
LPCB Red Book



1 Part: 3

Automatic sprinkler, water
spray and deluge systems

bre

Introduction

BRE Global Ltd, based in the UK near London, is an independent third party organisation offering certification of fire, security and sustainability products and services to an international market. LPCB is the certification brand used for fire and security products and services. The LPCB mark is accepted worldwide. We have representative offices in China, India and Dubai. We are owned by the BRE Trust, a not-for-profit organisation.

LPCB listings can be accessed, free of charge, at www.redbooklive.com or via apps from Apple, Google and Windows.

BRE Global Ltd is also a Notified Certification Body and Notified Test Laboratory for:-

- Construction Products Regulation
- Pressure Equipment Directive
- Marine Equipment Directive
- Transport Pressure Equipment Directive

BRE Global additionally carries out:

- Fire Investigation
- Fire Risk Assessment
- Fire Safety Engineering
- Research
- Training

LPCB Listings

Listings are given in sections which list related groups of products and services such as suppression, security and so on. Each section also summarises the technical basis for the certification of each product or service. The Red Book listings should always be used in conjunction with rules, regulations and design specifications required by the relevant Authority having jurisdiction.

Listings comprise:

Volume 1: (This Volume)

- **Fire detection and alarm products, systems, and cables**
- **Manual fire extinguishing equipment**
- **Automatic sprinkler, water spray and deluge systems**
- **Fixed fire fighting products and systems**
- **Watermist systems**
- **Related installers**

Volume 2:

- Passive fire protection products
- Security protection products
- Fire doors and shutters
- Smoke and fire ventilation systems
- Security Assessments - SABRE
- Related installers
- Management Systems
- Construction products

Listings are given in the name of the manufacturer or service provider, in alphabetical order. They can be downloaded free of charge from our website at www.redbooklive.com and also via an App that is available free from Apple iStore (for iPhone and iPad), from Google Play, (for Android phones and tablets) and Windows Store (for Windows 8 phones).

Updates

Certification of products and services are updated regularly. To ensure that you are using the most up to date information please refer to www.redbooklive.com or download from the App from the website home page.



What is Third Party Certification?

A frequent concern of stakeholders is in knowing whether a product will perform in accordance with the stated specifications. These concerns can involve such product attributes as safety, health or environmental impacts, durability, compatibility, suitability for intended purposes or for stated conditions, and other similar considerations. These issues can all be addressed through product certification.

Third party certification is a conformity assessment process, carried out by a body that is independent of both supplier and customer organisations. It provides confirmation that products and services have met and will continue to meet the requirements of specified standards and other normative documents.

LPCB third party product certification schemes are quality assurance schemes and comprise initial type testing and technical evaluation, assessment and surveillance of the manufacturer's quality system and factory production procedures, regular audit testing, labelling and listing.

Similarly, LPCB schemes for suppliers of services (installers) are also quality assurance schemes comprising a technical assessment of an installer's capability, assessment and surveillance of the installer's quality system and production procedures, regular inspection of completed installations and listing.

Benefits of Third Party Certification

For specifiers, regulators, insurers, manufacturers and installers, the benefits of an LPCB approval are:

For specifiers and regulators:

- Risk reduction - specifying LPCB approved products and services demonstrates due-diligence and best endeavour and mitigates against possible accusations of negligence.
- Avoidance of costly mistakes - you can trust LPCB approved products and services to conform each and every time.
- Time - using Red Book Live to search for and assess products and services can save you time.

For manufacturers and installers:

- Increased global sales - LPCB approval is recognised and specified widely throughout the world. In some territories LPCB approval is a mandatory requirement.
- Added value of the product or service - LPCB approved products and services are recognised as providing added value given their ability to conform each and every time.
- Reduced liability - LPCB approved products and services demonstrate due-diligence which can reduce liability for both you and your customers.

What does LPCB Certification offer?

LPCB certification is carried out against Loss Prevention Standards (LPS's). These LPS's include reference to BS, EN or ISO standards as appropriate. LPCB certification are level 5 schemes as detailed in ISO/ IEC 17067 with the added requirement to have a quality system certificated to ISO 9001.

VOLUME 1 LIST OF APPROVED PRODUCTS AND SERVICES

The technical requirements of LPCB schemes are given in the Loss Prevention Standards (LPSs). These documents are drafted by LPCB technical experts in conjunction with appropriate external experts. They are then peer reviewed by representatives from trade bodies, regulators, insurers, specifiers, manufacturers and other suppliers. Finally these documents are approved for use by the BRE Global Governing Body; the Body that oversees all of the certification activities of BRE Global.

Product schemes comprise:

- Initial type testing and evaluation of product.
- Approval and surveillance of the manufacturer's (or supplier's) quality management system to ISO 9001
- Assessment and surveillance of the manufacturer's (or supplier) factory production control system (FPC).
- Periodic audit testing of the product from either the factory or marketplace.
- Labelling or marking as appropriate.
- Listing on Red Book Live

Installer schemes comprise:

- Technical assessment of the installation contractor's capability.
- Approval and surveillance of the contractor's quality management system to ISO 9001 or assessment against the requirements of the relevant Loss Prevention Standard where ISO 9001 is not appropriate.
- Regular surveillance inspections of on-going installations.
- The issue of Certificates of Conformity by the installer to demonstrate compliance for each installation.
- Listing in the Red Book.

The LPCB Mark - the Mark you can trust

After certification of a product or service the manufacturer or service provider may place the LPCB certification mark, as shown below, on the product, packaging and literature etc.



Where LPCB holds accreditation through the United Kingdom Accreditation Service (UKAS), the certified company may include the UKAS symbol (the Crown and Tick) alongside the LPCB mark for certain applications e.g. promotional literature or material and stationery, as shown below.



(Full details of LPCB accreditation can be found on the UKAS website at www.ukas.com)

Where for reasons of space or cost the use of the above full mark is not practical, then the following simplified mark may be applied directly to the product (for some schemes only). The LPCB scheme rules define how and where the marks can be used.

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Part

3

*AUTOMATIC SPRINKLER,
WATER SPRAY AND
DELUGE SYSTEMS*

PART 3: AUTOMATIC SPRINKLER, WATER SPRAY AND DELUGE SYSTEMS

INTRODUCTION

The standards used by LPCB for approving and listing sprinkler system components have been developed to ensure that they are suitable for use in systems installed to the LPC Sprinkler Rules incorporating EN 12845.

Many of these components may also be suitable for use in systems designed in accordance with other international and national codes such as NFPA.

To ensure that the systems work, it is recommended that they are designed, installed, commissioned and maintained by contractors who are approved by LPCB to LPS 1048 (for commercial systems) or LPS 1301 (for residential or domestic systems).

Listings in this section include:

Products

- Wet and dry alarm valves for sprinkler systems
- Wet alarm valve stations
- Accelerators and exhausters for dry pipe valves
- Deluge valves and actuators
- Direct reading flow meters
- Multiple jet controls
- Pipe couplings and fittings
- Flexible drops
- Pre-action control systems
- Sprinkler system recycling systems
- Pressure switches
- Sprinkler heads
- Sprinkler bulbs
- Suction tanks for automatic pumps
- Vortex inhibitors
- Water flow alarm switches
- Flow switch testing devices
- Water spray systems
- Fire pumps
- Multi-state fire pumps
- Diesel engines for sprinkler pump sets
- Pipework supports
- Check valves
- Stop valves
- Plastic pipes and fittings
- Metron actuators
- Water motor alarms

Products are approved in accordance with a range of standards, the details of which are given at the front of each section relevant to the product.

Installation and maintenance contractors

Contractors are approved in accordance with:

- *LPS 1048: Requirements for the approval of sprinkler system contractors in the UK and Ireland.*
- *LPS 1148: Requirements for contractors engaged in the design, installation, commissioning and servicing of automatic sprinkler systems (overseas)*
- *LPS 1301: Requirements for the approval of sprinkler installers in the UK and Ireland for residential and domestic sprinkler systems.*

Sprinkler systems are only effective if designed, installed and maintained correctly. The LPS 1048-1 scheme: *Requirements for the approval of Sprinkler Contractors in the UK and Ireland*, ensures that installers are capable of designing, installing and servicing sprinkler systems to acceptable installation standards.

Scheme Structure

There are 4 approval levels for Sprinkler Contractors in the LPS 1048-1 scheme. Figure 1 below shows the Categories of Work that are allowed to be carried out at each approval level in the LPS 1048-1 scheme.

| Figure 1 | | Approval Level | | | |
|--------------------|--|----------------|---|---|---|
| Categories of Work | | 1 | 2 | 3 | 4 |
| A | Pre-calculated ordinary hazard systems, installations, extensions and alterations (excluding water supplies) | √ | √ | √ | √ |
| B | Pre-calculated high hazard systems, installations, extensions and alterations (excluding water supplies) | √ | √ | √ | √ |
| C | Town's main water supplies | √ | √ | √ | √ |
| D | Pumped water supplies | √ | √ | √ | √ |
| E | Base build contracts (pre-calculated design principles) | | √ | √ | √ |
| F | Systems, installations, extensions and alterations involving FHC design principles | | | √ | √ |

Important Note to Specifiers

Specifiers should only use Sprinkler Contractors that are LPS 1048-1 approved to the appropriate level depending on the type of sprinkler work required, refer to the individual company listings for the approval level of Sprinkler Contractors.

Listing of Sprinkler Contractors

LPS 1048-1 Approved Sprinkler Contractors are listed alphabetically, regardless of their approval level.

Continual Assessment

The LPS 1048-1 scheme has over 80 sprinkler contractors that are continually assessed for their continued capability to undertake sprinkler contracts and for their compliance with the requirements of the LPS 1048-1 scheme.

Certificates of Conformity

In order to ensure that a sprinkler system is effective, specifiers should always request an LPS 1048 Certificate of Conformity. An LPS 1048 Certificate of Conformity may only be issued for a sprinkler system, installation, extension or alteration that is in full compliance with the one of the acceptable installation standards.

Any agreed minor deviations to the installation standard will be recorded on the LPS 1048 Certificate of Conformity. An LPS Certificate of Conformity cannot be issued if there is a major deviation to the installation standard. It should be noted that a Sprinkler Contractor's Completion Certificate is **NOT** an LPS 1048 Certificate of Conformity.

An LPS 1048 Certificate of Conformity only remains valid if the sprinkler system, installation, extension or alteration, covered by the certificate, is serviced and maintained in accordance with the original installation standard.

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

Supervision

Where an approved Sprinkler Contractor does not meet all the criteria set out in the LPS 1048-1 scheme document to self-certificate any of the Categories of Work allowed under its approval level, it is required to have the Category (ies) of Work that it is not approved to self-certificate supervised by an LPCB approved Supervising Body or the LPCB Supervisory Service.

Supervision involves a review of the design, an inspection of the installed sprinkler protection, and if water supplies are included in the scope of work, witnessing of the water supply proving tests, for compliance with the installation standard. For supervised contracts, the LPS 1048 Certificates of Conformity is issued by an LPCB approved Supervising Body or the LPCB Supervisory Service.

Details of the Categories of Work that each approved Sprinkler Contractor can self-certificate, can be found in the individual company listings.

Financial assessment

The assessment and listing of Sprinkler Contractors in the LPS 1048-1 scheme covers only technical and quality aspects. All other contractual requirements are the responsibility of the parties to the contract.

Service and maintenance

Installers that undertake service and maintenance work are assessed for their capability to carry out such work in accordance with EN 12845 clause 20 and Technical Bulletin 203 of the LPC Rules for Automatic Sprinkler Installations.

A & F Sprinklers Limited

Unit 4, Transpennine Trading Estate, Gorrels Way, Rochdale, Lancashire OL11 2PX, United Kingdom

Tel: +44 (0)845 505 1550 • Fax: +44 (0)845 505 1660

E-mail: info@afsprinklers.co.uk • Website: www.afsprinklers.co.uk

Certificate No. ASC-001 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

A.M. Fire Systems Limited

Red Brook Mill, Bury Road, Rochdale OL11 4EE, United Kingdom

Tel: +44 (0)1706 639439 • Fax: +44 (0)1706 347733

E-mail: andyedmunds@amfiresystems.co.uk

Certificate No. ASC-076 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A B C
The following Categories of Work to be supervised - D E

AD Sprinkler Protection Limited

2/8 Heaton Mill, Grey Street, Denton, Manchester M34 3RG, United Kingdom

Tel: +44 (0)161 336 0001 • Fax: +44 (0)161 336 6608

E-mail: enquiries@adsprinklers.co.uk • Website: www.adsprinklers.co.uk

Certificate No. ASC-102 to LPS 1048

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A

The following Categories of Work to be supervised - B C D E

Alpha Sprinkler Protection Limited

G25, Innovation Centre, Evolution Park, Haslingden Road, Blackburn BB1 2FD, United Kingdom

Tel: +44 (0)1254 584669

E-mail: info@alphasprinklers.co.uk • Website: www.alphasprinklers.co.uk

Certificate No. ASC-137 to LPS 1048

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 2

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

Alpine Fire Engineers Limited

Sovereign House, Barehill Street, Littleborough, Lancashire OL15 9BL, United Kingdom

Tel: +44 (0)1706 838200 • Fax: +44 (0)1706 838020

E-mail: s.nanda@alpinefire.co.uk • Website: www.alpinefire.co.uk

Certificate No. ASC-054 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work

No supervision required

AML Fire Protection Limited

59 Carlton Avenue, Gillingham, Kent ME7 2JX, United Kingdom

Tel: +44 (0)1634 581412 • Fax: +44 (0)8709 748192

E-mail: enquiries@amlfireprotection.com • Website: www.amlfireprotection.co.uk

Certificate No. ASC-140 to LPS 1048

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 1

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

APW Fire Protection Limited

Unit A, Marlfield Factory, Front Road, Drumbo, Lisburn BT27 5JY, United Kingdom
Tel: +44 (0)28 90827046 • Fax: +44 (0)28 90827049
E-mail: will@apwfp.com

Certificate No. ASC-107 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A
The following Categories of Work to be supervised - B C D E

Aquamatic Fire UK Limited

52-56 Lower Oxford Street, Castleford, West Yorkshire WF10 4AF, United Kingdom
Tel: +44 (0)1977 517759 • Fax: +44 (0)872 352 3743
E-mail: info@aquamaticfire.co.uk • Website: www.aquamaticfire.co.uk

Certificate No. ASC-131 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Argus Fire Protection Company Limited

Hendglade House, 46 New Road, Stourbridge, West Midlands DY8 1PA, United Kingdom
Tel: +44 (0)1384 376256 • Fax: +44 (0)1384 393955
E-mail: info@argusfire.co.uk • Website: www.argusfire.co.uk

Certificate No. ASC-005 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

Armstrong Priestley Limited

Seventy Seven, Holbeck Lane, Leeds LS11 9UL, United Kingdom
Tel: +44 (0)113 3944040 • Fax: +44 (0)113 3944041
E-mail: info@armstrongpriestley.co.uk • Website: www.armstrongpriestley.co.uk

Certificate No. ASC-016 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

Automatic Fire Control Limited

Unit 4 - Shrivenham, 100 Business Park, Enterprise Centre, Major Road, Shrivenham, Wiltshire SN6 8TZ,
United Kingdom

Tel: +44 (0)1793 821588 • Fax: +44 (0)1793 821587

E-mail: info@automaticfire.co.uk

Certificate No. ASC-027 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A B C D
The following Categories of Work to be supervised - E

Automatic Sprinkler Company (Ireland) Limited trading as Automatic Fire & Integrated Solutions

Unit 3 Parkwest Road, Parkwest Industrial Park, Dublin 12, Ireland

Tel: +353 1 453 3108 • Fax: +353 1 453 3121

E-mail: info@automaticfire.ie • Website: www.automaticfire.ie

Certificate No. ASC-101 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

B4 Fire Protection Limited

Unit 5, Ladywood Works, Leicester Road, Lutterworth LE17 4HD, United Kingdom

Tel: +44 (0)1162 960 782

E-mail: info@b4fireprotection.co.uk • Website: www.b4fireprotection.co.uk

Certificate No. ASC-128 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

Besseges Limited

Riverside, Dukinfield, Cheshire SK16 4HE, United Kingdom

Tel: +44 (0)161 308 3252 • Fax: +44 (0)161 339 5003

E-mail: sales@besseges.co.uk • Website: www.besseges.co.uk

Certificate No. ASC-041 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work

No supervision required

Blue Shield Fire Protection Limited

Blue Shield House, Queen Street, Tring, Hertfordshire HP23 6BQ, United Kingdom

Tel: +44 (0)1442 828000 • Fax: +44 (0)1442 828001

E-mail: sales@blueshieldfire.co.uk • Website: www.blueshieldfire.co.uk

Certificate No. ASC-083 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A

The following Categories of Work to be supervised - B C D E

Bush (Fire Engineering) Limited

124 Barnfield Wood Road, Beckenham BR3 6SX, United Kingdom

Tel: +44 (0)203 021 1999

E-mail: sales@bushengineering.com • Website: www.bushengineering.com

Certificate No. ASC-065 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

Churches Fire Security Limited

Fire House, Mayflower Close, Chandlers Ford, Eastleigh, Hampshire SO53 4AR, United Kingdom

Tel: 0870 608 4350 • Fax: 0870 608 4351

E-mail: sales@churchesfire.com • Website: www.churchesfire.com

Certificate No. ASC-068 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Circum Limited

61 Hatfield Road, St Albans, Hertfordshire AL1 4JE, United Kingdom
Tel: +44 (0)1727 821228 • Fax: +44 (0)1727 822428
E-mail: sfulcher@circum.ltd.uk • Website: www.circum.ltd.uk

Certificate No. ASC-099 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A
The following Categories of Work to be supervised - B C D E

Commercial Sprinklers Limited

Copthall Farm, Breakspear Road South, Ickenham, Middlesex UB10 8HB, United Kingdom
Tel: +44 (0)208 864 3914
E-mail: info@commercialsprinklers.co.uk • Website: www.commercialsprinklers.co.uk

Certificate No. ASC-138 to LPS 1048

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Compco Fire Systems Limited

Cleeve House, Malvern Road, Lower Wick, Worcester WR2 4YX, United Kingdom
Tel: +44 (0)1905 741600 • Fax: +44 (0)1905 741620
E-mail: enquiries@compcofire.co.uk • Website: www.compcofire.co.uk

Hamilton:

Cadzow Industrial Estate, Cadzow House, Hamilton ML3 7QU, United Kingdom
Tel: +44 (0)1698 368790 • Fax: +44 (0)1698 426211
E-mail: enquiries@compcofire.co.uk • Website: www.compcofire.co.uk

Hemel Hempstead: (Note: Servicing not applicable for this office)

High Banks House, Lawn Lane, Hemel Hempstead, Hertfordshire HP3 9HR, United Kingdom
Tel: +44 (0)1442 242821
E-mail: enquiries@compcofire.co.uk • Website: www.compcofire.co.uk

Certificate No. ASC-049 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

CT Fire Protection Limited

30 Church Street, Burton Latimer, Northamptonshire NN15 5LU, United Kingdom

Tel: +44 (0)1536 515872 • Fax: +44 (0)1536 515872

E-mail: info@ct-fireprotection.co.uk

Certificate No. ASC-135 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

CW Fire Solutions Limited

Unit 6, Fitzroy Business Park, Sandy Lane, Sidcup, Kent DA14 5NL, United Kingdom

Tel: +44 (0)208 309 5203 • Fax: +44 (0)208 302 5707

E-mail: admin@cwfire.co.uk • Website: www.cwfire.co.uk

Certificate No. ASC-136 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A

The following Categories of Work to be supervised - B C D E

DIS Sprinklers Limited

First Floor, Cranham House, Falcon Close, Quedgeley, Gloucester, Gloucestershire GL2 4LY, United Kingdom

Tel: +44 (0)1452 304927

E-mail: sprinklers@dis-ltd.co.uk • Website: www.dis-ltd.co.uk

Certificate No. ASC-030 to LPS 1048

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A

The following Categories of Work to be supervised - B C D E

EA-RS Fire Engineering Limited

4 Swanbridge Industrial Park, Black Croft Road, Witham, Essex CM8 3YN, United Kingdom

Tel: +44 (0)1376 503680

E-mail: onesolution@ea-rsgroup.com • Website: www.ea-rsgroup.com

Certificate No. ASC-125 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Emtec Fire Systems Limited

1 Ellismuir Way, Tannochside Park, Uddingston, Glasgow G71 5PW, United Kingdom
Tel: +44(0)141 646 1949 • Fax: +44 (0)141 646 0418
E-mail: ac@emtecfire.co.uk • Website: www.emtecfire.co.uk

Certificate No. ASC-129 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Essex Fire Sprinklers Limited

13 Kendal Court, Hurrucane Way, Wickford, Essex SS11 8YB, United Kingdom
Tel: +44 (0)1268 760436
E-mail: info@essexfiresprinklers.com • Website: www.essexfiresprinklers.com

Certificate No. ASC-142

Design, installation and commissioning of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Eton Fire Limited

Suite 602, Tower Bridge Business Centre, 46-48 East Smithfield, London E1W 1AW, United Kingdom
Tel: +44 (0)207 517 6300 • Fax: +44 (0)207 538 5231
E-mail: fire@etonfire.com • Website: www.etonfire.com

Cannock:

Anysley House, Waterside Business Centre, Wolverhampton Road, Cannock WS11 1SN, United Kingdom
Tel: +44 (0)1543 431340 • Fax: +44 (0)1543 571680
E-mail: fire@etonfire.com • Website: www.etonfire.com

Certificate No. ASC-081 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A B C D
The following Categories of Work to be supervised - E

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

F.V.S. Limited

Broom Street, Off Huddersfield Road, Newhey, Rochdale OL16 3RY, United Kingdom

Tel: +44 (0)1706 848599 • Fax: +44 (0)1706 843474

E-mail: fvs@fvslimited.co.uk • Website: www.fvslimited.co.uk

Certificate No. ASC-031 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

FES Limited, FES Sprinklers

Forth House, Pirnhall Business Park, Stirling FK7 8HW, United Kingdom

Tel: +44 (0)1786 819600 • Fax: +44 (0)1786 811456

E-mail: hq@fes.ltd.uk

Certificate No. ASC-096 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A B C D

The following Categories of Work to be supervised - E

Fire Alarm Solutions Limited

Unit 2, Manor Way Business Centre, Fairview Industrial Park, Marsh Way, Rainham, Essex RM13 8UG, United Kingdom

Tel: +44(0) 1708 521181 • Fax: +44(0) 1708 521182

E-mail: enquiries@fas-ltd.com • Website: www.fas-ltd.com

Certificate No. ASC-110 to LPS 1048

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

Fire Logistics Limited

Unit 11B, Airport Industrial Estate, Newcastle upon Tyne NE3 2EF, United Kingdom

Tel: +44 (0)191 214 6400 • Fax: +44 (0)191 214 6303

E-mail: enquiries@firelogistics.co.uk • Website: www.firelogistics.co.uk

Certificate No. ASC-105 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Fire Security (Sprinkler Installations) Limited

Homefield Road, Haverhill, Suffolk CB9 8QP, United Kingdom
Tel: +44 (0)1440 705815 • Fax: +44 (0)1440 704352
E-mail: info@firesecurity.co.uk • Website: www.firesecurity.co.uk

Certificate No. ASC-018 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

Fireproof Fire Engineering Limited

The Old Brewery, 40 Coldhurst Street, Oldham, Lancashire OL1 2BQ, United Kingdom
Tel: +44 (0)161 620 0902 • Fax: +44 (0)161 620 0772
E-mail: contactus@fireproofsprinklersystems.com • Website: www.fireproofsprinklersystems.com

Certificate No. ASC-019 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

Firetec UK Limited

Unit 3, 284 Warley Hill, Brentwood, Essex CM13 3AB, United Kingdom
Tel: +44 (0)844 800 6974
E-mail: enquiries@firetec.co.uk • Website: www.firetec.uk

Certificate No. ASC-120 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

First Fire Protection Limited

Unit 3, Network 4, Lincoln Road, Cressex Business Park, High Wycombe, Buckinghamshire HP12 3RF, United Kingdom
Tel: +44 (0)1494 522031/2
E-mail: enquiries@firstfireprotection.co.uk • Website: www.firstfireprotection.co.uk

Certificate No. ASC-037 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

Approval Level 2

Approved to self-certificate the following Categories of Work: A B
The following Categories of Work to be supervised - C D

Gordonson Fire Protection Limited

Unit 2 Tawney Farm, Tawney Common, Theydon Mount, Epping, Essex CM16 7PU, United Kingdom
Tel: +44 (0)207 237 6707 • Fax: +44 (0)207 252 0152
E-mail: Danielle@Gordonson.co.uk

Certificate No. ASC-062 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A B C
The following Categories of Work to be supervised - D E

Hall & Kay Fire Services Limited trading as Hall & Kay Fire Engineering (Ascot)

Unit E - Science Park, Silwood Business Park, Ascot, Berkshire SL5 7PW, United Kingdom
Tel: +44 (0)1344 203800 • Fax: +44 (0)1344 203801
E-mail: ascot@hkfire.co.uk • Website: www.hkfire.co.uk

West Midlands:

Sterling Park, Clapgate Lane, Woodgate Valley, West Midlands B32 3BU, United Kingdom
Tel: +44 (0)121 421 3311 • Fax: +44 (0)121 422 7312
E-mail: birmingham@hkfire.co.uk • Website: www.hkfire.co.uk

Manchester: (Note: Servicing not applicable for this office)

Oak Court, Clifton Business Park, Wynne Avenue, Clifton, Manchester M27 8FF, United Kingdom
Tel: +44 (0)161 872 7316 • Fax: +44 (0)161 872 7003
E-mail: Manchester@hkfire.co.uk • Website: www.hkfire.co.uk

Certificate No. ASC-071 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

Integr8 Building Services Limited

203-205 High Street, Orpington, Kent BR6 0PF, United Kingdom
Tel: +44 (0)1689 824886
E-mail: info@i8.london • Website: www.i8.london

Certificate No. ASC-116 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Irish Sprinkler & Fire Protection Limited

Damastown Green, Damastown Industrial Estate, Mulhuddart, Dublin 15, Ireland
Tel: +353 1 8614036 • Fax: +353 1 8614037
E-mail: irishsprinkler@joneseng.com • Website: www.joneseng.com

Certificate No. ASC-069 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

J & J Design Limited trading as J & J Fire Engineering

Ewood Bridge Mill, Ewood Bridge, Lancashire BB4 6LB, United Kingdom
Tel: +44 (0)1706 223414 • Fax: +44 (0)1706 225639
E-mail: info@jjfe.co.uk • Website: www.jjsprinklers.co.uk

Certificate No. ASC-052 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

J G Truty Sprinkler Installations Limited

232 Desborough Avenue, High Wycombe, Buckinghamshire HP11 2TN, United Kingdom
Tel: +44 (0)1494 443339 • Fax:
E-mail: info@jgtrutysi.co.uk • Website: www.jgtrutysi.co.uk

Certificate No. ASC-122 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A
The following Categories of Work to be supervised - B C D E

Kean Building & Fire Protection Services Limited

39/43 Temple Bar, Willenhall, West Midlands WV13 1SH, United Kingdom
Tel: +44 (0)1902 603550 • Fax: +44 (0)1902 608017
E-mail: kean.fp@btconnect.com

Certificate No. ASC-061 to LPS 1048

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A B C
The following Categories of Work to be supervised - D E

Kentallen Fire Protection Limited

Lancaster Road, Lowmoss Industrial Estate, Bishopbriggs, Glasgow G64 2LL, United Kingdom
Tel: +44 (0)141 762 2540 • Fax: +44 (0)141 762 0823
E-mail: kentallen@btconnect.com

Certificate No. ASC-032 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

KPFP Limited

11 Waterhouse Lane, Kingswood, Surrey KT20 6EB, United Kingdom
Tel: +44 (0)20 8544 4844 • Fax:
E-mail: fire@kfpf.co.uk • Website: kfpf.co.uk

Certificate No. ASC-089 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A
The following Categories of Work to be supervised - B C D E

Linkester Fire Protection Limited

4/6 Cross Street, Macclesfield, Cheshire SK11 7PG, United Kingdom
Tel: +44 (0)1625 511272 • Fax: +44 (0)1625 511272
E-mail: sales.linkester@btconnect.com

Certificate No. ASC-011 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

M & P Fire Protection Limited

Unit 12, Viewpoint, Boxley Road, Maidstone, Kent ME14 2DZ, United Kingdom

Tel: +44 (0)800 043 1974 • Fax: +44 (0)1622 669631

E-mail: info@mpfireprotection.com • Website: www.mpfireprotection.com

Certificate No. ASC-133 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

M & P Fire Solutions Ltd

Unit 9 Robinhood Business Park, Robinhood Road, Dublin 22, Ireland

Tel: +353 1 4508248 • Fax: +353 1 4509028

E-mail: admin@mpfiresolutions.com • Website: www.mpfiresolutions.com

Certificate No. ASC-095 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A

The following Categories of Work to be supervised - B C D E

Mercury Engineering

Mercury House, Sandyford Industrial Estate, Foxrock, Dublin 18 D18 XH79, Ireland

Tel: +353 1 216 3000 • Fax: +353 1 216 3006

E-mail: fireprotection@mercuryeng.com • Website: www.mercuryeng.com

Certificate No. ASC-058 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work

No supervision required

National Sprinkler Company Limited

Unit 4B, Fingal Bay Business Park, Balbriggan, Co Dublin, Ireland

Tel: +353 1 690 4001/4040 • Fax: +353 1 841 7400

E-mail: info@nationalsprinkler.ie • Website: www.nationalsprinkler.ie

Certificate No. ASC-092 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

Approved to self-certificate the following Categories of Work: A B C D
The following Categories of Work to be supervised - E

Nu-Form Fire UK Limited

390 Manchester Road, Gollinrod, Bury, Lancashire BL9 5NB, United Kingdom
Tel: +44 (0)1706 825111 • Fax: +44 (0)1706 827111
E-mail: info@sprinklersystems.co.uk • Website: www.sprinklersystems.co.uk

Certificate No. ASC-040 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

Phoenix Fire Services Limited (trading as Interserve Sprinkler Division)

Ingenuity House, Elmdon Trading Estate, Bickenhall Lane, Birmingham B37 7HQ, United Kingdom
Tel: +44 (0)845 600 8420 • Fax: +44 (0)845 600 6841
E-mail: ifsfire.sprinklers@irv-if.com • Website: www.phoenixfireservices.co.uk

Certificate No. ASC-123 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Protec Camerfield Limited

5 Churchill Way, Nelson, Lancashire BB9 6RT, United Kingdom
Tel: +44 (0)1282 717474 • Fax: +44 (0)1282 717475
E-mail: camerfield@protec.co.uk • Website: www.protec.co.uk

Certificate No. ASC-056 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

Provincial Sprinkler Co. Limited

Unit 4, Cork Airport Industrial Estate, Kinsale Road, Cork, Ireland
Tel: +353 (0)21 4965058 • Fax: +353 (0)21 4317425
E-mail: info@pscl.ie • Website: www.provincial-sprinkler.ie

Certificate No. ASC-087 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

Quinn Infrastructure Services Limited

Finwell House, 26 Finsbury Square, London EC2A 1DS, United Kingdom

Tel: +44 (0)207 993 0731 • Fax: +44 (0)203 757 0580

E-mail: samantha.young@quinnis.co.uk • Website: www.quinninfrastructure.co.uk

Certificate No. ASC-104 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A
The following Categories of Work to be supervised - B C D E

Red Rose Fire Protection Limited

Unit 2, Atlas Foundry Estate, Brieryfield Road, Preston PR1 8SR, United Kingdom

Tel: +44 (0)1772 822133 • Fax: +44 (0)1772 822144

E-mail: redrosefp@aol.com

Certificate No. ASC-044 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Redcroft Fire Limited

1A Hurst Road, Sidcup, Kent DA15 9AE, United Kingdom

Tel: +44 (0)208 308 0232 • Fax: +44 (0)208 300 1106

E-mail: info@redcroftfire.co.uk • Website: www.redcroftfire.co.uk

Certificate No. ASC-127 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

Richmond Fire Engineers Limited

30 Firby Road, Gallowfields Trading Estate, Richmond, North Yorkshire DL10 4ST, United Kingdom

Tel: +44 (0)1748 825612 • Fax: +44 (0)1748 825935

E-mail: servicing@richmondfire.co.uk • Website: www.richmondfire.co.uk

Certificate No. ASC-059 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work

No supervision required

Ross Fire Protection Limited

29 Deerdykes View, Westfield, Cumbernauld G68 9HN, United Kingdom

Tel: +44 (0)1236 738502 • Fax: +44 (0)1236 727977

E-mail: info@rossfire.co.uk • Website: www.rossfire.co.uk

Certificate No. ASC-021 to LPS 1048

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

RSM Refko Installations Limited

Unit 8, Capstan Centre, Thurrock Park Way, Tilbury, Essex RM18 7HH, United Kingdom

Tel: +44 (0)1375 855500 • Fax: +44 (0)1375 855533

E-mail: rsmrefko@btconnect.com

Certificate No. ASC-043 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

Select Fire Services Limited

Unit 3 Omni Business Park, Stadium Way, Harlow, Essex CM19 5FT, United Kingdom

Tel: +44 (0)1279 641979 • Fax: +44 (0)1279 641978

E-mail: info@selectfire.co.uk • Website: www.selectfire.co.uk

Certificate No. ASC-070 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A B C D
The following Categories of Work to be supervised - E

Solent Fire Protection Services Limited

12 Heritage Business Park, Heritage Way, Gosport, Hampshire PO12 4BG, United Kingdom
Tel: +44 (0)2392 510230 • Fax: +44 (0)2392 511510
E-mail: info@solentfire.co.uk • Website: www.solentfire.co.uk

Certificate No. ASC-057 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A B C
The following Categories of Work to be supervised - D E

Spectrum Fire Protection (UK) Limited

Middlemore Lane, Aldridge, Walsall, West Midlands WS9 8SP, United Kingdom
Tel: +44 (0)1922 744 466 • Fax: +44 (0)1922 744 477
E-mail: TechSupport@spectrumfire.co.uk • Website: www.spectrumfire.co.uk

Certificate No. ASC-108 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Target Fire Systems Limited

Unit 12, The Portland Business Centre, Manor House Lane, Datchet, Berkshire SL3 9EG, United Kingdom
Tel: +44 (0)1753 549496 • Fax: +44 (0)1753 549122
E-mail: shaun.ellsmore@targetfiresystems.co.uk • Website: www.targetsiteservices.co.uk

Certificate No. ASC-124 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Taylor Fire Sprinklers Limited

Unit D, Avondale Way, Wakefield, West Yorkshire WF2 7QU, United Kingdom
Tel: +44 (0)1924 375971 • Fax: +44 (0)1924 609902
E-mail: info@taylorfiresprinklers.co.uk • Website: www.taylorfiresprinklers.co.uk

Certificate No. ASC-115 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Thameside Fire Protection Co. Limited

Unit 4, Sovereign Park, Cranes Farm Road, Basildon, Essex SS14 3JD, United Kingdom

Tel: +44 (0)1268 597999 • Fax: +44 (0)1268 597998

E-mail: darko.petrovic@thamesidefire.co.uk • Website: www.thamesidefire.co.uk

Certificate No. ASC-053 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A
The following Categories of Work to be supervised - B C D E

Thermotech Fire Protection Limited

Thermotech House, Building 1, Hercules Office Park, Bird Hall Lane, Cheadle Hulme, Stockport, Cheshire SK3 0UX, United Kingdom

Tel: +44 (0)161 476 5551 • Fax: +44 (0)161 476 2998

E-mail: info@thermotechsolutions.co.uk • Website: www.thermotechsolutions.co.uk

Certificate No. ASC-074 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 3

Approved to self-certificate the following Categories of Work: A B
The following Categories of Work to be supervised - C D E

Tyco Fire and Integrated Solutions (the trading company for Tyco Fire and Integrated Solutions (UK) Limited)

Tyco Park, Grimshaw Lane, Newton Heath, Manchester M40 2WL, United Kingdom

Tel: +44 (0)161 205 2321 • Fax: +44 (0)161 455 4459

Website: www.tycofis.com

Belfast

Tyco House, 13A Airport Road West, Belfast, Northern Ireland BT3 9ED, United Kingdom

Tel: +44 (0)2890 883560 • Fax: +44 (0)2890 814418

Website: www.tycofis.com

Bristol

180 Aztec West, Almondsbury, Bristol BS32 4TU, United Kingdom

Tel: +44 (0)1454 240071 • Fax: +44 (0)1454 626443

Website: www.tycofis.com

Gateshead

ADT House, 5th Avenue Business Park, Team Valley Trading Estate, Gateshead, Tyne & Wear NE11 0HF, United Kingdom

Tel: +44 (0)191 451 5100 • Fax: +44 (0)191 487 2177

Website: www.tycofis.com

Halesowen

Mucklow Office Park, Mucklow Hill, Halesowen, West Midlands B62 8DA, United Kingdom

Tel: +44 (0)121 255 6000 • Fax: +44 (0)121 255 6100

Website: www.tycofis.com

Sunbury on Thames

Security House, The Summit, Hanworth Road, Sunbury on Thames, Middlesex TW16 5DB

Tel: +44 (0)1753 574111 • Fax: +44 (0)1753 824226

Website: www.tycofis.com

Swansea

Tyco House, Phoenix Way, Swansea Enterprise Park, Swansea SA7 9EQ, United Kingdom

Tel: +44 (0)1792 465006 • Fax: +44 (0)1792 648535

Website: www.tycofis.com

Uddingston

ADT House, 4 Kilmartin Place, Tannochside Park, Uddingston G71 5PH

Tel: +44 (0)1355 225132 • Fax: +44 (0)1698 812061

Website: www.tycofis.com

Certificate No. ASC-007 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 4

PART 3: SECTION 1.1

LPS 1048 APPROVED SPRINKLER CONTRACTORS - UK AND IRELAND

Approved to self-certificate all Categories of Work
No supervision required

UK Fire Safety Limited

13-15 Lostock Road, Urmston, Manchester M41 0ES, United Kingdom
Tel: +44 (0)161 746 8037 • Fax: +44 (0)161 746 8136
E-mail: mroyle@uk-firesafety.co.uk • Website: www.uk-firesafety.co.uk

Certificate No. ASC-098 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Ultra Surefire Limited

Unit 4, Barnes Wallis Court, Wellington Road, High Wycombe, Buckinghamshire HP12 3PS, United Kingdom
Tel: +44 (0)1494 444123 • Fax: +44 (0)1494 444345
E-mail: info@ultrasurefire.co.uk • Website: www.ultrasurefire.co.uk

Certificate No. ASC-130 to LPS 1048

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work
All Categories of Work to be supervised

Vipond Fire Protection Limited

10-12 Glenfield Road, Kelvin Industrial Estate, East Kilbride, Lanarkshire G75 0RA, United Kingdom
Tel: +44 (0)1355 2375 25/80/88 • Fax: +44 (0)1355 263399
E-mail: admin.uk@vipondltd.co.uk • Website: www.vipondfire.co.uk

Burntwood:

Unit 7C, Zone 2 Burntwood Business Park, Burntwood, Staffordshire WS7 3JQ, United Kingdom
Tel: +44 (0)1543 471417

Certificate No. ASC-024 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial fire sprinklers systems.

Approval Level 4

Approved to self-certificate all Categories of Work
No supervision required

Watermatic Fire Sprinklers Limited

20 Altrincham Road, Wilmslow SK9 5ND, United Kingdom

Tel: +44 (0)333 77 22 321

E-mail: info@watermaticfire.co.uk • Website: www.watermaticfire.co.uk

Certificate No. ASC-141 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

Woodward & Co. (Environmental) Ltd t/a Woodward & Co. Fire Protection

The Courtyard, Severn Drive, Tewkesbury, Gloucestershire GL20 8GD, United Kingdom

Tel: +44 (0)1684 850005

E-mail: office@woodward.uk.com • Website: www.woodward.uk.com

Certificate No. ASC-139 to LPS 1048

Design, installation and commissioning of industrial & commercial fire sprinklers systems.

Approval Level 1

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

Writech Industrial Services Limited

Also including Writech Manufacturing Limited, Mullingar Business Park, Mullingar, Co. Westmeath, Ireland

Tel: +353 44 9349857 • Fax: +353 44 9349858

E-mail: info@writechltd.com

Certificate No. ASC-067 to LPS 1048

Design, installation, commissioning and servicing of industrial & commercial and residential & domestic fire sprinklers systems.

Approval Level 3

Not approved to self-certificate any Category of Work

All Categories of Work to be supervised

PART 3: SECTION 1.2

LPS 1048 SUPERVISING BODIES

LPCB Supervising Service

Bucknalls Lane, Watford, Hertfordshire WD25 9XX, United Kingdom

Tel: +44 (0)1923 664100 • Fax: +44 (0)1923 664994

E-mail: enquiries@lpcb.com • Website: www.redbooklive.com

Certificate No. n/a

LPS 1148 is a new scheme for installers of automatic fire sprinkler systems based overseas. This scheme is open to all Contractors operating anywhere in the World except the UK & Ireland and The Netherlands where LPCB operates different schemes for installers of automatic sprinkler systems.

Scheme Structure

There are 4 approval levels for Sprinkler Contractors in the LPS 1148 scheme. Figure 1 below shows the Categories of Work that are allowed to be carried out at each approval level in the LPS 1148 scheme.

Figure 1

| Category of Work | | Approval level | | | |
|------------------|--|----------------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| A | Pre-calculated ordinary hazard systems, installations, extensions and alterations (excluding water supplies) | ✓ | ✓ | ✓ | ✓ |
| B | Pre-calculated high hazard systems, installations, extensions and alterations (excluding water supplies) | ✓ | ✓ | ✓ | ✓ |
| C | Town's main water supplies | ✓ | ✓ | ✓ | ✓ |
| D | Pumped water supplies | ✓ | ✓ | ✓ | ✓ |
| E | Base build contracts (pre-calculated design principles) | | ✓ | ✓ | ✓ |
| F | Systems, installations, extension and alterations involving FHC design principles | | | ✓ | ✓ |

Installation standard

Sprinkler contractors will be assessed for their capability to design, install, test & commission and service (where undertaken) automatic fire sprinkler systems using their national sprinkler standard.

Important note to Specifiers

Specifiers should only use Sprinkler Contractors that are LPS 1148 approved to the appropriate level depending on the type of sprinkler work required, refer to the individual company listings for the approval level of Sprinkler Contractors.

Listing of Sprinkler Contractors

LPS 1148 Approved Sprinkler Contractors are listed alphabetically, regardless of their approval level.

Continual assessment

LPS 1148 approved sprinkler contractors are continually assessed for their continued capability to undertake sprinkler contracts and for their compliance with the requirements of the LPS 1148 scheme.

Certificates of Conformity

In order to ensure that a sprinkler system is effective, specifiers should always request an LPS 1148 Certificate of Conformity. An LPS 1148 Certificate of Conformity may only be issued for a sprinkler system, installation, extension or alteration that is in full compliance with the one of the acceptable installation standards.

Any agreed minor deviations to the installation standard will be recorded on the LPS 1148 Certificate of Conformity. A certificate of conformity cannot be issued if there is a major deviation to the installation standard. It should be noted that a Sprinkler Contractor's Completion Certificate is **NOT** an LPS 1148 Certificate of Conformity.

PART 3: SECTION 1.3

LPS 1148 APPROVED SPRINKLER CONTRACTORS - OVERSEAS

An LPS 1148 Certificate of Conformity remains valid only if:

1. The sprinkler system user carries out and maintains adequate records of the programme of daily and weekly inspections and checks required by the applicable installation standard, which will also be detailed in the operating and maintenance manual provided by the LPS 1148 Approved Sprinkler contractor, and
2. The sprinkler system is serviced, maintained and inspected strictly in accordance with the applicable installation standard by an LPS 1148 Approved Sprinkler Contractor, and
3. All subsequent repairs, alterations or additions to the sprinkler system are carried out by an LPS 1148 listed Sprinkler Contractors whose level of approval in the LPS 1148 scheme is appropriate to the scope of work carried out.

Supervision

Where an approved Sprinkler Contractor does not meet all the criteria set out in the LPS 1148 scheme document to self-certify any of the Categories of Work allowed under its approval level, it is required to have the Category(ies) of Work that it is not approved to self-certify supervised by the LPCB Supervisory Service.

Supervision involves a review of the design, an inspection of the installed sprinkler protection, and if water supplies are included in the scope of work, witnessing of the water supply proving tests, for compliance with the nominated installation standard. LPS 1148 Certificates of Conformity are then issued by the LPCB Supervisory Service.

Details of the Categories of Work that each approved Sprinkler Contractor can self-certify, can be found in the individual company listings.

Service and maintenance

Installers that undertake service and maintenance work are assessed for their capability to carry out such work in accordance with the nominated installation standard.

Financial assessment

The assessment and listing of Sprinkler Contractors in the LPS 1148 scheme covers only technical and quality aspects. All other contractual requirements are the responsibility of the parties to the contract.

Alberta Fire & Security Equipment Limited

San Gwakkın Road, Mriehel, BKR 3000, Malta

Tel: +356 21 443538 • Fax: +356 21 484077

E-mail: enquiries@alberta.com.mt • Website: www.alberta.com.mt

Certificate No. ASCO-001 to LPS 1148

Approval Level 4

Approved to self-certify all Categories of Work
No supervision required

Automatic sprinklers can be installed in residential and domestic premises to safeguard life, property and the environment yet two thirds of fire fatalities occur in unsprinklered residential and multi-occupancy properties such as care homes and blocks of flats.

Equipment designs and system configurations are constantly evolving. In order to ensure adequate protection, sprinkler system installers need and appropriate technical competency in both design and installation.

LPCB has developed LPS 1301 *Requirements for the approval of Sprinkler Installers in the UK and Ireland for Residential and Domestic Sprinkler Systems*. This scheme was produced with the assistance of installers, fire brigades, local government, insurers and end users.

The key requirements of the scheme are that:-

- The company must be totally responsible for all aspects of the project, including the work of any sub-contractors
- The company has designated permanent employees including a 'Design Supervisor' and an 'Installation Supervisor' who are suitably trained and experienced in their roles
- The company maintains adequate records of all aspects of its activities.

Firms approved under this scheme are audited every 6 months looking at their compliance to LPS 1301 including visits to site.

Ecotect Engineering Limited

Technology House, 3A Bentwood Road, Haslingden, Rossendale, Lancashire BB4 5HH, United Kingdom
Tel: +44 (0)333 456 0011 • Fax: +44 (0)333 456 0021
E-mail: ask@ecotectfire.com • Website: www.ecotectfire.com

Certificate No. ARI-002 to LPS 1301

FSE Fire Safety Systems Limited

Unit 8, Wilford Industrial Estate, Wilford, Nottingham NG11 7EP, United Kingdom
Tel: +44 (0)1159 812624 • Fax: +44 (0)1159 815883
E-mail: sales@fsesprinklersandrisers.co.uk • Website: www.fsesprinklersandrisers.co.uk

Certificate No. ARI-003 to LPS 1301

Ultramist Limited trading as Ultrasafe Fire Suppression

Unit 1 Bowlings Corner, Marley Lane, Battle, East Sussex TN33 0RE, United Kingdom
Tel: +44 (0)800 599 9251 • Fax: +44 (0)1424 871439
E-mail: enquiries@ultrasafe.org.uk • Website: www.ultrasafe.org.uk

Certificate No. ARI-001 to LPS 1301

PART 3: SECTION 3.1

WET AND DRY ALARM VALVES FOR SPRINKLER SYSTEMS

This section lists products approved in accordance with:

- EN12259-2 *Fixed firefighting systems. Components for sprinkler and water spray systems. Wet alarm valve assemblies*
- EN12259-3 *Fixed firefighting systems. Components for sprinkler and water spray systems. Dry alarm valve assemblies*
- LPCB Schedule of requirements

It is strongly recommended that all alarm valves, dry-pipe valves and back-pressure valves be the subject of a maintenance contract, satisfying the requirements of the *LPC Rules for Automatic Sprinkler Installations*.

The nominal orifice size of valves listed is given in millimetres.

The products shall be installed and maintained in accordance with the manufacturer's instructions.

Globe Fire Sprinkler Corporation

4077 Airpark Drive, Standish, Michigan 48658, USA

Tel: +1 989 846 4583 • Fax: +1 989 846 9231

E-mail: brian.hoening@globesprinkler.com • Website: www.globesprinkler.com

Certificate No: 147b to EN 12259-2:1999 + Amendment A1:2001 & Amendment A2: 2005

Globe Alarm Valve

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|-------------------|-------|--|---------------|
| Globe Alarm Valve | H1 | 80 ⁽²⁾⁽³⁾⁽⁶⁾ , 100 ⁽¹⁾⁽³⁾⁽⁶⁾ , 150 ⁽¹⁾⁽³⁾⁽⁶⁾ , 200 ⁽²⁾⁽³⁾⁽⁷⁾ | 147b/01 |
| | H3 | 80 ⁽²⁾⁽⁴⁾⁽⁶⁾ , 100 ⁽²⁾⁽⁴⁾⁽⁶⁾ , 150 ⁽²⁾⁽⁴⁾⁽⁶⁾ , 200 ⁽²⁾⁽⁴⁾⁽⁷⁾ | 147b/02 |
| | H2 | 80 ⁽¹⁾⁽⁵⁾⁽⁶⁾ , 100 ⁽¹⁾⁽⁵⁾⁽⁶⁾ , 150 ⁽¹⁾⁽⁵⁾⁽⁶⁾ , 200 ⁽¹⁾⁽⁵⁾⁽⁷⁾ | 147b/03 |

Notes:

- 1) Maximum working pressure 20.7 bar.
- 2) Maximum working pressure 12 bar.
- 3) With flanged inlet and flanged outlet connections.
- 4) With flanged inlet and grooved outlet connections.
- 5) With grooved inlet and grooved outlet connections.
- 6) Vertical and horizontal orientations
- 7) Vertical orientation only

MEFA Italia SpA

Via G.B. Morgagni, 16B, Pogliano Milanese (MI) 20010, Italy

Tel: +39 02 93540195 • Fax: +39 02 93543208

E-mail: danielepeluso@mefaitalia.com • Website: www.mefaitalia.com

Certificate No: 638Aa to EN 12259-2: 1999 & EN 12259-3:2000

Wet and Dry Alarm Valves

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|-----------------|-------|---|---------------|
| Wet Alarm Valve | B | 80, 100, 150, 200 ^(1, 2, 3, 4) | 638Aa/01 |
| | D | 100, 150, 200 ^(1, 2, 3, 5) | 638Aa/02 |
| | E | 100, 150, 200 ^(1, 2, 3, 6) | 638Aa/03 |
| Dry Alarm Valve | A | 80 ^(1, 2, 4, 7) | 638Aa/04 |
| | B | 100, 150 ^(1, 2, 5, 7) | 638Aa/05 |
| | E | 100 ^(1, 2, 6, 7) | 638Aa/06 |

PART 3: SECTION 3.1

WET AND DRY ALARM VALVES FOR SPRINKLER SYSTEMS

Notes:

- 1) Approved for use in vertical mounting position only.
- 2) Maximum working pressure 12 bar.
- 3) Approved for use with and without Model E Retard Chamber.
- 4) With flanged inlet and flanged outlet.
- 5) With flanged inlet and grooved outlet.
- 6) With grooved inlet and grooved outlet.
- 7) Approved for use with and without Model 1 Accelerator.

Minimax GmbH & Co. KG

Industriestrasse 10/12, D-23840 Bad Oldesloe, Germany

Tel: +49 4531 803 8064 • Fax: +49 4531 803 500

Website: www.minimax.de

Certificate No: 1118c to EN 12259-3:2000 + Amendment A1:2001 & Amendment A2: 2005

Dry Alarm Valve

| Product Name | Model (alternative designations) | Sizes (mm) | LPCB Ref. No. |
|-----------------|----------------------------------|------------------|---------------|
| Dry Alarm Valve | AVD-1* | 80,100, 150, 165 | 1118c/01 |
| | AVD-1C | 80,100, 150, 165 | 1118c/02 |

Notes:

*with longer inlet throat and upstream drain port

Maximum working pressure 17.2 bar.

Can be supplied with flanged inlet and flanged outlet or flanged inlet and grooved outlet or grooved inlet and grooved outlet connections.
Vertical orientation only

Rapidrop Global Limited

Rutland Business Park, Newark Road, Peterborough PE1 5WA, United Kingdom

Tel: +44 (0)1733 847 510 • Fax: +44 (0)1733 553 958

E-mail: rapidrop@rapidrop.com • Website: www.rapidrop.com

Certificate No: 566b to EN 12259-2:1999 + Amendment A1:2001 & Amendment A2: 2005

Wet Alarm Valves

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|-----------------|-------|---|---------------|
| Wet Alarm Valve | B | 80, 100, 150, 200 ^(1, 2, 3, 4) | 566b/01 |
| | D | 100, 150, 200 ^(1, 2, 3, 5) | 566b/02 |
| | E | 100, 150, ^(1, 2, 3, 6) | 566b/03 |

Notes:

- 1) Approved for use in vertical mounting position only.
- 2) Maximum working pressure 12 bar.
- 3) Approved for use with and without Model E Retard Chamber.
- 4) With flanged inlet and flanged outlet.
- 5) With flanged inlet and grooved outlet.
- 6) With grooved inlet and grooved outlet.

Rolland Sprinklers

235 Route de la Biolle, ZA le Sauvage, Mognard 73410, France

Tel: +33 479 547 250 • Fax: +33 479 547 248

E-mail: info@rolland-sprinklers.com

Certificate No: 295b

PART 3: SECTION 3.1

WET AND DRY ALARM VALVES FOR SPRINKLER SYSTEMS

Wet and Dry Alarm Valves

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|---------------------|--------------|-------------------------------------|----------------------|
| Wet Alarm Valve | B | 80, 100, 150, 200 ^{2,3,4)} | 295b/01 |
| | D | 80, 100, 150, 200 ^{2,3,5)} | 295b/02 |
| | E | 80, 100, 150, 200 ^{2,3,6)} | 295b/03 |
| Dry Alarm Valve | A | 80 ^(1,2,4,7) | 295b/04 |
| | B | 100, 150 ^(1,2,5,7) | 295b/05 |
| | E | 100 ^(1,2,6,7) | 295b/06 |

Notes:

- 1) Approved for use in vertical mounting position only.
- 2) Maximum working pressure 12 bar.
- 3) Approved for use with and without Model E Retard Chamber.
- 4) With flanged inlet and flanged outlet.
- 5) With flanged inlet and grooved outlet.
- 6) With grooved inlet and grooved outlet.
- 7) Approved for use with and without Model 1 Accelerator.

The Reliable Automatic Sprinkler Co., Inc.

1470 Smith Grove Road, Liberty, South Carolina 29657, USA

Tel: +1 864 843 1734 • Fax: +1 864 843 1418

E-mail: jcevallos@reliablesprinkler.com • Website: www.reliablesprinkler.com

UK Sales Enquiries

Tel: +44 (0)1372 728899 • Fax: +44 (01372) 724461

Certificate No: 034b

Certificate No: 034n

| Product Name | Model | Sizes DN (mm) | LPCB Ref. No. |
|--|--------------|----------------------|----------------------|
| Reliable Alarm Valve (1) (5) (7) | E | 65, 100, 150, 200 | 034b/01 |
| Reliable Alarm Valve (3) (6) (7) | D | 100, 150 | 034b/02 |
| Reliable Dry Pipe Valve (4) (6) (7) | A | 65 | 034b/03 |
| Reliable High Pressure Alarm Valve (2) (5) (8) | E3 | 100, 165, 200 | 034b/04 |
| Reliable Dry Alarm Valve (9,10,11,12,13) | DDX | 100 | 034n/01 |
| | DDX | 150 | 034n/02 |
| | DDX | 165 | 034n/03 |
| Reliable Dry Alarm Valve (9,10,11,12,14) | DDX | 50 | 034n/04 |
| | DDX | 65 (73.0) | 034n/05 |
| | DDX | 65 (76.1) | 034n/06 |
| | DDX | 80 | 034n/07 |

Notes:

- 1) With flanged inlet and flanged outlet.
- 2) With grooved inlet and grooved outlet.
- 3) With flanged inlet and flanged or grooved outlet.
- 4) With threaded inlet and outlet.
- 5) Vertical or horizontal.
- 6) Vertical.
- 7) Maximum working pressure of 12 bar.
- 8) Maximum working pressure of 21 bar.
- 9) Maximum rated working pressure 20.7 bar.
- 10) With groove inlet and outlet.
- 11) Vertical orientation as indicated only.
- 12) Approved with or without "model B1" quick opening device (LPCB ref 034c/01).
- 13) Refer to manufacturers instructions "Bulletins 356-B & 357-B"
- 14) Refer to manufacturers instruction "Bulletin 338"

Certificate No: 034s to EN12259 Part 3

PART 3: SECTION 3.1

WET AND DRY ALARM VALVES FOR SPRINKLER SYSTEMS

Model EX Dry Pipe Alarm Valves

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|--|-------|-------------------|---------------|
| Reliable Dry Pipe Alarm Valve - 17.2 bar (Groove/Groove) | EX | DN50 (60.3 mm) | 034s/01 |
| | EX | DN65 (73.0 mm) | 034s/02 |
| | EX | DN65 (76.1 mm) | 034s/03 |
| | EX | DN80 (88.9 mm) | 034s/04 |
| Reliable Dry Pipe Alarm Valve – 20.7 bar (Groove/Groove or Flange/Groove or Flange/Flange) | EX | DN100 (114.3 mm) | 034s/05 |
| | EX | DN150 (165.1 mm) | 034s/06 |
| | EX | DN150 (168.3 mm) | 034s/07 |
| Reliable Dry Pipe Alarm Valve – 17.2 bar (Groove/Groove or Flange/Groove or Flange/Flange) | EX | DN 200 (219.1 mm) | 034s/08 |

The Viking Corporation

210 N Industrial Park, Hastings, Michigan 49058, USA

Tel: +1 269 945 9501 • Fax: +1 269 945 9599

E-mail: techsvcs@vikingcorp.com • Website: www.vikingcorp.com

UK Sales Enquiries:

Tel: +44 (0)1427 875999 • Fax: +44 (0)1427 875998

Certificate No: 096b to EN12259-2:1999 + Amendment A2 and EN12259-3:2000 + Amendment A2

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|--------------------------------|-------|--------------------------|---------------|
| Viking Wet Alarm Valve(3) (4) | J-1 | 80,100,150, 165 (OD) 200 | 096b/05 |
| Viking Dry Pipe Valve(1)(2)(5) | F-1 | 80, 100, 150 | 096b/06 |

Notes:

- 1) Approved with flanged inlet and flanged or grooved outlet.
- 2) Maximum working pressure 12 bar.
- 3) Maximum working pressure 20.7 bar.
- 4) Vertical or horizontal.
- 5) Vertical only.

Certificate No: 096x to EN 12259-3:2000

Viking Dry Alarm Valve

| Product Name | Description | LPCB Ref. No. |
|--------------|-----------------|---------------|
| DRV-1 | Dry Alarm valve | 096x/01 |

Tyco Building Services Products B.V. part of the Johnson Controls group of Companies

Kopersteden 1, 7547 TJ Enschede, The Netherlands

Tel: +31 53 4284444 • Fax: +31 53 4283377

E-mail: info-NL@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 169b

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|---|-------|---------------|---------------|
| AV-1 Alarm Valve (Flange/Flange) (1, 2) | AV-1 | 100, 150, 200 | 169b/01 |
| AV-1 Alarm Valve (Flange/Groove) (1, 2) | AV-1 | 100, 150, 200 | 169b/02 |

PART 3: SECTION 3.1

WET AND DRY ALARM VALVES FOR SPRINKLER SYSTEMS

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|---|-------|---------------|---------------|
| AV-1 Alarm Valve (Groove/Groove) (1, 2) | AV-1 | 100, 150, 200 | 169b/03 |

Notes:

- 1) Maximum working pressure 16 bar.
- 2) Approved for use with and without Model RC-1 Retard Chamber.

Certificate No: 812b to EN 12259-3

| Product Name | Model | Size (mm) | LPCB Ref. No. |
|--------------------------------|-------|-----------|---------------|
| Dry Pipe Valve (Flange/Flange) | DPV-1 | 100 & 150 | 812b/01 |
| Dry Pipe Valve (Flange/Grove) | DPV-1 | 100 & 150 | 812b/02 |

Notes:

- 1) Only approved when trimmed in accordance with Tyco data sheet TFP1090
- 2) Maximum working pressure: 16 bar
- 3) Approved in vertical orientation only
- 4) Approved for use with and without model RC-1 Retard Chamber
- 5) Approved for use with and without model ACC-1 Accelerator

Tyco Fire Products Manufacturing Limited (Stockport)

Stockport Trading Estate, Yew Street, Stockport, Cheshire SK4 2JW, United Kingdom

Tel: +44 (0)161 429 3400 • Fax: +44 (0)161 477 6729

E-mail: simon.giles@tyco-bspd.com • Website: www.tfppea.com

Sales Enquiries:

Tel: +44 (0)161 875 0400 • Fax: +44 (0)161 875 0491

E-mail: info-uk@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 007c

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|--|---------|------------|---------------|
| B.W. Alarm Valve vertical (gunmetal) | FE 3557 | 100 | 007c/07 |
| B.W. Alarm Valve vertical (aluminium bronze) | FE 3262 | 150 | 007c/12 |

Notes:

Maximum working pressure: 25 bar.

Venus Fire Protection Ltd

4105, Portland Blvd, Sherbrooke (Quebec) J1L 1X9, Canada

Tel: +1 819 820 8000 • Fax: +1 819 820 8002

E-mail: venus@venus.ca • Website: www.venus-fire.com

Certificate No: 638a and 638c to EN 12259-2 & EN 12259-3

Wet and Dry Alarm Valves

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|-----------------|-------|---|---------------|
| Wet Alarm Valve | B | 80, 100, 150, 200 ^(1, 2, 3, 4) | 638a/01 |
| | D | 100, 150, 200 ^(1, 2, 3, 5) | 638a/02 |
| | E | 100, 150, ^(1, 2, 3, 6) | 638a/03 |
| Dry Alarm Valve | A | 80 ^(1, 2, 4, 7) | 638c/04 |
| | B | 100, 150 ^(1, 2, 5, 7) | 638c/05 |
| | E | 100 ^(1, 2, 6, 7) | 638c/06 |

PART 3: SECTION 3.1

WET AND DRY ALARM VALVES FOR SPRINKLER SYSTEMS

Notes:

- 1) Approved for use in vertical mounting position only.
- 2) Maximum working pressure 12 bar.
- 3) Approved for use with and without Model E Retard Chamber.
- 4) With flanged inlet and flanged outlet.
- 5) With flanged inlet and grooved outlet.
- 6) With grooved inlet and grooved outlet.
- 7) Approved for use with and without Model 1 Accelerator.

Victaulic Company

4901 Kesslersville Road, Easton, Pennsylvania 18040, USA

Tel: +1 610 559 3300 • Fax: +1 610 250 8817

E-mail: victaulic@victaulic.com • Website: www.victaulic.com

Certificate No: 104c to EN 12259-3

Model 768 and 768N Dry Alarm Valve

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|-----------------------------|-------------|--------------------------------|---------------|
| Series 768 Dry Alarm Valve | Series 768 | 40, 50, 65, 80, 100, 150 & 200 | 104c/01 |
| Series 768N Dry Alarm Valve | Series 768N | 40, 50, 65, 80, 100, 150 & 200 | 104c/02 |

Notes:

- 1) Maximum working pressure: 20 bar.
- 2) Approved for use with and without Victaulic Series 746 LPA accelerator.
- 3) Approved with grooved inlet and outlet only.
- 4) Approved in vertical orientation only.
- 5) Installations containing Series 768 and Series 768N valve shall be maintained under servicing contracts with the manufacturer, or LPS 1048 and LPS 1050 firms experienced in the installation and servicing of this valve.

Certificate No: 104e to EN 12259-2

Series 751

| Product Name | Model | Sizes | LPCB Ref. No. |
|----------------------------|------------|--------------------|---------------|
| Series 751 Wet Alarm Valve | Series 751 | 80, 100, 150 & 200 | 104e/01 |

Notes:

- 1) Maximum working pressure: 16 bar
- 2) Approved for use with and without Series 752 retard chamber.
- 3) Approved with grooved inlet and outlet only.
- 4) Approved in vertical orientation only.
- 5) 150mm nominal diameter valve approved in 165.1mm and 168.3mm outside diameters.
- 6) Installations containing Series 751 valve shall be maintained under servicing contracts with the manufacturer, or LPS 1048 and LPS 1050 firms experienced in the installation and servicing of this valve.

Certificate No: 104g

Series 764

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|----------------------------|------------|--------------------------------|---------------|
| Series 764 Alternate Valve | Series 764 | 40, 50, 65, 80, 100, 150 & 200 | 104g/01 |

Notes:

- 1) Maximum working pressure: 16 bar
- 2) Approved for use with and without Victaulic Series 746 LPA accelerator.
- 3) Approved for use with and without Series 752 retard chamber.
- 4) 150mm nominal diameter valve approved in 165.1mm and 168.3mm outside diameters.
- 5) Approved with grooved inlet and outlet only.

PART 3: SECTION 3.1

WET AND DRY ALARM VALVES FOR SPRINKLER SYSTEMS

- 6) Approved in vertical orientation only
- 7) Installations containing Series 764 valve shall be installed, commissioned and serviced under contracts with the manufacturer, or LPS 1048 and LPS 1050 firms experienced in the installation and servicing of this valve.

