
LPCB Red Book



2

Part: 1

Passive fire protection

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:

- 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: (This Volume)

- **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 the App.



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 2 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.



The products listed in Volume 2: Part 5 - Construction Products, are approved under our BRE Global Certification brand - the certification mark for this brand is:-



CONTENTS

| | |
|--|----------|
| 1 Passive fire protection | 1 |
| SECTION 1 Installation, service and maintenance of passive fire protection products | 3 |
| SECTION 1.1 LPS 1500 approved installer of fire resisting compartmentation system | 4 |
| SECTION 1.2 LPS 1531 approved installer of passive fire protection products | 6 |
| SECTION 1.3 LPS 2084 Inspection cleaning and maintenance of ductwork systems | 19 |
| SECTION 2 Construction product systems (building envelope, roofing & partitions) | 20 |
| SECTION 2.1 LPS 1181 series | 21 |
| SECTION 2.1.1 LPS 1181 lining materials | 23 |
| SECTION 2.1.2 LPS 1181-1 cladding products used for the external envelope of buildings | 24 |
| SECTION 2.1.3 LPS 1181-2 sandwich panels or built-up panel systems used internally in a building | 39 |
| SECTION 2.1.4 LPS 1181-3 (draft) cladding used in pod construction | 44 |
| SECTION 2.2 LPS 1208 composite construction elements | 45 |
| SECTION 2.3 LPS 1581 external cladding systems on a masonry substrate | 57 |
| SECTION 2.3.1 LPS 1581 external thermal insulated cladding (ETICS) on masonry substrates | 58 |
| SECTION 2.3.2 LPS 1581 rain screen cladding systems (RSC) on masonry substrates | 60 |
| SECTION 2.4 LPS 1582 external cladding systems supported by a structural steel frame | 62 |
| SECTION 2.4.1 LPS 1582 external thermal insulated cladding (ETICS) supported by a structural steel frame | 63 |
| SECTION 2.4.2 LPS 1582 rain screen cladding system (RSC) supported by a structural steel frame | 65 |
| SECTION 2.5 Roofing products | 66 |
| SECTION 2.5.1 Protection against fire from outside the building | 67 |
| SECTION 2.5.2 Protection against fire from inside the building | 73 |
| SECTION 2.6 Reaction to fire (RTF) classifications for materials and products | 75 |
| SECTION 3 LPS 1132 wall & floor penetration and linear gap seals | 76 |
| SECTION 4 Structural steel and concrete members fire protection | 92 |
| SECTION 4.1 LPS 1107 structural steel fire protection - board and cementitious coverings | 95 |
| SECTION 4.2 Structural steel fire protection - intumescent thin film coatings | 109 |
| SECTION 4.3 Structural concrete members fire protection | 116 |
| SECTION 5 Protective covering materials & scaffold cladding | 117 |
| SECTION 5.1 LPS 1207 protective covering materials | 118 |
| SECTION 5.1.1 LPS 1207 protective covering materials - sheeting | 119 |
| SECTION 5.1.2 LPS 1207 protective covering materials - pre-formed | 128 |
| SECTION 5.2 LPS 1215 scaffold cladding materials | 129 |
| SECTION 6 Cavity fire barriers | 131 |
| SECTION 7 LPS 1195 temporary buildings for use on construction sites | 133 |
| SECTION 8 Products assessed for use in surface and sub surface transport applications | 134 |
| SECTION 9 Fire protected timber stairs | 140 |
| SECTION 10 Fire resistant glazing systems | 141 |

| | | | |
|--|------------|---|--------------|
| 1 | | | |
| 123 Fire (a division of MB Plant Limited) | 6 | GBS Fire Protection Limited | 13 |
| A | | Giffen Group | 13 |
| A Steadman & Son (a Division of SIG Trading Limited) | 24 | GPS Drywall Contracts Limited | 13 |
| Abbey Thermal Insulation Ltd | 6 | Gunfire Trading Divison of Gunite (Eastern) Limited | 13 |
| Abbot Fire Group Limited | 6 | H | |
| ACT Construction (UK) Limited | 4, 7 | Hemsec Manufacturing Limited | 28, 46 |
| Adaptive Fire Protection Limited | 7 | Hoesch Bausysteme GmbH | 29 |
| Alufire Sp.Z o.o.Sp.K | 141 | Holemasters (Scotland) Ltd | 13 |
| Aran Services Ltd | 7 | I | |
| ArcelorMittal Construction Belgium NV | 24 | Icopal Limited | 67, 121, 129 |
| Architectural Coatings Limited | 7 | IKO PLC | 69 |
| Assan Panel Sanayi ve Ticaret A.S. | 25 | Industrial Textiles & Plastics Ltd | 121, 129 |
| Avert Fire (UK) Ltd | 7 | International Paint Limited | 109 |
| B | | IPB N.V. | 122 |
| Bainbridge International Limited | 119 | Isocab France SAS | 46 |
| Bellwood Interiors Limited | 8 | Isoclad Limited | 47 |
| Brucha Ges.m.b.H | 25, 39 | Isolatek International (Europe) Limited | 92, 95 |
| Buildzone UK Limited | 8 | J | |
| C | | Jeld-Wen UK Ltd | 140 |
| CA Group Limited | 25, 45 | Joris IDE N.V. | 29, 47 |
| Castle Hill Fire Protection Limited | 8 | JPM Fire Protection Limited | 14 |
| Checkmate Fire Solutions Ltd | 8, 9 | JTL Fire Limited | 14 |
| Clark & Fenn Skanska Limited | 9 | K | |
| Clear Line Maintenance Ltd | 9 | Karton S.p.A. | 122 |
| Cold Clad Limited | 4, 10 | Kingspan Insulation | 30 |
| Composite Panel Services Limited | 4, 10 | Kingspan Ltd | 30, 41, 47 |
| Core Drilling Specialists Ltd | 10 | Kingspan Ltd. | 32, 41, 48 |
| Core Industrial Plastics Limited | 119 | Kingspan Yapi Elemanlari A.S. | 49 |
| Corecut Fire Protection (a division of Corecut Limited) | 10 | L | |
| Coveris Flexibles (Gainsborough) UK Limited | 119 | LE-Partitions Limited | 14 |
| Culimeta-Saveguard Limited | 131 | LFCEA Limited | 14 |
| CVD Fire Protection Ltd | 10 | Loftus Construction Solutions Limited | 14 |
| D | | Lynco (UK) Limited | 15 |
| DC Fire Protection Limited | 11 | M | |
| Distriplast Flandre SAS | 120 | Map Ventilation Limited | 15 |
| Don & Low Ltd, Nonwovens | 120 | MCT Brattberg AB | 76, 134 |
| Dryvit UK Limited | 58, 63 | Middlesex Firestopping Limited | 15 |
| DS SMITH CORREX (Trading as a division of DS Smith Plastics Limited) | 120 | MITIE Technical Facilities Management Ltd | 5 |
| DST Group Ltd | 76 | Modular Panel Systems Limited | 33, 49 |
| Ductbusters Limited | 19 | N | |
| Ductclean (UK) Limited | 19 | Nene Valley Fire and Acoustic Limited | 15 |
| E | | Northern Ireland Plastics Limited | 122 |
| E&S Heating & Ventilation Ltd | 11 | O | |
| Eurobond Laminates Limited | 26, 40, 45 | Oakleaf Contracts (Europe) Ltd | 15 |
| Euroclad Limited | 28, 46 | Ockwells Limited | 123 |
| F | | O'Mahony Contractors Ltd | 16 |
| Fire Protection Limited | 11 | Ondaplast SpA | 123 |
| Fire Risk Management Associates | 11 | Overclean Limited | 19 |
| Fire Safety Services (UK) Limited | 12 | P | |
| Florprotec Limited | 118, 120 | P&M Group Ltd trading as ISD | 5, 16 |
| Fourway Communication Limited | 12 | Paneltex Limited | 42, 50 |
| G | | Paroc Panel System Oy Ab | 51 |
| G & A Fire Protection Ltd | 4, 12 | Perfect Service Solutions Ltd | 19 |
| Gardner & Co (Kent) Ltd | 12 | PFP Fire Systems Ireland Limited | 16 |
| Gardner FRD Ltd | 12 | Portakabin Ltd | 44 |
| | | PPG Coatings Europe BV | 94, 111 |
| | | Prestige Fire Door Services Limited | 16 |
| | | Promat Fire Protection L.L.C | 52, 95 |

INDEX

| | | | |
|--|----------------------------------|---|------------|
| Promat Rsearch and Technology Centre NV | 94 | Sealed Air Limited | 125 |
| Promat UK Ltd | 53, 95 | Solicom SA | 125, 130 |
| Protec International Limited | 124, 130 | Sotech Limited | 60, 65 |
| Protecta Screen Limited | 124 | Specialist Panels UK Limited | 56 |
| Q | | Stancold plc | 5, 17 |
| Quinn Therm Limited | 33 | Stopfire Ltd | 17 |
| R | | Swiftec Group | 126 |
| R1 Fire Pro Limited | 16 | Swiftguard | 126 |
| RA Fire Protection Limited | 17 | T | |
| Recticel Insulation Products / Recticel N.V | 34 | Tata Steel UK Limited, Panels and Profiles | 36 |
| Regal Fire & Seal | 17 | Temporary Floor Protection (TFP) Limited | 128 |
| Rockwool Limited | 34, 59, 73, 75, 77, 96, 132, 135 | Thermal Engineering Contracts Ltd | 18 |
| RPC bpi indupac Greenock (trading as a division of British Polythene Limited) | 125 | Total Polyfilm Limited | 127 |
| Ruukki Construction Oy | 53 | Total Protection (Fire & Sealing) Solutions Ltd | 18 |
| Ruukki Polska Sp. z.o.o | 35, 53 | Trimo d.o.o. | 37, 43, 56 |
| S | | Tufcoat Limited | 127, 130 |
| Saint-Gobain Construction Products UK Ltd t/a | | U | |
| British Gypsum | 108 | Ultrimax Coatings Limited | 127 |
| Sansetsu (UK) Limited | 125 | X | |
| | | Xrathern Limited | 37 |

Part

1

*PASSIVE FIRE
PROTECTION*

PART 1: PASSIVE FIRE PROTECTION

INTRODUCTION

Passive fire protection is a combination of design, assembly and material choice. This will include:

- Protection of structural elements
- Materials that do not contribute to fire growth
- Limited toxicity of combustion products
- Walls and floors that provide compartments to resist the spread of fire
- Provision of a building envelope to resist fire entering from outside

In addition to careful design and product selection, it is recommended that all products are installed by LPCB approved contractors who have demonstrated their competence.

Listings in this section include:

Products

- Partitions
- Structural steel protection
- Fire stopping/penetration seals
- Products used in transport applications
- Walls and roofs/roofing - the building envelope
- Protective sheeting
- Temporary buildings for use on site
- Timber stairs

These products are approved in accordance with various standards, the details of which are given at the front of each section.

Installation contractors

Contractors are approved in accordance with:

LPS 1500: Requirements for the approval and listing of companies installing construction elements used to provide compartmentation in buildings.

LPS 1531: Requirements for the approval and listing of companies installing or applying passive fire protection products.

A fundamental aspect of fire safety in buildings is the specification and installation of 'built in' or passive fire protection products and systems. It has long been recognised that the performance of a product can be severely undermined by poor installation or application leading to failure in the event of a fire. This has led to the recent development of LPS 1500 *Requirements for the LPCB approval and listing of companies installing construction elements used to provide compartmentation in buildings* and LPS 1531 *Requirements for the approval and listing of companies installing or applying passive fire protection products*. Both these schemes help to ensure that companies installing passive fire protection :

- Have sufficient training and expertise to install the products or systems using the correct techniques.
- Use products where it can be demonstrated that they will meet the required fire performance.
- Have access to up to date installation instructions for the installed systems.
- Carry out and record in process inspection checks prior to, during and after the product or system installation.
- Issue LPCB Certificates of Conformity for each installation.

LPS 1500 was developed specifically for companies installing fire resisting compartmentation systems approved by LPCB to LPS 1208.

LPS 1531 is an installer scheme that covers all the major product areas of passive fire protection.

PART 1: SECTION 1.1

LPS 1500 APPROVED INSTALLER OF FIRE RESISTING COMPARTMENTATION SYSTEM

The companies listed in this section are approved installers of fire resisting compartmentation systems approved by LPCB to LPS 1208.

LPS 1208 Approved products for use in the following elements of construction may be installed under this scheme.

- Loadbearing compartment walls and partitions
- Non-load bearing compartment walls and partitions
- External walls
- Curtain walls
- Cavity barriers
- Roofs where fire resistance is required (loadbearing and non-loadbearing)
- Loadbearing compartment floors
- Insulated panels used for enclosing production and storage areas in food factories.

ACT Construction (UK) Limited

Unit 25C, Anniesland Business Park, Netherton Road, Glasgow G13 1EU, United Kingdom

Tel: 0141 959 9200 • Fax: 0141 959 9400

E-mail: ken@act-construction.co.uk • Website: www.act-construction.co.uk

Certificate No. 1237PIa to LPS 1500: Issue 2

Company assessed and approved for installation of fire resisting compartmentation systems approved by LPCB to LPS 1208.

Cold Clad Limited

Sarnia House, Green Lane, Newtown Trading Centre, Tewkesbury, Gloucestershire GL20 8HD, United Kingdom

Tel: 01684 438190 • Fax: 01684 217610

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

Certificate No. 1169PIb to LPS 1500: Issue 2

Company assessed and approved for installation of fire resisting compartmentation systems approved by LPCB to LPS 1208.

Composite Panel Services Limited

CPS House, Clay Street, Hull HU8 8HA, United Kingdom

Tel: 01482 620277 • Fax: 01482 587121

E-mail: bill.allen@cps-hull.co.uk • Website: www.cps-hull.co.uk

Certificate No. 1170PIb to LPS 1500 Issue 2

Company assessed and approved for installation of fire resisting compartmentation systems approved by LPCB to LPS 1208.

G & A Fire Protection Ltd

Unit 2, Valley Way, Market Harborough LE16 7PS, United Kingdom

Tel: +44 (0) 1858 432222

E-mail: info@ga-group.com • Website: www.ga-group.com

Certificate No. 889PIb to LPS 1500: Issue 2

Company assessed and approved for installation of fire resisting compartmentation systems approved by LPCB to LPS 1208.

MITIE Technical Facilities Management Ltd

Mitie House, 61-63 Kepler, Lichfield Road Industrial Estate, Tamworth, Staffordshire B79 7XE, United Kingdom

Tel: +44 (0)1827 311456

E-mail: stuart.holmes@mitie.com • Website: www.mitie.com

Certificate No. 769a to LPS 1500: Issue 2

Company assessed and approved for installation of fire resisting compartmentation systems approved by LPCB to LPS 1208.

P&M Group Ltd trading as ISD

Unit A, 125 Business Park, Llanthony Road, Gloucester, Glos GL2 5JQ, United Kingdom

Tel: +44 (0) 1452 520649 • Fax: +44 (0) 1452 301910

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

Certificate No. 1008PIa to LPS 1500 Issue 2

Company assessed and approved for installation of fire resisting compartmentation systems approved by LPCB to LPS 1208.

Stancold plc

Portview Road, Avonmouth, Bristol BS11 9LQ, United Kingdom

Tel: +44 (0)117 316 7000 • Fax: +44 (0)117 316 7001

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

Certificate No. 1257PI to LPS 1500: Issue 2

Company assessed and approved for installation of fire resisting compartmentation systems approved by LPCB to LPS 1208

PART 1: SECTION 1.2

LPS 1531 APPROVED INSTALLER OF PASSIVE FIRE PROTECTION PRODUCTS

The companies listed in this section are approved to install passive fire protection products for the Appendix areas indicated in their entry.

Appendix areas:

1. Penetration, cavity barrier and linear gap seals
2. Fire rated board and cladding to structural elements
3. Intumescent coatings to structural elements
4. Fire rated spray materials
5. Fire rated ductwork systems
6. Fire resisting dampers
7. Fire resistant compartment wall systems
8. Offsite application of intumescent coatings to structural elements

123 Fire (a division of MB Plant Limited)

Swift House Business Centre, 16 High Street S43 3UX, United Kingdom

Tel: 0114 360 3213

E-mail: andrewbell@123fire.co.uk • Website: www.123fire.co.uk

Certificate No. 1133PI to LPS 1531 Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 2 - Fire rated board and cladding to structural elements

Appendix 3 - Intumescent coatings to structural elements

Abbey Thermal Insulation Ltd

23-24 Riverside House, Lower Southend Road, Wickford, Essex SS11 8BB, United Kingdom

Tel: +44 (0) 1268 572116 • Fax: +44 (0) 1268 572117

E-mail: robert.stubbs@abbeythermal.com

Certificate No. 1014PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barrier and linear gap seals.

Appendix 2 - Fire rated board and cladding to structural elements.

Appendix 3 - Intumescent coatings to structural elements.

Appendix 5 - Fire rated ductwork systems.

Abbot Fire Group Limited

Abbots Barn, Radclive Road, Gawcott, Buckingham MK18 4AA, United Kingdom

Tel: +44 (0)1280 824111

E-mail: admin@abbotfiregroup.co.uk

Certificate No. 586PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barriers and linear gap seals

ACT Construction (UK) Limited

Unit 25C, Anniesland Business Park, Nethererton Road, Glasgow G13 1EU, United Kingdom

Tel: 0141 959 9200 • Fax: 0141 959 9400

E-mail: ken@act-construction.co.uk • Website: www.act-construction.co.uk

Certificate No. 1237PIb to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:
Appendix 7 - Fire resistant compartment wall systems

Adaptive Fire Protection Limited

136 Boden Street, Glasgow G40 3PX, United Kingdom

Tel: 0141 556 7720

E-mail: steven.elliott@adaptivepltd.com

Certificate No. 1316PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:
Appendix 1 - Penetration, cavity barrier and linear gap seals
Appendix 2 - Fire rated board and cladding to structural elements

Aran Services Ltd

Units 1-6 The Old Station, Higham, Bury St. Edmunds, Suffolk IP28 6NE, United Kingdom

Tel: 01284 812520 • Fax: 01284 811166

E-mail: richard.spearman@aranservices.co.uk • Website: www.aranservices.co.uk

Certificate No. 1413PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals
Appendix 2 - Fire rated board and cladding to structural elements

Architectural Coatings Limited

272 Bath Street, Glasgow, , Scotland G2 4JR, United Kingdom

Tel: 0800 799 9026

E-mail: enquiries@architecturalcoatingsltd.co.uk • Website: architecturalcoatings.limited

Certificate No. 1427PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals
Appendix 2 - Fire rated board and cladding to structural elements
Appendix 3 - Intumescent coatings to structural elements

Avert Fire (UK) Ltd

P O Box 248, Dawes lane, Scunthorpe DN16 1DW, United Kingdom

Tel: +44 (0)1724 853712 • Fax: +44 (0)1724 278848

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

Certificate No. 850PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barriers and linear gap seals.
Appendix 2 - Fire rated board and cladding to structural elements
Appendix 7 - Fire resistant compartment wall systems

PART 1: SECTION 1.2

LPS 1531 APPROVED INSTALLER OF PASSIVE FIRE PROTECTION PRODUCTS

Bellwood Interiors Limited

Bellwood House, No 17 - Barton Industrial Estate, Faldo Road, Barton-Le-Clay, Bedfordshire MK45 4RP, United Kingdom

Tel: 01582 882278

E-mail: sales@bellwoodinteriors.com • Website: bellwoodinteriors.com

Certificate No. 1425PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 7 - Fire resistant compartment wall systems

Buildzone UK Limited

220 Higher Road, Urmston, Manchester M41 9BH, United Kingdom

Tel: 0843 212 0031

E-mail: geoff.dowdall@buildzoneuk.com • Website: www.buildzoneuk.com

Certificate No. 1399PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

Castle Hill Fire Protection Limited

Castle Hill House, High Street, Huntingdon, Cambridgeshire PE29 3TE, United Kingdom

Tel: 01480 400632

E-mail: andy.stubbs@chfire.co.uk • Website: www.castlehillfireprotection.co.uk

Certificate No. 1274PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 3 - Intumescent coatings to structural elements

Checkmate Fire Solutions Ltd

Unit 1, Woodgates Farm, Woodgates End, Dunmow, Essex CM6 2BN, United Kingdom

Tel: +44 (0) 1279 850021

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

Certificate No. 860PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 2 - Fire rated board and cladding to structural elements

Appendix 3 - Intumescent coatings to structural elements

Appendix 7 - Fire resistant compartment wall systems

Checkmate Fire Solutions Ltd

2nd Floor, Rosemont House, Rosemont Estate, Huddersfield Road, Elland, West Yorkshire HX5 0EE, United Kingdom

Tel: +44 (0) 1422 376436

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

Certificate No. 860PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

- Appendix 1 - Penetration, cavity barrier and linear gap seals
 - Appendix 2 - Fire rated board and cladding to structural elements
 - Appendix 3 - Intumescent coatings to structural elements
 - Appendix 7 - Fire resistant compartment wall systems
-

Checkmate Fire Solutions Ltd

Office 114, Fort Dunlop, Fort Parkway, Birmingham, West Midlands B24 9FE, United Kingdom

Tel: +44 (0) 1216 297766

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

Certificate No. 860PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope :

- Appendix 1 - Penetration, cavity barrier and linear gap seals
 - Appendix 2 - Fire rated board and cladding to structural elements
 - Appendix 3 - Intumescent coatings to structural elements
 - Appendix 7 - Fire resistant compartment wall systems
-

Clark & Fenn Skanska Limited

1st Floor, Hollywood House, Church Street, Woking, Surrey GU21 6HJ, United Kingdom

Tel: +44 (0) 1923 722700 • Fax: + 44 (0) 1923 725984

E-mail: Derek.Bennett@skanska.co.uk • Website: www.skanska.co.uk/services/ceilings-and-plasterwork

Certificate No. 1180PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Clear Line Maintenance Ltd

Rawson Spring Way, Sheffield, S6 1PG, United Kingdom

Tel: 01142 315444

E-mail: Hannah.harrison@clear-line.co.uk • Website: www.clear-line.co.uk

Certificate No. 1446PI to LPS 1531 Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

PART 1: SECTION 1.2

LPS 1531 APPROVED INSTALLER OF PASSIVE FIRE PROTECTION PRODUCTS

Cold Clad Limited

Sarnia House, Green Lane, Newtown Trading Centre, Tewkesbury, Gloucestershire GL20 8HD, United Kingdom

Tel: 01684 438190 • Fax: 01684 217610

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

Certificate No. 1169Pla to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 3 - Intumescent coatings to structural elements

Composite Panel Services Limited

CPS House, Clay Street, Hull HU8 8HA, United Kingdom

Tel: 01482 620277 • Fax: 01482 587121

E-mail: bill.allen@cps-hull.co.uk • Website: www.cps-hull.co.uk

Certificate No. 1170Pla to LPS 1531 Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 7 - Fire resistant compartment wall systems

Core Drilling Specialists Ltd

Core Drilling House, Unit 9, Inchcross Industrial Estate, Bathgate, EH48 2HR, United Kingdom

Tel: 01506 637840

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

Certificate No. 1447PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

Corecut Fire Protection (a division of Corecut Limited)

Bankhead, Broxburn, West Lothian EH52 6PP, United Kingdom

Tel: +44 (0) 1506 854710 • Fax: +44 (0) 1506 853068

E-mail: office@corecut.co.uk • Website: www.corecut.co.uk

Certificate No. 1028PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barriers and linear gap seals.

Appendix 3 - Intumescent coatings to structural elements.

CVD Fire Protection Ltd

Lawmuir Road, Law, Carluke, South Lanarkshire ML8 5JB, United Kingdom

Tel: +44 (0) 845 450 1601 • Fax: +44 (0) 845 450 1602

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

Certificate No. 1009PI to LPS 1531 Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barriers and linear gap seals
Appendix 2 - Fire rated board and cladding to structural elements
Appendix 3 - Intumescent coatings to structural elements

DC Fire Protection Limited

16 Gough Close, Kettering, Northants NN155BE, United Kingdom
Tel: 01933 651315
E-mail: craig@dcfireprotectionltd.org.uk • Website: www.dcfireprotectionltd.com

Certificate No. 1394PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals
Appendix 3 - Intumescent coatings to structural elements

E&S Heating & Ventilation Ltd

Diplocks Way, Hailsham, East Sussex BN27 3JF, United Kingdom
Tel: +44 (0) 1323 845492 • Fax: +44 (0) 1323 440577
E-mail: emmarussell@esgroup.co.uk • Website: www.esgroup.co.uk

Certificate No. 1013PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 5 - Fire rated ductwork systems.

Fire Protection Limited

Flamebar House, South Road, Templefields, Harlow, Essex CM20 2AR, United Kingdom
Tel: +44 (0)1279 634 230 • Fax: +44 (0)1279 634 231
E-mail: info@fireprotection.co.uk • Website: www.fireprotection.co.uk

Certificate No. 277b to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope:

Appendix 5 - Fire rated ductwork systems.

Fire Risk Management Associates

Townsend Farm, 11 High Street, Upwood, Cambridgeshire PE26 2QE, United Kingdom
Tel: +44 (0) 1487 479363
E-mail: joe.ruane@frmald.com • Website: www.frmald.co.uk

Certificate No. 1412PIa to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear seal gaps

PART 1: SECTION 1.2

LPS 1531 APPROVED INSTALLER OF PASSIVE FIRE PROTECTION PRODUCTS

Fire Safety Services (UK) Limited

Progress House, 15 Railton Road, Woburn Road Industrial Estate, Kempston, Bedford MK42 7PW, United Kingdom

Tel: 01234 854100

E-mail: acahill@firesafetyservices.co.uk • Website: www.firesafetyservices.co.uk

Certificate No. 1145Pla to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barrier and linear gap seals.

Fourway Communication Limited

Delamare Road, Cheshunt, Herts, EN8 9SH, United Kingdom

Tel: 01992 629182

E-mail: daniello.aspeling@fourway.co.uk

Certificate No. 1392PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

G & A Fire Protection Ltd

Unit 2, Valley Way, Market Harborough LE16 7PS, United Kingdom

Tel: +44 (0) 1858 432222

E-mail: info@ga-group.com • Website: www.ga-group.com

Certificate No. 889Pla to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barriers and linear gap seals

Appendix 2 - Fire rated board and cladding to structural elements

Appendix 3 - Intumescent coatings to structural elements

Gardner & Co (Kent) Ltd

1 - 5 Bermondsey Street, London SE1 2ER, United Kingdom

Tel: 020 7403 5894 • Fax: 020 7378 0316

E-mail: enquiries@gardnerco.net • Website: www.gardnerco.net

Certificate No. 1040PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 5 - Fire rated ductwork systems.

Gardner FRD Ltd

4 Sterling House, Sunderland Quay, Rochester, ME2 4HN, United Kingdom

Tel: 0207 403 5894

E-mail: mark.duguid@gardnerco.net

Certificate No. 1473PI to LPS 1531 : Issue 1

Appendix 5 - Fire rated duct systems

GBS Fire Protection Limited

113c Dudley Court, Dudley Close, Grays, Essex RM166PG, United Kingdom

Tel: 07544 304471

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

Certificate No. 1437PI to LPS 1531 - Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 2 - Fire rated board and cladding to structural elements

Appendix 3 - Intumescent coatings to structural elements

Giffen Group

Lyon Way, St Albans, Hertfordshire AL4 0LQ, United Kingdom

Tel: +44 (0)1727 869126

E-mail: steve.bluff@giffengroup.co.uk • Website: www.giffengroup.co.uk

Certificate No. 979PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity, barriers and linear gap seals.

GPS Drywall Contracts Limited

Unit 3B Merchant Workspace, Adwick Park, Wath-Upon-Dearne, Rotherham S63 5AB, United Kingdom

Tel: +(0)1709 875100 • Fax:

E-mail: m.nightingale@gpsdrywall.co.uk • Website: www.gpsdrywall.co.uk

Certificate No. 1293PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 7 - Fire resistant compartment wall systems

Gunfire Trading Division of Gunite (Eastern) Limited

Endeavour House, Compass Point, St Ives, Cambridgeshire PE27 5JL, United Kingdom

Tel: +44 (0)1480 466880 • Fax: +44 (0)1480 308999

E-mail: christine.morris@gunfire.org.uk • Website: www.gunite.co.uk

Certificate No. 848PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barriers and linear gap seals.

Appendix 3 - Intumescent coatings to structural elements.

Holemasters (Scotland) Ltd

114 Main Street, Chapelhall, Airdrie, Lanarkshire ML6 8SB, United Kingdom

Tel: 0845 467 1500 • Fax: 0845 467 1700

E-mail: david@holemasters-scotland.co.uk • Website: www.holemasters-scotland.co.uk

Certificate No. 1314PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

PART 1: SECTION 1.2

LPS 1531 APPROVED INSTALLER OF PASSIVE FIRE PROTECTION PRODUCTS

Appendix 1 - Penetration, cavity barrier and linear gap seals

JPM Fire Protection Limited

12 Bull Lane, Dagenham, Essex RM10 7HA, United Kingdom

Tel: 020 8595 1166 • Fax: 020 8592 8439

E-mail: jpmfirepro@aol.com

Certificate No. 1190PI to LPS 1531 Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 3 - Intumescent coatings to structural elements

JTL Fire Limited

24 Cove Road, Farnborough, Hants, GU14 0EN, United Kingdom

Tel: 01252 545741

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

Certificate No. 1416PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 3 - Intumescent coatings to structural elements

LE-Partitions Limited

43 Shepherds Walk, Cricklewood, London NW2 7BS, United Kingdom

Tel: 07957 637986

E-mail: mreece@le-partitions.com

Certificate No. 1197PI to LPS 1531 Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 7 - Fire resistant compartment wall systems

LFCD A Limited

Unit 3a, Forest Industrial Park, Forest Road, Redbridge, London IG6 3HL, United Kingdom

Tel: 0800 999 4416

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

Certificate No. 1146PI to LPS 1531 Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barrier and linear gap seals.

Loftus Construction Solutions Limited

Arquen House, Spicer Sreet, St Albans, Herts AL3 4PQ, United Kingdom

Tel: 0203 488 0498

E-mail: Paul@loftusconstruction.co.uk • Website: www.loftusconstruction.co.uk

Certificate No. 1398PI to LPS 1531: Issue 1

Appendix 3 - Intumescent coatings to structural elements

Lynco (UK) Limited

Unit 2, Plasketts Close, Killybeggs Business Park, Antrim, N. Ireland BT41 4LY, United Kingdom

Tel: 0289 4477800

E-mail: liam@lynco.uk • Website: www.lynco.uk

Certificate No. 1317PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:
Appendix 1 - Penetration, cavity barrier and linear gap seals

Map Ventilation Limited

Hanwiz House, Milner Way, Ossett, Wakefield WF5 9JG, United Kingdom

Tel: 01924 278175 • Fax: 01924 278126

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

Certificate No. 1065PI to LPS 1531 Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 5 - Fire rated ductwork systems

Middlesex Firestopping Limited

Darwin House, Bourne End Business Park, Cores End Road, Bourne End, Buckinghamshire SL8 5AS, United Kingdom

Tel: 01895 238818 • Fax: 01895 231018

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

Certificate No. 1344PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:
Appendix 1 - Penetration, cavity barrier and linear gap seals

Nene Valley Fire and Acoustic Limited

2a New Street, Irthlingborough, Northamptonshire NN9 5UG, United Kingdom

Tel: +44 (0) 1933 650650 • Fax: +44 (0) 1933 650001

E-mail: enquiries@nenevalleyfire.com • Website: www.nenevalleyfireandacoustic.com

Certificate No. 1021PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barrier and linear gap seals.

Oakleaf Contracts (Europe) Ltd

Unit 2, Kilcronagh Business Park, Kilcronagh Road, Cookstown, Co. Tyrone, Northern Ireland BT80 9HG, United Kingdom

Tel: 028 867 69000

E-mail: reception@oakleafcontracts.com • Website: www.oakleaf-contracts.com

Certificate No. 1453PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barriers and linear gap seals

PART 1: SECTION 1.2

LPS 1531 APPROVED INSTALLER OF PASSIVE FIRE PROTECTION PRODUCTS

O'Mahony Contractors Ltd

60 Middle Road, Higher Denham, Buckinghamshire UB9 5EQ, United Kingdom

Tel: 01895 833553 • Fax: 01895 835003

E-mail: gary@omahonycontractors.com • Website: www.omahonycontractors.com

Certificate No. 914PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barriers and linear gap seals

Appendix 2 - Fire rated board and cladding to structural elements

P&M Group Ltd trading as ISD

Unit A, 125 Business Park, Llanthony Road, Gloucester, Glos GL2 5JQ, United Kingdom

Tel: +44 (0) 1452 520649 • Fax: +44 (0) 1452 301910

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

Certificate No. 1008PIb to LPS 1531 Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barriers and linear gap seals.

Appendix 2 - Fire rated board and cladding to structural elements.

Appendix 7 - Fire resistant compartment wall systems.

PFP Fire Systems Ireland Limited

DO Centre, Block B, Maynooth Business Centre, Straffan Road, Maynooth, Co Kildare, Ireland

Tel: +353 (1) 541 3763

E-mail: cbarry@pfp-ireland.ie • Website: www.pfp-ireland.ie

Certificate No. 1407PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

Prestige Fire Door Services Limited

28 Waterfront Business Park, Fleet, Hampshire GU51 3QT, United Kingdom

Tel: +44 (0)1252 645534 • Fax: +44 (0)1252 678742

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

Certificate No. 1066PIa to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 7 - Fire resistant compartment wall systems

R1 Fire Pro Limited

The Gothic Building, Chantry Mills, Haverhill, Suffolk CB9 8AZ, United Kingdom

Tel: 01440 709050

E-mail: sales@r1fire.co.uk • Website: www.r1fire.co.uk

Certificate No. 1233PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals
Appendix 2 - Fire rated board and cladding to structural elements
Appendix 3 - Intumescent coatings to structural elements

RA Fire Protection Limited

Unit B5, The Business Centre, Bow Bridge Close, Rotherham, S60 1BY, United Kingdom
Tel: 01709 830366
E-mail: john@rafireprotection.com

Certificate No. 1382PI to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

Regal Fire & Seal

38 Forest Grove, Belfast BT8 6AR, United Kingdom
Tel: 02890 293242 • Fax: 02890 293242
E-mail: regalfireandseal@btinternet.com • Website: www.regalfireandseal.co.uk

Certificate No. 1315PI to LPS 1531: Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:
Appendix 1 - Penetration, cavity barrier and linear gap seals
Appendix 3 - Intumescent coatings to structural elements
Appendix 4 - Fire rated spray materials

Stancold plc

Portview Road, Avonmouth, Bristol BS11 9LQ, United Kingdom
Tel: +44 (0)117 316 7000 • Fax: +44 (0)117 316 7001
E-mail: sales@stancold.co.uk • Website: www.stancold.co.uk

Certificate No. 1257PIa to LPS 1531: Issue 1

Appendix 1 - Penetration, cavity barrier and linear gap seals

Stopfire Ltd

Units 22, 23, 24 & 32 Dryden Road, Loanhead, Midlothian EH20 9LZ, United Kingdom
Tel: +44(0)131 448 0555 • Fax: +44(0)131 448 0556
E-mail: mail@stopfire.net • Website: www.stopfireltd.com

Certificate No. 862PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barriers and linear gap seals
Appendix 2 - Fire rated board and cladding to structural elements
Appendix 3 - Intumescent coatings to structural elements

PART 1: SECTION 1.2

LPS 1531 APPROVED INSTALLER OF PASSIVE FIRE PROTECTION PRODUCTS

Thermal Engineering Contracts Ltd

38 Whitehouse Street, Leeds LS10 1AD, United Kingdom

Tel: +44(0) 1132 430254 • Fax: +44(0) 5603 430284

E-mail: info@tecl.uk.com • Website: www.tecl.uk.com

Certificate No. 963PI to LPS 1531: Issue 1

Company assessed and approved for installation of passive fire protection products under the following scope.

Appendix 1 - Penetration, cavity barriers and linear gap seals.

Appendix 2 - Fire rated board and cladding to structural elements.

Appendix 3 - Intumescent coatings to structural elements

Total Protection (Fire & Sealing) Solutions Ltd

The Coach House, West Hanningfield Road, Baddow Park, Chelmsford, Essex CM2 7SY, United Kingdom

Tel: 01277 841415 • Fax: 01277 829716

E-mail: Steven@totalprotection.co.uk • Website: www.totalprotection.co.uk

Certificate No. 1375PI to LPS 1531 Issue 1

Company assessed and approved for installing or applying passive fire protection products under the following scope:

Appendix 1 - Penetration, cavity barrier and linear gap seals

Appendix 3 - Intumescent coatings to structural elements

Well maintained ductwork is essential to the good maintenance of buildings. It is crucial in reducing the fire risk within ductwork, in particular kitchen extract systems where grease and cooking oils, if allowed to build up, can present a significant hazard.

Using a company certified to the LPS 2084 standard will give clients the assurance that the cleaning and maintenance of their ductwork systems has been carried out to industry recognised standards and provide evidence of compliance with the law. This evidence will be crucial when seeking out buildings insurance.

LPS 2084 *Requirements for the LPCB approval and listing of companies carrying out inspection, cleaning and maintenance of ductwork systems* defines the requirements for these works.

Using a company certified to LPS 2084 will give clients the assurance that the cleaning and maintenance of their ductwork systems has been carried out correctly.

Ductbusters Limited

Mortimer Hall, 1 Birmingham Road, Kidderminster, Worcestershire DY10 2BX, United Kingdom

Tel: 0121 559 1555

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

Certificate No. 1445PI to LPS 2084: Issue 1

Ductclean (UK) Limited

1 Woodfield Road, Welwyn Garden City, Hertfordshire AL7 1JQ, United Kingdom

Tel: 0870 1129196 • Fax: 0870 112 9197

E-mail: jamie.carraher@ductclean.co.uk • Website: www.ductclean.co.uk

Certificate No. 1276PIa to LPS 2084 - Issue 1

Overclean Limited

2 Flightway, Dunkeswell, Honiton, Devon EX14 4RD, United Kingdom

Tel: 01404 41333

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

Certificate No. 1431PI to LPS 2084 - Issue 1

Perfect Service Solutions Ltd

Unit 55, John Player Building, Sirling Enterprise Park, Stirling, , Scotland FK7 7RP, United Kingdom

Tel: 0800 0197 794

E-mail: hello@perfectservicesolutions.co.uk • Website: www.perfectservicesolutions.co.uk

Certificate No. 1474PI to LPS 2084 : Issue 1

PART 1: SECTION 2

CONSTRUCTION PRODUCT SYSTEMS (BUILDING ENVELOPE, ROOFING & PARTITIONS)

This section includes the reaction to fire and fire resistance approval schemes for construction systems including building envelope, roofing and partitions.

This section includes:

| | |
|---------------|---|
| Section 2.1 | LPS 1181 Series |
| Section 2.1.1 | LPS 1181 Lining materials |
| Section 2.1.2 | LPS 1181-1 Cladding products used for the external envelope of buildings. |
| Section 2.1.3 | LPS 1181-2 Sandwich panels or built-up panel systems used internally in a building. |
| Section 2.1.4 | LPS 1181-3 (Draft) Cladding used in POD construction |
| Section 2.2 | LPS 1208 Composite construction elements |
| Section 2.3 | LPS 1581 External cladding systems on a masonry substrate |
| Section 2.3.1 | LPS 1581 External thermal insulated cladding (ETICS) |
| Section 2.3.2 | LPS 1581 Rain screen cladding systems (RSC) |
| Section 2.4 | LPS 1582 External cladding systems supported by a structural steel frame |
| Section 2.4.1 | LPS 1582 External thermal insulated cladding (ETICS) |
| Section 2.4.2 | LPS 1582 Rain screen cladding system (RSC) |
| Section 2.5 | Roofing products |
| Section 2.5.1 | Protection against fire outside of the building |
| Section 2.5.2 | Protection against fire from inside the building |
| Section 2.6 | Reaction to Fire (RTF) classifications for Materials and Products |

The LPS 1181 series of fire growth standards cover the requirements for LPCB approval and listing of construction product systems. These standards evaluate the fire performance of sandwich panels, built-up cladding systems and other construction product systems to ensure they will not significantly contribute to fire growth in their defined end use applications as detailed in the following listings.

The use and application of the LPS 1181 standards are as follows:

- The LPS 1181 series of standards cover sandwich panels and built up cladding systems including jointing and fixing methods, sealants, gaskets and flashings.
- The LPS 1181 series of standards are used by the insurance industry for property protection purposes.
- The requirements of the Building Regulations are **not** addressed by the LPS 1181 series of standards.
- The Building Regulations define the life safety requirements for buildings.
- Approved Document B (produced by Communities and Local Government) provides guidance on meeting the requirements of the Building Regulations for fire safety and utilises the test data from the applicable BS 476 series and/or the EN 13501 series of standards.

The LPS 1181 series currently consists of the following parts:

LPS 1181: Part 1 *Requirements and tests for built-up cladding and sandwich panel systems for use as the external envelope of buildings* - See Section 2.1.2

LPS 1181: Part 2 *Requirements and tests for sandwich panels and built-up systems for use as internal constructions in buildings* - See Section 2.1.3

LPS 1181: Part 3 (Draft) *Requirements and tests for factory produced room modules (PODS) and building system modules* - See Section 2.1.4

Within the LPS 1181 series of standards there are a number of classifications and these are summarised as follows:

- Cladding systems used for the external envelope of buildings are tested to LPS 1181 part 1. Those products that pass the test are graded into 2 classes: -
 - o Grade EXT-A** - A product that satisfies both the requirements of LPS 1181: Part 1 and also demonstrates fire resistance through a fire resistance test as specified in LPS 1208 (see section 2.2). Such products meet the requirements for separating elements used for compartmentation. (** represents in minutes, the LPCB grading of insulation achieved during the fire resistance tests).
 - o EXT B - A product that satisfies the requirements of LPS 1181 part 1 only.
- Sandwich panels and built-up systems used internally in a building for the construction of cold stores, factory clean rooms, space separation etc are tested in the large-scale test in LPS 1181 part 2. Those products that pass the test are graded into 3 classes: -
 - o INT 1 - A product that achieves a minimum fire resistance performance of integrity = 60 minutes and insulation = 60 minutes and passes the requirements of the LPS 1181 part 2 large-scale test with an enhanced thermal exposure.
 - o INT 2 - A product that achieves a minimum fire resistance performance of integrity = 30 minutes and insulation = 30 minutes and passes the requirements of LPS 1181 part 2 large-scale test with a crib ignition source.
 - o INT 3 - A product that passes the requirements of LPS 1181 part 2 large-scale test with a crib ignition source but has no fire resistance.

A guide to example applications with the potential inception risks and associated LPS 1181 classes (part 1 and 2) can be found in appendices 1, 3 and 4 of "Technical briefing: Fire performance of sandwich panel

PART 1: SECTION 2.1

LPS 1181 SERIES

systems” published by the Association of British Insurers in May 2003.

It is the responsibility of end users, whether they be specifiers, regulators, insurers, architects etc, to satisfy themselves that any performance claims made by the manufacturers are valid by reference to a relevant certificate, listing and/or test reports and that the product satisfies all the necessary regulatory and design requirements. This responsibility also extends to ensuring that the systems are installed correctly and in accordance with the manufacturer’s instructions.

PART 1: SECTION 2.1.1

LPS 1181 LINING MATERIALS

The products listed in this section are intended to provide an additional, separate internal lining material to improve the thermal insulation of light steel or concrete industrial, agricultural and storage buildings. The listed products are often installed during the refurbishment of such buildings.

These products have been tested to ensure that they do not significantly contribute to a developing fire. The fire properties of these lining materials have been determined from the relevant criteria of the series of fire growth tests described in the LPS 1181 series of standards.

The lining materials are designed to be installed where the fire risk assessment of the building indicates a low to medium risk. Where the fire risk assessment of the building indicates a high fire risk, then products approved to LPS 1181:Part 1 or Part 2, as listed in Sections 2.1.2 and 2.1.3 should be used.

Currently there are no products listed in this section.

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

LPS 1181: Part 1 *Requirements and tests for built-up cladding and sandwich panel systems for use as the external envelope of buildings.*

This standard determines the contribution to fire growth of built-up cladding and sandwich panel systems used as the external envelope of buildings.

The test is a large scale test comprising ignition of a wood crib within an open-ended enclosure, supported on a steel frame, from the sandwich panels or built-up cladding system. It evaluates the panels, the jointing methods and the supporting system including fixings, which gives an assessment of the true fire performance of the system which cannot be determined from traditional small scale reaction to fire tests, such as surface spread of flame or fire propagation tests.

Products that have passed the test and have achieved LPCB approval are graded under the following designations:-

Grade EXT-A** - A product that satisfies both the requirements of LPS 1181: Part 1 and also demonstrates fire resistance through a fire resistance test as specified in LPS 1208 (see section 2.2). Such products meet the requirements for separating elements used for compartmentation. (** represents in minutes, the LPCB grading of insulation achieved during the fire resistance tests).

Grade EXT-B - A product that satisfies the requirements of LPS 1181: Part 1 only.

A Steadman & Son (a Division of SIG Trading Limited)

Warnell, Welton, Carlisle, Cumbria CA5 7HH, United Kingdom

Tel: +44 (0)16974 78277 • Fax: +44 (0)16974 78530

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

Certificate No: 635a to LPS 1181 Part 1

Composite wall and ceiling panel

| Product Name | LPCB Ref. No. |
|----------------------------|-------------------------|
| AS35/1000 PIR (roof panel) | 635a/07 635a/08 |
| AS35/1000 PIR (wall panel) | 635a/07 635a/08 635a/09 |
| ASMR (wall panel) | 635a/10 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

ArcelorMittal Construction Belgium NV

Lammerdries 8, Industrieterrein Geel West Z4, B-2440 Geel, Belgium

Tel: +32 14563943 • Fax: +32 14563952

E-mail: tche-wei.chen@arcelormittal.com • Website: www.arcelormittal-construction.com/arvalbenelux

Certificate No: 939a to LPS 1181 Part 1: Issue 1.2

Composite Panels

| Product Name | LPCB Ref. No. |
|------------------------------|----------------------|
| Promisol S 1000 wall panel | 939a/05 |
| Ondatherm roof panel | 939a/06 |
| Promisol S 1000 wall panel | 939a/07 |
| Ondatherm 1001 TS roof panel | 939a/08 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

Assan Panel Sanayi ve Ticaret A.S.

Yayla Mahallesi D-100, Karayolu Ruya Sokak No 2, Tuzla 34940, Istanbul, Turkey

Tel: +90 216 581 17 00 • Fax: +90 216 446 38 55

E-mail: assanpanel@kibarholding.com • Website: www.assanpanel.com.tr

Certificate No: 1367a to LPS 1181 Part 1: Issue 1

| Product Name | Specification Thickness (mm) | Specification Wall Panel Orientation (H/V) (Note 1) | Fire Resistance Integrity/Insulation | LPS 1181-1 Grade | Core Material | LPCB Ref. No. |
|-------------------------------|------------------------------|---|--------------------------------------|------------------|---------------|---------------|
| CS Cold Store Panel (wall) | 80 - 150 | V | - | EXT-B | PIR | 1367a/01 |
| CS Cold Store Panel (ceiling) | 80 - 150 | - | - | EXT-B | PIR | 1367a/02 |

Note:

1. Wall panel orientation, Horizontal or Vertical (H/V), relates to the long joint orientation.
2. A bead of CP606 (Manufacturer Hilti) is applied into both female sections of the joint before assembly.