This section lists products approved in accordance with:

- LPCB Schedule of requirements

GW Sprinkler A/S

Kastanievej 15, DK-5620 Glamsbjerg, Denmark

Tel: +45 64 72 2055 • Fax: +45 64 72 2255

E-mail: sales.dep@gwsprinkler.com

Certificate No: 084d

| Product Name | Size (mm) | Valve body model | Valve body material | Alarm motor and gong | Maximum working pressure (bar) | Attitude | LPCB Ref. No. |
|----------------|----------------------|------------------|---------------------|----------------------|--------------------------------|----------|---------------|
| GW Crusader | 80, 100, 150, 200 | C1 | Cast iron | D,E | 12.5 | Vertical | 084d/01 |

The GW Crusader wet alarm valves are supplied with GW datasheet 020, which includes installation, commissioning and operating instructions

PART 3: SECTION 4

ACCELERATORS AND EXHAUSTERS FOR DRY PIPE VALVES

This section lists products approved in accordance with:

- LPS 1041 *Requirements and Testing Methods for Dry Pipe Valve Sets*
- EN12259-3 *Fixed Firefighting Systems - Components for sprinkler and water spray systems - Part 3: Dry Alarm Valve Assemblies*
- LPCB Schedule of requirements

All alarm valves, dry-pipe valves and back-pressure valves should be the subject of a maintenance contract, satisfying the requirements of the *LPC Rules for Automatic Sprinkler Installations*.

MEFA Italia SpA

Via G.B. Morgagni, 16B, Pogliano Milanese (MI) 20010, Italy

Tel: +39 02 93540195 • Fax: +39 02 93543208

E-mail: danielepeluso@mefaitalia.com • Website: www.mefaitalia.com

Certificate No: 638Ac to EN 12259-3:2000

Accelerator

| Product Name | Model | LPCB Ref. No. |
|--------------|-------|---------------|
| Accelerator | 1 | 638Ac/01 |

Notes:

- 1) Approved for use with MEFA Models A, B and E Dry Alarm Valves
- 2) Maximum working pressure: 12 bar

Rolland Sprinklers

235 Route de la Biolle, ZA le Sauvage, Mognard 73410, France

Tel: +33 479 547 250 • Fax: +33 479 547 248

E-mail: info@rolland-sprinklers.com

Certificate No: 295c

Accelerator

| Product Name | Model | LPCB Ref. No. |
|--------------|-------|---------------|
| Accelerator | 1 | 295c/01 |

Notes:

- 1) Approved for use with Rolland Models A, B and E Dry Alarm Valves
- 2) Maximum working pressure: 12 bar

The Reliable Automatic Sprinkler Co., Inc,

1470 Smith Grove Road, Liberty, South Carolina 29657, USA

Tel: +1 864 843 1734 • Fax: +1 864 843 1418

E-mail: jcevallos@reliablesprinkler.com • Website: www.reliablesprinkler.com

UK Sales Enquiries:

Tel: +44 (0)1372 728899 • Fax: +44 (0)1372 724461

Certificate No: 034c

Approved Products

Reliable Accelerator Model
B1

LPCB Ref.
No.
034c/01

The Viking Corporation

210 N Industrial Park, Hastings, Michigan 49058, USA
Tel: +1 269 945 9501 • Fax: +1 269 945 9599
E-mail: techsvcs@vikingcorp.com • Website: www.vikingcorp.com

UK Sales Enquiries:

Tel: +44 (0)1427 875999 • Fax: +44 (0)1427 875998

Certificate No: 096c to EN12259-2:1999 + Amendment A2 and EN12259-3:2000 + Amendment A2

Approved Products

Viking Accelerator Model D-2

LPCB Ref.
No.
096c/03

Tyco Building Services Products B.V. part of the Johnson Controls group of Companies

Kopersteden 1, 7547 TJ Enschede, The Netherlands
Tel: +31 53 4284444 • Fax: +31 53 4283377
E-mail: info-NL@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 864a to EN 12259-3

| Product Name | Model | LPCB Ref. No. |
|--------------|-------|---------------|
| Accelerator | ACC-1 | 864a/01 |

Notes:

- 1) Approved for use with Tyco Model DPV-1 Dry Pipe Valve
- 2) Maximum working pressure: 16 bar

Tyco Fire Products Manufacturing Limited (Stockport)

Stockport Trading Estate, Yew Street, Stockport, Cheshire SK4 2JW, United Kingdom
Tel: +44 (0)161 429 3400 • Fax: +44 (0)161 477 6729
E-mail: simon.giles@tyco-bspd.com • Website: www.tfpemea.com

Sales Enquiries:

Tel: +44 (0)161 875 0400 • Fax: +44 (0)161 875 0491
E-mail: info-uk@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 007d

Approved Products

Model No. 936 Accelerator

LPCB Ref.
No.
007d/01

PART 3: SECTION 4

ACCELERATORS AND EXHAUSTERS FOR DRY PIPE VALVES

Venus Fire Protection Ltd

4105, Portland Blvd, Sherbrooke (Quebec) J1L 1X9, Canada

Tel: +1 819 820 8000 • Fax: +1 819 820 8002

E-mail: venus@venus.ca • Website: www.venus-fire.com

Certificate No: 638d

| Product Name | Model | LPCB Ref. No. |
|---------------------|--------------|----------------------|
| Accelerator | 1 | 638d/01 |

Notes:

- 1) Approved for use with Venus Models A, B and E Dry Alarm Valves
- 2) Maximum working pressure: 12 bar

This section lists products approved in accordance with:

- LPCB Schedule of requirements
- Pr EN 12259-9 *Fixed firefighting systems - Components for sprinkler and water spray systems - Part 9: Deluge valve assemblies*

Deluge valves and actuators are currently approved to a schedule of requirements developed by LPCB unless otherwise stated, for use in automatic sprinkler installations.

All deluge valves should be the subject of a maintenance contract, satisfying the requirements of the *LPCB Rules for Automatic Sprinkler Installations*.

The nominal orifice size of valves listed is given in millimetres.

GW Sprinkler A/S

Certificate No: 084a

| Product Name | Description | Sizes (mm) | Maximum Working Pressure | LPCB Ref. No. |
|------------------------|------------------|----------------------|--------------------------|---------------|
| GW Deluge Valve Mk.III | Aluminium bronze | 100mm, 150mm & 200mm | 20 bar | 084a/01 |

The Reliable Automatic Sprinkler Co., Inc,

1470 Smith Grove Road, Liberty, South Carolina 29657, USA

Tel: +1 864 843 1734 • Fax: +1 864 843 1418

E-mail: jcevallos@reliablesprinkler.com • Website: www.reliablesprinkler.com

UK Sales Enquiries:

Tel: +44 (0)1372 728899 • Fax: +44 (0)1372 724461

Certificate No: 034a

Certificate No: 034p

| Product Name | Model | Size DN (mm) | LPCB Ref. No. |
|---|-------|--------------|---------------|
| Reliable Deluge Valve | BX | 100 | 034a/01 |
| | BX | 150 | |
| Reliable Dry Pilot Line Actuator | | | 034a/03 |
| | | | 034p/01 |
| Reliable Deluge Alarm Valve (1, 2, 3, 4, 5) | DDX | 100 | 034p/02 |
| | DDX | 150 | 034p/03 |
| | DDX | 165 | 034p/04 |
| Relaible Deluge Alarm Valve (2, 3, 4, 6, 7) | DDX | 200 | 034p/05 |
| | DDX | 50 | 034p/06 |
| Relaible Deluge Alarm Valve (1, 2, 3, 4, 8) | DDX | 65 (73.0) | 034p/07 |
| | DDX | 65 (76.1) | 034p/08 |
| | DDX | 80 | |

Notes:

- 1) Maximum rated working pressure 20.7 bar.
- 2) With groove inlet and outlet.
- 3) Vertical orientation as indicated only.
- 4) Approved with or without "model B1" quick opening device (LPCB ref 034c/01).
- 5) Refer to manufacturer's instructions "Bulletins 510-C & 511-B"
- 6) Refer to manufacturer's instructions "Bulletin 515 Rev.A"
- 7) Maximum rated working pressure 17.2 bar
- 8) Refer to manufacturer's instruction "Bulletin 519"

PART 3: SECTION 5

DELUGE VALVES AND ACTUATORS

The Viking Corporation

210 N Industrial Park, Hastings, Michigan 49058, USA

Tel: +1 269 945 9501 • Fax: +1 269 945 9599

E-mail: techsvcs@vikingcorp.com • Website: www.vikingcorp.com

UK Sales Enquiries:

Tel: +44 (0)1427 875999 • Fax: +44 (0)1427 875998

Certificate No: 096a

rapi

| Product Name | Description | Sizes | LPCB Ref. No. |
|---------------------|----------------------------------|---|----------------------|
| Model E-1 | Screwed Inlet and Outlet | 50mm | 096a/01 |
| | Flanged Inlet and Outlet | 80mm, 100mm, 150mm | 096a/02 |
| | Flanged Inlet and Grooved Outlet | 80mm, 100mm, 150mm | 096a/03 |
| Model F-1 & F-2 | Flanged Inlet and Outlet | 80mm, 100mm, 150mm, 200mm | 096a/04 |
| | Flanged Inlet and Grooved Outlet | 80mm, 100mm, 150mm | 096a/05 |
| Model J-1 & J-2 | Flanged Inlet and Outlet | 80mm, 100mm, 150mm, 200mm | 096a/06 |
| | Flanged Inlet and Grooved Outlet | 80mm, 100mm, 150mm | 096a/07 |
| Model F-1 & F-2 | Screwed Inlet and Outlet | 40mm, 50mm, 65mm | 096a/08 |
| | Grooved Inlet and Outlet | 40mm, 50mm, 65mm, 80mm, 100mm, 150mm, 200mm | 096a/09 |
| Model J-1 & J-2 | Screwed Inlet and Outlet | 40mm, 50mm, 65mm | 096a/10 |
| | Grooved Inlet and Outlet | 40mm, 50mm, 65mm, 80mm, 100mm, 150mm, 200mm | 096a/11 |

Tyco Building Services Products B.V. part of the Johnson Controls group of Companies

Kopersteden 1, 7547 TJ Enschede, The Netherlands

Tel: +31 53 4284444 • Fax: +31 53 4283377

E-mail: info-NL@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 812a/01 to prEN 12259-9:2007 (March 2007)

Certificate No: 169c

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|------------------------|--------------|----------------------------|----------------------|
| DV-5 Deluge Valve | DV-5 | 40, 50, 80, 100, 150 & 200 | 812a/01 |
| TFP Dry Pilot Actuator | Model DP-1 | | 169c/01 |

Notes:

- 1) Maximum working pressure: 16 bar.
- 2) Approved with threaded, groove/groove, groove/flange and flange/flange inlet and outlets.
- 3) Approved in vertical orientation only.
- 4) Installations containing DV-5 valves shall be maintained under servicing contracts with the manufacturer, or LPS 1048 and LPS 1050 firms experienced in the installation and servicing of this valve.

Tyco Fire Products Manufacturing Limited (Stockport)

Stockport Trading Estate, Yew Street, Stockport, Cheshire SK4 2JW, United Kingdom

Tel: +44 (0)161 429 3400 • Fax: +44 (0)161 477 6729

E-mail: simon.giles@tyco-bspd.com • Website: www.ffppemea.com

Sales Enquiries:

Tel: +44 (0)161 875 0400 • Fax: +44 (0)161 875 0491

E-mail: info-uk@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 007b

Deluge Valves

Approved Products

| | | | LPCB Ref. No. |
|------------------------------------|-------------------|-------------------------|------------------|
| B.W. Deluge Valve(1) vertical | (gunmetal) | Model No. FE 2408 80mm | 007b/01 |
| B.W. Deluge Valve(1) vertical | (gunmetal) | Model No. FE 2333 100mm | 007b/02 |
| B.W. Deluge Valve(1) vertical | (stainless steel) | Model No. FE 2641 100mm | 007b/03 |
| B.W. Deluge Valve(1) horizontal | (gunmetal) | Model No. FE 2366 100mm | 007b/04 |
| B.W. Deluge Valve(1) horizontal | (stainless steel) | Model No. FE 2647 100mm | 007b/05 |
| B.W. Deluge Valve(1) vertical | (gunmetal) | Model No. FE 2326 150mm | 007b/06 |
| B.W. Deluge Valve(1) vertical | (stainless steel) | Model No. FE 2644 150mm | 007b/07 |
| B.W. Deluge Valve(1) horizontal | (gunmetal) | Model No. FE 2353 150mm | 007b/08 |
| B.W. Deluge Valve(1) horizontal | (stainless steel) | Model No. FE 2650 150mm | 007b/09 |
| B.W. Deluge Valve(1) vertical | (bronze) | Model No. FE 2370 200mm | 007b/10 |
| B.W. Deluge Valve(1) horizontal | (bronze) | Model No. FE 2687 200mm | 007b/11 |

(1)Maximum working pressure 16 bar

Victaulic Company

4901 Kesslersville Road, Easton, Pennsylvania 18040, USA

Tel: +1 610 559 3300 • Fax: +1 610 250 8817

E-mail: victaulic@victaulic.com • Website: www.victaulic.com

Certificate No: 104d to prEN 12259-9 (September 2004)

Model 769 and 769N Deluge Valve

| Product Name | Model | Sizes (mm) | LPCB Ref. No. |
|--------------------------|------------|--------------------------------|---------------|
| Series 769 Deluge Valve | Series 769 | 40, 50, 65, 80, 100, 150 & 200 | 104d/01 |
| Series 769N Deluge Valve | Series 769 | 40, 50, 65, 80, 100, 150 & 200 | 104d/02 |

Notes:

- 1) Maximum working pressure: 20 bar.
- 2) Approved with grooved inlet and outlet only.
- 3) Approved in vertical orientation only.
- 4) Installations containing Series 769 and Series 769N valve shall be maintained under servicing contracts with the manufacturer, or LPS 1048 and LPS 1050 firms experienced in the installation and servicing of this valve.

PART 3: SECTION 6

DIRECT READING FLOW METERS

This section lists products approved in accordance with:

- LPS 1045 *Requirements & Testing Methods for direct reading Flow Meters.*

The following devices are suitable for use under the *LPC Rules for Automatic Sprinkler Installations*. The products shall be installed and maintained in accordance with the manufacturer's instructions.

Influx Measurements Limited

1A Bennett House, The Dean, Alresford, Hampshire SO24 9BQ, United Kingdom
 Tel: +44 (0)1962 736736 • Fax: +44 (0)1962 736737
 E-mail: sales@influxmeasurements.com

Certificate No: 464a

'Firesure' Flowmeters

| Product Name | Nominal Pipe Size to BS 1387 (DN) | Nominal Pipe Size to BS 3600 (DN) | Flow Range (dm ³ /min) | Connection Type | LPCB Ref. No. |
|--------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------|---------------|
| Fireflange | 50 | 200 | 150-700 | Flange | 464a/01 |
| | 80 | | 300-1600 | Flange | 464a/02 |
| | 100 | | 500-3500 | Flange | 464a/03 |
| | 150 | | 900-7900 | Flange | 464a/04 |
| | | | 2000-15000 | Flange | 464a/05 |
| Firegroove | 50 | 200 | 150-700 | Groove | 464a/06 |
| | 80 | | 300-1600 | Groove | 464a/07 |
| | 100 | | 500-3500 | Groove | 464a/08 |
| | 150 (165.1mm) | | 900-7900 | Groove | 464a/09 |
| | 150 (168.3mm) | | 900-7900 | Groove | 464a/22 |
| | | | 2000-15000 | Groove | 464a/10 |

These meters have been approved for installation with the gauge glass in the vertical position. There must be at least five diameters of straight pipe upstream and downstream of the orifice plate. The isolating valves on the pressure tappings must be kept closed when the meter is not being used. A spare gauge glass must be provided and located in the cabinet containing the stock of replacement sprinklers.

Certificate No: 464a

'Firesure X' Flowmeters

| Product Name | Nominal Pipe Size to BS 1387 (DN) | Nominal Pipe Size to BS 3600 (DN) | Flow Range (dm ³ /min) | Connection Type | LPCB Ref. No. |
|--------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------|---------------|
| Fireflange X | 50 | 200 | 200-850 | Flange | 464a/11 |
| | 80 | | 200-1800 | Flange | 464a/12 |
| | 100 | | 400-4000 | Flange | 464a/13 |
| | 150 | | 1100-9500 | Flange | 464a/14 |
| | | | 2500-17000 | Flange | 464a/15 |
| Firegroove X | 50 | 200 | 200-850 | Groove | 464a/16 |
| | 80 | | 200-1800 | Groove | 464a/17 |
| | 100 | | 400-4000 | Groove | 464a/18 |
| | 150 (165.1mm) | | 1100-9500 | Groove | 464a/19 |
| | 150 (168.3mm) | | 1100-9500 | Groove | 464a/24 |
| | | | 2500-17000 | Groove | 464a/20 |

- 1) These meters have been approved for installation with the gauge glass in the vertical position. There must be at least five diameters of straight pipe upstream and downstream of the orifice plate. The isolating valves on the pressure tappings must be kept closed when the meter is not being used. A spare gauge glass must be provided and located in the cabinet containing the stock of replacement sprinklers.
- 2) 'Firesure' meters must be installed and maintained in accordance with manufacturers instructions ref 'IOM FS' Issue 8.
- 3) 'Firesure X' meters must be installed and maintained in accordance with manufacturers instructions ref 'IOM FSX' Issue C.

Mecon GmbH

Rontgenstrasse 105, Kerpen 50169, Germany
Tel: 0049 2237 6000611 • Fax: 0049 2237 6000620
Website: www.mecon.de

Certificate No: 1385a to LPS 1045

Direct Reading Flow Meter

| Product Name | Nominal Pipe Size to BS | | Flow Range (l/min) | Connection Type | LPCB Ref. No. | |
|--------------|-------------------------|-----------|--------------------|-----------------|---------------|----------|
| | 1387 (mm) | 3600 (mm) | | | | |
| Turbo-Lux 3 | 50 | 50 | 75 375 | Groove | 1385a/01 | |
| | 65 | 65 | 150 750 | Groove | 1385a/02 | |
| | 80 | 80 | 220 1100 | Groove | 1385a/03 | |
| | 80 | 80 | 300 1500 | Groove | 1385a/04 | |
| | 100 | 100 | 380 1900 | Groove | 1385a/05 | |
| | 100 | 100 | 460 2300 | Groove | 1385a/06 | |
| | 100 | 100 | 600 3000 | Groove | 1385a/07 | |
| | 100 | 100 | 680 3400 | Groove | 1385a/08 | |
| | 150 | 150 | 760 3800 | Groove | 1385a/09 | |
| | 150 | 150 | 1130 5650 | Groove | 1385a/10 | |
| | 150 | 150 | 1500 7500 | Groove | 1385a/11 | |
| | 150 | 150 | 1900 9500 | Groove | 1385a/12 | |
| | | | 200 | 2200 11000 | Groove | 1385a/13 |
| | | | 200 | 3000 15000 | Groove | 1385a/14 |
| | | | 200 | 3800 19000 | Groove | 1385a/15 |
| | | | 200 | 4500 22500 | Groove | 1385a/16 |

Notes:

- 1) These meters are provided with demountable measurement tubes (bypass meters) that are connected directly to the flow meter body. After measurements have been taken it is recommended that the measuring tube is either drained by inverting it or removed from the flow meter body. If removed the measurement tube must be drained and stored in the supplied packaging. The open orifice on the flow meter body must be sealed pressure tight with the cap supplied.
- 2) These meters have been approved for installation with the measurement tube in the vertical position.
- 3) Turbo-Lux 3 meters must be installed and maintained in accordance with manufacturers instruction's 'MECON GmbH 11/2016 OI_FO Turbo-Lux 3'

Roxspur Measurement & Control

2 Downgate Drive, Sheffield, South Yorkshire S4 8BT, United Kingdom
Tel: +44 (0)114 244 2521 • Fax: +44 (0)114 243 4838

Certificate No: 088a

| Product Name | Pipe Size (mm) | Flow Range (dm ³ /min) | LPCB Ref. No. |
|----------------|----------------|-----------------------------------|---------------|
| Shunt Gapmeter | 80 | 300 - 1500 | 088a/01 |
| | 100 | 500 - 2500 | 088a/02 |
| | 125 | 700 - 3500 | 088a/03 |
| | 150 | 1000 - 5000 | 088a/04 |

These meters have been approved for installation with the gauge glass in the vertical position. There must be at least five diameters of straight pipe upstream and downstream of the orifice plate. The isolating valves on the pressure tappings must be kept closed when the meter is not being used. A spare gauge glass must be provided and located in the cabinet containing the stock of replacement sprinklers. Type Nominal pipe size to Flow range Connection LPCB Ref. No.

Certificate No: 088a

PART 3: SECTION 6

DIRECT READING FLOW METERS

| Product Name | Nominal Pipe Size to BS1387 (mm) | Nominal Pipe Size to BS3600 (mm) | Flow Range (dm ³ /min) | Connection Type | LPCB Ref. No. |
|----------------|----------------------------------|----------------------------------|-----------------------------------|-----------------|---------------|
| Type SGUV Mk 2 | 50 | 200 | 150 - 750 | Flange | 088a/05 |
| | 80 | | 300 - 2300 | Flange | 088a/06 |
| | 100 | | 500 - 3500 | Flange | 088a/07 |
| | 150 | | 900 - 8200 | Flange | 088a/08 |
| | | | 2500 - 12500 | Flange | 088a/09 |
| | 50 | | 150 - 750 | Groove | 088a/10 |
| | 80 | | 300 - 2300 | Groove | 088a/11 |
| | 100 | | 500 - 3500 | Groove | 088a/12 |
| | 150 | | 900 - 8200 | Groove | 088a/13 |
| | | | 2500 - 12500 | Groove | 088a/14 |

To be installed in accordance with Roxspur Operation and Maintenance Manual OMM1002, Issue 1 (29/09/2005)

Tyco Fire Products Manufacturing Limited (Stockport)

Stockport Trading Estate, Yew Street, Stockport, Cheshire SK4 2JW, United Kingdom

Tel: +44 (0)161 429 3400 • Fax: +44 (0)161 477 6729

E-mail: simon.giles@tyco-bspd.com • Website: www.tfpemea.com

Sales Enquiries:

Tel: +44 (0)161 875 0400 • Fax: +44 (0)161 875 0491

E-mail: info-uk@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 007e

| Product Name | Hazard Class | Pipe Size (mm) | Flow Range (dm ³ /min) | Orifice Size (mm) | LPCB Ref. No. |
|---------------------------|--------------|----------------|-----------------------------------|-------------------|---------------|
| Direct Reading Flow Meter | OHI | 80 | 375 - 540 | 26.10 | 007e/01 |
| | OHII | 80 | 725 - 1000 | 39.25 | 007e/02 |
| | OHIII | 80 | 1100 - 1350 | 43.70 | 007e/03 |
| | OHIIS | 80 | 1800 - 2100 | 55.20 | 007e/04 |

These measuring devices are designed to be fitted directly on the upstream side, to straight pipes or into elbow fittings or globe valves or their hydraulic equivalent. The downstream flow loss may be zero in all but the case of the OHI measuring device which requires a minimum loss of 0.02 bar at a flow of 375 dm³/min. The maximum downstream flow loss shall not exceed 0.3 bar for any of the measuring devices with the following respective flow rates:

OHI 540dm³/min, OHII 1000dm³/min, OHIII 1350dm³/min, OHIIS 2100dm³/min

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Multiple Jet Controls for use under the *LPC Rules for Automatic Sprinkler Installations* have been approved to a schedule of requirements developed by LPCB. The products shall be installed and maintained in accordance with the manufacturer's instructions.

GW Sprinkler A/S

Kastanievej 15, DK-5620 Glamsbjerg, Denmark

Tel: +45 64 72 2055 • Fax: +45 64 72 2255

E-mail: sales.dep@gwsprinkler.com

Certificate No: 084f

Certificated Products

| | LPCB Ref. No. |
|--|----------------------|
| GW Multiple Control Model B Outlet) 40mm Glass bulb type | 084f/01 |
| GW Multiple Control Model B Outlet) 50mm Glass bulb type. | 084f/02 |
| GW Multiple Control Model B3 Outlet) 20mm Glass bulb type. | 084f/03 |

Tested to the FOC Requirements and Testing Methods for Multiple Controls, April 1984 and approved with plain and chromium finish.

The Viking Corporation

210 N Industrial Park, Hastings, Michigan 49058, USA

Tel: +1 269 945 9501 • Fax: +1 269 945 9599

E-mail: techsvcs@vikingcorp.com • Website: www.vikingcorp.com

Certificate No: 096v to LPS1218:Issue 1, Draft B

| Product Name | Nominal size | Outlet | Temperature rating (°C) | LPCB Ref. No. |
|----------------------|--------------|--------|--|---------------|
| Multiple Jet Control | DN 20 | Single | 68(1), 79(1), 93(1), 141, 182, 260 (5mm bulb) | 096v/01 |
| | DN 20 | Double | 68(1), 79(1), 93(1), 141, 182, 260 (5mm bulb) | 096v/02 |
| | DN 20 | Single | 57, 68(1), 79(1), 93(1), 141, 182, (3mm bulb) | |
| | DN 20 | Double | 57, 68(1), 79(1), 93(1), 141, 182, (3mm) bulb) | 096v/03 |
| | DN 25 | Single | 68(1), 79(1), 93(1), 141, 182, 260 (5mm bulb) | |
| | DN 25 | Double | 68(1), 79(1), 93(1), 141, 182, 260 (5mm bulb) | 096v/04 |
| | DN 25 | Single | 57, 68(1), 79(1), 93(1), 141, 182, (3mm) bulb) | |
| | DN 25 | Double | 57, 68(1), 79(1), 93(1), 141, 182, (3mm bulb) | |

(1) Also approved with 'Metron' actuator.

PART 3: SECTION 7

MULTIPLE JET CONTROLS

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Certificate No: 007f

Certificated Products

| | | LPCB Ref. No. |
|---------------------------|---|--------------------------|
| Tyco Multiple Jet Control | (Double Outlet) 20mm Glass bulb type. <i>A corrosion-resistant coating for the body and yoke has been approved under the LPC Rules for automatic sprinkler installations.</i> | 007f/01 |
| Tyco Multiple Jet Control | (Single Outlet) 20mm Glass bulb type. <i>A corrosion-resistant coating for the body and yoke has been approved under the LPC Rules for automatic sprinkler installations.</i> | 007f/02 |
| Tyco Multiple Jet Control | (Double Outlet) ¹ 25mm, 40mm and 50mm Glass bulb type (68°C only) | 007f/03 |

Note:

1) May also be used as a single outlet (with one outlet blanked off).

This section lists products approved in accordance with:

- LPS 1219 *Specification for Pipe Couplings*

All pipe couplings and fittings should be the subject of a maintenance contract, satisfying the requirements of the *LPC Rules for Automatic Sprinkler Installations*.

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Certificate No: 988Aa to LPS 1219 Issue 3

Pipe Couplings

| Product Name | Nominal Size | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------------------------|---------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Fig 8000 - Flexible Coupling | 25 | 33.7 | R&C | EPDM | 25 | 988Aa/01 |
| | 32 | 42.4 | R&C | EPDM | 25 | |
| | 40 | 48.3 | R&C | EPDM | 25 | |
| | 50 | 60.3 | R&C | EPDM | 25 | |
| | 65 | 73.0 | R&C | EPDM | 25 | |
| | 65 | 76.1 | R&C | EPDM | 25 | |
| | 80 | 88.9 | R&C | EPDM | 25 | |
| | 100 | 108.0 | R&C | EPDM | 25 | |
| | 100 | 114.3 | R&C | EPDM | 25 | |
| | 125 | 133.0 | R&C | EPDM | 25 | |
| | 125 | 139.7 | R&C | EPDM | 25 | |
| | 125 | 141.3 | R&C | EPDM | 25 | |
| | 150 | 159.0 | R&C | EPDM | 25 | |
| | 150 | 165.1 | R&C | EPDM | 25 | |
| | 150 | 168.3 | R&C | EPDM | 25 | |
| Fig 8400 - Rigid Coupling | 25 | 33.7 | R&C | EPDM | 25 | 988Aa/02 |
| | 32 | 42.4 | R&C | EPDM | 25 | |
| | 40 | 48.3 | R&C | EPDM | 25 | |
| | 50 | 60.3 | R&C | EPDM | 25 | |
| | 65 | 73.0 | R&C | EPDM | 25 | |
| | 65 | 76.1 | R&C | EPDM | 25 | |
| | 80 | 88.9 | R&C | EPDM | 25 | |
| | 100 | 108.0 | R&C | EPDM | 25 | |
| | 100 | 114.3 | R&C | EPDM | 25 | |
| | 125 | 133.0 | R&C | EPDM | 25 | |
| | 125 | 139.7 | R&C | EPDM | 25 | |
| | 125 | 141.3 | R&C | EPDM | 25 | |
| | 150 | 159.0 | R&C | EPDM | 25 | |
| | 150 | 165.1 | R&C | EPDM | 25 | |
| | 150 | 168.3 | R&C | EPDM | 25 | |
| Fig 8010 - Reducing Flexible Coupling | 50 x 32 | 60.3 x 42.4 | R&C | EPDM | 16 | 988Aa/03 |
| | 50 x 40 | 60.3 x 48.3 | R&C | EPDM | 16 | |
| | 65 x 50 | 73.0 x 60.3 | R&C | EPDM | 16 | |
| | 65 x 40 | 76.1 x 48.3 | R&C | EPDM | 16 | |
| | 65 x 50 | 76.1 x 60.3 | R&C | EPDM | 16 | |
| | 80 x 50 | 88.9 x 60.3 | R&C | EPDM | 16 | |
| | 80 x 65 | 88.9 x 73.0 | R&C | EPDM | 16 | |
| | 80 x 65 | 88.9 x 76.1 | R&C | EPDM | 16 | |
| | 100 x 50 | 114.3 x 60.3 | R&C | EPDM | 16 | |
| | 100 x 65 | 114.3 x 73.0 | R&C | EPDM | 16 | |
| | 100 x 65 | 114.3 x 76.1 | R&C | EPDM | 16 | |
| | 100 x 80 | 114.3 x 88.9 | R&C | EPDM | 16 | |
| | 150 x 100 | 165.1 x 114.3 | R&C | EPDM | 16 | |
| | 150 x 100 | 168.3 x 114.3 | R&C | EPDM | 16 | |
| | 200 x 150 | 219.1 x 165.1 | R&C | EPDM | 16 | |
| 200 x 150 | 219.1 x 168.3 | R&C | EPDM | 16 | | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--|---|----------------------------|--------------|-------------|--------------------------------|---------------|
| Fig 8400S - Light Duty Rigid Coupling | 65 | 76.1 | R&C | EPDM | 16 | 988Aa/04 |
| | 80 | 88.9 | R&C | EPDM | 16 | |
| | 100 | 108.0 | R&C | EPDM | 16 | |
| | 100 | 114.3 | R&C | EPDM | 16 | |
| | 125 | 139.7 | R&C | EPDM | 16 | |
| | 125 | 141.3 | R&C | EPDM | 16 | |
| | 150 | 159.0 | R&C | EPDM | 16 | |
| | 150 | 165.1 | R&C | EPDM | 16 | |
| | 150 | 168.3 | R&C | EPDM | 16 | |
| Fig 8045 - Mechanical Tee, Threaded Outlet | 200 | 219.1 | R&C | EPDM | 16 | 988Aa/05 |
| | 200 | 219.1 | R&C | EPDM | 16 | |
| | 100 x 65 | 114.3 x 76.1 | T | EPDM | 16 | |
| | 100 x 80 | 114.3 x 88.9 | T | EPDM | 16 | |
| | 125 x 65 | 139.7 x 76.1 | T | EPDM | 16 | |
| | 125 x 80 | 139.7 x 88.9 | T | EPDM | 16 | |
| | 125 x 100 | 139.7 x 114.3 | T | EPDM | 16 | |
| | 150 x 65 | 165.1 x 76.1 | T | EPDM | 16 | |
| | 150 x 80 | 165.1 x 88.9 | T | EPDM | 16 | |
| | 150 x 100 | 165.1 x 114.3 | T | EPDM | 16 | |
| | 150 x 65 | 168.3 x 76.1 | T | EPDM | 16 | |
| | 150 x 80 | 168.3 x 88.9 | T | EPDM | 16 | |
| | 150 x 100 | 168.3 x 114.3 | T | EPDM | 16 | |
| | 200 x 65 | 219.1 x 76.1 | T | EPDM | 16 | |
| | Fig 8046 - Mechanical Tee, Grooved Outlet | 200 x 80 | 219.1 x 88.9 | T | EPDM | |
| 200 x 100 | | 219.1 x 114.3 | T | EPDM | 16 | |
| 100 x 65 | | 114.3 x 76.1 | G | EPDM | 16 | |
| 100 x 80 | | 114.3 x 88.9 | G | EPDM | 16 | |
| 125 x 65 | | 139.7 x 76.1 | G | EPDM | 16 | |
| 125 x 80 | | 139.7 x 88.9 | G | EPDM | 16 | |
| 125 x 100 | | 139.7 x 114.3 | G | EPDM | 16 | |
| 150 x 65 | | 165.1 x 76.1 | G | EPDM | 16 | |
| 150 x 80 | | 165.1 x 88.9 | G | EPDM | 16 | |
| 150 x 100 | | 165.1 x 114.3 | G | EPDM | 16 | |
| 150 x 65 | | 168.3 x 76.1 | G | EPDM | 16 | |
| 150 x 80 | | 168.3 x 88.9 | G | EPDM | 16 | |
| 150 x 100 | | 168.3 x 114.3 | G | EPDM | 16 | |
| 200 x 65 | | 219.1 x 76.1 | G | EPDM | 16 | |
| Fig 8012 - Grooved Flange | | 200 x 80 | 219.1 x 88.9 | G | EPDM | 16 |
| | 200 x 100 | 219.1 x 114.3 | G | EPDM | 16 | |
| | 40 | 48.3 | R&C | EPDM | 16 | |
| | 50 | 60.3 | R&C | EPDM | 16 | |
| | 65 | 76.1 | R&C | EPDM | 16 | |
| | 80 | 88.9 | R&C | EPDM | 16 | |
| | 100 | 114.3 | R&C | EPDM | 16 | |
| | 125 | 139.7 | R&C | EPDM | 16 | |
| | 150 | 165.1 | R&C | EPDM | 16 | |

Certificate No: 988Aa to LPS 1219 issue 3

Pipe Fittings

| Product Name | Pipe Outside Diameter (mm) | Max Working Pressure (bar) | LPCB Ref. No. |
|----------------------------|---|----------------------------|---------------|
| Fig 8050 - 90° Elbow | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988Aa/09 |
| Fig 8450 - 90° Short Elbow | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 16 | 988Aa/10 |
| Fig 8060 - Tee | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988Aa/11 |
| Fig 8460 - Short Tee | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 16 | 988Aa/12 |
| Fig 8051 - 45° Elbow | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988Aa/13 |
| Fig 8074 - Cap | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988Aa/14 |
| Fig 8068 - Cross | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988Aa/15 |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Pipe Outside Diameter (mm) | Max Working Pressure (bar) | LPCB Ref. No. |
|--|---|----------------------------|---------------|
| Fig 8052 - 22.5° Elbow | 76.1, 88.9, 114.3, 139.7, 165.1, 219.1 | 25 | 988Aa/16 |
| Fig 8053 - 11.25° Elbow | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 219.1 | 25 | 988Aa/17 |
| Fig 8084 - Grooved Flange Adaptor | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 16 | 988Aa/18 |
| Fig 8072 - Grooved Concentric Reducer | 42.4 x 33.7, 48.3 x 33.7, 48.3 x 42.4, 60.3 x 33.7, 60.3 x 42.4, 60.3 x 48.3, 76.1 x 42.4, 76.1 x 48.3, 76.1 x 60.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 48.3, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 139.7 x 114.3, 165.1 x 88.9, 165.1 x 114.3, 165.1 x 139.7, 168.3 x 114.3, 168.3 x 139.7, 219.1 x 88.9, 219.1 x 114.3, 219.1 x 139.7, 219.1 x 168.3 | 25 | 988Aa/19 |
| Fig 8087 - Threaded Concentric Reducer | 60.3 x 26.9, 60.3 x 33.7, 60.3 x 42.4, 60.3 x 48.3, 76.1 x 42.4, 76.1 x 48.3, 76.1 x 60.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 48.3, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 139.7 x 114.3, 165.1 x 88.9, 219.1 x 88.9 | 25 | 988Aa/20 |
| Fig 8061 - Reducing Tee | 60.3 x 33.7, 60.3 x 48.3, 76.1 x 48.3, 76.1 x 60.3, 88.9 x 33.7, 88.9 x 48.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 33.7, 114.3 x 48.3, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 139.7 x 114.3, 165.1 x 88.9, 165.1 x 114.3, 165.1 x 139.7, 168.3 x 60.3, 168.3 x 76.1, 168.3 x 88.9, 168.3 x 114.3, 168.3 x 139.7, 219.1 x 60.3, 219.1 x 88.9, 219.1 x 114.3, 219.1 x 168.3 | 25 | 988Aa/21 |

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Certificate No: 119a to LPS 1219

Certificate No: 519a to LPS 1219

Pipe Couplings (GRUVLOK/SPF)

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|------------------------------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Pipe Coupling Style 7000 | 25 | 33.7 | R&C | EPDM | 20 | 119a/01 |
| | 32 | 42.4 | R&C | EPDM | 20 | |
| | 40 | 48.3 | R&C | EPDM | 20 | |
| | 50 | 60.3 | R&C | EPDM | 20 | |
| | 80 | 88.9 | R&C | EPDM | 20 | |
| | 100 | 114.3 | R&C | EPDM | 20 | |
| | 150 | 168.3 | R&C | EPDM | 20 | |
| Pipe Coupling Fig 7000 | 200 | 219.1 | R&C | EPDM | 20 | 119a/02 |
| | 65 | 76.1 | R&C | EPDM | 20 | |
| | 65 | 108 ⁽¹⁾ | R&C | EPDM | 20 | |
| | 65 | 133 ⁽¹⁾ | R&C | EPDM | 20 | |
| | 65 | 159 ⁽¹⁾ | R&C | EPDM | 20 | |
| Pipe Coupling Style 7400 Rigidlite | 150 | 165.1 | R&C | EPDM | 20 | 119a/03 |
| | 25 | 33.7 | R&C | EPDM | 20 | |
| | 32 | 42.4 | R&C | EPDM | 20 | |
| | 40 | 48.3 | R&C | EPDM | 20 | |
| | 50 | 60.3 | R&C | EPDM | 20 | |
| | 65 | 76.1 | R&C | EPDM | 20 | |
| | 80 | 88.9 | R&C | EPDM | 20 | |
| | 100 | 114.3 | R&C | EPDM | 20 | |
| 125 | 139.7 | R&C | EPDM | 20 | | |
| 150 | 165.1 | R&C | EPDM | 20 | | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. | | |
|--|---|----------------------------|-----------|-------------|--------------------------------|--------------------|----|---------|
| Pipe Coupling Style 7401 Rigidlok Mechanical Tee Fig 7045 | 150 | 168.3 | R&C | EPDM | 20 | 119a/04 119a/05 | | |
| | 200 | 219.1 | R&C | EPDM | 20 | | | |
| | 200 | 219.1 | R&C | EPDM | 20 | | | |
| | 50 x 15 | 60.3 x 21.3 | T | EPDM | 20 | | | |
| | 50 x 20 | 60.3 x 26.7 | T | EPDM | 20 | | | |
| | 50 x 25 | 60.3 x 33.7 | T | EPDM | 20 | | | |
| | 50 x 32 | 60.3 x 42.4 | T | EPDM | 20 | | | |
| | 50 x 40 | 60.3 x 48.3 | T | EPDM | 20 | | | |
| | 65 x 15 | 76.1 x 21.3 | T | EPDM | 20 | | | |
| | 65 x 20 | 76.1 x 26.7 | T | EPDM | 20 | | | |
| | 65 x 25 | 76.1 x 33.7 | T | EPDM | 20 | | | |
| | 65 x 32 | 76.1 x 42.4 | T | EPDM | 20 | | | |
| | 65 x 40 | 76.1 x 48.3 | T | EPDM | 20 | | | |
| | 80 x 15 | 88.9 x 21.3 | T | EPDM | 20 | | | |
| | 80 x 20 | 88.9 x 26.7 | T | EPDM | 20 | | | |
| | 80 x 25 | 88.9 x 33.7 | T | EPDM | 20 | | | |
| | 80 x 32 | 88.9 x 42.4 | T | EPDM | 20 | | | |
| | 80 x 40 | 88.9 x 48.3 | T | EPDM | 20 | | | |
| | 80 x 50 | 88.9 x 60.3 | T | EPDM | 20 | | | |
| | 100 x 15 | 114.3 x 21.3 | T | EPDM | 20 | | | |
| | 100 x 20 | 114.3 x 26.7 | T | EPDM | 20 | | | |
| | 100 x 25 | 114.3 x 33.7 | T | EPDM | 20 | | | |
| | 100 x 32 | 114.3 x 42.4 | T | EPDM | 20 | | | |
| | 100 x 40 | 114.3 x 48.3 | T | EPDM | 20 | | | |
| | 100 x 50 | 114.3 x 60.3 | T | EPDM | 20 | | | |
| | 125 x 32 | 139.7 x 42.4 | T | EPDM | 20 | | | |
| | 125 x 40 | 139.7 x 48.3 | T | EPDM | 20 | | | |
| 125 x 50 | 139.7 x 60.3 | T | EPDM | 20 | | | | |
| 150 x 32 | 165.1 x 42.4 | T | EPDM | 20 | | | | |
| 150 x 40 | 165.1 x 48.3 | T | EPDM | 20 | | | | |
| 150 x 50 | 165.1 x 60.3 | T | EPDM | 20 | | | | |
| 150 x 32 | 168.3 x 42.4 | T | EPDM | 20 | | | | |
| 150 x 40 | 168.3 x 48.3 | T | EPDM | 20 | | | | |
| 150 x 50 | 168.3 x 60.3 | T | EPDM | 20 | | | | |
| Mechanical Tee Fig 7046 | 65 x 32 | 76.1 x 42.4 | G | EPDM | 20 | 119a/06 | | |
| | 65 x 40 | 76.1 x 48.3 | G | EPDM | 20 | | | |
| | 80 x 32 | 88.9 x 42.4 | G | EPDM | 20 | | | |
| | 80 x 40 | 88.9 x 48.3 | G | EPDM | 20 | | | |
| | 80 x 50 | 88.9 x 60.3 | G | EPDM | 20 | | | |
| | 100 x 32 | 114.3 x 42.4 | G | EPDM | 20 | | | |
| | 100 x 40 | 114.3 x 48.3 | G | EPDM | 20 | | | |
| | 100 x 50 | 114.3 x 60.3 | G | EPDM | 20 | | | |
| | 100 x 65 | 114.3 x 76.1 | G | EPDM | 20 | | | |
| | 100 x 80 | 114.3 x 88.9 | G | EPDM | 20 | | | |
| | 125 x 32 | 139.7 x 48.3 | G | EPDM | 20 | | | |
| | 125 x 50 | 139.7 x 60.3 | G | EPDM | 20 | | | |
| | 125 x 80 | 139.7 x 88.9 | G | EPDM | 20 | | | |
| | 150 x 40 | 165.1 x 48.3 | G | EPDM | 20 | | | |
| | 150 x 50 | 165.1 x 60.3 | G | EPDM | 20 | | | |
| | 150 x 65 | 165.1 x 76.1 | G | EPDM | 20 | | | |
| | 150 x 80 | 165.1 x 88.9 | G | EPDM | 20 | | | |
| | 150 x 100 | 165.1 x 114.3 | G | EPDM | 20 | | | |
| | 150 x 40 | 168.3 x 48.3 | G | EPDM | 20 | | | |
| | 150 x 50 | 168.3 x 60.3 | G | EPDM | 20 | | | |
| | 150 x 65 | 168.3 x 76.1 | G | EPDM | 20 | | | |
| | 150 x 80 | 168.3 x 88.9 | G | EPDM | 20 | | | |
| | 150 x 100 | 168.3 x 114.3 | G | EPDM | 20 | | | |
| | 200 x 80 | 219.1 x 88.9 | G | EPDM | 20 | | | |
| | 200 x 100 | 219.1 x 114.3 | G | EPDM | 20 | | | |
| | Flexible Pipe Coupling Fig 7001E/SPF C1 | 250 | 273.0 | R&C | EPDM | | 20 | 519a/01 |
| | | 300 | 323.9 | R&C | EPDM | | 20 | |
| Lightweight Flexible Pipe Coupling Fig 7000E/SPF C3 | 32 | 42.4 | R&C | EPDM | 20 | 519a/16 | | |
| | 40 | 48.3 | R&C | EPDM | 20 | | | |
| | 50 | 60.3 | R&C | EPDM | 20 | | | |
| | 65 | 76.1 | R&C | EPDM | 20 | | | |
| | 80 | 88.9 | R&C | EPDM | 20 | | | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Rigid Pipe Coupling Fig 7400E/SPF C4 | 100 | 114.3 | R&C | EPDM | 20 | 519a/02 |
| | 150 | 165.1 | R&C | EPDM | 20 | |
| | 150 | 168.3 | R&C | EPDM | 20 | |
| | 200 | 219.1 | R&C | EPDM | 20 | |
| | 32 | 42.4 | R&C | EPDM | 20 | |
| | 40 | 48.3 | R&C | EPDM | 20 | |
| | 50 | 60.3 | R&C | EPDM | 20 | |
| | 65 | 76.1 | R&C | EPDM | 20 | |
| | 80 | 88.9 | R&C | EPDM | 20 | |
| | 100 | 114.3 | R&C | EPDM | 20 | |
| | 150 | 165.1 | R&C | EPDM | 20 | |
| | 150 | 168.3 | R&C | EPDM | 20 | |
| | 200 | 219.1 | R&C | EPDM | 20 | |
| Fig 7043/SPF MT90 Threaded Outlet (U-bolt) | 250 | 273.0 | R&C | EPDM | 20 | 519a/22 |
| | 300 | 323.9 | R&C | EPDM | 20 | |
| | 32 x 15 | 42.4 | T | EPDM | 20 | |
| | 32 x 20 | 42.4 | T | EPDM | 20 | |
| | 32 x 25 | 42.4 | T | EPDM | 20 | |
| | 40 x 15 | 48.3 | T | EPDM | 20 | |
| | 40 x 20 | 48.3 | T | EPDM | 20 | |
| | 40 x 25 | 48.3 | T | EPDM | 20 | |
| | 50 x 15 | 60.3 | T | EPDM | 20 | |
| | 50 x 20 | 60.3 | T | EPDM | 20 | |
| | 50 x 25 | 60.3 | T | EPDM | 20 | |
| | 60 x 15 | 76.1 | T | EPDM | 20 | |
| | 60 x 20 | 76.1 | T | EPDM | 20 | |
| | 60 x 25 | 76.1 | T | EPDM | 20 | |

Certificate No: 519a to LPS 1219

Pipe Couplings (GRUVLOK/SPF)

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|------------------------------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Reducing Coupling Fig 7010/SPF RC2 | 50 x 40 | 60.3 x 48.3 | R&C | EPDM | 20 | 519a/24 |
| | 65 x 50 | 76.1 x 60.3 | R&C | EPDM | 20 | |
| | 80 x 50 | 88.9 x 60.3 | R&C | EPDM | 20 | |
| | 80 x 65 | 88.9 x 76.1 | R&C | EPDM | 20 | |
| | 100 x 50 | 114.3 x 60.3 | R&C | EPDM | 20 | |
| | 100 x 65 | 114.3 x 76.1 | R&C | EPDM | 20 | |
| | 100 x 80 | 114.3 x 88.9 | R&C | EPDM | 20 | |
| | 150 x 100 | 165.1 x 114.3 | R&C | EPDM | 20 | |
| | 150 x 100 | 168.3 x 114.3 | R&C | EPDM | 20 | |
| | 200 x 150 | 219.1 x 165.1 | R&C | EPDM | 20 | |
| | 200 x 150 | 219.1 x 168.3 | R&C | EPDM | 20 | |

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Certificate No: 519a to LPS 1219

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

Pipe Couplings (GRUVLOK/SPF)

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|----------------------------------|-------------------|----------------------------|--------------|-------------|--------------------------------|---------------|
| Mechanical Tee Fig 7045E/SPF MT8 | 50 x 25 | 60.3 x 33.7 | Threaded (T) | EPDM | 20 | 519a/10 |
| | 50 x 32 | 60.3 x 42.2 | T | EPDM | 20 | |
| | 50 x 40 | 60.3 x 48.3 | T | EPDM | 20 | |
| | 65 x 25 | 76.1 x 33.7 | T | EPDM | 20 | |
| | 65 x 32 | 76.1 x 42.2 | T | EPDM | 20 | |
| | 65 x 40 | 76.1 x 48.3 | T | EPDM | 20 | |
| | 80 x 25 | 88.9 x 33.7 | T | EPDM | 20 | |
| | 80 x 32 | 88.9 x 42.2 | T | EPDM | 20 | |
| | 80 x 40 | 88.9 x 48.3 | T | EPDM | 20 | |
| | 80 x 50 | 88.9 x 60.3 | T | EPDM | 20 | |
| | 100 x 25 | 114.3 x 33.7 | T | EPDM | 20 | |
| | 100 x 32 | 114.3 x 42.2 | T | EPDM | 20 | |
| | 100 x 40 | 114.3 x 48.3 | T | EPDM | 20 | |
| | 100 x 50 | 114.3 x 60.3 | T | EPDM | 20 | |
| | 100 x 65 | 114.3 x 76.1 | T | EPDM | 20 | |
| | 150 x 32 | 165.1 x 42.2 | T | EPDM | 20 | |
| | 150 x 40 | 165.1 x 48.3 | T | EPDM | 20 | |
| | 150 x 50 | 165.1 x 60.3 | T | EPDM | 20 | |
| | 150 x 65 | 165.1 x 76.1 | T | EPDM | 20 | |
| | 150 x 80 | 165.1 x 88.9 | T | EPDM | 20 | |
| | 150 x 32 | 168.3 x 42.2 | T | EPDM | 20 | |
| | 150 x 40 | 168.3 x 48.3 | T | EPDM | 20 | |
| | 150 x 50 | 168.3 x 60.3 | T | EPDM | 20 | |
| 150 x 65 | 168.3 x 76.1 | T | EPDM | 20 | | |
| 150 x 80 | 168.3 x 88.9 | T | EPDM | 20 | | |
| 200 x 50 | 219.1 x 60.3 | T | EPDM | 20 | | |

Notes:

- Two Figure 7045 mechanical tees may be used in combination with pipe run sizes 76.1mm through 168.3mm with branch sizes 48.3mm and 60.3mm, and are designated Figure 7047.
- Two Figure 7046 mechanical tees may be used in combination with pipe run sizes 76.1mm through 168.3mm with branch sizes 48.3mm, through 114.3mm, and are designated Figure 7048.
- Figure 7045 and Figure 7046 mechanical tees may be used in combination with pipe run sizes 76.1mm through 168.3mm with branch sizes 48.3mm and 0.3mm, and are designated Figure 7049.

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Pipe Couplings (GRUVLOK/SPF)

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|----------------------------------|-------------------|----------------------------|-------------|-------------|--------------------------------|---------------|
| Mechanical Tee Fig 7046E/SPF MT2 | 65 x 32 | 76.1 x 42.2 | Grooved (G) | EPDM | 20 | 519a/09 |
| | 65 x 40 | 76.1 x 48.3 | G | EPDM | 20 | |
| | 80 x 32 | 88.9 x 42.2 | G | EPDM | 20 | |
| | 80 x 40 | 88.9 x 48.3 | G | EPDM | 20 | |
| | 80 x 50 | 88.9 x 60.3 | G | EPDM | 20 | |
| | 100 x 32 | 114.3 x 42.2 | G | EPDM | 20 | |
| | 100 x 40 | 114.3 x 48.3 | G | EPDM | 20 | |
| | 100 x 50 | 114.3 x 60.3 | G | EPDM | 20 | |
| | 100 x 65 | 114.3 x 76.1 | G | EPDM | 20 | |
| | 100 x 80 | 114.3 x 88.9 | G | EPDM | 20 | |
| | 150 x 32 | 165.1 x 42.2 | G | EPDM | 20 | |
| | 150 x 40 | 165.1 x 48.2 | G | EPDM | 20 | |
| | 150 x 50 | 165.1 x 60.3 | G | EPDM | 20 | |
| | 150 x 65 | 165.1 x 76.1 | G | EPDM | 20 | |
| | 150 x 80 | 165.1 x 88.9 | G | EPDM | 20 | |
| | 150 x 100 | 165.1 x 114.3 | G | EPDM | 20 | |
| | 150 x 32 | 168.3 x 42.2 | G | EPDM | 20 | |
| | 150 x 40 | 168.3 x 48.3 | G | EPDM | 20 | |
| | 150 x 50 | 168.3 x 60.3 | G | EPDM | 20 | |
| | 150 x 65 | 168.3 x 76.1 | G | EPDM | 20 | |
| | 150 x 80 | 168.3 x 88.9 | G | EPDM | 20 | |
| | 150 x 100 | 168.3 x 114.3 | G | EPDM | 20 | |
| | 200 x 50 | 219.1 x 60.3 | G | EPDM | 20 | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| | 200 x 65 | 219.1 x 76.1 | G | EPDM | 20 | |
| | 200 x 80 | 219.1 x 88.9 | G | EPDM | 20 | |

Certificate No: 519a to LPS 1219

Pipe Fittings (GRUVLOK/SPF)

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------------------------------|----------------------------|--------------------------------|---------------|
| 22.5° Elbow - Fig 7052/SPF E3 | 42.4 | 20 | 519a/25 |
| | 48.3 | 20 | |
| | 60.3 | 20 | |
| | 76.1 | 20 | |
| | 88.9 | 20 | |
| | 114.3 | 20 | |
| | 139.7 | 20 | |
| | 165.1 | 20 | |
| | 168.3 | 20 | |
| | 219.1 | 20 | |
| Concentric Reducer - Fig 7072/SPF R1 | 273.0 | 20 | 519a/26 |
| | 323.9 | 20 | |
| | 48.3 x 42.4 | 20 | |
| | 60.3 x 42.4 | 20 | |
| | 76.1 x 42.4 | 20 | |
| | 76.1 x 48.3 | 20 | |
| | 76.1 x 60.3 | 20 | |
| | 88.9 x 60.3 | 20 | |
| | 88.9 x 76.1 | 20 | |
| | 114.3 x 48.3 | 20 | |
| | 114.3 x 60.3 | 20 | |
| | 114.3 x 76.1 | 20 | |
| | 114.3 x 88.9 | 20 | |
| | 139.7 x 114.3 | 20 | |
| | 165.1 x 88.9 | 20 | |
| | 165.1 x 114.3 | 20 | |
| | 165.1 x 139.7 | 20 | |
| Drain Cap - Fig 7074D/SPF K1D | 168.3 x 114.3 | 20 | 519a/27 |
| | 168.3 x 139.7 | 20 | |
| | 168.3 x 165.1 | 20 | |
| | 219.1 x 114.3 | 20 | |
| | 219.1 x 165.1 | 20 | |
| | 219.1 x 168.3 | 20 | |
| | 273.0 x 219.1 | 20 | |
| Hydrant Tee - Fig 7061H/SPF HT | 60.3 | 20 | 519a/28 |
| | 48.3 | 20 | |
| | 76.1 | 20 | |
| | 88.9 | 20 | |
| | 114.3 | 20 | |
| | 139.7 | 20 | |
| | 168.3 | 20 | |
| 219.1 | 20 | | |
| 273.0 | 20 | | |
| 114.3 x 114.3 x 76.1 | 20 | | |

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PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

Pipe Couplings (GRUVLOK)

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--|---|--------------------------------|---------------|
| 90° Elbow - Fig 7050 | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 108 ⁽¹⁾ , 114.3, 133 ⁽¹⁾ , 159 ⁽¹⁾ , 165.1, 168.3, 219.1 | 20 | 119a/07 |
| 45° Elbow - Fig 7051 | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 108 ⁽¹⁾ , 114.3, 133 ⁽¹⁾ , 159 ⁽¹⁾ , 165.1, 168.3, 219.1 | 20 | 119a/08 |
| Tee - Fig 7060 | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 108 ⁽¹⁾ , 114.3, 133 ⁽¹⁾ , 159 ⁽¹⁾ , 165.1, 168.3, 219.1 | 20 | 119a/09 |
| Blank Cap - Fig 7074 | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 108 ⁽¹⁾ , 114.3, 133 ⁽¹⁾ , 159 ⁽¹⁾ , 165.1, 168.3, 219.1 | 20 | 119a/10 |
| 90° Elbow - Fig 7050E//SPF E1 | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 519a/12 |
| 45° Elbow - Fig 7051E//SPF E2 | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 519a/13 |
| Tee - Fig 7060E//SPF T1 | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 519a/14 |
| Cap - Fig 7074E//SPF K1 | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 519a/08 |
| Short pattern 90° Elbow - Fig 7450E//SPF SE1 | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 519a/20 |
| Short pattern Tee - Fig 7460E//SPF ST1 | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, | 20 | 519a/21 |

Note:

All couplings and fittings to be installed in accordance with the manufacturer's pipe preparation and installation instructions.