Brucha Ges.m.b.H

Rusterstrasse 33, A-3451, Michelhausen, Austria

Tel: +43 (2275) 5878 1800 • Fax: +43 (2275) 5875 1804

E-mail: office@brucha.at • Website: www.brucha.com

Certificate No: 900a to LPS 1181 Part 1: Issue 1

| Product Name | LPCB Ref. No. |
|-----------------------------|---------------|
| WP-F (wall and roof panels) | 900a/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

CA Group Limited

Evenwood Industrial Estate, Copeland Road, Evenwood, Co. Durham DL14 9SF, United Kingdom

Tel: +44 (0)1388 834242 • Fax: +44(0)1 388 830964

E-mail: technical@cagroup.ltd.uk • Website: www.cagroup.ltd.uk

Certificate No: 443a to LPS 1181 Part 1: Issue 1.2

| Product Name | LPCB Ref. No. |
|---|---------------|
| Twin-Therm® Roof | 443a/10 |
| Twin-Therm® Wall | |
| River-Therm® Roof | 443a/14 |
| River-Therm® Wall | |
| Twin-Therm® Wall including SolarWall® or Prime Rainscreen | 443a/15 |
| Twin-Therm® FW15 FireWall | 443a/17 |
| Twin-Therm® FW15 FireWall including SolarWall® or Prime Rainscreen | 443a/18 |
| Twin-Therm® FW120 FireWall | 443a/23 |
| Twin-Therm® FW120 FireWall including SolarWall® or Prime Rainscreen | 443a/24 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

Eurobond Laminates Limited

Wentloog Corporate Park, Wentloog, Cardiff CF3 2ER, United Kingdom

Tel: +44 (0)2920 776677 • Fax: +44 (0)2920 369161

E-mail: david.bampton@eurobond.co.uk • Website: www.eurobond.co.uk

Certificate No: 545b to LPS 1181: Part 1: Issue 1.2

| Product Name | Thickness (mm) | Wall Panel Orientation (V/H)* | Fire Resistance Integrity/Insulation (minutes) | LPS1181-1 Grade | Core Material | LPCB Ref. No. |
|---------------------------------------|------------------------------|-------------------------------|--|-----------------|---------------|---------------|
| Europanel F5 (wall panel) | 75 | V or H | 60/60 | EXT-A60 | Mineral fibre | 545b/01 |
| | 100 | V or H | 60/60 | EXT-A60 | Mineral fibre | |
| | 125 | V or H | 90/90 | EXT-A90 | Mineral fibre | |
| | 150 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 200 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| Europanel S5 (wall panel) | 75, 100, 125, 150, 175 & 200 | V or H | - | EXT-B | Mineral fibre | 545b/03 |
| | 75 | V or H | 60/30 | EXT-A30 | Mineral fibre | |
| | 100 | V or H | 60/30 | EXT-A30 | Mineral fibre | |
| | 125 | V or H | 90/60 | EXT-A60 | Mineral fibre | |
| | 150 | V or H | 120/90 | EXT-A90 | Mineral fibre | |
| | 175 | V or H | 120/90 | EXT-A90 | Mineral fibre | |
| Europanel G12, G30 & G50 (wall panel) | 75, 100, 125, 150, 175 & 200 | V or H | - | EXT-B | Mineral fibre | 545b/04 |
| | 75 | V or H | 60/60 | EXT-A60 | Mineral fibre | |
| | 100 | V or H | 60/60 | EXT-A60 | Mineral fibre | |
| | 125 | V or H | 90/90 | EXT-A90 | Mineral fibre | |
| | 150 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| Rockspan Extra (wall panel) | 75, 100, 125, 150, 175 & 200 | V or H | - | EXT-B | Mineral fibre | 545b/05 |
| | 75 | V or H | 60/60 | EXT-A60 | Mineral fibre | |
| | 100 | V or H | 120/90 | EXT-A90 | Mineral fibre | |
| | 100 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 125 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 150 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 200 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| 240 | V or H | 120/120 | EXT-A120 | Mineral Fibre | | |

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

| Product Name | Thickness (mm) | Wall Panel Orientation (V/H)* | Fire Resistance Integrity/Insulation (minutes) | LPS1181-1 Grade | Core Material | LPCB Ref. No. |
|------------------------------|-----------------------------------|-------------------------------|--|-----------------|---------------|---------------|
| Rockspan Lite (wall panel) | 75, 100, 125, 150, 175, 200 & 240 | V or H | - | EXT-B | Mineral fibre | 545b/06 |
| | 75 | V or H | 60/30 | EXT-A30 | Mineral fibre | |
| | 100 | V or H | 90/60 | EXT-A60 | Mineral fibre | |
| | 125 | V or H | 90/60 | EXT-A60 | Mineral fibre | |
| | 150 | V or H | 120/90 | EXT-A90 | Mineral fibre | |
| | 175 | V or H | 120/90 | EXT-A90 | Mineral fibre | |
| | 200 | V or H | 120/90 | EXT-A90 | Mineral fibre | |
| | 240 | V or H | 120/90 | EXT-A90 | Mineral fibre | |
| Rockspan Ultima (wall panel) | 75, 100, 125, 150, 175, 200 & 240 | V or H | - | EXT-B | Mineral fibre | 545b/07 |
| | 150 | V or H | 240/240 | EXT-A240 | Mineral fibre | |
| | 175 | V or H | 240/240 | EXT-A240 | Mineral fibre | |
| | 200 | V or H | 240/240 | EXT-A240 | Mineral fibre | |
| Rainspan Argeton | 120 | V or H | 120/120 | EXT-A120 | Mineral fibre | 545b/08 |
| | 150 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180/180 | EXT-A180 | Mineral fibre | |
| Rainspan ACM | 120 | V or H | 120/120 | EXT-A120 | Mineral fibre | 545b/09 |
| | 150 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180/180 | EXT-A180 | Mineral fibre | |
| Rainspan Parklex | 120 | V or H | 120/120 | EXT-A120 | Mineral fibre | 545b/10 |
| | 150 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180/180 | EXT-A180 | Mineral fibre | |
| Rainspan Rockpanel | 120 | V or H | 120/120 | EXT-A120 | Mineral fibre | 545b/11 |
| | 150 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180/180 | EXT-A180 | Mineral fibre | |
| Rainspan Corium | 120 | V or H | 120/120 | EXT-A120 | Mineral fibre | 545b/12 |
| | 150 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180/180 | EXT-A180 | Mineral fibre | |
| Rainspan Norclad | 120 | V or H | 120/120 | EXT-A120 | Mineral fibre | 545b/13 |
| | 150 | V or H | 120/120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180/180 | EXT-A180 | Mineral fibre | |
| Rainspan Aerolite Granite | 125 | V or H | 120 / 120 | EXT-A120 | Mineral fibre | 545b/15 |
| | 150 | V or H | 120 / 120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180 / 180 | EXT-A180 | Mineral fibre | |

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

| Product Name | Thickness (mm) | Wall Panel Orientation (V/H)* | Fire Resistance Integrity/Insulation (minutes) | LPS1181-1 Grade | Core Material | LPCB Ref. No. |
|-----------------------------|----------------|-------------------------------|--|-----------------|---------------|---------------|
| Rainspan Aerolite Stonework | 120 | V or H | 120 / 120 | EXT-A120 | Mineral fibre | 545b/16 |
| | 150 | V or H | 120 / 120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180 / 180 | EXT-A180 | Mineral fibre | |
| Rainspan Ultralite | 120 | V or H | 120 / 120 | EXT-A120 | Mineral fibre | |
| | 150 | V or H | 120 / 120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180 / 180 | EXT-A180 | Mineral fibre | |
| Rainspan Urban Glass | 120 | V or H | 120 / 120 | EXT-A120 | Mineral fibre | |
| | 150 | V or H | 120 / 120 | EXT-A120 | Mineral fibre | |
| | 175 | V or H | 180 / 180 | EXT-A180 | Mineral fibre | |

Notes:

- LPCB Ref No. 545b/07 - 150mm and 175mm Rockspan Ultima wall panel joints are to be stitched on both internal and external faces using 4.7mm diameter x 20mm long self-tapping screws at 300mm centres, the 200mm panel does not require stitching.
- LPCB Ref No. 545b/08 to 545b/16, the thickness specified relates to the insulated panel thickness only and does not include the facade system depth.

* Wall panel orientation, Vertical or Horizontal (V/H), relates to the long joint orientation of the insulated panel.

Euroclad Limited

Wentloog Corporate Park, Wentloog Road, Cardiff CF3 2ER, United Kingdom

Tel: +44 (0)2920 790722 • Fax: +44 (0)2920 793149

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

Certificate No: 879a to LPS 1181 Part 1: Issue 1.2

| Product Name | LPCB Ref. No. |
|------------------------|---------------|
| Elite 1 (Roof System) | 879a/05 |
| Elite 2 (Roof System) | 879a/06 |
| Elite 3 (Roof System) | 879a/07 |
| Elite 4 (Roof System) | 879a/08 |
| Elite 51 (Wall System) | 879a/09 |
| Elite 52 (Wall System) | 879a/10 |
| Elite 53 (Wall System) | 879a/11 |
| Elite 54 (Wall System) | 879a/12 |
| Elite 55 (Wall System) | 879a/13 |
| Elite 56 (Wall System) | 879a/14 |
| Elite 57 (Wall System) | 879a/15 |
| Elite 58 (Wall System) | 879a/16 |
| Elite 60 (Wall System) | 879a/17 |
| Elite 50 (Wall System) | 879a/18 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Hemsec Manufacturing Limited

Stoney Lane, Rainhill, Prescot, Merseyside L35 9LL, United Kingdom

Tel: +44 (0)151 426 7171 • Fax: +44 (0)151 493 1331

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

Certificate No: 558b to LPS 1181 Part 1 Issue 1

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

| Product Name | LPCB Ref. No. |
|------------------------------------|---------------|
| HPT External/Carrier (wall panels) | 558b/01 |
| HPT External/Carrier (roof panels) | 558b/02 |
| HPT External/Carrier (wall panels) | 558b/03 |
| HPT External/Carrier (roof panels) | 558b/04 |
| Hemsec SIP (wall panel) | 558b/05 |
| | 558b/06 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Hoesch Bausysteme GmbH

Hammerstrasse 11, D-57223 Kreuztal, Germany
Tel: +49 (0)2723 599 1221 • Fax: +49 (0)2723 599 1219
E-mail: info@hoesch-bau.com • Website: www.hoesch-bau.com

Certificate No: 657a to LPS 1181 Part 1: Issue 1.2

| Product Name | LPCB Ref. No. |
|--|---------------|
| Hoesch Isowand Integral (wall panel) | 657a/01 |
| Hoesch Isowand Vario (wall panel) | 657a/02 |
| Hoesch Isowelle (wall panel) | 657a/03 |
| Hoesch Isorock Integral D (roof panel) | 657a/04 |
| Hoesch Isowand Vario (wall panel) | 657a/05 |
| | |
| Hoesch Thermodach (roof panel) | 657a/06 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Joris IDE N.V.

Hille 174, B-8750, Zwevezele, Belgium
Tel: +44 (0)1928 571 444 • Fax: +44 (0)1928 571 488
E-mail: division.export@joriside.co.uk • Website: www.joriside.co.uk

Certificate No: 700a to LPS 1181 Part 1: Issue 2

| Product Name | LPCB Ref. No. |
|---|---------------|
| Isotherm Built up system (wall panels) | 700a/06 |
| Isotherm Built up system (roof panels) | 700a/07 |
| JI ROOF 1+2 1000 (roof and wall panels) | 700a/09 |
| JI ROOF 1+2 1000 (wall panel) | 700a/10 |
| JI ROOF 1+2 1000 with Tile system (roof panels) | 700a/11 |
| JI WALL SF 1060/1000/900/600 (wall panels) | 700a/12 |
| | 700a/13 |
| | 700a/14 |
| JI ONDUWALL 1000 (wall panel) | 700a/16 |
| JI ONDUWALL 1000 (wall panels) | 700a/17 |
| JI ROOF 2 1000 (wall panels) | 700a/18 |
| JI ROOF 2 1000 (roof panels) | 700a/19 |
| JI ROOF 2 1000 (wall panels) | 700a/20 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

Kingspan Insulation

Pembridge, Leominster, Herefordshire HR6 9LA, United Kingdom

Tel: +44 (0)1544 388601 • Fax: +44 (0)1544 388888

E-mail: info.uk@insulation.kingspan.com • Website: www.insulation.kingspan.com

Certificate No: 388-1b to LPS 1181: Part 1

| Product Name | Specification Thickness (system) (mm) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade | Core Material | LPCB Ref. No. |
|---|---------------------------------------|---------------------------------|----------------------------------|-------|---------------|---------------|
| Roofing systems incorporating Thermaroof TR26 LPC/FM zero ODP Insulation (also available as Thermataper TT46 for cut-to-fall roofing systems) | 65 to 155 | - | - | EXT-B | HCFC-free PIR | 388-1b/01 |
| Roofing systems incorporating Thermaroof TR27 LPC/FM zero ODP Insulation (also available as Thermataper TT47 for cut-to-fall roofing systems) | 65 to 155 | - | - | EXT-B | HCFC-free PIR | 388-1b/02 |

Notes:

- LPCB Ref 388-1b/01 Thermaroof TR26/ LPC/FM Mechanically Fixed Insulated metal deck system is approved to LPS 1181-1 as a built up roof system of the following configuration:
 - Corus D35 Roof Decking (0.7mm thick) or equivalent; deck panel lap joints stitched at 400mm centres.
 - With or without Corus Kalzip/Icopal Monofilament 250µm or equivalent approved Vapour Control Layer (VCL); loose laid on top of the deck.
 - Kingspan TR26/TT46 LPC/FM foil faced Insulation layer of rigid polyisocyanurate (PIR) boards supplied in 2.4m x 1.2m sheets (approved at 30mm to 120mm thick) the boards through fixed to deck using 140mm long SFS drill point roof fasteners at 3.8 fixings per m² with a 70mm diameter metal plate washer.
 - Weather sealed using Protan SE membrane (1.2mm x 1000mm) having a 120mm lap joint with a 40mm hot air weld, or equivalent woven polyester reinforced PVC water proof membrane, mechanically fixed to the roof system using RP75 x 100mm telescopic tube washers and 4.8 x 60mm screw fixed to the metal deck at 150mm centres. The membrane must be restrained around the edges of the deck with an edge restraint bar stitched at 400mm centres.
 - The roof system was tested in combination with LPCB approved PIR core wall panels.
- LPCB Ref 388-1b/02 Thermaroof TR27 LPC/FM Mechanically Fixed Insulated metal deck system is approved to LPS 1181-1 as a built up roof system of the following configuration:
 - Corus D35 Roof Decking (0.7mm thick) or equivalent; deck panel lap joints stitched at 400mm centres.
 - With or without Corus Kalzip/Icopal Monofilament 250µm or equivalent approved Vapour Control Layer (VCL); loose laid on top of the deck.
 - Kingspan TR27/TT47 LPC/FM glass tissue faced Insulation layer of rigid polyisocyanurate (PIR) boards supplied in 2.4m x 1.2m sheets (approved at 30mm to 120mm thick) the boards through fixed to deck using 140mm long SFS drill point roof fasteners at 3.8 fixings per m² with a 70mm diameter metal plate washer.
 - Weather sealed using Protan SE membrane (1.2mm x 1000mm) having a 120mm lap joint with a 40mm hot air weld, or equivalent woven polyester reinforced PVC water proof membrane, mechanically fixed to the roof system using RP75 x 100mm telescopic tube washers and 4.8 x 60mm screw fixed to the metal deck at 150mm centres. The membrane must be restrained around the edges of the deck with an edge restraint bar stitched at 400mm centres.
 - The roof system was tested in combination with LPCB approved PIR core wall panels.
- LPCB Ref. 388-1b/01 and 388-1b/02 certification is also valid for insulation boards manufactured at Kingspan Insulation Ltd, Castleblayney, County Monaghan, Ireland (LPCB FPC reference number 388-4QMS)

Kingspan Ltd

Carrickmacross Road, Kingscourt, Co. Cavan, Ireland

Tel: +353 42 969 8572 • Fax: +353 42 969 8576/77

E-mail: info.irl@kingspanpanels.com • Website: www.kingspanpanels.com

Certificate No: 186a to LPS 1181-1 Issue 1

| Product Name | LPCB Ref. No. |
|---------------------------------|---------------|
| Kingspan KS1000 RW (wall panel) | 186a/38 |
| Kingspan KS1000 SF (wall panel) | 186a/39 |

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

| Product Name | LPCB Ref. No. |
|--|---------------|
| Kingspan KS1000 RW/FW30 (wall panel) | 186a/40 |
| Kingspan KS1000 SF/FW30 (wall panel) | 186a/41 |
| Kingspan KS1000 RW (roof and wall panel) | 186a/42 |
| Kingspan KS1000 SF (roof and wall panel) | 186a/43 |
| Kingspan KS1000 LI (wall panel) | 186a/44 |
| Kingspan KS1000 LI (roof panel) | 186a/45 |
| Kingspan KS1000 BU (roof and wall panel) | 186a/46 |
| Kingspan KS1000 TS (roof panel) | 186a/47 |
| Kingspan Insulated Roof Gutter (Boundary and Valley) | 186a/71 |
| Kingspan Benchmark Ceramic Tile System | 260a/34 |
| Kingspan KS600-1200 MR, FL, FL-S, EB, WV, MM, CX, PL, Benchmark Evolution, Optimo & KS1000 TL, Benchmark Louvre DW & Benchmark Curve DW (wall panel) | 260a/35 |
| | 260a/37 |
| Kingspan KS600-1000 Benchmark Render DW (wall panel) | 260a/49 |
| | 260a/50 |
| Kingspan KS600-1000 FX (wall panel) | 260a/53 |
| Kingspan KS500 Zip & KS1000 Zip (roof panel) | 260a/54 |
| Kingspan Benchmark Ceramic Granite System | 260a/58 |
| Kingspan Benchmark Wood Composite System | 260a/59 |
| Thermabrick Façade System | 260a/60 |
| | 260a/61 |
| Kingspan Benchmark Metallic ACM Tray | 260a/62 |
| Kingspan Benchmark Ceramic Granite System | 260a/63 |
| Kingspan KS600-1000 MR, FL, FL-S, EB, WV, MM, CX, PL, Benchmark Evolution, Optimo & KS1000 TL, Benchmark Louvre DW & Benchmark Curve DW (wall panel) | 260a/64 |
| Kingspan KS600-1000 LS - MR, FL, EB, WV, MM or CX, profile options (wall panel) | 260a/67 |
| Kingspan KS2000 TS (roof panel) | 260a/68 |
| Kingspan KS2000 RW (roof panel) | 260a/69 |
| Kingspan Benchmark Trespa System | 260a/70 |
| KS1000SRW (wall and roof panel) | 260a/72 |
| KS1000SRW (wall panel) | 260a/74 |
| Kingspan KS1000 RT Rooftile (roof panel) | 279a/10 |
| Kingspan KS1000 DR (wall panel) | 279a/16 |
| Kingspan KS1000 TD (roof panel) | 279a/29 |
| Kingspan KS1000 EP Energi (wall and roof panel) | 279a/30 |
| Benchmark Topspan (roof panel) | 279a/31 |
| Kingspan KS1000 DR (roof panel) | 279a/34 |
| Kingspan KS1000 DR (wall panel) | 279a/36 |
| BENCHMARK Kreate (wall panel) | 279a/37 |
| | 279a/38 |
| Kingspan KS1000 FC (wall and roof panel) | 279a/39 |
| Kingspan KS1000 FC (wall panel) | 279a/40 |
| | 279a/41 |
| Kingspan KS1000 LP (roof panel) | 279a/65 |
| Kingspan KS1000 CR (roof panel) | 279a/66 |
| Kingspan KS600 - 1200 CS (wall panel) | 279c/15 |
| Kingspan KS600 - 1200 CS (ceiling panel) | 279c/16 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 186f to LPS 1181 Part 1: Issue 1.2

| Product Name | LPCB Ref. No. |
|--|---------------|
| Kingspan QuadCore KS1000 RW (roof panel) | 186f/01 |
| Kingspan QuadCore KS600 - 1200 AWP, MR, FL, FL-S, EB, WV, MM, CX, PL, Optimo, Benchmark Louvre DW, Benchmark Curve DW (wall panel) | 186f/02 |
| Kingspan QuadCore KS600 - 1200 AB (roof/ceiling panel) | 186f/03 |
| Kingspan QuadCore KS1000 RW (wall panel) | 186f/04 |
| | 186f/05 |
| | 186f/06 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

Kingspan Ltd.

Greenfield Business Park No. 2, Greenfield, Holywell, Flintshire CH8 7HU, United Kingdom

Tel: +44 (0)1352 716100 • Fax: +44 (0)1352 716161

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

Certificate No: 260a to LPS 1181-1 Issue 1

| Product Name | LPCB Ref. No. |
|--|----------------------|
| Kingspan Benchmark Ceramic Tile System | 260a/34 |
| Kingspan KS600-1200 MR, FL, FL-S, EB, WV, MM, CX, PL, Benchmark Evolution, Optimo & KS1000 TL, Benchmark Louvre DW & Benchmark Curve DW (wall panel) | 260a/35 260a/36 |
| Kingspan KS1000 RW (wall panel) | 260a/37 260a/38 |
| Kingspan KS1000 SF (wall panel) | 260a/39 |
| Kingspan KS1000 RW/FW30 (wall panel) | 260a/40 |
| Kingspan KS1000 SF/FW30 (wall panel) | 260a/41 |
| Kingspan KS1000 RW (roof and wall panel) | 260a/42 |
| Kingspan KS1000 SF (roof and wall panel) | 260a/43 |
| Kingspan KD1000 LJ (wall panel) | 260a/44 |
| Kingspan KS100 LJ (roof panel) | 260a/45 |
| Kingspan KS1000 BU (roof and wall panel) | 260a/46 |
| Kingspan KS1000 TS (roof panel) | 260a/47 |
| Kingspan KS600 - 1000 Benchmark Render DW (wall panel) | 260a/49 |
| Kingspan KS600 - 1000 FX (wall panel) | 260a/50 |
| Kingspan KS500 Zip & KS1000 Zip (roof panel) | 260a/53 |
| Kingspan Benchmark Ceramic Granite System | 260a/54 |
| Kingspan Benchmark Wood Composite System | 260a/58 |
| Thermabrick Façade System | 260a/59 |
| Kingspan Benchmark Metallic ACM Tray | 260a/60 |
| Kingspan Benchmark Ceramic Granite System | 260a/61 |
| Kingspan KS600-1000 MR, FL, FL-S, EB, WV, MM, CX, PL, Benchmark Evolution, Optimo & KS1000 TL (wall panel) | 260a/62 |
| Kingspan KS600 - 1000 LS - MR, FL, EB, WV, MM or CX profile options (wall panel) | 260a/63 |
| Kingspan KS2000 TS (roof panel) | 260a/64 |
| Kingspan KS2000 RW (roof panel) | 260a/67 |
| Kingspan Benchmark Trespa System | 260a/68 |
| Kingspan Insulated Roof Gutter System (Boundary and Valley) | 260a/69 |
| KS1000SRW (wall and roof panel) | 260a/70 |
| KS1000SRW (wall panel) | 260a/71 |
| Kingspan KS1000 DR (wall panel) | 260a/72 |
| Kingspan KS1000 RT Rooftile (roof panel) | 260a/74 |
| Kingspan KS1000 TD (wall panel) | 279a/16 |
| Kingspan KS1000 EP Energi (wall and roof panel) | 279a/10 |
| Benchmark Topspan (roof panel) | 279a/29 |
| Kingspan KS1000 DR (roof panel) | 279a/30 |
| Kingspan KS1000 DR (wall panel) | 279a/31 |
| BENCHMARK Kreate (wall panel) | 279a/34 |
| Kingspan KS1000 FC (wall and roof panel) | 279a/36 |
| Kingspan KS1000 FC (wall panel) | 279a/37 |
| Kingspan KS1000 FC (wall panel) | 279a/38 |
| Kingspan KS1000 LP (roof panel) | 279a/39 |
| Kingspan KS1000 CR (roof panel) | 279a/40 |
| Kingspan KS600 - 1200 CS (wall panel) | 279a/41 |
| Kingspan KS600 - 1200 CS (ceiling panel) | 279a/65 |
| | 279a/66 |
| | 279c/15 |
| | 279c/16 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 260f to LPS 1181 Part 1: Issue 1.2

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

| Product Name | LPCB Ref. No. |
|---|---------------|
| Kingspan QuadCore KS1000 RW (roof panel) | 260f/01 |
| Kingspan QuadCore KS600 - 1200 AWP, MR, FL, FL-S, EB, WV, MM, CX, PL, Optimo, Benchmark Evolution, KS 1000 TL, Benchmark Louvre DW, Benchmark Curve DW (wall panel) | 260f/02 |
| Kingspan QuadCore KS600 - 1200AB (roof/ceiling panel) | 260f/03 |
| Kingspan QuadCore KS1000 RW (wall panel) | 260f/04 |
| | 260f/05 |
| | 260f/06 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Modular Panel Systems Limited

Mohill, Co. Leitrim, Ireland

Tel: +353 719631162 • Fax: +353 719651979

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

Certificate No: 750b to LPS 1181: Part 1

| Product Name | Specification Thickness (mm) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade | Core Material | LPCB Ref. No. |
|--------------------------------------|------------------------------|---------------------------------|----------------------------------|---------|---------------|---------------|
| PIR ExoClad (wall and ceiling panel) | 50 | - | - | EXT-B | PIR | 750b/01 |
| PIR ExoClad (wall panel) | 50 | 120 | 16 | EXT-A15 | PIR | 750b/02 |

Notes:

- The joints of the ExoClad panels 750b/01 should be stitched with 6.3mm x 22mm long self tapping screws @ 250mm centres on the external overlap and stitched with 4.8mm dia x 10mm stainless steel rivets @ 250mm centres on the internal face.
- Wall panels to be orientated vertically only.
- ExoClad wall panels 750b/02, panel joints external overlap stitched with stainless steel rivets and screwed at 100 mm centres. The internal joint is stitched at 100mm centres and protected with a 250mm wide by 50mm deep insulated cover strip stitched at 100mm centres.

Quinn Therm Limited

Scotchtown, Ballyconnell, Co. Cavan, Ireland

Tel: +353 49 952 5604 • Fax: +353 49 952 5601

E-mail: Neil.Martin@quinn-packaging.com • Website: www.quinn-therm.com

Certificate No: 893a to LPS1181: Part 1

| Product Name | Specification Thickness (mm) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade | Core Material | LPCB Ref. No. |
|--|------------------------------|---------------------------------|----------------------------------|-------|---------------|---------------|
| QRFR Fully adhered Insulating metal deck roof system | 85 - 185 | - | - | EXT-B | PIR | 893a/01 |
| QRFR Mechanically Fixed metal deck roof system | 85 - 185 | - | - | EXT-B | PIR | 893a/02 |

Notes:

- LPCB Ref 893a/01 QRFR Fully adhered Insulating metal deck roof system is approved to LPS 1181-1 as a built-up roof system of the following configuration:
 - Steadmans AS34 single skin roof profile deck (0.7mm thick); deck panel lap joints stitched at 250mm centres.
 - Multifold 250µm Vapour Control Layer (VCL) laid on top of the deck, with the VCL cut back to within 75mm from the edge of the deck perimeter and further protected by flashing installed to form an 'upstand' around the perimeter of the roof system.
 - 150mm thick Quintherm QRFR glass fibre tissue faced Insulation layer of rigid polyisocyanurate (PIR) boards supplied in 2.4m x 1.2m sheets (tested at 150mm thick, but available and approved between 50mm to 150mm thick), the boards being through fixed to the steelwork using 6.3 x 175mm fastec CR10 fluoro carbon coated screws, with discs, at six fixings per m²
 - Weather sealed using a Sika-Trocacal SGK 1.2 to 1.5mm by 1100mm wide, water proof membrane adhered to the Quintherm Insulation using Sika-Trocacal C300 adhesive at a rate of 250 g/m².

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

- The 150mm insulation roof system tested incorporated a 150 x 200mm external edge flashing and a 300 x 300mm internal roof/wall 1.6mm galvanised steel flashing.
 - The roof system was tested in combination with LPCB approved PIR core wall panels.
2. LPCB Ref 893a/02 QRFR Mechanically fixed Insulating metal deck roof system is approved to LPS 1181-1 as a built-up roof system of the following configuration:
- Steadmans AS34 single skin roof profile deck (0.7mm thick); deck panel lap joints stitched at 300mm centres.
 - Multifold 250µm Vapour Control Layer (VCL) laid on top of the deck, with the VCL cut back to within 75mm from the edge of the deck perimeter and further protected by flashing installed to form an 'upstand' around the perimeter of the roof system.
 - 150mm thick Quintherm QRFR foil faced Insulation layer of rigid polyisocyanurate (PIR) boards supplied in 2.4m x 1.2m sheets (tested at 150mm thick, but available and approved between 50mm to 150mm thick), the boards being through fixed to the steelwork using 6.3 x 175mm fastec CR10 fluoro carbon coated screws in a 500mm x 500mm square pattern.
 - Weather sealed using a Sika-Trocal Type S 1.5 (1.5mm x 1100mm) water proof membrane mechanically fixed to the roof system using Trocal Metal Discs and Fasteners secured in place by the 6.3 x 175mm fastec CR10 fluoro carbon coated screws mentioned above.
 - The 150mm insulation roof system tested incorporated a 150 x 200mm external edge flashing and a 300 x 300mm internal roof/wall 1.6mm galvanised steel flashing.
 - The roof system was tested in combination with LPCB approved PIR core wall panels.

Recticel Insulation Products / Recticel N.V

Enterprise way, Meir Park, Stoke-On-Trent ST3 7UN, United Kingdom

Tel: +44 (0)1782 590470 • Fax: +44(0)1782 590499

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

Certificate No: 968a to LPS 1181: Part 1: Issue 1

| Product Name | Specification Thickness (System) (mm) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade | Core Material | LPCB Ref. No. |
|--|---------------------------------------|---------------------------------|----------------------------------|-------|---------------|---------------|
| Roofing system incorporating Powerdeck F | 65 - 155 | - | - | EXT-B | PIR | 968a/02 |

Notes:

1. LPCB Ref 968a/02 Powerdeck F Mechanically Fixed Insulated metal deck system is approved to LPS 1181-1 as a built up roof system of the following configuration:
 - Corus D35 Roof Decking (0.7mm thick) or equivalent; deck panel lap joints stitched at 400mm centres.
 - Powerdeck F glass tissue faced Insulation layer of rigid polyisocyanurate (PIR) boards supplied in 1.2m x 0.6m sheets (approved at 30mm to 120mm thick) the boards through fixed to deck using BS 4.8 x 130mm screws & SFS Isotak RP75 x 30 tube washers with a 183mm PVC disk sitting on top of the PIR insulation at 600mm centres
 - Weather sealed using Fatra Fatrafol 810AA (1.5mm x 1300mm) Single ply membrane having its lap joint's hot air welded in accordance with manufacturer's recommendations, or equivalent single ply water proof membrane, the membrane is bonded to the 183mm PVC disks using Fatra FF855 adhesive, brush applied.
 - The roof system was tested in combination with LPCB approved PIR core wall panels.

Rockwool Limited

Wern Tarw, Pencoed, Bridgend, Mid Glamorgan CF35 6NY, United Kingdom

Tel: +44 (0)1656 862621 • Fax: +44 (0)1656 862302

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

Certificate No: 022g to LPS1181: Part 1: Issue 1.1

| Product Name | Specification System Thickness (mm) (1) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade (2) | Core Material | LPCB Ref. No. |
|--|---|---------------------------------|----------------------------------|-----------|---------------|---------------|
| Hardrock Dual Density Roof Board System | 100 - 135 | 60 | 60 | EXT-A60 | Stone wool | 022g/01 |
| Hardrock Dual Density Roofing Board System | 210 | 120 | 120 | EXT-A120 | Stone wool | |
| | 100 - 210 | - | - | EXT-B | Stone wool | |

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

| Product Name | Specification System Thickness (mm) (1) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade (2) | Core Material | LPCB Ref. No. |
|--|---|---------------------------------|----------------------------------|------------------|--------------------------|---------------|
| Hardrock Dual Density SPA Roofing Board System | 140 - 205 | 90 | 90 | EXT-A90 | Stone wool | 022g/02 |
| | 210 | 120 | 120 | EXT-A120 | Stone wool | |
| | 100 - 135 | 60 | 60 | EXT-A60 | Stone wool | |
| | 100 - 210 140 - 205 | - 90 | - 90 | EXT-B EXT-A90 | Stone wool Stone wool | |
| DuoRock Roofing Board System | 100 - 210 | 60 | 60 | EXT-A60 | Stone wool | 022g/03 |
| Hardrock Multi-fix Dual Density Roofing Board System | 100 - 210 150 | - 90 | - 90 | EXT-B EXT-A90 | Stone wool Stone Wool | 022g/04 |
| | 210 | 120 | 120 | EXT-A120 | Stone Wool | |
| | 100 - 135 | 60 | 60 | EXT-A60 | Stone Wool | |
| | 100 - 210 140 - 205 | - 90 | - 90 | EXT-B EXT-A90 | Stone Wool Stone Wool | |
| | | | | A90 | | |

Notes:

- Roof board system LPCB Ref No. 022g/01, 022g/03 & 022g/04 Mechanically fastened Samafil single ply type S327 (1.2mm thickness) external weather proof membrane (or alternative membrane less than 3.5 kg/m² e.g. PVC, Chlorinated PE, Butyl Rubber with wedged seams).
Comprising of two layers of Rockwool roofing board with staggered joints (100mm minimum stagger for fire resistance up to 90 minutes and 300mm stagger for 2 hours fire resistance), vapour control layer and 0.7mm thickness 35mm deep profile steel metal deck.
- Roof board system LPCB Ref No. 022g02; Samafil single ply external weather proof membrane type G410 (1.2mm thickness), fully adhered to Hardrock Dual Density SPA Roofing Board System with Samafil Adhesive (or Rockwool approved alternative, adhesive/membrane combination, with a membrane material less than 3.5 kg/m² e.g. PVC, Chlorinated PE, Butyl Rubber with welded seams); comprising of two layers of Rockwool roofing board with staggered joints (100mm minimum stagger for fire resistance up to 90 minutes and 300mm stagger for 2 hours fire resistance), vapour control layer and 0.7mm thickness 35mm deep profile steel metal deck.
- Roof Board System LPCB Ref No. 022g/01, 022g/02, 022g/03 & 022g/04 Hardrock Dual Density, Hardrock Dual Density SPA, DuoRock and Hardrock Multi-fix Dual Density roofing boards are also available and approved in cut-to-fall tapered options the relevant minimum & maximum system thickness and staggered joints shall apply as detailed above.
- For EXT-A fire resistance grading, the test construction was tested unloaded. However, deflection of the roof did not exceed the allowable limits set out in BS 476: Part 20:1987 for loadbearing horizontal elements.
- Decking side laps were stitched at 450mm centres. The built up roofing system was tested with Eurobond Stone wool core sandwich wall panels.
- Hardrock Multi-fix Dual Density roof board system 022g/04 at a thickness of 150mm is unfaced and for the purpose of extending the thickness within the Multi-Fix system.

Ruukki Polska Sp. z.o.o

ul Jaktorowska 13, 96-300 Żyrardów, Poland

Tel: + 44(0)121 704 7300/07876 809611 • Fax: + 44(0)121 711 9712

E-mail: steve.darlington@ruukki.com • Website: www.ruukki.com/gbr

Certificate No: 1052a to LPS 1181: Part 1

| Product Name | Specification Thickness (mm) | Wall panel orientation (H/V) (Note 1) | Fire Resistance Integrity/Insulation (mins) | LPS1181 - 1 Grade | Core Material | LPCB Ref. No. |
|-------------------------|---|---------------------------------------|---|-------------------|---------------|---------------|
| SP2B UK (wall panel) | 100 | H | 61/34 | EXT-A30 | PIR | 1052a/01 |
| | 100 | V | 61/30 | EXT-A30 | PIR | |
| | 40, 60, 80 and 100 80 and 100 | H/V H | - 53/17 | EXT-B EXT-A15 | PIR PIR | |
| SP2C UK (ceiling panel) | 120/80, 140/100, 160/120 and 210/170 | - | 63/37 | EXT-A30 | PIR | 1052a/02 |
| | | | | | | |

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

| Product Name | Specification Thickness (mm) | Wall panel orientation (H/V) (Note 1) | Fire Resistance Integrity/Insulation (mins) | LPS1181 - 1 Grade | Core Material | LPCB Ref. No. |
|----------------------|---|---------------------------------------|---|-------------------|---------------|---------------|
| | 80/40, 100/60, 120/80, 140/100, 160/120 and 210/170 | - | - | EXT-B | PIR | |
| | 80/40, 100/60, 120/80, 140/100, 160/120 and 210/170 | - | 91/19 | EXT-A15 | PIR | |
| SP2D UK (wall panel) | 100 and 120 | H | 34/28 | EXT-A30 | PIR | 1052a/03 |
| | 100 and 120 | V | 50/22 | EXT-A15 | PIR | |
| | 60, 80, 100 and 120 | H/V | - | EXT-B | PIR | |
| SP2E UK (wall panel) | 100, 120, 160, 180 and 200 | H/V | - | EXT-B | PIR | 1052a/04 |
| | 100, 120, 160, 180 and 200 | V | 46/25 | EXT-A15 | PIR | |
| | 200 | H | 73/72 | EXT-A60 | PIR | |

Notes:

1. Wall panel orientation, Horizontal or Vertical (H/V), relates to the long joint orientation.
2. LPCB Ref 1052a/02 EXT-B grade ceiling panels, joints shall be stitched on the external face using 4.9 x 19mm zinc coated carbon steel self drilling fasteners at nominal 300mm centres.
3. LPCB Ref 1052a/02 EXT-A15 grade 80/40, 100/60, 120/80, 140/100 and 210/170 ceiling panels were fire resistance tested with an imposed load of 24kg/m². The maximum unsupported span shall be limited to 2.0m between supports and the panel joints shall be stitched on the external face using 4.9 x 19mm zinc coated carbon steel self drilling fasteners at nominal 300mm centres.
4. LPCB Ref 1052a/02 EXT-A30 grade 120/80, 140/100 and 210/170 ceiling panels were fire resistance tested with an imposed load of 32kg/m². The maximum unsupported span shall be limited to 2.0m between supports and the panel joints shall be stitched on the external face using 4.9 x 19mm zinc coated carbon steel self drilling fasteners at nominal 300mm centres.
5. LPCB Ref. 1052a/01, 1052a/02, 1052/03 and 1052/04 a bead of sealant Butylene-X (Den Braven) is applied inside the panel joints on both faces prior to installation

Tata Steel UK Limited, Panels and Profiles

Shotton Works, Deeside, Flintshire CH5 2NH, United Kingdom

Tel: +44 (0) 1684 856600 • Fax: + 44 (0) 1684 856601

E-mail: sales.theworks@tatasteel.com • Website: www.tatasteel.com

Certificate No: 460a to LPS 1181: Part 1 Issue 1

| Product Name | Specification Thickness (mm) | Wall Panel Orientation | Fire Resistance (min) Integrity/Insulation | Grade | Core Material | LPCB Ref. No. |
|---|------------------------------|------------------------|--|---------|---------------------|---------------|
| Trimapanel wall panel | 70 | H | 240/16 | EXR-A15 | PIR* | 460a/13 |
| | 90 | H | 240/27 | EXT-A30 | PIR* | |
| Built up wall (System W1) | 160 - 220 | - | 240/30 | EXT-A30 | Mineral wool | 460a/14 |
| | 80 - 220 | - | 240/15 | EXT-A15 | Mineral wool | |
| Built up roof (System R1) | 60 - 220 | - | - | EXT-B | Mineral wool | 460a/15 |
| Built up roof (System R2) | 60 - 220 | - | - | EXT-B | Mineral wool | 460a/16 |
| Trinsul wall and roof system | 90 | - | - | EXT-B | Mineral wool | 460a/19 |
| | 90 | - | - | EXT-B | Mineral wool | |
| Trinsul wall system | 90 | - | 240/60 | EXT-A60 | Mineral wool | |
| Structural Liner Tray Roof | 190 | - | - | EXT-B | PIR* / Mineral wool | 460a/20 |
| Structural Liner Tray Wall | 170 | V | - | EXT-B | PIR* / Mineral wool | |
| | 170 | V | 120/15 | EXT-A15 | PIR* / Mineral wool | |
| Structural Flat Metal Roof Deck | 50 - 200 | - | - | EXT-B | Mineral wool | 460a/21 |
| Stratatherm façade | 80 - 150 | H | - | EXT-B | Mineral wool | 460a/22 |
| Built up acoustic wall and roof systems | 175 | V | - | EXT-B | Mineral wool | 460a/23 |
| Built up acoustic wall system | 175 | V | 240/15 | EXT-A15 | Mineral wool | |

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

| Product Name | Specification Thickness (mm) | Wall Panel Orientation | Fire Resistance (min) Integrity/Insulation | Grade | Core Material | LPCB Ref. No. |
|------------------------------------|------------------------------|------------------------|--|---------|---------------------|---------------|
| Hybrid acoustic wall system | 100 | V | 240/15 | EXT-A15 | PIR* / Mineral wool | 460a/24 |
| Hybrid acoustic roof system | 120 | - | - | EXT-B | PIR* / Mineral wool | |
| Trisomet 333 (wall panel) | 60, 80, 100 and 120 | V | 240/25 | EXT-A15 | PIR* | 460a/27 |
| Trimapanel wall panel | 70 and 120 | V or H | - | EXT-B | PIR* | 460a/28 |
| Trisomet 333 (roof and wall panel) | 40, 60, 80, 100 and 120 | H or V | - | EXT-B | PIR* | 460a/29 |
| Trisomet 333 (roof panel) | 40, 60, 80, 100 and 120 | - | - | EXT-B | PIR* | 460a/30 |

Notes:

1. Wall panel orientation, Horizontal or Vertical (H/V), relates to the long joint orientation.
2. The PIR core materials marked * are both CFC and HCFC Free and are stated to be Low Global Warming Potential (GWP).
3. LPCB Ref 460a/13 Trimapanel wall panels having a grade EXT-A are to be stitched on the internal face with SFS Intec IR2 - 4.8 x 60 (70mm thick panel), or SFS Intec IR2 - 4.8 x 80 (90mm thick panel) screws or similar at maximum 250mm centres.
4. LPCB Ref 460a/19 Trinsul wall system outer liner 0.55mm steel stitched at minimum 600mm centres, internal liner 0.4mm steel.
5. LPCB Ref 460a/20 Structural Liner Tray system requires the liner tray joints to be stitched at minimum 450mm centres.
6. LPCB Ref 460a/21 Structural Flat Metal roof deck steel profile liner D19 - D35 require no side lap stitching, steel profile liner D46 - D159 require side lap stitching min 450mm c/c and steel profile liner D210 require side lap stitching min 350mm c/c.
7. LPCB Ref 460a/29 Trisomet 333 wall panels can be laid with the long joints in the vertical orientation stitched or unstitched, or in the horizontal orientation with the overlap joint stitched at maximum 600mm centres.
8. LPCB Ref 460a/29 & 460a/30 Trisomet 333 roof panels are to be secured to each purlin with 3 fixings, the perimeter of the roof system is to be secured to the frame support through the panel edge at 300mm centres.
9. LPCB Ref 460a/27 Trisomet 333 wall panels are to be stitched at maximum 300mm centres with SL2-T-A14-4 8x20 self tapping screws or similar.

Trimo d.o.o.

Prijateljjeva cesta 12, 8210 Trebnje, Slovenia

Tel: 00386 73460200 • Fax: 0038 673460127

E-mail: robert.ajdic@trimo-group.com • Website: www.trimo-group.com

Certificate No: 650b to LPS 1181 Part 1

| Product Name | LPCB Ref. No. |
|---------------------|---------------|
| FTV (wall panel) | 650b/01 |
| SNV (ceiling panel) | 650b/02 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Xtratherm Limited

Kells Road, Navan, Co. Meath, Ireland

Tel: +353 46 906 6000 • Fax: +353 46 906 6090

E-mail: marketing@xtratherm.com • Website: www.xtratherm.com

Certificate No: 851a to LPS 1181: Part 1: Issue 1.1

| Product Name | Specification System Thickness (mm) | Fire Resistance (minutes) Integrity | Fire Resistance (minutes) Insulation | Grade | Insulation Material | LPCB Ref. No. |
|-----------------------|-------------------------------------|-------------------------------------|--------------------------------------|-------|---------------------|---------------|
| XT/FR-Alu Roof system | 66 - 136 | - | - | EXT-B | PIR | 851a/01 |
| XT/TR-Alu roof System | 66 - 136 | - | - | EXT-B | PIR | |

PART 1: SECTION 2.1.2

LPS 1181-1 CLADDING PRODUCTS USED FOR THE EXTERNAL ENVELOPE OF BUILDINGS

| Product Name | Specification System Thickness (mm) | Fire Resistance (minutes) Integrity | Fire Resistance (minutes) Insulation | Grade | Insulation Material | LPCB Ref. No. |
|----------------------|--|--|---|--------------|----------------------------|----------------------|
| XT/FR-MG Roof System | 66 - 136 | - | - | EXT-B | PIR | 851a/02 |
| XT/TR-MG Roof System | 66 - 136 | - | - | EXT-B | PIR | |

Notes:

- LPCB Ref 851a/01, the built-up roof system tested and approved consists of;
 - PVC Membrane laid in lengths across the width of the roof, mechanically fixed with hot-air welded lap joints.
 - 100mm XT/SP XT/FR-Alu or XT/TR-Alu PIR insulation boards (available and approved between 30mm to 100mm thick) mechanically fixed using a minimum of 6 fasteners per 2.4m x 1.2m board; each fastener incorporated a 50mm x 50mm square plate spreader washer. Boards laid in a break bond pattern.
 - 1mm gauge Vapour Control Layer - loose lay.
 - 0.7mm gauge, 35mm deep profiled metal deck with overlap side laps stitched at 400mm centres.
- LPCB Ref 851a/02, the built-up roof system tested and approved consists of;
 - PVC Membrane laid in lengths across the width of the roof, solvent welded to the PIR insulation boards with HA-C membrane adhesive at a rate of 250g/m² and with solvent welded lap joints.
 - 100mm XT/SP XT/FR-MG or XT/TR-MG PIR insulation boards (available and approved between 30mm to 100mm thick) mechanically fixed using a minimum of 6 fasteners per 2.4m x 1.2m board; each fastener incorporated a 50mm x 50mm square plate spreader washer.
 - 1mm gauge Vapour Control Layer- loose lay.
 - 0.7mm gauge, 35mm deep profiled metal deck with overlap side laps stitched at 400mm centres.
- LPCB Ref 851a/01 & 851a/02, the built-up roof systems were tested and approved in combination with a 150mm mineral wool cored sandwich panel wall elements.

PART 1: SECTION 2.1.3

LPS 1181-2 SANDWICH PANELS OR BUILT-UP PANEL SYSTEMS USED INTERNALLY IN A BUILDING

LPS 1181:Part 2 *Requirements and tests for sandwich panels and built-up systems for use as internal constructions in buildings*

This standard determines the contribution to fire growth of sandwich panels and built-up cladding systems used internally within a building. Systems listed in this section are typically used for the construction of food factory clean rooms, cold store rooms/refrigerated spaces or room separation, other internal structure applications may also be applicable where insulated (acoustic or temperature controlled) spaces are specified. The structures are either self-supporting or supported by an external structure.

The test is a large scale test comprising setting fire to an open-ended enclosure (approximately the size of a large domestic garage) from the sandwich panels or built-up cladding system. It evaluates the panels, the jointing methods and the supporting system including fixings, which gives an assessment of the true fire performance of the system which cannot be determined from traditional small scale reaction to fire tests, such as surface spread of flame or fire propagation tests.

Products that have passed the test and have achieved LPCB approval are graded under the following designations:

| Requirements for internal applications | | | | |
|--|---------------------|----------------------|--|-------------|
| GRADE | Fire resistance | | Wall and ceiling lining test Thermal exposure | |
| | Integrity (minutes) | Insulation (minutes) | Level | Source |
| INT-1 | 60 | 60 | Enhanced | Gas burner |
| INT-2 | 30 | 30 | Standard | Timber crib |
| INT-3 | | | Standard | Timber crib |

Brucha Ges.m.b.H

Rusterstrasse 33, A-3451, Michelhausen, Austria
Tel: +43 (2275) 5878 1800 • Fax: +43 (2275) 5875 1804
E-mail: office@brucha.at • Website: www.brucha.com

Certificate No: 900b to LPS1181-2

| Product Name | Specification Thickness (mm) | Maximum Unsupported Panel Span (m) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade | Core Material | LPCB Ref. No. |
|----------------------|------------------------------|------------------------------------|---------------------------------|----------------------------------|-------|---------------|---------------|
| WP-F (wall panel) | 60, 80, 100, 120, 150 & 200 | 3.0 | - | - | INT-3 | Mineral Wool | 900b/01 |
| WP-F (ceiling panel) | 60, 80, 100, 120, 150 & 200 | 3.5 | - | - | INT-3 | Mineral Wool | 900b/02 |

Notes:

- LPCB ref 900b/01 WP-F Wall panels to be installed with no external supports & the long edge joint in the vertical orientation only.
- LPCB ref 900b/01 & 900b/02 Wall and ceiling panel joints to be stitched on the internal face with 3.2 mm blind rivets at nominally 300mm centres.
- LPCB ref 900b/02 WP-F Ceiling panels are supported by a hanger system consisting of.
 - A length of wire rope (4.0mm 6 x 7N 1AX) passed over and supported from a suitable load bearing frame.
 - An M10 turnbuckle with the rope secured using a 'U bolt and clamp.
 - A length of M10 studding is passing through a hole which is drilled in the panel and secured on the internal surface with an 80mm diameter washer and domed head nut, this is further protected with a 0.55mm thick steel box (130mm-square x 30mm-deep with 130mm x 30mm-flanges), lined with Promatect board and fixed using 3.2mm blind rivets.
 - The turn buckle is then adjusted to accommodate the weight of the panels.