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Pipe Couplings

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Grinnell Fig 705 Flexible Pipe Coupling | 32 | 42.2 | Rolled | EPDM | 20 | 921a/01 |
| | 40 | 48.3 | Rolled | EPDM | 20 | |
| | 50 | 60.3 | Rolled | EPDM | 20 | |
| | 65 | 76.1 | Rolled | EPDM | 20 | |
| | 80 | 88.9 | Rolled | EPDM | 20 | |
| | 100 | 114.3 | Rolled | EPDM | 20 | |
| | 150 | 165.1 | Rolled | EPDM | 20 | |
| | 150 | 168.3 | Rolled | EPDM | 20 | |
| Grinnell Fig 577 Rigid Pipe Coupling | 200 | 219.1 | Rolled | EPDM | 20 | 921a/02 |
| | 25 | 33.7 | Rolled | EPDM | 20 | |
| | 32 | 42.2 | Rolled | EPDM | 20 | |
| | 40 | 48.3 | Rolled | EPDM | 20 | |
| | 50 | 60.3 | Rolled | EPDM | 20 | |
| | 65 | 76.1 | Rolled | EPDM | 20 | |
| | 80 | 88.9 | Rolled | EPDM | 20 | |
| | 100 | 114.3 | Rolled | EPDM | 20 | |
| | 150 | 165.1 | Rolled | EPDM | 20 | |
| | 150 | 168.3 | Rolled | EPDM | 20 | |
| | 200 | 219.1 | Rolled | EPDM | 20 | |
| Grinnell Fig 772 Rigid Pipe Coupling | 250 | 273.0 | Rolled | EPDM | 20 | 921a/03 |
| | 300 | 323.9 | Rolled | EPDM | 20 | |
| | 32 | 42.2 | Rolled | EPDM | 20 | |
| | 40 | 48.3 | Rolled | EPDM | 20 | |
| | 50 | 60.3 | Rolled | EPDM | 20 | |
| | 65 | 76.1 | Rolled | EPDM | 20 | |

PART 3: SECTION 8.1**PIPE COUPLINGS AND FITTINGS**

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Grinnell Fig 730 Mechanical Tee | 80 | 88.9 | Rolled | EPDM | 20 | 921a/04 |
| | 100 | 114.3 | Rolled | EPDM | 20 | |
| | 150 | 165.1 | Rolled | EPDM | 20 | |
| | 150 | 168.3 | Rolled | EPDM | 20 | |
| | 200 | 219.1 | Rolled | EPDM | 20 | |
| | 250 | 273 | Rolled | EPDM | 20 | |
| | 300 | 323.9 | Rolled | EPDM | 20 | |
| | 50 x 15 | 60.3 x 21.3 | Threaded | EPDM | 20 | |
| | 50 x 20 | 60.3 x 26.9 | Threaded | EPDM | 20 | |
| | 50 x 25 | 60.3 x 33.4 | Threaded | EPDM | 20 | |
| | 50 x 32 | 60.3 x 42.2 | Threaded | EPDM | 20 | |
| | 50 x 40 | 60.3 x 48.3 | Threaded | EPDM | 20 | |
| | 65 x 15 | 76.1 x 21.3 | Threaded | EPDM | 20 | |
| | 65 x 20 | 76.1 x 26.9 | Threaded | EPDM | 20 | |
| | 65 x 25 | 76.1 x 33.4 | Threaded | EPDM | 20 | |
| | 65 x 32 | 76.1 x 42.2 | Threaded | EPDM | 20 | |
| | 65 x 40 | 76.1 x 48.3 | Threaded | EPDM | 20 | |
| | 65 x 50 | 76.1 x 60.3 | Threaded | EPDM | 20 | |
| | 80 x 15 | 88.9 x 21.3 | Threaded | EPDM | 20 | |
| | 80 x 20 | 88.9 x 26.9 | Threaded | EPDM | 20 | |
| | 80 x 25 | 88.9 x 33.4 | Threaded | EPDM | 20 | |
| | 80 x 32 | 88.9 x 42.2 | Threaded | EPDM | 20 | |
| | 80 x 40 | 88.9 x 48.3 | Threaded | EPDM | 20 | |
| | 80 x 50 | 88.9 x 60.3 | Threaded | EPDM | 20 | |
| | 100 x 15 | 114.3 x 21.3 | Threaded | EPDM | 20 | |
| | 100 x 20 | 114.3 x 26.9 | Threaded | EPDM | 20 | |
| | 100 x 25 | 114.3 x 33.4 | Threaded | EPDM | 20 | |
| | 100 x 32 | 114.3 x 42.2 | Threaded | EPDM | 20 | |
| | 100 x 40 | 114.3 x 48.3 | Threaded | EPDM | 20 | |
| | 100 x 50 | 114.3 x 60.3 | Threaded | EPDM | 20 | |
| | 100 x 65 | 114.3 x 76.1 | Threaded | EPDM | 20 | |
| | 100 x 80 | 114.3 x 88.9 | Threaded | EPDM | 20 | |
| | 150 x 32 | 165.1 x 42.2 | Threaded | EPDM | 20 | |
| | 150 x 40 | 165.1 x 48.3 | Threaded | EPDM | 20 | |
| | 150 x 50 | 165.1 x 60.3 | Threaded | EPDM | 20 | |
| | 150 x 65 | 165.1 x 76.1 | Threaded | EPDM | 20 | |
| | 150 x 80 | 165.1 x 88.9 | Threaded | EPDM | 20 | |
| | 150 x 100 | 165.1 x 114.3 | Threaded | EPDM | 20 | |
| | 150 x 32 | 168.3 x 42.2 | Threaded | EPDM | 20 | |
| | 150 x 40 | 168.3 x 48.3 | Threaded | EPDM | 20 | |
| | 150 x 50 | 168.3 x 60.3 | Threaded | EPDM | 20 | |
| | 150 x 65 | 168.3 x 76.1 | Threaded | EPDM | 20 | |
| | 150 x 80 | 168.3 x 88.9 | Threaded | EPDM | 20 | |
| | 150 x 100 | 168.3 x 114.3 | Threaded | EPDM | 20 | |
| | 200 x 50 | 219.1 x 60.3 | Threaded | EPDM | 20 | |
| | 200 x 65 | 219.1 x 76.1 | Threaded | EPDM | 20 | |
| | 200 x 80 | 219.1 x 88.9 | Threaded | EPDM | 20 | |
| 200 x 100 | 219.1 x 114.3 | Threaded | EPDM | 20 | | |
| 50 x 32 | 60.3 x 42.2 | Grooved | EPDM | 20 | | |
| 50 x 40 | 60.3 x 48.3 | Grooved | EPDM | 20 | | |
| 65 x 32 | 76.1 x 42.2 | Grooved | EPDM | 20 | | |
| 65 x 40 | 76.1 x 48.3 | Grooved | EPDM | 20 | | |
| 65 x 50 | 76.1 x 60.3 | Grooved | EPDM | 20 | | |
| 80 x 32 | 88.9 x 42.2 | Grooved | EPDM | 20 | | |
| 80 x 40 | 88.9 x 48.3 | Grooved | EPDM | 20 | | |
| 80 x 50 | 88.9 x 60.3 | Grooved | EPDM | 20 | | |
| 100 x 32 | 114.3 x 42.4 | Grooved | EPDM | 20 | | |
| 100 x 40 | 114.3 x 48.3 | Grooved | EPDM | 20 | | |
| 100 x 50 | 114.3 x 60.3 | Grooved | EPDM | 20 | | |
| 100 x 65 | 114.3 x 76.1 | Grooved | EPDM | 20 | | |
| 100 x 80 | 114.3 x 88.9 | Grooved | EPDM | 20 | | |
| 150 x 32 | 165.1 x 42.2 | Grooved | EPDM | 20 | | |
| 150 x 40 | 165.1 x 48.3 | Grooved | EPDM | 20 | | |
| 150 x 50 | 165.1 x 60.3 | Grooved | EPDM | 20 | | |
| 150 x 65 | 165.1 x 76.1 | Grooved | EPDM | 20 | | |
| 150 x 80 | 165.1 x 88.9 | Grooved | EPDM | 20 | | |
| 150 x 100 | 165.1 x 114.3 | Grooved | EPDM | 20 | | |
| 150 x 32 | 168.3 x 42.2 | Grooved | EPDM | 20 | | |
| 150 x 40 | 168.3 x 48.3 | Grooved | EPDM | 20 | | |
| 150 x 50 | 168.3 x 60.3 | Grooved | EPDM | 20 | | |
| 150 x 65 | 168.3 x 76.1 | Grooved | EPDM | 20 | | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------------------------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Grinnell Fig 716 Reducing Coupling | 150 x 80 | 168.3 x 88.9 | Grooved | EPDM | 20 | 921a/05 |
| | 150 x 100 | 168.3 x 114.3 | Grooved | EPDM | 20 | |
| | 200 x 50 | 219.1 x 60.3 | Grooved | EPDM | 20 | |
| | 200 x 65 | 219.1 x 76.1 | Grooved | EPDM | 20 | |
| | 200 x 80 | 219.1 x 88.9 | Grooved | EPDM | 20 | |
| | 200 x 100 | 219.1 x 114.3 | Grooved | EPDM | 20 | |
| | 65 x 40 | 76.1 x 60.3 | Rolled | EPDM | 20 | |
| | 80 x 65 | 88.9 x 76.1 | Rolled | EPDM | 20 | |
| | 100 x 65 | 114.3 x 76.1 | Rolled | EPDM | 20 | |
| | 150 x 100 | 165.1 x 114.3 | Rolled | EPDM | 20 | |
| Grinnell Fig 71 Flange Adaptor | 200 | 219.1 | Rolled | EPDM | 20 | 921a/06 |
| | 300 | 323.9 | Rolled | EPDM | 16 | |
| Grinnell Fig 522 Sprinkler Tee | 25 x 15 | 33.4 x 21.3 | Threaded | EPDM | 20 | 921a/11 |
| | 25 x 20 | 33.4 x 26.9 | Threaded | EPDM | 20 | |
| Grinnell Fig 774 Rigid Pipe Coupling | 25 x 25 | 33.4 x 33.4 | Threaded | EPDM | 20 | 921a/24 |
| | 32 x 10 | 42.2 x 17.2 | Threaded | EPDM | 20 | |
| | 32 x 15 | 42.2 x 21.3 | Threaded | EPDM | 20 | |
| | 32 x 20 | 42.2 x 26.9 | Threaded | EPDM | 20 | |
| | 32 x 25 | 42.2 x 33.4 | Threaded | EPDM | 20 | |
| | 40 x 15 | 48.3 x 21.3 | Threaded | EPDM | 20 | |
| | 40 x 20 | 48.3 x 26.9 | Threaded | EPDM | 20 | |
| | 40 x 25 | 48.3 x 33.4 | Threaded | EPDM | 20 | |
| | 50 x 15 | 60.3 x 21.3 | Threaded | EPDM | 20 | |
| | 50 x 20 | 60.3 x 26.9 | Threaded | EPDM | 20 | |
| | 50 x 25 | 60.3 x 33.4 | Threaded | EPDM | 20 | |
| | 65 x 15 | 76.1 x 21.3 | Threaded | EPDM | 20 | |
| | 65 x 25 | 76.1 x 33.4 | Threaded | EPDM | 20 | |
| | 25 | 33.7 | Rolled | EPDM | 20 | |
| | 32 | 42.2 | Rolled | EPDM | 20 | |
| | 40 | 48.3 | Rolled | EPDM | 20 | |
| | 50 | 60.3 | Rolled | EPDM | 20 | |
| | 65 | 76.1 | Rolled | EPDM | 20 | |
| | 80 | 88.9 | Rolled | EPDM | 20 | |
| | 100 | 114.3 | Rolled | EPDM | 20 | |
| 150 | 165.1 | Rolled | EPDM | 20 | | |
| 150 | 168.3 | Rolled | EPDM | 20 | | |
| 200 | 219.1 | Rolled | EPDM | 20 | | |
| 250 | 273.0 | Rolled | EPDM | 20 | | |
| 300 | 323.9 | Rolled | EPDM | 20 | | |

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Pipe Fittings

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-------------------------------------|--|--------------------------------|---------------|
| Grinnell Fig 201 45° Elbow | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 921a/07 |
| Grinnell Fig 501 45° Elbow | 42.2, 48.3, 273.0, 323.9 | 20 | |
| Grinnell Fig 501 'G-FIRE' 45° Elbow | 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 20 | 921a/21 |
| Grinnell Fig 210 90° Elbow | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 921a/08 |
| Grinnell Fig 510 90° Elbow | 273.0, 323.9 | 20 | |
| Grinnell Fig 510 'G-FIRE' 90° Elbow | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 20 | 921a/22 |
| Grinnell Fig 219 Tee | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 921a/09 |
| Grinnell Fig 519 Tee | 273.0, 323.9 | 20 | |

PART 3: SECTION 8.1**PIPE COUPLINGS AND FITTINGS**

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--|---|--------------------------------|---------------|
| Grinnell Fig 519 'G-FIRE' Tee | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 20 | 921a/23 |
| Grinnell Fig 260 End Cap | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 921a/10 |
| Grinnell Fig 250/550 Concentric Reducer | 42.4 x 33.7, 48.3 x 33.4, 60.3 x 42.2, 60.3 x 48.3, 76.1 x 42.2, 76.1 x 60.3, 88.9 x 76.1, 114.3 x 76.1, 114.3 x 88.9, 165.1 x 114.3, 168.3 x 114.3, 219.1 x 139.7, 219.1 x 165.1, 273.0 x 165.1 | 20 | 921a/12 |
| Grinnell Fig 510S 'G-FIRE' 90° Short Elbow | 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 20 | 921a/13 |
| Grinnell Fig 519S 'G-FIRE' Short Tee | 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 20 | 921a/14 |
| Grinnell Fig 221/521 Reducing Tee | 60.3x60.3x48.5, 76.1x76.1x48.3, 76.1x76.1x60.3, 88.9x88.9x33.7, 88.9x88.9x60.3, 88.9x88.9x76.1, 114.3x114.3x60.3, 114.3x114.3x76.1, 114.3x114.3x88.9, 139.7x139.7x88.9, 139.7x139.7x114.3, 165.1x165.1x88.9, 165.1x165.1x114.3, 168.3x168.3x60.3, 168.3x168.3x76.1, 168.3x168.3x88.9, 168.3x168.3x114.3, 168.3x168.3x139.7, 219.1x219.1x139.7, 219.1x219.1x165.1, 273.0x273.0x114.3, 273.0x273.0x168.3, 273.0x273.0x219.1 | 20 | 921a/15 |
| Grinnell 222 Hydrant Tee | 114.3 x 114.3 x 76.1 | 20 | 921a/16 |
| Grinnell Fig 212/512 22.5° Elbow | 76.1, 139.7 | 20 | 921a/17 |
| Grinnell Fig 211/511 11.25° Elbow | 76.1, 139.7, 165.1 | 20 | 921a/18 |
| Grinnell Fig 210LR 90° Long Radius Elbow | 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 20 | 921a/19 |
| Grinnell Fig 227/527 Cross | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 168.3, 219.1 | 20 | 921a/20 |

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Certificate No: 988Ca to LPS 1219 issue 3

Pipe Couplings

| Product Name | Nominal Size | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-----------------------------------|-----------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Flexible Coupling Fig 1N | 50 | 60.3 | R&C | EPDM | 25 | 988Ca/01 |
| | 65 | 73.0 | R&C | EPDM | 25 | |
| | 65 | 76.1 | R&C | EPDM | 25 | |
| | 80 | 88.9 | R&C | EPDM | 25 | |
| | 100 | 114.3 | R&C | EPDM | 25 | |
| | 125 | 139.7 | R&C | EPDM | 25 | |
| | 150 | 165.1 | R&C | EPDM | 25 | |
| | 150 | 168.3 | R&C | EPDM | 25 | |
| | 200 | 219.1 | R&C | EPDM | 25 | |
| | Rigid Coupling Fig 1G | 50 | 60.3 | R&C | EPDM | |
| 65 | | 73.0 | R&C | EPDM | 25 | |
| 65 | | 76.1 | R&C | EPDM | 25 | |
| 80 | | 88.9 | R&C | EPDM | 16 | |
| Light Duty Rigid Coupling Fig 1GS | 80 | 88.9 | R&C | EPDM | 16 | 988Ca/04 |
| | 100 | 114.3 | R&C | EPDM | 16 | |
| | 125 | 139.7 | R&C | EPDM | 16 | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|--------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| | 150 | 165.1 | R&C | EPDM | 16 | |
| | 150 | 168.3 | R&C | EPDM | 16 | |
| | 200 | 219.1 | R&C | EPDM | 16 | |

Certificate No: 988Ca to LPS 1219 issue 3

Pipe Fittings

| Product Name | Pipe Outside Diameter (mm) | Max Working Pressure (bar) | LPCB Ref. No. |
|-------------------------------|--|----------------------------|---------------|
| Short Style 90° Elbow Fig 90S | 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 16 | 988Ca/10 |
| Short Style Tee Fig 130S | 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 16 | 988Ca/12 |

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Certificate No: 988a to LPS1219 Issue 3

Pipe Couplings

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-----------------------------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Flexible Coupling Fig 1N | 25 | 33.7 | R&C | EPDM | 25 | 988a/01 |
| | 32 | 42.4 | R&C | EPDM | 25 | |
| | 40 | 48.3 | R&C | EPDM | 25 | |
| | 50 | 60.3 | R&C | EPDM | 25 | |
| | 65 | 73 | R&C | EPDM | 25 | |
| | 65 | 76.1 | R&C | EPDM | 25 | |
| | 80 | 88.9 | R&C | EPDM | 25 | |
| | 100 | 108 | R&C | EPDM | 25 | |
| | 100 | 114.3 | R&C | EPDM | 25 | |
| | 125 | 133 | R&C | EPDM | 25 | |
| | 125 | 139.7 | R&C | EPDM | 25 | |
| | 125 | 141.3 | R&C | EPDM | 25 | |
| | 150 | 159 | R&C | EPDM | 25 | |
| | 150 | 165.1 | R&C | EPDM | 25 | |
| | 150 | 168.3 | R&C | EPDM | 25 | |
| Rigid Coupling Fig 1G | 200 | 219.1 | R&C | EPDM | 25 | 988a/02 |
| | 25 | 33.7 | R&C | EPDM | 25 | |
| | 32 | 42.4 | R&C | EPDM | 25 | |
| | 40 | 48.3 | R&C | EPDM | 25 | |
| | 50 | 60.3 | R&C | EPDM | 25 | |
| | 65 | 73 | R&C | EPDM | 25 | |
| | 65 | 76.1 | R&C | EPDM | 25 | |
| | 80 | 88.9 | R&C | EPDM | 25 | |
| | 100 | 108 | R&C | EPDM | 25 | |
| | 100 | 114.3 | R&C | EPDM | 25 | |
| | 125 | 133 | R&C | EPDM | 25 | |
| | 125 | 139.7 | R&C | EPDM | 25 | |
| | 125 | 141.3 | R&C | EPDM | 25 | |
| | 150 | 159 | R&C | EPDM | 25 | |
| | 150 | 165.1 | R&C | EPDM | 25 | |
| 150 | 168.3 | R&C | EPDM | 25 | | |
| 200 | 219.1 | R&C | EPDM | 25 | | |
| Reducing Flexible Coupling Fig 1N | 50 x 32 | 60.3x42.4 | R&C | EPDM | 16 | 988a/03 |
| | 50 x 40 | 60.3x48.3 | R&C | EPDM | 15 | |
| | 65 x 50 | 73x0x60.3 | R&C | EPDM | 16 | |
| | 65 x 40 | 76.1x48.3 | R&C | EPDM | 16 | |
| | 65 x 50 | 76.1x60.3 | R&C | EPDM | 16 | |
| | 80 x 50 | 88.9x60.3 | R&C | EPDM | 16 | |
| | 80 x 60 | 88.9 x 73 | R&C | EPDM | 16 | |

PART 3: SECTION 8.1**PIPE COUPLINGS AND FITTINGS**

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-----------------------------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| | 80 x 65 | 88.9 x 76.1 | R&C | EPDM | 16 | |
| | 100 x 50 | 114.3 x 60.3 | R&C | EPDM | 16 | |
| | 100 x 60 | 114.3 x 73.0 | R&C | EPDM | 16 | |
| | 100 x 65 | 114.3 x 76.1 | R&C | EPDM | 16 | |
| | 100 x 80 | 114.3 x 88.9 | R&C | EPDM | 16 | |
| | 150 x 100 | 165.1 x 114.3 | R&C | EPDM | 16 | |
| | 150 x 100 | 168.3 x 114.3 | R&C | EPDM | 16 | |
| | 200 x 150 | 219.1 x 165.1 | R&C | EPDM | 16 | |
| | 200 x 150 | 219.1 x 168.3 | R&C | EPDM | 16 | |
| Light Duty Rigid Coupling Fig 1GS | 65 | 76.1 | R&C | EPDM | 16 | 988a/04 |
| | 80 | 88.9 | R&C | EPDM | 16 | |
| | 100 | 108 | R&C | EPDM | 16 | |
| | 100 | 114.3 | R&C | EPDM | 16 | |
| | 125 | 139.7 | R&C | EPDM | 16 | |
| | 125 | 141.3 | R&C | EPDM | 16 | |
| | 150 | 159 | R&C | EPDM | 16 | |
| | 150 | 165.1 | R&C | EPDM | 16 | |
| | 150 | 168.3 | R&C | EPDM | 16 | |
| | 200 | 219.1 | R&C | EPDM | 16 | |
| Threaded Mechanical Tee Fig 3J | 100 x 65 | 114.3 x 76.1 | T | EPDM | 16 | 988a/05 |
| | 100 x 80 | 114.3 x 88.9 | T | EPDM | 16 | |
| | 125 x 65 | 139.7 x 76.1 | T | EPDM | 16 | |
| | 125 x 80 | 139.7 x 88.9 | T | EPDM | 16 | |
| | 125 x 100 | 139.7 x 114.3 | T | EPDM | 16 | |
| | 150 x 65 | 165.1 x 76.1 | T | EPDM | 16 | |
| | 150 x 80 | 165.1 x 88.9 | T | EPDM | 16 | |
| | 150 x 100 | 165.1 x 114.3 | T | EPDM | 16 | |
| | 150 x 65 | 168.3 x 76.1 | T | EPDM | 16 | |
| | 150 x 80 | 168.3 x 88.9 | T | EPDM | 16 | |
| | 150 x 100 | 168.3 x 114.3 | T | EPDM | 16 | |
| | 200 x 65 | 219.1 x 76.1 | T | EPDM | 16 | |
| | 200 x 80 | 219.1 x 88.9 | T | EPDM | 16 | |
| | 200 x 100 | 219.1 x 114.3 | T | EPDM | 16 | |
| Grooved Mechanical Tee Fig 3G | 100 x 65 | 114.3 x 76.1 | G | EPDM | 16 | 988a/06 |
| | 100 x 80 | 114.3 x 88.9 | G | EPDM | 16 | |
| | 125 x 65 | 139.7 x 76.1 | G | EPDM | 16 | |
| | 125 x 80 | 139.7 x 88.9 | G | EPDM | 16 | |
| | 125 x 100 | 139.7 x 114.3 | G | EPDM | 16 | |
| | 150 x 65 | 165.1 x 76.1 | G | EPDM | 16 | |
| | 150 x 80 | 165.1 x 88.9 | G | EPDM | 16 | |
| | 150 x 100 | 165.1 x 114.3 | G | EPDM | 16 | |
| | 150 x 65 | 168.3 x 76.1 | G | EPDM | 16 | |
| | 150 x 80 | 168.3 x 88.9 | G | EPDM | 16 | |
| | 150 x 100 | 168.3 x 114.3 | G | EPDM | 16 | |
| | 200 x 65 | 219.1 x 76.1 | G | EPDM | 16 | |
| | 200 x 80 | 219.1 x 88.9 | G | EPDM | 16 | |
| | 200 x 100 | 219.1 x 114.3 | G | EPDM | 16 | |
| Grooved Flange Fig 321 | 40 | 48.3 | R&C | EPDM | 16 | 988a/08 |
| | 50 | 60.3 | R&C | EPDM | 16 | |
| | 65 | 76.1 | R&C | EPDM | 16 | |
| | 80 | 88.9 | R&C | EPDM | 16 | |
| | 100 | 114.3 | R&C | EPDM | 16 | |
| | 125 | 139.7 | R&C | EPDM | 16 | |
| | 150 | 165.1 | R&C | EPDM | 16 | |
| | 150 | 168.3 | R&C | EPDM | 16 | |
| | 200 | 219.1 | R&C | EPDM | 16 | |

Certificate No: 988a to LPS 1219 issue 3

Pipe Fittings

| Product Name | Pipe Outside Diameter (mm) | Max Working Pressure (bar) | LPCB Ref. No. |
|-------------------------------|---|----------------------------|---------------|
| 90° Elbow Fig 90 | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988a/09 |
| Short Style 90° Elbow Fig 90S | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 16 | 988a/10 |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Pipe Outside Diameter (mm) | Max Working Pressure (bar) | LPCB Ref. No. |
|--------------------------------------|---|----------------------------|---------------|
| Tee Fig 130 | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988a/11 |
| Short Style Tee Fig 130S | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 16 | 988a/12 |
| 45° Elbow Fig 120 | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988a/13 |
| Cap Fig 300 | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1, 273.0, 323.9 | 25 | 988a/14 |
| Cross Fig 180 | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988a/15 |
| 22.5° Elbow Fig 110 | 76.1, 88.9, 114.3, 139.7, 165.1, 219.1 | 25 | 988a/16 |
| 11.25° Elbow Fig 105 | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 219.1 | 25 | 988a/17 |
| Adaptor Flange Fig 321G | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 16 | 988a/18 |
| Concentric Reducer Grooved Fig 240 | 42.4 x 33.7, 48.3 x 33.7, 48.3 x 42.4, 60.3 x 33.7, 60.3 x 42.4, 60.3 x 48.3, 76.1 x 48.3, 76.1 x 60.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 48.3, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 139.7 x 114.3, 165.1 x 88.9, 165.1 x 114.3, 165.1 x 139.7, 168.3 x 114.3, 168.3 x 139.7, 219.1 x 88.9, 219.1 x 114.3, 219.1 x 139.7, 219.1 x 168.3 | 25 | 988a/19 |
| Concentric Reducer Threaded Fig 240N | 60.3 x 26.9, 60.3 x 33.7, 60.3 x 42.4, 60.3 x 48.3, 76.1 x 48.3, 76.1 x 60.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 48.3, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 139.7 x 114.3, 165.1 x 88.9, 219.1 x 88.9 | 25 | 988a/20 |
| Reducing Tee Fig 130R | 60.3 x 33.7, 60.3 x 48.3, 76.1 x 48.3, 76.1 x 60.3, 88.9 x 33.7, 88.9 x 48.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 33.7, 114.3 x 48.3, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 139.7 x 114.3, 165.1 x 88.9, 165.1 x 114.3, 165.1 x 139.7, 168.3 x 60.3, 168.3 x 76.1, 168.3 x 88.9, 168.3 x 114.3, 168.3 x 139.7, 219.1 x 60.3, 219.1 x 88.9, 219.1 x 114.3, 219.1 x 168.3 | 25 | 988a/21 |

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Certificate No: 1118b

Pipe Couplings

| Product Name | Nominal size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Type 900 | 25 | 33.7 | R&C | EPDM | 20 | 1118b/01 |
| | 32 | 42.4 | R&C | EPDM | 21 | |
| | 40 | 48.3 | R&C | EPDM | 21 | |
| | 50 | 60.3 | R&C | EPDM | 21 | |
| | 65 | 73.0 | R&C | EPDM | 21 | |
| | 65 | 76.1 | R&C | EPDM | 21 | |
| | 80 | 88.9 | R&C | EPDM | 21 | |
| | 100 | 114.3 | R&C | EPDM | 21 | |
| | 125 | 139.7 | R&C | EPDM | 21 | |
| | 150 | 165.1 | R&C | EPDM | 21 | |
| | 150 | 168.3 | R&C | EPDM | 21 | |
| | 200 | 219.1 | R&C | EPDM | 21 | |
| | 250 | 273.0 | R&C | EPDM | 20 | |
| | 300 | 323.9 | R&C | EPDM | 20 | |
| Type 901 | 32 | 42.4 | R&C | EPDM | 20 | 1118b/07 |
| | 40 | 48.3 | R&C | EPDM | 20 | |
| | 50 | 60.3 | R&C | EPDM | 20 | |
| | 65 | 76.1 | R&C | EPDM | 20 | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| | 80 | 88.9 | R&C | EPDM | 20 | |
| | 100 | 114.3 | R&C | EPDM | 20 | |
| | 125 | 139.7 | R&C | EPDM | 20 | |
| | 150 | 165.1 | R&C | EPDM | 20 | |
| | 150 | 168.3 | R&C | EPDM | 20 | |
| | 200 | 219.1 | R&C | EPDM | 20 | |

Certificate No: 1118b

Pipe Fittings

| Product Name | Model No. | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|------------------------|-----------|--|--------------------------------|---------------|
| 90° elbow | 910 | 33.7, 42.4, 48.3, 273.0 | 20 | 1118b/02 |
| Short Radius 90° elbow | 910S | 60.3, 73.0, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 1118b/08 |
| Long Radius 90° elbow | 910LR | 114.3 | 20 | 1118b/09 |
| 45° elbow | 920 | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1, 273.0 | 20 | 1118b/03 |
| tee | 930 | 33.7, 42.4, 48.3, 273.0 | 20 | 1118b/04 |
| Short Radius tee | 930S | 60.3, 73.0, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 1118b/10 |
| Pitcher-tee cap | 935 | 114.3 x 114.3 x 88.9 G2.1/2 thread | 20 | 1118b/11 |
| | 940 | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1, 273.0 | 20 | 1118b/05 |
| | 941 | 60.3, 73.0, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1, 273.0 | 20 | 1118b/06 |

Notes:

All above products to be installed in accordance with Minimax Installation Instructions MX-INS900_EN, REV E or equivalent German version MX-INS900_DE, REV F.

Shurjoint fittings, (LPCB Ref. No. 448a), may be used with Minimax couplings up to DN250. Minimax fittings may be used with Shurjoint couplings, but for sizes DN200 and above only Shurjoint rigid couplings may be used.

In all cases the bolt tightening torque specified by the manufacturer for the coupling type fitted in any assembly must be used.

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Certificate No: 123a and 123b

Pipe Couplings (QUIKCOUP)

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| Style 75 | 150 | 168.3 | R&C | EPDM | 20 | 10 123a/01 |
| | 32 | 42.2 | R&C | EPDM | 20 | |
| | 40 | 48.3 | R&C | EPDM | 20 | |
| | 50 | 60.3 | R&C | EPDM | 20 | |
| | 65 | 76.1 | R&C | EPDM | 20 | |
| | 80 | 88.9 | R&C | EPDM | 20 | |
| | 100 | 114.3 | R&C | EPDM | 20 | |
| | 125 | 139.7 | R&C | EPDM | 20 | |
| | 125 | 141.3 | R&C | EPDM | 20 | |
| | 150 | 165.1 | R&C | EPDM | 20 | |
| Style 07 | 200 | 219.1 | R&C | EPDM | 20 | 123a/02 |
| | 50 | 60.3 | R&C | EPDM | 20 | |
| | 80 | 88.9 | R&C | EPDM | 20 | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. | |
|---------------------|-------------------|----------------------------|--------------|-------------|--------------------------------|---------------|----|
| Style 007 Quikhinge | 100 | 114.3 | R&C | EPDM | 20 | 123a/03 | |
| | 125 | 141.3 | R&C | EPDM | 20 | | |
| | 150 | 168.3 | R&C | EPDM | 20 | | |
| | 200 | 219.1 | R&C | EPDM | 20 | | |
| | 32 | 42.4 | R&C | EPDM | 12 | | |
| | 40 | 48.3 | R&C | EPDM | 12 | | |
| | 50 | 60.3 | R&C | EPDM | 12 | | |
| | 65 | 76.1 | R&C | EPDM | 12 | | |
| | 80 | 88.9 | R&C | EPDM | 12 | | |
| | 100 | 114.3 | R&C | EPDM | 12 | | |
| | 125 | 139.7 | R&C | EPDM | 12 | | |
| | 150 | 165.1 | R&C | EPDM | 12 | | |
| | 150 | 168.3 | R&C | EPDM | 12 | | |
| | Style 08 Quik-T | 50 | 60.3 | T(½ in BSP) | EPDM | | 20 |
| 50 | | 60.3 | T(¾ in BSP) | EPDM | 20 | | |
| 50 | | 60.3 | T(1 in BSP) | EPDM | 20 | | |
| 50 | | 60.3 | T(1¼ in BSP) | EPDM | 20 | | |
| 50 | | 60.3 | T(1½ in BSP) | EPDM | 20 | | |
| 65 | | 76.1 | T(½ in BSP) | EPDM | 20 | | |
| 65 | | 76.1 | T(¾ in BSP) | EPDM | 20 | | |
| 65 | | 76.1 | T(1 in BSP) | EPDM | 20 | | |
| 65 | | 76.1 | T(1¼ in BSP) | EPDM | 20 | | |
| 65 | | 76.1 | T(1½ in BSP) | EPDM | 20 | | |
| 80 | | 88.9 | T(½ in BSP) | EPDM | 20 | | |
| 80 | | 88.9 | T(¾ in BSP) | EPDM | 20 | | |
| 80 | | 88.9 | T(1 in BSP) | EPDM | 20 | | |
| 80 | | 88.9 | T(1¼ in BSP) | EPDM | 20 | | |
| 80 | | 88.9 | T(1½ in BSP) | EPDM | 20 | | |
| 80 | | 88.9 | T(2 in BSP) | EPDM | 20 | | |
| 100 | | 114.3 | T(½ in BSP) | EPDM | 20 | | |
| 100 | | 114.3 | T(¾ in BSP) | EPDM | 20 | | |
| 100 | | 114.3 | T(1 in BSP) | EPDM | 20 | | |
| 100 | | 114.3 | T(1¼ in BSP) | EPDM | 20 | | |
| 100 | | 114.3 | T(1½ in BSP) | EPDM | 20 | | |
| 100 | | 114.3 | T(2 in BSP) | EPDM | 20 | | |
| 150 | | 165.1 | T(1¼ in BSP) | EPDM | 20 | | |
| 150 | | 165.1 | T(1½ in BSP) | EPDM | 20 | | |
| 150 | | 165.1 | T(2 in BSP) | EPDM | 20 | | |
| 150 | | 168.3 | T(1¼ in BSP) | EPDM | 20 | | |
| 150 | | 168.3 | T(1½ in BSP) | EPDM | 20 | | |
| 150 | | 168.3 | T(2 in BSP) | EPDM | 20 | | |
| 150 | | 168.3 | T(4 in BSP) | EPDM | 20 | | |
| 125 x 32 | | 139.7 x 42.4 | T | EPDM | 20 | 123a/05 | |
| 150 x 65 | | 165.1 x 76.1 | T | EPDM | 20 | | |
| 50 x 40 | | 60.3 x 48.3 | G | EPDM | 20 | 123a/06 | |
| 65 x 40 | 76.1 x 48.3 | G | EPDM | 20 | | | |
| 80 x 32 | 88.9 x 42.4 | G | EPDM | 20 | | | |
| 80 x 40 | 88.9 x 48.3 | G | EPDM | 20 | | | |
| 80 x 50 | 88.9 x 60.3 | G | EPDM | 20 | | | |
| 100 x 32 | 114.3 x 42.4 | G | EPDM | 20 | | | |
| 100 x 40 | 114.3 x 48.3 | G | EPDM | 20 | | | |
| 100 x 50 | 114.3 x 60.3 | G | EPDM | 20 | | | |
| 100 x 65 | 114.3 x 76.1 | G | EPDM | 20 | | | |
| 125 x 65 | 139.7 x 76.1 | G | EPDM | 20 | | | |
| 150 x 40 | 165.1 x 48.3 | G | EPDM | 20 | | | |
| 150 x 50 | 165.1 x 60.3 | G | EPDM | 20 | | | |
| 150 x 40 | 168.3 x 48.3 | G | EPDM | 20 | | | |
| 150 x 50 | 168.3 x 60.3 | G | EPDM | 20 | | | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. | | |
|--------------------------------------|---------------------------------|----------------------------|-------------|-------------|--------------------------------|---------------|----|---------|
| Style 007R Quikhinge | 150 x 65 | 168.3 x 76.1 | G | EPDM | 20 | 123a/07 | | |
| | 150 x 100 | 168.3 x 114.3 | G | EPDM | 20 | | | |
| | 32 | 42.2 | R&C | EPDM | 12 | | | |
| | 40 | 48.3 | R&C | EPDM | 12 | | | |
| | 50 | 60.3 | R&C | EPDM | 12 | | | |
| | 65 | 76.1 | R&C | EPDM | 12 | | | |
| | 80 | 88.9 | R&C | EPDM | 12 | | | |
| | 100 | 114.3 | R&C | EPDM | 12 | | | |
| | 125 | 139.7 | R&C | EPDM | 12 | | | |
| | 150 | 165.1 | R&C | EPDM | 12 | | | |
| Style 99 Quiklet | 150 | 168.3 | R&C | EPDM | 12 | 123a/14 | | |
| | 32 x 15 | 42.2 | T | EPDM | 12 | | | |
| | 32 x 20 | 42.2 | T | EPDM | 12 | | | |
| | 32 x 25 | 42.2 | T | EPDM | 12 | | | |
| | 40 x 15 | 48.3 | T | EPDM | 12 | | | |
| | 40 x 20 | 48.3 | T | EPDM | 12 | | | |
| | 40 x 25 | 48.3 | T | EPDM | 12 | | | |
| | 50 x 15 | 60.3 | T | EPDM | 12 | | | |
| | 50 x 20 | 60.3 | T | EPDM | 12 | | | |
| | 50 x 25 | 60.3 | T | EPDM | 12 | | | |
| Style 75RT Rigid Coupling | 40 | 48.3 | R&C | EPDM | 16 | 123a/15 | | |
| | 50 | 60.3 | R&C | EPDM | 16 | | | |
| | 65 | 76.1 | R&C | EPDM | 16 | | | |
| | 80 | 88.9 | R&C | EPDM | 16 | | | |
| | 100 | 114.3 | R&C | EPDM | 16 | | | |
| | 125 | 139.7 | R&C | EPDM | 16 | | | |
| | 150 | 165.1 | R&C | EPDM | 16 | | | |
| | 150 | 168.3 | R&C | EPDM | 16 | | | |
| | 200 | 219.1 | R&C | EPDM | 16 | | | |
| | 40 | 48.3 | R&C | EPDM | 16 | | | |
| Style 007RT Quikhinge Rigid Coupling | 50 | 60.3 | R&C | EPDM | 16 | 123a/16 | | |
| | 65 | 76.1 | R&C | EPDM | 16 | | | |
| | 80 | 88.9 | R&C | EPDM | 16 | | | |
| | 100 | 114.3 | R&C | EPDM | 16 | | | |
| | 125 | 39.7 | R&C | EPDM | 16 | | | |
| | 150 | 165.1 | R&C | EPDM | 16 | | | |
| | 150 | 168.3 | R&C | EPDM | 16 | | | |
| | Style 08M Quik-T Mechanical Tee | 50 x 15 | 60.3 x 21.3 | T | EPDM | | 20 | 123b/25 |
| | | 50 x 20 | 60.3 x 26.9 | T | EDPM | | 20 | |
| | | 50 x 25 | 60.3 x 33.7 | T | EPDM | | 20 | |
| 50 x 32 | | 60.3 x 42.2 | T | EPDM | 20 | | | |
| 50 x 40 | | 60.3 x 48.3 | T | EPDM | 20 | | | |
| 65 x 15 | | 76.1 x 21.3 | T | EPDM | 20 | | | |
| 65 x 20 | | 76.1 x 26.9 | T | EPDM | 20 | | | |
| 65 x 25 | | 76.1 x 33.7 | T | EPDM | 20 | | | |
| 65 x 32 | | 76.1 x 42.2 | T | EPDM | 20 | | | |
| 65 x 40 | | 76.1 x 48.3 | T | EPDM | 20 | | | |
| 80 x 15 | | 88.9 x 21.3 | T | EPDM | 20 | | | |
| 80 x 20 | | 88.9 x 26.7 | T | EPDM | 20 | | | |
| 80 x 25 | | 88.9 x 33.7 | T | EPDM | 20 | | | |
| 80 x 32 | | 88.9 x 42.4 | T | EPDM | 20 | | | |
| 80 X 40 | | 88.9 X 48.3 | T | EPDM | 20 | | | |
| 80 x 50 | | 88.9 x 60.3 | T | EPDM | 20 | | | |
| 100 x 15 | | 114.3 x 21.3 | T | EPDM | 20 | | | |
| 100 x 20 | | 114.3 x 26.7 | T | EPDM | 20 | | | |
| 100 X 25 | | 114.3 X 33.7 | T | EPDM | 20 | | | |
| 100 x 32 | | 114.3 x 42.4 | T | EPDM | 20 | | | |
| 100 x 40 | | 114.3 x 48.3 | T | EPDM | 20 | | | |
| 100 x 50 | | 114.3 x 60.3 | T | EPDM | 20 | | | |
| 100 x 65 | | 114.3 x 76.1 | T | EPDM | 20 | | | |
| 100 x 80 | | 114.3 x 88.9 | T | EPDM | 20 | | | |
| 125 x 15 | | 139.7 x 21.3 | T | EPDM | 20 | | | |
| 125 x 20 | | 139.7 x 26.9 | T | EPDM | 20 | | | |
| 125 x 25 | | 139.7 x 33.7 | T | EPDM | 20 | | | |
| 125 x 32 | | 139.7 x 42.2 | T | EPDM | 20 | | | |
| 125 x 40 | | 139.7 x 48.3 | T | EPDM | 20 | | | |
| 125 x 50 | | 139.7 x 60.3 | T | EPDM | 20 | | | |
| 125 x 65 | 139.7 x 76.1 | T | EPDM | 20 | | | | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| | 125 x 80 | 139.7 x 88.9 | T | EPDM | 20 | |
| | 125 x 100 | 139.7 x 114.3 | T | EPDM | 20 | |
| | 150 x 15 | 165.1 x 21.3 | T | EPDM | 20 | |
| | 150 x 20 | 165.1 x 26.9 | T | EPDM | 20 | |
| | 150 x 25 | 165.1 x 33.7 | T | EPDM | 20 | |
| | 150 x 32 | 165.1 x 42.2 | T | EPDM | 20 | |
| | 150 x 40 | 165.1 x 48.3 | T | EPDM | 20 | |
| | 150 x 50 | 165.1 x 60.3 | T | EPDM | 20 | |
| | 150 x 65 | 165.1 x 76.1 | T | EPDM | 20 | |
| | 150 x 80 | 165.1 x 88.9 | T | EPDM | 20 | |
| | 150 x 100 | 165.1 x 114.3 | T | EPDM | 20 | |
| | 150 x 32 | 168.3 x 42.2 | T | EPDM | 20 | |
| | 150 x 40 | 168.3 x 48.3 | T | EPDM | 20 | |
| | 150 x 50 | 168.3 x 60.3 | T | EPDM | 20 | |
| | 150 x 65 | 168.3 x 76.1 | T | EPDM | 20 | |
| | 150 x 80 | 168.3 x 88.9 | T | EPDM | 20 | |
| | 150 x 100 | 168.3 x 114.3 | T | EPDM | 20 | |
| | 200 x 25 | 219.1 x 33.7 | T | EPDM | 20 | |
| | 200 x 32 | 219.1 x 42.2 | T | EPDM | 20 | |
| | 200 x 40 | 219.1 x 48.3 | T | EPDM | 20 | |
| | 200 x 50 | 219.1 x 60.3 | T | EPDM | 20 | |
| | 200 x 65 | 219.1 x 76.1 | T | EPDM | 20 | |
| | 200 x 80 | 219.1 x 88.9 | T | EPDM | 20 | |
| | 200 x 100 | 219.1 x 114.3 | T | EPDM | 20 | |
| | 50 x 32 | 60.3 x 42.2 | G | EPDM | 20 | 123b/26 |
| | 50 x 40 | 60.3 x 48.3 | G | EPDM | 20 | |
| | 65 x 25 | 76.1 x 33.7 | G | EPDM | 20 | |
| | 65 x 32 | 76.1 x 42.2 | G | EPDM | 20 | |
| | 65 x 40 | 76.1 x 48.3 | G | EPDM | 20 | |
| | 80 x 25 | 88.9 x 33.7 | G | EPDM | 20 | |
| | 80 x 32 | 88.9 x 42.4 | G | EPDM | 20 | |
| | 80 x 40 | 88.9 x 48.3 | G | EPDM | 20 | |
| | 80 x 50 | 88.9 x 60.3 | G | EPDM | 20 | |
| | 100 x 25 | 114.3 x 33.7 | G | EPDM | 20 | |
| | 100 x 32 | 114.3 x 42.4 | G | EPDM | 20 | |
| | 100 x 40 | 114.3 x 48.3 | G | EPDM | 20 | |
| | 100 x 50 | 114.3 x 60.3 | G | EPDM | 20 | |
| | 100 x 65 | 114.3 x 76.1 | G | EPDM | 20 | |
| | 100 x 80 | 114.3 x 88.9 | G | EPDM | 20 | |
| | 125 x 50 | 139.7 x 60.3 | G | EPDM | 20 | |
| | 125 x 65 | 139.7 x 76.1 | G | EPDM | 20 | |
| | 125 x 80 | 139.7 x 88.9 | G | EPDM | 20 | |
| | 125 x 100 | 139.7 x 114.3 | G | EPDM | 20 | |
| | 150 x 50 | 165.1 x 60.3 | G | EPDM | 20 | |
| | 150 x 65 | 165.1 x 76.1 | G | EPDM | 20 | |
| | 150 x 80 | 165.1 x 88.9 | G | EPDM | 20 | |
| | 150 x 100 | 165.1 x 114.3 | G | EPDM | 20 | |
| | 150 x 50 | 168.3 x 60.3 | G | EPDM | 20 | |
| | 150 x 65 | 168.3 x 76.1 | G | EPDM | 20 | |
| | 150 x 80 | 168.3 x 88.9 | G | EPDM | 20 | |
| | 150 x 100 | 168.3 x 114.3 | G | EPDM | 20 | |
| | 200 x 65 | 219.1 x 76.1 | G | EPDM | 20 | |
| | 200 x 80 | 219.1 x 88.9 | G | EPDM | 20 | |
| | 200 x 100 | 219.1 x 114.3 | G | EPDM | 20 | |

Certificate No: 123a and 123b

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

Fittings

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|------------------------------------|---|--------------------------------|---------------|
| Style 06 90° Elbow | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 141.3, 165.1, 168.3, 219.1 | 20 | 123a/08 |
| Style 04 45° Elbow | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123a/09 |
| Style 05 Grooved Tee | 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123a/10 |
| Style 06 90° Elbow | 139.7 | 12 | 123a/11 |
| Style 02/020 Blank Ends | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123a/12 |
| Style 02 Blank End | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3 | 20 | 123a/13 |
| Style 64M 45° Elbow | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123b/17 |
| Style 65M Tee - Short Radius | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123b/18 |
| Style 66M 90° Elbow - Short Radius | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123b/19 |
| Style 02M End Cap | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123b/20 |
| Style 04M 45° Elbow | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123b/21 |
| Style 05M Tee | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123b/22 |
| Style 06M 90° Elbow | 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 20 | 123b/23 |

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Certificate No: 060c to LPS1219

Live Tap Mechanical Tees

| Product Name | Nominal Size (m) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--|------------------|-----------|-------------|--------------------------------|---------------|
| Model LT-KD-002 (Kwik-Drain) (Note 2) | 50 x 25.4 | T | EPDM | 12 | 060c/01 |
| Model LT-KD-002 (Kwik Drain) (Note 2) | 65 x 25.4 | T | EPDM | 12 | |
| | 80 x 25.4 | T | EPDM | 12 | |
| | 100 x 25.4 | T | EPDM | 12 | |
| | 150 x 25.4 | T | EPDM | 12 | |
| Model LT-KD-50-002 (Kwik-Drain 50mm outlet) (Note 2) | 80 x 50.8 | T | EPDM | 12 | 060c/02 |
| | 100 x 50.8 | T | EPDM | 12 | |
| | 150 x 50.8 | T | EPDM | 12 | |
| Model LT-KD-SA-001 (Kwik-Drain S.A.) (Note 2) | 50 x 25.4 | T | EPDM | 12 | 060c/03 |
| | 65 x 25.4 | T | EPDM | 12 | |
| | 80 x 25.4 | T | EPDM | 12 | |
| | 100 x 25.4 | T | EPDM | 12 | |
| | 150 x 25.4 | T | EPDM | 12 | |
| Model LT-NDT(50)-002 (No-Drain-T) (Note 3 & 4) | 50 x 32 | T | EPDM | 12 | 060c/02 |
| | 65 x 40 | T | EPDM | 12 | |
| Model LT-NDT (50)-002 (No Drain-T) (Note 3 & 4) | 80 x 50.8 | T | EPDM | 12 | 060c/03 |
| | 100 x 50.8 | T | EPDM | 12 | |
| | 150 x 50.8 | T | EPDM | 12 | |
| Model LT-KC(15-32)-002 (Kwik-Clamp) (Note 2) | 32 x 15 | T | EPDM | 12 | 060c/03 |
| Model LT-KC(15-40)-002 (Kwik-Clamp) (Note 2) | 40 x 15 | T | EPDM | 12 | |
| Model LT-KC(15-50)-002 (Kwik-Clamp) (Note 2) | 50 x 15 | T | EPDM | 12 | 060c/06 |
| Model LT-KV-SA-001 (Kwik-Vent S.A.) (Note 2) | 32 x 15 | T | EPDM | 12 | |
| | 40 x 15 | T | EPDM | 12 | |
| | 50 x 15 | T | EPDM | 12 | 060d/01 |
| Model LT-C-100-80 (No-Drain-T) (Notes 1, 3 & 4) | 100 x 80 | G | EPDM | 12 | |

Notes:

- 1) LPCB approval is limited to pipe fittings (mechanical tees) to LPS1219. LPCB approval excludes all ancillary equipment for use with LiveTap products.

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

- 2) Sprinkler heads must not be connected to these outlets.
- 3) These outlets are suitable for sprinkler head connections.
- 4) This fitting must only be installed in the orientation specified by the manufacturer in document WIUPD035 and not in a way that could cause fitting rotation around the branch pipe in the event of a hanger failure on the outlet pipe.

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Certificate No: 448a to LPS 1219

Pipe Couplings (SHURJOINT)

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. | |
|-----------------------------|----------------------------|----------------------------|-------------|-------------|--------------------------------|---------------|--------------------|
| Fig. 7705 | 50 | 60.3 | R&C | EPDM | 20 | 448a/01 | |
| | 65 | 76.1 | R&C | EPDM | 20 | | |
| | 80 | 88.9 | R&C | EPDM | 20 | | |
| | 100 | 114.3 | R&C | EPDM | 20 | | |
| | 125 | 139.7 | R&C | EPDM | 20 | | |
| | 150 | 165.1 | R&C | EPDM | 20 | | |
| | 200 | 219.1 | R&C | EPDM | 20 | | |
| Fig. K-9 Dogtooth | 32 | 42.4 | R&C | EPDM | 15 | 448a/02 | |
| | 40 | 48.3 | R&C | EPDM | 15 | | |
| | 50 | 60.3 | R&C | EPDM | 12 | | |
| | 65 | 76.1 | R&C | EPDM | 12 | | |
| | 80 | 88.9 | R&C | EPDM | 12 | | |
| | 100 | 114.3 | R&C | EPDM | 12 | | |
| | 125 | 139.7 | R&C | EPDM | 15 | | |
| | 150 | 165.1 | R&C | EPDM | 12 | | |
| | 200 | 219.1 | R&C | EPDM | 15 | | |
| | 200 | 219.1 | R&C | EPDM | 20 | | 448a/16 448a/03 |
| | Rigid Coupling Model K-9H | 50 x 40 | 60.3 x 48.3 | R&C | EPDM | | |
| Reducing Coupling Fig. 7706 | 65 x 50 | 76.1 x 60.3 | R&C | EPDM | 20 | | |
| | 80 x 50 | 88.9 x 60.3 | R&C | EPDM | 20 | | |
| | 80 x 65 | 88.9 x 76.1 | R&C | EPDM | 20 | | |
| | 100 x 50 | 114.3 x 60.3 | R&C | EPDM | 20 | | |
| | 100 x 65 | 114.3 x 76.1 | R&C | EPDM | 20 | | |
| | 100 x 80 | 114.3 x 88.9 | R&C | EPDM | 20 | | |
| | 150 x 100 | 165.1 x 114.3 | R&C | EPDM | 20 | | |
| | 200 x 150 | 219.1 x 165.1 | R&C | EPDM | 16 | | |
| | Mechanical Tees Model 7721 | 65 x 32 | 76.1 x 42.4 | T | EPDM | 20 | 448a/04 |
| | | 65 x 40 | 76.1 x 48.3 | T | EPDM | 20 | |
| 80 x 32 | | 88.9 x 42.4 | T | EPDM | 20 | | |
| 80 x 40 | | 88.9 x 48.3 | T | EPDM | 20 | | |
| 80 x 50 | | 88.9 x 60.3 | T | EPDM | 20 | | |
| 100 x 32 | | 114.3 x 42.4 | T | EPDM | 20 | | |
| 100 x 40 | | 114.3 x 48.3 | T | EPDM | 20 | | |
| 100 x 50 | | 114.3 x 60.3 | T | EPDM | 20 | | |
| 100 x 65 | | 114.3 x 76.1 | T | EPDM | 20 | | |
| 100 x 80 | | 114.3 x 88.9 | T | EPDM | 20 | | |
| 150 x 32 | | 165.1 x 42.4 | T | EPDM | 20 | | |
| 150 x 40 | | 165.1 x 48.3 | T | EPDM | 20 | | |
| 150 x 50 | | 165.1 x 60.3 | T | EPDM | 20 | | |
| 150 x 65 | | 165.1 x 76.1 | T | EPDM | 20 | | |
| 150 x 80 | | 165.1 x 88.9 | T | EPDM | 20 | | |
| 150 x 100 | | 165.1 x 114.3 | T | EPDM | 20 | | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. | | |
|------------------------------------|------------------------------------|----------------------------|-----------|-------------|--------------------------------|---------------|----|---------|
| Fig. 7722 | 80 x 40 | 88.9 x 48.3 | G | EPDM | 20 | 448a/05 | | |
| | 80 x 50 | 88.9 x 60.3 | G | EPDM | 20 | | | |
| | 100 x 40 | 114.3 x 48.3 | G | EPDM | 20 | | | |
| | 100 x 50 | 114.3 x 60.3 | G | EPDM | 20 | | | |
| | 100 x 65 | 114.3 x 76.1 | G | EPDM | 20 | | | |
| | 100 x 80 | 114.3 x 88.9 | G | EPDM | 20 | | | |
| | 150 x 40 | 165.1 x 48.3 | G | EPDM | 20 | | | |
| | 150 x 50 | 165.1 x 60.3 | G | EPDM | 20 | | | |
| | 150 x 65 | 165.1 x 76.1 | G | EPDM | 20 | | | |
| | 150 x 80 | 165.1 x 88.9 | G | EPDM | 20 | | | |
| | 150 x 100 | 165.1 x 114.3 | G | EPDM | 20 | | | |
| Fig. 723 | 32 x 15 | 42.2 x 21.3 | T | EPDM | 12 | 448a/06 | | |
| | 32 x 20 | 42.2 x 26.7 | T | EPDM | 12 | | | |
| | 32 x 25 | 42.2 x 33.7 | T | EPDM | 12 | | | |
| | 40 x 15 | 48.3 x 21.3 | T | EPDM | 12 | | | |
| | 40 x 20 | 48.3 x 26.7 | T | EPDM | 12 | | | |
| | 40 x 25 | 48.3 x 33.7 | T | EPDM | 12 | | | |
| | 50 x 15 | 60.3 x 21.3 | T | EPDM | 12 | | | |
| | 50 x 20 | 60.3 x 26.7 | T | EPDM | 12 | | | |
| | 50 x 25 | 60.3 x 33.7 | T | EPDM | 12 | | | |
| | 65 x 15 | 76.1 x 21.3 | T | EPDM | 12 | | | |
| | 65 x 20 | 76.1 x 26.7 | T | EPDM | 12 | | | |
| | 65 x 25 | 76.1 x 33.7 | T | EPDM | 12 | | | |
| | Transition Flange Model 7041 | 50 | 60.3 | R&C | EPDM | | 16 | 448a/15 |
| | | 65 | 76.1 | R&C | EPDM | | 16 | |
| 80 | | 88.9 | R&C | EPDM | 16 | | | |
| 100 | | 114.3 | R&C | EPDM | 16 | | | |
| 150 | | 165.1 | R&C | EPDM | 16 | | | |
| 200 | | 219.1 | R&C | EPDM | 16 | | | |
| Angle Pad Rigid Coupling Model Z05 | 32 | 42.4 | R&C | EPDM | 12 | 448a/16 | | |
| | 40 | 48.3 | R&C | EPDM | 12 | | | |
| | 50 | 60.3 | R&C | EPDM | 12 | | | |
| | 65 | 76.1 | R&C | EPDM | 12 | | | |
| | 80 | 88.9 | R&C | EPDM | 12 | | | |
| | 100 | 114.3 | R&C | EPDM | 12 | | | |
| | 125 | 139.7 | R&C | EPDM | 12 | | | |
| | 150 | 165.1 | R&C | EPDM | 12 | | | |
| | 200 | 219.1 | R&C | EPDM | 12 | | | |
| | Angle Pad Rigid Coupling Model Z07 | 32 | 42.4 | R&C | EPDM | | 20 | 448a/17 |
| | | 40 | 48.3 | R&C | EPDM | | 20 | |
| 50 | | 60.3 | R&C | EPDM | 20 | | | |
| 65 | | 76.1 | R&C | EPDM | 20 | | | |
| 80 | | 88.9 | R&C | EPDM | 20 | | | |
| 100 | | 114.3 | R&C | EPDM | 20 | | | |
| 125 | | 139.7 | R&C | EPDM | 20 | | | |
| 150 | | 165.1 | R&C | EPDM | 20 | | | |
| 200 | | 219.1 | R&C | EPDM | 20 | | | |
| 250 | | 273.0 | R&C | EPDM | 20 | | | |
| 300 | | 323.9 | R&C | EPDM | 20 | | | |

Certificate No: 448a to LPS 1219

Pipe Fittings (SHURJOINT)

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------------------------|---|--------------------------------|---------------|
| 90° Elbows Fig. 7110 | 60.3,76.1,88.9,114.3,139.7,165.1,219.1 | 20 | 448a/07 |
| 45° Elbows Fig. 7111 | 60.3,76.1,88.9,114.3,139.7,165.1,219.1 | 20 | 448a/08 |
| Tees - Fig. 7120 | 60.3,76.1,88.9,114.3,139.7,165.1,219.1 | 20 | 448a/09 |
| Caps. - Fig. 7160 | 60.3,76.1,88.9,114.3,139.7,165.1,219.1 | 20 | 448a/10 |
| Concentric reducer - Fig. 7150 | 76.1 x 60.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 165.1 x 88.9, 165.1 x 114.3, 219.1 x 165.1 | 20 | 448a/11 |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|----------------------------------|--|--------------------------------|---------------|
| Reducing tee - Fig. 7121 | 114.3 x 114.3 x 76.1, 114.3 x 114.3 x 88.9, 165.1 x 165.1 x 88.9, 219.1 x 219.1 x 114.3, 219.1 x 219.1 x 165.1 | 20 | 448a/12 |
| Pitcher Tee - Fig. 7133 | 114.3 x 114.3 x 76.1, BSP thread | 20 | 448a/14 |
| Short Radius 90° Elbow - Fig 901 | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 219.1 | 20 | 448a/18 |
| Short Radius Tee - Fig 903 | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 219.1 | 20 | 448a/19 |

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Certificate No: 988Ba to LPS 1219 issue 3

Pipe Couplings (AQUILA)

| Product Name | Nominal Size | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------------------|--------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| 1N - Flexible Coupling | 25 | 33.7 | R&C | EPDM | 25 | 988Ba/01 |
| | 32 | 42.4 | R&C | EPDM | 25 | |
| | 40 | 48.3 | R&C | EPDM | 25 | |
| | 50 | 60.3 | R&C | EPDM | 25 | |
| | 65 | 73.0 | R&C | EPDM | 25 | |
| | 65 | 76.1 | R&C | EPDM | 25 | |
| | 80 | 88.9 | R&C | EPDM | 25 | |
| | 100 | 108.0 | R&C | EPDM | 25 | |
| | 100 | 114.3 | R&C | EPDM | 25 | |
| | 125 | 133.0 | R&C | EPDM | 25 | |
| | 125 | 139.7 | R&C | EPDM | 25 | |
| | 125 | 141.3 | R&C | EPDM | 25 | |
| | 150 | 159.0 | R&C | EPDM | 25 | |
| | 150 | 165.1 | R&C | EPDM | 25 | |
| | 150 | 168.3 | R&C | EPDM | 25 | |
| 1G - Rigid Coupling | 200 | 219.1 | R&C | EPDM | 25 | 988Ba/02 |
| | 25 | 33.7 | R&C | EPDM | 25 | |
| | 32 | 42.4 | R&C | EPDM | 25 | |
| | 40 | 48.3 | R&C | EPDM | 25 | |
| | 50 | 60.3 | R&C | EPDM | 25 | |
| | 65 | 73.0 | R&C | EPDM | 25 | |
| | 65 | 76.1 | R&C | EPDM | 25 | |
| | 80 | 88.9 | R&C | EPDM | 25 | |
| | 100 | 108.0 | R&C | EPDM | 25 | |
| | 100 | 114.3 | R&C | EPDM | 25 | |
| | 125 | 133.0 | R&C | EPDM | 25 | |
| | 125 | 139.7 | R&C | EPDM | 25 | |
| | 125 | 141.3 | R&C | EPDM | 25 | |
| | 150 | 159.0 | R&C | EPDM | 25 | |
| | 150 | 165.1 | R&C | EPDM | 25 | |
| 150 | 168.3 | R&C | EPDM | 25 | | |
| 1GS - Light Duty Rigid Coupling | 200 | 219.1 | R&C | EPDM | 25 | 988Ba/04 |
| | 65 | 76.1 | R&C | EPDM | 16 | |
| | 80 | 88.9 | R&C | EPDM | 16 | |
| | 100 | 108.0 | R&C | EPDM | 16 | |
| | 100 | 114.3 | R&C | EPDM | 16 | |
| | 125 | 139.7 | R&C | EPDM | 16 | |
| | 125 | 141.3 | R&C | EPDM | 16 | |
| | 150 | 159.0 | R&C | EPDM | 16 | |
| | 150 | 165.1 | R&C | EPDM | 16 | |
| | 150 | 168.3 | R&C | EPDM | 16 | |
| | 150 | 165.1 | R&C | EPDM | 16 | |
| | 150 | 168.3 | R&C | EPDM | 16 | |
| | 200 | 219.1 | R&C | EPDM | 16 | |
| | 200 | 219.1 | R&C | EPDM | 16 | |
| | 200 | 219.1 | R&C | EPDM | 16 | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. | | |
|--------------------------------------|-------------------------------------|----------------------------|--------------|-------------|--------------------------------|---------------|----------|----------|
| 3J - Mechanical Tee, Threaded Outlet | 100 x 65 | 114.3 x 76.1 | T | EPDM | 16 | 988Ba/05 | | |
| | 100 x 80 | 114.3 x 88.9 | T | EPDM | 16 | | | |
| | 125 x 65 | 139.7 x 76.1 | T | EPDM | 16 | | | |
| | 125 x 80 | 139.7 x 88.9 | T | EPDM | 16 | | | |
| | 125 x 100 | 139.7 x 114.3 | T | EPDM | 16 | | | |
| | 150 x 65 | 165.1 x 76.1 | T | EPDM | 16 | | | |
| | 150 x 80 | 165.1 x 88.9 | T | EPDM | 16 | | | |
| | 150 x 100 | 165.1 x 114.3 | T | EPDM | 16 | | | |
| | 150 x 65 | 168.3 x 76.1 | T | EPDM | 16 | | | |
| | 150 x 80 | 168.3 x 88.9 | T | EPDM | 16 | | | |
| | 150 x 100 | 168.3 x 114.3 | T | EPDM | 16 | | | |
| | 200 x 65 | 219.1 x 76.1 | T | EPDM | 16 | | | |
| | 200 x 80 | 219.1 x 88.9 | T | EPDM | 16 | | | |
| | 200 x 100 | 219.1 x 114.3 | T | EPDM | 16 | | | |
| | 3G - Mechanical Tee, Grooved Outlet | 100 x 65 | 114.3 x 76.1 | G | EPDM | | 16 | 988Ba/06 |
| | | 100 x 80 | 114.3 x 88.9 | G | EPDM | | 16 | |
| | | 125 x 65 | 139.7 x 76.1 | G | EPDM | | 16 | |
| 125 x 80 | | 139.7 x 88.9 | G | EPDM | 16 | | | |
| 125 x 100 | | 139.7 x 114.3 | G | EPDM | 16 | | | |
| 150 x 65 | | 165.1 x 76.1 | G | EPDM | 16 | | | |
| 150 x 80 | | 165.1 x 88.9 | G | EPDM | 16 | | | |
| 150 x 100 | | 165.1 x 114.3 | G | EPDM | 16 | | | |
| 150 x 65 | | 168.3 x 76.1 | G | EPDM | 16 | | | |
| 150 x 80 | | 168.3 x 88.9 | G | EPDM | 16 | | | |
| 150 x 100 | | 168.3 x 114.3 | G | EPDM | 16 | | | |
| 200 x 65 | | 219.1 x 76.1 | G | EPDM | 16 | | | |
| 200 x 80 | | 219.1 x 88.9 | G | EPDM | 16 | | | |
| 200 x 100 | | 219.1 x 114.3 | G | EPDM | 16 | | | |
| 321 - Grooved Flange | | 40 | 48.3 | R&C | EPDM | 16 | 988Ba/08 | |
| | | 50 | 60.3 | R&C | EPDM | 16 | | |
| | | 65 | 76.1 | R&C | EPDM | 16 | | |
| | 80 | 88.9 | R&C | EPDM | 16 | | | |
| | 100 | 114.3 | R&C | EPDM | 16 | | | |
| | 125 | 139.7 | R&C | EPDM | 16 | | | |
| | 150 | 165.1 | R&C | EPDM | 16 | | | |
| | 150 | 168.3 | R&C | EPDM | 16 | | | |
| | 200 | 219.1 | R&C | EPDM | 16 | | | |

Certificate No: 988Ba to LPS 1219 issue 3

Pipe Fittings (AQUILA)

| Product Name | Pipe Outside Diameter (mm) | Max Working Pressure (bar) | LPCB Ref. No. |
|---|---|----------------------------|---------------|
| 90 - 90° Elbow | 33.7 , 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988Ba/09 |
| 90S - 90° Short Elbow | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 16 | 988Ba/10 |
| 130 - Tee | 33.7 , 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1,168.3, 219.1 | 25 | 988Ba/11 |
| 130S - Short Tee | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 16 | 988Ba/12 |
| 120 - 45° Elbow | 33.7 , 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1,168.3, 219.1 | 25 | 988Ba/13 |
| 300 - Cap | 33.7, 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988Ba/14 |
| 180 - Cross | 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 25 | 988Ba/15 |
| 110 - 22.5° Elbow | 76.1, 88.9, 114.3, 139.7, 165.1, 219.1 | 25 | 988Ba/16 |
| 105 - 11.25° Elbow | 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 219.1 | 25 | 988Ba/17 |
| 321G - Grooved Flange Adaptor | 33.7 , 42.4, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 165.1, 168.3, 219.1 | 16 | 988Ba/18 |
| 240 - Grooved Concentric Reducer | 42.4 x 33.7, 48.3 x 33.7, 48.3 x 42.4, 60.3 x 33.7, 60.3 x 42.4, 60.3 x 48.3, 76.1 x 42.4, 76.1 x 48.3, 76.1 x 60.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 48.3, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 139.7 x 114.3, 165.1 x 88.9, 165.1 x 114.3, 165.1 x 139.7, 168.3 x 114.3, 168.3 x 139.7, 219.1 x 88.9, 219.1 x 114.3, 219.1 x 139.7, 219.1 x 168.3 | 25 | 988Ba/19 |
| 240N - Female Threaded Concentric Reducer | 60.3 x 26.9, 60.3 x 33.7, 60.3 x 42.4, 60.3 x 48.3, 76.1 x 42.4, 76.1 x 48.3, 76.1 x 60.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 48.3, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 139.7 x 114.3, 165.1 x 88.9, 219.1 x 88.9 | 25 | 988Ba/20 |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Pipe Outside Diameter (mm) | Max Working Pressure (bar) | LPCB Ref. No. |
|---------------------|---|----------------------------|---------------|
| 130R - Reducing Tee | 60.3 x 33.7, 60.3 x 48.3, 76.1 x 48.3, 76.1 x 60.3, 88.9 x 33.7, 88.9 x 48.3, 88.9 x 60.3, 88.9 x 76.1, 114.3 x 33.7, 114.3 x 48.3, 114.3 x 60.3, 114.3 x 76.1, 114.3 x 88.9, 139.7 x 114.3, 165.1 x 88.9, 165.1 x 114.3, 165.1 x 139.7, 168.3 x 60.3, 168.3 x 76.1, 168.3 x 88.9, 168.3 x 114.3, 168.3 x 139.7, 219.1 x 60.3, 219.1 x 88.9, 219.1 x 114.3, 219.1 x 168.3 | 25 | 988Ba/21 |

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Certificate No: 169h to LPS1219

Pipe Fittings

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|------------------|---------------------------------|--------------------------------|---------------|
| Grinnell Fig 222 | 114.3 x 114.3 x 76.1 BSP thread | 20 | 169h/01 |

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Certificate No: 669a to LPS 1219

Grinnell Fittings

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--|--|--------------------------------|---------------|
| Grinnell Fig 201 45 degree Elbow | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 669a/07 |
| Grinnell Fig 501 45 degree Elbow | 42.2, 48.3, 273.0, 323.9 | 20 | |
| Grinnell Fig 501 'G-FIRE' 45 degree Elbow | 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 20 | 669a/21 |
| Grinnell Fig 210 90 Degree Elbow | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 669a/08 |
| Grinnell Fig 510 90 Degree Elbow | 273.0, 323.9 | 20 | |
| Grinnell Fig 510 'G-FIRE' 90 Degree Elbow | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 20 | 669a/22 |
| Grinnell Fig 219 Tee | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 669a/09 |
| Grinnell Fig 519 Tee | 273.0, 323.9 | 20 | |
| Grinnell Fig 519 'G-FIRE' Tee | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1 | 20 | 669a/23 |
| Grinnell Fig 260 End Cap | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 165.1, 168.3, 219.1, 273.0, 323.9 | 20 | 669a/10 |
| Grinnell Fig 510S 'G-FIRE' 90 Degree Short Elbow | 60.3, 76.1, 88.9, 114.3, 168.3, 219.1 | 20 | 669a/13 |
| Grinnell Fig 519S 'G-FIRE' Short Tee | 60.3, 76.1, 88.9, 114.3, 168.3, 219.1 | 20 | 669a/14 |
| Grinnell Fig 212/512 22.5 degree Elbow | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 168.3, 219.1 | 20 | 669a/17 |
| Grinnell Fig 211/511 11.25 degree Elbow | 42.2, 48.3, 60.3, 76.1, 88.9, 114.3, 139.7, 168.3, 219.1 | 20 | 669a/18 |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---|---|--------------------------------|---------------|
| Grinnell Fig 250/550 Concentric Reducer | 48.3x42.2, 273.0x168.3, 273.0x219.1, 323.9x168.3, 323.9x219.1, 323.9x273.0 | 20 | 669a/12 |
| Grinnell Fig 221/521 Reducing Tee | 76.1x76.1x60.3, 88.9x 88.9x48.3, 88.9x88.9x76.1, 114.3x114.3x76.1, 139.7x139.7x76.1, 139.7x139.7x88.9, 139.7x139.7x114.3, 168.3x168.3x76.1, 219.1x219.1x114.3, 219.1x 219.1x168.3 | 20 | 669a/15 |