PART 1: SECTION 2.1.3

LPS 1181-2 SANDWICH PANELS OR BUILT-UP PANEL SYSTEMS USED INTERNALLY IN A BUILDING

Eurobond Laminates Limited

Wentloog Corporate Park, Wentloog, Cardiff CF3 2ER, United Kingdom

Tel: +44 (0)2920 776677 • Fax: +44 (0)2920 369161

E-mail: david.bampton@eurobond.co.uk • Website: www.eurobond.co.uk

Certificate No: 545c to LPS1181: Part 2: Issue 2

| Product Name | Specification Thickness (mm) | Maximum Unsupported Panel Length (m) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade | Core Material | LPCB Ref. No. | | |
|--------------------------|------------------------------|--------------------------------------|---------------------------------|----------------------------------|-------|---------------|---------------|---------------|---------|
| Firemaster Wall Lite | 75 | 3.00 | 30 | 30 | INT-2 | Mineral fibre | 545c/01 | | |
| | 75 | 3.00 | 60 | 30 | INT-2 | Mineral fibre | | | |
| | 100 | 5.50 | 30 | 30 | INT-2 | Mineral fibre | | | |
| | 100 | 4.50 | 60 | 60 | INT-1 | Mineral fibre | | | |
| | 100 | 4.00 | 90 | 60 | INT-1 | Mineral fibre | | | |
| | 125 | 5.50 | 30 | 30 | INT-2 | Mineral fibre | | | |
| | 125 | 4.50 | 60 | 60 | INT-1 | Mineral fibre | | | |
| | 125 | 4.00 | 90 | 60 | INT-1 | Mineral fibre | | | |
| | 150 | 5.50 | 60 | 60 | INT-1 | Mineral fibre | | | |
| | 150 | 5.00 | 90 | 90 | INT-1 | Mineral fibre | | | |
| | 150 | 5.00 | 120 | 90 | INT-1 | Mineral fibre | | | |
| | 175 | 5.00 | 120 | 90 | INT-1 | Mineral fibre | | | |
| | 175 | 5.00 | 90 | 90 | INT-1 | Mineral fibre | | | |
| | 175 | 5.50 | 60 | 60 | INT-1 | Mineral fibre | | | |
| | 200 | 5.50 | 60 | 60 | INT-1 | Mineral fibre | | | |
| | 200 | 5.00 | 90 | 90 | INT-1 | Mineral fibre | | | |
| | Firemaster Wall Extra | 75 | 3.00 | 30 | 30 | INT-2 | | Mineral fibre | 545c/02 |
| 75 | | 3.00 | 60 | 60 | INT-1 | Mineral fibre | | | |
| 100 | | 5.50 | 90 | 90 | INT-1 | Mineral fibre | | | |
| 100 | | 6.00 | 60 | 60 | INT-1 | Mineral fibre | | | |
| 100 | | 5.50 | 120 | 120 | INT-1 | Mineral fibre | | | |
| 125 | | 7.50 | 30 | 30 | INT-2 | Mineral fibre | | | |
| 125 | | 6.00 | 60 | 60 | INT-1 | Mineral fibre | | | |
| 125 | | 5.50 | 90 | 90 | INT-1 | Mineral fibre | | | |
| 125 | | 5.50 | 120 | 120 | INT-1 | Mineral fibre | | | |
| 150 | | 7.50 | 60 | 60 | INT-1 | Mineral fibre | | | |
| 150 | | 7.50 | 90 | 90 | INT-1 | Mineral fibre | | | |
| 150 | | 7.50 | 120 | 120 | INT-1 | Mineral fibre | | | |
| 175 | | 7.50 | 60 | 60 | INT-1 | Mineral fibre | | | |
| 175 | | 7.50 | 90 | 90 | INT-1 | Mineral fibre | | | |
| 175 | | 7.50 | 120 | 120 | INT-1 | Mineral fibre | | | |
| Firemaster Ceiling Panel | | 75 | 6.00 | - | - | INT-3 | Mineral fibre | 545c/03 | |
| | | 100 | 4.20 | 60 | 60 | INT-1 | Mineral fibre | | |
| | 100 | 6.00 | - | - | INT-3 | Mineral fibre | | | |
| | 125 | 4.20 | 60 | 60 | INT-1 | Mineral fibre | | | |
| | 125 | 6.00 | - | - | INT-3 | Mineral fibre | | | |
| | 150 | 4.20 | 60 | 60 | INT-1 | Mineral fibre | | | |
| Firemaster Wall Ultima | 150 | 6.00 | - | - | INT-3 | Mineral fibre | 545c/05 | | |
| | 150 | 7.50 | 240 | 240 | INT-1 | Mineral fibre | | | |
| | 175 | 7.50 | 240 | 240 | INT-1 | Mineral fibre | | | |
| | 200 | 7.50 | 240 | 240 | INT-1 | Mineral fibre | | | |

Notes:

1. Grade INT-1 approved products have equal performance at Grade INT-2 and INT-3
2. Grade INT-2 approved products have equal performance at Grade INT-3
3. LPCB Ref No. 545c/02 - Where Eurobond 120 rock fibre insulation core is used in the 100mm thick panel the fire resistance insulation performance is limited to 90 minutes for maximum unsupported panel lengths of 5.5m
4. LPCB Ref No. 545c/05 - 150mm and 175mm Firemaster Wall Ultima panel joints are to be stitched on both internal and external faces using 4.7mm diameter x 20mm long self-tapping screws at 300mm centres, the 200mm panel does not require stitching

PART 1: SECTION 2.1.3

LPS 1181-2 SANDWICH PANELS OR BUILT-UP PANEL SYSTEMS USED INTERNALLY IN A BUILDING

Kingspan Ltd

Carrickmacross Road, Kingscourt, Co. Cavan, Ireland

Tel: +353 42 969 8572 • Fax: +353 42 969 8576/77

E-mail: info.irl@kingspanpanels.com • Website: www.kingspanpanels.com

Certificate No: 186d to LPS 1181 Part 2: Issue 2

| Product Name | Specification Thickness (mm) | Specification Wall Panel Orientation (H/V) (Note 1) | Kingspan Model Specification Ref (Note 2) | Fire Resistance Integrity/Insulation (min) | LPS 1181-2 Grade | Core Material (Note 2) | LPCB Ref. No. |
|--|------------------------------|---|---|--|------------------|------------------------|---------------|
| Kingspan IPN QuadCore KS600-1200CS (wall and ceiling panels) | 80 - 200 | V | 36 Rev 0 | -/- | INT-3 | Hybrid insulation | 279e/01 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 100-200 | V | 36 Rev 0 | 45/39 | INT-2 | Hybrid insulation | 279e/02 |
| Kingspan IPN QuadCore KS600-1200CS (ceiling panel) | 175 - 200 | - | 36 Rev 0 | 95/65 | INT-2 | Hybrid insulation | 279e/03 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 100 - 200 | V | 36 Rev 0 | 128/30 | INT-2 | Hybrid insulation | 279e/04 |
| Kingspan IPN QuadCore KS600-1200CS (ceiling panel) | 125 - 200 | - | 36 Rev 0 | 57/49 | INT-2 | Hybrid insulation | 279e/05 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 175 - 200 | V | 36 Rev 0 | 211/65 | INT-2 | Hybrid insulation | 279e/06 |

Notes:

1. Wall panel orientation, Horizontal or Vertical (H/V), relates to the long joint orientation
2. The Kingspan Model Specification documents contain full system details including panel fixing requirement, joint seals and stitching details as applicable. Reference must be made to the appropriate Model Specification to define the specific installation requirements. Copies of Model specifications are available on request please contact the Kingspan Envirocare Department - refer to model specification LPCB 36 Rev 0 for full details.

Kingspan Ltd.

Greenfield Business Park No. 2, Greenfield, Holywell, Flintshire CH8 7HU, United Kingdom

Tel: +44 (0)1352 716100 • Fax: +44 (0)1352 716161

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

Certificate No: 260d to LPS 1181 Part 2: Issue 2

PART 1: SECTION 2.1.3

LPS 1181-2 SANDWICH PANELS OR BUILT-UP PANEL SYSTEMS USED INTERNALLY IN A BUILDING

| Product Name | Specification Thickness (mm) | Specification Wall Panel Orientation (H/V) (Note 1) | Kingspan Model Specification Ref (Note 2) | Fire Resistance Integrity/Insulation (min) | LPS 1181-2 Grade | Core Material (Note 2) | LPCB Ref. No. |
|--|------------------------------|---|---|--|------------------|------------------------|---------------|
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 100 - 200 | V | 36 Rev 0 | 45/39 | INT-2 | Hybrid insulation | 279/02 |
| Kingspan IPN QuadCore KS600-1200CS (wall and ceiling panels) | 80 - 200 | V | 36 Rev 0 | -/- | INT-3 | Hybrid insulation | 279e/01 |
| Kingspan IPN QuadCore KS600-1200CS (ceiling panel) | 175 - 200 | - | 36 Rev 0 | 95/65 | INT-2 | Hybrid insulation | 279e/03 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 100 - 200 | V | 36 Rev 0 | 128/80 | INT-2 | Hybrid insulation | 279e/04 |
| Kingspan IPN QuadCore KS600-1200CS (ceiling panel) | 125 - 200 | - | 36 Rev 0 | 57/49 | INT-2 | Hybrid insulation | 279e/05 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 175 - 200 | V | 36 Rev 0 | 211/65 | INT-2 | Hybrid insulation | 279e/06 |

Notes:

1. Wall panel orientation, Horizontal or Vertical (H/V), relates to the long joint orientation
2. The Kingspan Model Specification documents contain full system details including panel fixing requirement, joint seals and stitching details as applicable. Reference must be made to the appropriate Model Specification to define the specific installation requirements. Copies of Model specifications are available on request please contact the Kingspan Envirocare Department - refer to model specification LPCB 36 Rev 0 for full details.

Paneltex Limited

Kingston International Business Park, Somerden Road, Kingston-upon-Hull HU9 5PE, United Kingdom

Tel: 01482 787236 • Fax: 01482 787238

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

Certificate No: 993a to LPS 1181 Part 2: Issue 2.0

| Product Name | Specification Thickness (mm) | Maximum system size | Fire resistance (minutes) Integrity/Insulation | Grade | Core Material | LPCB Ref. No. |
|--|------------------------------|---------------------|--|-------|---------------|---------------|
| Paneltex Fireproof Coldstore (wall and ceiling panel system) | 122 - 165 | See Note 2 | - / - | INT-3 | PIR | 993a/01 |
| Paneltex Fireproof Coldstore (wall panel system) | 122 - 165 | See note 3 | 34 / 34 (note 3) | INT-2 | PIR | 993a/02 |

Notes:

1. LPCB Ref 993a/01 Paneltex Fireproof Coldstore wall and ceiling panel systems to be installed with no external supports, the wall panels have the long edge joint in the horizontal orientation.
2. LPCB Ref 993a/01 The maximum internal length, width and height of the Paneltex Fireproof Coldstore system shall not exceed 14.827m x 3.968m x 3.600m.

PART 1: SECTION 2.1.3

LPS 1181-2 SANDWICH PANELS OR BUILT-UP PANEL SYSTEMS USED INTERNALLY IN A BUILDING

3. LPCB Ref 993a/02 For fire resistance applications (INT-2) the maximum wall height shall not exceed 3.000m; the maximum panel length is as per note 2. The wall system was tested with an imposed load of 65kg/m (1.297kN per linear metre), loading on the walls shall not exceed this load.

Trimo d.o.o.

Prijateljjeva cesta 12, 8210 Trebnje, Slovenia

Tel: 00386 73460200 • Fax: 0038 673460127

E-mail: robert.ajdic@trimo-group.com • Website: www.trimo-group.com

Certificate No: 650d to LPS 1181 Part 2

| Product Name | LPCB Ref. No. |
|--------------------------------|----------------------|
| Trimoterm FTV (wall panel) | 650d/01 |
| Trimoterm FTV (ceiling panel) | 650d/02 |
| Trimoterm FTV-HL (wall panel) | 650d/03 |
| Qbiss One Power T (wall panel) | 650d/04 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 2.1.4

LPS 1181-3 (DRAFT) CLADDING USED IN POD CONSTRUCTION

LPS 1181: Part 3 (Draft) *Requirements and tests for factory produced room modules (PODS) and building system modules*

'PODS' are prefabricated units forming a room containing all structural elements and linings and may include services and fittings. This section covers PODS constructed of sandwich panels walls and/or ceilings.

For units listed in this section, the wall and ceiling construction has been tested to LPS 1181:Part 3 (Draft). The testing does not assess the structural performance of the POD under test nor the effect of doors or windows within the structure.

Portakabin Ltd

New lane, Huntington, York YO32 9PT, United Kingdom

Tel: 01904 611655 • Fax: 01904 611644

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

Certificate No: 592a(2) to LPS1181 Part 3

| Product Name | Specification Sandwich panel thickness only | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade | Core Material | LPCB Ref. No. |
|---|--|--|---|--------------|--------------------------|--------------------------|
| ULTIMA Building System Building Module (wall) | 76mm & 89mm thick | 60 | 15 | A | PUR | 592a/03 |
| ULTIMA Building System Building Module (ceiling) | 47mm thick | 60 | 60 | A | PUR | 592a/04 |
| ULTIMA Building System Building Module (roof) | 110mm thick | - | - | B | PUR | 592a/05 |

Notes:

1. LPCB Ref. No. 592a/03, 592a/04 & 592a/05 Test specimen conformed to LPS1181 size requirements, except width was only 3.6m, the maximum width possible for the module.
2. LPCB Ref. No. 592a/03 Wall panels laid with long joints in the vertical orientation.
3. LPCB Ref. No. 592a/04 The test specimen for the ceiling fire resistance test was a combined ceiling and floor construction
4. LPCB Ref. No. 592a/03 Wall inner surface lining 1x layer 12.5mm thick Gyproc Fireline Duplex, Lafarge GTEC Fire V or Knauf Fireshield Plasterboard with Renolit Minster PVC innerface lining.
5. LPCB Ref. No. 592a/04 & 592a/05 Inner surface: interior polyester steel.
6. LPCB Ref. No. 592a/03, 592a/04 & 592a/05 No assessment has been made of the structural performance of the module, or of the inclusion of windows and doors. Therefore there has been no evaluation of the performance should the fire break through a window or door.
7. LPCB Ref. No. 592a/03, 592a/04 & 592a/05 Test Specimen short wall was 89mm thick and the long walls were 76mm thick.

LPS 1208: *LPCB test and performance requirements for walls, cavity barriers, floors and roofs* defines the test and performance requirements to satisfy the fire resistance requirements for compartmentation given in the *LPC Design Guide for Fire Protection of Buildings: 2000*.

Products for use in the following elements of construction fall within the scope of LPS 1208:

- Loadbearing compartment walls
- Non-loadbearing compartment walls and partitions
- External walls
- Curtain walls
- Cavity barriers
- Roofs where fire resistance is required (loadbearing and non-loadbearing)
- Loadbearing compartment floors
- Insulated panels used for enclosing production and storage areas in food factories

Note: Unless otherwise stated in individual listings, elements of construction have not been approved for load bearing capacity.

CA Group Limited

Evenwood Industrial Estate, Copeland Road, Evenwood, Co. Durham DL14 9SF, United Kingdom
 Tel: +44 (0)1388 834242 • Fax: +44(0)1 388 830964
 E-mail: technical@cagroup.ltd.uk • Website: www.cagroup.ltd.uk

Certificate No: 443b to LPS 1208: Issue 2

| Product Name | LPCB Ref. No. |
|----------------------------|---------------|
| Twin-Therm® FW120 FireWall | 443b/02 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Eurobond Laminates Limited

Wentloog Corporate Park, Wentloog, Cardiff CF3 2ER, United Kingdom
 Tel: +44 (0)2920 776677 • Fax: +44 (0)2920 369161
 E-mail: david.bampton@eurobond.co.uk • Website: www.eurobond.co.uk

Certificate No: 545a to LPS 1208: Issue 2.2

Sandwich Panel Systems

| Product Name | LPCB Ref. No. |
|---------------------------------------|---------------|
| Firemaster Wall Extra | 545a/01 |
| Firemaster Ceiling Panel | 545a/02 |
| Firemaster Wall Lite | 545a/03 |
| Europanel F5 (wall panel) | 545a/05 |
| Europanel G12, G30 & G50 (wall panel) | 545a/06 |
| Europanel S5 (wall panel) | 545a/07 |
| Rockspan Extra (wall panel) | 545a/08 |
| Rockspan Lite (wall panel) | 545a/09 |
| Rockspan Ultima (wall panel) | 545a/10 |
| Firemaster Ultima (wall panel) | 545a/11 |
| Firemaster Ceiling Panel | 545a/12 |
| Rainspan Argeton | 545a/13 |
| Raispan-ACM | 545a/14 |
| Rainspan-Parklex | 545a/15 |
| Rainspan-Rockpanel | 545a/16 |
| Rainspan Corium | 545a/17 |
| Rainspan Norclad | 545a/18 |
| Rainspan Aerolite Granite | 545a/20 |

PART 1: SECTION 2.2

LPS 1208 COMPOSITE CONSTRUCTION ELEMENTS

| Product Name | LPCB Ref. No. |
|---------------------------|----------------------|
| Rainspan Urban Glass | 545a/21 |
| Europanel F5 (wall panel) | 545a/22 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Euroclad Limited

Wentloog Corporate Park, Wentloog Road, Cardiff CF3 2ER, United Kingdom

Tel: +44 (0)2920 790722 • Fax: +44 (0)2920 793149

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

Certificate No: 879b to LPS 1208: Issue 2.2

| Product Name | LPCB Ref. No. |
|------------------------|----------------------|
| Elite 51 (Wall System) | 879b/09 |
| Elite 52 (Wall System) | 879b/10 |
| Elite 53 (Wall System) | 879b/11 |
| Elite 54 (Wall System) | 879b/12 |
| Elite 55 (Wall System) | 879b/13 |
| Elite 56 (Wall System) | 879b/14 |
| Elite 57 (Wall System) | 879b/15 |
| Elite 58 (Wall System) | 879b/16 |
| Elite 60 (Wall System) | 879b/17 |
| Elite 50 (Wall System) | 879b/18 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Hemsec Manufacturing Limited

Stoney Lane, Rainhill, Prescot, Merseyside L35 9LL, United Kingdom

Tel: +44 (0)151 426 7171 • Fax: +44 (0)151 493 1331

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

Certificate No: 558a to LPS 1208 Issue3

| Product Name | LPCB Ref. No. |
|--------------------------------|----------------------|
| Hemsec SIP (wall panel) | 558a/11 |
| | 558a/13 |
| HPT Control 30 (wall panel) | 558a/16 |
| HPT Control 60 (wall panel) | |
| HPT Control 30 (ceiling panel) | 558a/17 |
| HPT Control 60 (ceiling panel) | |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Isocab France SAS

Z.I. de Grande Synthe, 3 Rue Charles Fourier, CS 30142, F-59792 Grande, Synthe Cedex, France

Tel: +33 (0)3 28 29 24 40 • Fax: +33 (0)3 28 29 24 50

E-mail: Info@isocabfrance.fr • Website: www.isocab.com

Certificate No: 1295a to LPS 1208: Issue 2.2

| Product Name | LPCB Ref. No. |
|---|----------------------|
| Isocab Industrial Agro-alimentaire (IND) ceiling panel system | 1295a/01 |
| Isocab Industrial Agro-alimentaire (IND) wall panel system | 1295a/02 |
| | 1295a/03 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Isoclad Limited

10 Alder Road, West Chirton North Industrial Estate, North Shields, Tyne & Wear NE29 8SD, United Kingdom
 Tel: +44 (0)191 258 5052 • Fax: +44 (0)191 259 5742
 E-mail: sales@isoclad.co.uk • Website: www.isoclad.co.uk

Certificate No: 142a to LPS 1208 Issue 2

| Product Name | LPCB Ref. No. |
|--------------------------------|---------------|
| Firestop 10 (wall panel) | 142a/01 |
| Firestop 12 (wall panel) | 142a/02 |
| Firestop 12C (ceiling panel) | 142a/03 |
| Isoclad PIR (wall panel) | 142a/05 |
| Isoclad PIR (ceiling panel) | 142a/06 |
| Isoclad PIR 40 (wall panel) | 142a/07 |
| Firestop 12 (ceiling panel) | 142a/08 |
| Securiclad SR4 (wall panel) | 142a/09 |
| Securiclad SR4 (ceiling panel) | 142a/10 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Joris IDE N.V.

Hille 174, B-8750, Zwevezele, Belgium
 Tel: +44 (0)1928 571 444 • Fax: +44 (0)1928 571 488
 E-mail: division.export@joriside.co.uk • Website: www.joriside.co.uk

Certificate No: 700d to LPS 1208: Issue 2.2

| Product Name | LPCB Ref. No. |
|-----------------------------------|---------------|
| JI Wall 1150 Insulated Wall Panel | 700d/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Kingspan Ltd

Carrickmacross Road, Kingscourt, Co. Cavan, Ireland
 Tel: +353 42 969 8572 • Fax: +353 42 969 8576/77
 E-mail: info.irl@kingspanpanels.com • Website: www.kingspanpanels.com

Certificate No: 186b to LPS 1208: Issue 2

| Product Name | Specification Thickness (mm) | Maximum Unsupported Span (m) | Wall Panel Orientation (H/V) (note 1) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|---|-------------------------------|------------------------------|---------------------------------------|--|-------|---------------|---------------|
| Kingspan Ecosafe KS1100CS (wall panel) | 100, 125, 150, 175, 200 & 220 | 4.00 | V | 195 / 31 | FR30 | PIR | 279b/05 |
| Kingspan Ecosafe KS1100CS (ceiling panel) | 100, 125, 150, 175, 200 & 220 | 4.00 | V | 35 / 32 | FR30 | PIR | |
| Kingspan Ecosafe KS1100CS (ceiling panel) | 100, 125, 150, 175, 200 & 220 | 3.40 | - | 58 / 32 | FR30 | PIR | 279b/06 |

PART 1: SECTION 2.2

LPS 1208 COMPOSITE CONSTRUCTION ELEMENTS

| Product Name | Specification Thickness (mm) | Maximum Unsupported Span (m) | Wall Panel Orientation (H/V) (note 1) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|---|------------------------------|------------------------------|---------------------------------------|--|-------|---------------|---------------|
| Kingspan Ecosafe KS1100CS (wall panel) | 175, 200 & 220 | 3.00 | V | 240 / 64 | FR60 | PIR | 279b/07 |
| Kingspan Ecosafe KS1100CS (ceiling panel) | 175, 200 & 220 | 3.30 | - | 148 / 67 | FR60 | PIR | 279b/08 |
| Kingspan Ecosafe KS1100CS (wall panel) | 175, 200 & 220 | 4.00 | V | 69 / 61 | FR60 | PIR | 279b/09 |

Notes

1. Wall panel orientation, Horizontal or Vertical (H/V), relates to the long joint orientation.
2. LPCB Ref No. 279b/05, 279b/06, 279b/07, 279b/08 & 279b/09 - Refer to model specification LPCB 11 Rev M for full details.

Certificate No: 186c to LPS 1208 Issue 2

| Product Name | LPCB Ref. No. |
|--|---------------|
| Kingspan IPN QuadCore KS1100CS (wall panel) | 279d/01 |
| Kingspan IPN QuadCore Kingspan IPN QuadCore Kingspan IPN QuadCore KS1100CS (ceiling panel) | 279d/02 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 279d/03 |
| Kingspan IPN QuadCore KS1100CS (ceiling panel) | 279d/04 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 279d/05 |
| Kingspan IPN QuadCore KS600-1200CS (ceiling panel) | 279d/06 |
| Kingspan IPN QuadCore KS600-1200CS (ceiling panel) | 279d/07 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 279d/08 |
| Kingspan IPN QuadCore KS600-1200CS (ceiling panel) | 279d/09 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Kingspan Ltd.

Greenfield Business Park No. 2, Greenfield, Holywell, Flintshire CH8 7HU, United Kingdom

Tel: +44 (0)1352 716100 • Fax: +44 (0)1352 716161

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

Certificate No: 260b to LPS 1208: Issue 2

| Product Name | Specification Thickness (mm) | Maximum Unsupported Span (m) | Wall Panel Orientation (H/V) (note 1) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|---|-------------------------------|------------------------------|---------------------------------------|--|-------|---------------|---------------|
| Kingspan Ecosafe KS1100CS (wall panel) | 100, 125, 150, 175, 200 & 220 | 4.00 | V | 195 / 31 | FR30 | PIR | 279b/05 |
| Kingspan Ecosafe KS1100CS (ceiling panel) | 100, 125, 150, 175, 200 & 220 | 4.00 | V | 35 / 32 | FR30 | PIR | |
| Kingspan Ecosafe KS1100CS (ceiling panel) | 100, 125, 150, 175, 200 & 220 | 3.40 | - | 58 / 32 | FR30 | PIR | 279b/06 |
| Kingspan Ecosafe KS1100CS (wall panel) | 175, 200 & 220 | 3.00 | V | 240 / 64 | FR60 | PIR | 279b/07 |
| Kingspan Ecosafe KS1100CS (ceiling panel) | 175, 200 & 220 | 3.30 | - | 148 / 67 | FR60 | PIR | 279b/08 |

PART 1: SECTION 2.2

LPS 1208 COMPOSITE CONSTRUCTION ELEMENTS

| Product Name | Specification Thickness (mm) | Maximum Unsupported Span (m) | Wall Panel Orientation (H/V) (note 1) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|--|------------------------------|------------------------------|---------------------------------------|--|-------|---------------|---------------|
| Kingspan Ecosafe KS1100CS (wall panel) | 175, 200 & 220 | 4.00 | V | 69 / 61 | FR60 | PIR | 279b/09 |

Notes:

1. Wall panel orientation, Horizontal or Vertical (H/V), relates to the long joint orientation.
2. LPCB Ref No 279b/05, 279b/06, 279b/07, 279b/08 & 279b/09 - Refer to model specification LPCB 11 Rev M for full details.

Certificate No: 260c to LPS 1208 Issue 2

| Product Name | LPCB Ref. No. |
|---|---------------|
| Kingspan IPN QuadCore Kingspan IPN QuadCore KS1100CS (wall panel) | 279d/01 |
| Kingspan IPN QuadCore KS1100CS (ceiling panel) | 279d/02 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 279d/03 |
| Kingspan IPN QuadCore KS1100CS (ceiling panel) | 279d/04 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 279d/05 |
| | 279d/06 |
| Kingspan IPN QuadCore KS600-1200CS (ceiling panel) | 279d/07 |
| Kingspan IPN QuadCore KS600-1200CS (wall panel) | 279d/08 |
| Kingspan IPN QuadCore KS600-1200CS (ceiling panel) | 279d/09 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the product name in the associated entry on www.RedBookLive.com

Kingspan Yapi Elemanlari A.S.

Yumurtalik Serbest Bolgesi 3 No'lu Parsel, Ceyhan-Adana, Turkey 01920, Turkey

Tel: +90 322 634 2034 • Fax: +90 322 634 2035

E-mail: deniz.ozay@kingspan.com • Website: www.izopoli.com

Certificate No: 1278a to LPS 1208: Issue 2.2

| Product Name | LPCB Ref. No. |
|-----------------------|---------------|
| KS110CTF (Wall Panel) | 1278a/01 |
| | 1278a/02 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Modular Panel Systems Limited

Mohill, Co.Leitrim, Ireland

Tel: +353 719631162 • Fax: +353 719651979

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

Certificate No: 750a to LPS 1208 Issue 2.1

| Product Name | Specification Thickness (mm) | Max Unsupported Span | Wall Panel Orientation (H/V)(Note 1) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|-------------------------------|------------------------------|----------------------|--------------------------------------|--|-------|---------------|---------------|
| Enviro Panel PIR (wall panel) | 100 | 3.0 | V | 43 / 15 | FR15 | PIR | 750a/01 |
| | 150 | 3.0 | V | 60 / 48 | FR30 | PIR | |
| | 200 | 3.0 | V | 60 / 48 | FR30 | PIR | |

PART 1: SECTION 2.2

LPS 1208 COMPOSITE CONSTRUCTION ELEMENTS

| Product Name | Specification Thickness (mm) | Max Unsupported Span | Wall Panel Orientation (H/V)(Note 1) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|---|------------------------------|----------------------|--------------------------------------|--|-------|---------------|---------------|
| Enviro Panel Mineral Wool (wall panel) | 100 | 7.5 | V | 121 / 44 | FR30 | Mineral Wool | 750a/02 |
| Enviro Panel Mineral Wool (ceiling panel) | 150 | 3.0 | - / - | 121 / 68 | FR60 | Mineral Wool | 750a/03 |
| Enviro Panel PIR (wall panel) | 100 | 3.0 | V | 30 / 15 | FR15 | PIR | 750a/04 |
| | 150 | 3.0 | V | 60 / 30 | FR30 | PIR | |
| | 200 | 3.0 | V | 60 / 30 | FR30 | PIR | |
| Enviro Panel Mineral Wool (wall panel) | 100 | 7.5 | V | 120 / 30 | FR30 | Mineral Wool | 750a/05 |
| Enviro Panel Mineral Wool (ceiling panel) | 150 | 3.0 | - / - | 120 / 60 | FR60 | Mineral Wool | 750a/06 |
| Enviro Panel Mineral Wool (wall panel) | 150 | 7.5 | V | 120 / 60 | FR60 | Mineral Wool | 750a/07 |

Notes:

1. Wall panels orientation, Horizontal or Vertical (H/V) relates to the long joint orientation.
2. LPCB Ref. 750a/01, 750a/03, 750a/04 & 750a/06 - A strip of Pyrostrip graphite self-adhesive tape, 10mm wide x 2mm thick, shall be applied between the overlap in the steel skins of adjacent panels, the joints of the Enviro panels shall then be stitched with 4.8mm dia x 10mm stainless steel rivets @ 300mm centres on both the exposed and internal face.
3. LPCB Ref. 750a/02, 750a/05 & 750a/07 - A strip of Pyrostrip graphite self-adhesive tape, 10mm wide x 2mm thick, shall be applied between the overlap in the steel skins of adjacent panels, the joints of the Enviro panels shall then be stitched with 3.2mm dia x 12mm stainless steel rivets @ 300mm centres on both the external and internal face.
4. LPCB Ref. 750a/01, 750a/02 & 750a/03 PIR and Mineral wool panels are supplied with a castellated joint panel edge profile.
5. LPCB Ref. 750a/04, 750a/05 & 750a/06 PIR and Mineral wool panels are supplied with a flat, butt joint panel edge profile.
6. LPCB Ref. 750a/07 Mineral wool wall panels are supplied with a castellated joint or a flat, butt joint panel edge profile.

Paneltex Limited

Kingston International Business Park, Somerden Road, Kingston-upon-Hull HU9 5PE, United Kingdom

Tel: 01482 787236 • Fax: 01482 787238

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

Certificate No: 993b to LPS 1208: Issue 2

| Product Name | Specification Thickness (mm) | Maximum unsupported span (m) | Fire Resistance (minutes) Integrity / Insulation (EN 1365-1) | Load bearing capacity under test conditions | Grade | Core Material | LPCB Ref. No. |
|--|------------------------------|------------------------------|--|---|-------|---------------|---------------|
| Paneltex Fireproof Coldstore (wall panel system) | 122 - 165 | See note 1 | 34 / 34 | 65kg/m (1.297kN per linear metre) | FR30 | PIR | 993b/01 |

Note:

1. LPCB Ref 993b/01 Paneltex Fireproof Coldstore wall panels have the inner liner long edge joint in the horizontal orientation, the panels are factory manufactured to required height and length. The maximum wall height shall not exceed 3.000m.

Paroc Panel System Oy Ab

FIN-21600, Parainen, Finland

Tel: +358 46 876 8000 • Fax: +358 46 876 8702

E-mail: panelinfo@paroc.com • Website: www.paroc.com

Certificate No: 381a to LPS 1208: Issue 2

AST F, AST S & AST T Wall Panels and AST E Ceiling Panels

| Product Name | Specification Thickness (mm) | Maximum Unsupported span (m) | Wall panel orientation (H/V) (note 1) | Fire Resistance (mm) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|-----------------------------|------------------------------|------------------------------|---------------------------------------|---|--------------|---------------|---------------|
| PAROC AST F (wall panel) | 50 | 4.6 | V | 30/30 | FR30 | Mineral wool | 381a/01 |
| | 80 | 4.0 | V | 90/90 | FR90 | Mineral wool | |
| | 80 | 4.9 | V | 60/60 | FR60 | Mineral wool | |
| | 80 | 7.5 | V | 30/30 | FR30 | Mineral wool | |
| | 100 | 4.0 | V | 120/120 | FR120 | Mineral wool | |
| | 100 | 4.4 | V | 90/90 | FR90 | Mineral wool | |
| | 100 | 6.6 | V | 60/60 | FR60 | Mineral wool | |
| | 100 | 7.5 | V | 30/30 | FR30 | Mineral wool | |
| | 120 | 4.0 | V | 180/180 | FR180 | Mineral wool | |
| | 120 | 4.8 | V | 120/120 | FR120 | Mineral wool | |
| | 120 | 6.4 | V | 90/90 | FR90 | Mineral wool | |
| | 120 | 7.5 | V | 30/30 | FR30 | Mineral wool | |
| | 120 | 7.5 | V | 60/60 | FR60 | Mineral wool | |
| | 100 - 240 | 4.0 | H | 120/120 | FR120 | Mineral wool | |
| | 120 - 240 | 4.0 | H | 180/180 | FR180 | Mineral wool | |
| | 150 - 240 | 4.0 | H | 240/240 | FR240 | Mineral wool | |
| | 150 - 240 | 4.0 | V | 240/240 | FR240 | Mineral wool | |
| | 150 - 240 | 4.7 | V | 180/180 | FR180 | Mineral wool | |
| | 150 - 240 | 7.1 | V | 120/120 | FR120 | Mineral wool | |
| | 150 - 240 | 7.5 | V | 30/30 | FR30 | Mineral wool | |
| | 150 - 240 | 7.5 | V | 60/60 | FR60 | Mineral wool | |
| 150 - 240 | 7.5 | V | 90/90 | FR90 | Mineral wool | | |
| 50 - 240 | 4.0 | H | 30/30 | FR30 | Mineral wool | | |
| 80 - 240 | 4.0 | H | 60/60 | FR60 | Mineral wool | | |
| 80 - 240 | 4.0 | H | 90/90 | FR90 | Mineral wool | | |
| PAROC AST S (wall panel) | 80 | 4.0 | V | 60/30 | FR30 | Mineral wool | 381a/02 |
| | 80 | 5.1 | V | 30/30 | FR30 | Mineral wool | |
| | 100 | 4.0 | V | 60/60 | FR60 | Mineral wool | |
| | 100 | 6.7 | V | 30/30 | FR30 | Mineral wool | |
| | 120 | 4.0 | V | 120/120 | FR120 | Mineral wool | |
| | 120 | 4.6 | V | 90/90 | FR90 | Mineral wool | |
| | 120 | 6.9 | V | 60/60 | FR60 | Mineral wool | |
| | 120 | 7.5 | V | 30/30 | FR30 | Mineral wool | |
| | 100 - 240 | 4.0 | H | 60/60 | FR60 | Mineral wool | |
| | 120 - 240 | 4.0 | H | 120/120 | FR120 | Mineral wool | |
| | 120 - 240 | 4.0 | H | 90/90 | FR90 | Mineral wool | |
| | 150 - 240 | 4.0 | H | 180/180 | FR180 | Mineral wool | |
| | 150 - 240 | 4.0 | H | 240/240 | FR240 | Mineral wool | |
| | 150 - 240 | 4.0 | V | 240/240 | FR240 | Mineral wool | |
| | 150 - 240 | 4.1 | V | 180/180 | FR180 | Mineral wool | |
| | 150 - 240 | 6.1 | V | 120/120 | FR120 | Mineral wool | |
| | 150 - 240 | 7.5 | V | 30/30 | FR30 | Mineral wool | |
| | 150 - 240 | 7.5 | V | 60/60 | FR60 | Mineral wool | |
| | 150 - 240 | 7.5 | V | 90/90 | FR90 | Mineral wool | |
| | 80 - 240 | 4.0 | H | 30/30 | FR30 | Mineral wool | |
| | 80 - 240 | 4.0 | H | 60/30 | FR30 | Mineral wool | |
| PAROC AST E (ceiling panel) | 100 | 6.5 | - | 60/60 | FR60 | Mineral wool | 381a/04 |
| | 100 | 8.2 | - | 30/30 | FR30 | Mineral wool | |
| PAROC AST T (wall panel) | 80 | 4.0 | V | 30/30 | FR30 | Mineral wool | 381a/05 |
| | 100 | 5.1 | V | 30/30 | FR30 | Mineral wool | |
| | 120 | 4.0 | V | 120/120 | FR120 | Mineral wool | |

PART 1: SECTION 2.2

LPS 1208 COMPOSITE CONSTRUCTION ELEMENTS

| Product Name | Specification Thickness (mm) | Maximum Unsupported span (m) | Wall panel orientation (H/V) (note 1) | Fire Resistance (mm) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|--------------|------------------------------|------------------------------|---------------------------------------|---|-------|---------------|---------------|
| | 120 | 4.8 | V | 90/90 | FR90 | Mineral wool | |
| | 120 | 7.3 | V | 60/60 | FR60 | Mineral wool | |
| | 120 | 7.5 | V | 30/30 | FR30 | Mineral wool | |
| | 120 - 240 | 4.0 | H | 120/120 | FR120 | Mineral wool | |
| | 120 - 240 | 4.0 | H | 60/60 | FR60 | Mineral wool | |
| | 120 - 240 | 4.0 | H | 90/90 | FR90 | Mineral wool | |
| | 150 - 240 | 4.0 | H | 180/180 | FR180 | Mineral wool | |
| | 150 - 240 | 4.0 | H | 240/240 | FR240 | Mineral wool | |
| | 150 - 240 | 4.0 | V | 240/240 | FR240 | Mineral wool | |
| | 150 - 240 | 4.7 | V | 180/180 | FR180 | Mineral wool | |
| | 150 - 240 | 7.1 | V | 120/120 | FR120 | Mineral wool | |
| | 150 - 240 | 7.5 | V | 30/30 | FR30 | Mineral wool | |
| | 150 - 240 | 7.5 | V | 60/60 | FR60 | Mineral wool | |
| | 150 - 240 | 7.5 | V | 90/90 | FR90 | Mineral wool | |
| | 80 - 240 | 4.0 | H | 30/30 | FR30 | Mineral wool | |

Notes:

1. Wall orientation, Horizontal or Vertical (H/V), relates to the long joint orientation.
2. LPCB Ref 381a/01, 381a/02 and 381a/05 when panels are laid with the long joint in the horizontal orientation the joints shall be stitched on the internal and external face at nominal 150mm centres.

Promat Fire Protection L.L.C

PO Box 123945, Plot No. 597-921, Dubai Investment Park 2, Dubai, United Arab Emirates

Tel: 00 971 0 4 885 3070 • Fax: 00 971 0 4 885 3588

E-mail: info@promatfp.ae • Website: www.promatfp.ae

Certificate No: 1387a to LPS 1208 Non-loadbearing compartment walls and partitions

PROMATECT®-H

| Product Name | LPCB Ref. No. |
|--------------|---------------|
| PROMATECT®-H | 1387a/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 1388a to LPS 1208 Non-loadbearing compartment walls and partitions

PROMATECT®-L500

| Product Name | LPCB Ref. No. |
|-----------------|---------------|
| PROMATECT®-L500 | 1388a/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 1389a to LPS 1208 Non-loadbearing compartment and wall partitions

DURASTEEL®

| Product Name | LPCB Ref. No. |
|--------------|---------------|
| DURASTEEL® | 1389a |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Promat UK Ltd

The Sterling Centre, Eastern Road, Bracknell, Berkshire RG12 2TD, United Kingdom

Tel: +44 (0)1344 381300 • Fax: +44 (0)1344 381301

Website: www.promat.co.uk

Certificate No: 545a to LPS 1208: Issue 2

| Product Name | Specification Thickness (mm) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Maximum Unsupported Length (m) | Grading | Core Material | LPCB Ref. No. |
|--------------|------------------------------|---------------------------------|----------------------------------|--------------------------------|---------|---------------|---------------|
| Durawall 120 | 150 | 120 | 120 | 5.50 | FR120 | Mineral fibre | 545a/01 |
| Durawall 90 | 125 | 90 | 90 | 5.50 | FR90 | Mineral fibre | |
| Durawall 60 | 100 | 60 | 60 | 4.50 | FR60 | Mineral fibre | 545a/03 |
| Durawall 240 | 150 | 240 | 240 | 7.50 | FR240 | Mineral fibre | 545a/11 |

Notes:

- LPCB Ref. No's 545a/01, 545a/03 and 545a/11 - Wall panels can be installed vertically or horizontally.
- LPCB Ref. No's 545a/11 - wall panel joints to be stitched on both internal and external faces using 4.7mm Diameter x 20mm long self-tapping screws at 300mm centres.

Ruukki Construction Oy

Panuntie 11, 00620 Helsinki, Finland

Tel: +358 20 592 7521 • Fax: +358 20 592 7708

E-mail: simo.heikkila@ruukki.com • Website: www.ruukki.com

Certificate No: 660a to LPS 1208: Issue 2

| Product Name | LPCB Ref. No. |
|--------------|---------------|
| SPA E | 660a/03 |

Notes:

- Wall panel orientation, Horizontal or Vertical (H/V), relates to the long joint orientation.
- The following Company manufacture the product listed on this certificate. This Company is audited by the LPCB to ensure the product certification requirements are met.

Ruukki Construction Oy
Makelantie 9,
62900 Alajarvi,
Finland

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Ruukki Polska Sp. z.o.o

ul Jaktorowska 13, 96-300 Żyrardów, Poland

Tel: + 44(0)121 704 7300/07876 809611 • Fax: + 44(0)121 711 9712

E-mail: steve.darlington@ruukki.com • Website: www.ruukki.com/gbr

Certificate No: 1052b to LPS 1208

| Product Name | Specification Thickness (mm) | Max Unsupported Span (m) | Wall panel orientation (H/V) (note 1) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|---------------------|------------------------------|--------------------------|---------------------------------------|--|-------|---------------|---------------|
| SP2D W (wall panel) | 100 - 220 | 4.0 | H | 68/67 | FR60 | Mineral wool | 1052b/01 |

PART 1: SECTION 2.2

LPS 1208 COMPOSITE CONSTRUCTION ELEMENTS

| Product Name | Specification Thickness (mm) | Max Unsupported Span (m) | Wall panel orientation (H/V) (note 1) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|----------------------|------------------------------|--------------------------|---------------------------------------|--|-------|---------------|---------------|
| SP2D WE (wall panel) | 100 - 220 | 4.0 | V | 120/120 | FR120 | Mineral wool | 1052b/02 |
| | 100 - 220 | 4.0 | V | 60/60 | FR60 | Mineral wool | |
| | 100 - 220 | 4.0 | V | 90/90 | FR90 | Mineral wool | |
| | 100 - 220 | 7.5 | V | 30/15 | FR15 | Mineral wool | |
| | 100 - 220 | 7.5 | V | 30/30 | FR30 | Mineral wool | |
| SPB W (wall panel) | 100 - 220 | 7.5 | H | 120/120 | FR120 | Mineral wool | 1052b/03 |
| | 100 - 220 | 7.5 | H | 30/15 | FR15 | Mineral wool | |
| | 100 - 220 | 7.5 | H | 30/30 | FR30 | Mineral wool | |
| | 100 - 220 | 7.5 | H | 60/60 | FR60 | Mineral wool | |
| | 100 - 220 | 7.5 | H | 90/90 | FR90 | Mineral wool | |
| | 120 - 220 | 7.4 | H | 180/180 | FR180 | Mineral wool | |
| | 160 - 220 | 7.5 | H | 180/180 | FR180 | Mineral wool | |
| SPB WB (wall panel) | 100 - 220 | 7.5 | H | 120/120 | FR120 | Mineral wool | 1052b/04 |
| | 100 - 220 | 7.5 | H | 30/15 | FR15 | Mineral wool | |
| | 100 - 220 | 7.5 | H | 30/15 | FR30 | Mineral wool | |
| | 100 - 220 | 7.5 | H | 60/60 | FR60 | Mineral wool | |
| | 100 - 220 | 7.5 | H | 90/90 | FR90 | Mineral wool | |
| | 120 - 220 | 7.4 | H | 180/180 | FR180 | Mineral wool | |
| | 160 - 220 | 7.5 | H | 180/180 | FR180 | Mineral wool | |
| SPB WI (wall panel) | 100 - 140 | 7.5 | H | 120/120 | FR120 | Mineral wool | 1052b/05 |
| | 100 - 140 | 7.5 | H | 30/15 | FR15 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 30/30 | FR30 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 60/60 | FR60 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 90/90 | FR90 | Mineral wool | |
| | 120 - 220 | 7.4 | H | 180/180 | FR180 | Mineral wool | |
| SPB WIB (wall panel) | 100 - 140 | 7.5 | H | 120/120 | FR120 | Mineral wool | 1052b/06 |
| | 100 - 140 | 7.5 | H | 30/15 | FR15 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 30/30 | FR30 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 60/60 | FR60 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 90/90 | FR90 | Mineral wool | |
| | 120 - 220 | 7.4 | H | 180/180 | FR180 | Mineral wool | |
| SPB WE (wall panel) | 100 - 220 | 7.5 | H | 120/120 | FR120 | Mineral wool | 1052b/07 |

PART 1: SECTION 2.2

LPS 1208 COMPOSITE CONSTRUCTION ELEMENTS

| Product Name | Specification Thickness (mm) | Max Unsupported Span (m) | Wall panel orientation (H/V) (note 1) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|-----------------------|------------------------------|--------------------------|---------------------------------------|--|-------|---------------|---------------|
| SPB WEB (wall panel) | 100 - 220 | 7.5 | H | 30/30 | FR30 | Mineral wool | 1052b/08 |
| | 100 - 220 | 7.5 | H | 90/90 | FR90 | Mineral wool | |
| | 100 - 220 | 7.5 | H/V | 60/60 | FR60 | Mineral wool | |
| | 120 - 220 | 7.4 | H | 180/180 | FR180 | Mineral wool | |
| | 100 - 220 | 7.5 | H | 120/120 | FR120 | Mineral wool | |
| | 100 - 220 | 7.5 | H | 30/30 | FR30 | Mineral wool | |
| | 100 - 220 | 7.5 | H | 60/60 | FR60 | Mineral wool | |
| SPB WEI (wall panel) | 100 - 220 | 7.5 | H | 90/90 | FR90 | Mineral wool | 1052b/09 |
| | 120 - 220 | 7.4 | H | 180/180 | FR180 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 120/120 | FR120 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 30/30 | FR30 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 60/60 | FR60 | Mineral wool | |
| SPB WEIB (wall panel) | 100 - 140 | 7.5 | H | 90/90 | FR90 | Mineral wool | 1052b/10 |
| | 120 - 220 | 7.4 | H | 180/180 | FR180 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 120/120 | FR120 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 30/30 | FR30 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 60/60 | FR60 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 90/90 | FR90 | Mineral wool | |
| | 100 - 140 | 7.5 | H | 60/60 | FR60 | Mineral wool | |
| | 120 - 220 | 7.4 | H | 180/180 | FR180 | Mineral wool | |

Note:

1. Wall panel orientation, Horizontal or Vertical (H/V), relates to the long joint orientation.
2. LPCB Ref No. 1052b/02, 03, 04, 05, 06, 07, 08, 09 & /10 a bond of sealant Butylene-X or EPDM gaskets (Black or Green) is applied to the joint prior to installation.
3. LPCB Ref. No 1052b/01 a bead of sealant Sikalastomer 710 (or equivalent) is applied to the joint prior to installation.

Certificate No: 1052b to LPS 1208

| Product Name | Specification Thickness (mm) | Max Unsupported Span (m) | Load bearing capacity under test conditions (kN/m ²) | Fire Resistance (min) Integrity / Insulation | Grade | Core Material | LPCB Ref. No. |
|--------------------|------------------------------|--------------------------|--|--|-------|---------------|---------------|
| SPC W (roof panel) | 140/100 240/200 | 2.0 | 0.31 | 182/70 | FR60 | Mineral wool | 1052b/11 |

PART 1: SECTION 2.2

LPS 1208 COMPOSITE CONSTRUCTION ELEMENTS

Specialist Panels UK Limited

Bolam Business Park, Bassington Drive, Bassington Industrial Estate, Cramlington, Northumberland NE23 8AD, United Kingdom

Tel: +44(0) 1670 739116 • Fax: +44(0) 1670 732955

E-mail: isowall@btinternet.com • Website: www.isowall.org.uk

Certificate No: 957a to LPS1208: Issue 2

| Product Name | Specification Thickness | Max Unsupported span (m) | Wall panel orientation (h/V) (note 1) | Fire Resistance(min) integrity/insulation Span (m) | Grade | Core Material | LPCB Ref. No. |
|----------------------|-------------------------|--------------------------|---------------------------------------|--|-------|---------------|---------------|
| Isowall (wall panel) | 100 | 7.5 | V | 30 / 30 | FR30 | Mineral Wool | 957a/01 |
| | 100 | 4.9 | V | 60 / 60 | FR60 | Mineral Wool | |
| | 100 | 4.0 | V | 90 / 90 | FR90 | Mineral Wool | |
| | 125 | 7.5 | V | 30 / 30 | FR30 | Mineral Wool | |
| | 125 | 4.9 | V | 60 / 60 | FR60 | Mineral Wool | |
| | 125 | 4.0 | V | 90 / 90 | FR90 | Mineral Wool | |
| | 150 | 7.5 | V | 30 / 30 | FR30 | Mineral Wool | |
| | 150 | 7.5 | V | 60 / 60 | FR60 | Mineral Wool | |
| | 150 | 6.9 | V | 90 / 90 | FR90 | Mineral Wool | |
| | 150 | 5.2 | V | 120 / 120 | FR120 | Mineral Wool | |
| | 150 | 3.0 | V | 265 / 208 | FR180 | Mineral Wool | |

Note:

1. Wall panel orientation, Horizontal or Vertical (H/V) relates to the long joint orientation.

Trimo d.o.o.

Prijateljjeva cesta 12, 8210 Trebnje, Slovenia

Tel: 00386 73460200 • Fax: 0038 673460127

E-mail: robert.ajdic@trimo-group.com • Website: www.trimo-group.com

Certificate No: 650a to LPS 1208: Issue 2

| Product Name | LPCB Ref. No. |
|------------------------|---------------|
| FTV (wall pael) | 650a/01 |
| FTV-H (wall panel) | 650a/02 |
| SNV (roof panel) | 650a/03 |
| FTV-HL (wall panel) | 650a/04 |
| Qbiss One (wall panel) | 650a/05 |
| FTV (ceiling panel) | 650a/06 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 2.3

LPS 1581 EXTERNAL CLADDING SYSTEMS ON A MASONRY SUBSTRATE

LPS 1581 *Requirements and tests for LPCB approval of non-load bearing External Thermal Insulated Cladding Systems with rendered finishes (ETICS) or Rain Screen Cladding systems (RSC) applied to the masonry face of a building.*

PART 1: SECTION 2.3.1

LPS 1581 EXTERNAL THERMAL INSULATED CLADDING (ETICS) ON MASONRY SUBSTRATES

LPS 1581 *Requirements and tests for LPCB approval of non-load bearing External Thermal Insulated Cladding Systems with rendered finishes (ETICS) or Rain Screen Cladding systems (RSC) applied to the masonry face of a building*

The test method used is BS 8414-1:2002 *Test method for non-load bearing external cladding systems applied to the face of the building* and is representative of an external fire source or fully developed (post-flashover) fire in a room venting through an opening such as a window aperture that exposes the external surfaces of the cladding system to the effects of the impinging flames. The test method determines external and potential internal (within the ETICS system) fire spread and, where a void exists, the extent of fire spread through the void.

External Thermal Insulated Composite Systems (ETICS) are systems which are applied to a masonry or concrete leaf, typically comprising of a number of layers including an insulation layer, a reinforcing mesh and external render or pre-formed slips or similar finish.