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Certificate No: 104-1a

Certificate No: 078a

Certificate No: 491a

Pipe Couplings

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. | | |
|-------------------------------|---|----------------------------|-------------|-------------|--------------------------------|---------------|----|-----------|
| Firelock Outlet-Tee Style 922 | 32 x 15 | 42.4 x 21.3 | T | EPDM | 16 | 491a/27 | | |
| | 32 x 18 | 42.4 x 26.9 | T | EPDM | 16 | | | |
| | 40 x 15 | 48.3 x 21.3 | T | EPDM | 16 | | | |
| | 40 x 18 | 48.3 x 26.9 | T | EPDM | 16 | | | |
| | 40 x 25 | 48.3 x 33.7 | T | EPDM | 16 | | | |
| | 50 x 15 | 60.3 x 21.3 | T | EPDM | 16 | | | |
| | 50 x 18 | 60.3 x 26.9 | T | EPDM | 16 | | | |
| | 50 x 21 | 60.3 x 33.7 | T | EPDM | 16 | | | |
| | 65 x 15 | 76.1 x 21.3 | T | EPDM | 16 | | | |
| | 65 x 18 | 76.1 x 26.9 | T | EPDM | 16 | | | |
| | 65 x 21 | 76.1 x 33.7 | T | EPDM | 16 | | | |
| | Firelock Sprinkler Outlet Tee Style 912 | 25 x 15 | 33.7 x 21.3 | T | EDPM | | 16 | 104-1a/34 |
| | | 32 x 15 | 42.4 x 21.3 | T | EDPM | | 16 | |
| | | 40 x 15 | 48.3 x 21.3 | T | EDPM | | 16 | |
| Mechanical Tees Style 920 | 80 x 32 | 88.9 x 42.4 | T | EPDM | 20 | 104-1a/11 | | |
| | 50 x 32 | 60.3 x 42.4 | T | EPDM | 20 | | | |
| Mechanical Tees Style 920N | 50 x 32 | 60.3 x 42.4 | G | EPDM | 20 | 104-1a/26 | | |
| | 50 x 40 | 60.3 x 48.3 | T | EPDM | 20 | | | |
| | 50 x 40 | 60.3 x 48.3 | G | EPDM | 20 | | | |
| | 50 x 15 | 60.3 x 21.3 | T | EPDM | 20 | | | |
| | 50 x 20 | 60.3 x 26.9 | T | EPDM | 20 | | | |
| | x 25 | 73 x 33.7 | T | EPDM | 20 | | | |
| | x 32 | 73 x 42.4 | T | EPDM | 20 | | | |
| | x 32 | 73 x 42.4 | G | EPDM | 20 | | | |
| | x 40 | 73 x 48.4 | T | EPDM | 20 | | | |
| | x 40 | 73 x 48.3 | G | EPDM | 20 | | | |
| | x 15 | 73 x 21.3 | T | EPDM | 20 | | | |
| | x 15 | 73 x 26.7 | T | EPDM | 20 | | | |
| | 80 x 15 | 88.9 x 21.3 | T | EPDM | 20 | | | |
| | 80 x 20 | 88.9 x 26.9 | T | EPDM | 20 | | | |
| | 80 x 25 | 88.9 x 33.7 | T | EPDM | 20 | | | |
| | 80 x 32 | 88.9 x 42.4 | T | EPDM | 20 | | | |
| | 80 x 32 | 88.9 x 42.4 | G | EPDM | 20 | | | |
| | 80 x 40 | 88.9 x 48.3 | T | EPDM | 20 | | | |
| | 80 x 40 | 88.9 x 48.3 | G | EPDM | 20 | | | |
| | 80 x 50 | 88.9 x 60.3 | T | EPDM | 20 | | | |
| | 100 x 20 | 114.3 x 26.9 | T | EPDM | 20 | | | |
| | 100 x 25 | 114.3 x 33.7 | T | EPDM | 20 | | | |
| | 80 x 50 | 88.9 x 60.3 | G | EPDM | 20 | | | |
| | 100 x 15 | 114.3 x 21.3 | T | EPDM | 20 | | | |
| | 100 x 32 | 114.3 x 42.4 | T | EPDM | 20 | | | |
| | 100 x 32 | 114.3 x 42.4 | G | EPDM | 20 | | | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------------------|-------------------|----------------------------|-----------|-------------|--------------------------------|---------------|
| | 100 x 40 | 114.3 x 48.3 | T | EPDM | 20 | |
| | 100 x 40 | 114.3 x 48.3 | G | EPDM | 20 | |
| | 100 x 50 | 114.3 x 60.3 | T | EPDM | 20 | |
| | 150 x 50 | 114.3 x 60.3 | G | EPDM | 20 | |
| | 150 x 32 | 165.1 x 42.4 | T | EPDM | 20 | |
| | 150 x 32 | 168.3 x 42.4 | T | EPDM | 20 | |
| | 150 x 40 | 165.1 x 48.3 | T | EPDM | 20 | |
| | 150 x 50 | 165.1 x 60.3 | T | EPDM | 20 | 491a/34 |
| | 150 x 32 | 168.3 x 42.4 | G | EPDM | 20 | 104-1a/26 |
| | 150 x 40 | 168.3 x 48.3 | T | EPDM | 20 | |
| | 150 x 40 | 168.3 x 48.3 | G | EPDM | 20 | |
| | 150 x 50 | 168.3 x 60.3 | T | EPDM | 20 | |
| | 150 x 50 | 168.3 x 60.3 | G | EPDM | 20 | |
| | x 32 | 108 x 42.2 | T | EPDM | 20 | |
| | x 40 | 108 x 48.3 | T | EPDM | 20 | |
| | x 50 | 159 x 60.3 | T | EPDM | 20 | |
| | 65 x 32 | 76.1 x 42.4 | T | EPDM | 20 | |
| | 65 x 32 | 76.1 x 42.4 | G | EPDM | 20 | |
| | 65 x 40 | 76.1 x 48.3 | T | EPDM | 20 | |
| | 65 x 40 | 76.1 x 48.3 | G | EPDM | 20 | |
| | 50 x 25 | 60.3 x 33.4 | T | EPDM | 20 | |
| Style 005H | 50 | 60.3 | R&C | EPDM | 16 ⁽³⁾ | 104-1a/01 |
| | 50 | 73.0 ⁽¹⁾ | R&C | EPDM | 16 ⁽³⁾ | |
| | 65 | 76.1 | R&C | EPDM | 16 ⁽³⁾ | |
| | 80 | 88.9 | R&C | EPDM | 16 ⁽³⁾ | |
| | 80 | 108.0 ⁽¹⁾ | R&C | EPDM | 16 ⁽³⁾ | |
| | 100 | 114.3 | R&C | EPDM | 16 ⁽³⁾ | |
| | 100 | 133.4 ⁽¹⁾ | R&C | EPDM | 16 ⁽³⁾ | |
| | 125 | 139.7 | R&C | EPDM | 16 ⁽³⁾ | |
| | 125 | 141.3 ⁽¹⁾ | R&C | EPDM | 16 ⁽³⁾ | |
| | 125 | 158.8 ⁽¹⁾ | R&C | EPDM | 16 ⁽³⁾ | |
| | 150 | 165.1 | R&C | EPDM | 16 ⁽³⁾ | |
| | 150 | 168.3 | R&C | EPDM | 16 ⁽³⁾ | |
| Style 009 | 200 | 219.1 | R&C | EPDM | 16 | |
| Style 009V | 65 | 73.0 | R&C | EPDM | 20 | 104-1a/31 |
| | 32 | 42.4 | R&C | EPDM | 20 | 104-1a/32 |
| | 100 | 114.3 | R&C | EPDM | 20 | |
| | 40 | 48.3 | R&C | EPDM | 20 | |
| | 50 | 60.3 | R&C | EPDM | 20 | |
| | 65 | 76.1 | R&C | EPDM | 20 | |
| | 80 | 88.9 | R&C | EPDM | 20 | |
| Style 07 | 100 | 114.3 | R&C | EPDM | 20 | |
| | 25 | 33.7 | R&C | EPDM | 40 ⁽³⁾ | 104-1a/02 |
| | 32 | 42.4 | R&C | EPDM | 40 ⁽³⁾ | |
| | 40 | 48.3 | R&C | EPDM | 40 ⁽³⁾ | |
| | 50 | 60.3 | R&C | EPDM | 40 ⁽³⁾ | |
| | 50 | 73.0 ⁽¹⁾ | R&C | EPDM | 40 ⁽³⁾ | |
| | 65 | 76.1 | R&C | EPDM | 40 ⁽³⁾ | |
| | 80 | 88.9 | R&C | EPDM | 40 ⁽³⁾ | |
| | 80 | 108.0 ⁽¹⁾ | R&C | EPDM | 40 ⁽³⁾ | |
| | 100 | 114.3 | R&C | EPDM | 40 ⁽³⁾ | |
| | 100 | 133.4 ⁽¹⁾ | R&C | EPDM | 20 ⁽³⁾ | |
| | 125 | 139.7 | R&C | EPDM | 20 ⁽³⁾ | |
| | 125 | 141.3 ⁽¹⁾ | R&C | EPDM | 20 ⁽³⁾ | |
| | 125 | 158.8 ⁽¹⁾ | R&C | EPDM | 40 ⁽³⁾ | |
| | 150 | 165.1 | R&C | EPDM | 40 ⁽³⁾ | |
| | 150 | 168.3 | R&C | EPDM | 40 ⁽³⁾ | |
| | 200 | 219.1 | R&C | EPDM | 35 ⁽³⁾ | |
| Style 741 (Range adaptors) | 150 | 165.1 | R&C | EPDM | 20 | 104-1a/10 |
| Style 741 (Flange adaptors) | 150 | 168.3 | R&C | EPDM | 20 | |
| | 200 | 219.1 | R&C | EPDM | 20 | |
| | 80 | 88.9 | R&C | EPDM | 20 | |
| Style 741 (Range adaptors) | 125 | 139.7 | R&C | EPDM | 20 | |
| Style 741 (Vic-Flange Adaptors) | 100 | 114.3 | R&C | EPDM | 20 | |
| Style 75 | 40 | 48.3 | R&C | EPDM | 20 | 104-1a/03 |
| | 50 | 60.3 | R&C | EPDM | 20 | |
| | 65 | 76.1 | R&C | EPDM | 20 | |
| | 80 | 88.9 | R&C | EPDM | 20 | |
| | 100 | 114.3 | R&C | EPDM | 20 | |
| | 125 | 139.7 | R&C | EPDM | 20 | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------------|-------------------|----------------------------|---------------|-------------|--------------------------------|---|
| Style 750 Reducing | 150 | 165.1 | R&C | EPDM | 20 | 104-1a/05 |
| | 200 | 219.1 | R&C | EPDM | 20 | |
| | 50 x 40 | 60.3 x 48.3 | R&C | EPDM | 20 | |
| | 80 x 50 | 88.9 x 60.3 | R&C | EPDM | 20 | |
| | 100 x 50 | 114.3 x 60.3 | R&C | EPDM | 20 | |
| | 100 x 80 | 114.3 x 88.9 | R&C | EPDM | 20 | |
| | 150 x 100 | 165.1 x 114.3 | R&C | EPDM | 20 | |
| Style 77 | 200 x 150 | 219.1 x 165.1 | R&C | EPDM | 20 | 078a/08 078a/09 078a/10 104-1a/04 |
| | 65 x 50 | 76.1 x 60.3 | R&C | EPDM | 20 | |
| | 80 x 65 | 88.9 x 76.1 | R&C | EPDM | 20 | |
| | 100 x 65 | 114.3 x 76.1 | R&C | EPDM | 16 | |
| | 150 x 80 | 165.1 x 88.9 | R&C | EPDM | 15 | |
| | 20 | 26.9 | R&C | EPDM | 20 | |
| | 25 | 33.7 | R&C | EPDM | 20 ⁽³⁾ | |
| | 32 | 42.4 | R&C | EPDM | 20 ⁽³⁾ | |
| | 40 | 48.3 | R&C | EPDM | 20 ⁽³⁾ | |
| | 50 | 60.3 | R&C | EPDM | 20 ⁽³⁾ | |
| | 50 | 73.0 ⁽¹⁾ | R&C | EPDM | 20 ⁽³⁾ | |
| | 65 | 76.2 | R&C | EPDM | 20 ⁽³⁾ | |
| | 80 | 88.9 | R&C | EPDM | 20 ⁽³⁾ | |
| | 100 | 114.3 | R&C | EPDM | 20 ⁽³⁾ | |
| | 125 | 139.7 | R&C | EPDM | 20 ⁽³⁾ | |
| Style 920 | 125 | 141.3 ⁽¹⁾ | R&C | EPDM | 20 ⁽³⁾ | 104-1a/11 078a/13 078a/14 104-1a/11 491a/33 104-1a/11 078a/14 104-1a/11 104-1a/11 078a/14 104-1a/11 078a/14 104-1a/11 491a/33 078a/14 104-1a/11 078a/14 104-1a/11 491a/33 078a/14 104-1a/11 491a/33 104-1a/11 104-1a/08 104-1a/11 |
| | 150 | 165.1 | R&C | EPDM | 20 ⁽³⁾ | |
| | 150 | 168.3 | R&C | EPDM | 20 ⁽³⁾ | |
| | 200 | 219.1 | R&C | EPDM | 20 ⁽³⁾ | |
| | 80 x 40 | 88.9 x 48.3 | T | EPDM | 20 | |
| | 80 x 40 | 88.9 x 48.3 | G | EPDM | 20 | |
| | 100 x 32 | 114.3 x 42.4 | T | EPDM | 20 | |
| | 100 x 40 | 114.3 x 48.3 | T | EPDM | 20 | |
| | 100 x 40 | 114.3 x 48.3 | G | EPDM | 20 | |
| | 100 x 65 | 114.3 x 76.1 | G | EPDM | 20 | |
| | 100 x 65 | 114.3 | T(2.5 in BSP) | EPDM | 20 | |
| | 100 x 65 | 114.3 x 76.1 | G | EPDM | 20 | |
| | 100 x 80 | 114.3 x 88.9 | T | EPDM | 20 | |
| | 125 x 65 | 141.3 x 76.1 | G | EPDM | 20 | |
| | 150 x 40 | 165.1 x 48.3 | G | EPDM | 20 | |
| | 150 x 50 | 165.1 x 60.3 | G | EPDM | 20 | |
| | 150 x 50 | 165.1 | T(2.5 in BSP) | EPDM | 20 | |
| | 150 x 50 | 165.1 x 60.3 | G | EPDM | 20 | |
| | 150 x 65 | 165.1 x 73.0 | G | EPDM | 20 | |
| | 150 x 65 | 168.3 x 76.1 | G | EPDM | 20 | |
| | 150 x 65 | 165.1 x 76.1 | G | EPDM | 20 | |
| | 150 x 80 | 165.1 x 88.9 | T | EPDM | 20 | |
| | 150 x 80 | 168.3 x 88.9 | G | EPDM | 20 | |
| | 150 x 80 | 165.1 x 88.9 | G | EPDM | 20 | |
| | 150 x 100 | 165.1 x 114.3 | T | EPDM | 20 | |
| | 150 x 100 | 168.3 x 114.3 | G | EPDM | 20 | |
| | 200 x 50 | 219.1 x 60.3 | G | EPDM | 20 | |
| 150 x 100 | 165.1 x 114.3 | G | EPDM | 20 | | |
| 200 x 65 | 219.1 x 76.1 | T | EPDM | 20 | | |
| 200 x 65 | 219.1 x 76.1 | G | EPDM | 20 | | |
| 200 x 80 | 219.1 x 88.9 | T | EPDM | 20 | | |
| 200 x 80 | 219.1 x 88.9 | G | EPDM | 20 | | |
| 200 x 100 | 219.1 x 114.3 | G | EPDM | 20 | | |
| 200 x 100 | 219.1 x 114.3 | T | EPDM | 20 | | |
| Style 927 | 32 x 15 | 42.4 x 21.3 | T | EPDM | 12 | 104-1a/09 |
| | 32 x 20 | 42.4 x 26.7 | T | EPDM | 12 | |
| | 32 x 25 | 42.4 x 26.9 | T | EPDM | 12 | |
| | 40 x 15 | 48.3 x 21.3 | T | EPDM | 12 | |
| | 40 x 20 | 48.3 x 26.9 | T | EPDM | 12 | |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. | | |
|---------------------------|--------------------|----------------------------|-----------|-------------|--------------------------------|---------------|-----------|-----------|
| Victaulic Mechanical Tees | 40 x 25 | 48.3 x 33.7 | T | EPDM | 12 | 104-1a/06 | | |
| | 50 x 15 | 60.3 x 21.3 | T | EPDM | 12 | | | |
| | 50 x 20 | 60.3 x 26.9 | T | EPDM | 12 | | | |
| | 50 x 25 | 60.3 x 33.7 | T | EPDM | 12 | | | |
| | 100 x 50 | 114.3 x 60.3 | G | EPDM | 20 | | | |
| | 100 x 80 | 114.3 x 88.9 | G | EPDM | 20 | | | |
| | 150 x 50 | 165.1 x 60.3 | G | EPDM | 15 | | 104-1a/07 | |
| | 150 x 80 | 165.1 x 88.9 | G | EPDM | 15 | | | |
| | 150 x 100 | 165.1 x 114.3 | G | EPDM | 15 | | 104-1a/08 | |
| | 200 x 80 | 219.1 x 88.9 | G | EPDM | 20 | | | |
| Style 009N | 200 x 100 | 219.1 x 114.3 | G | EPDM | 20 | 104-1a/36 | | |
| | 32 | 42.2 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 40 | 48.3 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 50 | 60.3 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 65 | 73.0 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 65 | 76.1 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 80 | 88.9 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 100 | 114.3 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 125 ⁽²⁾ | 139.7 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 125 ⁽²⁾ | 141.3 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 150 ⁽²⁾ | 165.1 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 150 ⁽²⁾ | 168.3 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | 200 ⁽²⁾ | 219.1 | R&C | EPDM | 25 ⁽³⁾ | | | |
| | Style 009H | 125 | 139.7 | R&C | EPDM | | 25 | 104-1a/35 |
| | | 125 | 141.3 | R&C | EPDM | | 25 | |
| 150 | | 165.1 | R&C | EPDM | 25 | | | |
| 150 | | 168.3 | R&C | EPDM | 25 | | | |
| 200 | | 219.1 | R&C | EPDM | 25 | | | |
| Style 107N | 250 | 273.0 | R&C | EPDM | 16 | 104-1a/37 | | |
| | 300 | 323.9 | R&C | EPDM | 16 | | | |

Notes:

All these products to be installed in accordance with the relevant Victaulic Instructions.

- 1) These sizes are not suitable for installations that requires BS 1387 pipework due to the sizes not being included in that standard.
- 2) A bolt tightening torque of 125 ft lbf (170Nm) is required for these sizes.
- 3) These products are approved to the above stated maximum working pressures with zinc-electroplated bolts and nuts and also approved to 25 bar working pressure with hot dipped galvanized bolts and nuts.

Certificate No: 104-1a

Certificate No: 078a

Fittings

| Product Name | Model No. | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-----------------------|-----------|---|--------------------------------|---------------|
| 90° Elbow | 10 | 20, 25, 32, 40, 50, 65, 80, 100, 150, 200 | 20 | 104-1a/12 |
| | | 125 | 20 | 078a/15 |
| 90° Long Radius Elbow | 100 | 50, 80, 100, 150, 200 | 20 | 104-1a/13 |
| 45° Elbow | 11 | 20, 25, 32, 40, 50, 80, 100, 150, 200 | 20 | 104-1a/14 |
| | | 65, 125 | 20 | 078a/16 |
| 45° Long Radius Elbow | 110 | 50, 80, 100, 150, 200 | 20 | 104-1a/15 |
| 22.5° Elbow | 12 | 25, 32, 40, 50, 65, 80, 100, 150, 200 | 20 | 104-1a/16 |
| 11.25° Elbow | 13 | 25, 32, 40, 50, 80, 100, 150, 200 | 20 | 104-1a/17 |
| Tee | 20 | 20, 25, 32, 40, 50, 80, 100, 150, 200 | 20 | 104-1a/18 |
| | | 125 | 20 | 078a/17 |
| Cross | 35 | 20, 25, 32, 40, 50, 80, 100, 200 | 20 | 104-1a/19 |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Model No. | Pipe Outside Diameter (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-----------------------------------|-----------|---|--------------------------------|---------------|
| Cap | 60 | 20, 25, 32, 40, 50, 80, 100, 150, 200 | 20 | 104-1a/20 |
| 45° Lateral | 30 | 20, 25, 32, 40, 50, 80, 100, 150, 200 | 20 | 104-1a/21 |
| 90° True Y | 33 | 25, 32, 40, 50, 80, 100, 200 | 20 | 104-1a/22 |
| Concentric Reducer | 50 | 40 x 25, 50 x 20, 50 x 25, 50 x 32, 50 x 40, 80 x 25, 80 x 50, 100 x 125, 100 x 40, 100 x 50, 100 x 80, 200 x 80, 200 x 100 | 20 | 104-1a/23 |
| Eccentric Reducer | 51 | 40 x 25, 50 x 20, 50 x 25, 50 x 32, 50 x 40, 80 x 25, 80 x 50, 100 x 125, 100 x 40, 100 x 50, 100 x 80, 200 x 80, 200 x 100 | 20 | |
| 45° Reducing Lateral | 30R | 80 x 80 x 50, 100 x 100 x 50, 100 x 100 x 80, 200 x 200 x 100 | 20 | 104-1a/24 |
| Reducing Tee Grooved | 25 | 50 x 50 x 20, 50 x 50 x 25, 50 x 50 x 40, 80 x 80 x 25, 80 x 80 x 40, 80 x 80 x 50, 100 x 100 x 25, 100 x 100 x 50, 100 x 100 x 80, 150 x 150 x 50, 150 x 150 x 100, 200 x 200 x 50, 200 x 200 x 80, 200 x 200 x 100, 200 x 200 x 150 | 20 | 104-1a/25 |
| Reducing Tee Threaded | 29R | 50 x 50 x 20, 50 x 50 x 25, 50 x 50 x 40, 80 x 80 x 25, 80 x 80 x 40, 80 x 80 x 50, 100 x 100 x 25, 100 x 100 x 50, 100 x 100 x 80, 150 x 150 x 50, 150 x 150 x 100, 200 x 200 x 50, 200 x 200 x 80, 200 x 200 x 100, 200 x 200 x 150 | 20 | |
| Blank End Grooved (Radial Branch) | | 65, 125 | 20 | 078a/18 |
| Pitcher Tee Firelock | 001 | 100 x 100 x 2.5 in BSP 60.3, 73, 76.1, 88.9, 114.3, 139.7, 141.3, 165.1, 168.3, 219.1 | 20 | 078a/19 |
| | 002 | 60.3, 73, 76.1, 88.9, 114.3, 139.7, 141.3, 165.1, 168.3, 219.1 | 16 | 104-1a/28 |
| | 003 | 60.3, 73, 76.1, 88.9, 114.3, 139.7, 141.3, 165.1, 168.3, 219.1 | 16 | 104-1a/29 |
| | | | 16 | 104-1a/30 |

All couplings and fittings to be installed in accordance with the Victaulic Field Assembly and Installation Instruction handbook.

Certificate No: 104-1a to LPS 1219: Issue 3.1

Installation Ready Fittings

| Product Name | Model No. | Pipe Outside Diameter (mm) | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-----------|---|-------------|--------------------------------|---------------|
| 90° Elbow | 101 | 42.4 ⁽¹⁾ , 48.3 ⁽¹⁾ , 60.3 ⁽²⁾ , 73.0 ⁽²⁾ , 76.1 ⁽²⁾ | EPDM | 25 | 104-1a/38 |
| Tee | 102 | 42.4 ⁽¹⁾ , 48.3 ⁽¹⁾ , 60.3 ⁽²⁾ , 73.0 ⁽²⁾ , 76.1 ⁽²⁾ | EPDM | 25 | |
| 45° Elbow | 103 | 42.4 ⁽¹⁾ , 48.3 ⁽¹⁾ , 60.3 ⁽²⁾ , 73.0 ⁽²⁾ , 76.1 ⁽²⁾ | EPDM | 25 | |

Above items to be installed in accordance with Victaulic Instructions I-102_1 REV_B

- (1) A bolt torque of 60 ft lbf (81 Nm) is required for this size
- (2) A bolt torque of 70 ft lbf (95 Nm) is required for this size

Certificate No: 104-1b to LPS 1219: Issue 3.1

IGS Fittings

| Product Name | Model No. | Pipe Outside Diameter (mm) | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-----------------------------------|-----------|----------------------------|-------------|--------------------------------|---------------|
| 90° Elbow | 101 | 33.3 ⁽¹⁾ | EPDM | 25 | 104-1b/01 |
| Tee | 102 | 33.3 ⁽¹⁾ | EPDM | 25 | 104-1b/02 |
| Male Threaded x Grooved Adaptor | 140 | 33.3 | - | 25 | 104-1b/03 |
| Female Threaded x Grooved Adaptor | 141 | 33.3 | - | 25 | 104-1b/04 |
| Welded Outlet | 142 | 33.3 | - | 25 | 104-1b/05 |
| Close Nipple | 143 | 33.3 | - | 25 | 104-1b/06 |
| Female Threaded x Grooved Elbow | 145 | 33.3 | - | 25 | 104-1b/07 |
| Cap | 146 | 33.3 | - | 25 | 104-1b/08 |
| Sprinkler Reducer outlet | 148 | 33.3 | - | 25 | 104-1b/09 |

PART 3: SECTION 8.1

PIPE COUPLINGS AND FITTINGS

| Product Name | Model No. | Pipe Outside Diameter (mm) | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-----------------------------------|------------------|-----------------------------------|--------------------|---------------------------------------|----------------------|
| Installation-Ready rigid coupling | 108 | 33.3 | EPDM | 25 | 104-1b/10 |
| Grooved Flexible Drop Outlet-T | 922 | 33.3 ⁽¹⁾ | EPDM | 25 | 104-1b/11 |

Notes:

Above items to be installed in accordance with Victaulic Instructions 10.54 10161 Rev B for use with grooved flexible sprinkler connectors in wet applications.

(1) A bolt torque of 60 ft lbf (81 Nm) is required for this item

This section lists products approved in accordance with:

- LPS 1261 *Requirements for testing flexible hoses for sprinkler systems.*

Flexible pipes may be used in different ways within a sprinkler system. For example some products are suitable for use behind ceiling grids whilst others are suitable for connecting supplies to storage racks. The user should contact the manufacturer to ensure they specify the correct type.

A wide range of flexible drop pipe lengths are available in these listings. The end users should ensure the selection of appropriate product with due regard to the installation codes and rules applicable to the territories in which these products are being installed.

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Certificate No: 1298a to LPS 1261: Issue 02 (Draft)

Daejin Sanup Co. Genie-Systems DJ25UB – 25 mm Unbraided Flexible Sprinkler Hose

| Product Name | Length (mm) | Nominal Size / Connection Supply | Nominal Size / Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|----------------------------------|--|--------------------------------|---------------|
| DJ25UB-700 | 700 | 1 NPT/PT external thread | 1/2" NPT/PT internal thread | 16 | 1298a/01 |
| DJ25UB-1000 | 1000 | 1 NPT/PT external thread | 3/4" NPT/PT internal thread 1/2" NPT/PT internal thread | 16 | |
| DJ25UB-1200 | 1200 | 1 NPT/PT external thread | 3/4" NPT/PT internal thread 1/2" NPT/PT internal thread | 16 | |
| DJ25UB-1500 | 1500 | 1 NPT/PT external thread | 3/4" NPT/PT internal thread 1/2" NPT/PT internal thread | 16 | |
| DJ25UB-1800 | 1800 | 1 NPT/PT external thread | 3/4" NPT/PT internal thread 1/2" NPT/PT internal thread | 16 | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings).

- 1) Daejin Sanup Co. Genie-Systems DJ25UB sprinkler hose connections are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|----------------------|----------------|--------|--------------------------------|
| | Town's mains | Pumped | |
| Up to 700* | Yes | Yes | Yes |
| Up to 1000** | Yes | Yes | Yes |
| Up to 1500** | No | Yes | Yes |
| Up to 1800*** | No | Yes | Yes |

All pipework supplying Daejin Sanup Co. sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains

*up to 1 x 90° bends

**up to 2 x 90° bends

***up to 3 x 90° bends

PART 3: SECTION 8.2

FLEXIBLE DROPS

- 2) In suspended ceilings Daejin Sanup Co. DJ25UB sprinkler connection must be installed in accordance with the Daejin Sanup Co. Installation Manuals IM-L-01(R.2) and IM-L-02(R.2) dated 02.06.2015.
- 3) In suspended ceilings the outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

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Certificate No: 566Aa to LPS 1261

Dong-A Flexible sprinkler connections approved to LPS 1261

| Product Name | Length (mm) | Supply Nominal Size/Connection | Outlet Nominal Size/Connection | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------|-------------|--|---|--------------------------------|---------------|
| DA-SP-1_S (1,2,3,4) | 700 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread or R1(1"BSPT) or 1"NPT External thread | 16 | 566a/01 |
| DA-SP-1 (1,2,3,4) | 780 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread or R1(1"BSPT) or 1"NPT External thread | 16 | |
| DA-SP-2_S (1,2,3,4) | 1,000 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread or R1(1"BSPT) or 1"NPT External thread | 16 | |
| DA-SP-2 (1,2,3,4) | 1,220 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread or R1(1"BSPT) or 1"NPT External thread | 16 | |
| DA-SP-3 (1,2,3,4) | 1,540 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread or R1(1"BSPT) or 1"NPT External thread | 16 | |
| DA-SP-4 (1,2,3,4) | 1,880 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread or R1(1"BSPT) or 1"NPT External thread | 16 | |
| DA-SP-5 (1,2,3,4) | 2,540 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread or R1(1"BSPT) or 1"NPT External thread | 16 | |
| DA-SP-6 (1,2,3,4) | 3,220 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread or R1(1"BSPT) or 1"NPT External thread | 16 | |
| DA-SPN-1_S (1,2,3) | 700 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread | 16 | 566a/02 |
| DA-SPN-1 (1,2,3) | 780 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread | 16 | |
| DA-SPN-2_S (1,2,3) | 1,000 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread | 16 | |
| DA-SPN-2 (1,2,3) | 1,220 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPT or Rc3/4(3/4"BSPT) or 3/4"NPT Internal thread | 16 | |

PART 3: SECTION 8.2

FLEXIBLE DROPS

| Product Name | Length (mm) | Supply Nominal Size/Connection | Outlet Nominal Size/Connection | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------------|-------------|--|--|--------------------------------|---------------|
| DA-SPN-3 (1,2,3) | 1,540 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPN-4 (1,2,3) | 1,880 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPN-5 (1,2,3) | 2,540 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPN-6 (1,2,3) | 3,220 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPW-1_S (1,2,3) | 700 | R1(1"BSPT) or 1"NPTor R1.1/4(1.1/4"BSPT)External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | 566a/03 |
| DA-SPW-1 (1,2,3) | 780 | R1(1"BSPT) or 1"NPTor R1.1/4(1.1/4"BSPT)External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPW-2_S (1,2,3) | 1,000 | R1(1"BSPT) or 1"NPTor R1.1/4(1.1/4"BSPT)External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPW-2 (1,2,3) | 1,220 | R1(1"BSPT) or 1"NPTor R1.1/4(1.1/4"BSPT)External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPW-3 (1,2,3) | 1,540 | R1(1"BSPT) or 1"NPTor R1.1/4(1.1/4"BSPT)External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPW-4 (1,2,3) | 1,880 | R1(1"BSPT) or 1"NPTor R1.1/4(1.1/4"BSPT)External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPW-5 (1,2,3) | 2,540 | R1(1"BSPT) or 1"NPTor R1.1/4(1.1/4"BSPT)External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |
| DA-SPW-6 (1,2,3) | 3,220 | R1(1"BSPT) or 1"NPTor R1.1/4(1.1/4"BSPT)External thread | Rc1/2(1/2"BSPT) or 1/2"NPTor Rc3/4(3/4"BSPT)or 3/4"NPT Internal thread | 16 | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings)

(1) Dong-A sprinkler connections are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|----------------------|----------------|--------|--------------------------------|
| | Town's mains | Pumped | |
| Up to 1220* | Yes | Yes | Yes |
| Up to 1880** | No | Yes | Yes |
| Up to 3220 | No | No | Yes |

All pipe work supplying Dong-A flexible sprinkler connections assemblies in pre-calculated systems shall be sized as Distribution mains

* For use with a 90 degree sprinkler reducer, this length is to 1000 mm

** For use with a 90 degree sprinkler reducer, this length is reduced to 1540 mm

The above applications apply to Dong-A flexible sprinkler connections with up to 3 x 90' bends and either straight or 90' reducers.

(2) In suspended ceilings Dong-A flexible sprinkler connections must be installed in accordance with Installation Instructions DASP000501.

(3) In suspended ceilings, outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

(4) For special applications the outlet is 1" Nipple for connection to normal standard pipe fittings, installer must supply & install brackets to ensure that the sprinkler is secure.

PART 3: SECTION 8.2

FLEXIBLE DROPS

Flexhead Industries Inc.

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Website: www.flexhead.com

European Distributor:

Reliable Fire Sprinkler Limited, Unit 2A Epsom Business Park, Kiln Lane, Epsom, Surrey KT17 1JF

Tel: +44 (0)1372 728899 • Fax: +44 (0)1372 724481

Certificate No: 764a

Flexhead Flexible Sprinkler Pipe

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|---|--|--------------------------------|---------------|
| 2024 | 600 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 12 | 764a/01 |
| 2036 | 900 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 12 | |
| 2048 | 1200 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 12 | |
| 2060 | 1500 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 12 | |
| 2072 | 1800 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 12 | |
| 2024H | 600 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 20 | 764a/02 |
| 2036H | 900 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 20 | |
| 2048H | 1200 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 20 | |
| 2060H | 1500 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 20 | |
| 2072H | 1800 | R1 (1" NPT) or (1" BSPT) External thread | Rc $\frac{1}{2}$ or Rc $\frac{3}{4}$ ($\frac{1}{2}$ " or $\frac{3}{4}$ " NPT) or ($\frac{1}{2}$ " or $\frac{3}{4}$ " BSP Internal thread | 20 | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings)

1 Flexhead flexible sprinkler connections are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|----------------------|----------------|--------|--------------------------------|
| | Town's | Pumped | |
| 600 | Yes | Yes | Yes |
| 900 | Yes | Yes | Yes |
| 1200 | Yes | Yes | Yes |
| 1500 | Yes | Yes | Yes |
| 1800 | Yes | Yes | Yes |

All pipework supplying Flexhead flexible sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains.

The above applications apply to Flexhead Standard and Flexhead H with up to three bends of up to 90° each.

- In a suspended ceiling Flexhead flexible sprinkler connections must be installed in accordance with the Flexhead Installation Guide, designated FlexLPCB07.
- In suspended ceilings, outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

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Certificate No: 566a to LPS 1261: Issue 1.2

Rapidrop SP, SPN & SPW Flexible Sprinkler Connectors

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|---|--|--------------------------------|---------------|
| SP-1_S | 700 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | 566a/01 |
| SP-1 | 780 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SP-2_S | 1,000 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SP-2 | 1,220 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SP-3 | 1,540 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SP-4 | 1,880 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SP-5 | 2,540 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SP-6 | 3,220 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPN-1_S | 700 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | 566a/02 |
| SPN-1 | 780 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPN-2_S | 1,000 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPN-2 | 1,220 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPN-3 | 1,540 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPN-4 | 1,880 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPN-5 | 2,540 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPN-6 | 3,220 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |

PART 3: SECTION 8.2

FLEXIBLE DROPS

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|---|--|--------------------------------|---------------|
| SPW-1_S | 700 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | 566a/03 |
| SPW-1 | 780 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPW-2_S | 1,000 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPW-2 | 1,220 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPW-3 | 1,540 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPW-4 | 1,880 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPW-5 | 2,540 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| SPW-6 | 3,220 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |

Notes for Rapidrop SP, SPN & SPW Flexible Sprinkler Connectors:

These flexible sprinkler connectors may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings).

1. Rapidrop SP, SPN & SPW sprinkler connectors are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|----------------------|----------------|--------|--------------------------------|
| | Town's mains | Pumped | |
| Up to 780* | Yes | Yes | Yes |
| Up to 1000** | Yes | Yes | Yes |
| Up to 1540** | No | Yes | Yes |
| Up to 3220** | No | No | Yes |

Pipework supplying Rapidrop flexible sprinkler connector assemblies in pre-calculated systems shall be sized as distribution mains. The above applications apply to Rapidrop flexible sprinkler connectors with:

* up to 2 x 90° bends, with a straight or 90° elbow reducer

** up to 3 x 90° bends, with a straight or 90° elbow reducer

2. In suspended ceilings Rapidrop SP, SPN & SPW flexible sprinkler connectors must be installed in accordance with the Rapidrop installation instructions, Datasheet 3.03, issue D.
3. In suspended ceilings the outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure the sprinkler is secure.

Certificate No: 566i to LPS 1261: Issue 03 draft

Rapidrop RD-SMB (Braided) & RD-SM (Unbraided) Flexible Sprinkler Connectors

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|---|--|--------------------------------|---------------|
| RD-SMB-01 | 780 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | 566i/01 |

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|---|--|--------------------------------|---------------|
| RD-SMB-02 | 1000 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| RD-SMB-03 | 1220 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| RD-SMB-04 | 1540 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| RD-SMB-05 | 1830 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| RD-SM-01 | 780 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | 566i/02 |
| RD-SM-02 | 1000 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| RD-SM-03 | 1220 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| RD-SM-04 | 1540 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| RD-SM-05 | 1830 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |
| RD-SM-06 | 2500 | R1 (1"BSPT), 1"NPT, R1¼ (1¼"BSPT), 1¼"NPT External thread | Rc½"BSPT, ½"NPT, Rc¾"BSPT, ¾"NPT Internal thread | 16 | |

Notes for RD-SMB (Braided) & RD-SM (Unbraided) Flexible Sprinkler Connectors:

These flexible sprinkler connectors may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings).

- Rapidrop RD-SMB (braided) flexible sprinkler connectors are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|----------------------|----------------|--------|--------------------------------|
| | Town's mains | Pumped | |
| 780* | Yes | Yes | Yes |
| Up to 1830*** | Yes | Yes | Yes |

Rapidrop RD-SM (unbraided) sprinkler connectors are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|----------------------|----------------|--------|--------------------------------|
| | Town's mains | Pumped | |
| 780** | Yes | Yes | Yes |
| Up to 1540*** | No | Yes | Yes |
| Up to 2500*** | No | No | Yes |

Pipework supplying Rapidrop flexible sprinkler connector assemblies in pre-calculated systems shall be sized as distribution mains. The above applications apply to Rapidrop flexible sprinkler connectors with:

- * up to 1 x 90° bends, with a straight or 90° elbow reducer
- ** up to 2 x 90° bends, with a straight or 90° elbow reducer
- *** up to 3 x 90° bends, with a straight or 90° elbow reducer

- In suspended ceilings Rapidrop RD-SMB flexible sprinkler connectors must be installed in accordance with the Rapidrop installation instructions, Datasheet 3.11, issue F and Rapidrop RD-SM flexible sprinkler connectors must be installed in accordance with the Rapidrop installation instructions, Datasheet 3.10, issue A.

PART 3: SECTION 8.2

FLEXIBLE DROPS

3. In suspended ceilings the outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure the sprinkler is secure.

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Certificate No: 140d to LPS 1261

RASCOFLEX 28mm Braided & Unbraided Flexible Sprinkler Hose

| Product Name | Length (mm) | Nominal Size / Connection Supply | Nominal Size / Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------|--------------------|---|--|---------------------------------------|----------------------|
| RF070U | 700 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | 140d/01 |
| RF100U | 1000 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | |
| RF120U | 1200 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | |
| RF150U | 1500 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | |
| RF180U | 1800 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | |
| RF070B | 700 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | 140d/02 |
| RF100B | 1000 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | |
| RF120B | 1200 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | |
| RF150B | 1500 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | |
| RF180B | 1800 | 1" BSPT/NPT external thread 1¼" BSPT/NPT external thread | ½" BSPT/NPT internal thread ¾" BSPT/NPT internal thread | 14 | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings).

- 1) RASCOFLEX RFXXXU (unbraided) sprinkler hose connections are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|-------------------------|----------------|--------|-----------------------------------|
| | Town's mains | Pumped | |
| Up to 1000* | Yes | Yes | Yes |
| Up to 1200** | Yes | Yes | Yes |
| Up to 1500** | No | Yes | Yes |
| Up to 1800*** | No | Yes | Yes |

RASCOFLEX RFXXXB (braided) sprinkler hose connections are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|-------------------------|----------------|--------|-----------------------------------|
| | Town's mains | Pumped | |
| Up to 1000* | Yes | Yes | Yes |
| Up to 1200** | Yes | Yes | Yes |
| Up to 1500** | Yes | Yes | Yes |
| Up to 1800*** | Yes | Yes | Yes |

All pipework supplying RASCOFLEX sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains

*up to 1 x 90° bends, with or without a 90° elbow reducer

**up to 2 x 90° bends, with or without a 90° elbow reducer

***up to 3 x 90° bends, with or without a 90° elbow reducer

- 2) In suspended ceilings RASCOFLEX sprinkler connection must be installed in accordance with the RASCOFLEX installation instructions RF Inst. 1.0 dated 21.10.14.
- 3) In suspended ceilings the outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

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Certificate No: 1468a to LPS 1261: Issue 03 draft

FLEXONE SJ27B (Braided) & SJ27N (Unbraided) Flexible Sprinkler Connectors

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|------------------------|----------------|-----------------------------------|---|-----------------------------------|------------------|
| FLEXONE SJ27B-T700 | 700 | 1 BSPT / NPT External thread | ½" BSPT / NPT ¾" BSPT / NPT Internal thread | 14 | 1468a/01 |
| FLEXONE SJ27B-T1000 | 1000 | 1 BSPT / NPT External thread | ½" BSPT / NPT ¾" BSPT / NPT Internal thread | 14 | |
| FLEXONE SJ27B-T1200 | 1200 | 1 BSPT / NPT External thread | ½" BSPT / NPT ¾" BSPT / NPT Internal thread | 14 | |
| FLEXONE SJ27B-T1500 | 1500 | 1 BSPT / NPT External thread | ½" BSPT / NPT ¾" BSPT / NPT Internal thread | 14 | |
| FLEXONE SJ27B-T1800 | 1800 | 1 BSPT / NPT External thread | ½" BSPT / NPT ¾" BSPT / NPT Internal thread | 14 | |
| FLEXONE SJ27N-T700 | 700 | 1 BSPT / NPT External thread | ½" BSPT / NPT ¾" BSPT / NPT Internal thread | 14 | 1468a/02 |

PART 3: SECTION 8.2

FLEXIBLE DROPS

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------|-------------|---------------------------------|---|--------------------------------|---------------|
| FLEXONE SJ27N-T1000 | 1000 | 1 BSPT / NPT External thread | 1/2" BSPT / NPT 3/4" BSPT / NPT Internal thread | 14 | |
| FLEXONE SJ27N-T1200 | 1200 | 1 BSPT / NPT External thread | 1/2" BSPT / NPT 3/4" BSPT / NPT Internal thread | 14 | |
| FLEXONE SJ27N-T1500 | 1500 | 1 BSPT / NPT External thread | 1/2" BSPT / NPT 3/4" BSPT / NPT Internal thread | 14 | |
| FLEXONE SJ27N-T1800 | 1800 | 1 BSPT / NPT External thread | 1/2" BSPT / NPT 3/4" BSPT / NPT Internal thread | 14 | |

Notes for FLEXONE SJ27B (Braided) & SJ27N (Unbraided) Flexible Sprinkler Connectors:

These flexible sprinkler connectors may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings).

1. FLEXONE SJ27B (braided) & SJ27N (unbraided) flexible sprinkler connectors are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|----------------------|----------------|--------|--------------------------------|
| | Town's mains | Pumped | |
| Up to 700* | Yes | Yes | Yes |
| Up to 1500** | No | Yes | Yes |
| Up to 1800** | No | No | Yes |

Table 1 - Without 'L1' or 'L2' 90° elbow reducer - see notes

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|----------------------|----------------|--------|--------------------------------|
| | Town's mains | Pumped | |
| Up to 700*** | No | Yes | Yes |
| Up to 1800**** | No | No | Yes |

Table 2 - With 'L1' or 'L2' 90° elbow reducer - see notes

Pipework supplying FLEXONE flexible sprinkler connector assemblies in pre-calculated systems shall be sized as distribution mains. The above applications apply to FLEXONE flexible sprinkler connectors with:

- * up to 2 x 90° bends, with a straight or 'L' type 90° elbow reducer
- ** up to 3 x 90° bends, with a straight or 'L' type 90° elbow reducer
- *** up to 2 x 90° bends, with a 'L1' or 'L2' type 90° elbow reducer
- **** up to 3 x 90° bends, with a 'L1' or 'L2' type 90° elbow reducer

2. In suspended ceilings FLEXONE SJ27B & SJ27N flexible sprinkler connectors must be installed in accordance with the FLEXONE Manual of Installation, Maintenance / Design revision date 5th July 2018.
3. In suspended ceilings the outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure the sprinkler is secure.

The Viking Corporation

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Certificate No: 096i/01

Viking Flex Drop - 28mm Braided

| Product Name | Length mm | Inlets | Outlet | MWP Bar | LPCB Ref. No. |
|--------------|-----------|--|--|---------|---------------|
| VKFD28 B-07 | 700 | 1" NPT, 1" BSPT, 1 1/4" NPT, 1 1/4" BSPT Male | 1/2" NPT or BSPT, 3/4" NPT or BSPT Female, Straight & 90° Angle | 17.2 | 096i/01 |
| VKFD28 B-10 | 1000 | 1" NPT, 1" BSPT, 1 1/4" NPT, 1 1/4" BSPT Male | 1/2" NPT or BSPT, 3/4" NPT or BSPT Female, Straight & 90° Angle | 17.2 | |
| VKFD28S B-12 | 1200 | 1" NPT, 1" BSPT, 1 1/4" NPT, 1 1/4" BSPT Male | 1/2" NPT or BSPT, 3/4" NPT or BSPT Female, Straight & 90° Angle | 17.2 | |
| VKFD28 B-15 | 1500 | 1" NPT, 1" BSPT, 1 1/4" NPT, 1 1/4" BSPT Male | 1/2" NPT or BSPT, 3/4" NPT or BSPT Female, Straight & 90° Angle | 17.2 | |
| VKFD28 B-18 | 1800 | 1" NPT, 1" BSPT, 1 1/4" NPT, 1 1/4" BSPT Male | 1/2" NPT or BSPT, 3/4" NPT or BSPT Female, Straight & 90° Angle | 17.2 | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings)

1) Viking Flex Drop sprinkler connections are approved for use in the following applications:

| Hose diam (mm) | Length (mm) | Pre-calculated: | | Fully hydraulically calculated: |
|----------------|-------------|-----------------|--------|---------------------------------|
| | | Town's | Pumped | |
| 28 | 700 | Yes | Yes | Yes |
| | 1000 | Yes | Yes | Yes |
| | 1200 | Yes | Yes | Yes |
| | 1500 | Yes | Yes | Yes |
| | 1800 | Yes | Yes | Yes |

All pipework supplying Viking Flex Drop sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains.

The above restrictions apply to Viking Flex Drops with any configuration of inlet and outlet fittings and apply with up to three 90° bends (excluding a 90 angled outlet nipple).

- In suspended ceiling Viking Flex Drop flexible sprinkler drops must be installed in accordance with Viking Installation manuals VKFD28-LPCB-CLIP or Installation manual 112107
- In suspended ceilings, outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

PART 3: SECTION 8.2

FLEXIBLE DROPS

Certificate No: 096i/02

Viking Flex Drop - 28mm UnBraided

| Product Name | Length mm | Inlets | Outlet | MWP Bar | LPCB Ref. No. |
|--------------|-----------|-------------|--|---------|---------------|
| VKFD28 U-07 | 700 | 1" NPT | 1/2" NPT or BSPT | 13.8 | 096i/02 |
| VKFD28 U-10 | 1000 | 1" BSPT | 3/4" NPT or BSPT | | |
| VKFD28 U-12 | 1200 | 1 1/4" NPT | Female, Straight | | |
| VKFD28S U-15 | 1500 | 1 3/4" BSPT | 90 degree Angle & 90 degree Angle & 90 degree Angle & 90 degree Angle & 90 degree Angle & 90 degree Angle | | |
| VKFD28 U-18 | 1800 | Male | | | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings)

1) Viking Flex Drop sprinkler connections are approved for use in the following applications:

| Hose diam. (mm) | Length (mm) | Pre-calculated: | | Fully hydraulically calculated: |
|--------------------|----------------|-----------------|--------|------------------------------------|
| | | Town's | Pumped | |
| 28 | 700 | Yes | Yes | Yes |
| | 1000 | Yes | Yes | Yes |
| | 1200 | Yes | Yes | Yes |
| | 1500 | Yes | Yes | Yes |
| | 1800 | Yes | Yes | Yes |

All pipework supplying Viking Flex Drop sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains.

The above restrictions apply to Viking Flex Drops with any configuration of inlet and outlet fittings and apply with up to three 90° bends (excluding a 90 angled outlet nipple).

- In suspended ceiling Viking Flex Drop flexible sprinkler drops must be installed in accordance with Viking Installation manuals VKFD28-LPCB-CLIP or Installation manual 112107
- In suspended ceilings, outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

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Certificate No: 169a to LPS 1261

Flexible Sprinkler Hose

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|--|--|--------------------------------|---------------|
| YN25-700 | 700 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BSPT) or NPT) Internal thread | 16 | 169a/01 |
| YN25-1000 | 1000 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BSPT) or NPT) Internal thread | 16 | |
| YN25-1200 | 1200 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BSPT) or NPT) Internal thread | 16 | |

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FLEXIBLE DROPS

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|--|---|--------------------------------|---------------|
| YN25-1500 | 1500 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BSPT) or NPT) Internal thread | 16 | |
| YN25-1800 | 1800 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BSPT) or NPT) Internal thread | 16 | |
| YN25-2000 | 2000 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BSPT) or NPT) Internal thread | 16 | |
| YN25-2500 | 2500 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BSPT) or NPT) Internal thread | 16 | |
| YN25-2700 | 2700 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BSPT) or NPT) Internal thread | 16 | |
| YN25-3100 | 3100 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BSPT) or NPT) Internal thread | 16 | |
| YN25-3700 | 3700 | R1(1"BSPT) or 1"NPT or R1.1/4 (1.1/4"BSPT) External thread | Rc1/2 or Rc3/4 (1/2" or 3/4" BS PT) or NPT) Internal thread | 16 | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings)

1. Tyco Fastflex flexible sprinkler connections are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully Hydraulically calculated |
|----------------------|---------------------|---------------------|--------------------------------|
| | Town's main | Pumped | |
| 700 | Up to 2 x 90° bends | Up to 2 x 90° bends | Up to 2 x 90° bends |
| Up to 1200 | No | Up to 2 x 90° bends | Up to 2 x 90° bends |
| Up to 1500 | No | No | Up to 2 x 90° bends |
| Up to 3700 | No | No | Up to 3 x 90° bends |

All pipework supplying Fastflex flexible sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains.

The above restrictions apply to Fastflex which includes a sprinkler reducer. Straight lengths can be used with a 90° outlet.

2. In suspended ceilings Fastflex flexible sprinkler connections must be installed in accordance with Fastflex Installation Guide Rev 1.
3. In suspended ceilings, outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

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Certificate No: 104I to LPS 1261

Victaulic VicFlex™ AH2 braided flexible sprinkler drops

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|---------------------------------|--|--------------------------------|---------------|
| AH2-31 | 790 | 1"BSPT (or NPT) External thread | 1/2" or 3/4" BSPT (or NPT) Internal thread | 16 | 104I/01 |

PART 3: SECTION 8.2

FLEXIBLE DROPS

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|--|--|--------------------------------|---------------|
| AH2-36 | 915 | 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-48 | 1220 | 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-60 | 1525 | 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-72 | 1830 | 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-31 | 790 | 1¼" x 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-36 | 915 | 1¼" x 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-48 | 1220 | 1¼" x 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-60 | 1525 | 1¼" x 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-72 | 1830 | 1¼" x 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings)

- Victaulic flexible sprinkler connections are approved for use in the following applications:

| Assembly length, mm | Pre-calculated | | Fully hydraulically calculated |
|---------------------|----------------|--------|--------------------------------|
| | Town's mains | Pumped | |
| 790 * | Yes | Yes | Yes |
| 915 ** | Yes | Yes | Yes |
| 1220 ** | Yes | Yes | Yes |
| 1525 ** | Yes | Yes | Yes |
| 1830 ** | Yes | Yes | Yes |

All pipework supplying Victaulic flexible sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains.

The above applications apply to Victaulic flexible drops with;

*up to 2 x 90° bends, with or without, a 90° sprinkler reducer,

** up to 3 x 90° bends, with or without, a 90° sprinkler reducer.

- In a suspended ceiling Victaulic flexible sprinkler connections must be installed using AB1 bracket assemblies in Accordance with either of the Victaulic Installation instructions, I-VicFlex.AB1/AB2/AB10 REV M; I-VicFlex.AB3 REV D; I-VicFlex.AB4/AB9 REV F; I-VicFlex.AB5 REV C; I-VicFlex.AB7 REV H; I-VicFlex.AB8 REV B.

Certificate No: 1041 to LPS 1261

Victaulic VicFlex™ AH2-CC grooved end braided flexible sprinkler drops.

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|----------------------------------|--|--------------------------------|---------------|
| AH2-31 | 790 | 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | 1041/04 |
| AH2-36 | 910 | 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-48 | 1220 | 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-60 | 1525 | 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH2-72 | 1830 | 1" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |

Notes:

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261.

These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings)

1. Victaulic flexible sprinkler connections are approved for use in the following applications:

| Assembly length, mm | Pre-calculated | | Fully hydraulically calculated |
|------------------------|----------------|--------|-----------------------------------|
| | Town's mains | Pumped | |
| 790 * | Yes | Yes | Yes |
| 915 ** | Yes | Yes | Yes |
| 1220 ** | Yes | Yes | Yes |
| 1525 ** | Yes | Yes | Yes |
| 1830 ** | No | Yes | Yes |

All pipework supplying Victaulic flexible sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains.

The above applications apply to Victaulic flexible drops with;

*up to 2 x 90° bends, with or without, a 90° sprinkler reducer,

** up to 3 x 90° bends, with or without, a 90° sprinkler reducer.

- In a suspended ceiling Victaulic flexible sprinkler connections must be installed using AB1 bracket assemblies in Accordance with the Victaulic Installation Instructions, I-VicFlex.AB1/AB2/AB10 REV O.
- In suspended ceilings, the outlet ferrule must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

Certificate No: 104I to LPS 1261

Victaulic VicFlex™ AH1 braided flexible sprinkler drops

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|--|---|--------------------------------|---------------|
| AH1-31 | 790 | 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | 104I/02 |
| AH1-36 | 910 | 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-48 | 1220 | 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-60 | 1525 | 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-72 | 1830 | 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-31 | 790 | 1¼" x 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-36 | 910 | 1¼" x 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-48 | 1220 | 1¼" x 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-60 | 1525 | 1¼" x 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-72 | 1830 | 1¼" x 1"BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings)

- Victaulic flexible sprinkler connections are approved for use in the following applications:

PART 3: SECTION 8.2

FLEXIBLE DROPS

| Assembly length, mm | Pre-calculated | | Fully hydraulically calculated |
|------------------------|----------------|--------|-----------------------------------|
| | Town's mains | Pumped | |
| 790 * | No | Yes | Yes |
| 910 ** | No | Yes | Yes |
| 1220 ** | No | Yes | Yes |
| 1525 ** | No | Yes | Yes |
| 1830 ** | No | Yes | Yes |

All pipework supplying Victaulic flexible sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains.

The above applications apply to Victaulic flexible drops with;

*up to 2 x 90° bends, with or without, a 90° sprinkler reducer,

** up to 3 x 90° bends, with or without, a 90° sprinkler reducer.

- In a suspended ceiling Victaulic flexible sprinkler connections must be installed using AB1 bracket assemblies in Accordance with either of the Victaulic Installation instructions, I-VicFlex.AB1/AB2/AB10 REV M; I-VicFlex.AB3 REV D; I-VicFlex.AB4/AB9 REV F; I-VicFlex.AB5 REV C; I-VicFlex.AB7 REV H; I-VicFlex.AB8 REV B.

Certificate No: 1041 to LPS 1261

Victaulic VicFlex™ AH1-CC grooved end braided flexible sprinkler drops.

| Product Name | Length (mm) | Nominal Size/Connection Supply | Nominal Size/Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|---------------------------------------|---|--------------------------------|---------------|
| AH1-31 | 790 | 0.8" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | 1041/03 |
| AH1-36 | 910 | 0.8" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-48 | 1220 | 0.8" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-60 | 1525 | 0.8" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |
| AH1-72 | 1830 | 0.8" BSPT (or NPT) External thread | ½" or ¾" BSPT (or NPT) Internal thread | 16 | |

Notes:

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261.

These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings)

- Victaulic flexible sprinkler connections are approved for use in the following applications:

| Assembly length, mm | Pre-calculated | | Fully hydraulically calculated |
|------------------------|----------------|--------|-----------------------------------|
| | Town's mains | Pumped | |
| 790 * | No | Yes | Yes |
| 910 ** | No | No | Yes |
| 1220 ** | No | No | Yes |
| 1525 ** | No | No | Yes |
| 1830 ** | No | No | Yes |

All pipework supplying Victaulic flexible sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains.

The above applications apply to Victaulic flexible drops with;

*up to 2 x 90° bends, with or without, a 90° sprinkler reducer,

** up to 3 x 90° bends, with or without, a 90° sprinkler reducer.

- In a suspended ceiling Victaulic flexible sprinkler connections must be installed using AB1 bracket assemblies in Accordance with the Victaulic Installation instructions, I-VicFlex.AB1/AB2/AB10 REV O.
- In suspended ceilings, the outlet ferrule must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

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Certificate No: 1254a to LPS 1261

Youngjin YJ28 – 28mm Braided & Unbraided Flexible Sprinkler Hose

| Product Name | Length (mm) | Nominal Size / Connection Supply | Nominal Size / Connection Outlet | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|-------------|----------------------------------|----------------------------------|--------------------------------|---------------|
| YJ28-S-700 | 700 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | 1254a/01 |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |
| YJ28-S-1000 | 1000 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |
| YJ28-S-1200 | 1200 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |
| YJ28-S-1500 | 1500 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |
| YJ28-S-1800 | 1800 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |
| YJ28-SB-700 | 700 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | 1254a/02 |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |
| YJ28-SB-1000 | 1000 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |
| YJ28-SB-1200 | 1200 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |
| YJ28-SB-1500 | 1500 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |
| YJ28-SB-1800 | 1800 | 1" BSPT/NPT external thread | ½" BSPT/NPT internal thread | 14 | |
| | | 1¼" BSPT/NPT external thread | ¾" BSPT/NPT internal thread | | |

These products have been approved as a Type 2 hose of moderate flexibility in accordance with LPS 1261. These may be used in applications where little or no differential movement between the two ends is expected after installation (e.g. supply to single sprinklers in suspended ceilings).

1) Youngjin YJ28-S (unbraided) sprinkler hose connections are approved for use in the following applications:

PART 3: SECTION 8.2

FLEXIBLE DROPS

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|-------------------------|----------------|--------|-----------------------------------|
| | Town's mains | Pumped | |
| Up to 1000* | Yes | Yes | Yes |
| Up to 1200** | Yes | Yes | Yes |
| Up to 1500** | No | Yes | Yes |
| Up to 1800*** | No | Yes | Yes |

Youngjin YJ28-SB (braided) sprinkler hose connections are approved for use in the following applications:

| Assembly length (mm) | Pre-calculated | | Fully hydraulically calculated |
|-------------------------|----------------|--------|-----------------------------------|
| | Town's mains | Pumped | |
| Up to 1000* | Yes | Yes | Yes |
| Up to 1200** | Yes | Yes | Yes |
| Up to 1500** | Yes | Yes | Yes |
| Up to 1800*** | Yes | Yes | Yes |

All pipework supplying Youngjin sprinkler connection assemblies in pre-calculated systems shall be sized as distribution mains

*up to 1 x 90° bends, with or without a 90° elbow reducer

**up to 2 x 90° bends, with or without a 90° elbow reducer

***up to 3 x 90° bends, with or without a 90° elbow reducer

- 2) In suspended ceilings Youngjin YJ28 sprinkler connection must be installed in accordance with the Youngjin installation instructions MNL_SP00 dated 10/20/2014.
- 3) In suspended ceilings the outlet reducer must be secured to the ceiling support system with brackets supplied. For other applications the installer must supply brackets to ensure sprinkler is secure.

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Lightweight Pipework Systems listed below are considered acceptable for use in installations conforming to the *LPC Rules for Automatic Sprinkler Installations*. The products shall be installed and maintained in accordance with the manufacturer's instructions.

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Website: www.geberit.co.uk

Certificate No: 1031a to TS1599 v5

Geberit Mapress Press-Fit Lightweight Galvanized Steel Sprinkler Pipework System

| Product Name | Size / mm | LPCB Ref. No. |
|---|--|---------------|
| Pipe | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031a/01 |
| Coupling | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031a/02 |
| Slip Coupling | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031a/03 |
| Bend 90° | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031a/04 |
| Bend 90° with plain end | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031a/05 |
| Bend 45° | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031a/06 |
| Bend 45° with plain end | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031a/07 |
| Reducer with plain end | 28x22, 35x22, 35x28, 42x28, 42x35, 54x35, 54x42, 76.1x54, 88.9x54, 88.9x76.1, 108x76.1, 108x88.9 | 1031a/08 |
| T-piece equal | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031a/09 |
| T-piece reduced | 28x22x28, 35x22x35, 35x28x35, 42x22x42, 42x28x42, 42x35x42, 54x22x54, 54x28x54, 54x35x54, 54x42x54, 76.1x22x76.1, 76.1x28x76.1, 76.1x35x76.1, 76.1x42x76.1, 76.1x54x76.1, 88.9x22x88.9, 88.9x28x88.9, 88.9x35x88.9, 88.9x42x88.9, 88.9x54x88.9, 88.9x76.1x88.9, 108x22x108, 108x28x108, 108x35x108, 108x42x108, 108x54x108, 108x76.1x108, 108x88.9x108 | 1031a/10 |
| T-piece with female thread | 22x1/2"x22, 22x3/4"x22, 28x1/2"x28, 28x3/4"x28, 28x1"x28, 35x1/2"x35, 35x3/4"x35, 42x1/2"x42, 42x3/4"x42, 54x1/2"x54, 54x3/4"x54, 54x2"x54, 76.1x3/4"x76.1, 76.1x2"x76.1, 88.9x3/4"x88.9, 88.9x2"x88.9, 108x3/4"x108, 108x2"x108 | 1031a/11 |
| Adaptor with male thread | 22x1/2", 22x3/4", 22x1", 28x3/4", 28x1", 28x1 1/4", 35x1 1/4", 35x1 1/2", 42x 1 1/4", 42x1 1/2", 54x1 1/2", 54x2", 76.1x2 1/2", 88.9x3" | 1031a/12 |
| Adaptor with female thread | 22x3/4", 28x1/2", 28x1" | 1031a/13 |
| Adaptor with plain and welding end | 15, 18, 22, 28, 35, 42, 54 | 1031a/14 |
| Adaptor for groove systems | 54 | 1031a/15 |
| Adaptor with brass union nut | 22x1", 22x 1 1/4", 22x 1 1/2", 28x1", 28x1 1/4", 28x1 1/2", 35x1 1/2", 35x2", 42x1 3/4", 42x2", 42x 2 1/4", 42x 2 3/8", 42x 2 1/2", 54x 2 1/2", 54x 2 3/4" | 1031a/16 |
| Adaptor union with male thread | 22x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 1031a/17 |
| Adaptor union with female thread, nut made of stainless steel | 22x3/4", 22x1", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 1031a/18 |
| Elbow adaptor 90° with male thread | 22x3/4" | 1031a/19 |
| Elbow adaptor 90° with female thread | 28x1/2" | 1031a/20 |
| Bend adaptor 90° with female thread | 22x3/4", 28x1/2" | 1031a/21 |
| Straight union with press fittings on both ends | 22, 28, 35, 42, 54 | 1031a/22 |
| Flange PN 10 / 16 with pressing socket | 76.1, 88.9, 108 | 1031a/23 |
| Cap | 22, 28, 35, 42, 54 | 1031a/24 |

PART 3: SECTION 8.3

LIGHTWEIGHT PIPEWORK SYSTEMS

Notes

1. The above Geberit Press-fit pipework and fittings are to be installed using the Geberit Mapress ECO301 and HCPS pressing tools only, in accordance with the Geberit Installation Instructions. These tools shall be serviced and maintained in accordance with manufacturers' stated guidelines.
2. Geberit Press-fit pipework and fittings may only be installed by LPCB approved or registered contractors who have undergone adequate training by the manufacturer.
3. Geberit Press-fit pipework and fittings shall be installed in accordance with the Geberit Installation Instructions, Issue 1. August 2011.
4. Geberit Press-fit pipework and fittings shall be installed and maintained in conformance with the LPC Rules for Automatic Sprinkler Installations.
5. The use of Geberit Press-fit pipework and fittings shall be recorded on LPS1048 certificates of conformity.
6. Where a Geberit Reducer is installed, a pipe hanger shall be used adjacent to the reducer on the larger pipe.
7. Where Geberit system pipework is connected to sprinklers in suspended ceilings using flexible drops, only LPCB Approved flexible drops shall be used.
8. Geberit Press-fit pipework and fittings are not compatible with lightweight piping systems from other manufacturers.

Certificate No: 1031b to TS1599 v5

Geberit Mapress Press-Fit Lightweight Stainless Steel Sprinkler Pipework System

| Product Name | Size / mm | LPCB Ref. No. |
|---|--|---------------|
| Pipe | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031b/01 |
| Coupling | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031b/02 |
| Slip Coupling | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031b/03 |
| Bend 90° | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031b/04 |
| Bend 90° with plain end | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031b/05 |
| Bend 45° | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031b/06 |
| Bend 45° with plain end | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031b/07 |
| Reducer with plain end | 28x22, 35x22, 35x28, 42x28, 42x35, 54x35, 54x42, 76.1x54, 88.9x54, 88.9x76.1, 108x76.1, 108x88.9 | 1031b/08 |
| T-piece equal | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031b/09 |
| T-piece reduced | 28x22x28, 35x22x35, 35x28x35, 42x22x42, 42x28x42, 42x35x42, 54x22x54, 54x28x54, 54x35x54, 54x42x54, 76.1x22x76.1, 76.1x28x76.1, 76.1x35x76.1, 76.1x42x76.1, 76.1x54x76.1, 88.9x22x88.9, 88.9x28x88.9, 88.9x35x88.9, 88.9x42x88.9, 88.9x54x88.9, 88.9x76.1x88.9, 108x22x108, 108x28x108, 108x35x108, 108x42x108, 108x54x108, 108x76.1x108, 108x88.9x108 | 1031b/10 |
| T-piece with female thread | 22x1/2"x22, 22x3/4"x22, 28x1/2"x28, 28x3/4"x28, 28x1"x28, 35x1/2"x35, 35x3/4"x35, 42x1/2"x42, 42x3/4"x42, 54x1/2"x54, 54x3/4"x54, 54x2"x54, 76.1x3/4"x76.1, 76.1x2"x76.1, 88.9x3/4"x88.9, 88.9x2"x88.9, 108x3/4"x108, 108x2"x108 | 1031b/11 |
| Adaptor with male thread | 22x1/2", 22x3/4", 22x1", 28x3/4", 28x1", 28x1 1/4", 35x1", 35x1 1/4", 35x1 1/2", 42x 1 1/4", 42x1 1/2", 54x1 1/2", 54x2", 76.1x2 1/2", 88.9x3" | 1031b/12 |
| Adaptor with female thread | 22x1/2", 22x3/4", 22x1", 28x1/2", 28x3/4", 28x1", 28x1 1/4", 35x1", 35x1 1/4", 35x1 1/2", 42x 1 1/4", 42x1 1/2", 54x1 1/2", 54x2" | 1031b/13 |
| Adaptor with brass union nut | 22x1", 22x 1 1/4", 22x 1 1/2", 28x1", 28x1 1/4", 28x1 1/2", 35x1 1/2", 42x1 3/4", 54x2 3/8", 76.1x3", 88.9x3 1/2" | 1031b/14 |
| Adaptor with stainless steel union nut | 22x1", 28x1 1/2" | 1031b/15 |
| Adaptor union with male thread, nut made of stainless steel | 22x1/2", 22x3/4", 22x1", 28x1/2", 28x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 1031b/16 |
| Adaptor union with male thread, nut made of brass | 22x1/2", 22x3/4", 22x1", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 1031b/17 |
| Adaptor union with female thread, nut made of brass | 22x3/4", 22x1", 28x1", 35x1 1/4", 42x 1 1/2", 54x2" | 1031b/18 |
| Adaptor union with female thread, nut made of stainless steel | 22x3/4", 22x1", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 1031b/19 |
| Elbow adaptor 90° with male thread | 22x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 1031b/20 |
| Elbow adaptor 90° with female thread | 22x3/4", 28x1", 35x1 1/4" | 1031b/21 |
| Straight union with press fittings on both ends | 22, 28, 35, 42, 54 | 1031b/22 |
| Flange PN 10 / 16 with pressing socket | 22, 28, 35, 42, 54, 76.1, 88.9, 108 | 1031b/23 |
| Cap | 22, 28, 35, 42, 54 | 1031b/24 |

Notes

1. The above Geberit Press-fit pipework and fittings are to be installed using the Geberit Mapress ECO301 and HCPS pressing tools only, in accordance with the Geberit Installation Instructions. These tools shall be serviced and maintained in accordance with manufacturers' stated guidelines.