Dryvit UK Limited

Unit 4, Wren Park, Hitchin Road, Shefford, Bedfordshire SG17 5JD, United Kingdom

Tel: +44 (0)1462 819555 • Fax: +44 (0)1462 819556

E-mail: ukenquiries@dryvit.com • Website: www.dryvit.co.uk

Certificate No: 784a to LPS 1581: Issue 2

| Product Name | External layer detail | Insulation material type & thickness | Cavity type and maximum depth | Firebreak detail | EN 13501-1 Classification | LPCB Ref. No. |
|--------------------------------|------------------------------|--|--------------------------------------|-------------------------|----------------------------------|----------------------|
| Roxsulation S | See Note 1 & 3 | Mineral wool, thickness range 40-200mm See Note 4 | No cavity | Continuous | No Performance Determined | 784a/01 |
| Outsulation & Outsulation Plus | See Note 1 & 5 | EPS, thickness 50-250mm See Note 6 | No cavity | See Note 7 | B-s2-d0 See Note 1 | 784a/02 |

Notes:

General.

1. LPCB Ref. No. 784a/01 & 784a/02 - Approved systems consist of Dryvit Genesis base coat, Dryvit Standard Plus reinforcing mesh, with or without Dryvit primer and a Dryvit Quarzputz PMRB, Sandpebble PMRB or Sandpebble Fine PMRB top coat, natural or tinted with a Qpcs value of up to 2.95MJ/kg.
LPCB Ref. No. 784a/02 The stated EN 13501-1 classification is applicable to systems with a PMRB top coat, natural or tinted with a Qpcs value up to 2.63MJ/kg only.
2. Subject to the stated conditions the Roxsulation S system (LPCB Ref. No 784a/01) shall be installed in accordance with the application detail contained within Dryvit document DUK628 (June 2008). Outsulation & Outsulation Plus systems (LPCB Ref. No. 784a/02) shall be installed in accordance with the application detail contained within Dryvit documents DUK204 (21/01/08) and DUK218 (V1 21-2-07) respectively.

Roxsulation S - LPCB Ref. No 784a/01

3. The system is approved with or without horizontal expansion joints in the render and insulation layer.
4. The insulation boards are adhesively and mechanically fixed to the substrate with Dryvit Genesis adhesive, ribbon and dab method with a minimum of 8 dabs per full size board, and a minimum of 3 mechanical fixings per board.

Outsulation & Outsulation Plus - LPCB Ref. No 784a/02

5. The system is approved with or without horizontal expansion joints in the render and insulation layer.
6. Dryvit EPS insulation boards adhered to the substrate with Dryvit Genesis adhesive.
7. Minimum 100mm high continuous horizontal lamella fire breaks shall be affixed direct to the substrate with continuous band of Dryvit Genesis adhesive. The fire breaks shall be positioned at a maximum of 870mm above openings and a maximum of 3100mm centres between consecutive breaks.

Rockwool Limited

Wern Tarw, Pencoed, Bridgend, Mid Glamorgan CF35 6NY, United Kingdom

Tel: +44 (0)1656 862621 • Fax: +44 (0)1656 862302

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

Certificate No: 022h to LPS 1581: Issue 1

| Product Name | External layer detail | Insulation material type & thickness (mm) | Cavity type & maximum depth (mm) | Firebrake detail | EN 13501-1 Classification | LPCB Ref. No. |
|---------------------|-----------------------|---|----------------------------------|------------------|---------------------------|---------------|
| Rockwool RockShield | See Note 1 | Rockwool thickness range 30-150mm See note 2 | N/A | Continuous | No Performance Determined | 022h/01 |

Notes:

1. LPCB Ref. No. 022h/01 - Rockwool RockShield base coat with universal reinforcing mesh with a white Rockwool RockShield Silcoplast topcoat.
2. LPCB Ref. No. 022h/02 - Rockwool RockShield insulation boards of nominally 1200mm x 600mm fixed to the masonry substrate using 4-5mm layer of Rockwool RockShield adhesive mortar, and then mechanically fixed using TI anchors fixed at a rate of 5.56per m²

PART 1: SECTION 2.3.2

LPS 1581 RAIN SCREEN CLADDING SYSTEMS (RSC) ON MASONRY SUBSTRATES

LPS 1581 *Requirements and tests for LPCB approval of non-load bearing External Thermal Insulated Cladding Systems with rendered finishes (ETICS) or Rain Screen Cladding systems (RSC) applied to the masonry face of a building*

The test method used is BS 8414-1:2002 *Test method for non-load bearing external cladding systems applied to the face of the building* and is representative of an external fire source or fully developed (post-flashover) fire in a room venting through an opening such as a window aperture that exposes the external surfaces of the cladding system to the effects of the impinging flames. The test method determines external and potential internal fire spread and, where a void exists, the extent of fire spread through the void.

Rain Screen Cladding (RSC) systems are often used for the refurbishment of existing buildings where the insulation component is typically fixed to the original masonry face of the building. The external face of the cladding system is fixed to a supporting rail, so that the external face is spaced away from the insulation layer to form a cavity which may be drained.

Sotech Limited

2 Traynor Way, Whitehouse Business Park, Peterlee, County Durham SR8 2RU, United Kingdom

Tel: +44 (0)191 587 2287 • Fax: +44 (0)191 518 0703

E-mail: mail@sotech-optima.co.uk • Website: www.sotech-optima.co.uk

Certificate No: 770a to LPS 1581: Issue 2

| Product Name | External layer detail | Insulation material type & thickness (mm) | Cavity type and maximum depth (mm) | Firebreak detail | EN 13501-1 Classification | LPCB Ref. No. |
|---------------------------------|-------------------------------|--|--|-------------------------|----------------------------------|----------------------|
| Sotech Optima Rainscreen System | Aluminium cassette See Note 1 | 75mm mineral fibre. See Note 2 | Cavity of maximum 200mm depth between rear of cassette system and face of insulation | See Note 3 | No Performance Determined | 770a/04 |

Notes:

1. LPCB Ref. No. 770a/04 - Sotech Optima Rainscreen cassette system consists of aluminium cassette panels precoated with pvdf to the following scope;

| Cassette Panel Material | Cassette Height (mm) | Max. Single Span* (mm) |
|-------------------------|----------------------|------------------------|
| Aluminium 1.5mm | 500 | 1500 |
| | 600 | 1500 |
| | 750 | 1500 |
| | 900 | 1350 |
| | 1100 | 1200 |
| Aluminium 2.0mm | 500 | 1800 |
| | 600 | 1800 |
| | 750 | 1800 |
| | 900 | 1500 |
| | 1100 | 1200 |
| Aluminium 3.0mm | 500 | 1800 |
| | 600 | 1800 |
| | 750 | 1800 |
| | 900 | 1600 |

* Multiple spans are allowable provided that the intermediate supports are installed at centres not exceeding the maximum single span distances.

2. LPCB Ref. No. 770a/04 - Insulation consists of Rainscreen Duo-slab Mineral fibre, 75mm thick and affixed through the sheathing board to the SFS with a minimum of one central stainless steel Ejoyt TID anchor (or similar specification) per slab plus one Ejoyt DH plastic anchor (or similar specification) at each slab end butt joint.

PART 1: SECTION 2.3.2

LPS 1581 RAIN SCREEN CLADDING SYSTEMS (RSC) ON MASONRY SUBSTRATES

3. LPCB Ref. No. 770a/04 - fire breaks consist of a lamella/intumescent strip system located at a maximum height intervals of 2.5m.

PART 1: SECTION 2.4

LPS 1582 EXTERNAL CLADDING SYSTEMS SUPPORTED BY A STRUCTURAL STEEL FRAME

LPS 1582 Requirements and tests for LPCB approval of non-load bearing external cladding systems fixed to and supported by a structural steel frame.

PART 1: SECTION 2.4.1

LPS 1582 EXTERNAL THERMAL INSULATED CLADDING (ETICS) SUPPORTED BY A STRUCTURAL STEEL FRAME

LPS 1582 *Requirements and tests for LPCB approval of non-load bearing external cladding systems fixed to and supported by a structural steel frame.*

This standard is applicable to non-load bearing external cladding systems, such as curtain walling, glazed elements, infill panels and insulated composite panel systems fixed to and supported by a structural steel frame.

The test method used is BS 8414-2: 2005 *Test method for non-load bearing external cladding systems fixed to and supported by a structural steel frame*, and is intended to represent the action of a fully developed (post flashover) fire in a room venting through an opening such as a window aperture, or an external fire source that exposes the external surfaces of the cladding system to the effects of the impinging flames. The test method determines external and potential internal and fire spread and, where a void exists, the extent of fire spread through the void.

Dryvit UK Limited

Unit 4, Wren Park, Hitchin Road, Shefford, Bedfordshire SG17 5JD, United Kingdom

Tel: +44 (0)1462 819555 • Fax: +44 (0)1462 819556

E-mail: ukenquiries@dryvit.com • Website: www.dryvit.co.uk

Certificate No: 784b to LPS 1582 Issue 1

| Product Name | External layer detail | Insulation material type & thickness | Frame type & sheathing board | Cavity type and maximum depth | Firebreak detail | EN 13501-1 Classification | LPCB Ref. No. |
|--------------------------------|-----------------------|--|------------------------------|--|------------------|---------------------------|---------------|
| Outsulation & Outsulation Plus | See Note 1 & 4 | EPS Thickness range 50-250mm See Note 5 | See Note 2 | No cavity | See Note 6 | B-s2-d0 See Note 1 | 784b/01 |
| Outsulation Rail | See Note 1 & 7 | EPS Thickness range 50-250mm See Note 8 | See Note 2 | Drainage cavity of maximum 15mm depth between sheathing board and fire break | See Note 9 | B-s2-d0 See Note 1 | 784b/02 |

Notes:

General.

- LPCB Ref. No. 784b/01 & 784b/02 - Approved systems consist of Dryvit Genesis base coat, Dryvit Standard Plus reinforcing mesh, with or without Dryvit primer and a Dryvit Quarzputz PMRB, Sandpebble PMRB or Sandpebble Fine PMRB top coat, natural or tinted with a Qpcs value of up to 2.95MJ/kg.
The stated EN 13501-1 classification is applicable to systems with a PMRB top coat, natural or tinted with a Qpcs value up to 2.63MJ/kg only.
- LPCB Ref. No. 784b/01 & 784b/02 - Any galvanised steel frame system, installed between floor slabs, confirmed by structural assessment to maintain the structural stability of the wall system in ambient conditions, and is suitable for the fire performance of the wall when exposed to fire within the building. The studs must have a minimum leg length of 45mm and be spaced at a maximum of 600mm centres (the stud size as tested was 100mm x 45mm x 1.2mm). The frame shall be clad with any sheathing board system suitable for the application on the external (cladding) face of the following generic types:- cement particle board (min. 12mm thick), cement-based calcium silicate board (min. 9mm thick), calcium silicate board (min. 9mm thick) or magnesium oxide board (min. 9mm thick). The system is approved with or without mineral wool insulation within the steel frame stud cavity. The internal face frame shall be clad with any type of gypsum wallboard that ensures that the required reaction-to-fire and fire resistance performance is provided when the wall is exposed to fire within the building.
- Subject to the stated conditions the Outsulation & Outsulation Plus systems (LPCB Ref. No. 784b/01) shall be installed in accordance with the application detail contained within Dryvit documents DUK204 (21/01/08) and DUK218 (V1 21-2-07) respectively. The Outsulation Rail system (LPCB Ref. No. 784b/02) shall be installed in accordance with the application detail contained within Dryvit document DUK664 (21-08-07).

Outsulation & Outsulation Plus - LPCB Ref. No 784b/01

- The system is approved with or without horizontal expansion joints in the render and insulation layer.

PART 1: SECTION 2.4.1

LPS 1582 EXTERNAL THERMAL INSULATED CLADDING (ETICS) SUPPORTED BY A STRUCTURAL STEEL FRAME

5. Dryvit EPS insulation boards adhered to the sheathing board with Dryvit Genesis adhesive.
6. Minimum 100mm high continuous horizontal lamella fire breaks shall be affixed direct to the sheathing board with continuous band of Dryvit Genesis adhesive. The fire breaks shall be positioned at a maximum of 870mm above openings and a maximum of 3100mm centres between consecutive breaks.

Outsulation Rail - LPCB Ref. No 784b/02

7. The system is approved with or without horizontal expansion joints in the render and insulation layer.
8. Dryvit EPS insulation boards fixed to a mechanical PVC 'T' spline railing system. The rails are fixed to the sheathing board using packing shims of up to 15mm thick at 300mm centres with suitable fixings to form the drainage cavity.
9. The cavity fire break system and continuous horizontal lamella fire breaks shall be positioned a maximum of 800mm above openings, subsequent fire breaks shall be positioned at each floor slab at a maximum spacing of 3100mm centres.

PART 1: SECTION 2.4.2

LPS 1582 RAIN SCREEN CLADDING SYSTEM (RSC) SUPPORTED BY A STRUCTURAL STEEL FRAME

LPS 1582 Requirements and tests for LPCB approval of non-load bearing external cladding systems fixed to and supported by a structural steel frame.

This standard is applicable to non-load bearing external rain screen cladding systems fixed to and supported by a structural steel frame.

The test method used is BS 8414-2: 2005 *Test method for non-load bearing external cladding systems fixed to and supported by a structural steel frame*, and is intended to represent the action of a fully developed (post flashover) fire in a room venting through an opening such as a window aperture, or an external fire source that exposes the external surfaces of the cladding system to the effects of the impinging flames. The test method determines external and potential internal and fire spread and, where a void exists, the extent of fire spread through the void.

Sotech Limited

2 Traynor Way, Whitehouse Business Park, Peterlee, County Durham SR8 2RU, United Kingdom

Tel: +44 (0)191 587 2287 • Fax: +44 (0)191 518 0703

E-mail: mail@sotech-optima.co.uk • Website: www.sotech-optima.co.uk

Certificate No: 770b to LPS 1582 Issue 1.0

| Product Name | External layer detail | Insulation material type & thickness | Frame type & boarding | Cavity type and maximum depth (mm) | Firebreak detail | EN 13501-1 Classification | LPCB Ref. No. |
|---------------------------------|-------------------------------|--------------------------------------|-----------------------|--|------------------|---------------------------|---------------|
| Sotech Optima Rainscreen System | Aluminium cassette see Note 1 | 100mm mineral fibre see Note 2 | See Note 3 | Cavity of maximum 120mm depth between rear of cassette system and face of insulation | See Note 4 | No Performance Determined | 770b/01 |

Notes:

1. LPCB Ref. No. 770b/01 - Sotech Optima Rainscreen cassette system consists of aluminium cassette panels pre-coated with pvdf to the following scope;

| Cassette Panel Material | Cassette Height (mm) | Maximum Single Span*(mm) |
|-------------------------|----------------------|--------------------------|
| Aluminium 1.5mm | 500 | 1500 |
| | 600 | 1500 |
| | 750 | 1500 |
| | 900 | 1350 |
| | 1100 | 1200 |
| Aluminium 2.0mm | 500 | 1800 |
| | 600 | 1800 |
| | 750 | 1800 |
| | 900 | 1500 |
| | 1100 | 1200 |
| Aluminium 3.0mm | 500 | 1800 |
| | 600 | 1800 |
| | 750 | 1800 |
| | 900 | 1600 |

*Multiple spans are allowable provided that the intermediate supports are installed at centres not exceeding the maximum single span distances.

2. LPCB Ref. No. 770b/01 – Insulation consists of Rainscreen Duo-slab Mineral fibre, 100mm thick and affixed through the sheathing board to the SFS with a minimum of one fixing (Ejot 80 SS disc washer T1D-TR2 secured with JT3-D6H screw 5.5-6.3x147 and HTV-4055 washer) per slab.
3. LPCB Ref. No. 770b/01 – Frame system consists of METSEC SFS 150mm lightweight steel frame stud and track sections installed between floor slabs. External sheathing board; minimum of single layer 12mm Versapanel fixed at 600mm centres. Internal liner; minimum of two layers 12.5mm British Gypsum Gyproc Fireline boards, staggered lay and fixed at 600mm centres. The cavity within the SFS is unfilled.
4. LPCB Ref. No. 770b/01 - Fire breaks consist of a horizontal lamella/intumescent strip system located at a maximum height intervals of 2.5m.

PART 1: SECTION 2.5

ROOFING PRODUCTS

The products listed in this section are used as roofing systems where there is a risk of fire as follows;

Section 2.5.1 - Protection against fire from outside the building.

Section 2.5.2 - Protection against fire from inside the building.

The products listed in this section are used as roofing systems that offer protection where there is a risk of fire from outside of the building. The products have been tested against either BS 476:Part 3 *Fire tests on building materials & structures - external fire exposure roof test* or ENV 1187:2002 *Test methods for external fire exposure to roofs*, in order to ensure that roof covering and its supporting deck act as a protective barrier against fire from the outside of a building. It should be noted that BS 476: Part 3:1958 has been withdrawn, but is still referred to in Approved Document B of the UK Building Regulations. ENV 1187:2002 has been issued as a Draft for Development publication and is of a provisional nature as agreement could not be reached on the publication of an EN.

Work is currently being undertaken to develop a Loss Prevention Standard for this product group.

Icopal Limited

Barton Dock Road, Stretford, Manchester M32 0YL, United Kingdom

Tel: +44 (0)161 865 4444 • Fax: +44 (0)161 865 8433

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

Certificate No: 572a to BS 476: Part 3: 1958

Firesmart

| Product Name | Category | LPCB Ref. No. |
|------------------------------|----------|---------------|
| Firesmart Power system | EXT.F.AA | 572a/03 |
| Firesmart Tecnotorch system | EXT.F.AA | 572a/05 |
| Firesmart Profiles XL system | EXT.F.AA | 572a/07 |
| Firesmart Thermaweld | EXT.F.AA | 572a/09 |

Notes:

1. The categories specified are applicable only to roofs having a pitch of 10 degrees or less.
2. All products were tested using a 19mm exterior grade plywood deck.

Certificate No: 572b to ENV 1187: 2002 Test 1

ENV 1187: 2002 Test 1

| Product Name | Category | LPCB Ref. No. |
|------------------------------|----------|---------------|
| Firesmart Power system | EXT.F.AA | 572b/03 |
| Firesmart Tecnotorch system | EXT.F.AA | 572b/05 |
| Firesmart Profiles XL system | EXT.F.AA | 572b/07 |
| Firesmart Thermaweld | EXT.F.AA | 572b/09 |

Notes:

1. The certification applies to roofs with a pitch of 20 degrees or less.
2. The certification for, 572b/03, 572b/07 and 572b/09 covers the systems when applied to any wooden continuous deck with a minimum thickness of 16mm, and with gaps not exceeding 0.5mm and any non-combustible continuous deck with a minimum thickness of 10mm.
3. The certification for 572b/05 covers the systems when applied to a 19mm thick exterior grade plywood deck only.
4. The performance of the systems is detailed in the following tables.

PART 1: SECTION 2.5.1

PROTECTION AGAINST FIRE FROM OUTSIDE THE BUILDING

| Specimen | | Firesmart Power | | | | Firesmart Torch | | | | Firesmart Profiles XL | | | |
|--|---------------------------------|-----------------|-----|-------|-------|-----------------|-----|-------|-------|-----------------------|-----|-----|-----|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| External fire spread | | | | | | | | | | | | | |
| Time taken to travel (in an upwards direction from upper edge of the brand) (min:sec) | 10m | - | - | - | - | - | - | - | - | - | - | - | - |
| | 30cm | - | - | - | - | - | - | - | - | - | - | - | - |
| | 50cm | - | - | - | - | - | - | - | - | - | - | - | - |
| | 70cm | - | - | - | - | - | - | - | - | - | - | - | - |
| | to upper edge of measuring zone | - | - | - | - | - | - | - | - | - | - | - | - |
| Time taken to travel (in a downwards direction from lower edge of the brand) (min:sec) | 10m | 03:29 | - | 02:33 | 02:19 | 02:59 | - | 02:57 | 02:06 | - | - | - | - |
| | 30cm | - | - | - | - | - | - | - | - | - | - | - | - |
| | 50cm | - | - | - | - | - | - | - | - | - | - | - | - |
| | to lower edge of measuring zone | - | - | - | - | - | - | - | - | - | - | - | - |
| Falling flaming material from surface of roof | | | | | | | | | | | | | |
| Time of occurrence (min:sec) | | - | - | - | - | - | - | - | - | - | - | - | - |
| Length of time burning on floor (min:sec) | | - | - | - | - | - | - | - | - | - | - | - | - |
| Burnt length (external) | | | | | | | | | | | | | |
| Upwards (cm) | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Downwards (cm) | | 9 | 5 | 21 | 11 | 12 | 5 | 13 | 14 | 6 | 7 | 6 | 7 |
| Damaged area (cm ²) | | 548 | 698 | 554 | 557 | 650 | 697 | 576 | 647 | 645 | 594 | 601 | 557 |

| Specimen | | Firesmart Power | | | | Firesmart Torch | | | | Firesmart Profiles XL | | | |
|---|---|-----------------|---|---|---|-----------------|---|---|---|-----------------------|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Fire penetration | | | | | | | | | | | | | |
| Falling flaming material from underside | Time of occurrence (min:sec) | - | - | - | - | - | - | - | - | - | - | - | - |
| | Length of time burning on floor (min:sec) | - | - | - | - | - | - | - | - | - | - | - | - |
| Openings | Time of occurrence (min:sec) | - | - | - | - | - | - | - | - | - | - | - | - |
| | Nature | - | - | - | - | - | - | - | - | - | - | - | - |
| | Maximum area of a single opening (cm ²) Sum of area of all openings (cm ²) | - | - | - | - | - | - | - | - | - | - | - | - |
| Fire penetration | Time of occurrence (min:sec) | - | - | - | - | - | - | - | - | - | - | - | - |
| | Nature | - | - | - | - | - | - | - | - | - | - | - | - |

PART 1: SECTION 2.5.1

PROTECTION AGAINST FIRE FROM OUTSIDE THE BUILDING

| | | Firesmart Power | | | | Firesmart Tecnatorch | | | | Firesmart Profiles XL | | | |
|---|-----------|----------------------|----|----|----|----------------------|----|----|----|-----------------------|----|----|----|
| | | Firesmart Thermaweld | | | | | | | | | | | |
| Specimen | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Internal damage | | | | | | | | | | | | | |
| Non-flaming propagation | Nature | - | - | - | - | - | - | - | - | - | - | - | - |
| Extent of internal damage (m ²) | Upwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Downwards | 9 | 5 | 21 | 11 | 12 | 5 | 13 | 14 | 6 | 7 | 6 | 7 |
| Maximum length of burnt material in each functional layer (m ²) | Layer 1 | | | | | | | | | | | | |
| | Upwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Downwards | 9 | 5 | 21 | 11 | 12 | 5 | 13 | 14 | 6 | 7 | 6 | 7 |
| | Layer 2 | | | | | | | | | | | | |
| | Upwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Downwards | 9 | 5 | 21 | 11 | 12 | 5 | 13 | 14 | 6 | 7 | 6 | 7 |
| | Layer 3 | | | | | | | | | | | | |
| | Upwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Downwards | 9 | 5 | 21 | 11 | 12 | 5 | 13 | 14 | 0 | 0 | 0 | 0 | |
| Layer 4 | | | | | | | | | | | | | |
| Upwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NA | NA | NA | NA |
| Downwards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NA | NA | NA | NA |

| | | Firesmart Power | | | | Firesmart Tecnatorch | | | | Firesmart Profiles XL | | | |
|---|---------|----------------------|-----|-----|-----|----------------------|-----|-----|-----|-----------------------|-----|-----|-----|
| | | Firesmart Thermaweld | | | | | | | | | | | |
| Damaged area of each functional layer (m ²) | Layer 1 | 548 | 698 | 554 | 587 | 650 | 697 | 576 | 647 | 645 | 574 | 601 | 587 |
| | Layer 2 | 548 | 698 | 554 | 587 | 650 | 697 | 576 | 647 | 645 | 574 | 601 | 587 |
| | Layer 3 | 548 | 698 | 554 | 587 | 650 | 697 | 576 | 647 | 98 | 288 | 82 | 159 |
| | Layer 4 | 200 | 181 | 246 | 210 | 212 | 70 | 276 | 481 | N/A | N/A | N/A | N/A |
| Extent of lateral flame spread | | | | | | | | | | | | | |
| External (cm) | | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Internal (cm) | | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil | Nil |

IKO PLC

Appley Lane North, Appley Bridge, Wigan, Lancashire WN6 9AB, United Kingdom

Tel: +44 (0)844 412 7207 • Fax: +44 (0)844 412 7208

E-mail: technical@ikogroup.co.uk • Website: www.ikogroup.co.uk

Certificate No: 626a to BS 476: Part 3: 1958

Roofing Products

| Product Name | Category | LPCB Ref. No. |
|---|----------|---------------|
| Coolbond FireBLOC System | EXT.F.AA | 626a/01 |
| Superflex FireBLOC system | EXT.F.AA | 626a/06 |
| Superflex FireBLOC T-O system | EXT.F.AA | 626a/07 |
| Ultra prevENT system | EXT.F.AA | 626a/08 |
| Ultra prevENT T-O system | EXT.F.AA | 626a/10 |
| Goldseal FR Roofing System | EXT.F.AA | 626a/11 |
| Goldseal Torch On Roofing System | EXT.F.AA | 626a/12 |
| Mach One Single Layer (Cold Adhered) Roofing System | EXT.F.AA | 626a/14 |
| Mach One Single Layer (Mechanically Fixed) Roofing System | EXT.F.AA | 626a-13 |

Notes:

PART 1: SECTION 2.5.1

PROTECTION AGAINST FIRE FROM OUTSIDE THE BUILDING

1. All systems specified are applicable only to roofs having a pitch of 10 degrees or less.
2. All systems specified were tested applied to an 18mm exterior grade plywood deck.
3. The supporting substrate may be reinforced (cast insitu) concrete 200mm or pre cast concrete slabs, (screeded), 50-100 mm screeded Woodwool slabs, profiled metal decking or 20mm timber boards.
4. Systems LPCB Ref. No. 626a/07 Superflex FireBLOC T-O consist of any IKO VCL, Insulation layers Supertherm Universal (53-103mm), or Supertherm PIR (50-100mm), or SuperRock standard (100-160mm) and IKO Systems T-O underlay.
5. Systems LPCB Ref. No. 626a/06 Superflex FireBLOC consist of any Superbar FireBLOC VCL, Insulation layers Supertherm Universal (53-103mm), or Enertherm PIR (50-100mm), or SuperRock standard (100-160mm) and Superbase FireBLOC underlay.
6. Systems LPCB Ref. No. 626a/08 Ultra prevENT consist of any IKO Systems VCL, Insulation layers Supertherm Universal (53-103mm), or Enertherm PIR (50-100mm), or SuperRock standard (100-160mm) and UltraprevENT underlay.
7. Systems LPCB Ref. No. 626a/10 Ultra prevENT T-O consist of any Superbar FireBLOC VCL, Insulation layers Supertherm Universal (53-103mm), or Supertherm PIR (50-100mm), or SuperRock standard (100-160mm) and Ultra prevENT T-O underlay.
8. The requirements for BS476: Part 3: 1958 will cease when the UK Building Regulations cease to refer to it.