2. Geberit Press-fit pipework and fittings may only be installed by LPCB approved or registered contractors who have undergone adequate training by the manufacturer.
3. Geberit Press-fit pipework and fittings shall be installed in accordance with the Geberit Installation Instructions, Issue 1. August 2011.
4. Geberit Press-fit pipework and fittings shall be installed and maintained in conformance with the LPC Rules for Automatic Sprinkler Installations.
5. The use of Geberit Press-fit pipework and fittings shall be recorded on LPS1048 certificates of conformity.
6. Where a Geberit Reducer is installed, a pipe hanger shall be used adjacent to the reducer on the larger pipe.
7. Where Geberit system pipework is connected to sprinklers in suspended ceilings using flexible drops, only LPCB Approved flexible drops shall be used.
8. Geberit Press-fit pipework and fittings are not compatible with lightweight piping systems from other manufacturers.

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Certificate No: 169f to TS1599 Issue draft 5

Grinnell G-Press Lightweight Galvanized Steel Sprinkler Pipework System

| Product Name | Size/mm | LPCB Ref. No. |
|--|---|---------------|
| Pipe GS | 22, 28, 35, 42, 54 | 169f/01 |
| G05 Straight Coupling (2 x Press) | 22, 28, 35, 42, 54 | 169f/02 |
| G10 Slip Coupling (2 x Press) | 22, 28, 35, 42, 54 | 169f/03 |
| G15 90° Elbow (2 x Press) | 22, 28, 35, 42, 54 | 169f/04 |
| G16 90° Elbow (Press x plain end) | 22, 28, 35, 42, 54 | 169f/05 |
| G20 45° Elbow (2 x Press) | 22, 28, 35, 42, 54 | 169f/06 |
| G21 45° Elbow (Press x plain end) | 22, 28, 35, 42, 54 | 169f/07 |
| G25 90° Bend (2 x plain end) | 22, 28, 35, 42, 54 | 169f/08 |
| G30 Cross over (2 x plain end) | 22, 28 | 169f/09 |
| G35 Tee equal (3 x Press) | 22, 28, 35, 42, 54 | 169f/10 |
| G36 Tee reduced (3 x Press) | 22x28x22, 28x22x28, 35x22x35, 35x28x35, 42x22x42, 42x28x42, 42x35x42, 54x22x54, 54x28x54, 54x35x54, 54x42x54 | 169f/11 |
| G37 Tee threaded (Press x fem. thread x Press) | 22x1/2"x22, 22x3/4"x22, 28x1/2"x28, 28x3/4"x28, 28x1"x28, 35x1/2"x35, 35x3/4"x35, 35x1x35, 42x1/2"x42, 42x3/4"x42, 42x1"x42, 54x1/2"x54, 54x3/4"x54, 54x1"x54 | 169f/12 |
| G40 Reducer (Large Plain end x Press) | 28x22, 35x22, 35x28, 42x28, 42x35, 54x35, 54x42, | 169f/13 |
| G41 Reducer (2 x Press) | 28x22 | 169f/14 |
| G51 Straight connector (Plain end x female thread) | 22x1/2", 22x3/4" | 169f/15 |
| G46 Straight connector (Press x female thread) | 22x3/4", 28x1/2", 28x3/4", 28x1", 35x1 1/4" | 169f/16 |
| G45 Straight connector (Press x male thread) | 22x1/2", 22x3/4", 22x1", 28x3/4", 28x1", 28x1 1/4", 35x1", 35x1 1/4", 35x1 1/2", 42x1 1/4", 42x1 1/2", 54x1 1/2", 54x2" | 169f/17 |
| G47 Straight union (Press x male thread) | 22x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 169f/18 |
| G19 90° Angle adaptor (Press x male thread) | 22x3/4" | 169f/19 |
| G17 90° Elbow (Press x male thread) | 22x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2", | 169f/20 |
| G18 90° Elbow (Press x female thread) | 22x1/2", 22x3/4", 28x1/2", 28x3/4", 28x1", 35x1/2", 35x3/4", 35x1" | 169f/21 |
| G48 Straight connector (Press x grooved) | 28x33.7, 35x42.4, 42x48.3, 54x60.3 | 169f/22 |
| G50 Stop end (1 x press) | 22, 28, 35, 42, 54 | 169f/23 |

Notes

PART 3: SECTION 8.3

LIGHTWEIGHT PIPEWORK SYSTEMS

1. The above Grinnell G-Press pipework and fittings are to be installed using the Novopress pressing tool in accordance with the Grinnell G-Press User Manual. The tools shall be serviced and maintained in accordance with the manufacturer's stated guidelines.
2. Grinnell G-Press pipework and fittings may only be installed by LPCB Approved Sprinkler Contractors who have undergone adequate training by the manufacturer.
3. Grinnell G-Press pipework and fittings shall be installed in accordance with the Grinnell G-Press user Manual: Issue TYCENPRESS-10/11.
4. Grinnell G-Press pipework and fittings shall be installed and maintained in conformance with the LPC Rules for Automatic Sprinkler Installations.
5. The use of Grinnell G-Press Sprinkler System pipework and fittings shall be recorded on LPS1048 certificates of conformity.
6. Where a Grinnell Reducer is installed, a pipe hanger shall be used adjacent to the reducer on the larger pipe.
7. Where Grinnell system pipework is connected to sprinklers in suspended ceilings, only LPCB Approved flexible drops shall be used.
8. Grinnell G-Press pipework and fittings are not compatible with lightweight piping systems from other manufacturers.

Certificate No: 169g to TS1599 Issue draft 5

Grinnell G-Press Lightweight Stainless Steel Sprinkler Pipework System

| Product Name | Size/mm | LPCB Ref. No. |
|--|---|----------------------|
| Pipe SS (1.4401) | 22, 28, 35, 42, 54 | 169g/01 |
| G05 Straight Coupling (2 x Press) | 22, 28, 35, 42, 54 | 169g/02 |
| G10 Slip Coupling (2 x Press) | 22, 28, 35, 42, 54 | 169g/03 |
| G15 90° Elbow (2 x Press) | 22, 28, 35, 42, 54 | 169g/04 |
| G16 90° Elbow (Press x plain end) | 22, 28, 35, 42, 54 | 169g/05 |
| G20 45° Elbow (2 x Press) | 22, 28, 35, 42, 54 | 169g/06 |
| G21 45° Elbow (Press x plain end) | 22, 28, 35, 42, 54 | 169g/07 |
| G25 90° Bend (2 x plain end) | 22, 28, 35, 42, 54 | 169g/08 |
| G26 60° Bend (2 x plain end) | 28, 35, 42, 54 | 169g/09 |
| G27 30° Bend (2 x plain end) | 28, 35, 42, 54 | 169g/10 |
| G28 15° Bend (2 x plain end) | 28, 35, 42, 54 | 169g/11 |
| G30 Cross over (2 x plain end) | 22, 28 | 169g/12 |
| G35 Tee equal (3 x Press) | 22, 28, 35, 42, 54 | 169g/13 |
| G36 Tee reduced (3 x Press) | 28x22x28, 35x22x35, 35x28x35, 42x22x42, 42x28x42, 42x35x42, 54x22x54, 54x28x54, 54x35x54, 54x42x54 | 169g/14 |
| G37 Tee threaded (Press x fem. thread x Press) | 22x1/2"x22, 22x3/4"x22, 28x1/2"x28, 28x3/4"x28, 28x1"x28, 35x1/2"x35, 35x3/4"x35, 35x1x35, 42x1/2"x42, 42x3/4"x42, 42x1"x42, 54x1/2"x54, 54x3/4"x54, 54x1"x54, 54x2"x54 | 169g/15 |
| G40 Reducer (Large Plain end x Press) | 28x22, 35x22, 35x28, 42x28, 42x35, 54x35, 54x42, | 169g/16 |
| G46 Straight connector (Press x female thread) | 22x1/2", 22x3/4", 22x1", 28x3/4", 28x1", 28x1 1/4", 35x1", 35x1 1/4", 35x1 1/2", 42x1 1/4", 42x1 1/2", 54x1 1/2", 54x2" | 169g/17 |
| G45 Straight connector (Press x male thread) | 22x1/2", 22x3/4", 22x1", 28x3/4", 28x1", 28x1 1/4", 35x1", 35x1 1/4", 35x1 1/2", 42x1 1/4", 42x1 1/2", 54x1 1/2", 54x2" | 169g/18 |
| G47 Straight union (Press x male thread) | 22x1/2", 22x3/4", 22x1", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 169g/19 |
| G51 Straight union (Press x female thread) | 22x3/4", 22x1", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 169g/20 |
| G19 90° Angle adaptor (Press x male thread) | 22x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 169g/21 |
| G14 90° Angle adaptor (Press x female thread) | 22x1/2", 22x3/4", 28x1/2", 28x3/4", 28x1", 35x1/2", 35x3/4", 35x1", 35x1 1/4" | 169g/22 |
| G17 90° Elbow (Press x male thread) | 22x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2", | 169g/23 |
| G18 90° Elbow (Press x female thread) | 22x1/2", 22x3/4", 28x1/2", 28x3/4", 28x1", 35x1/2", 35x3/4", 35x1", 42x1 1/2", 54x2", | 169g/24 |
| G48 Straight connector (Press x grooved) | 28x33.7, 35x42.4, 42x48.3, 54x60.3 | 169g/25 |
| G50 Stop end (1 x press) | 22, 28, 35, 42, 54 | 169g/26 |

Notes

1. The above Grinnell G-Press pipework and fittings are to be installed using the Novopress ECO301 pressing tool in accordance with the Grinnell G-Press User Manual. The tools shall be serviced and maintained in accordance with the manufacturer's stated guidelines.
2. Grinnell G-Press pipework and fittings may only be installed by LPCB Approved Sprinkler Contractors who have undergone adequate training by the manufacturer.
3. Grinnell G-Press pipework and fittings shall be installed in accordance with the Grinnell G-Press user Manual: Issue TYCENPRESS-10/11.
4. Grinnell G-Press pipework and fittings shall be installed and maintained in conformance with the LPC Rules for Automatic Sprinkler Installations.
5. The use of Grinnell G-Press Sprinkler System pipework and fittings shall be recorded on LPS1048 certificates of conformity.
6. Where a Grinnell Reducer is installed, a pipe hanger shall be used adjacent to the reducer on the larger pipe.
7. Where Grinnell system pipework is connected to sprinklers in suspended ceilings, only LPCB Approved flexible drops shall be used.
8. Grinnell G-Press pipework and fittings are not compatible with lightweight piping systems from other manufacturers.

VSH Fittings BV

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Certificate No: 1033a to TS1599: Issue draft 5

VSH XPress Lightweight Galvanized Steel Pipework System

| Product Name | Description | Size/mm | LPCB Ref. No. |
|--------------|--|---|---------------|
| C 1461 | Galvanised tube | 22, 28, 35, 42, 54 | 1033a/01 |
| C 1401 | Straight Coupling (2 x Press) | 22, 28, 35, 42, 54 | 1033a/02 |
| C 1403 | Slip Coupling (2 x Press) | 22, 28, 35, 42, 54 | 1033a/03 |
| C 1408 | 90° Elbow (2 x Press) | 22, 28, 35, 42, 54 | 1033a/04 |
| C 1411 | 90° Elbow (Press x plain end) | 22, 28, 35, 42, 54 | 1033a/05 |
| C 1413 | 45° Elbow (2 x Press) | 22, 28, 35, 42, 54 | 1033a/06 |
| C 1412 | 45° Elbow (Press x plain end) | 22, 28, 35, 42, 54 | 1033a/07 |
| C 1425 | 90° Bend (2 x plain end) | 22, 28, 35, 42, 54 | 1033a/08 |
| C 1417 | Cross over (2 x plain end) | 22, 28 | 1033a/09 |
| C 1414 | Tee equal (3 x Press) | 22, 28, 35, 42, 54 | 1033a/10 |
| C 1415 | Tee reduced (3 x Press) | 22x28x22, 28x22x28, 35x22x35, 35x28x35, 42x22x42, 42x28x42, 42x35x42, 54x22x54, 54x28x54, 54x35x54, 54x42x54 | 1033a/11 |
| C 1418 | Tee threaded (press x fem. thread x press) | 22x1/2"x22, 22x3/4"x22, 28x1/2"x28, 28x3/4"x28, 28x1"x28, 35x1/2"x35, 35x3/4"x35, 35x1x35, 42x1/2"x42, 42x3/4"x42, 42x1"x42, 54x1/2"x54, 54x3/4"x54, 54x1"x54 | 1033a/12 |
| C 1407 | Reducer (Plain end x Press) | 28x22, 35x22, 35x28, 42x28, 42x35, 54x35, 54x42 | 1033a/13 |
| C 1439 | Reducer (2 x Press) | 28x22 | 1033a/14 |
| C 1433 | Straight connector (plain end x female thread) | 22x1/2", 22x3/4" | 1033a/15 |
| C 1402 | Straight connector (press x female thread) | 22x1/2", 22x3/4", 28x1/2", 28x3/4", 28x1", 35x1/2", 35x3/4", 35x1", 35x1 1/4", 42x1 1/2", 54x2" | 1033a/16 |
| C 1405 | Straight connector (press x male thread) | 22x1/2", 22x3/4", 22x1", 28 x 3/4", 28x1", 35x1", 35x1 1/4", 42x1 1/2", 54x2" | 1033a/17 |
| C 1435 | Straight union (Press x male thread) | 22x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 1033a/18 |
| C 1428 | 90° Angle adaptor (Press x male thread) | 22x3/4" | 1033a/19 |
| C 1430 | 90° Elbow (Press x male thread) | 22x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2", | 1033a/20 |
| C 1438 | 90° Elbow (Press x female thread) | 22x1/2", 22x3/4", 28x1/2", 28x3/4", 28x1", 35x1/2", 35x3/4", 35x1" | 1033a/21 |
| C 1442 | Transition connector (press x grooved) | 28x33.7, 35x42.4, 42x48.3, 54x60.3 | 1033a/22 |
| C 1429 | Stop end (1 x press) | 22, 28, 35, 42, 54 | 1033a/23 |
| C 1443 | Slip coupling (press x female thread) | 22x1/2", 22x3/4", 28x1/2", 28x3/4" | 1033a/24 |

PART 3: SECTION 8.3

LIGHTWEIGHT PIPEWORK SYSTEMS

| Product Name | Description | Size/mm | LPCB Ref. No. |
|--------------|---|-------------------------------------|---------------|
| C 1409 | Angle adaptor (press x female thread) | 22x½", 28x½", 35x½" | 1033a/25 |
| C 1444 | Straight union (press x female thread) | 22x¾", 28x1", 35x1¼", 42x1½", 54x2" | 1033a/26 |
| C 1446 | Coupling with nut (press x female thread) | 22, 28, 35, 42, 54 | 1033a/27 |

Notes:

1. The above VSH XPress pipework and fittings are to be installed using the Novopress ECO301, ACO201, ACO202, ECO201, ECO202, EFP2, EFP202 and Klauke UAP2 pressing tools in accordance with the VSH User Manual. These tools shall be serviced and maintained in accordance with the manufacturer's stated guidelines.
2. VSH XPress pipework and fittings may only be installed by LPCB approved or registered contractors who have undergone adequate training by the manufacturer.
3. VSH XPress pipework and fittings shall be installed in accordance with the VSH User Manual: XPress Sprinkler EN-12-1.0.
4. VSH XPress pipework and fittings shall be installed and maintained in conformance with the LPC Rules for Automatic Sprinkler Installations.
5. The use of VSH XPress Sprinkler System pipework and fittings shall be recorded on LPS1048 certificates of conformity.
6. Where a VSH Reducer is installed, a pipe hanger shall be used adjacent to the reducer on the larger pipe.
7. Where VSH system pipework is connected to sprinklers in suspended ceilings, only LPCB Approved flexible drops shall be used.
8. VSH XPress pipework and fittings are not compatible with lightweight piping systems from other manufacturers.

Certificate No: 1033b to TS1599: Issue draft 5

VSH XPress Lightweight Stainless Steel Pipework System

| Product Name | Description | Size/mm | LPCB Ref. No. |
|--------------|--|---|---------------|
| R 2750 | Stainless steel tube 1.4401 | 22, 28, 35, 42, 54 | 1033b/01 |
| R 2752 | Stainless steel tube 1.4521 | 22, 28, 35, 42, 54 | |
| R 2753 | Stainless steel tube 1.4520 | 22, 28, 35, 42, 54 | |
| R 2701 | Straight Coupling (2 x Press) | 22, 28, 35, 42, 54 | 1033b/02 |
| R 2703 | Slip Coupling (2 x Press) | 22, 28, 35, 42, 54 | 1033b/03 |
| R 2708 | 90° Elbow (2 x Press) | 22, 28, 35, 42, 54 | 1033b/04 |
| R 2711 | 90° Elbow (Press x plain end) | 22, 28, 35, 42, 54 | 1033b/05 |
| R 2713 | 45° Elbow (2 x Press) | 22, 28, 35, 42, 54 | 1033b/06 |
| R 2712 | 45° Elbow (Press x plain end) | 22, 28, 35, 42, 54 | 1033b/07 |
| R 2725 | 90° Bend (2 x plain end) | 22, 28, 35, 42, 54 | 1033b/08 |
| R 2724 | 60° Bend (2 x plain end) | 28, 35, 42, 54 | 1033b/09 |
| R 2723 | 30° Bend (2 x plain end) | 28, 35, 42, 54 | 1033b/10 |
| R 2722 | 15° Bend (2 x plain end) | 28, 35, 42, 54 | 1033b/11 |
| R 2717 | Cross over (2 x plain end) | 22, 28 | 1033b/12 |
| R 2714 | Tee equal (3 x Press) | 22, 28, 35, 42, 54 | 1033b/13 |
| R 2715 | Tee reduced (3 x Press) | 28x22x28, 35x22x35, 35x28x35, 42x22x42, 42x28x42, 42x35x42, 54x22x54, 54x28x54, 54x35x54, 54x42x54 | 1033b/14 |
| R 2718 | Tee threaded (Press x fem. thread x Press) | 22x1½"x22, 22x¾"x22, 28x1½"x28, 28x¾"x28, 28x1"x28, 35x1½"x35, 35x¾"x35, 35x1"x35, 42x1½"x42, 42x¾"x42, 42x1"x42, 54x1½"x54, 54x¾"x54, 54x1"x54, 54x2"x54 | 1033b/15 |
| R 2707 | Reducer (Plain end x Press) | 28x22, 35x22, 35x28, 42x28, 42x35, 54x35, 54x42 | 1033b/16 |
| R 2702 | Straight connector (Press x female thread) | 22x½", 22x¾", 22x1", 28x½", 28x¾", 28x1", 28x1¼", 35x1", 35x1¼", 35x1½", 42x1¼", 42x1½", 54x1½", 54x2" | 1033b/17 |
| R 2705 | Straight connector (Press x male thread) | 22x ½", 22x ¾", 22x1", 28x¾", 28x1", 28x1¼", 35x1", 35x1¼", 35x1½", 42x1¼", 42x1½", 54x1½", 54x2" | 1033b/18 |
| R 2735 | Straight union (Press x male thread) | 22x½", 22x¾", 22x1", 28x1", 35x1¼", 42x1½", 54x2" | 1033b/19 |

PART 3: SECTION 8.3
LIGHTWEIGHT PIPEWORK SYSTEMS

| Product Name | Description | Size/mm | LPCB Ref. No. |
|--------------|---|---|---------------|
| R 2738 | Straight union (Press x female thread) | 22x3/4", 22x1", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 1033b/20 |
| R 2728 | 90° Angle adaptor (Press x male thread) | 22x3/4", 28x1", 35x1 1/4", 42x1 1/2", 54x2" | 1033b/21 |
| R 2709 | 90° Angle adaptor (Press x female thread) | 22x1/2", 22x3/4", 28x1/2", 28x3/4", 28x1", 35x1/2", 35x3/4", 35x1", 35x1 1/4" | 1033b/22 |
| R 2704 | Coupling with nut (press x female thread) | 22, 28, 35, 42, 54 | 1033b/23 |
| R 2726 | Flanged connector (press x flange) | 22, 28, 35, 42, 54 | 1033b/24 |
| R 2748 | Transition connector (press x grooved) | 28x33.7, 35x42.4, 42x48.3, 54x60.3 | 1033b/25 |
| R 2729 | Stop end (1 x press) | 22, 28, 35, 42, 54 | 1033b/26 |
| R 2741 | Slip coupling (press x female thread) | 22x1/2", 22x3/4", 28x1/2", 28x3/4" | 1033b/27 |
| R 2736 | Coupling (press x flat seal) | 22x1 1/4", 22x1 1/2", 28x1 1/2", 35x2", 42x2 1/4", 54x2 3/4" | 1033b/28 |

Notes:

1. The above VSH XPress pipework and fittings are to be installed using the Novopress ECO301, ACO201, ACO202, ECO201, ECO202, EFP2, EFP202 and Klauke UAP2 pressing tools in accordance with the VSH User Manual. These tools shall be serviced and maintained in accordance with the manufacturer's stated guidelines.
2. VSH XPress pipework and fittings may only be installed by LPCB Approved Sprinkler Contractors who have undergone adequate training by the manufacturer.
3. VSH XPress pipework and fittings shall be installed in accordance with the VSH User Manual: XPress Sprinkler EN-12-1.0.
4. VSH XPress pipework and fittings shall be installed and maintained in conformance with the LPC Rules for Automatic Sprinkler Installations.
5. The use of VSH XPress Sprinkler System pipework and fittings shall be recorded on LPS1048 certificates of conformity.
6. Where a VSH Reducer is installed, a pipe hanger shall be used adjacent to the reducer on the larger pipe.
7. Where VSH system pipework is connected to sprinklers in suspended ceilings, only LPCB Approved flexible drops shall be used.
8. VSH XPress pipework and fittings are not compatible with lightweight piping systems from other manufacturers.

PART 3: SECTION 9.1

PRE-ACTION CONTROL SYSTEMS

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Pre-action control systems for use under the *LPC Rules for Automatic Sprinkler Installations* have been approved to a schedule of requirements developed by LPCB (please contact LPCB for further details). The products shall be installed and maintained in accordance with the manufacturer's instructions.

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Certificate No: 034d

Certificate No: 034M

RELIABLE SINGLE INTERLOCK PRE-ACTION SYSTEM (Pre-action Control Valve Description)

| Product Name | Size(s) (mm) | Mounting Attitude | Body Material | Type | Maximum Working Pressure | Flanged or Grooved | LPCB Ref. No. |
|--------------|-----------------|-------------------|---------------|------------|--------------------------|--------------------|---------------|
| BX/E | 100 | Vertical | Cast Iron | Pre-action | 12 bar | Flanged | 034d/01 |
| | 150 | Vertical | Cast Iron | Pre-action | 12 bar | Flanged | |
| DDX 4" | 100 | Verticle | Ductile Iron | Pre-action | 17.2 | Grooved | 034M/01 |
| DDX 6" | 150 | Verticle | Ductile Iron | Pre-action | 17.2 | Grooved | 034m/01 |
| DDX 165mm | 165 | Verticle | Ductile Iron | Pre-action | 17.2 | Grooved | |

Approval Conditions:

- 1) The above pre-action system employs duplicate solenoid valves, which are manufactured by firms, as detailed below. One of each shall be used.
- 2) Solenoid valves shall be installed in parallel.
- 3) Solenoid valves shall function in pneumatic condition only, and be protected by a strainer.
- 4) LPCB Certificated detectors compatible with the control and indicating equipment shall be used.
- 5) Suitable electrical detection control and indicating equipment and pneumatic systems which are compatible with the equipment identified above shall be used. The control and indicating equipment should be LPCB approved/certificated.
- 6) Connecting cables shall comply with BS 6387: 1994, classification C, W, Z evidenced by LPCB certification.
- 7) The system shall be electrically monitored to demonstrate that it is in a 'ready-to-operate' state at all times.
- 8) Clean dry air shall be used.
- 9) The equipment must be installed, operated and maintained as prescribed in The Reliable Automatic Sprinkler Co Inc installation, operating and maintenance manuals "Bulletin 717 revision C" and "Bulletin 739 revision A".
- 11) The pre-action systems shall comply with the details specified in LPC Rules for Automatic sprinkler systems Technical Bulletin 21 or 208 Supplementary Requirements for sprinkler installations which can operate in the dry mode and in the LPC Rules for Automatic Sprinkler Installations.
- 12) The Reliable Automatic Sprinkler Company Inc are the firm responsible for the complete pre-action station, including electrics. It should be noted that only the equipment specifically referenced above is LPCB approved.

Certificate No: 034d

RELIABLE SINGLE INTERLOCK PRE-ACTION SYSTEM (Solenoid Valve Description)

| Product Name | Manufacturer | Voltage (V) | Power (W) | LPCB Ref. No. |
|--------------|--------------|-------------|-----------|---------------|
| LV2LBX25 | Skinner | 24 DC | 11 | 034d/01 |
| R8210A107 | ASCO | 24 DC | 10.6 | |

Approval Conditions:

- 1) The above pre-action system employs duplicate solenoid valves, which are manufactured by firms, as detailed above. One of each shall be used.
- 2) Solenoid valves shall be installed in parallel.
- 3) Solenoid valves shall function in pneumatic condition only, and be protected by a strainer.

- 4) LPCB Certificated detectors compatible with the control and indicating equipment shall be used.
- 5) Suitable electrical detection control and indicating equipment and pneumatic systems which are compatible with the equipment identified above shall be used. The control and indicating equipment should be LPCB approved/certificated.
- 6) Connecting cables shall comply with BS 6387: 1994, classification C, W, Z evidenced by LPCB certification.
- 7) The system shall be electrically monitored to demonstrate that it is in a 'ready-to-operate' state at all times.
- 8) Clean dry air shall be used.
- 9) The equipment must be installed, operated and maintained as prescribed in The Reliable Automatic Sprinkler Co Inc installation, operating and maintenance manual.
- 10) The pre-action system shall be configured in accordance with Reliable specifications.
- 11) The pre-action systems shall comply with the details specified in LPC Technical Bulletin 21 Supplementary Requirements for sprinkler installations which can operate in the dry mode and in the LPC Rules for Automatic Sprinkler Installations.
- 12) The Reliable Automatic Sprinkler Company Inc are the firm responsible for the complete pre-action station, including electrics. It should be noted that only the equipment specifically referenced above under (a) and (b) is LPCB approved.

The Viking Corporation

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Certificate No: 096f

Viking Pre-Action Systems (Pre-Action Control Valves descriptions)

| Product Name | Size(s) (mm) | Mounting Attitude | Body Material | Type | Maximum Working Pressure (bar) | Connections | LPCB Ref. No. |
|--|-----------------|----------------------|---------------|------|---|--|------------------|
| Type 1 Single-Interlocked Pre-action system | 50 | Angle style | Ductile Iron | E-1 | 16 | Screwed/Screwed | 096f/01 |
| | 80, 100, 150 | Angle Style | Ductile Iron | E-1 | 16 | Flange/Flange Flange/Groove | 096f/02 |
| Type 1 Surefire (TM) Single-Interlocked Pre- action system | 50 | Angle Style | Ductile Iron | E-1 | 16 | Screwed/Screwed | 096f/03 |
| | 80, 100, 150 | Angle Style | Ductile Iron | E-1 | 16 | Flange/Flange Flange/Groove | 096f/04 |
| Type 2 Non-Interlocked Pre-action system | 50 | Angle Style | Ductile Iron | E-1 | 16 | Screwed/Screwed | 096f/05 |
| | 80, 100, 150 | Angle Style | Ductile Iron | E-1 | 16 | Flange/Flange Flange/Groove | 096f/06 |
| Non-Interlocked, Single or Double Interlocked Pre- action system (4) | 40, 50, 65 | Vertical | Ductile Iron | F-1 | 16 | Screwed / Screwed / Grooved / Grooved | 096f/07 |
| | | | | F-2 | | | |
| | | | | J-1 | | | |
| 80, 100, 150 | Vertical | Ductile Iron | F-1 | 16 | Flanged / Grooved | 096f/08 | |
| | | | F-2 | | | | |
| | | | J-1 | | | | |
| 80, 100, 150, 200 | Vertical | Ductile Iron | F-1 | 16 | Flanged / Flanged Grooved / Grooved | 096f/09 | |
| | | | F-2 | | | | |
| | | | J-2 | | | | |

Notes:

- 1) The above systems are approved for use with hydraulic, pneumatic and pneu-lectric release systems.
- 2) The above systems are available with TrimPac™
- 3) The above systems are available as TotalPac™.
- 4) These systems are approved for use with hydraulic, non-interlocked pneumatic, non-interlocked electric, single interlocked pneumatic, single interlocked electric, double interlocked pneumatic/pneumatic, double interlocked electric/pneumatic, double interlocked electric/pneu-lectric, single interlocked SUREFIRE™ and double interlocked SUREFIRE™ release systems.

Approval Conditions:

- 1) The above pre-action system employs duplicate solenoid valves, LPCB approved, as detailed below. One of each manufacturer must be utilised.
- 2) Solenoid valves shall be installed in parallel.
- 3) Solenoid valves shall be protected by a strainer.
- 4) LPCB Certificated detectors compatible with the control and indicating equipment shall be used.

PART 3: SECTION 9.1

PRE-ACTION CONTROL SYSTEMS

- 5) Suitable electrical detection control and indicating equipment and pneumatic systems which are compatible with the equipment identified above shall be used. The control and indicating equipment should be LPCB approved/certificated.
- 6) Connecting cables shall comply with BS 6387, classification C, W, Z evidenced by LPCB certification.
- 7) The system shall be electrically monitored to demonstrate that it is in a 'ready to operate' state at all times.
- 8) Clean dry air shall be used.
- 9) The equipment must be installed, operated and maintained as prescribed in the Viking Corporation installation, operating and maintenance manuals.
- 10) The pre-action system shall be configured in accordance with Viking Corporation's datasheets.
- 11) The pre-action systems shall comply with the details specified in LPC Rules for Automatic Sprinkler Systems Technical Bulletin TB208: Supplementary Requirements for Sprinkler Installations which can operate in the dry mode.
- 12) The Viking Corporation is the firm responsible for the complete pre-action station.

Viking Pre-action Systems (Solenoid Valves Description)

| Product Name | Manufacturer | Voltage (V) | Power (W) |
|--------------|--------------|-------------|-----------|
| 11591 | Skinner | 24 DC | 10 |
| 11595 | Skinner | 24 DC | 10 |
| 11601 | ASCO | 24 DC | 9 |

Victaulic Company

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Certificate No: 104k

Victaulic Series 769 & 769N Pre-Action System (Pre-action Control Valve Description)

| Product Name | Nominal Size | Mounting Attitude | Body Material | Type | Max Working Pressure (bar) | Connections | LPCB Ref. No. |
|---|--|-------------------|---------------|------------|----------------------------|-------------|---------------|
| Series 769 Single Interlock (Electric) | 40, 50, 65, 76.1, 80, 100, 150, 165.1, 200 | Vertical | Cast Iron | Pre-action | 20 | Grooved | 104k/01 |
| Series 769 Single Interlock (Pneumatic/Electric) | 40, 50, 65, 76.1, 80, 100, 150, 165.1, 200 | Vertical | Cast Iron | Pre-action | 20 | Grooved | 104k/02 |
| Series 769 Double Interlock | 40, 50, 65, 76.1, 80, 100, 150, 165.1, 200 | Vertical | Cast Iron | Pre-action | 20 | Grooved | 104k/03 |
| Series 769N Single Interlock (Electric) | 40, 50, 65, 80, 100, 150 & 200 | Vertical | Cast Iron | Pre-action | 20 | Grooved | 104k/06 |
| Series 769N Single Interlock (Pneumatic/Electric) | 40, 50, 65, 80, 100, 150 & 200 | Vertical | Cast Iron | Pre-action | 20 | Grooved | 104k/07 |
| Series 769N Double Interlock | 40, 50, 65, 80, 100, 150 & 200 | Vertical | Cast Iron | Pre-action | 20 | Grooved | 104k/08 |

Notes:

- 1) The above systems are approved also when configured with 'Autoconvert' option.

Approval Conditions:

- 1) The above pre-action system employs duplicate solenoid valves, which are manufactured by firms, as detailed below. One of each shall be used.
- 2) Solenoid valves shall be installed in parallel.
- 3) Solenoid valves shall function in pneumatic condition only, and be protected by a strainer.
- 4) LPCB Certificated detectors compatible with the control and indicating equipment shall be used.
- 5) Suitable electrical detection control and indicating equipment and pneumatic systems which are compatible with the equipment identified above shall be used. The control and indicating equipment should be LPCB approved/certificated.
- 6) Connecting cables shall comply with BS 6387: 1994, classification C, W, Z evidenced by LPCB certification.
- 7) The system shall be electrically monitored to demonstrate that it is in a 'ready-to-operate' state at all times.
- 8) Clean dry air shall be used.
- 9) The equipment must be installed, operated and maintained as prescribed in Victaulic installation, maintenance and testing manuals "I-769P revision D" and "I-769P-EPA revision D".

PART 3: SECTION 9.1
PRE-ACTION CONTROL SYSTEMS

10) The pre-action systems shall comply with the details specified in LPC Rules for Automatic sprinkler systems Technical Bulletin 21 or 208 Supplementary Requirements for sprinkler installations which can operate in the dry mode and in the LPC Rules for Automatic Sprinkler Installations.

11) Victaulic Company are the firm responsible for the complete pre-action station, including electrics. It should be noted that only the equipment specifically referenced above is LPCB approved.

Victaulic Pre-Action System (Solenoid Valve Description)

| Product Name | Manufacturer | Voltage (V) | Power (W) | LPCB Ref. No. |
|---------------------|---------------------|--------------------|------------------|----------------------|
| 753E | Spartan Scientific | 24 DC | 10.0 | 104k/04 |
| 8210P007 | ASCO | 24 DC | 2.0 | 104k/05 |
| | | | | |

PART 3: SECTION 9.2

SPRINKLER SYSTEM RECYCLING SYSTEMS

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Sprinkler system recycling systems for use under the *LPC Rules for Automatic Sprinkler Installations* have been approved to a schedule of requirements developed by LPCB (please contact LPCB for further details). The products shall be installed and maintained in accordance with the manufacturer's instructions.

The Viking Corporation

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Certificate No: 096d

Approved Products

| | | LPCB Ref. No. |
|--|---|----------------------|
| Viking Firecycle III Cycling (single interlocked) System | Flow control valves (Model H-1) 50mm 80mm 100mm 150mm Control panel (Model B-1) Heat detectors (Type FC 1002 - 140° F) M1 cable used for connecting the heat detectors in a series circuit | 096d/02 |
| Viking Firecycle III Cycling (double interlocked) System | Flow control valves (Model H-1) 50mm 80mm 100mm 150mm Control panel (Model E-1) Heat detectors (Type FC 1002 - 140° F) | 096d/03 |

Approval Conditions:

- 1) The above Firecycle systems employs duplicate solenoid valves. For details of the solenoid valves contact Viking. The solenoid valves shall be LPCB approved.
- 2) Solenoid valves shall be installed in parallel.
- 3) Solenoid valves may function in hydraulic or pneumatic conditions, and be protected by a strainer.
- 4) Heat detectors compatible with the control and indicating equipment shall be used.
- 5) Suitable electrical detection control and indicating equipment which is compatible with the equipment identified above shall be used. The control and indicating equipment should be LPCB approved/certificated.
- 6) Connecting cables shall comply with BS 5839-1: 2002 and be LPCB approved.
- 7) The system shall be electrically monitored to demonstrate that it is in a 'ready-to-operate' state at all times.
- 8) Clean dry air shall be used where applicable.
- 9) The equipment must be installed, operated and maintained as prescribed in Viking Corporation's installation, operating and maintenance manual.
- 10) The Firecycle III systems shall be configured in accordance with Viking Corporation's specifications.
- 11) The Firecycle III systems shall comply with the details specified in LPC Technical Bulletin 208 Supplementary Requirements for sprinkler installations which can operate in dry mode.
- 12) Viking Corporation are the firm responsible for the complete Firecycle III station, including electrics.

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Pressure switches for use under *LPC Rules for Automatic Sprinkler Installations* have been approved to a schedule of requirements developed by LPCB. The products shall be installed and maintained in accordance with the manufacturer's instructions.

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Certificate No: 085a to LPS 1226 Draft B

| Product Name | Maximum Rated Working Pressure (bar) | Maximum Rated Current and Voltage AC | Maximum Rated Current and Voltage DC | LPCB Ref. No. |
|--------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------|
| Type 1381 | 17.2 | 5 Amps @ 250 Volts | 1 Amp @ 30 Volts | 085a/01 |
| Type 1381P | 17.2 | 5 Amps @ 250 Volts | 1 Amp @ 30 Volts | |
| Type 1381V | 17.2 | 5 Amps @ 250 Volts | 1 Amp @ 30 Volts | |
| Type 1381PV | 17.2 | 5 Amps @ 250 Volts | 1 Amp @ 30 Volts | |
| Type 1391 | 17.2 | 5 Amps @ 250 Volts | 1 Amp @ 30 Volts | 085a/03 |
| Type 1391P | 17.2 | 5 Amps @ 250 Volts | 1 Amp @ 30 Volts | |
| Type 1391V | 17.2 | 5 Amps @ 250 Volts | 1 Amp @ 30 Volts | |
| Type 1391PV | 17.2 | 5 Amps @ 250 Volts | 1 Amp @ 30 Volts | |

Potter Electric Signal Company LLC

1609 Park 370 Place, Hazelwood, St Louis, Missouri 63042, USA

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E-mail: info@pottersignal.com • Website: www.pottersignal.com

Certificate No: 125a to LPS 1226

Pressure Switches

| Product Name | Maximum Rated Working Pressure (bar) | Maximum Rated Current and Voltage AC | Maximum Rated Current and Voltage DC | LPCB Ref. No. |
|---------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------|
| Model PS 10A | 17.2 | 15 Amps @ 125/250 Volts | 2.5 Amps @ 30 Volts | 125a/01 |
| Model PS 40A | 17.2 | 15 Amps @ 125/250 Volts | 2.5 Amps @ 30 Volts | 125a/02 |
| Model PS 100A | 17.2 | 15 Amps @ 125/250 Volts | 2.5 Amps @ 30 Volts | 125a/03 |
| Model PS 120A | 17.2 | 15 Amps @ 125/250 Volts | 2.5 Amps @ 30 Volts | 125a/04 |
| Model PS10-1 | 17.2 | 10.1 Amps @ 125/250 Volts | 2 Amps @ 30 Volts | 125a/05 |
| Model PS10-2 | 17.2 | 10.1 Amps @ 125/250 Volts | 2 Amps @ 30 Volts | 125a/06 |
| Model PS40-1 | 17.2 | 10.1 Amps @ 125/250 Volts | 2 Amps @ 30 Volts | 125a/07 |
| Model PS40-2 | 17.2 | 10.1 Amps @ 125/250 Volts | 2 Amps @ 30 Volts | 125a/08 |
| Model PS100-2 | 17.2 | 10.1 Amps @ 125/250 Volts | 2 Amps @ 30 Volts | 125a/09 |
| Model PS120-1 | 17.2 | 10.1 Amps @ 125/250 Volts | 2 Amps @ 30 Volts | 125a/10 |

PART 3: SECTION 10

PRESSURE SWITCHES

| Product Name | Maximum Rated Working Pressure (bar) | Maximum Rated Current and Voltage AC | Maximum Rated Current and Voltage DC | LPCB Ref. No. |
|---------------------|---|---|---|----------------------|
| Model PS120-2 | 17.2 | 10.1 Amps @ 125/250 Volts | 2 Amps @ 30 Volts | 125a/11 |
| Model PS15-2 | 17.2 | 10.1 Amps @ 125/250 Volts | 2 Amps @ 30 Volts | 125a/12 |
| Model PS25-2 | 17.2 | 10.1 Amps @ 125/250 Volts | 2 Amps @ 30 Volts | 125a/13 |

System Sensor

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Website: www.systemsensor.com

Manufacturing location

Honeywell International [ACS ECC (Mexhon)], Mexhon S.A. de C.V., Boulevard Insurgentes No. 8503-2 Tijuana, Baja California, Baja 92154, Mexico

Certificate No: 1357h to LPS 1226 Draft 1

Pressure Switches

| Product Name | Maximum Rated Working Pressure (bar) | Maximum Rated Current and Voltage AC | Maximum Rated Current and Voltage DC | LPCB Ref. No. |
|---------------------|---|---|---|----------------------|
| Model EPS40-1 | 17.2 | 10 Amps @ 125/250 Volts | 2.5 Amps @ 6, 12 & 24 Volts | 1357h/01 |
| Model EPS40-2 | 17.2 | 10 Amps @ 125/250 Volts | 2.5 Amps @ 6, 12 & 24 Volts | 1357h/02 |
| Model EPS10-2V | 17.2 | 10 Amps @ 125/250 Volts | 2.5 Amps @ 6, 12 & 24 Volts | 1357h/03 |
| Model EPS45-2V | 17.2 | 8 Amps @ 125/250 Volts | 2.5 Amps @ 6, 12 & 24 Volts | 1357h/04 |
| Model EPS10-1 | 17.2 | 10 Amps @ 125/250 Volts | 2.5 Amps @ 6, 12 & 24 Volts | 1357h/05 |
| Model EPS10-2 | 17.2 | 10 Amps @ 125/250 Volts | 2.5 Amps @ 6, 12 & 24 Volts | 1357h/06 |

This section lists products approved in accordance with:

- EN 12259-1 *Fixed firefighting systems. Components for sprinkler and water spray systems. Sprinklers*
- LPS 1039 *Requirements and testing methods for automatic sprinklers*
- LPCB Schedule of requirements

LPCB is a Notified Body for all of the products in this section (with the exception of ESFR and specialist sprinklers).

LPCB recommends the removal and testing of sprinkler heads from a system after 25 years and every 5 years thereafter. The areas from which the sprinkler heads are removed should take account of the different makes and models used and variation of atmospheric conditions. LPCB further recommends that sprinkler heads are replaced where problems are found.

KEY to abbreviations

Each entry includes the nominal orifice size in millimetres and the temperature ratings in degrees centigrade.

- † indicates glass bulb sprinkler head; all others are fusible element sprinkler heads.
- indicates that a corrosion-resistant coating for the body and yoke of the sprinkler has been approved under the *LPC Rules for Automatic Sprinkler Installations*.

The type of sprinkler is indicated by the following abbreviations:

| Type | LPS | EN 12259-1 |
|--|-----------|-----------------|
| Conventional (upright and pendent) | CUP, CU/P | CUP |
| Conventional (Upright) | CU | CU |
| Conventional (Pendent) | CP | CP |
| Spray (Upright) | SU | SU |
| Spray (Pendent) | SP | SP |
| Spray, recessed (Pendent) | - | RP |
| Flat spray (Upright) | - | FU |
| Flat spray (Pendant) | - | FP |
| Sidewall (Upright and pendent) | WUP, WU/P | WUP |
| Sidewall (Upright) | WU | WU |
| Sidewall (Pendent) | WP | WP |
| Sidewall (Horizontal) | WH | WH |
| Sidewall, recessed (Horizontal) | - | RWH, WHR |
| Sidewall, concealed (Horizontal) | | WHSCC |
| Sidewall, dry (Horizontal) | | DWH |
| Sidewall, dry, recessed (Horizontal) | | RDWH |
| Sidewall, flush (Horizontal) | WHF | WLH |
| Sidewall, extended coverage (Horizontal) | WHEC | - |
| Conventional, dry (Upright and Pendent) | CDU/P | CDUP |
| Conventional, dry (Upright) | CDU | CDU |
| Conventional, dry (Pendent) | CDP | CDP |
| Spray, dry (Upright) | SDU | SDU, DSU |
| Spray, dry (Pendent) | SDP | SDP, DSP |
| Conventional, flush (Pendent) | CF | CLP |
| Spray, flush (Pendent) | SF | SLP |
| Spray, dry, flush (Pendent) | SFD | SDLP |
| Spray, dry, recessed (Pendent) | | DRSP |
| Spray, concealed, dry (Pendent) | | CCDSP |
| Spray, recessed (Pendent) | SR | SRP |
| Spray, concealed (Pendent) | SK | SCCP, CCP, CCSP |
| Early suppression fast response | ESFR | - |
| Early protection enhanced coverage | EPEC | - |

Notes:

PART 3: SECTION 11.1

SPRINKLER HEADS

1. A dash (-) indicates that the type is not recognised in the standard concerned.
2. Concealed (CC) sprinklers are not allocated a response time category (in the listings) as there is no requirement in EN12259-1 for testing or classification. Thus, Concealed sprinklers are listed as incorporating either 5mm or 3mm bulb. No response classification should be implied or inferred from the stated bulb size.

AG Fire Sprinkler S.L.

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Certificate No: 034g to LPS 1039

Certificate No: 034Ag to BS EN 12259-1: 1999 including amendment +A3:2006

Certificate No: 034k

Certificate No: 034r

Sprinkler Heads

| Product Name | SIN No | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|-------------------|--------|---------------------------|------|--|---------------|
| † AG (1)(2)(3) | AG8156 | 20 | SR | 57, 68, 79, 93 (5mm bulb) | 034g/02 |
| † AG (1) | AG8156 | 20 | SP | 57, 68, 79, 93, 141 (5mm bulb) | |
| | AG8164 | 20 | SU | 57, 68, 79, 93, 141 (5mm bulb) | |
| | AG8169 | 20 | CU/P | 57, 68, 79, 93, 141 (5mm bulb) | |
| † AG-QR (1) | AG8106 | 20 | SP | 57, 68, 79, 93, 141 (quick response) | 034g/03 |
| † AG-QR (1)(2)(4) | AG8106 | 20 | SR | 57, 68, 79, 93 | |
| † AG-QR (1) | AG8118 | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| | AG8125 | 20 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| † AG-66 (1) | AG6651 | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | 034g/13 |
| † AG-66 (1)(2) | AG6651 | 15 | SR | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † AG-66 (1) | AG1325 | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | AG1375 | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | AG1385 | 15 | WU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † AG-QR66 (1) | AG6601 | 15 | SP | 57, 68, 79, 93, 141 (quick response) | 034g/14 |
| † AG-QR66 (1)(2) | AG6601 | 15 | SR | 57, 68, 79, 93, 141 | |
| † AG-QR66 (1) | AG1425 | 15 | SU | 57, 68, 79, 93, 141 (quick response) | |
| | AG1475 | 15 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| | AG1485 | 15 | WU/P | 57, 68, 79, 93, 141 (quick response) | |
| † AGC-56 (8)(9) | AG3415 | 15 | CCFP | 74 with 57 ceiling plate, 100 with 74 ceiling plate | 034Ag/15 |
| AG-22 ESFR (5) | AG1011 | N/A | SP | 74, 100 | 034k/02 |
| AG-14 ESFR (6) | AG1812 | N/A | SP | 74, 100 | 034r/01 |
| AG-17 ESFR (7) | AG1914 | N/A | SP | 74, 100 | 034r/02 |

Notes:

- (1) Approved with plated brass, bronze, chrome, black-plated and coloured finish.
- (2) To be installed in accordance with specific installation instructions.
- (3) Only Model AG1 recessed escutcheon to be used with this sprinkler.
- (4) Only Model AG2 recessed escutcheon to be used with this sprinkler.
- (5) This ESFR sprinkler has a k-factor of 322 l.min⁻¹.bar^{-1/2} (US k-factor of 22.4 gal.min⁻¹.psi^{-1/2}).
- (6) This ESFR sprinkler has a k-factor of 200 l.min⁻¹.bar^{-1/2} (US k-factor of 14 gal.min⁻¹.psi^{-1/2}).
- (7) This ESFR sprinkler has a k-factor of 242 l.min⁻¹.bar^{-1/2} (US k-factor of 16.8 gal.min⁻¹.psi^{-1/2}).
- (8) Not to be installed in ceilings with a positive pressure in the void above.
- (9) Can be used with a solid or perforated ceiling plate (drawing 85001410).

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Certificate No: 1402a to EN12259-1

Duyar Vana Sprinkler Heads

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (° C) | LPCB Ref. No. |
|---------------|---------------------------|------|--------------------------|---------------|
| † DY-3327 (1) | 15 | SP | 68 (5mm bulb) | 1402a/01 |
| † DY-3323 (1) | 15 | SU | 68 (5mm bulb) | 1402a/02 |
| † DY-3329 (1) | 15 | WH | 68 (5mm bulb) | 1402a/03 |
| † DY-3427 (1) | 15 | SP | 68 (quick response) | 1402a/04 |
| † DY-3423 (1) | 15 | SU | 68 (quick response) | 1402a/05 |
| † DY-3429 (1) | 15 | WH | 68 (quick response) | 1402a/06 |

Notes:

1. Approved with brass, white and chrome finishes.

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Certificate No: 147c

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|----------------------|---------------------------|------|--|---------------|
| † Globe Model GL5668 | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | 147c/04 |
| † Globe Model GL5661 | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † Globe Model GL5651 | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † Globe Model GL5654 | 15 | SR | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † Globe Model GL5671 | 15 | CCP | 57° with 57° cover plate, 68° with 57° or 68° cover plate, 79° with 68° cover plate, 93° with 68° cover plate (5mm bulb) | |
| † Globe Model GL5671 | 15 | WH | 57°, 68°, 79°, 93°, 141° (5mm bulb) | |
| † Globe Model GL5671 | 15 | RWH | 57°, 68°, 79°, 93°, 141° (5mm bulb) | |
| † Globe Model GL8164 | 20 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † Globe Model GL8156 | 20 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † Globe Model GL5624 | 20 | SR | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † Globe Model GL5624 | 15 | CU/P | 57, 68, 79, 93, 141 (quick response) | 147c/05 |
| † Globe Model GL5615 | 15 | SU | 57, 68, 79, 93, 141 (quick response) | |

PART 3: SECTION 11.1

SPRINKLER HEADS

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|----------------------|---------------------------|------|--|---------------|
| † Globe Model GL5601 | 15 | SP | 57, 68, 79, 93, 141 (quick response) | |
| † Globe Model GL5604 | 15 | SR | 57, 68, 79, 93, 141 (3mm bulb) | |
| † Globe Model GL5627 | 15 | CCP | 57° with 57° cover plate, 68° with 57° or 68° cover plate, 79° with 68° cover plate, 93° with 68° cover plate (5mm bulb) | |
| | 15 | WH | 57°, 68°, 79°, 93°, 141° (quick response) | |
| | 15 | RWH | 57°, 68°, 79°, 93°, 141° (quick response) | |
| † Globe Model GL8118 | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| † Globe Model GL8106 | 20 | SP | 57, 68, 79, 93, 141 (quick response) | |
| | 20 | SR | 57, 68, 79, 93, 141 (3mm bulb) | |
| † Globe Model GL5607 | 15 | CCP | 68, (with 57 large cover plate) (3mm bulb) | 147c/06 |
| † Globe Model GL5658 | 15 | CCP | 79, 93, (with 68 small cover plate) (3mm bulb) 68, (with 57 large cover plate) (5mm bulb) 79, 93, (with 68 small cover plate) (5mm bulb) | |

Notes:

- 1) Approved in plain brass, chromium and coloured finishes
- 2) Concealed and recessed heads not to be installed in ceilings with a positive pressure in the void above.
- 3) All sprinklers approved with Job & Norbulb bulbs, except GL5607 and GL5658 (Job only)

GW Sprinkler A/S

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Certificate No: 084k

Certificate No: 084l

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|------------------------|---------------------------|------|---------------------------------------|---------------|
| † GW-DD-F2 (1),(5),(6) | 15 | WHEC | 57, 68, 79 | 084k/01 |
| † GW-S (1) | 10 | SR | 57, 68, 79, 93 (5mm bulb) | 084l/01 |
| | 10 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 10 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † GW-S (1),(2),(7) | 10 | SR | 57, 68, 79, 93 (5mm bulb) | |
| † GW-S (1),(7) | 10 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 10 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † GW-S (1) | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † GW-S (1),(2) | 15 | SR | 57, 68, 79, 93 (5mm bulb) | |
| † GW-S (1) | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 15 | WU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † GW-S (1),(3) | 20 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 20 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 20 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † GW-S (1) | 20 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 20 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 20 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † GW-S QR (1),(2) | 10 | SR | 57, 68, 79, 93, 141 | 084l/02 |
| † GW-S QR (1),(4) | 10 | SP | 57, 68, 79, 93, 141, (quick response) | |
| | 10 | SU | 57, 68, 79, 93, 141, (quick response) | |
| † GW-S QR (1),(2),(7) | 10 | SR | 57, 68, 79, 93, 141 | |
| † GW-S QR (1),(4),(7) | 10 | SP | 57, 68, 79, 93, 141, (quick response) | |
| | 10 | SU | 57, 68, 79, 93, 141, (quick response) | |
| † GW-S QR (1),(2) | 15 | SR | 57, 68, 79, 93, 141 | |
| † GW-S QR (1),(4) | 15 | SP | 57, 68, 79, 93, 141, (quick response) | |
| | 15 | SU | 57, 68, 79, 93, 141, (quick response) | |
| | 15 | CU/P | 57, 68, 79, 93, 141, (quick response) | |
| | 15 | WU/P | 57, 68, 79, 93, 141, (quick response) | |

PART 3: SECTION 11.1**SPRINKLER HEADS**

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|-----------------------|---------------------------|------|---------------------------------------|---------------|
| † GW-S QR (1),(3),(4) | 20 | SP | 57, 68, 79, 93, 141, (quick response) | |
| | 20 | CU/P | 57, 68, 79, 93, 141, (quick response) | |
| | 20 | SU | 57, 68, 79, 93, 141, (quick response) | |
| † GW-S QR (1),(4) | 20 | SP | 57, 68, 79, 93, 141, (quick response) | |
| | 20 | SU | 57, 68, 79, 93, 141, (quick response) | |
| | 20 | CU/P | 57, 68, 79, 93, 141, (quick response) | |

Notes:

- Also approved with chromium and painted finishes.
- Approved with brass, chrome or coloured recessing cup.
- This 20mm orifice sprinkler is fitted with a pintle to denote that it has a 15mm nominal thread size.
- The suitability of 'quick response' sprinklers for many risks is not yet proven. Use is therefore limited to where the purchaser, authority having jurisdiction and/or insurers consent to its use. Quick response sprinklers must be handled with care due to the fragile nature of the operating element, with packaging and instructions being marked accordingly.
- This extended coverage horizontal sidewall sprinkler should be handled with care to ensure that the deflector is not deformed. After installation the deflector angle should be checked with the manufacturers gauge to verify its angle of 92.5°.
- The product manufacturer should be consulted to determine the product fire protection capability and installation practice. Available test evidence and the CEA document "Requirements and Test Methods for Hotel Room Horizontal Sidewall Sprinklers" should also be consulted to ensure correct usage in light hazard applications.
- This sprinkler is fitted with a pintle to denote that it has a 15mm nominal thread size.

Johnson Controls International Plc

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Certificate No: 094a

Certificate No: 094b

Certificate No: 094c

Sprinkler Heads

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|------------------------------|---------------------------|------|--|--------------------|
| †TY3251 (1),(8) | 15 | SP | 57, 68, 79, 93, 141, 182, 260 (5mm bulb) | 094a/05 |
| †TY3151 (1),(8) | 15 | SU | 57, 68, 79, 93, 141, 182, 260 (5mm bulb) | |
| †TY3651 (1),(8) | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | 094a/06 |
| †TY3451 (1),(8) | 15 | WU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| †TY3351 (1) | 15 | WH | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| †TY4251 (1),(8) | 20 | SP | 57, 68, 79, 93, 141, 182, 260 (5mm bulb) | |
| †TY4151 (1),(8) | 20 | SU | 57, 68, 79, 93, 141, 182, 260 (5mm bulb) | |
| †TY4651 (1),(8) | 20 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| †TY3631 (1),(6),(8) | 15 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| †TY3131 (1),(6),(8) | 15 | SU | 57, 68, 79, 93, 141 (quick response) | |
| †TY3231 (1),(6),(8) | 15 | SP | 57, 68, 79, 93, 141 (quick response) | |
| †TY3431 (1),(6),(8) | 15 | WU/P | 57, 68, 79, 93, 141 (quick response) | |
| †TY3331 (1) | 15 | WH | 57, 68, 79, 93, 141 | |
| †TY4631 (1),(6),(8) | 20 | CU/P | 57, 68, 79, 93, 141 (quick response) | 094b/01 094a/03 |
| †TY4131 (1),(6),(8) | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| †TY4231 (1),(6),(8) | 20 | SP | 57, 68, 79, 93, 141 (quick response) | |
| ESFR-1(2) | N/A | SP | 74, 100 | |
| TY3221 (Nickel Link) (6),(7) | 15 | SP | 74 (quick response) | |
| TY3121 (Nickel Link) (6),(7) | 15 | SU | 74 (quick response) | |
| TY3111 (1) | 15 | SU | 74, 100, 138 | |
| TY3211 (1) | 15 | SP | 74, 100, 138 | |
| TY3211 (3),(4),(9) | 15 | SR | 74, 100 | |
| TY4111 (1) | 15 | SU | 74, 100, 138 | |

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SPRINKLER HEADS

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|-----------------------------|---------------------------|------|--|---------------|
| TY4811 (1) | 20 (1/2" PT) | SU | 74, 100, 138 | |
| TY4911 (1) | 20 (1/2" PT) | SP | 74, 100, 138 | |
| TY3551(10) | 15 | CCP | 68 sprinkler with 59 ceiling plate (5mm bulb) | 094a/09 |
| | 15 | CCP | 93 sprinkler with 74 ceiling plate (5mm bulb) | |
| TY3531(10) | 15 | CCP | 68 sprinkler with 59 ceiling plate (3mm bulb) | 094a/10 |
| | 15 | CCP | (adjustable) 93 sprinkler with 74 ceiling plate (3mm bulb) | |
| TY3155 (1)(8) | 15 | DSU | 57, 68, 79, 93, 141 | 094a/11 |
| TY3255 (1)(8) | 15 | DSP | 57, 68, 79, 93, 141 | |
| TY3355 (1)(8) | 15 | DWH | 57, 68, 79, 93, 141 | |
| †G1036 | 15 | SU | 260 | 094a/01 |
| †G1040 | 15 | SP | 260 | |
| ESFR-17 (11) | N/A | SP | 74, 100 | 094b/02 |
| ESFR-25 (12) | N/A | SP | 74, 100 | 094b/03 |
| † TY3250 (13) | 15mm | SP | 68, 93, 141, (5mm bulb) | 094a/12 |
| † ELO 231 (TY5131) (1),(14) | 20mm | SU | 68, 93, 141, (quick response) | 094c/01 |
| † ELO 231 (TY5231) (1),(14) | 20mm | SP | 68, 93, 141, (quick response) | 094c/02 |

Notes:

- 1) Also approved with chromium finish.
- 2) This ESFR sprinkler has a k-factor of 200 l.min⁻¹.bar^{-1/2} (US k-factor of 14 gal.min⁻¹.psi^{-1/2}).
- 3) Not to be installed in ceilings with a positive pressure in the void above.
- 4) Approved with brass, chrome, or coloured recessing cup.
- 6) The suitability of 'quick response' sprinklers for many risks is not yet proven. Use is therefore limited to where the purchaser authority having jurisdiction and/or insurers consent to its use. Quick response sprinklers must be handled with care due to the fragile nature of the operating element, with packaging and instructions being marked accordingly.
- 7) Every five years, all sprinklers should be visually examined, and representative samples removed and tested to the requirements of the authority and/or insurer.
- 8) Also approved with polyester finish.
- 9) To be installed with specific installation instructions.
- 10) Certificated with Chrome, Brass and painted coverplates.
- 11) The ESFR-17 sprinkler has a k-factor of 241.9 l.min⁻¹.bar^{-1/2} (US k-factor of 16.8 gal.min⁻¹.psi^{-1/2}).
- 12) The ESFR-25 sprinkler has a k-factor of 362.9 l.min⁻¹.bar^{-1/2} (US k-factor of 25.2 gal.min⁻¹.psi^{-1/2}).
- 13) Approved in grade 316 Stainless steel
- 14) This Extra Large Orifice (ELO) sprinkler has a k-factor of 160 l.min⁻¹.bar^{-1/2} (US k-factor of 11.2 gal.min⁻¹.psi^{-1/2}).

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Certificate No: 1118a to EN12259-1

Sprinkler Heads

| Product Name | Nominal orifice size (mm) | Type | Temperature rating (°C) | LPCB Ref. No. |
|---------------------|---------------------------|------|---------------------------------|---------------|
| † Minimax MX5-SP-24 | 15 | SP | 57, 68, 79, 93, 141, (5mm bulb) | 1118a/01 |

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Certificate No: 566d to EN12259-1:1999 + Amendment A3:2006

Certificate No: 566e to EN12259-1:1999 + Amendment A3:2006

Certificate No: 566f to EN12259-1:1999 + Amendment A3:2006

Sprinkler Heads

| Product Name | Nominal orifice size (mm) | Type | Temperature rating (°C) | LPCB Ref. No. |
|-----------------------------|---------------------------|------|--|---------------|
| † Rapidrop RD020 (1) | 15 | CU/P | 57, 68, 79, 93, 141 (5mm bulb) | 566d/01 |
| † Rapidrop RD022 (1) | 15 | SP | 57, 68, 79, 93, 141 (5mm bulb) | |
| † Rapidrop RD024 (1) | 15 | SU | 57, 68, 79, 93, 141 (5mm bulb) | |
| † Rapidrop RD060 (1) | 15 | WH | 57, 68, 79, 93, 141 (5mm bulb) | |
| † Rapidrop RD021 (1) | 15 | CU/P | 57, 68, 79, 93, 141(6), (quick response) | 566d/02 |
| † Rapidrop RD023 (1) | 15 | SP | 57, 68, 79, 93, 141(6), (quick response) | |
| † Rapidrop RD025 (1) | 15 | SU | 57, 68, 79, 93, 141(6), (quick response) | |
| † Rapidrop RD061 (1) | 15 | WH | 57, 68, 79, 93, 141 (quick response) | |
| † Rapidrop RD030(1) | 15 | CU/P | 57, 68, 79, 93, 141, (4mm bulb) | 566d/03 |
| † Rapidrop RD031(1) | 15 | SP | 57, 68, 79, 93, 141, (4mm bulb) | |
| † Rapidrop RD032(1) | 15 | SU | 57, 68, 79, 93, 141, (4mm bulb) | |
| † Rapidrop RD042 (1) | 20 | SP | 57, 68, 79, 93, 141 (5mm bulb) | 566d/04 |
| † Rapidrop RD044 (1) | 20 | SU | 57, 68, 79, 93, 141 (5mm bulb) | |
| † Rapidrop RD043 (1) | 20 | SP | 57, 68, 79, 93, 141 (quick response) | |
| † Rapidrop RD045 (1) | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| † Rapidrop RD052 (1)(7) | 20 | SP | 57, 68, 79, 93, 141 (5mm bulb) | 566d/05 |
| † Rapidrop RD054 (1)(7) | 20 | SU | 57, 68, 79, 93, 141 (5mm bulb) | |
| † Rapidrop RD053 (1)(7) | 20 | SP | 57, 68, 79, 93, 141 (quick response) | |
| † Rapidrop RD055 (1)(7) | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| Rapidrop RD101 (1)(2)(9) | 15 | SLP | 72, 96 (quick response) | 566e/01 |
| Rapidrop RD102 (8)(9) | 15 | SLP | 72, (quick response) | 566e/02 |
| Rapidrop RD107 (3)(4)(5)(9) | 15 | SCCP | 72 with 60 cover plate | 566f/01 |

Notes:

- 1) Approved with plain, chrome and coloured finish.
- 2) This sprinkler must be handled with care, and the protective cap which protects the thermal element should only be removed after installation is completed. To be installed in accordance with Data Sheet 4.12.
- 3) This sprinkler must be handled with care, and the protective cap which protects the thermal element should only be removed after ceiling installation is completed. To be installed in accordance with the Rapidrop Installation Instructions specific to the sprinkler.
- 4) Approved with chrome and coloured cover plates.
- 5) Not to be installed in ceilings with a positive pressure in the void above.
- 6) Approved with Job bulbs only for this temperature rating.
- 7) These sprinklers have a 15mm thread and deflectors marked 'K115'
- 8) These sprinklers are approved with a painted white (other RAL colours available on request) or a chrome finished escutcheon, and must be installed in accordance with Rapidrop Data Sheet 4.27.
- 9) These sprinklers are approved for use with the Lumi Plugin LP120 fitted co-axially with the sprinkler. Their installation must comply with Rapidrop product Data Sheet 14.01, issue A, Sept. 2017.

Rolland Sprinklers

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Certificate No: 295a to EN12259-1:1999 + Amendment A3:2006

Sprinkler Heads

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|---------------------------|---------------------------|------|--------------------------------------|---------------|
| † Rolland Model N (1),(2) | 15 | SP | 57, 68, 79, 93, 141 (quick response) | 295a/01 |
| | 15 | SU | 57, 68, 79, 93, 141 (quick response) | |
| | 15 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | 295a/02 |
| | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |

Notes:

- 1) Also approved with chromium and painted finishes.
- 2) Also approved for use without temperature sensing element for open head applications.

PART 3: SECTION 11.1

SPRINKLER HEADS

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Certificate No: 924a to EN12259-1, A3

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (° C) | LPCB Ref. No. |
|--------------|---------------------------|------|--------------------------|---------------|
| ZN-QR EU | 15 | SLP | 72,96 (quick response) | 924a/01 |

Note 1. Approved with plain, chrome, white and coloured finishes

Note 2. This sprinker must be handled with care, and the protective cap which protects the thermal element should only be removed after installation is completed. To be installed in accordance with Document No U022920.

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Certificate No: 034g to LPS 1039

Certificate No: 034i to I to LPS 1039

Certificate No: 034r to LPS 1039

Sprinkler Heads

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|--------------------------------|---------------------------|-------|---|---------------|
| Reliable F3 (19) | 15 | DSP | 57, 68, 93, 141 | 034i/01 |
| † Reliable F1 (2),(3),(4) | 10 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | 034g/02 |
| † Reliable F1 (5),(10) | 10 | SR | 57, 68, 79, 93 (5mm bulb) | |
| † Reliable F1 (2),(3),(13) | 20 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 20 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 20 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † Reliable F1 (15),(17) | 20 | SR | 57, 68, 79, 93 (5mm bulb) | |
| † Reliable F1FR (11),(13) | 10 | SP | 57, 68, 79, 93, 141 (quick response) | 034g/03 |
| † Reliable F1FR (13),(14),(15) | 10 | SR | 57, 68, 79, 93 | |
| † Reliable F1FR (11),(13) | 20 | SP | 57, 68, 79, 93, 141 (quick response) | |
| | 20 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| † Reliable F1FR (15),(16) | 20 | SR | 57, 68, 79, 93 | |
| * Reliable G (2) | 15 | CU/P | 57, 74, 100, 141 | 034g/04 |
| | 15 | SU | 57, 74, 100, 141 | |
| | 15 | SP | 57, 74, 100, 141 | |
| | 15 | WU/P | 57, 74, 100, 141 | |
| * Reliable G (6),(7),(8) | 15 | SR | 57, 74, 100 | |
| Reliable G3 (2) | 15 | SDP | and adjustable) 57, 74 | 034g/06 |
| Reliable G/F (12),(9),(10) | 10 | SR | 57, 74, 100 | 034g/07 |
| | 15 | SR | 57, 74, 100 | |
| Reliable G4FR (8), (18) | 15 | SK | ceiling plate) 74 with 57 ceiling plate | 034g/11 |
| Reliable F3 (19) | 15 | DRSP | 57, 68, 93, 141 | 034i/01 |
| | 15 | CCDSP | 57 with 57 ceiling plate | |
| | 15 | CCDSP | 68 with 57 ceiling plate | |
| | 15 | CCDSP | 93 with 74 ceiling plate | |
| | 15 | DWH | 57, 68, 93, 141 | |

PART 3: SECTION 11.1

SPRINKLER HEADS

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|-----------------------------------|---------------------------|------|---|---------------|
| | 15 | RDWH | 57, 68, 93, 141 | |
| Reliable XL Commercial (19), (23) | 15 | SF | 74 (quick response) | 034g/12 |
| Reliable XL Commercial (20, 24) | 15 | WHF | 74 (quick response) | |
| Reliable F1FR-EPEC (22) | 20 | SP | 57, 68, 79 | 034I/01 |
| Reliable ESFR-HL22 (21) | N/A | SP | 74, 100 | 034k/02 |
| Reliable JL-14 (1) | N/A | SP | 74, 100 | 034r/01 |
| Reliable JL-17 (24) | N/A | SP | 74, 100 | 034r/02 |
| † Reliable F1 56 (19) | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | 034g/13 |
| | 15 | SR | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 15 | WU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † Reliable F1FR 56 (11), (19) | 15 | SP | 57, 68, 79, 93, 141 (quick response) | 034g/14 |
| | 15 | SR | 57, 68, 79, 93, 141 (3mm bulb) | |
| | 15 | SU | 57, 68, 79, 93, 141(quick response) | |
| | 15 | CU/P | 57, 68, 79, 93, 141(quick response) | |
| | 15 | WU/P | 57, 68, 79, 93, 141(quick response) | |
| Reliable G5-56 (8)(25) | 15 | CCP | 74 with 57 ceiling plate 100 with 74 ceiling plate | 034g/15 |

Notes:

- 1) This ESFR sprinkler has a k-factor of 200 l.min⁻¹.bar^{-½} (US k-factor of 14 gal.min⁻¹.psi^{-½})
- 2) Approved with a chromium finish.
- 3) Also approved with plated brass, black plate and dull and bright chrome finishes.
- 4) The 57°, 68°, 79° and 93° sprinklers are also approved with a white paint finish.
- 5) Incorporating Reliable F1 SP Sprinkler in Model G/F1 recessed escutcheon. To be installed in accordance with installation bulletin 119.
- 6) To be installed in accordance with installation bulletin 111G. Approved with brass, chrome or coloured recessing cup.
- 7) The Reliable G has slotted holes in the recessing cup. (The Reliable G/F1, which is similar in appearance, has no slotted holes in the recessing cup).
- 8) Not to be installed in ceilings with a positive pressure in the void above.
- 9) Incorporating Reliable G SP Sprinkler in Model G/F1 recessed escutcheon. To be installed in accordance with installation bulletin 120.
- 10) Approved with brass, chrome or white G/F1 recessed escutcheon.
- 11) The suitability of 'quick response' sprinklers for many risks is not yet proven. Use is therefore limited to where the purchaser, authority having jurisdiction and/or insurers consent to its use. Quick response sprinklers must be handled with care due to the fragile nature of the operating element, with packaging and instructions being marked accordingly.
- 12) Every five years, all sprinklers should be visually examined and representative samples removed and tested to the requirements of the authority and/or insurer.
- 13) Approved with plated brass, bronze, chrome, black-plated and coloured finish.
- 14) Incorporating reliable F1FR SP sprinkler in Model F1 recessed escutcheon.
- 15) To be installed in accordance with specific installation instructions.
- 16) Incorporating Reliable F1FR SP sprinkler in Model F2 recessed escutcheon.
- 17) Incorporating Reliable F1 SP (5mm bulb)" sprinkler in Model F1 recessed escutcheon.
- 18) This sprinkler is approved with BeNi and Cu links.
- 19) Also approved with chrome and white paint finish.
- 20) Approved with brass, chrome, black plated and white painted finish.
- 21) This ESFR sprinkler has a k-factor of 322 l.min⁻¹.bar^{-½} (US k-factor of 22.4 gal.min⁻¹.psi^{-½}).
- 22) This EPEC sprinkler has a k-factor of 115 l.min⁻¹.bar^{-½} (US k-factor of 8 gal.min⁻¹.psi^{-½}).
- 23) This sprinkler must be handled with care, and the shipping cap which protects the thermal element should only be removed after installation. To be installed in accordance with Installation Bulletin 145, Rev C.
- 24) This ESFR sprinkler has a k-factor of 242 l.min⁻¹.bar^{-½} (US k-factor of 16.8.min⁻¹.psi^{-½})
- 25) Can be used with a solid or perforated ceiling plate (drawing 85001410).

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Certificate No: 096e

Certificate No: 096g

PART 3: SECTION 11.1

SPRINKLER HEADS

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|--|---------------------------|-------|--|---------------|
| K25 ESFR (13) | N/A | ESFR | 74, 96 (Link) | 096g/01 |
| † Viking M Microfast (1), (2), (6) | 15 | SU | 57, 68, 79, 93, 141, (quick response) | 096e/03 |
| | 15 | SP | 57, 68, 79, 93, 141, (quick response) | |
| † Viking M Microfast (1), (2),(6) | 15 | CU/P | 57, 68, 79, 93, 141, (quick response) | |
| † Viking M Microfast (1), (2), (6), (18) | 20 | SU | 57, 68, 79, 93, 141, (quick response) | |
| | 20 | SP | 57, 68, 79, 93, 141, (quick response) | |
| † Viking M Microfast (1), (2), (6), (15) | 20 | CU/P | 57, 68, 79, 93, 141, (quick response) | |
| † Viking F-1 Microfast (3) | 15 | SR | 57, 68, 79, 93, 141, (recessed and adjustable) | 096e/04 |
| † Viking M (6),(7) | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | 096e/06 |
| | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 15 | WH | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 20 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 20 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| | 20 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † Viking M (8) | 15 | SDP | 57, 68, 79, 93, (adjustable recessed) (5mm bulb) | |
| † Viking M (9) | 15 | SDP | 57, 68, 79, 93, 141 (adjustable standard) (5mm bulb) | |
| † Viking M (10) | 15 | SDP | 57, 68, 79, 93, 141 (plain barrel) (5mm bulb) | |
| † Viking M/E-1 (3), (14) | 15 | SR | 57, 68, 79, 93 (5mm bulb) | |
| | 20 | SR | 57, 68, 79, 93 (5mm bulb) | |
| Viking Horizon Model H(1) (11),(12) | 15 | SF | 74 (quick response) | 096e/08 |
| Viking Model N-2 VK130 (15), (16) | 15 | SU | 68, 79, 93, 141, 182 (5mm bulb) | 096e/09 |
| Viking Model N-2 VK132 (15), (16) | 15 | SP | 68, 79, 93, 141, 182 (5mm bulb) | |
| Viking Horizon Mirage VK408 | 15 | WHSCC | 74 | 096e/11 |
| Viking Mirage Concealed VK462 (18), (19) | 15 | CCP | 68 Sprinkler with 59 ceiling plate (3 mm bulb) | 096e/12 |
| | 15 | CCP | 79 Sprinkler with 74 ceiling plate (3 mm bulb) | |
| | 15 | CCP | 93 Sprinkler with 74 ceiling plate (3 mm bulb) | |
| † Viking K160 VK377 (20) (24) | 20 | SP | 57, 68, 79, 93, 141, (quick response) | 096e/14 |
| † Viking K160 VK5311 (20) | 20 | SU | 57, 68, 79, 93, 141, (quick response) | |
| Viking VK478 (21) (22) (23) | 15 | SLP | 74,96 (quick response) | 096e/15 |

Notes:

- The suitability of 'quick response' sprinklers for many risks is not yet proven. Use is therefore limited to where the purchaser, authority having jurisdiction and/or insurers consent to its use. Quick response sprinklers must be handled with care due to the fragile nature of the operating element, with packaging and instructions being marked accordingly.
- Approved with plain and chrome finishes.
- Approved with brass, chrome or coloured recessing cup.
- Approved with chrome, bright brass and painted finish coverplates.
- Not to be installed in ceilings with a positive pressure in the void above.
- Approved with chrome, polished brass and coloured finishes.
- The "57°, 68°, 79° and 93° heads are approved with wax finishes.
- Approved with chrome and white finishes.
- Approved with chrome finish.
- Approved with chrome and brass finishes.
- Every five years, all sprinklers should be visually examined and representative samples removed and tested to the requirements of the authority and/or insurer.
- Approved with polished chrome and white polyester finishes.
- This ESFR sprinkler has a k-factor of 362.9 l.min⁻¹.bar⁻² (US k-factor of 25.2 gal.min⁻¹.psi⁻²).
- Approved with recessed and adjustable escutcheon.
- The VK130 & 132 sprinklers are stainless steel.
- Certificated to EN12259:1999 including amendment A1:2001
- Certificated to the relevant clauses of EN12259:1999 and LPS1039
- Certificated to EN12259-1:1999 A3:2006
- Approved with Polished Chrome and Painted White finished coverplates
- Approved with plain, black and white painted and chromium plated finishes.
- Not to be installed in ceilings with a positive pressure in the void above
- The installation instructions, 'Sprinkler 73d, April 2012', Fig 2, must be followed. Particular attention should be paid to ensuring that the slots in the skirt are not obstructed in any way and note (21) is observed
- This sprinkler must be handled with care and the protective cap which protects the thermal element should be removed only after installation to the range pipe has been completed.
- This sprinkler utilizes alternative pip cap assemblies. Viking part numbers 16342, 18096.

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Certificate No: 169d/01 to EN 12259-1, A3

| Product Name | Nominal Orifice Size (mm) | Type | Temp rating (° C) | LPCB Ref. No. |
|--------------|---------------------------|------|------------------------|---------------|
| TY-QRF-EU | 15 | SLP | 72,96 (quick response) | 169d/01 |

Note 1. Approved with plain, chrome, white and coloured finishes

Note 2. This sprinkler must be handled with care, and the protective cap which protects the thermal element should only be removed after installation is completed. To be installed in accordance with Document No TFP 191.

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Certificate No: 007k

Certificate No: 007l

Certificate No: 007p

Certificate No: 007q

Certificate No: 007r

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|-------------------|---------------------------|------|--------------------------------------|---------------|
| † TY2208 (1) | 10 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | 007k/03 |
| † TY2108 (1) | 10 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY3251 (1) | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY3151 (1) | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY3651 (1) | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY3251 (1),(3) | 15 | RP | 57, 68, 79, 93 (5mm bulb) | |
| † TY3451 (1) | 15 | WU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY3351 (7) | 15 | WH | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY4251 (1) | 20 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY4151 (1) | 20 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY4651 (1) | 20 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY4251 (1),(3) | 20 | RP | 57, 68, 79, 93 (5mm bulb) | |
| TY4851 (1), (5) | 20 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY4951 (1), (5) | 20 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY2209 (1), (2) | 10 | SP | 57, 68, 79, 93, 141 (quick response) | 007k/04 |
| † TY2109 (1), (3) | 10 | SU | 57, 68, 79, 93, 141 (quick response) | |
| † TY3631 (1), (2) | 15 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| † TY3131 (1), (3) | 15 | SU | 57, 68, 79, 93, 141 (quick response) | |
| † TY3231 (1), (2) | 15 | SP | 57, 68, 79, 93, 141 (quick response) | |
| † TY3231 (1), (3) | 15 | RP | 57, 68, 79, 93 (3mm bulb) | |
| † TY3431 (1), (2) | 15 | WU/P | 57, 68, 79, 93, 141 (quick response) | |
| † TY3331 (4) | 15 | WH | 57, 68, 79, 93, 141 | |
| † TY3331 (1), (3) | 15 | WHR | 57, 68, 79, 93 | |

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SPRINKLER HEADS

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|-------------------------|---------------------------|------|---------------------------------------|---------------|
| † TY4631 (1), (2) | 20 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| † TY4131 (1), (2) | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| † TY4231 (1), (2) | 20 | SP | 57, 68, 79, 93, 141 (quick response) | |
| † TY4831 (1), (3), (13) | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| † TY4931 (1), (3), (13) | 20 | SP | 57, 68, 79, 93, 141 (quick response) | |
| ESFR-1(16) | N/A | SP | 74, 100 | 007I/01 |
| ESFR-17 (14) | N/A | SP | 74, 100 | 007I/02 |
| ESFR-25 (9) | N/A | SP | 74, 100 | 007I/03 |
| TY8181 (10) | 15 | SU | 57, 68, 79, 93, 141 (quick response) | 007q/01 |
| TY8183 (11) | 15 | SP | 57, 68, 79, 93, 141 (quick response) | |
| TY8182 (12) | 15 | SU | 57, 68, 79, 93, 141 (quick response) | |
| TY8281 (10) | 15 | SP | 57, 68, 79, 93, 141 (quick response) | |
| TY8283 (11) | 15 | SP | 57, 68, 79, 93, 141 (quick response) | |
| TY8282 (12) | 15 | SP | 57, 68, 79, 93, 141 (quick response) | |
| TY8681 (10) | 15 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| TY8683 (11) | 15 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| TY8682 (12) | 15 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| TY8481 (10) | 15 | WU/P | 57, 68, 79, 93, 141 (quick response) | |
| TY8483 (11) | 15 | WU/P | 57, 68, 79, 93, 141 (quick response) | |
| TY8482 (12) | 15 | WU/P | 57, 68, 79, 93, 141 (quick response) | |
| TY8381 (10) | 15 | WH | 57, 68, 79, 93, 141 (quick response) | |
| TY8383 (11) | 15 | WH | 57, 68, 79, 93, 141 (quick response) | |
| TY8382 (12) | 15 | WH | 57, 68, 79, 93, 141 (quick response) | |
| TY9281 (10) | 20 | SP | 57, 68, 79, 93, 141 (quick response) | |
| TY9181 (10) | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| TY9681 (10) | 20 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| TY8191 (10) | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | 007q/02 |
| TY8193 (11) | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8291 (10) | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8293 (11) | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8292 (12) | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8691 (10) | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8693 (11) | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8692 (12) | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8491 (10) | 15 | WU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8493 (11) | 15 | WU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8492 | 15 | WU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8391 (10) | 15 | WH | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8393 (11) | 15 | WH | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY8392 (12) | 15 | WH | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY9291 (10) | 20 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY9191 (8) | 20 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY9691 (10) | 20 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| TY1156 | 10 | FU | 57, 68, 79, 93, 141 (5mm bulb) | 007r/01 |
| TY1256 | 10 | FP | 57, 68, 79, 93, 141 (5mm bulb) | |
| TY3156 | 15 | FU | 57, 68, 79, 93, 141 (5mm bulb) | |
| TY3256 | 15 | FP | 57, 68, 79, 93, 141 (5mm bulb) | |
| TY4156 | 20 | FU | 57, 68, 79, 93, 141 (5mm bulb) | |
| TY4256 | 20 | FP | 57, 68, 79, 93, 141 (5mm bulb) | |
| TY1136 (3) | 10 | FU | 57, 68, 79, 93, 141 (quick response) | 007r/02 |
| TY1236 (3) | 10 | FP | 57, 68, 79, 93, 141 (quick response) | |
| TY3136 (3) | 15 | FU | 57, 68, 79, 93, 141 (quick response) | |
| TY3236 (3) | 15 | FP | 57, 68, 79, 93, 141 (quick response) | |
| TY4136 (3) | 20 | FU | 57, 68, 79, 93, 141 (quick response) | |
| TY4236 (3) | 20 | FP | 57, 68, 79, 93, 141 (quick response) | |
| TY2208 (1) | 10 | RP | 57, 68, 79, 93 (5mm bulb) | 007k/03 |
| TY2209 (1) | 10 | RP | 57, 68, 79, 93 (3mm bulb) | 007k/04 |
| † TY315 (1) (8) (15) | 15mm | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | 007k/05 |
| † TY325 (1) (8) (15) | 15mm | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY313 (1) (8) (15) | 15mm | SU | 57, 68, 79, 93, 141, (quick response) | |
| † TY323 (1) (8) (15) | 15mm | SP | 57, 68, 79, 93, 141, (quick response) | |
| † TY3650 (1) (15) | 15mm | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † TY3630 (1) (15) | 15mm | CU/P | 57, 68, 79, 93, 141, (quick response) | |

Notes:

- Also approved with coloured and chromium finishes.
- The suitability of 'quick response' sprinklers for many risks is not yet proven. Use is therefore limited to where the purchaser, authority having jurisdiction and/or insurers consent to its use. Quick response sprinklers must be handled with care due to the fragile nature of the operating element, with packaging and instructions being marked accordingly.

- 3) Approved with Model F700 recessed escutcheon.
- 4) Also approved in chromium finish.
- 5) Sprinkler has 1/2" NPT thread.
- 6) Approved with Job G5 and Geissler type 'E' bulbs.
- 7) Also approved in chromium finish.
- 8) The EPEC sprinkler has a k-factor of 112.8 l.min-1.bar -1/2. Also approved with coloured and chrome finishes.
- 9) The ESFR-25 sprinkler has a k-factor of 362.9 l.min-1.bar -1/2 (US k-factor of 25.2 gal.min-1.psi -1/2).
- 10) Approved in 316 Stainless Steel material.
- 11) Approved in Titanium material.
- 12) Approved in 254 SMO Stainless Steel material.
- 13) Sprinkler has 1/2" NPT thread.
- 14) The ESFR-17 sprinkler has a k-factor of 241.9 l.min-1.bar -1/2 (US k-factor of 16.8 gal.min-1.psi -1/2).
- 15) Approved with 16mm long bulbs.
- 16) The ESFR-1 sprinkler has a k-factor of 200 l.min-1.bar -1/2 (US k-factor of 14 gal.min-1.psi-1/2).

Victaulic Company

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 Tel: +1 610 559 3300 • Fax: +1 610 250 8817
 E-mail: victaulic@victaulic.com • Website: www.victaulic.com

Certificate No: 104b

Sprinkler Heads

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|--------------|---------------------------|------|---|---------------|
| † V2727 (1) | 15 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | 104b/01 |
| † V2703 (1) | 15 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † V2725 (1) | 15 | CU/P | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † V2709 (1) | 15 | WH | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † V2728 (1) | 15 | SP | 57, 68, 79, 93, 141 (quick response) | 104b/02 |
| † V2704 (1) | 15 | SU | 57, 68, 79, 93, 141 (quick response) | |
| † V2726 (1) | 15 | CU/P | 57, 68, 79, 93, 141 (quick response) | |
| † V2710 (1) | 15 | WH | 57, 68, 79, 93, 141 (quick response) | |
| † V3423 (1) | 20 | SP | 57, 68, 79, 93, 141, 182 (5mm bulb) | 104b/03 |
| † V3401 (1) | 20 | SU | 57, 68, 79, 93, 141, 182 (5mm bulb) | |
| † V3424 (1) | 20 | SP | 57, 68, 79, 93, 141 (quick response) | 104b/04 |
| † V3402 (1) | 20 | SU | 57, 68, 79, 93, 141 (quick response) | |
| † V3801 | 15 | CCSP | 68, with 59 ceiling plate (5mm bulb) | 104b/05 |
| | | | 79, 93 with 74 ceiling plate (5mm bulb) | |
| † V3802 | 15 | CCSP | 68 with 59 ceiling plate (3mm bulb) | 104b/06 |
| | | | 79, 93 with 74 ceiling plate (3mm bulb) | |

Note:

- 1) Also approved with chromium, polyester and nickel/teflon finishes.

PART 3: SECTION 11.2

ELECTRICALLY OPERATED SPRINKLER HEADS

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Sprinkler Heads included in this section include a means of electronic operation in addition to the normal glass bulb mode.

Approval Conditions

- 1) LPCB approved detectors compatible with the control and indicating equipment shall be used;
- 2) Suitable electrical detection control and indicating equipment compatible with the equipment below shall be used. The control and indicating equipment shall be LPCB Approved/Certificated;
- 3) Connecting cables shall comply with BS 6387:1994 *Specification for performance requirements for cables required to maintain circuit integrity under fire conditions*, classification C,W,Z or equivalent;
- 4) The equipment must be installed, operated and maintained as prescribed in the manufacturer's Installation, Operating and Maintenance Manual;
- 5) To guard against inadvertent operation it is recommended that electrically operated sprinklers be used in conjunction with coincidence detection;
- 6) Where 'Metron' actuators are employed the maximum allowable operating temperature shall not be exceeded;
- 7) Where 'Metron' actuators are used, these shall also be LPCB approved; and
- 8) The 'Guidance' in the Part 3 Section 22 'Metron' Actuators, shall also be taken into account.

GW Sprinkler A/S

Kastanievej 15, DK-5620 Glamsbjerg, Denmark

Tel: +45 64 72 2055 • Fax: +45 64 72 2255

E-mail: sales.dep@gwsprinkler.com

Certificate No: 084h

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Ratings (°C) | LPCB Ref. No. |
|---------------------------|---------------------------|------|-----------------------------|---------------|
| GW-S-EL(1),(2),(3) | 10 | SP | 57, 68, 79 (5mm bulb) | 084h/01 |
| | 10 | SU | 57, 68, 79 (5mm bulb) | |
| GW-S-EL(1),(2),(3),(4) | 10 | SP | 57, 68, 79 (5mm bulb) | 084h/02 |
| | 10 | SU | 57, 68, 79 (5mm bulb) | |
| GW-S-EL(1),(2),(3) | 15 | CU/P | 57, 68, 79 (5mm bulb) | |
| | 15 | SP | 57, 68, 79 (5mm bulb) | |
| | 15 | SU | 57, 68, 79 (5mm bulb) | |
| GW-S-QR-EL(1),(2),(3) | 10 | SP | 57, 68, 79 (quick response) | 084h/02 |
| | 10 | SU | 57, 68, 79 (quick response) | |
| GW-S-QR-EL(1),(2),(3),(4) | 10 | SP | 57, 68, 79 (quick response) | 084h/02 |
| | 10 | SU | 57, 68, 79 (quick response) | |
| GW-S-QR EL(1),(2),(3) | 15 | SP | 57, 68, 79 (quick response) | |
| | 15 | SU | 57, 68, 79 (quick response) | |
| | 15 | CU/P | 57, 68, 79 (quick response) | |

Notes:

- 1) Also approved with chrome and painted finishes.
- 2) To be installed, operated and maintained in accordance with the GW Sprinkler A/S Installation, Operating and Maintenance Manual.
- 3) Sprinklers marked EL incorporate a 'Metron' actuator.
- 4) This sprinkler is fitted with a pintle to denote that it has a 15mm nominal thread size.

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Dual sensing sprinkler heads have been evaluated in relation to their general performance capability but not in relation to their suitability for specific applications. The manufacturer's installation and maintenance instructions shall be followed.

Dual sensing sprinkler heads are only suitable for use on fully hydraulically calculated systems.

Project Fire Products Limited

Pasturefields Lane Industrial Estate, Pasturefields Lane, Hixon, Staffordshire ST18 0PH, United Kingdom

Tel: +44 (0)1889 270999 • Fax: +44 (0)845 2800116

E-mail: sales@projectfire.co.uk • Website: www.projectfire.co.uk

Certificate No: 060b

| Product Name | Nominal Orifice Size (mm) | Type | Temperature Rating (°C) | LPCB Ref. No. |
|--------------|---------------------------|------|-------------------------|---------------|
| 'Gemini' | 15 (1, 2) | SP | 68 (1) | 060b/01 |

Notes:

- 1) Sprinkler assembly only approved when fitted with Viking Model M "Microfast" 15mm SP Sprinkler head as per section 11.1 .
- 2) The K factor of the 'Gemini' dual sensing sprinkler head is $58.6 \text{ l}\cdot\text{min}^{-1}\cdot\text{bar}^{-1/2}$.
- 3) Dual sensing sprinkler heads are only suitable for use on fully hydraulically calculated systems.

PART 3: SECTION 12

SPRINKLER BULBS

This section lists products approved in accordance with:

- LPS 1039 *Requirements & Testing Methods for Automatic Sprinklers*
- LPS 1258 *Requirements & Testing Methods for Automatic Sprinkler Glass Bulbs with a Narrow Operating Temperature Band*
- EN 12259-1 *Fixed firefighting systems. Components for sprinkler and water spray systems.*

These bulbs may be used in sprinkler heads listed in Section 11.

Day-Impex Limited

Station Works, Earls Colne, Colchester, Essex CO6 2ER, United Kingdom

Tel: +44 (0)1787 223232 • Fax: +44 (0)1787 224171

Website: www.day-impex.co.uk

Certificate No: 291a

| Product Name | Bulb Size (mm) | Temperature Rating (°C) | LPCB Ref. No. |
|--------------|----------------|--------------------------|---------------|
| 937 | 5 | 57, 68, 79, 93, 141, 182 | 291a/02 |

Helmut Geissler Glasinstrumente GmbH

Leonhard-Karl-Str. 33, D-97877 Wertheim, Germany

Tel: +49 9342 92640 • Fax: +49 9342 926420

E-mail: mail@geisslerglass.com • Website: www.geisslerglass.com

Certificate No: 310a

| Product Name | Bulb Size (mm) | Temperature Rating (°C) | LPCB Ref. No. |
|--------------|----------------|--------------------------|---------------|
| E | 5 | 57, 68, 79, 93, 141, 182 | 310a/01 |

Job GmbH

Kurt-Fischer-Strasse 30, D-22926 Ahrensburg, Hamburg, Germany

Tel: +49 4102 21140 • Fax: +49 4102 211470

E-mail: job@job-bulbs.com • Website: www.job-bulbs.com

Certificate No: 351a

| Product Name | Bulb Size (mm) | Temperature Rating (°C) | LPCB Ref. No. |
|------------------------------------|----------------|-------------------------|---------------|
| F2.5 Quick Response(1) | 2.5 | 68,93 | 351a/01 |
| F3 Quick Response(1) | 3 | 57,68,79,93,141 | 351a/02 |
| F3-SP 'superior' Quick Response(1) | 3 | 57,68,79,93,141 | 351a/04 |
| G5 | 5 | 57,68,79,93,141,182 | 351a/03 |

Note:

1) Suitable for use in quick response sprinklers.

This section lists products approved in accordance with:

- LPS 1276 *Requirements for suction tanks for automatic pumps.* (Section 13.1)
- LPS 1254 *Requirements for suction tanks for automatic pumps.* (Section 13.2)

The use of LPS 1254 has been replaced by LPS 1276 for new installations in the UK and Ireland. The use of LPS 1254 in other territories should be confirmed with the relevant Insurance or Regulatory bodies. The two standards will co-exist pending ongoing review, any changes to this position will be updated on the Red Book Live website.

Approval Conditions are set out in each section and take precedence over any material contained in other documentation for the purposes of LPCB recognition.

PART 3: SECTION 13.1

LPS 1276 TANKS

LPS 1276 Tanks

1) In accordance with the requirements of EN 12845, the following definitions are derived:

| | |
|------------------------------|---|
| <i>Single supply tank:</i> | <i>A water storage tank which shall be designed and protected against corrosion such that the need for emptying the tank for maintenance is reduced to a period of not less than 3 years.</i> |
| <i>Superior supply tank:</i> | <i>A water storage tank which shall be designed and protected against corrosion such that the need for emptying the tank for maintenance is reduced to a period of not less than 10 years.</i> |

2) Each single-supply or multi-level take-off tank supplied under this approval scheme must not exceed a maximum capacity of 1300m³. Duplicate sub-divided tanks may have a total capacity not exceeding 2600m³, provided the dividing wall is structurally capable of supporting either compartment full whilst the other is empty, and the maximum capacity of each compartment does not exceed 1300m³.

3) It may be necessary for a current Regulations Advisory Scheme, WRAS (formerly Wrc), certificate to be held by the manufacturer, specific to each tank listed.

4) Galvanised “Superior” steel tanks shall have the tank shell protected by:

(a) a coating weight of at least 610g/m² each side, with such tank entries marked ‘g’,
or

(b) an equivalent corrosion protection system which has been specifically approved and listed by the LPCB, with such tank entries marked ‘e’.

5) The purchaser shall specify the required tank designation “Superior” or “Single” in accordance with the LPC Rules for Automatic Sprinkler Installations, together with the tank reference number.

6) The tank must bear a plate stating:

(i) The name and address of the manufacturer.

(ii) The date of installation.

(iii) The LPCB Reference Number, including the type suffix (“Superior” or “Single”) which has been specified by the purchaser and agreed by the manufacturer.

(iv) The maximum capacity in cubic metres. Multi-supply tanks must indicate the capacity for the automatic sprinkler system separately.

Tanks which do not bear such a plate are not approved.

7) Specifiers of LPCB approved sprinkler suction tanks are advised to ensure that where a vortex inhibitor is used in accordance with the LPC Sprinkler Rules, that the vortex inhibitor used is listed in Part 3 Section 14 of the Red Book as LPCB approved.

8) Where “Superior” tank shell exteriors are not protected by 610g/m² or equivalent, appropriate inspection, service and maintenance shall be specified. Exterior shell protection of 300g/m² galvanising is set as the minimum acceptable level of exterior protection combined with specified inspection service and maintenance.

9) Immersion heaters used to prevent the ball valve and water in the vicinity from freezing shall be dual element type.

Balmoral Tanks Limited

Llantrisant Business Park, Llantrisant, Pontyclun CF72 8LF, United Kingdom

Tel: +44 (0)1443 235170 • Fax: +44 (0)1443 226900

E-mail: tanks@balmoral.co.uk • Website: www.balmoraltanks.com

Certificate No: 445b to LPS 1276-1.2

LPS 1276 - Suction Tanks for Automatic Sprinkler Systems

| Product Name | Description | LPCB Ref. No. |
|----------------------|--|---------------|
| Single supply tank | M100 rectangular, sectional, hot press moulded GRP panel tank. Maximum height 4m. <i>Maximum capacity 880m³</i> | 445b/01 |
| Superior supply tank | M100 rectangular, sectional, hot press moulded GRP panel tank. Maximum height 4m. <i>Maximum capacity 880m³</i> | 445b/02 |
| Single supply tank | HB rectangular pressed steel sectional galvanized tank to BS1564:1975 Type 1 (Hot Pressed), with galvanized steel roof. Maximum height 5m. <i>Maximum capacity 1300m³</i> . | 445b/03 |
| Superior supply tank | HB rectangular pressed steel sectional galvanized tank to BS1564:1975 Type 1 (Hot Pressed) with galvanized steel roof. Maximum height 5m. <i>Maximum capacity 1300m³</i> . | 445b/04 |
| Single supply tank | Bolted cylindrical galvanized steel plate tank lined with an EPDM, butyl rubber or PVC liner and fitted with a galvanized steel decking roof externally coated with PVC. <i>Maximum capacity 1300m³</i> . | 445b/05 |
| Superior supply tank | Bolted cylindrical galvanized steel plate tank lined with an EPDM, butyl rubber or PVC liner and fitted with a galvanized steel decking roof externally coated with PVC. <i>Maximum capacity 1300m³</i> . | 445b/06 |

All tank approvals are strictly subject to tanks being supplied in accordance with LPCB Approved Conditions set out in the 'introduction'

CST Industries (UK) Limited

Cotes Park Lane, Cotes Park Industrial Estate, Alfreton, Derbyshire DE55 4NJ, United Kingdom

Tel: +44 (0)1773 835321 • Fax: +44 (0)1773 836578

E-mail: tcruse@cstindustries.com • Website: www.cstindustries.com

Certificate No: 044c to LPS1276 1.1

Suction Tanks for Sprinkler Systems

| Certificated Products | | LPCB Ref. No. |
|-----------------------|---|---------------|
| Single supply tank | Bolted cylindrical, mastic sealed, galvanized steel plate tank with a galvanized steel decking cover that is externally coated with PVC. <i>Maximum capacity 1300m³</i> | 044c/01 |
| Superior supply tank | Bolted cylindrical, mastic sealed, galvanized steel plate tank with a galvanized steel decking cover that is externally coated with PVC. <i>Maximum capacity 1300m³</i> | 044c/02g |
| Single supply tank | Bolted rectangular, mastic sealed galvanized steel panel tank with a galvanized steel decking cover. Suitable for restricted space locations. Designed to most shapes using 90 degree corners and up to 3m in height. <i>Maximum capacity 1300m³</i> | 044c/03 |
| Superior Supply Tank | Bolted rectangular, mastic sealed galvanized steel panel tank with a galvanized steel decking cover. Suitable for restricted space locations. Designed to most shapes using 90 degree corners and up to 3m in height. <i>Maximum capacity 1300m³</i> | 044c/04e |
| Single supply tank | Bolted cylindrical, rubber liner sealed, galvanized steel plate tank with a galvanized steel decking cover that is externally coated with PVC. <i>Maximum capacity 1300m³</i> | 044c/05 |
| Superior supply tank | Bolted cylindrical, rubber or PVC* liner sealed, galvanized steel plate tank with a galvanized steel decking cover that is externally coated with PVC. <i>Maximum capacity 1300m³</i> | 044c/06e |

Notes:

* PVC liner is manufactured by Power Plastic and/or Stephens Industries Limited.

All tank approvals are strictly subject to tanks being supplied in accordance with LPCB Approved Conditions set out in the 'Introduction'. For galvanized steel tanks, Type "Superior", the designation 'g' refers to tanks protected by 610g/m² each side and the designation 'e' refers to equivalent corrosion protection as set out in Item 4 of the Introduction.

PART 3: SECTION 13.1

LPS 1276 TANKS

Dewey Waters Limited

Heritage Works, Winterstoke Road, Weston-Super-Mare, Somerset BS24 9AN, United Kingdom

Tel: +44 (0)1934 421477 • Fax: +44 (0)1934 421488

E-mail: sales@deweywaters.co.uk • Website: www.deweywaters.co.uk

Certificate No: 135b to LPS1276-1.1

| Certificated Products | | LPCB Ref. No. |
|------------------------------|---|----------------------|
| Single supply tank | Contact moulded sectional GRP tank Maximum height 3m <i>Maximum capacity 75m³</i> | 135b/01 |
| Superior supply tank | Contact moulded sectional GRP tank Maximum height 3m <i>Maximum capacity 75m³</i> | 135b/02 |
| Single supply tank | Hot pressed moulded sectional GRP tank Maximum height 4m. <i>Maximum capacity 1300m³</i> | 135b/03 |
| Superior supply tank | Hot pressed moulded sectional GRP tank Maximum height 4m. <i>Maximum capacity 1300m³</i> | 135b/04 |

All tank approvals are strictly subject to tanks being supplied in accordance with LPCB Approved Conditions set out in this section Introduction. The tanks shall be installed in accordance with the manufacturer's instructions.

Franklin Hodge Industries Ltd.

Jubilee Building, Faraday Road, Westfields Trading Estate, Hereford HR4 9NS, United Kingdom

Tel: +44 (0)1432 269605 • Fax: +44 (0)1432 277454

E-mail: sales@franklinhodge.co.uk • Website: www.franklinhodge.com

Certificate No: 037c to LPS 1276

Superior supply tank

| Product Name | Description | LPCB Ref. No. |
|----------------------|--|----------------------|
| Superior supply tank | Bolted, aluminium panel tank lined internally with butyl rubber, EPDM or PVC, with aluminium deck roof: Cylindrical <i>Maximum capacity 1300m³</i> | 037c/02 |
| | Bolted, galvanised steel panel tank lined internally with butyl rubber, EPDM or PVC. Cylindrical, with galvanised steel decking, externally coated with PVC <i>Maximum capacity 1300m³</i> | 037c/06e |
| | Bolted, galvanised steel panel tank lined internally with butyl rubber or EPDM. Rectangular, with aluminium deck roof. <i>Maximum capacity 1300m³</i> | 037c/08e |

Note:

- 1) All tank approvals are strictly subject to tanks being supplied in accordance with LPCB Approved Conditions set out in the 'Introduction'. For galvanized steel tanks, Types A and D, the designation 'g' refers to tanks protected by 610g/m² each side and the designation 'e' refers to equivalent corrosion protection as set out in Item 5 of the Introduction.

1) The BS 5306 LPC *Rules for Automatic Sprinkler Installations* identifies the following types of pump suction tanks:

Note: This specification is withdrawn for all contracts delivered after 1st April 2009.

- Type A* Not dependent on inflow, fed from a potable water supply, and suitable for sprinkler service without emptying, cleaning, maintenance or repair for a period of not less than 15 years.
- Type B* Not dependent on inflow.
- Type C* Dependent on inflow.
- Type D* Dependent on inflow, fed from a potable water supply, and suitable for sprinkler service without emptying, cleaning, maintenance or repair for a period of not less than 15 years.

The type of tank approved or certificated is indicated by capital the letter A, B, C or D at the end of the LPCB Reference number in the product listing.

2) Each single-supply or multi-level take-off tank supplied under this approval scheme must not exceed a maximum capacity of 1300m³. Duplicate sub-divided tanks may have a total capacity not exceeding 2600m³, provided the dividing wall is structurally capable of supporting either compartment full whilst the other is empty, and the maximum capacity of each compartment does not exceed 1300m³

3) Continuation of approval is conditional upon a current Regulations Advisory Scheme, WRAS certificate (formerly WrC) being held by the manufacturer, specific to each tank listed.

4) 1,2 Galvanised steel tanks Type A and D shall have the tank shell protected by:

(a) a coating weight of at least 610g/m² each side, with such tank entries marked 'g',
or

(b) an equivalent corrosion protection system which has been specifically approved and listed by the LPCB, with such tank entries marked 'e'.

5) 1 Galvanised steel tanks Types B and C shall have the tank shell protected by a coating weight of at least 300g/m² each side, or an equivalent corrosion protection system, approved and listed by the LPCB.

6) The purchaser shall specify the required tank designation A, B, C or D in accordance with the LPC *Rules for Automatic Sprinkler Installations*, together with the tank reference number.

7) The tank must bear a plate stating:

(i) The name and address of the manufacturer.

(ii) The date of installation.

(iii) The LPCB Reference Number, including the type suffix (A,B,C or D) which has been specified by the purchaser and agreed by the manufacturer.

(iv) The maximum capacity in cubic metres. Multi-supply tanks must indicate the capacity for the automatic sprinkler system separately.

Tanks which do not bear such a plate are not approved.

8) Specifiers of LPCB approved sprinkler suction tanks are advised to ensure that where a vortex inhibitor is used in accordance with the LPC Sprinkler Rules, that the vortex inhibitor used is listed in Part 3 Section 14 of the Red Book as LPCB approved.

Note 1. Corrosion protection systems specified should be regarded as minimum levels and additional protection may be warranted in special circumstances to achieve a design life of at least 15 years (Types A & D) or 6 years (Types B & C).

PART 3: SECTION 13.2

LPS 1254 TANKS

Balmoral Tanks Limited

Llantrisant Business Park, Llantrisant, Pontyclun CF72 8LF, United Kingdom

Tel: +44 (0)1443 235170 • Fax: +44 (0)1443 226900

E-mail: tanks@balmoral.co.uk • Website: www.balmoraltanks.com

Certificate No: 445a to LPS 1254: Issue 1

LPS 1254 - Suction Tanks For Automatic Pumps

Certificated Products

| | | LPCB Ref. No. |
|----------------------------------|--|----------------------|
| Suction Tank For Automatic Pumps | M100 rectangular, sectional, hot press moulded GRP panel tank. Maximum height 3m. Maximum capacity 192m ³ . | 445a/01A |
| Suction Tank For Automatic Pumps | M100 rectangular, sectional, hot press moulded GRP panel tank. Maximum height 3m. Maximum capacity 192m ³ . | 445a/01B |
| Suction Tank For Automatic Pumps | M100 rectangular, sectional, hot press moulded GRP panel tank. Maximum height 3m. Maximum capacity 192m ³ . | 445a/01C |
| Suction Tank For Automatic Pumps | M100 rectangular, sectional, hot press moulded GRP panel tank. Maximum height 3m. Maximum capacity 192m ³ . | 445a/01D |

All tank approvals are strictly subject to tanks being supplied in accordance with LPCB Approved Conditions set out in the 'Introduction'. For galvanized steel tanks, Types A and D, the designation 'g' refers to tanks protected by 610g/m² each side and the designation 'e' refers to equivalent corrosion protection as set out in Item 5 of the Introduction.

CST Industries (UK) Limited

Cotes Park Lane, Cotes Park Industrial Estate, Alfreton, Derbyshire DE55 4NJ, United Kingdom

Tel: +44 (0)1773 835321 • Fax: +44 (0)1773 836578

E-mail: tcruse@cstindustries.com • Website: www.cstindustries.com

Certificate No: 044a to LPS 1254: Issue 1.3

Certificated Products

| | | LPCB Ref. No. |
|----------------------------------|--|----------------------|
| Suction Tank For Automatic Pumps | Bolted, cylindrical, galvanised steel plate tank internally coated with a bitumen solution in accordance with BS 3416, with a galvanised steel decking roof externally coated with PVC. (1) Maximum capacity 1300m ³ | 044a/01Ag |
| Suction Tank For Automatic Pumps | Bolted, cylindrical, galvanised steel plate tank internally coated with a bitumen solution in accordance with BS 3416, with a galvanised steel decking roof externally coated with PVC. Maximum capacity 1300m ³ | 044a/01Dg |
| Suction Tank for Automatic pumps | Bolted, cylindrical, galvanized steel plate tank lined with a rubber liner and fitted with a galvanized steel decking roof externally coated with PVC. Maximum capacity 1300m ³ | 044a/04Ae |
| Suction Tank for automatic pump | Bolted, cylindrical, galvanized steel plate tank lined with a rubber liner and fitted with a galvanized steel decking roof externally coated with PVC. Maximum capacity 1300m ³ | 044a/04De |

All tank approvals are strictly subject to tanks being supplied in accordance with LPCB Approved Conditions set out in the 'Introduction'. For galvanized steel tanks, Types A and D, the designation 'g' refers to tanks protected by 610g/m² each side and the designation 'e' refers to equivalent corrosion protection as set out in Item 5 of the Introduction.

1) The LPCB reference number for this tank design was formerly T14

Dewey Waters Limited

Heritage Works, Winterstoke Road, Weston-Super-Mare, Somerset BS24 9AN, United Kingdom

Tel: +44 (0)1934 421477 • Fax: +44 (0)1934 421488

E-mail: sales@deweywaters.co.uk • Website: www.deweywaters.co.uk

Certificate No: 135a to LPS 1254

| Certificated Products | | LPCB Ref. No. |
|----------------------------------|---|----------------------|
| Suction Tank For Automatic Pumps | Rectangular, sectional, contact moulded GRP tank. Maximum height 3m. Approved for use where not exposed to sunlight. <i>Maximum capacity 75m³</i> | 135a/01A |
| Suction Tank For Automatic Pumps | Rectangular, sectional, contact moulded GRP tank. Maximum height 3m. Approved for use where not exposed to sunlight. <i>Maximum capacity 75m³</i> | 135a/01B |
| Suction Tank For Automatic Pumps | Rectangular, sectional, contact moulded GRP tank. Maximum height 3m. Approved for use where not exposed to sunlight. <i>Maximum capacity 75m³</i> | 135a/01C |
| Suction Tank For Automatic Pumps | Rectangular, sectional, contact moulded GRP tank. Maximum height 3m. Approved for use where not exposed to sunlight. <i>Maximum capacity 75m³</i> | 135a/01D |
| Suction Tank for Automatic Pumps | Dewey Waters '1000' Module Series hot pressed moulded GRP sectional rectangular tank. Maximum height 3m. <i>Maximum capacity 1300m³</i> | 135a/03A |
| Suction Tank for Automatic Pumps | Dewey Waters '1000' Module Series hot pressed moulded GRP sectional rectangular tank. Maximum height 3m. <i>Maximum capacity 1300m³</i> | 135a/03B |
| Suction Tank for Automatic Pumps | Dewey Waters '1000' Module Series hot pressed moulded GRP sectional rectangular tank. Maximum height 3m. <i>Maximum capacity 1300m³</i> | 135a/03C |
| Suction Tank for Automatic Pumps | Dewey Waters '1000' Module Series hot pressed moulded GRP sectional rectangular tank. Maximum height 3m. <i>Maximum capacity 1300m³</i> | 135a/03D |

All tank approvals are strictly subject to tanks being supplied in accordance with LPCB Approved Conditions set out in the 'Introduction'.
For galvanized steel tanks,

Notes:

- Types A and D, the designation 'g' refers to tanks protected by 610g/m² each side and the designation 'e' refers to equivalent corrosion protection as set out in Item 5 of the Introduction.
- Dewey Waters tanks to be installed in accordance with the latest issue of Operating Procedure OP 44.

Franklin Hodge Industries Ltd.

Jubilee Building, Faraday Road, Westfields Trading Estate, Hereford HR4 9NS, United Kingdom

Tel: +44 (0)1432 269605 • Fax: +44 (0)1432 277454

E-mail: sales@franklinhodge.co.uk • Website: www.franklinhodge.com

Certificate No: 037a to LPS 1254

| Approved Products | | LPCB Ref. No. |
|----------------------------------|--|----------------------|
| Suction Tank For Automatic Pumps | Bolted, aluminium panel tank lined internally with butyl rubber, EPDM or PVC, with aluminium deck roof: Cylindrical <i>Maximum capacity 1300m³</i> | 037a/01A |
| Suction Tank For Automatic Pumps | Bolted, galvanised steel panel tank lined internally with butyl rubber, EPDM or PVC. Cylindrical, with galvanised steel decking, externally coated with PVC <i>Maximum capacity 1300m³</i> | 037a/03Ae |
| Suction Tank For Automatic Pumps | Bolted, galvanised steel panel tank lined internally with butyl rubber, EPDM or PVC. Rectangular, with aluminium deck roof. <i>Maximum capacity 1300m³</i> | 037a/04Ae |

PART 3: SECTION 13.2

LPS 1254 TANKS

All tank approvals are strictly subject to tanks being supplied in accordance with LPCB Approved Conditions set out in the 'Introduction'. For galvanized steel tanks, Types A and D, the designation 'g' refers to tanks protected by 610g/m² each side and the designation 'e' refers to equivalent corrosion protection as set out in Item 5 of the Introduction.

This section lists products approved in accordance with:

- LPCB Schedule of requirements

The new edition of the LPC Sprinkler Rules, incorporating EN12845 *Fixed Firefighting Systems. Automatic Sprinkler Systems. Design, Installation and Maintenance*, includes requirements whereby the minimum dimension from the suction pipe to the minimum low water level can be reduced if a suitable vortex inhibitor is installed. Where the listed vortex inhibitors meet this requirement this is shown by a note in the listing.

Balmoral Tanks Limited

Llantrisant Business Park, Llantrisant, Pontyclun CF72 8LF, United Kingdom

Tel: +44 (0)1443 235170 • Fax: +44 (0)1443 226900

E-mail: tanks@balmoral.co.uk • Website: www.balmoraltanks.com

Certificate No: 445c to LPS 2070: Draft 1

Vortex Inhibitors

| Product Name | Description | LPCB Ref. No. |
|----------------------------|---|---------------|
| Balmoral Vortex Inhibitors | suitable for the following nominal bore suction pipes (mm): 80, 100, 150, 200, 250, 300, 350, 400 and 450 mm. These Vortex Inhibitors have been assessed as being in compliance with the requirements of EN 12845, Fixed firefighting systems - Automatic sprinkler systems - Design, installation and maintenance | 445c/01 |

Notes:

Installed in accordance with Vortex Inhibitor Installation Procedure BT-DD-VI-IP-I-001 Rev.2 dated 10/05/12

CST Industries (UK) Limited

Cotes Park Lane, Cotes Park Industrial Estate, Alfreton, Derbyshire DE55 4NJ, United Kingdom

Tel: +44 (0)1773 835321 • Fax: +44 (0)1773 836578

E-mail: tcruse@cstindustries.com • Website: www.cstindustries.com

Certificate No: 044b

CST Vortex Inhibitors

Certificated Products

| | | |
|-----------------------|---|--------------------------|
| CST Vortex Inhibitors | Inhibitors suitable for the following nominal bore suction pipes (mm):- 80, 100, 150, 200, 250, 300, 350, 400 and 450 mm These Vortex Inhibitors have been assessed as being in compliance with the requirements of EN12845, Fixed firefighting systems - Automatic sprinkler systems - Design, installation and maintenance. | LPCB Ref. No. 044b/01 |
|-----------------------|---|--------------------------|

Franklin Hodge Industries Ltd.

Jubilee Building, Faraday Road, Westfields Trading Estate, Hereford HR4 9NS, United Kingdom

Tel: +44 (0)1432 269605 • Fax: +44 (0)1432 277454

E-mail: sales@franklinhodge.co.uk • Website: www.franklinhodge.com

Certificate No: 037b

PART 3: SECTION 14

VORTEX INHIBITORS

Certificated Products

F.H.I. Anti - Vortex Plate

Suitable for the following nominal bore suction pipes (mm):
100, 150, 200, 250, 300, 350, 400 and 450

These Vortex Inhibitors have been assessed as being in compliance with the requirements of EN12845, Fixed firefighting systems - Automatic sprinkler systems - Design, installation and maintenance.

LPCB Ref.

No.

037b/01

Tyco Fire Products Manufacturing Limited (Stockport)

Stockport Trading Estate, Yew Street, Stockport, Cheshire SK4 2JW, United Kingdom

Tel: +44 (0)161 429 3400 • Fax: +44 (0)161 477 6729

E-mail: simon.giles@tyco-bspd.com • Website: www.tfpemea.com

Sales Enquiries:

Tel: +44 (0)161 875 0400 • Fax: +44 (0)161 875 0491

E-mail: info-uk@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 007h

Certificated Products

Tyco Vortex Inhibitors

Inhibitors suitable for the following nominal bore suction pipes (mm):
65, 80, 100, 150, 200, 250, 300, 350 and 400.

LPCB Ref.

No.

007h/01

This section lists products approved in accordance with:

- EN12259-5 *Fixed firefighting systems. Components for sprinkler and water spray systems. Water flow detectors.*
- LPCB Schedule of requirements.

The following water flow alarm switches have been approved for use in wet pipe sprinkler systems in accordance with the *LPC Rules for Automatic Sprinkler Installations*. The products shall be installed and maintained in accordance with the manufacturer's instructions.

Influx Measurements Limited

1A Bennett House, The Dean, Alresford, Hampshire SO24 9BQ, United Kingdom
Tel: +44 (0)1962 736736 • Fax: +44 (0)1962 736737
E-mail: sales@influxmeasurements.com

Certificate No: 464b to EN12259-5

SprinklerSense SPDB Waterflow Switch

| Product Name | Sizes (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------------------------------|---------------------------|--------------------------------|---------------|
| SprinklerSense SPDB Waterflow Switch | 50, 65, 80, 100, 125, 150 | 20 | 464b/01 |

Certificate No: 464b

SprinklerSense test interface unit

Certificated Products

SprinklerSense test interface unit

LPCB Ref. No.
464b/02

Potter Electric Signal Company LLC

1609 Park 370 Place, Hazelwood, St Louis, Missouri 63042, USA
Tel: +1 314 595 6900 • Fax: +1 314 595 6999
E-mail: info@pottersignal.com • Website: www.pottersignal.com

Certificate No: 125c to BS EN 12259-5 (with the exception of clause 4.6.11) of maximum 30 second alarm delay changed to 90 seconds)

| Product Name | Size | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|--------|--------------------------------|---------------|
| VSR 2" | DN 50 | 16 | 125c/01 |
| VSR 2.5" | DN 65 | 16 | |
| VSR 3" | DN 80 | 16 | |
| VSR 4" | DN 100 | 16 | |
| VSR 5" | DN 125 | 16 | |
| VSR 6" | DN 150 | 16 | |
| VSR 8" | DN 200 | 16 | |

Notes:

- 1) BS EN 12259-5 Clause 4.6.1 allows a maximum 30 second delay before the alarm signal is sent. These products allow up to 90 seconds. This is necessary in some circumstances due to fluctuating water pressures.
- 2) To be used in accordance with manufacturers operating instructions. Ref "MFG #5401146 revision E".

Certificate No: 125c to BS EN 12259-5

PART 3: SECTION 15.1

WATER FLOW ALARM SWITCHES

| Product Name | Size | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------|-------------|---------------------------------------|----------------------|
| VSR 2" (EU) | DN 50 | 16 | 125c/02 |
| VSR 2.5" (EU) | DN 65 | 16 | |
| VSR 3" (EU) | DN 80 | 16 | |
| VSR 4" (EU) | DN 100 | 16 | |
| VSR 6" (EU) | DN 150 | 16 | |
| VSR 8" (EU) | DN 200 | 16 | |

Notes:

- 1) To be used in accordance with manufacturers operating instructions. Ref "MFG #5401159 revision C".

Certificate No: 125d to BS EN 12259-5 (with the exception of clause 4.6.11) of maximum 30 second alarm delay changed to 90 seconds)

| Product Name | Size | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------|-------------|---------------------------------------|----------------------|
| VSR-S 1" | DN 25 | 20.7 | 125d/01 |
| VSR-S 1 ¼" | DN 32 | 20.7 | |
| VSR-S 1 ½" | DN 38 | 20.7 | |
| VSR-S 2" | DN 50 | 20.7 | |

Notes:

- 1) BS EN 12259-5 Clause 4.6.1 allows a maximum 30 second delay before the alarm signal is sent. These products allow up to 90 seconds. This is necessary in some circumstances due to fluctuating water pressures.
- 2) To be used in accordance with manufacturers operating instructions. Ref "MFG #5401206 revision B".

Certificate No: 125d to BS EN 12259-5

| Product Name | Size | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------|-------------|---------------------------------------|----------------------|
| VSR-S (EU) 1" | DN 25 | 20.7 | 125d/02 |
| VSR-S (EU) 1 ¼" | DN 32 | 20.7 | |
| VSR-S (EU) 1 ½" | DN 38 | 20.7 | |
| VSR-S (EU) 2" | DN 50 | 20.7 | |

Notes:

- 1) To be used in accordance with manufacturers operating instructions. Ref "MFG #5401206 revision B".

Certificate No: 125e to EN 12259-5

Water Flow Detectors

| Product Name | Size | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------|-------------|---------------------------------------|----------------------|
| VSR-AT 2" (EU) | DN 50 | 16 | 125e/01 |
| VSR-AT 2.5" (EU) | DN 65 | 16 | 125e/02 |
| VSR-AT 3" (EU) | DN 80 | 16 | 125e/03 |
| VSR-AT 4" (EU) | DN 100 | 16 | 125e/04 |
| VSR-AT 5" (EU) | DN 125 | 16 | 125e/05 |
| VSR-AT 6" (EU) | DN 150 | 16 | 125e/06 |
| VSR-AT 8" (EU) | DN 200 | 16 | 125e/07 |

Note:

To be used in accordance with manufacturer manual MFG. #5401239

System Sensor

3825 Ohio Avenue, Saint Charles, Illinois 60174, USA
Tel: +1 630 377 6580 • Fax: +1 630 377 7245
Website: www.systemsensor.com

Manufacturing location

Honeywell International [ACS ECC (Mexhon)], Mexhon S.A. de C.V., Boulevard Insurgentes No. 8503-2
Tijuana, Baja California, Baja 92154, Mexico

Certificate No: 1357g to EN12259-5

| Product Name | Sizes (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|----------------|------------|--------------------------------|---------------|
| Model WFD20EN | DN50 | 16 | 1357g/01 |
| Model WFD25EN | DN65 | 16 | |
| Model WFD30EN | DN80 | 16 | |
| Model WFD40EN | DN100 | 16 | |
| Model WFD60EN | DN150 | 16 | |
| Model WFD80EN | DN200 | 16 | |
| Model WFD20EPN | DN50 | 16 | |
| Model WFD25EPN | DN65 | 16 | |
| Model WFD30EPN | DN80 | 16 | |

Notes:

1. WFDxxEN models to be used in accordance with the manufacturer's installation and maintenance instructions ref: I56 - 4047 - 001R.
2. WFDxxEPN models to be used in accordance with the manufacturer's installation and maintenance instructions ref: I56 - 4051 - 001R.

PART 3: SECTION 15.2

FLOW SWITCH TESTING DEVICES

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Flow switch testing devices for use under *LPC Rules for Automatic Sprinkler Installations* have been approved to a schedule of requirements developed by LPCB. The products shall be installed and maintained in accordance with the manufacturer's instructions.

Project Fire Products Limited

Pasturefields Lane Industrial Estate, Pasturefields Lane, Hixon, Staffordshire ST18 0PH, United Kingdom

Tel: +44 (0)1889 270999 • Fax: +44 (0)845 2800116

E-mail: sales@projectfire.co.uk • Website: www.projectfire.co.uk

Certificate No: 060a

Flow switch automatic tester system

| Product Name | LPCB Ref. No. |
|---------------------|----------------------|
| ZONECHECK | 060a/01 |

Guidance and approval conditions.

Zonecheck shall be installed in accordance with Project Fire Products Limited 'Instruction Booklet', but subject to guidance below taking precedence.

- 1) The Zonecheck system circulates, but does not draw-off water from the sprinkler system and consequently does not test any zone or control valves.
- 2) System approval based on use with LPCB approved and listed flow switch.
- 3) Effective operation of the Zonecheck system should be monitored.
- 4) In the event of any servicing being warranted on this system, it shall be ensured that this does not impair effective sprinkler protection.
- 5) Provision to test flow switches in the normal way (LPC Sprinkler Rules) should also be incorporated.
- 6) It shall be ensured that the associated pipework is adequately vented and charged hydraulically.
- 7) The automatic means of operation and recording does not form part of this approval.

Certificate No: 060c

| Product Name | Nominal Size (mm) | Pipe Ends | Gasket Type | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--|--------------------------|------------------|--------------------|---------------------------------------|----------------------|
| Model ZC-R-25 (Zonecheck Residential) | 25.4 x 25.4 | T | EPDM | 12 | 060c/07 |
| Model ZC-R-32 (Zonecheck Residential) | 32 x 25.4 | T | EPDM | 12 | |
| Model ZC-R-40 (Zonecheck Residential) | 40 x 25.4 | T | EPDM | 12 | |
| Model LT-ZCL-65-002 (Zonecheck Live) (Note 2) | 65 x 25.4 | T | EPDM | 12 | 060c/04 |
| Model LT-ZCL-80-002 (Zonecheck Live) (Note 2) | 80 x 25.4 | T | EPDM | 12 | |
| Model LT-ZCL-100-002 (Zonecheck Live) (Note 2) | 100 x 25.4 | T | EPDM | 12 | |
| Model LT-ZCL-150-002 (Zonecheck Live) (Note 2) | 150 x 25.4 | T | EPDM | 12 | |
| Model LT-ZCL-SA-002 (Zonecheck Special) (Note 2) | 65 x 25.4 | T | EPDM | 12 | 060c/05 |
| | 80 x 25.4 | T | EPDM | 12 | |
| | 100 x 25.4 | T | EPDM | 12 | |
| | 150 x 25.4 | T | EPDM | 12 | |

Guidance and approval conditions.

Zonecheck shall be installed in accordance with Project Fire Products Limited 'Instruction Booklet', but subject to guidance below taking precedence.

- 1) The Zonecheck system circulates, but does not draw-off water from the sprinkler system and consequently does not test any zone or control valves.
- 2) System approval based on use with LPCB approved and listed flow switch.

- 3) Effective operation of the Zonecheck system should be monitored.
- 4) In the event of any servicing being warranted on this system, it shall be ensured that this does not impair effective sprinkler protection.
- 5) Provision to test flow switches in the normal way (LPC Sprinkler Rules) should also be incorporated.
- 6) It shall be ensured that the associated pipework is adequately vented and charged hydraulically.
- 7) The automatic means of operation and recording does not form part of this approval.

Sale Engineering Products Ltd.

Unit 2 Brookfield Industrial Estate, Brookfield Road, Cheadle, Cheshire SK8 2PN, United Kingdom

Tel: +44 (0) 161 428 1180

E-mail: info@saleengineering.co.uk • Website: www.firesprinkler.co.uk

Certificate No: 1423a to Technical Approval to an LPCB Schedule of Requirements

Sprinkler System Flow Switch Test Device

| Product Name | Nominal Pipe Size (mm) | Pipe Ends | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------|------------------------|-----------|--------------------------------|---------------|
| Zone Guardian DN50 | 60.3 x 60.3 | T | 12 | 1423a/01 |
| Zone Guardian DN65 | 76.1 x 76.1 | T | 12 | |
| Zone Guardian DN80 | 88.9 x 88.9 | T | 12 | |
| Zone Guardian DN100 | 114.3 x 114.3 | T | 12 | |
| Zone Guardian DN150 | 165.1 x 165.1 | T | 12 | |
| | 168.3 x 168.3 | T | 12 | |

Notes:

- 1) Zone Guardian Flow Switch Test Device shall be installed in accordance with IOM2, Zone Guardian Installation & Operation Instructions, Rev C 13 April 2018.
- 2) Technical product approval is based on use with LPCB approved and listed flow switch.
- 3) Effective operation of the Zone Guardian Flow Switch Test Device should be monitored.
- 4) In the event of any servicing being warranted on this device, it shall be ensured that this does not impair effective sprinkler protection.
- 5) Provision to test flow switches in the normal way (LPC Sprinkler Rules) should also be incorporated.
- 6) It shall be ensured that the associated pipework is adequately vented and charged hydraulically.
- 7) The automatic means of operation and recording does not form part of this approval.
- 8) All above sizes are approved in left and right handed versions.

PART 3: SECTION 15.3

WET ALARM VALVE TESTING DEVICE FOR SPRINKLER SYSTEMS

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Wet alarm valve testing devices for use with automatic sprinkler systems have been approved to a schedule of requirements developed by LPCB. The products shall be installed and maintained in accordance with the manufacturer's instructions.

Project Fire Products Limited

Pasturefields Lane Industrial Estate, Pasturefields Lane, Hixon, Staffordshire ST18 0PH, United Kingdom

Tel: +44 (0)1889 270999 • Fax: +44 (0)845 2800116

E-mail: sales@projectfire.co.uk • Website: www.projectfire.co.uk

Certificate No: 060e to an LPCB schedule of requirements

Wet Alarm Valve Testing Devices

| Product Name | Wet Alarm Valve Size (mm) | Pipe Ends (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-----------------------------------|--------------------------------------|---------------------------|---|--------------------------|
| Model BC-RF-PL-005 (Bellcheck) | 80 - 200 | 25 | 12 | 060e |

PART 3: SECTION 16.1

WATER SPRAY SYSTEMS (MEDIUM AND HIGH VELOCITY)

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Medium and high velocity sprayers for use under *LPC Rules for Automatic Sprinkler Installations* on oil and flammable liquid hazards have been approved to a schedule of requirements developed by LPCB. The products shall be installed and maintained in accordance with the manufacturer's instructions.

GW Sprinkler A/S

Kastanievej 15, DK-5620 Glamsbjerg, Denmark

Tel: +45 64 72 2055 • Fax: +45 64 72 2255

E-mail: sales.dep@gwsprinkler.com

Certificate No: 084i

Water spray systems (high velocity)

| Product Name | Description | LPCB Ref. No. |
|--------------------------|---------------|---------------|
| Fyrhed Waterspray System | High velocity | 084i/01 |

Certificate No: 084i

Water spray systems (medium velocity)

| Product Name | Description | LPCB Ref. No. |
|-------------------------------|-----------------|---------------|
| Thermospray Waterspray System | Medium velocity | 084i/02 |

Standard with ½" NPT thread. Operating pressure range 1.4 to 3.5 bar. Horizontal to Vertically down.

| K-FACTOR ±5% | BORE DIA. (X)mm | SPRAY ANGLE |
|-----------------|-----------------------|----------------|
| 23* | 7.5 | 60° |
| 32 | 8.7 | 75° |
| 38 | 9.4 | 90° |
| 41 | 9.7 | 100° |
| 50 | 10.6 | 110° |
| 63 | 11.5 | 120° |
| 78 | 12.4 | 135° |
| 92 | 13.1 | 150° |
| 115 | 14.0 | |

*= fitted with filter

PART 3: SECTION 16.1

WATER SPRAY SYSTEMS (MEDIUM AND HIGH VELOCITY)

The Reliable Automatic Sprinkler Co., Inc,

1470 Smith Grove Road, Liberty, South Carolina 29657, USA

Tel: +1 864 843 1734 • Fax: +1 864 843 1418

E-mail: jcevallos@reliablesprinkler.com • Website: www.reliablesprinkler.com

UK Sales Enquiries:

Tel: +44 (0)1372 728899 • Fax: +44 (0)1372 724461

Certificate No: 034e

Approved Products

Reliable Medium Velocity
Water Spray System

**LPCB Ref.
No.**
034e/01

Tyco Fire and Integrated Solutions (the trading company for Tyco Fire and Integrated Solutions (UK) Limited)

Tyco Park, Grimshaw Lane, Newton Heath, Manchester M40 2WL, United Kingdom

Tel: +44 (0)161 205 2321 • Fax: +44 (0)161 455 4459

Website: www.tycofis.com

Certificate No: 014d

Water spray systems (medium and high velocity)

Approved Products

Mulsifyre System
Protectospray System
Wormald High Velocity
Water Spray System
Wormald Medium Velocity
Water Spray System

**LPCB Ref.
No.**
014d/01
014d/02
014d/03

014d/04

Tyco Fire Products Manufacturing Limited (Stockport)

Stockport Trading Estate, Yew Street, Stockport, Cheshire SK4 2JW, United Kingdom

Tel: +44 (0)161 429 3400 • Fax: +44 (0)161 477 6729

E-mail: simon.giles@tyco-bspd.com • Website: www.tycofire.com

Sales Enquiries:

Tel: +44 (0)161 875 0400 • Fax: +44 (0)161 875 0491

E-mail: info-uk@tyco-bspd.com • Website: www.tycofire.com

Certificate No: 007i

Approved Products

Mulsifyre System
Protectospray System

**LPCB Ref.
No.**
007i/01
007i/02

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Water sprayers for use under *LPC Rules for Automatic Sprinkler Installations* on oil and flammable liquid hazards have been approved to a schedule of requirements developed by LPCB. The products shall be installed and maintained in accordance with the manufacturer's instructions.

GW Sprinkler A/S

Kastanievej 15, DK-5620 Glamsbjerg, Denmark

Tel: +45 64 72 2055 • Fax: +45 64 72 2255

E-mail: sales.dep@gwsprinkler.com

Certificate No: 084j

Certificated Products

GW R (1),(2),(3) 15mm long-throw horizontal open sprinkler

**LPCB Ref.
No.
084j/01**

1) Also approved with chromium finish.

2) To be installed in accordance with the supplier's installation instructions.

3) Application is limited to where purchaser, authority having jurisdiction and/or insurer consent to use.

PART 3: SECTION 17.1

FIRE PUMPS

This section lists products approved in accordance with:

- LPS 1131 *Pumps for Automatic Sprinkler Installation. Pump Sets - Requirements and testing methods.*

Firms listed in this section shall control and be responsible for the design, construction, testing and performance of all fire pump sets incorporating their LPCB approved fire pumps.

All fire pump sets incorporating LPCB approved fire pumps shall conform to the *LPC Rules for Automatic Sprinkler Installations*, or Rules specified in the contract, and shall be tested in accordance with the LPC Sprinkler Rules.

Note: Only LPCB approved fire pumps shall be used to comply with the *LPC Rules for automatic sprinkler installations*.

Pumps are approved for a maximum working pressure of 12 bar except where stated.

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E-mail: ukfire@armstrongfluidtechnology.com • Website: www.armstrongfluidtechnology.com

Certificate No: 197a

Fire Pump

| Product Name | Type | Suction Inlet Diameter/ Discharge Outlet Diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (L/min) (at NPSH req.= 5.38m) | Rated Head (bar) (at NPSH req.= 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|----------------------|-------------------------------|---|------------------------------|-----------------------------|--|--|----------------------------------|------------------|
| 4030 FP 8x5x11½ | Direct coupled end suction | 200/125 | 292 | 2900 | 7450 | 7.5 | 10 | 197a/01 |
| | | | 241 | 2900 | 7000 | 3.8 | 6.8 | |
| | | | 292 | 2900* | 7450 | 7.5 | 10 | |
| | | | 292 | 1450* | 4800 | 1.6 | 2.3 | |
| 4030FP 6x4x10 | Direct coupled end suction | 150/100 | 259* | 2900 | 7680 | 5.3 | 8.6 | 197a/02 |
| | | | 205* | 2900 | 5280 | 3.6 | 4.8 | |
| | | | 259 | 2900* | 7680 | 5.3 | 8.6 | |
| | | | 259 | 1450* | 3120 | 1.6 | 2.1 | |
| 4030 FP(1) 4x3x8½ | Direct coupled end suction | 100/80 | 224 | 2900 | 3360 | 3.4 | 6.3 | 197a/03 |
| 4030 FP 4x3x8½ | | | 175 | 2900 | 2460 | 1.9 | 3.9 | |
| 4030FP 3x2x6 | Direct coupled end suction | 80/50 | 157 | 2900 | 1300 | 1.2 | 2.9 | 197a/04 |
| | | | 113 | 2900 | 750 | 0.9 | 1.5 | |
| 4020 FP(1) 4x3x8½ | Close coupled end suction | 100/80 | 224 | 2900 | 3360 | 3.4 | 6.3 | 197a/05 |
| | | | 175 | 2900 | 2460 | 1.9 | 3.9 | |
| 4020 FP 8x5x11½ | Close coupled end suction | 200/125 | 292 | 2900 | 7450 | 7.5 | 10 | 197a/06 |
| | | | 241 | 2900 | 7000 | 3.8 | 6.8 | |
| | | | 292 | 2900* | 7450 | 7.5 | 10 | |
| | | | 292 | 1450* | 4800 | 1.6 | 2.3 | |
| 4020FP 6x4x10 | Close coupled end suction | 150/100 | 259* | 2900 | 7680 | 5.3 | 8.6 | 197a/07 |
| | | | 205* | 2900 | 5280 | 3.6 | 4.8 | |
| | | | 259 | 2900* | 7680 | 5.3 | 8.6 | |
| | | | 259 | 1450* | 3120 | 1.6 | 2.1 | |

PART 3: SECTION 17.1

FIRE PUMPS

| Product Name | Type | Suction Inlet Diameter/ Discharge Outlet Diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (L/min) (at NPSH req.= 5.38m) | Rated Head (bar) (at NPSH req.= 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|-----------------------------------|-------------------------------|---|---------------------------|--------------------------|---|---|----------------------------|---------------|
| 4020FP 3x2x6 | Close coupled end suction | 80/50 | 157 | 2900 | 1300 | 1.2 | 2.9 | 197a/08 |
| 40MF 8x6x13 LPC (2),(3) & (4) | Direct Coupled End Suction | 200/150 | 113 | 2900 | 750 | 0.9 | 1.5 | 197a/09 |
| | | | 295 | 2900 | 9050 | 8.1 | 11.1 | |
| | | | 279 | 2900 | 8850 | 7.2 | 9.8 | |
| | | | 330 | 2600 | 10430 | 6.8 | 10.7 | |
| 40MF 6x5x13 PLC(2),(3) & (4) | Direct Coupled End Suction | 150/125 | 273 | 2600 | 9850 | 4.2 | 7.5 | 197a/10 |
| | | | 295 | 2900 | 7700 | 8.5 | 12.0 | |
| | | | 250 | 2900 | 7700 | 4.8 | 8.6 | |
| | | | 330 | 2600 | 8000 | 8.7 | 12.1 | |
| 40MF 5x4x11.5 LPC(2),(3) & (4) | Direct Coupled End Suction | 125/100 | 250 | 2600 | 7500 | 303 | 6.9 | 197a/11 |
| | | | 292 | 2900 | 5750 | 7.9 | 10.9 | |
| | | | 241 | 2900 | 5100 | 4.5 | 7.4 | |
| | | | 292 | 2600 | 5850 | 5.4 | 8.8 | |
| | | | 241 | 2600 | 4825 | 303 | 5.9 | |

*These pumps are approved with impeller diameters and, where applicable, speeds within the ranges shown, to provide flows and heads within those ranges.

Notes:

- 1) Maximum working pressure: 10 bar. The above pumps are fitted with 'closed head' relief valve Part No. UKDO 5493 - 145 Issue A.
- 2) This pump is fitted with 'closed head' relief valve Part No. UKDO5286-204.
- 3) Pump configurations which generate a closed valve head exceeding 10 bar are approved for use in accordance with TB13:1990:1 - High rise sprinkler systems.
- 4) Maximum working pressure: 12 bar.

DAB Pumps SpA

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 Website: www.dabpumps.com

Certificate No: 1073a to LPS 1131: Issue 1.1

Fire Pump

| Product Name | Type | Suction Inlet Diameter / Discharge Outlet Diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (L/min) (at NPSH req. = 5.0/5.38m) | Rated Head (bar) (at NPSH req. = 5.0/5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|------------------------------|-----------------------------------|--|---------------------------|--------------------------|--|--|----------------------------|---------------|
| KDN 40- 250/246 Note 1 | End Section Long Coupled | 65/40 | 246 | 2950 | 1058* at 5.0m 1087* at 5.38m | 6.3 6.1 | 7.9 | 1073a/01 |
| KDN 65- 315/267 Note 1 | End Section Long Coupled | 80/65 | 267 | 2950 | 2330** at 5.0m 2480** at 5.38m | 7.8 7.4 | 9.5 | 1073a/02 |

The above pumps may be fitted with Danfoss valve Type EVSI15 'closed head' relief valve.

- *The minimum bypass flow rate is 10 l/min
 ** The minimum bypass flow rate is 30 l/min

Note 1) Maximum working pressure 16 bar

PART 3: SECTION 17.1

FIRE PUMPS

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Website: www.grundfos.co.uk

Certificate No: 510a to LPS 1131: Issue 1.1

Fire Pump

| Product Name | Type | Suction Inlet Diameter/ Discharge Outlet Diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (L/min) (at NPSH req. 5.38m) | Rated Head (bar) (at NPSH req. 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|--------------|---------------------------|--|------------------------|-----------------------|---|---------------------------------------|-------------------------|---------------|
| FK80-200 | End suction long coupled | 100/80 | 222 | 2950 | 3417 | 4.9 | 6.2 | 510a/01 |
| FB80-200 | End suction close coupled | 100/80 | 185 222 | 2950 2950 | 3250 3417 | 2.9 4.9 | 4.2 6.2 | 510a/02 |
| FK80-250 | End suction long coupled | 100/80 | 185 227 | 2950 2950 | 3250 3330 | 2.9 5.1 | 4.2 6.5 | 510a/03 |
| FK65-160 | End suction long coupled | 80/65 | 177 | 2950 | 2466 | 2.5 | 4.1 | 510a/05 |
| FB65-160 | End suction close coupled | 80/65 | 137 177 | 2950 2950 | 2050 2466 | 1.1 2.5 | 2.3 4.1 | 510a/06 |
| FK65-200 | End suction long coupled | 80/65 | 137 219 | 2950 2950 | 2050 2633 | 1.1 4.3 | 2.3 6.3 | 510a/07 |
| FB65-200 | End suction close coupled | 80/65 | 180 219 | 2950 2950 | 2233 2633 | 2.2 4.3 | 4.1 6.3 | 510a/08 |
| | | | 180 | 2950 | 2233 | 2.2 | 4.1 | |

* These pumps are approved with impeller diameters within the ranges shown to provide flows and heads within these ranges. The above pumps are approved with mechanical seals and fitted with Danfoss EVSI 15 Special 'closed head' relief valves, Part No. 032U7190

Certificate No: 510a to LPS 1131: Issue 1.1

| Product Name | Type | Suction Inlet Diameter / Discharge Outlet diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow* (L/min) (at NPSH req. <= 5.0/5.38m) | Rated Head (bar) (at NPSH req. <= 5.0/5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|--------------|--------------------------|---|------------------------|-----------------------|---|--|-------------------------|---------------|
| NKF125-315 | End suction long coupled | 125/315 | 289.5 | 2990 | 7233** at 5.0m | 8.1 | 11.4 | 510a/09 |
| NKF125-250 | End suction long coupled | 150/125 | 269* | 2990 | 6917 | 9.9 | 10.2 | 510a/10 |
| NKF125-250.1 | End suction long coupled | 150/125 | 226* 263* | 2990 2990 | 6917 6450 | 5.4 8.5 | 6.6 9.3 | 510a/11 |
| NKF100-200 | End suction long coupled | 125/100 | 238.5* 219* | 2990 2990 | 6450 5300 | 6.2 5.8 | 7.4 6.9 | 510a/12 |
| | | | 209* | 2990 | 5300 | 3.9 | 6.1 | |

* These pumps are approved with impeller diameters within the ranges shown to provide flows and heads within these ranges

** The bypass flow rate is 5% of rated flow

The above pumps are approved with mechanical seals and fitted with Danfoss EVSI 15, Part No. 032U7190 or EVSI 20, Part No. 032U7191 'closed head' relief valves.

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Certificate No: 436a

Fire Pump

| Product Name | Type | Suction Inlet Diameter/ Discharge Outlet Diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (L/min) (at NPSH req. ≤ 5.38m) | Rated Head (bar) (at NPSH req. ≤ 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|--------------|--------------------------------|--|--|--|--|--|--|---------------|
| 4 x 3 VIP | Vertical in-line close coupled | 100/75 | 216* | 2950 | 2000 | 4.5 | 6.5 | 436a/01 |
| 5 x 3 VIP | Vertical in-line close coupled | 125/75 | 178* 222* | 2950 2950 | 1850 3300 | 2 4.2 | 4.2 6.8 | 436a/02 |
| 5 x 4 MAC | Horizontal split case | 125/100 | 162* 219* | 2950 2950 | 2700 4810 | 1.3 4.9 | 3.3 6.6 | 436a/03 |
| 4 x 3 ME | Horizontal split case | 100/75 | 159* 219* 159* 219* 197* 394* | 2950 3000 3000 3300 3300 1750 | 4475 4850 4400 4500 4500 3325 | 1.4 5.1 1.6 6.9 4.9 5.5 | 3.4 6.8 3.6 8.2 6.6 7.5 | 436a/04 |
| 5 x 4 M | Horizontal split case | 125/100 | 270* 314* | 3300 1750 | 3225 4000 | 1.7 3.3 | 3.5 4.7 | 436a/05 |
| 6 x 5 MAA | Horizontal split case | 150/125 | 270* 257* | 1750 2950 | 4100 5075 | 1.9 4.3 | 3.4 9 | 436a/06 |
| 8 x 6 MI | Horizontal split case | 200/150 | 184* 257* 184* 257* 206* 406* | 2950 3000 3000 3300 3300 1750 | 4000 5050 4100 5150 5000 9400 | 1.5 4.3 1.5 6.7 2.5 5.6 | 4.7 9.3 4.9 11.2 7.2 8.1 | 436a/07 |
| 10 x 8 M | Horizontal split case | 250/200 | 327* 406* 338* 457* | 1750 2100 2100 1470 | 8775 9100 10100 13000 | 2.1 9.4 4.5 5.4 | 5.1 11.5 7.9 7.4 | 436a/08 |
| 5x4x10 VES | End suction long coupled | 125/100 | 400* 457* 356 259* | 1470 1750 1750 2950 | 12300 13200 11000 4900 | 2.7 8.6 3.6 7.9 | 5.6 10.5 6.1 9.3 | 436a/09 |
| | | | 215* 259* 215* 259* 215* 259* 215* 259* | 2950 2800 2800 2600 2600 2400 2400 2200 | 4800 4950 4750 4750 4550 4350 4000 4550 | 3.5 7.1 2.9 5.7 2.3 5 2.3 3.9 | 5.9 8.3 5.3 7.2 4.6 6.1 3.9 5.1 | |

PART 3: SECTION 17.1

FIRE PUMPS

| Product Name | Type | Suction Inlet Diameter/ Discharge Outlet Diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (L/min) (at NPSH req. ≤ 5.38m) | Rated Head (bar) (at NPSH req. ≤ 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|----------------|--------------------------|--|------------------------|-----------------------|---|---|-------------------------|---------------|
| 5x3x13 VES (2) | End suction long coupled | 125/75 | 215* | 2200 | 3800 | 1.7 | 3.3 | 436a/010 |
| | | | 318.5* | 2950 | 4000 | 10 | 13.3(1) | |
| | | | 260* | 2950 | 3675 | 4.5 | 8.7 | |
| | | | 318.5* | 2800 | 3950 | 8.7 | 12.0(1) | |
| | | | 260* | 2800 | 3530 | 3.9 | 7.9 | |
| | | | 318.5* | 2600 | 3900 | 7 | 10.3(1) | |
| | | | 260* | 2600 | 3350 | 3 | 6.8 | |
| | | | 318.5* | 2400 | 3475 | 6.2 | 8.8 | |
| | | | 260* | 2400 | 3075 | 3 | 5.5 | |
| | | | 318.5* | 2200 | 3640 | 4.2 | 7.4 | |
| 6x5x11 VES (3) | End suction long coupled | 150/125 | 260* | 2200 | 2900 | 2.3 | 4.9 | 436a/011 |
| | | | 290* | 2900 | 6600 | 9.6 | 10.7(1) | |
| | | | 250* | 2900 | 6300 | 5.9 | 7.8 | |
| | | | 290* | 2800 | 6500 | 8.8 | 9.9 | |
| | | | 250* | 2800 | 6500 | 5.3 | 7.3 | |
| | | | 310* | 2600 | 6550 | 8.8 | 9.9 | |
| | | | 250* | 2600 | 6700 | 3.9 | 6.2 | |
| | | | 330* | 2400 | 6050 | 9.4 | 10.0(1) | |
| | | | 250* | 2400 | 6000 | 3.6 | 5.3 | |
| | | | 330* | 2200 | 5900 | 7.7 | 8.5 | |
| 10x8x17SSC (4) | Horizontal split case | 250/200 | 250* | 2200 | 6150 | 2.5 | 4.4 | 436a/012 |
| | | | 406* | 2100 | 12200 | 8.9 | 12.2(1) | |
| | | | 349* | 2100 | 12200 | 5.3 | 9.1 | |
| | | | 422* | 1750 | 12200 | 6.7 | 9.3 | |
| | | | 349* | 1750 | 11800 | 2.6 | 6.3 | |
| | | | 422* | 1475 | 12800 | 3.2 | 6.6 | |
| | | | 349* | 1475 | 9900 | 2 | 4.5 | |
| | | | 422* | 1750)* | 12200 | 6.7 | 9.3 | |
| | | | 349 | 1475* | 9900 | 2 | 4.5 | |
| | | | 8x6YR (3) | Horizontal split case | 200/150 | 300 | 2950 | |
| 263 | 2950 | 7675 | | | | 4.9 | 9.5 | |
| 384 | 2100 | 12500 | | | | 8 | 11.0(1) | |
| 8x6YS (3) | | | 340 | 2100 | 11500 | 5.2 | 8.5 | 436a/014 |
| | | | | | | | | |

*These pumps are approved with impeller diameters and speeds within the ranges shown, to provide flows and heads within those ranges.

The above pumps are fitted with Danfoss type EVSI 'closed head' relief valves.

- 1) Pump configurations which generate a closed valve head exceeding 10 bar are approved for use in accordance with TB13: 1990: 1 - High rise sprinkler systems
- 2) Maximum working pressure: 15.6 bar.
- 3) Maximum working pressure: 13 bar.
- 4) Maximum working pressure: 16.5 bar.

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Certificate No: 111b to LPS 1131

PART 3: SECTION 17.1

FIRE PUMPS

Fire Pump

| Product Name | Type | Suction Inlet Diameter/ Discharge Outlet Diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (L/min) (at NPSH req. = 5.38m) | Rated Head (bar) (at NPSH req. = 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|---------------------------|----------------------------|--|------------------------|-----------------------|---|---|-------------------------|---------------|
| TD20D Thru-stream (2),(5) | Horizontal split case | 250/200 | 340 | 2950 | 13600 | 10.8 | 15.7 ⁽¹⁾ | 111b/01 |
| | | | 275* | 2950 | 12000 | 7.6 | 10.3 ⁽¹⁾ | |
| | | | 273* | 2950 | 11600 | 7.4 | 10 | |
| | | | 245* | 2950 | 8500 | 6 | 8 | |
| | | | 340 | 2950* | 13600 | 10.8 | 15.7 ⁽¹⁾ | |
| | | | 340 | 2400* | 13500 | 6 | 10.3 ⁽¹⁾ | |
| TD20E Thru-stream (2),(5) | Horizontal split case | 250/200 | 290* | 2950 | 13300 | 6.7 | 11.3 ⁽¹⁾ | 111b/02 |
| | | | 273* | 2950 | 13300 | 5.7 | 10 | |
| | | | 240* | 2950 | 10800 | 4.9 | 7.7 | |
| | | | 290 | 2950* | 13300 | 6.7 | 11.3 ⁽¹⁾ | |
| | | | 290 | 2800* | 13800 | 5.3 | 10.2 | |
| | | | 290 | 2200* | 12700 | 2 | 6.3 | |
| TD15F Thru-stream (3),(5) | Horizontal split case | 200/150 | 325* | 2950 | 9600 | 7.9 | 13.3 ⁽¹⁾ | 111b/03 |
| | | | 282* | 2950 | 9600 | 5.4 | 10 | |
| | | | 275* | 2950 | 9600 | 5.1 | 9.5 | |
| | | | 245* | 2950 | 9600 | 3.9 | 7.5 | |
| | | | 325 | 2950* | 9600 | 7.9 | 13.3 ⁽¹⁾ | |
| | | | 325 | 2550* | 9600 | 5 | 10 | |
| TD15A Thru-stream (3),(5) | Horizontal split case | 200/150 | 325* | 2950 | 7300 | 12.8 | 14.4 ⁽¹⁾ | 111b/04 |
| | | | 270* | 2950 | 7300 | 8.5 | 9.9 | |
| | | | 240* | 2950 | 7300 | 5.9 | 7.7 | |
| | | | 270 | 2950* | 7300 | 8.5 | 9.8 | |
| | | | 270 | 2400* | 8650 | 4.3 | 6.4 | |
| | | | 325 | 2950* | 7300 | 12.8 | 14.4 ⁽¹⁾ | |
| KP12X Unistream (5) | Direct coupled end suction | 150/125 | 264* | 2950 | 6800 | 8.5 | 10.4 ⁽¹⁾ | 111b/05 |
| | | | 200* | 2950 | 6650 | 2.4 | 5.4 | |
| | | | 264 | 2950* | 6800 | 8.5 | 10.4 ⁽¹⁾ | |
| | | | 264 | 2200* | 5700 | 4.7 | 5.8 | |
| | | | 264* | 2950 | 5500 | 7.6 | 9.8 | |
| | | | 195* | 2950 | 4200 | 3.6 | 5.3 | |
| KP10X Unistream (5) | Direct coupled end suction | 125/100 | 264* | 2950 | 5500 | 7.6 | 9.8 | 111b/06 |
| | | | 195* | 2950 | 4200 | 3.6 | 5.3 | |
| | | | 264 | 2950* | 5500 | 7.6 | 9.8 | |
| | | | 264 | 2200* | 5500 | 3 | 5.7 | |
| | | | 272* | 2950 | 7800 | 7.8 | 9.8 | |
| | | | 239* | 2950 | 7600 | 5.2 | 7.7 | |
| KP15Y Unistream (5) | Direct coupled end suction | 200/150 | 272* | 2950 | 7800 | 7.8 | 9.8 | 111b/07 |
| | | | 239* | 2950 | 7600 | 5.2 | 7.7 | |
| | | | 272 | 2950* | 7800 | 7.8 | 9.8 | |
| | | | 272 | 2200* | 8200 | 3.2 | 5.6 | |
| | | | 310* | 2600 | 8600 | 8.6 | 10.5 | |
| | | | 239* | 2600 | 7800 | 3.2 | 5.9 | |
| KP08Y Unistream (4),(5) | Direct coupled end suction | 100/80 | 310 | 2600* | 8600 | 8.6 | 10.5 | 111b/08 |
| | | | 310 | 2000* | 7350 | 4.7 | 6.2 | |
| | | | 329* | 2950 | 3600 | 13.2 | 15.2 ⁽¹⁾ | |
| | | | 270* | 2950 | 3500 | 7 | 10 | |
| | | | 255* | 2950 | 3450 | 5.6 | 8.8 | |
| | | | 329 | 2950* | 3600 | 13.2 | 15.2 ⁽¹⁾ | |
| KP08V Unistream (5) | Direct coupled end suction | 100/80 | 214 | 2920 | 2700 | 2.4 | 5.6 | 111b/09 |
| | | | 329 | 2400* | 3650 | 7 | 10 | |
| | | | 329 | 2200* | 3650 | 5 | 8.3 | |
| | | | 165 | 2920 | 2340 | 1.6 | 3.3 | |
| | | | 174 | 2900 | 2590 | 2.3 | 4.3 | |
| | | | 125 | 2900 | 1790 | 0.6 | 2 | |
| KP06C Unistream (5) | Direct coupled end suction | 80/65 | 174 | 2900 | 2590 | 2.3 | 4.3 | 111b/10 |
| | | | 125 | 2900 | 1790 | 0.6 | 2 | |
| KP05D Unistream (5) | Direct coupled end suction | 65/50 | 214 | 2900 | 1380 | 3.3 | 6.3 | 111b/11 |
| | | | 125 | 2900 | 1790 | 0.6 | 2 | |

PART 3: SECTION 17.1

FIRE PUMPS

| Product Name | Type | Suction Inlet Diameter/ Discharge Outlet Diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (L/min) (at NPSH req. = 5.38m) | Rated Head (bar) (at NPSH req. = 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|----------------------------|-------------------------------|--|------------------------|-----------------------|--|--|-------------------------|---------------|
| KP06D Unistream (5) | Direct coupled end suction | 80/65 | 165 | 2900 | 1090 | 1.6 | 3.7 | 111b/12 |
| | | | 214* | 2950 | 2580 | 5 | 6.6 | |
| | | | 214 | 2950* | 2250 | 2.3 | 3.8 | |
| KP08D Unistream (5) | Direct coupled end suction | 100/80 | 214 | 2950* | 2580 | 5 | 6.6 | 111b/13 |
| | | | 214 | 2200* | 2550 | 1.7 | 3.6 | |
| | | | 214* | 2950 | 3400 | 4.8 | 6.5 | |
| KM10E Eurostream(5) | Close coupled end suction | 125/100 | 165 | 2950 | 2820 | 2.4 | 3.8 | 111b/14 |
| | | | 214 | 2950* | 3400 | 4.8 | 6.5 | |
| | | | 214 | 2200* | 3300 | 1.8 | 3.7 | |
| KM08V Eurostream(5) | Close coupled end suction | 100/80 | 195 | 2950 | 4200 | 3.6 | 5.3 | 111b/15 |
| | | | 214 | 2920 | 2700 | 2.4 | 5.6 | |
| KM06C Eurostream (5) | Close coupled end suction | 80/65 | 165 | 2920 | 2340 | 1.6 | 3.3 | 111b/16 |
| | | | 174 | 2900 | 2590 | 2.3 | 4.3 | |
| KM05D Eurostream (5) | Close coupled end suction | 65/50 | 125 | 2900 | 1790 | 0.6 | 2 | 111b/17 |
| | | | 214 | 2900 | 1380 | 3.3 | 6.3 | |
| KM06D Eurostream (5) | Close coupled end suction | 80/65 | 165 | 2900 | 1090 | 1.6 | 3.7 | 111b/18 |
| | | | 214 | 2950 | 2580 | 5 | 6.6 | |
| KM08D Eurostream (5) | Close coupled end suction | 100/80 | 165 | 2950 | 2250 | 2.3 | 3.8 | 111b/19 |
| | | | 214 | 2950 | 3400 | 4.8 | 6.5 | |
| AV03N Unistream (5) | Close coupled end suction | 100/80 | 165 | 2950 | 2820 | 2.4 | 3.8 | 111b/20 |
| | | | 174 | 2900 | 2540 | 1.3 | 3.8 | |
| AV03P Eurostream (5) | Close coupled end suction | 100/80 | 135 | 2900 | 1840 | 1 | 2.3 | 111b/21 |
| | | | 174 | 2900 | 2540 | 1.3 | 3.8 | |
| KP10Y Unistream (5) | Direct coupled end suction | 150/100 | 135 | 2900 | 1840 | 1 | 2.3 | 111b/23 |
| | | | 264* | 2950 | 7680 | 5.2 | 9.7 | |
| | | | 210* | 2950 | 5100 | 4.2 | 6 | |
| KM08E Eurostream (5) | Close coupled end suction | 100/80 | 264 | 2950* | 7680 | 5.2 | 9.7 | 111b/24 |
| | | | 264 | 2200* | 6480 | 2 | 5.4 | |
| | | | 264* | 2950 | 2800 | 9.5 | 10 | |
| KP08E Unistream (5) | Direct coupled end suction | 100/80 | 205* | 2950 | 2800 | 4.2 | 5.9 | 111b/25 |
| | | | 264* | 2950 | 2800 | 9.5 | 10 | |
| | | | 205* | 2950 | 2800 | 4.2 | 5.9 | |
| KP12Z Unistream (5),(6) | Direct coupled end suction | 150/125 | 264* | 2600 | 3150 | 6.6 | 7.8 | 111b/26 |
| | | | 264 | 2950* | 2800 | 9.5 | 10 | |
| | | | 264 | 2200* | 3200 | 3.8 | 5.5 | |
| | | | 329* | 2600 | 6500 | 10.6 | 12.1 | |
| | | | 255* | 2600 | 6000 | 5 | 6.9 | |
| | | | 329 | 2600* | 6500 | 10.6 | 12.1 | |
| KP15Y Unistream (5) | Direct coupled end suction | 200/150 | 329 | 2000* | 6350 | 5.4 | 7.1 | 111b/27 |
| | | | 272* | 2950 | 7800 | 7.8 | 9.8 | |
| | | | 239* | 2950 | 7600 | 5.2 | 7.7 | |
| | | | 272 | 2950* | 7800 | 7.8 | 9.8 | |
| | | | 272 | 2200* | 8200 | 3.2 | 5.6 | |
| | | | 310* | 2600 | 8600 | 8.6 | 10.5 | |
| TF20A Thru- stream (6) | Horizontal split case | 250/200 | 239* | 2600 | 7800 | 3.2 | 5.9 | 111b/29 |
| | | | 310 | 2600* | 8600 | 8.6 | 10.5 | |
| | | | 310 | 2000* | 7350 | 4.7 | 6.2 | |
| | | | 480 | 1760 | 13170 at 5.0m | 10.8 | 12.0 | |
| | | | 310 | 2600* | 8600 | 8.6 | 10.5 | |
| | | | 310 | 2000* | 7350 | 4.7 | 6.2 | |

PART 3: SECTION 17.1

FIRE PUMPS

| Product Name | Type | Suction Inlet Diameter/ Discharge Outlet Diameter (mm) | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (L/min) (at NPSH req. = 5.38m) | Rated Head (bar) (at NPSH req. = 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|--------------|------|--|---------------------------|--------------------------|---|---|----------------------------|---------------|
| | | | 480 | 1760 | 13540 at 5.38m | 10.7 | 12.0 | |
| | | | 370 | 1760 | 12540 at 5.0m | 5.7 | 7.3 | |
| | | | 370 | 1760 | 12900 at 5.38m | 5.6 | 7.3 | |

* These pumps are approved with impeller diameters and, where applicable, speeds within the ranges shown, to provide flows and heads within those ranges.

Notes:

- 1) Pump configurations which generate a closed valve head exceeding 10 bar are approved for use in accordance with BS EN 12845:2004+A2:2009 - Annex E - Special requirements for high rise systems.
- 2) Maximum working pressure: 21 bar.
- 3) Maximum working pressure: 20 bar.
- 4) Maximum working pressure: 18 bar.
- 5) The above pumps are also approved with alternate material options of bronze impeller and/or stainless steel shaft.
- 6) Maximum working pressure 14 bar.

The above pumps are fitted with "closed head" relief valve Pt. No. 25652 - 511 - 000 - 7 or Pt. No. 25652-501-000-2.a

PART 3: SECTION 17.2

MULTI-STAGE FIRE PUMPS

This section lists products approved in accordance with:

- LPS 1131 *Pumps for Automatic Sprinkler Installation. Pump Sets - Requirements and testing methods.*

Firms listed in this section shall control and be responsible for the design, construction, testing and performance of all fire pump sets incorporating their LPCB approved fire pumps.

All fire pump sets incorporating LPCB approved fire pumps shall conform to the *LPC Rules for Automatic Sprinkler Installations*, or Rules specified in the contract, and shall be tested in accordance with the LPC Sprinkler Rules.

Only LPCB approved fire pumps shall be used to comply with the *LPC Rules for Automatic Sprinkler Installations*.

Pumps listed in this section are suitable for use in pump sets for high-rise and multi-storey buildings.

SPP Pumps Limited

1420 Lakeview, Arlington Business Park, Theale, Reading, Berkshire RG7 4SA, United Kingdom

Tel: +44 (0)118 932 3123 • Fax: +44 (0)118 932 3302

E-mail: enquiries@sppumps.com • Website: www.sppumps.com

Certificate No: 111b

| Product Name | Suction Inlet Diameter/ Discharge Outlet Diameter (mm) | Delivery Configuration | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow (l/min) (at NPSH req. <= 5.38m) | Rated Head (bar) (at NPSH req. <= 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|---|--|---|------------------------|-----------------------|--|--|-------------------------|---------------|
| CD10K 2-5 stage Multistream multistage pump | 125/100 | (1) Single stage - closed stage or final outlet | 219 | 2950 | 2800 | 4.8 | 7.0 | 111b/22 |
| | | | 202 | 2950 | 2800 | 3.3 | 5.5 | |
| | | (2) Single stage - intermediate outlet | 219 | 2950 | 2800 | 3.7 | 7.5 | |
| | | | 202 | 2950 | 2800 | 1.4 | 5.9 | |
| | | (3) Final outlet of five stage pump | 219 | 2950 | 2800 | 24.0 | 35.0 | |
| | | | 202 | 2950 | 2800 | 16.5 | 27.5 | |

The pump performance is the summation of each stage, i.e. the performance at the final outlet of a four stage pump is 4 x (1).

The performance at the fourth stage intermediate outlet of a five stage pump is 3 x (1) + (2).

The performance at the final outlet of a five stage pump is 5 x (1), as detailed in (3).

The above pump is approved with impeller diameters within the range shown, to provide flows and heads within the ranges shown.

The above pump is fitted with 'closed head' relief valve part no. 25652-511-000-7.

Certificate No: 111b

| Product Name | Suction Inlet Diameter/ Discharge Outlet diameter (mm) | Delivery Configuration | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow* (L/min) (at NPSH req <= 5.38m) | Rated Head (bar) (at NPSH req <= 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|--|--|---|------------------------|-----------------------|--|---|-------------------------|---------------|
| CD12K 2-10 stage Multistream multistage pump | 150/125 | Single stage - closed stage or final outlet | 308 | 1470 | 4290 | 2.3 | 3.7 | 111b/28 |
| | | | 247 | 1470 | 3930 | 0.5 | 2.2 | |

PART 3: SECTION 17.2

MULTI-STAGE FIRE PUMPS

| Product Name | Suction Inlet Diameter/ Discharge Outlet diameter (mm) | Delivery Configuration | Impeller Diameter (mm) | Rated Speed (rev/min) | Rated Flow* (L/min) (at NPSH req <= 5.38m) | Rated Head (bar) (at NSPH req <= 5.38m) | Closed Valve Head (bar) | LPCB Ref. No. |
|--------------|--|------------------------------------|------------------------|-----------------------|--|---|-------------------------|---------------|
| | | Single stage - intermediate outlet | 308 | 1470 | 4290 | 0.8 | 3.7 | |
| | | | 247 | 1470 | 3930 | | 2.2 | |
| | | Final outlet of ten stage pump | 308 | 1470 | 4290 | 23.0 | 37.0 | |
| | | | 247 | 1470 | 3930 | 5.0 | 22.0 | |

The pump performance is the summation of each stage, i.e. the performance at the final outlet of an eight stage pump is 8 x (1).

The performance at the seventh stage intermediate outlet of an eight stage pump is 6 x (1) + (2).

The performance at the final outlet of a ten stage pump is 10 x (1), as detailed in (3).

The above pump is fitted with 'closed head' relief valve part no. 25652-511-000-7.

*The minimum bypass flow rate is 160 L/min.

PART 3: SECTION 17.3

DIESEL ENGINES FOR SPRINKLER PUMP SETS

This section lists products approved in accordance with:

- LPS 1239 *Requirements for LPCB Approval of Diesel Engines for Sprinkler Pump Sets.*

LPCB approved diesel engines shall be used in fire pump sets which conform to the *LPC Rules for Automatic Sprinkler Installations*.

For pump sets requiring a diesel engine with a power/speed rating outside the range of approved diesel engines listed, such diesel engines should conform to LPS 1239, Issue 1.

LPCB Approved engines are approved for use between the following limits:

- Not greater than the approved rated engine power at the rated speed.
- Not less than 40% of the approved rated engine power at the rated speed

The responsibility for the design, construction, testing and performance of all fire pump sets incorporating LPCB approved diesel engines lies with the pump set manufacturer.

Clarke UK Limited

Grange Works, Lomond Road, Coatbridge, Scotland ML5 2NN, United Kingdom

Tel: +44 (0)1236 429946 • Fax: +44 (0)1236 427274

Certificate No: 601 to LPS 1239

| Product Name | 1760* | 2100* | 2350* | 2600* | 2800* | 2960* | LPCB Ref. No. |
|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------|
| JU4H - LP20 (1) | 60 | 67 | 72 | - | - | - | 601b/01 |
| JU4H - LP24 (1) | - | - | 72 | 75 | 80 | 83 | 601b/02 |
| JU4H - LP50 (2) | 110 | 130 | 127 | - | - | - | 601b/03 |
| JU4H - LP54 (2) | - | - | 122 | 139 | 145 | 145 | 601b/04 |
| JU4H - LP84 (3) | - | - | 139 | 175 | 179 | 185 | 601b/05 |
| JU6H - LP50 (2) | 183 | 210 | 210 | - | - | - | 601b/06 |
| JU6H - LP54 (2) ** | - | - | 210 | 216 | 216 | 216 | 601b/07 |
| JU6H - LP60 (3) | 200 | 240 | 240 | - | - | - | 601b/08 |
| JU6H - LP84 (3) ** | - | - | 243 | 247 | 259 | 275 | 601b/09 |
| LC2A - LP30 (1) (4) | - | - | - | - | 6.8 | 9.7 | 601c/01 |
| LC2A - LP60 (1) (4) | - | - | - | - | 21.8 | 22.3 | 601c/02 |

* Approved rated engine power (bhp) at rated speed (rev/min)

** These engines are not suitable for continuous operation in the range 2650 to 2750 rpm

Notes:

- 1) Normally aspirated.
- 2) Turbocharged & Jacket Water Aftercooled.
- 3) Turbocharged & Raw Water Aftercooled.
- 4) Air-cooled engine

This section lists products approved in accordance with:

- LPCB Schedule of requirements
- LPS 1194 *Requirements and Testing Methods for Pipe Hangers*

Components of pipe support systems listed below are considered acceptable for use in installations conforming to the *LPC Rules for Automatic Sprinkler Installations*. The products shall be installed and maintained in accordance with the manufacturer's instructions.

Lindapter International

Lindsay House, Brackenbeck Road, Bradford BD7 2NF, United Kingdom

Tel: +44 (0)1274 521 444 • Fax: +44 (0)1274 521 130

E-mail: enquiries@lindapter.com • Website: www.lindapter.com

Certificate No: 1171a to LPS 1194: Issue 1.2

Pipe Hangers

| Product Name | Pipe Size (mm) | Material | Finish | LPCB Ref. No. |
|----------------|----------------|------------|------------|---------------|
| SH025 / SH025N | 25 | Mild Steel | Galvanised | 1171a/01 |
| SH032 / SH032N | 32 | Mild Steel | Galvanised | |
| SH040 / SH040N | 40 | Mild Steel | Galvanised | |
| SH050 / SH050N | 50 | Mild Steel | Galvanised | |
| SH065 / SH065N | 65 | Mild Steel | Galvanised | |
| SH080 / SH080N | 80 | Mild Steel | Galvanised | |
| SH100 / SH100N | 100 | Mild Steel | Galvanised | |
| SH125 / SH125N | 125 | Mild Steel | Galvanised | |
| SH150 / SH150N | 150 | Mild Steel | Galvanised | |

Note:

Models suffixed with 'N' are supplied with a knurled hanger nut, otherwise supplied with a standard hex nut.

Tyco Building Services Products B.V. part of the Johnson Controls group of Companies

Kopersteden 1, 7547 TJ Enschede, The Netherlands

Tel: +31 53 4284444 • Fax: +31 53 4283377

E-mail: info-NL@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 169e

| Product Name | Pipe Size (mm) | Material | Finish | LPCB Ref. No. |
|--------------|----------------|------------|------------|---------------|
| Filbow DN20 | 20 | Mild Steel | Galvanised | 169e/01 |
| Filbow DN25 | 25 | Mild Steel | Galvanised | |
| Filbow DN32 | 32 | Mild Steel | Galvanised | |
| Filbow DN40 | 40 | Mild Steel | Galvanised | |
| Filbow DN50 | 50 | Mild Steel | Galvanised | |
| Filbow DN65 | 65 | Mild Steel | Galvanised | |
| Filbow DN80 | 80 | Mild Steel | Galvanised | |
| Filbow DN100 | 100 | Mild Steel | Galvanised | |
| Filbow DN150 | 150 | Mild Steel | Galvanised | |
| Filbow DN200 | 200 | Mild Steel | Galvanised | |
| F020 | 20 | Mild Steel | Galvanised | 169e/02 |
| F025 | 25 | Mild Steel | Galvanised | |
| F032 | 32 | Mild Steel | Galvanised | |
| F040 | 40 | Mild Steel | Galvanised | |
| F050 | 50 | Mild Steel | Galvanised | |
| F065 | 65 | Mild Steel | Galvanised | |
| F080 | 80 | Mild Steel | Galvanised | |
| F100 | 100 | Mild Steel | Galvanised | |

PART 3: SECTION 18

PIPEWORK SUPPORTS

| Product Name | Pipe Size (mm) | Material | Finish | LPCB Ref. No. |
|---------------------|-----------------------|-----------------|---------------|----------------------|
| F125 | 125 | Mild Steel | Galvanised | |
| F150 | 150 | Mild Steel | Galvanised | |

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Check valves listed below are considered acceptable for use in installations conforming to the *LPC Rules for Automatic Sprinkler Installations*. The products shall be installed and maintained in accordance with the manufacturer's instructions.

Jinan Meide Casting Co Ltd

No 3 Nanmen Road, Pingyin, Jinan, China

Tel: +86 531 87885062 • Fax: +86 531 87879387

E-mail: kevinzhang0925@gmail.com • Website: Web: <http://www.meide-casting.com>

Certificate No: 988b to LPS 1186 Issue 3.1

Check Valves

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Body Material | Maximum Working Pressure (bar) | Connections | LPCB Ref. No. |
|-------------------|--------------------|----------------------------|---------------|--------------------------------|-------------|---------------|
| H84X check valves | 50 | 60.3 | Ductile iron | 25 | Grooved | 988b/01 |
| | 65 | 73.0 | Ductile iron | 25 | Grooved | |
| | 65 | 76.1 | Ductile iron | 25 | Grooved | |
| | 80 | 88.9 | Ductile iron | 25 | Grooved | |
| | 100 | 114.3 | Ductile iron | 25 | Grooved | |
| | 125 | 139.7 | Ductile iron | 25 | Grooved | |
| | 125 | 141.3 | Ductile iron | 25 | Grooved | |
| | 150 | 165.1 | Ductile iron | 25 | Grooved | |
| | 150 | 168.3 | Ductile iron | 25 | Grooved | |
| | 200 | 219.3 | Ductile iron | 25 | Grooved | |
| | 250 | 273.0 | Ductile iron | 25 | Grooved | |
| | 300 | 323.9 | Ductile iron | 25 | Grooved | |
| | H44X2 check valves | 50 | 60.3 | Ductile iron | 25 | |
| 65 | | 73 | Ductile iron | 25 | Flanged | |
| 80 | | 88.9 | Ductile iron | 25 | Flanged | |
| 100 | | 114.3 | Ductile iron | 25 | Flanged | |
| 125 | | 139.7 | Ductile iron | 25 | Flanged | |
| 150 | | 165.1 | Ductile iron | 25 | Flanged | |
| 200 | | 219.1 | Ductile iron | 25 | Flanged | |
| 250 | | 273.0 | Ductile iron | 25 | Flanged | |
| 300 | | 323.9 | Ductile iron | 25 | Flanged | |

Rapidrop Global Limited

Rutland Business Park, Newark Road, Peterborough PE1 5WA, United Kingdom

Tel: +44 (0)1733 847 510 • Fax: +44 (0)1733 553 958

E-mail: rapidrop@rapidrop.com • Website: www.rapidrop.com

Certificate No: 566j to LPS 1186 Issue 3.1

RAPIDROP Check Valves

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Body Material | Maximum Working Pressure (bar) | Connections | LPCB Ref. No. |
|--------------|-------------------|----------------------------|---------------|--------------------------------|-------------|---------------|
| Fig 301 | 50 | 60.3 | Ductile iron | 25 | Grooved | 566j/01 |
| | 65 | 73.0 | Ductile iron | 25 | Grooved | |
| | 65 | 76.1 | Ductile iron | 25 | Grooved | |
| | 80 | 88.9 | Ductile iron | 25 | Grooved | |
| | 100 | 114.3 | Ductile iron | 25 | Grooved | |
| | 125 | 139.7 | Ductile iron | 25 | Grooved | |

PART 3: SECTION 19

CHECK VALVES

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Body Material | Maximum Working Pressure (bar) | Connections | LPCB Ref. No. |
|--------------|-------------------|----------------------------|---------------|--------------------------------|-------------|---------------|
| Fig 302 | 125 | 141.3 | Ductile iron | 25 | Grooved | 566j/02 |
| | 150 | 165.1 | Ductile iron | 25 | Grooved | |
| | 150 | 168.3 | Ductile iron | 25 | Grooved | |
| | 200 | 219.3 | Ductile iron | 25 | Grooved | |
| | 250 | 273.0 | Ductile iron | 25 | Grooved | |
| | 300 | 323.9 | Ductile iron | 25 | Grooved | |
| | 50 | 60.3 | Ductile iron | 25 | Flanged | |
| | 65 | 73 | Ductile iron | 25 | Flanged | |
| | 80 | 88.9 | Ductile iron | 25 | Flanged | |
| | 100 | 114.3 | Ductile iron | 25 | Flanged | |
| | 150 | 165.1 | Ductile iron | 25 | Flanged | |
| | 200 | 219.1 | Ductile iron | 25 | Flanged | |
| | 250 | 273.0 | Ductile iron | 25 | Flanged | |
| | 300 | 323.9 | Ductile iron | 25 | Flanged | |

Victaulic Company

4901 Kesslersville Road, Easton, Pennsylvania 18040, USA

Tel: +1 610 559 3300 • Fax: +1 610 250 8817

E-mail: victaulic@victaulic.com • Website: www.victaulic.com

Certificate No: 104h to LPS1186 Issue 3.0

Series 717 Check Valves

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Body Material | Maximum Working Pressure (bar) | Connections | LPCB Ref. No. |
|---------------------------|-------------------|----------------------------|---------------|--------------------------------|-------------|---------------|
| Series 717 R check valves | 50 | 73.0 | Ductile iron | 25 | Grooved | 104h/02 |
| | 65 | 76.1 | Ductile iron | 25 | Grooved | |
| | 80 | 88.9 | Ductile iron | 25 | Grooved | |
| | 100 | 114.3 | Ductile iron | 25 | Grooved | |
| | 125 | 139.7 | Ductile iron | 25 | Grooved | |
| | | 141.3 | Ductile iron | 25 | Grooved | |
| | 150 | 165.1 | Ductile iron | 25 | Grooved | |
| | | 168.3 | Ductile iron | 25 | Grooved | |
| | 200 | 219.3 | Ductile iron | 24 | Grooved | |
| | 250 | 273.0 | Ductile iron | 17 | Grooved | |
| Series 717 H check-valves | 300 | 323.9 | Ductile iron | 17 | Grooved | 104h/01 |
| | 50 | 60.3 | Ductile iron | 25 | Grooved | |
| Series 717 check-valves | 65 | 73 | Ductile iron | 25 | Grooved | |
| | 80 | 76.1 | Ductile iron | 25 | Grooved | |
| | | 88.9 | Ductile iron | 25 | Grooved | |
| | 100 | 114.3 | Ductile iron | 25 | Grooved | |
| | 125 | 139.7 | Ductile iron | 25 | Grooved | |
| | | 141.3 | Ductile iron | 25 | Grooved | |
| | 150 | 165.1 | Ductile iron | 25 | Grooved | |
| | | 168.3 | Ductile iron | 25 | Grooved | |
| | 200 | 219.1 | Ductile iron | 24 | Grooved | |
| | 250 | 273.0 | Ductile iron | 17 | Grooved | |
| 300 | 323.9 | Ductile iron | 17 | Grooved | | |

User Data Sheet 10.08, rev P

This section lists products approved in accordance with:

- LPCB Schedule of requirements
- LPS 1185 *Requirements for Testing Methods for Remote Monitored Gear Operated Butterfly Stop Valves*

Stop valves listed below are considered acceptable for use in installations conforming to the *LPC Rules for Automatic Sprinkler Installations*. The products shall be installed and maintained in accordance with the manufacturer's instructions.

PVI (Picardie Valves Industries)

2 Rue du Marais, 80400 Ham, France

Tel: +33 (0)3 23 81 43 00 • Fax: +33 (0)3 23 81 43 14

E-mail: az@altifort.com • Website: www.altifort-pvi.com

Certificate No: 571a

Model SAPAG JPL 39109 Butterfly Stop Valves

| Product Name | Size (mm) | Body Material | Maximum Working Pressure (bar) | Connections | LPCB Ref. No. |
|--|-----------|---------------|--------------------------------|-------------|---------------|
| Model SAPAG JPL 39109 Butterfly stop valve | 100 | Ductile Iron | 12.1 | Grooved | 571a/01 |
| | 125 | Ductile Iron | 12.1 | Grooved | |
| | 150 | Ductile Iron | 12.1 | Grooved | |
| | 200 | Ductile Iron | 12.1 | Grooved | |
| | 250 | Ductile Iron | 12.1 | Grooved | |
| | 300 | Ductile Iron | 12.1 | Grooved | |

Victaulic Company

4901 Kesslersville Road, Easton, Pennsylvania 18040, USA

Tel: +1 610 559 3300 • Fax: +1 610 250 8817

E-mail: victaulic@victaulic.com • Website: www.victaulic.com

Certificate No: 104j to LPS 1185 Issue 3.1

Certificate No: 846a to LPS 1185 Issue 3.1

Series 705(1) & 707C (2) Butterfly Valves Series

| Product Name | Nominal Size (mm) | Pipe Outside Diameter (mm) | Body Material | Max. Working Pressure (bar) | Connections | LPCB Ref. No. |
|-----------------------------------|-----------------------------------|----------------------------|---------------|-----------------------------|-------------|---------------|
| Series 705 & 707C Butterfly valve | 65 | 73.0 | Ductile iron | 21 | Grooved | 104j/01 |
| | 65 | 76.1 | Ductile iron | 21 | Grooved | |
| | 80 | 88.9 | Ductile iron | 21 | Grooved | |
| Series 705 & 707C Butterfly valve | | 108.0 | Ductile iron | 21 | Grooved | 846a/01 |
| | Series 705 & 707C Butterfly valve | 100 | 114.3 | Ductile iron | 21 | |
| Series 705 & 707C Butterfly valve | 125 | 139.7 | Ductile iron | 21 | Grooved | 104j/01 |
| | | 141.3 | Ductile iron | 21 | Grooved | |
| | 150 | 165.1 | Ductile iron | 21 | Grooved | |
| | | 168.3 | Ductile iron | 21 | Grooved | |
| | 200 | 219.3 | Ductile iron | 21 | Grooved | |
| | 250 | 273.0 | Ductile iron | 21 | Grooved | |
| | 300 | 323.9 | Ductile iron | 21 | Grooved | |

⁽¹⁾ Switch circuit Normally Open

⁽²⁾ Switch circuit Normally Closed

PART 3: SECTION 20

STOP VALVES

Certificate No: 104h to LPS 1186: Issue 3.0

Series 728 Ball Valves

| Product Name | Nominal Size (mm) | Body Material | Maximum Working Pressure (bar) | Connections | LPCB Ref. No. |
|------------------------|-------------------|---------------|--------------------------------|-------------|---------------|
| Series 728 Ball Valves | DN25 | Brass | 20 | Threaded | 104i/01 |
| | DN32 | Brass | 20 | Threaded | |
| | DN40 | Brass | 20 | Threaded | |
| | DN50 | Brass | 20 | Threaded | |
| | DN32 | Brass | 20 | Grooved | |
| | DN40 | Brass | 20 | Grooved | |
| | DN50 | Brass | 20 | Grooved | |

User manual 2227, Rev B

Certificate No: 104j to LPS1185 Issue 3.1

Certificate No: 846a

Series 765(1) & 766(2) Butterfly Valves

| Product Name | Nominal Size (mm) | Pipe Outside diameter (mm) | Body Material | Max Working Pressure (bar) | Connections | LPCB Ref. No. | |
|----------------------------------|-------------------|----------------------------|---------------|----------------------------|-------------|--------------------|--|
| Series 765 & 766 Butterfly valve | 65 | 73.0 | Ductile iron | 25 | Grooved | 104j/02 | |
| | 65 | 76.1 | Ductile iron | 25 | Grooved | 846a/02 104j/02 | |
| | 80 | 88.9 | Ductile iron | 25 | Grooved | | |
| | | 108.0 | Ductile iron | 25 | Grooved | | |
| | | 100 | 114.3 | Ductile iron | 25 | Grooved | |
| | | 125 | 139.7 | Ductile iron | 25 | Grooved | |
| | | | 141.3 | Ductile iron | 25 | Grooved | |
| | | 150 | 165.1 | Ductile iron | 25 | Grooved | |
| | | | 168.3 | Ductile iron | 25 | Grooved | |
| | | 200 | 219.3 | Ductile iron | 25 | Grooved | |
| | | 250 | 273.0 | Ductile iron | 25 | Grooved | |
| | | 300 | 323.9 | Ductile iron | 25 | Grooved | |

⁽¹⁾ Switch circuit Normally Open

⁽²⁾ Switch circuit Normally Closed

This section lists products approved in accordance with:

- LPS 1260 *Requirements for testing plastic pipes and fittings for sprinkler systems.*

The 'scope of use' of plastic pipe shall be agreed between the plastics suppliers, purchaser/installer, authority having jurisdiction and/or insurer in accordance with documented supplier 'Installation Instructions' but subject to the following criteria taking precedence.

- 1) Use of plastic pipe and fittings is subject to water authority agreement for the district or territory concerned.
- 2) LPCB Approved quick response sprinklers shall be used with exposed (i.e. fire exposure) plastic pipe and fittings.
- 3) Plastic pipe and fittings are suitable for use only with wet pipe systems.
- 4) Use of water additives is only permitted in accordance with the manufacturer's installation instructions.
- 5) Care should be exercised to ensure that the adhesive joints are adequately cured, in accordance with the manufacturer's installation instructions, prior to pressurisation.
- 6) Plastic pipe and fittings shall not be installed outdoors.
- 7) Where plastic pipe and fittings are exposed (i.e. fire exposure), the system shall be installed close to a flat ceiling construction.
- 8) Sprinkler systems which employ plastic pipe and fittings shall be designed where possible to ensure there are no 'no flow' sections of pipework in the event of sprinkler operation.

Aquatherm GmbH

Biggen 5, D-57439 Attendorn, Germany

Tel: +49 2722 950223 • Fax: +49 2722 950252

E-mail: info@aquatherm.de • Website: www.aquatherm.de

Certificate No: 684a to LPS 1260

Aquatherm GmbH 'Red Pipe' PPR Plastic Pipe & Fittings

| Product Name | Nominal Diameter Range (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------------|--|--------------------------------|---------------|
| 'Red Pipe' Sprinkler Pipe | 20,25,32,40,50,63,75,90,110,125 | 12 | 684a/01 |
| Socket | 20,25,32,40,50,63,75,90,110,125 | 12 | 684a/02 |
| Reducer | 20,25,32,40,50,63,75,90,110,125 | 12 | 684a/03 |
| Elbow, 90° | 20,25,32,40,50,63,75,90,110,125 | 12 | 684a/04 |
| Elbow, 45° | 20,25,32,40,50,63,75,90,110,125 | 12 | 684a/05 |
| Tee | 20,25,32,40,50,63,75,90,110,125 | 12 | 684a/06 |
| Reducing Tee | 20x25x20;25x20x20;25x20x25;32x20x20; 32x20x32;32x25x32;40x20x40;40x25x40; 40x32x40;50x20x50;50x25x50;50x32x50; 50x40x50;63x40x63;63x50x63;75x40x75; 75x50x75;75x63x75;90x40x90;90x50x90; 90x63x90;90x75x90;110x63x110;110x75x110; 110x90x110;125x75x125;125x90x125;125x110x125 | 12 | 684a/07 |
| End Cap | 20,25,32,40,50,63,75,90,110,125 | 12 | 684a/08 |
| Socket Welded Nipple | 32,40,50,63,75,90,110,125 | 12 | 684a/09 |
| Saddle Weld-in | 40/20;40/25;50/20;50/25;63/20;63/25;63/32;75/20; 75/25;75/32;90/20;90/25;90/32;90/40;110/20;110/25; 110/32;110/40;125/20;125/25;125/32;125/40 | 12 | 684a/10 |
| Coupling screw joint | 32,40,50,63,75 | 12 | 684a/11 |
| Wall connection | 20x1/2"F;25x3/4"F | 12 | 684a/12 |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Nominal Diameter Range (mm) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--|--|--------------------------------|---------------|
| Transition piece Female | 20x1/2" F; 25x3/4" F; 32x1" F; 40x1 1/4" F 50x1 1/2" F; 63x2" F; 75x2" | 12 | 684a/13 |
| Transition piece Male | 20x1/2" M; 25x3/4" M; 32x1" M; 40x1 1/4" M; 50x1 1/2" M; 63x2" M; 75x2 1/2" M; 90x3" M; 110x4" M | 12 | 684a/14 |
| Connecting Union | 20/nut R 1"; 25/nut R 1 1/4"; 32/nut R 1 1/2"; 40/nut R 2"; 50/nut R 2 1/4"; 50/nut R 2 1/2"; 63/nut R 2 3/4"; 75/nut R 3 1/2"; 90/nut R 4" | 12 | 684a/15 |
| Transition joint | nut R 1"x20; nut R 1 1/4"/25; nut R 1 1/2"/32; nut R 2"/40 nut R 2 1/4"x50; nut R 2 3/4"x63 | 12 | 684a/16 |
| Counterpart | 1"Mx20; 1 1/4"Mx25; 1 1/2"Mx32; 2"Mx40; 2 1/4"Mx50; 2 3/4"Mx63 | 12 | 684a/17 |
| Transition Tee | 20x1/2Fx20; 25x3/4Fx25; 32x1Fx32 | 12 | 684a/18 |
| Saddle Weld-in with Female thread & hexagon socket | 40/25x1/2F; 50/25x1/2F; 63/25x1/2F; 75/25x1/2F; 90/25x1/2F; 40/25x3/4F; 50/25x3/4F; 63/25x3/4F; 75/25x3/4F; 90/25x3/4F; 110/25x3/4F; 125/125x3/4F; | 12 | 684a/19 |
| Screw-down valve | 20,25,32,40 | 12 | 684a/20 |
| Inclined valve | 20,25,32,40 | 12 | 684a/21 |
| Ball cock | 20,25,32,40,50,63,75,90 | 12 | 684a/22 |
| Draining branch | 20,25,32,40,50,63 | 12 | 684a/23 |

Notes relating to Aquatherm pipes and fittings:

- 1) The system of pipes and fittings must be installed in accordance with the Aquatherm installation instructions, which include Annex "Technical Instruction aquatherm red pipe" dated 01/12/2012 Issue 2.
- 2) The maximum normal ambient temperature of use shall not exceed 70°C.
- 3) The products shall only be installed by LPCB Certificated or Registered Installing companies (see Part 5, Section 1A and 1B above) or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be Certificated to ISO 9000.

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Certificate No: 455a to LPS1260

GF Harvel Blazemaster® Chlorinated Polyvinyl Chloride (CPVC) Sprinkler Pipe

| Product Name | Nominal Diameter Range | Maximum Working Pressure (bar) | LPCB Ref. No. |
|----------------------------------|--|--------------------------------|---------------|
| Blazemaster® Fire Sprinkler Pipe | 0.75", 1.0", 1.25", 1.5", 2.0", 2.5", 3.0" | 12 | 455a/01 |

Blazemaster® is a registered trademark of Lubrizol Advanced Materials, Inc.

Notes relating to Spears fittings and GF Harvel pipes:

- 1) The system of pipe and fittings must be installed in accordance with Georg Fischer Harvel LLC and Spears Manufacturing Company, 'Blazemaster' Installation Instructions, which includes LPCB Conditions of Use agreed with GF Harvel and Spears.
- 2) The maximum normal ambient temperatures of use shall not exceed 50°C.
- 3) The products shall only be installed by LPCB Certificated or Registered Installing companies (see Part 5, Section 1A and 1B above) or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be LPCB Certificated to ISO 9000.
- 4) GF Harvel Blazemaster CPVC sprinkler pipes are manufactured from Blazemaster CPVC materials that are WRAS listed.
- 5) GF Harvel Blazemaster CPVC sprinkler pipes are WRAS listed.

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Certificate No: 270a to LPS1260

GF Harvel Blazemaster® Chlorinated Polyvinyl Chloride (CPVC) Sprinkler Pipe

| Product Name | Nominal Diameter Range | Maximum Working Pressure (bar) | LPCB Ref. No. |
|----------------------------------|--|--------------------------------|---------------|
| Blazemaster® Fire Sprinkler Pipe | 0.75", 1.0", 1.25", 1.5", 2.0", 2.5", 3.0" | 12 | 270a/01 |

Blazemaster® is a registered trademark of Lubrizol Advanced Materials, Inc.

Notes relating to Spears fittings and GF Harvel pipes:

- 1) The system of pipe and fittings must be installed in accordance with Georg Fischer Harvel LLC and Spears Manufacturing Company, 'Blazemaster' Installation Instructions, which includes LPCB Conditions of Use agreed with GF Harvel and Spears.
- 2) The maximum normal ambient temperatures of use shall not exceed 50°C.
- 3) The products shall only be installed by LPCB Certificated or Registered Installing companies (see Part 5, Section 1A and 1B above) or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be LPCB Certificated to ISO 9000.
- 4) GF Harvel Blazemaster CPVC sprinkler pipes are manufactured from Blazemaster CPVC materials that are WRAS listed.
- 5) GF Harvel Blazemaster CPVC sprinkler pipes are WRAS listed.

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Certificate No: 875a to LPS 1260

IPEX Blazemaster® Chlorinated Polyvinyl Chloride (CPVC) Sprinkler Fittings

| Product Name | Size | Model | Maximum working pressure (bar) | LPCB Ref. No. |
|--|--------------------|--------|--------------------------------|---------------|
| SHA TEE SxSxSRFPT | 3/4" x 3/4" x 1/2" | 048010 | 12 | 875a/01 |
| | 1" x 1" x 1/2" | 048012 | 12 | |
| | 1/2" x 1/2" x 1" | 048062 | 12 | |
| SHA 90° ELBOW SxSRFPT | 3/4" x 1/2" | 048019 | 12 | 875a/02 |
| | 1" x 1/2" | 048020 | 12 | |
| SHA SxSRFPT | 3/4" x 1/2" | 048026 | 12 | 875a/03 |
| | 1" x 1/2" | 048527 | 12 | |
| SHA SpSRFPT | 1" x 1/2" | 048030 | 12 | 875a/04 |
| FEMALE ADAPTOR SxSRFPT CAP SCH 80 BLZ | 1" | 048024 | 12 | 875a/05 |
| | 3/4" | 048400 | 12 | 875a/06 |
| | 1" | 048401 | 12 | |
| | 1 1/4" | 048402 | 12 | |
| | 1 1/2" | 048403 | 12 | |
| COUPLING CSH 80 BLZ | 2" | 048404 | 12 | 875a/07 |
| | 3/4" | 048407 | 12 | |
| | 1" | 048408 | 12 | |
| | 1 1/4" | 048409 | 12 | |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Size | Model | Maximum working pressure (bar) | LPCB Ref. No. | |
|-----------------------------|--------------------------|--------|--------------------------------|---------------|---------|
| CROSS CSH 80 BLZ | 1 1/2" | 048410 | 12 | 875a/08 | |
| | 2" | 048411 | 12 | | |
| | 3/4" | 048414 | 12 | | |
| | 1" | 048415 | 12 | | |
| | 1 1/4" | 048416 | 12 | | |
| 45 DEG. ELBOW SCH 80 BLZ | 1 1/2" | 048417 | 12 | 875a/09 | |
| | 2" | 048418 | 12 | | |
| | 3/4" | 048420 | 12 | | |
| | 1" | 048421 | 12 | | |
| | 1 1/4" | 048422 | 12 | | |
| 90 DEG. ELBOW SCH 80 BLZ | 1 1/2" | 048423 | 12 | 875A/10 | |
| | 2" | 048424 | 12 | | |
| | 3/4" | 048431 | 12 | | |
| | 1" | 048432 | 12 | | |
| | 1 1/4" | 048433 | 12 | | |
| FLANGE SOCKET SCH 80 BLZ | 1 1/2" | 048434 | 12 | 875a/10 | |
| | 2" | 048435 | 12 | | |
| | 3/4" | 048443 | 12 | | 875a/11 |
| | 1" | 048444 | 12 | | |
| | 1 1/4" | 048445 | 12 | | |
| REDUCER BUSHING SCH 80 BLZ | 1 1/2" | 048446 | 12 | 875a/12 | |
| | 2" | 048447 | 12 | | |
| | 1" X 3/4" | 048459 | 12 | | |
| | 1 1/4" X 3/4" | 048460 | 12 | | |
| | 1 1/4" X 1" | 148461 | 12 | | |
| | 1 1/2" X 3/4" | 048462 | 12 | | |
| | 1 1/2" X 1" | 048463 | 12 | | |
| | 1 1/2" X 1 1/4" | 048464 | 12 | | |
| | 2" X 1" | 048466 | 12 | | |
| | 2" X 1 1/4" | 048467 | 12 | | |
| TEE SCH 80 BLZ | 2" X 1 1/2" | 048468 | 12 | 875a/13 | |
| | 3/4" | 048486 | 12 | | |
| | 1" | 048487 | 12 | | |
| | 1 1/4" | 048488 | 12 | | |
| | 1 1/2" | 048489 | 12 | | |
| REDUCER TEE SCH 80 BLZ | 2" | 048490 | 12 | 875a/14 | |
| | 3/4" X 3/4" X 1" | 048493 | 12 | | |
| | 1" X 3/4" X 3/4" | 048497 | 12 | | |
| | 1" X 3/4" X 1" | 048498 | 12 | | |
| | 1" X 1" X 3/4" | 048495 | 12 | | |
| | 1 1/4" X 1" X 3/4" | 048499 | 12 | | |
| | 1 1/4" X 1" X 1" | 048506 | 12 | | |
| | 1 1/4" X 1" X 1 1/4" | 048501 | 12 | | |
| | 1 1/4" X 1 1/4" X 3/4" | 048502 | 12 | | |
| | 1 1/4" X 1 1/4" X 1" | 048504 | 12 | | |
| | 1 1/2" X 1 1/4" X 3/4" | 048507 | 12 | | |
| | 1 1/2" X 1 1/2" X 3/4" | 048509 | 12 | | |
| | 1 1/2" X 1 1/2" X 1" | 048510 | 12 | | |
| | 1 1/2" X 1 1/2" X 1 1/4" | 048511 | 12 | | |
| | 2" X 2" X 3/4" | 048513 | 12 | | |
| 2" X 2" X 1" | 048514 | 12 | | | |
| GROOVED COUPLING SCH 80 BLZ | 2" X 2" X 1 1/2" | 048515 | 12 | 875a/15 | |
| | 1 1/4" | 048524 | 12 | | |
| | 1 1/2" | 048540 | 12 | | |
| | 2" | 048541 | 12 | | |

Notes relating to IPEX fittings:

- 1) IPEX fittings are LPCB approved for use with IPEX LPCB approved pipe and IPEX BM-5 "One-Step Solvent Cement" adhesive.
- 2) The system of pipe and fittings must be installed in accordance with IPEX Mechanical Technical Manual Series Volume II: Fire Protection Systems, Second Edition (Ref. MNMEBMIP060210 / BM003C dated 2008), which includes LPCB Conditions of Use agreed with IPEX.
- 3) The maximum normal ambient temperature of use shall not exceed 50°C.
- 4) The products shall only be installed by LPCB Certificated or Registered installing companies (see Part 5, Section 1A and 1B above), or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be LPCB Certificated to ISO 9000.
- 5) IPEX Blazemaster CPVC fittings are manufactured from Blazemaster CPVC materials that are WRAS listed.
- 6) Blazemaster® is a registered trademark of Lubrizol Advanced Materials, Inc.

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

Certificate No: 875b to LPS 1260

IPEX Blazemaster® Chlorinated Polyvinyl Chloride (CPVC) Sprinkler Pipe

| Product Name | Size | Model | Maximum working pressure (bar) | LPCB Ref. No. |
|-----------------|--------|--------|--------------------------------|---------------|
| Pipe SCH 80 BLZ | 3/4" | 013401 | 12 | 875b/01 |
| | 1" | 013404 | 12 | |
| | 1 1/4" | 013406 | 12 | |
| | 1 1/2" | 013415 | 12 | |
| | 2" | 013411 | 12 | |

Notes relating to IPEX pipes:

- 1) IPEX pipe is LPCB approved for use with IPEX LPCB approved fittings and IPEX BM-5 "One-Step Solvent Cement" adhesive.
- 2) The system of pipe and fittings must be installed in accordance with IPEX Mechanical Technical Manual Series Volume II: Fire Protection Systems, Second Edition (Ref. MNMEBMP060210 / BM003C dated 2008), which includes LPCB Conditions of Use agreed with IPEX Inc.
- 3) The maximum normal ambient temperature of use shall not exceed 50°C.
- 4) The products shall only be installed by LPCB Certificated or Registered installing companies (see Part 5, Section 1A and 1B above), or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be LPCB Certificated to ISO 9000.
- 5) IPEX Blazemaster CPVC pipe is manufactured from Blazemaster CPVC materials that are WRAS listed.
- 6) Blazemaster® is a registered trademark of Lubrizol Advanced Materials, Inc.

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Certificate No: 878a to LPS 1260-2.2

Nibco Inc Blazemaster® Chlorinated Polyvinyl Chloride (CPVC) Sprinkler Fittings

| Product Name | Size | Model | Maximum Working Pressure (bar) | LPCB Ref. No. | | |
|--|------------------|-------------|--------------------------------|---------------|----|---------|
| Coupling | 3/4" | 5001 | 12 | 878a/01 | | |
| | 1" | 5001 | 12 | | | |
| | 1 1/4" | 5001 | 12 | | | |
| | 1 1/2" | 5001 | 12 | | | |
| | 2" | 5001 | 12 | | | |
| | 2 1/2" | 5001 | 12 | | | |
| | 3" | 5001 | 12 | | | |
| | 1"x3/4" | 5001R | 12 | | | |
| | 1 1/4"x1" | 5001R | 12 | | | |
| | 1 1/2"x3/4" | 5001R | 12 | | | |
| | 1 1/2"x1" | 5001R | 12 | | | |
| | 1 1/2"x1 1/4" | 5001R | 12 | | | |
| | 2"x1" | 5001R | 12 | | | |
| | 2"x1 1/2" | 5001R | 12 | | | |
| | Grooved Coupling | 1 1/4" | 5001-G | | 12 | 878a/22 |
| | | 1 1/2" | 5001-G | | 12 | |
| | | 2" | 5001-G | | 12 | |
| 2 1/2" | | 5001-G | 12 | | | |
| 65mm x 2 1/2" | | 5001-G | 12 | | | |
| 3" | | 5001-G | 12 | | | |
| Female Adapter w/Metal Thd Insert | 3/4" | 5003-2-BI | 12 | 878a/02 | | |
| | 1" | 5003-2-BI | 12 | | | |
| Female Sprinkler Head Adapter w/Metal Thd Insert | 3/4"x1/2" | 5003-2-S-BI | 12 | 878a/03 | | |
| | 1"x1/2" | 5003-2-S-BI | 12 | | | |
| Female Adapter w/Metal Thd Insert | 3/4" | 5003-BI | 12 | 878a/04 | | |
| | 1" | 5003-BI | 12 | | | |
| | 1 1/4" | 5003-BI | 12 | | | |
| | 1 1/2" | 5003-BI | 12 | | | |
| | 2" | 5003-BI | 12 | | | |
| Female Sprinkler Head Adapter w/Metal Thd Insert | 3/4"x1/2" | 5003-S-BI | 12 | 878a/05 | | |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Size | Model | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--|----------------------|-------------|--------------------------------|--------------------|
| Brastic Sprinkler Head Adaptor (Soc x Thd) | 1"x1/2" | 5003-S-BI | 12 | 878a/24 |
| | 1"x3/4" | 5003-S-BI | 12 | |
| | 3/4"x1/2" | 5003-S-BT | 12 | |
| | 1" x 1/2" | 5003-S-BT | 12 | |
| Female Adapter w/ Metal BSPT Thd Insert | 1" | 5003-BI-BSP | 12 | 878a/18 |
| | 1 1/4" | 5003-BI-BSP | 12 | |
| | 1 1/2" | 5003-BI-BSP | 12 | |
| | 2" | 5003-BI-BSP | 12 | |
| | 3/4" | 5004-BI | 12 | |
| Male Adapter w/Metal Thd Insert | 1" | 5004-BI | 12 | 878a/06 |
| | 1 1/4" | 5004-BI | 12 | |
| | 1 1/2" | 5004-BI | 12 | |
| | 2" | 5004-BI | 12 | |
| | 3/4" | 5004-BI | 12 | |
| 45 Elbow | 3/4" | 5006 | 12 | 878a/07 |
| | 1" | 5006 | 12 | |
| | 1 1/4" | 5006 | 12 | |
| | 1 1/2" | 5006 | 12 | |
| | 2" | 5006 | 12 | |
| | 2 1/2" | 5006 | 12 | |
| | 3" | 5006 | 12 | |
| | 3" | 5006 | 12 | |
| 90 Elbow | 3/4" | 5007 | 12 | 878a/08 |
| | 1" | 5007 | 12 | |
| | 1 1/4" | 5007 | 12 | |
| | 1 1/2" | 5007 | 12 | |
| | 2" | 5007 | 12 | |
| | 2 1/2" | 5007 | 12 | |
| | 3" | 5007 | 12 | |
| | 3" | 5007 | 12 | |
| Sprinkler Head 90 w/Metal Thd Insert | 3/4"x1/2" | 5007-3-S-BI | 12 | 878a/09 |
| | 1"x1/2" | 5007-3-S-BI | 12 | |
| | 1"x3/4" | 5007-3-S-BI | 12 | |
| | 1 1/4"x1/2" | 5007-3-S-BI | 12 | |
| 90 Elbow Tee | 1"x3/4" | 5007R | 12 | 878a/10 878a/11 |
| | 3/4" | 5011 | 12 | |
| | 1" | 5011 | 12 | |
| | 1 1/4" | 5011 | 12 | |
| | 1 1/2" | 5011 | 12 | |
| | 2" | 5011 | 12 | |
| | 2 1/2" | 5011 | 12 | |
| | 3" | 5011 | 12 | |
| | 3/4"x3/4"x1" | 5011R | 12 | |
| | 1"x1"x3/4" | 5011R | 12 | |
| | 1"x3/4"x1" | 5011R | 12 | |
| | 1"x3/4"x3/4" | 5011R | 12 | |
| | 1 1/4"x1 1/4"x1" | 5011R | 12 | |
| | 1 1/4"x1 1/4"x3/4" | 5011R | 12 | |
| | 1 1/4"x1"x1 1/4" | 5011R | 12 | |
| | 1 1/4"x1"x1" | 5011R | 12 | |
| | 1 1/4"x1"x3/4" | 5011R | 12 | |
| | 1 1/4"x1 1/4"x1 1/2" | 5011R | 12 | |
| | 1 1/2"x1 1/2"x1 1/4" | 5011R | 12 | |
| | 1 1/2"x1 1/2"x1" | 5011R | 12 | |
| | 1 1/2"x1 1/2"x3/4" | 5011R | 12 | |
| | 1 1/2"x1 1/4"x1" | 5011R | 12 | |
| | 1 1/2"x1 1/4"x3/4" | 5011R | 12 | |
| | 1 1/2"x1 1/2"x2" | 5011R | 12 | |
| | 2"x2"x1 1/2" | 5011R | 12 | |
| | 2"x2"x1 1/4" | 5011R | 12 | |
| | 2"x2"x1" | 5011R | 12 | |
| | 2"x2"x3/4" | 5011R | 12 | |
| | 3"x3"x2" | 5011R | 12 | |
| | 2 1/2"x2 1/2"x2" | 5011R | 12 | |
| | 2 1/2"x2 1/2"x1 1/2" | 5011R | 12 | |
| | 2 1/2"x2 1/2"x1 1/4" | 5011R | 12 | |
| | 2 1/2"x2 1/2"x1" | 5011R | 12 | |
| 3"x3"x2 1/2" | 5011R | 12 | | |
| 3"x3"x1 1/2" | 5011R | 12 | | |
| Sprinkler Head Tee w/Metal Thd Insert | 1"x3/4"x1 1/2" | 5012R-S-BI | 12 | 878a/12 |
| | 1"x1/2"x1" | 5014R-S-BI | 12 | |
| | 1 1/4"x1"x1/2" | 5012R-S-BI | 12 | |
| | 1 1/2"x1 1/4"x1/2" | 5012R-S-BI | 12 | |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Size | Model | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---|-------------|-------------|--------------------------------|---------------|
| | 2"x1½"x½" | 5012R-S-BI | 12 | |
| | 1" | 5012-S-BI | 12 | 878a/13 |
| | ¾"x¾"x½" | 5012-S-BI | 12 | |
| | 1"x1"x½" | 5012-S-BI | 12 | |
| | 1¼"x1¼"x½" | 5012-S-BI | 12 | |
| | 1½"x1½"x½" | 5012-S-BI | 12 | |
| | 2"x2"x½" | 5012-S-BI | 12 | |
| Cap | ¾" | 5017 | 12 | 878a/14 |
| | 1" | 5017 | 12 | |
| | 1¼" | 5017 | 12 | |
| | 1½" | 5017 | 12 | |
| | 2" | 5017 | 12 | |
| | 2½" | 5017 | 12 | |
| | 3" | 5017 | 12 | |
| Bushing | 1"x¾" | 5018 | 12 | 878a/15 |
| | 1¼"x1" | 5018 | 12 | |
| | 1½"x¾" | 5018 | 12 | |
| | 1½"x1¼" | 5018 | 12 | |
| | 1½"x1" | 5018 | 12 | |
| | 1½"x¾" | 5018 | 12 | |
| | 2"x1½" | 5018 | 12 | |
| | 2"x1¼" | 5018 | 12 | |
| | 2"x1" | 5018 | 12 | |
| | 2"x¾" | 5018 | 12 | |
| | 2½" x 1" | 5018 | 12 | |
| | 2½"x2" | 5018 | 12 | |
| | 2½"x1½" | 5018 | 12 | |
| | 2½"x1¼" | 5018 | 12 | |
| | 3" x 1½" | 5018 | 12 | |
| | 3"x2½" | 5018 | 12 | |
| | 3"x2" | 5018 | 12 | |
| Flush Bushing SHA (Spg x Thd) | 1" | 5018-S-BI | 12 | 878a/23 |
| Blind Flange | ¾" | 5019-H | 12 | 878a/19 |
| | 1" | 5019-H | 12 | |
| | 1¼" | 5019-H | 12 | |
| | 1½" | 5019-H | 12 | |
| | 2" | 5019-H | 12 | |
| | 2½" | 5019-H | 12 | |
| | 3" | 5019-H | 12 | |
| CPVC Union (Soc x Soc) | ¾" | 5033-E | 12 | 878a/21 |
| | 1" | 5033-E | 12 | |
| CPVC Union (Soc x Thd) w/ Brass End | ¾" | 5033-E-3 | 12 | |
| | 1" | 5033-E-3 | 12 | |
| Cross | ¾" | 5035 | 12 | 878a/16 |
| | 1" | 5035 | 12 | |
| | 1¼" | 5035 | 12 | |
| | 1½" | 5035 | 12 | |
| | 2" | 5035 | 12 | |
| | 2½" | 5035 | 12 | |
| | 3" | 5035 | 12 | |
| Flange | 1"x1"x¾"x¾" | 5035R | 12 | 878a/17 |
| | ¾" | 5051-H | 12 | 878a/20 |
| | 1" | 5051-H | 12 | |
| | 1¼" | 5051-H | 12 | |
| | 1½" | 5051-H | 12 | |
| | 2" | 5051-H | 12 | |
| | 2½" | 5051-H | 12 | |
| | 3" | 5051-H | 12 | |
| Rubber Seated Sprinkler Head Adapter – Socket | ¾"x½" | 5003-S-BG | 12 | 878a/25 |
| | 1"x½" | 5003-S-BG | 12 | |
| Rubber Seated Sprinkler Head Adapter – Spigot | ¾"x½" | 5003-2-S-BG | 12 | 878a/26 |
| | 1"x½" | 5003-2-S-BG | 12 | |

Notes relating to Nibco Inc fittings:

- 1) Nibco Fittings are LPCB approved for use with Viking Plastics and Harvel LPCB approved pipes and Nibco FP-1000 "One-Step Solvent Cement" adhesive.
- 2) Where assemblies are made using Harvel pipe, the system of pipe and fittings must be installed in accordance with Nibco Inc Installation Instructions (Nibco Ref: IM-BLZME-0608 dated 01/06/08) which includes LPCB Conditions of Use agreed with Nibco

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

- 3) Where assemblies are made using Viking pipe, the system of pipe and fittings must be installed in accordance with Nibco Inc Installation Instructions (Nibco Ref: IM-BLZME-0608 dated 01/06/08) and Viking Plastics 'Blazemaster' Installation and Design Manual (Viking Ref: F_080712 (1/6/16) Rev 16.1) which includes LPCB Conditions of Use agreed with Nibco and Viking
- 4) Where assemblies are made using Nibco Instaseal rubber seated sprinkler head adapters, the system of pipe and fittings must be installed in accordance with Nibco Inc Installation Instructions (Nibco Ref: IM-BLZME-0608 dated 01/06/08) and Nibco Instaseal Rubber Seated Sprinkler Head Adapters Installation Manual (Date: August 31, 2017).
- 5) The maximum normal ambient temperature of use shall not exceed 50°C.
- 6) The products shall only be installed by LPCB Certificated or Registered installing companies (see Part 5, Section 1A and 1B above), or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be LPCB Certificated to ISO 9001.
- 7) Nibco Blazemaster CPVC fittings are manufactured from Blazemaster CPVC materials that are WRAS listed.
- 8) Blazemaster® is a registered trademark of Lubrizol Advanced Materials, Inc.

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Certificate No: 293b

Spears® FlameGuard® Chlorinated Polyvinyl Chloride (CPVC) Sprinkler Fittings

| Product Name | Nominal Size (in.) | Part Number | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---|--------------------|-------------|--------------------------------|---------------|
| Tee (Soc x Soc x Soc) | ¾ | 4201-007 | 12 BAR | 293b/01 |
| | 1 | 4201-010 | 12 BAR | |
| | 1¼ | 4201-012 | 12 BAR | |
| | 1½ | 4201-015 | 12 BAR | |
| | 2 | 4201-020 | 12 BAR | |
| | 2½ | 4201-025 | 12 BAR | |
| | 3 | 4201-030 | 12 BAR | |
| Reducing Tee (Soc x Soc x Soc) | ¾x¾x1 | 4201-102 | 12 BAR | 293b/02 |
| | 1x¾x¾ | 4201-125 | 12 BAR | |
| | 1x¾x1 | 4201-126 | 12 BAR | |
| | 1x1x¾ | 4201-131 | 12 BAR | |
| | 1¼x1x¾ | 4201-157 | 12 BAR | |
| | 1¼x1x1 | 4201-158 | 12 BAR | |
| | 1¼x1x1¼ | 4201-159 | 12 BAR | |
| | 1¼x1¼x¾ | 4201-167 | 12 BAR | |
| | 1¼x1¼x1 | 4201-168 | 12 BAR | |
| | 1¼x1¼x1½ | 4201-169 | 12 BAR | |
| | 1½x1¼x¾ | 4201-201 | 12 BAR | |
| | 1½x1¼x1 | 4201-202 | 12 BAR | |
| | 1½x1½x¾ | 4201-210 | 12 BAR | |
| | 1½x1½x1 | 4201-211 | 12 BAR | |
| | 1½x1½x1¼ | 4201-212 | 12 BAR | |
| | 1½x1½x2 | 4201-213 | 12 BAR | |
| | 2x2x¾ | 4201-248 | 12 BAR | |
| | 2x2x1 | 4201-249 | 12 BAR | |
| | 2x2x1½ | 4201-251 | 12 BAR | |
| | 2½x2½x1 | 4201-289 | 12 BAR | |
| 2½x2½x1¼ | 4201-290 | 12 BAR | | |
| 2½x2½x1½ | 4201-291 | 12 BAR | | |
| 3x3x2 | 4201-338 | 12 BAR | | |
| 3x3x2½ | 4201-339 | 12 BAR | | |
| Street Tee (Sprig x Soc x Soc) | ¾ | 4244-007 | 12 BAR | 293b/03 |
| | 1 | 4244-010 | 12 BAR | |
| | 1¼ | 4244-012 | 12 BAR | |
| | 1½ | 4244-015 | 12 BAR | |
| | 2 | 4244-020 | 12 BAR | |
| Sprinkler Head Tee (Soc x Soc x Metal FIPT) | ¾x¾x½ | 4202-101 | 12 BAR | 293b/04 |
| | 1x¾x½ | 4202-124 | 12 BAR | |
| | 1x1x½ | 4202-130 | 12 BAR | |
| | 1x1x1 | 4202-010 | 12 BAR | |
| | 1¼x1x½ | 4202-156 | 12 BAR | |
| | 1¼x1¼x½ | 4202-166 | 12 BAR | |
| | 1½x1¼x½ | 4202-199 | 12 BAR | |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Nominal Size (in.) | Part Number | Maximum Working Pressure (bar) | LPCB Ref. No. | | |
|---|--|-------------|---|--------------------|---------|---------|
| Sprinkler Head Tee (Soc x Soc x SR FIPT) | 1½x1½x½ | 4202-209 | 12 BAR | 293b/05 | | |
| | 2x1½x½ | 4202-237 | 12 BAR | | | |
| | 2x2x½ | 4202-247 | 12 BAR | | | |
| | ¾x¾x½ | 4202-101SR | 12 BAR | | | |
| | 1x¾x½ | 4202-124SR | 12 BAR | | | |
| | 1x1x½ | 4202-130SR | 12 BAR | | | |
| | 1x1x1 | 4202-010SR | 12 BAR | | | |
| | 1¼x1x½ | 4202-156SR | 12 BAR | | | |
| | 1¾x1¾x½ | 4202-166SR | 12 BAR | | | |
| | 1½x1¼x½ | 4202-199SR | 12 BAR | | | |
| Sprinkler Head Tee (Soc x Metal FIPT x Soc) Sprinkler Head Tee (Soc x SR FIPT x Soc) | 1½x1½x1 | 4202-211SR | 12 BAR | 293b/06 | | |
| | 2x1½x½ | 4202-237SR | 12 BAR | | | |
| | 2x2x½ | 4202-247SR | 12 BAR | | | |
| | 1x½x1 | 4203-122 | 12 BAR | | | |
| | 1x½x1 | 4203-122SR | 12 BAR | | | |
| | Sprinkler Head Tee, Sidewall (SR FIPT x SR FIPT x Soc) Cross (All Socket) | ½x½x1 | 4243-075SR | | 12 BAR | 293b/07 |
| | | ¾ | 4220-007 | | 12 BAR | 293b/08 |
| | | 1 | 4220-010 | | 12 BAR | |
| | | 1¼ | 4220-012 | | 12 BAR | |
| | | 1½ | 4220-015 | | 12 BAR | |
| 2 | | 4220-020 | 12 BAR | | | |
| 2½ | | 4220-025 | 12 BAR | | | |
| 3 | | 4220-030 | 12 BAR | | | |
| Reducing Cross (All Socket) | | 1x1x¾x¾ | 4220-131 | 12 BAR | 293b/09 | |
| Sprinkler Head Cross, Sidewall (Soc x SR FIPT) | | 1x½ | 4221-130SR | 12 BAR | 293b/10 | |
| 90° Elbow (All Socket) | 1x¾ | 4221-131SR | 12 BAR | 293b/11 | | |
| | ¾ | 4206-007 | 12 BAR | | | |
| | 1 | 4206-010 | 12 BAR | | | |
| | 1¼ | 4206-012 | 12 BAR | | | |
| Reducing 90° Elbow (All Socket) 90° Street Elbow (Spig x Soc) | 1½ | 4206-015 | 12 BAR | 293b/12 293b/13 | | |
| | 2 | 4206-020 | 12 BAR | | | |
| | 2½ | 4206-025 | 12 BAR | | | |
| | 3 | 4206-030 | 12 BAR | | | |
| | 1x¾ | 4206-131 | 12 BAR | | | |
| | ¾ | 4209-007 | 12 BAR | | | |
| | 1 | 4209-010 | 12 BAR | | | |
| | 1-¼ | 4209-012 | 12 BAR | | | |
| | 1-½ | 4209-015 | 12 BAR | | | |
| | 2 | 4209-020 | 12 BAR | | | |
| Sprinkler Head 90° Elbow (Socket x Metal FIPT) | ¾x½ | 4207-101 | 12 BAR | 293b/14 | | |
| | 1x½ | 4207-130 | 12 BAR | | | |
| Sprinkler Head Cross, Sidewall (Soc x SR FIPT) | 1x¾ | 4207-131 | 12 BAR | | | |
| Sprinkler Head 90° Elbow (Socket x Metal FIPT) | 1¾x½ | 4207-166 | 12 BAR | | | |
| | ¾x½ | 4207-101SR | 12 BAR | | | |
| 45° Elbow (All Socket) | 1x½ | 4207-130SR | 12 BAR | 293b/15 | | |
| | 1x¾ | 4207-131SR | 12 BAR | | | |
| | 1¼x½ | 4207-166SR | 12 BAR | | | |
| | ¾ | 4217-007 | 12 BAR | | | |
| | 1 | 4217-010 | 12 BAR | | | |
| | 1¼ | 4217-012 | 12 BAR | | | |
| | 1½ | 4217-015 | 12 BAR | | | |
| | 2 | 4217-020 | 12 BAR | | | |
| | 2½ | 4217-025 | 12 BAR | | | |
| | 3 | 4217-030 | 12 BAR | | | |
| Coupling (Soc x Soc) | ¾ | 4229-007 | 12 BAR | 293b/16 | | |
| | 1 | 4229-010 | 12 BAR | | | |
| | 1¼ | 4229-012 | 12 BAR | | | |
| | 1½ | 4229-015 | 12 BAR | | | |
| | 2 | 4229-020 | 12 BAR | | | |
| | 2½ | 4229-025 | 12 BAR | | | |
| Reducer Coupling (Soc x Soc) | 3 | 4229-030 | 12 BAR | 293b/17 | | |
| | 1x¾ | 4229-131 | 12 BAR | | | |
| | 1¼x¾ | 4229-167 | 12 BAR | | | |
| | 1¼x1 | 4229-168 | 12 BAR | | | |
| | 1½x¾ | 4229-210 | 12 BAR | | | |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Nominal Size (in.) | Part Number | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---|--------------------|-------------|--------------------------------|---------------|
| Reducer Bushing (Spig x Soc) | 1½x1 | 4229-211 | 12 BAR | 293b/18 |
| | 1½x1¼ | 4229-212 | 12 BAR | |
| | 2x¾ | 4229-248 | 12 BAR | |
| | 2x1 | 4229-249 | 12 BAR | |
| | 2x1¼ | 4229-250 | 12 BAR | |
| | 2x1½ | 4229-251 | 12 BAR | |
| | 2½x1½ | 4229-291 | 12 BAR | |
| | 2½x2 | 4229-292 | 12 BAR | |
| | 1x¾ | 4237-131 | 12 BAR | |
| | 1¼x¾ | 4237-167 | 12 BAR | |
| | 1¼x1 | 4237-168 | 12 BAR | |
| | 1½x¾ | 4237-210 | 12 BAR | |
| | 1½x1 | 4237-211 | 12 BAR | |
| | 1½x1¼ | 4237-212 | 12 BAR | |
| | 2x¾ | 4237-248 | 12 BAR | |
| | 2x1 | 4237-249 | 12 BAR | |
| | 2x1¼ | 4237-250 | 12 BAR | |
| | 2x1½ | 4237-251 | 12 BAR | |
| | 2½x1¼ | 4237-290 | 12 BAR | |
| | 2½x1½ | 4237-291 | 12 BAR | |
| Cap (Soc) | 2½x2 | 4237-292 | 12 BAR | 293b/19 |
| | 3x2 | 4237-338 | 12 BAR | |
| | 3x2½ | 4237-339 | 12 BAR | |
| | ¾ | 4247-007 | 12 BAR | |
| | 1 | 4247-010 | 12 BAR | |
| | 1¼ | 4247-012 | 12 BAR | |
| | 1½ | 4247-015 | 12 BAR | |
| | 2 | 4247-020 | 12 BAR | |
| | 2½ | 4247-025 | 12 BAR | |
| | 3 | 4247-030 | 12 BAR | |
| Grooved Coupling Adapter (Grv x Soc) | 1¼ | 4233-012 | 12 BAR | 293b/20 |
| | 1½ | 4233-015 | 12 BAR | |
| | 2 | 4233-020 | 12 BAR | |
| | 2½ | 4233-025 | 12 BAR | |
| | 3 | 4233-030 | 12 BAR | |
| Female Adapter (Soc x Metal FIPT) | ¾ | 4235-007 | 12 BAR | 293b/21 |
| | 1 | 4235-010 | 12 BAR | |
| | 1¼ | 4235-012 | 12 BAR | |
| | 1½ | 4235-015 | 12 BAR | |
| Sprinkler Head Adapter Long Body (Soc x Metal FIPT) | 2 | 4235-020 | 12 BAR | 293b/22 |
| | 1x½ | L4235-130 | 12 Bar | |
| | ¾x½ | R4235-101 | 12 BAR | |
| | ¾x½ | 4235-101 | 12 BAR | |
| | 1x½ | 4235-130 | 12 BAR | |
| Female Adapter (Soc x SR FIPT) | 1x¾ | 4235-131 | 12 BAR | 293b/23 |
| | ¾ | 4235-007SR | 12 BAR | |
| | 1 | 4235-010SR | 12 BAR | |
| | 1¼ | 4235-012SR | 12 BAR | |
| Sprinkler Head Adapter (Soc x SR FIPT) | ¾x½ | 4235-101SR | 12 BAR | 293b/24 |
| | 1x1½ | 4235-130SR | 12 BAR | |
| | 1x¾ | 4235-131SR | 12 BAR | |
| Spigot Sprinkler Head Adapter (Spig x Metal FIPT) | 3/x½ | 4238-101 | 12 BAR | 293b/25 |
| Spigot Sprinkler Head Adapter (Spig x Metal FIPT) | 1x1½ | 4238-130 | 12 BAR | 293b/26 |
| Spigot Sprinkler Head Adapter (Spig x SR FIPT) | ¾x½ | 4238-101SR | 12 BAR | |
| | 1x½ | 4238-130SR | 12 BAR | |
| Spigot Female Adapter (Spig x Metal FIPT) | ¾ | 4278-007 | 12 BAR | 293b/27 |
| | 1 | 4278-010 | 12 BAR | |
| Spigot Female Adapter (Spig x SR FIPT) | ¾ | 4278-007SR | 12 BAR | 293b/28 |
| | 1 | 4278-010SR | 12 BAR | |
| Adjustable Sprinkler Head Adapter (Soc x Metal FIPT) | ¾x½ | 42001 | 12 BAR | 293b/29 |
| | 1x½ | 42011 | 12 BAR | |
| Adjustable Sprinkler Head Adapter (Spig x Metal FIPT) | ¾x½ | 42004 | 12 BAR | 293b/30 |
| | 1x½ | 42014 | 12 BAR | |
| Adjustable Sprinkler Head Adapter (Soc x SR FIPT) | ¾x½ | 42001SR | 12 BAR | 293b/31 |
| | 1x½ | 42011SR | 12 BAR | |
| Adjustable Sprinkler Head Adapter (Spig x SR FIPT) | ¾x½ | 42004SR | 12 BAR | 293b/32 |
| | 1x½ | 42014SR | 12 BAR | |
| Flange (Soc) | ¾ | 4251-007 | 12 BAR | 293b/33 |
| | 1 | 4251-010 | 12 BAR | |
| | 1¼ | 4251-012 | 12 BAR | |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Nominal Size (in.) | Part Number | Maximum Working Pressure (bar) | LPCB Ref. No. | |
|--------------------------------|--------------------|-------------|--------------------------------|---------------|---------|
| Flange, Van Stone Style (Spig) | 1½ | 4251-015 | 12 BAR | 293b/34 | |
| | 2 | 4251-020 | 12 BAR | | |
| | 2½ | 4251-025 | 12 BAR | | |
| | 3 | 4254-030 | 12 BAR | | |
| | ¾ | 4256-007 | 12 BAR | | |
| | 1 | 4256-010 | 12 BAR | | |
| | 1¼ | 4256-012 | 12 BAR | | |
| | 1½ | 4256-015 | 12 BAR | | |
| | 2 | 4256-020 | 12 BAR | | |
| | 2½ | 4256-025 | 12 BAR | | |
| Flange, Blind | 3 | 4256-030 | 12 BAR | 293b/35 | |
| | ¾ | 4253-007 | 12 BAR | | |
| | 1 | 4253-010 | 12 BAR | | |
| | 1¼ | 4253-012 | 12 BAR | | |
| | 1½ | 4253-015 | 12 BAR | | |
| | 2 | 4253-020 | 12 BAR | | |
| | 2½ | 4253-025 | 12 BAR | | |
| | 3 | 4253-030 | 12 BAR | | |
| | ¾ | 4257-007 | 12 BAR | | 293b/36 |
| | 1 | 4257-010 | 12 BAR | | |
| 1¼ | 4257-012 | 12 BAR | | | |
| 1½ | 4257-015 | 12 BAR | | | |
| Union (Soc x Soc) | 2 | 4257-020 | 12 BAR | 293b/37 | |
| | ¾ | 4259-007BR | 12 BAR | | |
| | 1 | 4259-010BR | 12 BAR | | |
| | 1¼ | 4259-012BR | 12 BAR | | |
| | 1½ | 4259-015BR | 12 BAR | | |
| | 2 | 4259-020BR | 12 BAR | | |

Notes:

1. The system of pipe and fittings must be installed in accordance with Spears Manufacturing Company installation instructions FGUK-3-1014, which includes LPCB conditions of use agreed with Spears Manufacturing Company.
2. The maximum normal ambient temperature of use shall not exceed 50°C.
3. LPCB approval does not cover the use of CPVC fire sprinkler piping below ground.
4. The products shall only be installed in the UK by LPCB Certificated or Registered installing companies (see Part 3, Section 1.1, 1.2 and 1.3), or by firms outside the UK who can provide evidence of personnel training in the installation of the product.

Certificate No: 293b

Spears® FlameGuard® Chlorinated Polyvinyl Chloride (CPVC) Sprinkler Pipe

| Product Name | Nominal Size (in.) | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------------------------|------------------------|--------------------------------|---------------|
| Spears FlameGuard Fire Sprinkler Pipe | ¾, 1, 1¼, 1½, 2, 2½, 3 | 12 | 293b/38 |

Notes:

1. The system of pipe and fittings must be installed in accordance with Spears Manufacturing Company installation instructions FGUK-3-1014, which includes LPCB conditions of use agreed with Spears Manufacturing Company.
2. The maximum normal ambient temperature of use shall not exceed 50°C.
3. LPCB approval does not cover the use of CPVC fire sprinkler piping below ground.
4. The products shall only be installed in the UK by LPCB Certificated or Registered installing companies (see Part 3, Section 1.1, 1.2 and 1.3), or by firms outside the UK who can provide evidence of personnel training in the installation of the product.

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

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Certificate No: 420a

TYCO FIRE PRODUCTS CHLORINATED POLYVINYLCHLORIDE (CPVC) BLAZEMASTER SPRINKLER FITTINGS

| Product Name | Nominal Diameter Range | Maximum Working Pressure (bar) | LPCB Ref. No. |
|-----------------------------------|--|--------------------------------|---------------|
| Cap | 0.75", 1.0", 1.25", 1.5", 2.0", 2.5", 3.0" | 12 | 420a/01 |
| Straight coupling | 0.75", 1.0", 1.25", 1.5", 2.0", 2.5", 3.0" | 12 | 420a/02 |
| Reducer bush | 1.0"x0.75", 1.25"x0.75", 1.25"x1.0", 1.5"x0.75", 1.5"x1.0", 1.5"x1.25", 2.0"x0.75", 2.0"x1.0", 2.5"x1.0", 2.0"x1.25", 2.0"x1.5", 2.5"x1.25", 2.5"x1.5", 2.5"x2.0" | 12 | 420a/03 |
| 90° Elbow | 0.75", 1.0", 1.25", 1.5", 2.0", 2.25", 2.5", 3" | 12 | 420a/04 |
| 45° Elbow | 0.75", 1.0", 1.25", 1.5", 2.0" | 12 | 420a/05 |
| Tee | 0.75", 1.0", 1.25", 1.5", 2.0", 2.5", 3" | 12 | 420a/06 |
| Reducing Tee | 0.75"x0.75"x1.0", 1.0"x0.75"x0.75", 1.0"x0.75"x1.0", 1.0"x1.0"x 0.75", 1.25"x1.0"x0.75", 1.25"x1.0"x1.0", 1.25"x1.0"x1.25", 1.25"x1.25"x0.75", 1.25"x1.25"x1.0", 1.25"x1.25"x1.5", 1.5"x1.25"x0.75", 1.5"x1.25"x1.0", 1.5"x1.5"x0.75", 1.5"x1.5"x1.25", 1.5"x1.5"x1.0", 2.0"x2.0"x3", 2.0"x2.0"x1.0", 2.0"x2.0"x1.25", 2.0"x2.0"x1.5", 2.5"x2.5"x1.0", 2.5"x2.5"x1.25", 2.5"x2.5"x2.0", 3.0"x3.0"x1.5", 3.0"x3.0"x2.0", 3.0"x3.0"x2.5" | 12 | 420a/07 |
| Cross | 0.75", 1.0", 1.25", 1.5", 2.0", 2.5", 3" | 12 | 420a/08 |
| Slip sprinkler head adapters | 0.75"x0.5", 1.0"x0.5", 1.0"x0.75" | 12 | 420a/09 |
| Reducer | 1.0"x0.75" | 12 | 420a/11 |
| Coupling | | | |
| Spigot sprinkler head Adaptor | 0.75"x0.5", 1.0"x0.5" | 12 | 420a/12 |
| Sprinkler head 90° Elbow | 0.75"x0.5", 1.0"x0.5" | 12 | 420a/19 |
| Sprinkler head tee | 0.75"x0.75"x0.5", 1.0"x1.0"x0.5", 1.0"x1.0"x1.0", 1.25"x1.25"x0.5", 1.25"x1.0"x0.5", 1.5"x1.25"x0.5", 1.5"x1.5"x0.5", 2.0"x1.5"x0.5", 2.0"x2.0"x0.5" | 12 | 420a/20 |
| Reducing elbow 90° | 1.0"x0.75" | 12 | 420a/23 |
| Male adapter NPT | 0.75", 1.0" | 12 | 420a/24 |
| Male adapter ISO 7/1 | 1.0" | 12 | |
| Sprinkler head tee (back to back) | 1.0"x0.5" NPT (3/8"), 1.0"x0.5" NPT (5/8") | 12 | 420a/26 |
| Cross (back to back) | 1.0"x0.5" NPT (3/8"), 1.0"x0.5" NPT (5/8") | 12 | 420a/27 |
| Female adapter NPT | 0.75", 1", 1.25", 1.5", 2.0" | 12 | 420a/28 |
| Female adapter ISO 7/1 | 1", 1.25", 1.5", 2.0" | 12 | |
| Reducing Cross | 1"x1"x0.75"x0.75" | 12 | 420a/29 |
| Grooved Adapter | 1.25", 1.50", 2", 2.50" x 76.1mm, 3" | 12 | 420a/30 |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Nominal Diameter Range | Maximum Working Pressure (bar) | LPCB Ref. No. |
|------------------------------|------------------------|--------------------------------|---------------|
| NPS Female 90° Adapter Elbow | ¾" x ½", 1" x ½" | 12 | 420a/31 |
| NPS Female Adapter | ¾" x ½", 1" x ½" | 12 | 420a/32 |
| NPS Female Adapter-Spigot | 1" x ½" | 12 | 420a/33 |

Notes relating to Tyco Fire Products pipes and fittings:

- 1) The system of pipe and fittings must be installed in accordance with the Tyco Fire Products Installation Handbook IH-1900 Revision 11.02.2017, which includes LPCB Conditions of Use agreed with Tyco.
- 2) The maximum normal ambient temperatures of use shall not exceed 50°C.
- 3) LPCB approval covers all solvent cement joints made with One Step Solvent Cement TFP-500 only.
- 4) The products shall only be installed by LPCB Certificated or Registered Installing companies (see Part 3, Sections 1.1, 1.2 and 1.3) or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be LPCB Certificated to ISO 9001.
- 5) Tyco BlazeMaster CPVC sprinkler pipes are manufactured from Blazemaster CPVC materials that are Wrc (WRAS) listed.

Certificate No: 420a

TYCO FIRE PRODUCTS CHLORINATED POLYVINYLCHLORIDE (CPVC) BLAZEMASTER SPRINKLER PIPE

| Product Name | Nominal Diameter Range | Maximum Working Pressure (bar) | LPCB Ref. No. |
|--------------|--|--------------------------------|---------------|
| Pipe | 0.75", 1.0", 1.25", 1.5", 2.0", 2.5", 3.0" | 12 | 420a/21 |

Notes relating to Tyco Fire Products pipes and fittings:

- 1) The system of pipe and fittings must be installed in accordance with the Tyco Fire Products Installation Handbook IH-1900 Revision 11.02.2017, which includes LPCB Conditions of Use agreed with Tyco.
- 2) The maximum normal ambient temperatures of use shall not exceed 50°C.
- 3) LPCB approval covers all solvent cement joints made with One Step Solvent Cement TFP-500 only.
- 4) The products shall only be installed by LPCB Certificated or Registered Installing companies (see Part 3, Sections 1.1, 1.2 and 1.3) or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be LPCB Certificated to ISO 9001.
- 5) Tyco BlazeMaster CPVC sprinkler pipes are manufactured from Blazemaster CPVC materials that are Wrc (WRAS) listed.

Viking Plastics

202 Industrial Drive, Huntsville AL 35811, USA

Tel: 001 256 858 3711 • Fax: 001 256 858 3775

E-mail: techsvcs@vikingcorp.com • Website: www.vikingcorp.com

UK Sales Enquiries

Tel: +44(0) 1724 295 300 • Fax: +44(0) 1724 295 301

E-mail: vikinguk@vikingcorp.com

Certificate No: 837a to LPS 1260

Viking Plastics 'Blazemaster®' Chlorinated Polyvinyl Chloride (CPVC) Sprinkler Pipe

| Product Name | Nominal Diameter Range | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---------------------|--------------------------------|--------------------------------|---------------|
| CPVC Sprinkler Pipe | 0.75, 1, 1.25, 1.5 2, 2.5", 3" | 12 | 837a/01 |

Notes:

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

- 1) The system of pipe and fittings must be installed in accordance with Viking Plastics 'Blazemaster' Installation and Design Manual F_080712 (1/6/16) Rev 16.1, which includes LPCB Conditions of Use agreed with Viking Plastics.
- 2) Viking Plastics pipes are approved for use with fittings of the same nominal size manufactured by all LPCB approved Blazemaster licensees and Spears Manufacturing Company Inc.
- 3) The maximum nominal ambient temperature of use shall not exceed 50°C.
- 4) The products shall only be installed by LPCB Certificated or Registered installing companies (see Part 3, Section 1.1.1.2 and 1.3), or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be LPCB Certificated to ISO 9001.
- 5) Viking Plastics Blazemaster CPVC sprinkler pipes are manufactured from Blazemaster CPVC materials that are WRAS listed.
- 6) Blazemaster® is a registered trademark of Lubrizol Advanced Materials, Inc.

Certificate No: 878a to LPS 1260-2.2

Viking Plastics Blazemaster® Chlorinated Polyvinyl Chloride (CPVC) Sprinkler Fittings

| Product Name | Size | Model | Maximum Working Pressure (bar) | LPCB Ref. No. | | |
|--|------------------|------------------|--------------------------------|---------------|----|---------|
| Coupling | ¾" | V5001-007 | 12 | 878a/01 | | |
| | 1" | V5001-010 | 12 | | | |
| | 1¼" | V5001-012 | 12 | | | |
| | 1½" | V5001-015 | 12 | | | |
| | 2" | V5001-020 | 12 | | | |
| | 2½" | V5001-025 | 12 | | | |
| | 3" | V5001-030 | 12 | | | |
| | 1"x¾" | V5001R-131 | 12 | | | |
| | 1¼"x1" | V5001R-168 | 12 | | | |
| | 1½"x¾" | V5001R-210 | 12 | | | |
| | 1½"x1" | V5001R-211 | 12 | | | |
| | 1½"x1¼" | V5001R-212 | 12 | | | |
| | 2"x1" | V5001R-249 | 12 | | | |
| | 2"x1½" | V5001R-251 | 12 | | | |
| | Grooved Coupling | 1¼" | V5001-G-012 | | 12 | 878a/22 |
| | | 1½" | V5001-G-015 | | 12 | |
| | | 2" | V5001-G-020 | | 12 | |
| 2½" | | V5001-G-025 | 12 | | | |
| 65mm x 2½" | | V5001-G | 12 | | | |
| Female Adapter w/Metal Thd Insert | ¾" | V5003-2-BI-007 | 12 | 878a/02 | | |
| | 1" | V5003-2-BI-010 | 12 | | | |
| Female Sprinkler Head Adapter w/Metal Thd Insert | ¾"x½" | V5003-2-S-BI-101 | 12 | 878a/03 | | |
| | 1"x½" | V5003-2-S-BI-130 | 12 | | | |
| Female Adapter w/Metal Thd Insert | ¾" | V5003-BI-007 | 12 | 878a/04 | | |
| | 1" | V5003-BI-010 | 12 | | | |
| | 1¼" | V5003-BI-012 | 12 | | | |
| | 1½" | V5003-BI-015 | 12 | | | |
| | 2" | V5003-BI-020 | 12 | | | |
| Female Sprinkler Head Adapter w/Metal | ¾"x½" | V5003-S-BI-101 | 12 | 878a/05 | | |
| | 1"x½" | V5003-S-BI-130 | 12 | | | |
| Female Sprinkler Head Adapter w/Metal Thd Insert | 1"x¾" | V5003-S-BI-131 | 12 | 878a/24 | | |
| | ¾" x ½" | V5003-S-BT | 12 | | | |
| Brastic Sprinkler Head Adaptor (Soc x Thd) | 1" x ½" | V5003-S-BT | 12 | 878a/18 | | |
| | 1" | V5003-BI-BSP-010 | 12 | | | |
| Female Adapter w/ Metal BSPT Thd Insert | 1¼" | V5003-BI-BSP-012 | 12 | 878a/06 | | |
| | 1½" | V5003-BI-BSP-015 | 12 | | | |
| | 2" | V5003-BI-BSP-020 | 12 | | | |
| | ¾" | V5004-BI-007 | 12 | | | |
| | 1" | V5004-BI-010 | 12 | | | |
| Male Adapter w/Metal Thd Insert | 1¼" | V5004-BI-012 | 12 | 878a/07 | | |
| | 1½" | V5004-BI-015 | 12 | | | |
| | 2" | V5004-BI-020 | 12 | | | |
| | ¾" | V5006-007 | 12 | | | |
| | 1" | V5006-010 | 12 | | | |
| | 1¼" | V5006-012 | 12 | | | |
| | 1½" | V5006-015 | 12 | | | |
| 45 Elbow | 2" | V5006-020 | 12 | 878a/08 | | |
| | 2½" | V5006-025 | 12 | | | |
| | 3" | V5006-030 | 12 | | | |
| | ¾" | V5007-007 | 12 | | | |
| | 1" | V5007-010 | 12 | | | |
| 90 Elbow | 1¼" | V5007-012 | 12 | 878a/08 | | |
| | 1½" | V5007-015 | 12 | | | |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Size | Model | Maximum Working Pressure (bar) | LPCB Ref. No. | | | |
|--------------------------------------|---------------------------------------|------------------|--------------------------------|--------------------|----|---------|---------|
| Sprinkler Head 90 w/Metal Thd Insert | 2" | V5007-020 | 12 | 878a/09 | | | |
| | 2½" | V5007-025 | 12 | | | | |
| | 3" | V5007-030 | 12 | | | | |
| | ¾"x½" | V5007-3-S-BI-101 | 12 | | | | |
| | 1"x½" | V5007-3-S-BI-130 | 12 | | | | |
| | 1"x¾" | V5007-3-S-BI-131 | 12 | | | | |
| | 1¼"x½" | V5007-3-S-BI-166 | 12 | | | | |
| | 1"x¾" | V5007R-131 | 12 | | | | |
| | ¾" | V5011-007 | 12 | | | | |
| | 1" | V5011-010 | 12 | | | | |
| 90 Elbow Tee | 1¼" | V5011-012 | 12 | 878a/10 878a/11 | | | |
| | 1½" | V5011-015 | 12 | | | | |
| | 2" | V5011-020 | 12 | | | | |
| | 2½" | V5011-025 | 12 | | | | |
| | 3" | V5011-030 | 12 | | | | |
| | ¾"x¾"x1" | V5011R-102 | 12 | | | | |
| | 1"x1"x¾" | V5011R-131 | 12 | | | | |
| | 1"x¾"x1" | V5011R-126 | 12 | | | | |
| | 1"x¾"x¾" | V5011R-125 | 12 | | | | |
| | 1¼"x1¼"x1" | V5011R-168 | 12 | | | | |
| | 1¼"x1¼"x¾" | V5011R-167 | 12 | | | | |
| | 1¼"x1"x1¼" | V5011R-159 | 12 | | | | |
| | 1¼"x1"x1" | V5011R-158 | 12 | | | | |
| | 1¼"x1"x¾" | V5011R-157 | 12 | | | | |
| | 1¼"x1¼"x1½" | V5011R-169 | 12 | | | | |
| | 1½"x1½"x1¼" | V5011R-212 | 12 | | | | |
| | 1½"x1½"x1" | V5011R-211 | 12 | | | | |
| | 1½"x1½"x¾" | V5011R-210 | 12 | | | | |
| | 1½"x1¼"x1" | V5011R-202 | 12 | | | | |
| | 1½"x1¼"x¾" | V5011R-201 | 12 | | | | |
| | 1½"x1½"x2" | V5011R-213 | 12 | | | | |
| | 2"x2"x1½" | V5011R-251 | 12 | | | | |
| | 2"x2"x1¼" | V5011R-250 | 12 | | | | |
| | 2"x2"x1" | V5011R-249 | 12 | | | | |
| | 2"x2"x¾" | V5011R-248 | 12 | | | | |
| | 3"x3"x2" | V5011R-338 | 12 | | | | |
| | 2½"x2½"x2" | V5011R-292 | 12 | | | | |
| | 2½"x2½"x1½" | V5011R-291 | 12 | | | | |
| | 2½"x2½"x1¼" | V5011R-290 | 12 | | | | |
| | 2½"x2½"x1" | V5011R-289 | 12 | | | | |
| | 3"x3"x2½" | V5011R-339 | 12 | | | | |
| | 3"x3"x1½" | V5011R-337 | 12 | | | | |
| | Sprinkler Head Tee w/Metal Thd Insert | 1"x¾"x½" | V5012R-S-BI-124 | | 12 | 878a/12 | |
| | | 1"x½"x1" | V5012R-S-BI-122 | | 12 | | |
| | | 1¼"x1"x½" | V5012R-S-BI-156 | | 12 | | |
| | | 1½"x1¼"x½" | V5012R-S-BI-199 | | 12 | | |
| | | 2"x1½"x½" | V5012R-S-BI-237 | | 12 | | |
| | | 1" | V5012-S-BI-010 | | 12 | | 878a/13 |
| | | ¾"x¾"x½" | V5012-S-BI-101 | | 12 | | |
| | | 1"x1"x½" | V5012-S-BI-130 | | 12 | | |
| 1¼"x1¼"x½" | | V5012-S-BI-166 | 12 | | | | |
| 1½"x1½"x½" | | V5012-S-BI-209 | 12 | | | | |
| Cap | 2"x2"x½" | V5012-S-BI-247 | 12 | 878a/14 | | | |
| | ¾" | V5017-007 | 12 | | | | |
| | 1" | V5017-010 | 12 | | | | |
| | 1¼" | V5017-012 | 12 | | | | |
| | 1½" | V5017-015 | 12 | | | | |
| | 2" | V5017-020 | 12 | | | | |
| | 2½" | V5017-025 | 12 | | | | |
| | 3" | V5017-030 | 12 | | | | |
| | Bushing | 1"x¾" | V5018-131 | | 12 | 878a/15 | |
| | | 1¼"x1" | V5018-168 | | 12 | | |
| 1¼"x¾" | | V5018-167 | 12 | | | | |
| 1½"x1¼" | | V5018-212 | 12 | | | | |
| 1½"x1" | | V5018-211 | 12 | | | | |
| 1½"x¾" | | V5018-210 | 12 | | | | |
| 2"x1½" | | V5018-251 | 12 | | | | |
| 2"x1¼" | | V5018-250 | 12 | | | | |
| 2"x1" | | V5018-249 | 12 | | | | |
| 2"x¾" | | V5018-248 | 12 | | | | |

PART 3: SECTION 21.1

PLASTIC PIPES AND FITTINGS

| Product Name | Size | Model | Maximum Working Pressure (bar) | LPCB Ref. No. |
|---|-------------|-------------|--------------------------------|---------------|
| | 2½" x 1" | V5018-289 | 12 | |
| | 2½"x2" | V5018-292 | 12 | |
| | 2½"x1½" | V5018-291 | 12 | |
| | 2½"x1¼" | V5018-290 | 12 | |
| | 3" x 1½" | V5018-337 | 12 | |
| | 3"x2½" | V5018-339 | 12 | |
| | 3"x2" | V5018-338 | 12 | |
| Flush Bushing SHA (Spg x Thd) Blind Flange | 1" | V5018-S-BI | 12 | 878a/23 |
| | ¾" | V5019-H-007 | 12 | 878a/19 |
| | 1" | V5019-H-010 | 12 | |
| | 1¼" | V5019-H-012 | 12 | |
| | 1½" | V5019-H-015 | 12 | |
| | 2" | V5019-H-020 | 12 | |
| | 2½" | V5019-H-025 | 12 | |
| CPVC Union (Soc x Soc) | 3" | V5019-H-030 | 12 | |
| | ¾" | V5033-E | 12 | 878a/21 |
| | 1" | V5033-E | 12 | |
| CPVC Union (Soc x Thd) w/ Brass End | ¾" | V5033-E-3 | 12 | |
| | 1" | V5033-E-3 | 12 | |
| Cross | ¾" | V5035-007 | 12 | 878a/16 |
| | 1" | V5035-010 | 12 | |
| | 1¼" | V5035-012 | 12 | |
| | 1½" | V5035-015 | 12 | |
| | 2" | V5035-020 | 12 | |
| | 2½" | V5035-025 | 12 | |
| | 3" | V5035-030 | 12 | |
| | 1"x1"x¾"x¾" | V5035R-131 | 12 | 878a/17 |
| Flange | ¾" | V5051-H-007 | 12 | 878a/20 |
| | 1" | V5051-H-010 | 12 | |
| | 1¼" | V5051-H-012 | 12 | |
| | 1½" | V5051-H-015 | 12 | |
| | 2" | V5051-H-020 | 12 | |
| | 2½" | V5051-H-025 | 12 | |
| | 3" | V5051-H-030 | 12 | |

Notes relating to Viking Plastics fittings:

- 1) Viking Plastics Fittings are LPCB approved for use with Viking Plastics and Harvel LPCB approved pipes and Nibco FP-1000 "One-Step Solvent Cement" adhesive.
- 2) Where assemblies are made using Harvel pipe, the system of pipe and fittings must be installed in accordance with Nibco Inc Installation Instructions (Nibco Ref: IM-BLZME-0608 dated 19/05/08). which includes LPCB Conditions of Use agreed with Nibco
- 3) Where assemblies are made using Viking pipe, the system of pipe and fittings must be installed in accordance with Nibco Inc Installation Instructions (Nibco Ref: IM-BLZME-0608 dated 19/05/08) and Viking Plastics 'Blazemaster' Installation and Design Manual (Viking Ref: F_080712 (1/6/16) Rev 16.1) which includes LPCB Conditions of Use agreed with Nibco and Viking.
- 4) The maximum normal ambient temperature of use shall not exceed 50°C.
- 5) The products shall only be installed by LPCB Certificated or Registered installing companies (see Part 3, Section 1.1,1.2 and 1.3), or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be LPCB Certificated to ISO 9001.
- 6) Viking Plastics Blazemaster CPVC fittings are manufactured from Blazemaster CPVC materials that are WRAS listed.
- 7) Blazemaster® is a registered trademark of Lubrizol Advanced Materials, Inc.

PART 3: SECTION 21.2

POLYMERIC COMPOUNDS FOR PLASTIC PIPES AND FITTINGS

This section lists products approved in accordance with:

- LPS 1260 *Requirements for testing plastic pipes and fittings for sprinkler systems.*

Notes:

The compounds listed in this section have been tested and approved for the production of the plastic pipes and fittings listed in Section 21.1.

As the pipes and fittings themselves must be tested and approved to LPS 1260, only those products listed in Part 3 Section 21.1 are LPCB approved. Products manufactured from compounds in section 21.2 but not listed in Part 3 Section 21.1 are not LPCB approved.

Lubrizol Advanced Materials Inc

4200 Bells Lane, Louisville, Kentucky 40211, USA

Tel: +1 502 7725709

E-mail: Lynn.Huff@Lubrizol.com • Website: www.lubrizol.com

Additional address:

Lubrizol Advanced Materials Inc, 9911 Brecksville Road, Cleveland, Ohio 44141, USA

Tel: +1 216 4477239

E-mail: Forest.Hampton@Lubrizol.com • Website: www.lubrizol.com

Certificate No: 535a

| Product Name | Part No. | LPCB Ref. No. |
|-----------------------|----------------|---------------|
| CPVC Pipe Compound | 88738 ORG 734G | 535a/05 |
| | 3138 ORG 734G | 535a/07 |
| CPVC Fitting Compound | 88065 ORG 734G | 535a/06 |
| | 3238 ORG 734G | 535a/08 |

Notes:

- 1) This is an approval of the compounds, not the pipe and fittings. Approval of pipes and fittings using these compounds is dependent on conformance with LPS 1260.
- 2) Firms engaged in manufacturing fire sprinkler pipe and fitting products from these compounds shall also be LPCB Certified.
- 3) BlazeMaster® CPVC sprinkler pipes and fittings manufactured from BlazeMaster® CPVC pipe and fitting materials are WRc (WRAS) listed.
- 4) BlazeMaster® is a registered trademark of Lubrizol Advanced Materials.

PART 3: SECTION 22

METRON ACTUATORS

This section lists products approved in accordance with:

- LPCB Schedule of requirements

Metron actuators listed below have been evaluated in relation to their general performance capability but not in relation to their suitability for specific applications.

LPCB strongly recommends that:

- 1) Care shall be exercised to ensure that the monitoring current specified by the manufacturer is not exceeded.
- 2) The manufacturer's installation instructions and product safety instructions shall be followed.
- 3) These devices shall be replaced every ten years.

Chemring Energetics Limited

Ardeer Site, Stevenston, Ayrshire, Scotland KA20 3LN, United Kingdom

Tel: +44 (0)1294 487007 • Fax: +44 (0)1294 487230

E-mail: campbell.howie@chemringenergetics.co.uk • Website: www.chemringenergetics.co.uk

Certificate No: 313a

Protractor 'Metron' Actuators

| Product Name | Stroke (mm) | Work Outout J (minimum) | Resistance Range Ohms | Allfire Amps (50ms) | Nofire Amps (5 sec) | LPCB Ref. No. |
|---------------------|--------------------|--------------------------------|------------------------------|----------------------------|----------------------------|----------------------|
| DR2001/C13 | 3.4 | 0.69 | 0.9 to 1.6 | 0.6 | 0.3 | 313a/01 |
| DR2003/C1 | 3.4 | 1.18 | 0.9 to 1.6 | 0.6 | 0.3 | 313a/02 |
| DR2003/C6 | 3.4 | 1.18 | 0.9 to 1.6 | 0.6 | 0.3 | |
| DR2003/C35 | 3.4 | 1.18 | 0.9 to 1.6 | 0.6 | 0.3 | |
| DR2004/C1 | 9.5 | 3.43 | 0.9 to 1.6 | 0.6 | 0.3 | 313a/03 |
| DR2005/C1 | 9.5 | 3.43 | 0.9 to 1.6 | 0.6 | 0.3 | 313a/04 |
| DR2005/C2 | 9.5 | 3.43 | 0.9 to 1.6 | 0.6 | 0.3 | |
| DR2005/C3 | 9.5 | 3.43 | 0.9 to 1.6 | 0.6 | 0.3 | |
| DR2005/C6 | 9.5 | 3.43 | 0.9 to 1.6 | 0.6 | 0.3 | |
| DR2005/C9 | 9.5 | 3.43 | 0.9 to 1.6 | 0.6 | 0.3 | |
| DR2005/C35 | 9.5 | 3.43 | 0.9 to 1.6 | 0.6 | 0.3 | |
| DR2006/C1 | 13.5 | 4.9 | 0.9 to 1.6 | 0.6 | 0.3 | 313a/05 |
| DR2006/C2 | 13.5 | 4.9 | 0.9 to 1.6 | 0.6 | 0.3 | |
| DR2014/C1 | 9.5 | 4.9 | 0.9 to 1.6 | 0.6 | 0.3 | 313a/06 |
| DR2053 | 3.4 | 0.8 | 7 to 12 | 0.16 | 0.05 | 313a/07 |

Maximum monitoring current for all models is 0.01A.

This section lists products approved in accordance with:

- EN12259-4 *Fixed firefighting systems. Components for sprinkler & water spray systems. Water motor alarms.*

Globe Fire Sprinkler Corporation

4077 Airpark Drive, Standish, Michigan 48658, USA

Tel: +1 989 846 4583 • Fax: +1 989 846 9231

E-mail: brian.hoening@globesprinkler.com • Website: www.globesprinkler.com

Certificate No: 147d to EN 12259-4:2000 + A1:2001

Water Motor Alarm

| Product Name | Model | LPCB Ref. No. |
|-------------------|----------|---------------|
| Water Motor Alarm | Model WM | 147d/01 |

Note: Maximum working pressure 12 bar.

MEFA Italia SpA

Via G.B. Morgagni, 16B, Pogliano Milanese (MI) 20010, Italy

Tel: +39 02 93540195 • Fax: +39 02 93543208

E-mail: danielepeluso@mefaitalia.com • Website: www.mefaitalia.com

Certificate No: 638Ab to EN 12259-4: 2000

| Product Name | Model | LPCB Ref. No. |
|-------------------|---------|---------------|
| Water Motor Alarm | Model E | 638Ab/01 |

Rapidrop Global Limited

Rutland Business Park, Newark Road, Peterborough PE1 5WA, United Kingdom

Tel: +44 (0)1733 847 510 • Fax: +44 (0)1733 553 958

E-mail: rapidrop@rapidrop.com • Website: www.rapidrop.com

Certificate No: 566c to EN 12259-4:2000 + Amendment A1:2001

Water Motor Alarms

| Product Name | Model | LPCB Ref. No. |
|-------------------|---------|---------------|
| Water Motor Alarm | Model E | 566c/01 |

Note: Maximum Working Pressure 12 bar.

Rolland Sprinklers

235 Route de la Biolle, ZA le Sauvage, Mognard 73410, France

Tel: +33 479 547 250 • Fax: +33 479 547 248

E-mail: info@rolland-sprinklers.com

Certificate No: 295d

PART 3: SECTION 23

WATER MOTOR ALARMS

Water Motor Alarm

| Product Name | Model | LPCB Ref. No. |
|---------------------|--------------|----------------------|
| Water Motor Alarm | Model E | 295d/01 |

The Reliable Automatic Sprinkler Co., Inc,

1470 Smith Grove Road, Liberty, South Carolina 29657, USA

Tel: +1 864 843 1734 • Fax: +1 864 843 1418

E-mail: jcevallos@reliablesprinkler.com • Website: www.reliablesprinkler.com

UK Sales Enquiries:

Tel: +44 (0)1372 728899 • Fax: +44 (0)1372 724461

Certificate No: 034f

Approved Products

Water Motor Alarm Model C

**LPCB Ref.
No.**
034f/01

The Viking Corporation

210 N Industrial Park, Hastings, Michigan 49058, USA

Tel: +1 269 945 9501 • Fax: +1 269 945 9599

E-mail: techsvcs@vikingcorp.com • Website: www.vikingcorp.com

UK Sales Enquiries

Tel: +44(0) 1427 875999 • Fax: +44(0) 1427 875998

Certificate No: 096u/01 to EN 12259-4:2000 +Amendment A1:2001

Water Motor Alarm (1)

| Product Name | Model | LPCB Ref. No. |
|-----------------------|--------------|----------------------|
| Water Motor Alarm (1) | F-2 | 096u/01 |

Notes:

1) The maximum specified working pressure of this device is 12 bar.

Tyco Building Services Products B.V. part of the Johnson Controls group of Companies

Kopersteden 1, 7547 TJ Enschede, The Netherlands

Tel: +31 53 4284444 • Fax: +31 53 4283377

E-mail: info-NL@tyco-bspd.com • Website: www.tycobuilding.com

Certificate No: 673b to EN 12259-4: 2000

| Product Name | Model | LPCB Ref. No. |
|---------------------|--------------|----------------------|
| Water Motor Alarm | WMA1 | 673b/01 |

Notes:

1) Maximum working pressure: 16 bar.

Venus Fire Protection Ltd

4105, Portland Blvd, Sherbrooke (Quebec) J1L 1X9, Canada

Tel: +1 819 820 8000 • Fax: +1 819 820 8002

E-mail: venus@venus.ca • Website: www.venus-fire.com

Certificate No: 638b

Certificated Products

Water Motor Alarm Model E

**LPCB Ref.
No.**
638b/01

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Certificate No: 104f to EN 12259-4

Certificated Products

Water Motor Alarm Series 760

**LPCB Ref.
No.**
104f/01