Certificate No: 626b to DD ENV 1187: 2002 - Test Methods for External Fire Exposure to Roofs - Test 1

Roofing Products

| Product Name | LPCB Ref. No. |
|--------------------------|---------------|
| Coolbond FireBLOC system | 626b/01 |

Notes:

1. The certification applies to roofs with a pitch of 20 degrees or greater.
2. The certification covers the above systems when applied to a 18mm thick exterior grade plywood deck.
3. The performance of the systems is detailed in the following table.

| Specimen | | Coolbond FireBLOC system | | | |
|---|------------------------------------|--------------------------|------|------|-------|
| | | 1 | 2 | 3 | 4 |
| External fire spread | | | | | |
| Time taken to travel: (in an upwards direction from upper edge of the brand) (min:sec) | 10cm | – | – | 5:59 | – |
| | 30cm | – | – | – | – |
| | 50cm | – | – | – | – |
| | 70cm | – | – | – | – |
| | to upper edge of measuring zone | – | – | – | – |
| Time taken to travel: (in a downwards direction from lower edge of the brand) (min:sec) | 10cm | 1:56 | 1:25 | 1:49 | 1:54 |
| | 30cm | 2:30 | 2:17 | 2:28 | 5:05- |
| | 50cm | – | – | – | – |
| | to lower edge of measuring zone | – | – | – | – |
| Falling flaming material from surface | | | | | |
| Time of occurrence (min:sec) | | - | - | - | - |
| Length of time burning on floor (min: sec) | | - | - | - | - |
| Burnt length (external) | | | | | |
| Upwards (cm) | | 2 | 3 | 10 | 0 |
| Downwards (cm) | | 30 | 30 | 30 | 30 |
| Damaged area (cm ²) | | 700 | 600 | 700 | 800 |

PART 1: SECTION 2.5.1

PROTECTION AGAINST FIRE FROM OUTSIDE THE BUILDING

| Specimen | | Coolbond FireBLOC system | | | |
|--|---|--------------------------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| Fire penetration | | | | | |
| Falling flaming material from underside: | Time of occurrence (min:sec) | - | - | - | - |
| | Length of time burning on floor (min:sec) | - | - | - | - |
| Openings | Time of occurrence (min:sec) | - | - | - | - |
| | Nature | - | - | - | - |
| | Maximum area of a single opening (cm ²) | - | - | - | - |
| | Sum of area of all openings (cm ²) | - | - | - | - |
| Fire penetration | Time of occurrence (min:sec) | - | - | - | - |
| | Nature | - | - | - | - |

PART 1: SECTION 2.5.1

PROTECTION AGAINST FIRE FROM OUTSIDE THE BUILDING

| | | Coolbond FireBLOC system | | | |
|--|--------------------|--------------------------|-----|-----|-----|
| Specimen | | 1 | 2 | 3 | 4 |
| Internal damage | | | | | |
| Non-flaming | Nature | – | – | – | – |
| Extent of internal damage (cm) | Upwards | – | – | – | – |
| | Downwards | 19 | 18 | 28 | 27 |
| Maximum length of burnt material in each functional layer (cm) | Layer 1: Upwards | – | – | – | – |
| | Layer 1: Downwards | 19 | 18 | 28 | 27 |
| | Layer 2: Upwards | – | – | – | – |
| | Layer 2: Downwards | 8 | 18 | 16 | 27 |
| | Layer 3: Upwards | – | – | – | – |
| | Layer 3: Downwards | 8 | 5 | 5 | 16 |
| Damaged area of each functional layer (cm ²) | Layer 1 | 700 | 500 | 700 | 700 |
| | Layer 2 | 500 | 500 | 600 | 700 |
| | Layer 3 | 400 | 500 | 500 | 600 |
| Extent of lateral flame spread | | | | | |
| External (cm) | | Nil | Nil | Nil | Nil |
| Internal (cm) | | Nil | Nil | Nil | Nil |

Certificate No: 626c to DD ENV 1187: 2002 Test 2

Roofing Products

| Product Name | LPCB Ref. No. |
|--------------------------|---------------|
| Coolbond FireBLOC system | 626c/01 |

Notes:

- 1) The certification applies to roofs with any pitch.
- 2) The certification covers the above systems when applied to a 18mm thick exterior grade plywood deck.
- 3) The performance of the systems is detailed in the following tables.

626c/01 Coolbond FireBLOC system

| Specimen | 1 | 2 | 3 | 4 | 5 | 6 | Average |
|--|-------|-------|-------|-------|-------|-------|---------|
| Air velocity | 2 m/s | 2 m/s | 2 m/s | 4 m/s | 4 m/s | 4 m/s | N/A |
| Time at which specimen ignited (min:sec) | 00:54 | 00:51 | 00:50 | 00:48 | 00:38 | 00:41 | 00:47 |
| Time at which flaming of specimen ceased (min:sec) | 08:53 | 08:49 | 04:29 | 04:56 | 04:15 | 04:10 | 05:55 |
| Time at which glowing of specimen ceased (min:sec) | N/A | N/A | N/A | N/A | N/A | N/A | - |
| Test termination time (min:sec) | 15:00 | 15:00 | 15:00 | 15:00 | 15:00 | 15:00 | 15:00 |
| Reason for termination (if applicable) | N/A | N/A | N/A | N/A | N/A | N/A | - |
| Extent of damage to roof covering | 360 | 360 | 410 | 385 | 390 | 360 | 378 |
| Extent of damage to substrate (mm) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Damaged area of roof covering (mm ²) | 31000 | 31000 | 36000 | 34000 | 34500 | 32000 | 33084 |
| Damaged area of substrate (mm ²) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Maximum depth of damage (mm) | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

The products listed in this section are built-up roofing systems which offer protection against the risk of fire from within the building. The products have been tested to:

- BS 476:Part 21 *Fire tests on building materials & structures. Methods for determination of the fire resistance of loadbearing elements of construction*
- or
- BS 476:Part 22 *Fire tests on building materials & structures. Methods for determination of the fire resistance of non-loadbearing elements*
- or
- EN 1364:Part 2 *Fire resistance tests for non-loadbearing elements. Ceilings*
- or
- EN 1365:Part 2 *Fire resistance tests for loadbearing elements. Floors & roofs* and meet the requirements of LPS 1208 for fire resistance (For roof sandwich panels, see Section 2.2.)

Rockwool Limited

Wern Tarw, Pencoed, Bridgend, Mid Glamorgan CF35 6NY, United Kingdom

Tel: +44 (0)1656 862621 • Fax: +44 (0)1656 862302

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

Certificate No: 022a to BS 476: Part 21: Method 7 (see note 1)

| Product Name | Specification System Thickness (mm) (1) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Core Material | LPCB Ref. No. |
|--|---|---------------------------------|----------------------------------|---------------|---------------|
| Hardrock Dual Density Roofing Board System | 210 | 120 | 120 | Stone Wool | 022a/01 |
| | 100 - 135 | 60 | 60 | Stone Wool | |
| | 140 - 205 | 90 | 90 | Stone Wool | |
| Hardrock Dual Density SPA Roofing Board System | 210 | 120 | 120 | Stone Wool | 022a/02 |
| | 100 - 135 | 60 | 60 | Stone Wool | |
| | 140 - 205 | 90 | 90 | Stone Wool | |
| DuoRock Roofing Board System | 100 - 210 | 60 | 60 | Stone Wool | 022a/03 |
| Hardrock Multi-fix Dual Density Roofing Board System | 150 | 90 | 90 | Stone Wool | 022a/04 |
| | 210 | 120 | 120 | Stone Wool | |
| | 100 - 135 | 60 | 60 | Stone Wool | |
| | 140 - 205 | 90 | 120 | Stone Wool | |

Notes:

1. Roof board system LPCB Ref No. 022a/01, LPCB Ref No. 022a/03 & and LPCB Ref No. 022a/04 : Mechanically fastened Sarnafil single ply type S327 (1.2mm thickness), external weather proof membrane (or alternative membrane less than 3.5kg/m² e.g.. PVC, Chlorinated PE, Butyl Rubber with welded seams); Comprising of two layers of Rockwool roofing board with staggered joints (100mm minimum stagger for fire resistance up to 90 minutes and 300mm stagger for 2 hours fire resistance), vapour control layer and 0.7mm thickness 35mm deep profile steel metal deck.
2. Roof board system LPCB Ref No. 022a/02; Sarnafil single ply external weather proof membrane type G410 (1.2mm thickness), fully adhered to Hardrock Dual Density SPA Roofing Board System with Sarnafil Adhesive (or Rockwool approved alternative, adhesive/membrane combination, with a membrane material less than 3.5kg/m² e.g. PVC, Chlorinated PE, Butyl Rubber with welded seams); comprising of two layers of Rockwool roofing board with staggered joints (100mm minimum stagger for fire resistance up to 90 minutes and 300mm stagger for 2 hours fire resistance), vapour control layer and 0.7mm thickness 35mm deep profile steel metal deck.
3. The test construction was tested unloaded. However, deflection of the roof did not exceed the allowable limits set out in BS 476: Part 20: 1987 for loadbearing horizontal elements. Decking side laps were stitched at 450mm centres.

PART 1: SECTION 2.5.2

PROTECTION AGAINST FIRE FROM INSIDE THE BUILDING

4. Roof board System LPCB Ref 022a/01, 022a/02 & 022a/03 Hardrock Dual Density Roofing Board System, Hardrock Dual Density SPA Roofing Board System and DuoRock Roofing Board System are also available and approved in cut-to-fall tapered options, the relevant minimum & maximum and maximum system thickness and staggered joints shall apply as detailed above.
5. Hardrock Multi-fix Dual Density roof board system 022a/04 at a thickness of 150mm is unfaced and for the purpose of extending the thickness within the Multi-Fix system.

The materials and products listed in this section are LPCB approved and classified to one of the following Reaction to Fire (RTF) classification systems:

- Non-combustible to BS 476-4 Fire tests on building materials and structures. Non-combustibility test for materials.
- Class O as defined in Approved Document B - Fire Safety, The Building Regulations 2000.
- EN 13501-1 Fire classification of construction products and building elements. Classification using test data from reaction to fire tests. Note: LPCB approvals under this standard are limited to materials or products resulting in a classification of A1, A2 or B. Products under A2 or B will also be classified in relation to the additional classifications of s and d (eg s3, d2).

Rockwool Limited

Wern Tarw, Pen-coed, Bridgend, Mid Glamorgan CF35 6NY, United Kingdom

Tel: +44 (0)1656 862621 • Fax: +44 (0)1656 862302

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

Certificate No: 022e to SD 198 (Appendix B14) / EN 13501-1

Rockwool Non-combustible Insulation Materials

| Product Name | LPCB Ref. No. |
|---|----------------------|
| Cladding Roll - Aluminium foil faced | 022e/01 |
| Cladding Roll - Unfaced | |
| Cladding Roll - White tissue faced | |
| Cavity Batts - Unfaced | 022e/02 |
| Rainscreen Duo-slabs - Unfaced | 022e/03 |
| Ranscreen Duo-slabs - Black tissue faced | |
| Flaexi Batts - Unfaced | 022e/04 |
| Hardrock Dual Density Roofing Boards - Black tissue faced | 022e/05 |
| Hardrock Dual Density Roofing Boards - Unfaced | |
| Hardrock Dual Density Roofing Boards - White tissue faced | |
| DuoRock Roofing Boards - Black tissue faced | 022e/06 |
| DuoRock Roofing Boards - Unfaced | |
| DuoRock Roofing Boards - White tissue faced | |
| Rockwool Hardrock Dual Density Multi-Fix-Cream glass fibre tissue faced | 022e/07 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

The following products have been approved to LPS 1132 *Requirements and tests for LPCB approval of wall & floor penetration & linear gap seals* to help ensure fire resisting compartment walls and floors are not compromised by the installation of building services that pass between fire resisting compartments.

The design requirements for these products are described in more detail in Section 4.6 of the *LPC Design Guide for the Fire Protection of Buildings: 2000*.

DST Group Ltd

Design House, 2C Southgate, White Lund, Morecombe, Lancs LA3 3PB, United Kingdom

Tel: +44 (0)1524 389494 • Fax: +44 (0)1524 389495

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

Certificate No: 873a to LPS 1132: Issue 4.1

Fire Sleeve Pipe Wraps

| Product Name | Use | Element of construction | Element of construction thickness minimum (mm) | Fire resistance (min) Integrity | Fire resistance (min) Insulation | LPCB Ref. No. |
|------------------------|--|------------------------------|--|---------------------------------|----------------------------------|---------------|
| Fire Sleeve Pipe Wraps | uPVC Pipes up to 167mm diameter | Concrete, masonry or drywall | 130 | 120 | Not assessed | 873a/01 |
| | uPVC Pipes from 167mm to 225mm diameter | Concrete, masonry or drywall | 130 | 120 | Not assessed | |
| | ABS pipes up to 114mm diameter | Concrete, masonry or drywall | 130 | 120 | Not assessed | |
| | Polypropylene pipes up to 16mm diameter | Concrete, masonry or drywall | 130 | 120 | Not assessed | |
| | Polypropylene pipes from 16mm to 160mm diameter | Concrete, masonry or drywall | 130 | 90 | Not assessed | |
| | Polypropylene pipes from 160mm to 225mm diameter | Concrete, masonry or drywall | 130 | 60 | Not assessed | |
| | Polyethylene pipes up to 225mm diameter | Concrete, masonry or drywall | 130 | 120 | Not assessed | |
| | Steel pipes up to 220mm diameter | Concrete, masonry or drywall | 130 | 120 | Not assessed | |
| | Copper pipes up to 76mm diameter | Concrete, masonry or drywall | 130 | 120 | Not assessed | |

Notes:

1. The fire performance of the system will be dependent on the diameter and wall thickness of the pipe and installed location as detailed in the table above. The shell of the pipe wrap assembly shall be sealed in the element of construction by a bead of DST Group intumescent mastic/sealant with a minimum fire rating of 2 hours. Reference should be made to manufacturers' literature and BRE Global assessment report CC241402 Review 2 for further information

MCT Brattberg AB

SE 37192 Karlskrona, Sweden

Tel: +46 (0) 455 375200 • Fax: +46 (0) 455 375290

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

UK Office:

MCT Brattberg Ltd, Commerce Street, Carrs Industrial Estate, Haslingden BB4 5JT, United Kingdom

Tel: +44 (0)1706 244890 • Fax: +44 (0)1706 244891

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

Certificate No: 628a to LPS 1132: Issue 4

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Use | Element of Construction | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | LPCB Ref. No. |
|-------------------------------------|-------------|---------------------------|---------------------------------|----------------------------------|---------------|
| RGB 2, 4, 6, 8 & RGB 180, 240 & 360 | Cables | Concrete or masonry Floor | 240 | 120 | 628a/01 |
| | Steel pipes | Concrete or masonry Floor | 240 | 60 | |
| | Cables | Concrete or masonry Wall | 240 | 60 | |
| | Steel pipes | Concrete or masonry Wall | 240 | 60 | |
| RGO 2, 4, 6, 8 & RGO 180, 240 & 360 | Cables | Concrete or masonry Floor | 240 | 120 | 628a/02 |
| | Steel pipes | Concrete or masonry Floor | 240 | 60 | |
| | Cables | Concrete or masonry Wall | 240 | 60 | |
| | Steel pipes | Concrete or masonry Wall | 240 | 60 | |
| RGP 50, 70, 100, 150, 200 & 300 | Cables | Concrete or masonry Floor | 360 | 120 | 628a/03 |
| | Steel pipes | Concrete or masonry Floor | 240 | 60 | |
| | Cables | Concrete or masonry Wall | 360 | 120 | |
| | Steel pipes | Concrete or masonry Wall | 240 | 60 | |
| RGPO 50, 70, 100, 150, 200 & 300 | Cables | Concrete or masonry Floor | 360 | 120 | 628a/04 |
| | Steel pipes | Concrete or masonry Floor | 240 | 60 | |
| | Cables | Concrete or masonry Wall | 360 | 120 | |
| | Steel pipe | Concrete or masonry Wall | 240 | 60 | |

Note:

Please refer to manufacturer's product data for maximum aperture sizes and installation details.

Rockwool Limited

Wern Tarw, Pencoed, Bridgend, Mid Glamorgan CF35 6NY, United Kingdom

Tel: +44 (0)1656 862621 • Fax: +44 (0)1656 862302

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

Certificate No: 022b(4) to LPS 1132: Issue 4

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Maximum Joint Width (mm) | Configuration: Fire Side Depth of Sealant (mm) | Configuration: Backing Material | Configuration: Non-fire Side Depth of Sealant | Fire Resistance (mm) Integrity (E) | Fire Resistance (mm) Insulation (I) | LPCB Ref. No. |
|---------------------------------------|-------------------------------------|--|----------------------------------|--------------------------|--|---------------------------------|---|------------------------------------|-------------------------------------|---------------|
| FirePro™ Acoustic Intumescent Sealant | floor | 230 | AC/AC | 50 | 25 | Ethafoam Ø 50mm | | 155 | 105 | 022b/05 |
| | floor | 230 | Softwood/AC | 25 | 12 | Ethafoam Ø 30mm | | 51 | 44 | |
| | floor | 230 | Hardwood/AC | 50 | 25 | Ethafoam Ø 50mm | | 47 | 47 | |
| | floor | 230 | Steel/AC | 50 | 25 | Ethafoam Ø 50mm | | 72 | 62 | |
| | floor | 250 | AC/AC | 30 | 15 | Ethafoam Ø 40mm | | 243 | 65 | |
| | floor | 250 | AC/AC | 15 | 10 | Ethafoam Ø 25mm | | 243 | 29 | |
| | floor | 250 | AC/AC | 20 | | Polyethylene Ø 20mm | 10 | 155 | 47 | |
| | floor | 250 | AC/AC | 50 | | Polyethylene Ø 50 x 25mm | 25 | 240 | 92 | |
| | floor | 250 | AC/AC | 10 | | Polyethylene Ø 10mm | 6 | 240 | 207 | |
| | floor | 250 | AC/AC | 25 | | Polyethylene Ø 25mm | 15 | 240 | 73 | |
| | floor | 250 | Hardwood/AC | 15 | 10 | Ethafoam Ø 15mm | | 53 | 53 | |
| | floor | 250 | Steel/AC | 15 | 10 | Ethafoam Ø 25mm | | 243 | 29 | |
| | wall | 150 | AC/AC | 30 | 30 | Polyethylene 15 x 15 | 30 | 265 | 265 | |
| | wall | 150 | AC/AC | 15 | 15 | Polyethylene 10 x 10 | 15 | 265 | 230 | |
| | wall | 150 | AC/AC | 10 | 10 | Polyethylene 10 x 15 | 10 | 265 | 265 | |
| | wall | 150 | AC/AC | 10 | 10 | Polyethylene 10 x 15 | | 200 | 166 | |
| | wall | 150 | AC/AC | 15 | 15 | Polyethylene 15 x 15 | | 227 | 227 | |
| | wall | 150 | AC/AC | 30 | 30 | Polyethylene 30 x 15 | | 240 | 233 | |
| | wall | 200 | AC/AC | 50 | 25 | Ethafoam Ø 50mm | | 245 | 82 | |
| | wall | 200 | Hardwood/AC | 50 | 25 | Ethafoam Ø 50mm | | 96 | 93 | |
| | wall | 200 | Softwood/AC | 25 | 12 | Ethafoam Ø 30mm | | 55 | 54 | |
| | wall | 200 | Steel/AC | 50 | 25 | Ethafoam Ø 50mm | | 77 | 39 | |
| | wall | 215 | AC/AC | 30 | 15 | Ethafoam Ø 40mm | | 243 | 44 | |
| | wall | 215 | AC/AC | 15 | 10 | Ethafoam Ø 25mm | | 243 | 29 | |
| | wall | 215 | Hardwood/AC | 15 | 10 | Ethafoam Ø 25mm | | 40 | 29 | |
| | wall | 215 | Steel/AC | 15 | 10 | Ethafoam Ø 25mm | | 243 | 16 | |
| | wall | 250 | AC/AC | 20 | | Polyethylene Ø 20mm | 10 | 240 | 122 | |
| | wall | 250 | AC/AC | 40 | | Polyethylene Ø 40mm | 20 | 240 | 95 | |
| | wall | 250 | AC/AC | 10 | | Polyethylene Ø 10mm | 10 | 240 | 240 | |
| | wall | 250 | AC/AC | 25 | | Polyethylene Ø 25mm | 20 | 240 | 126 | |

Note:

AC - Aerated Concrete.

Ethafoam - Open cell polyethylene foam rod

Please refer to Rockwool installation instructions for further details

Certificate No: 022b(5) to LPS 1132: Issue 4

Rockwool FirePro Ablative Coated Batt - Pipe Penetration

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture Size (mm) | Coated Batt (layers & Thickness) | Seal Detail | Penetration Type | O/D wall thickness range (mm) | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|---------------------------------------|-------------------------------------|--|---|--------------------|----------------------------------|--------------------------------|------------------|-------------------------------|--|---------------|
| Rockwool FirePro Ablative Coated Batt | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Rockwool Insulated Fire Sleeve | ABS | 27 / 2.5 to 110 / 12 | 120 / 60 | 022b/06 |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture Size (mm) | Coated Batt (layers & Thickness) | Seal Detail | Penetration Type | O/D wall thickness range (mm) | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|--------------|-------------------------------------|--|---|--------------------|----------------------------------|---|-------------------------|-------------------------------|--|---------------|
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Rockwool Insulated Fire Sleeve ⁽⁷⁾ | PVC | 19 / 1.9 to 55 / 2.2 | 90 / 60 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Rockwool Insulated Fire Sleeve ⁽⁷⁾ | PVC | >55 / 2.2 to 110 / 8.9 | 60 / 60 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Rockwool Insulated Fire Sleeve ⁽⁷⁾ | PVC | 110 / < 3.6 | 120 / 30 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Rockwool Insulated Fire Sleeve ⁽⁷⁾ | HDPE | 110 / 4.2 to 160 / 6.2 | 90 / 60 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Rockwool Insulated Fire Sleeve ⁽⁷⁾ | PP | >22 / 1.2 to 160 / 10 | 60 / 60 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Rockwool Insulated Fire Sleeve ⁽⁷⁾ | PP | 22 / 1.2 | 120 / 120 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 60mm | Unlagged ⁽⁸⁾ | Steel / Stainless Steel | 17.1 / 2.3 to 168.3 / 7.1 | 120 / 0 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 6mm | Unlagged ⁽⁸⁾ | Cast Iron | 17.1 / 2.3 to 108 / 7.1 | 120 / 0 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Unlagged ⁽⁸⁾ | Copper | 15.0 / 0.7 to 108 / 1.5 | 120 / 0 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 ⁽⁹⁾ pipe section or Fire Tube/Conlit pipe sections | Steel / Stainless Steel | 88.9 / 4.0 to 164 / 6.4 | 120 / 60 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 ⁽⁹⁾ pipe section or Fire Tube/Conlit pipe sections | Copper | 15.0 / 0.5 to 108 / 1.5 | 120 / 60 | |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture Size (mm) | Coated Batt (layers & Thickness) | Seal Detail | Penetration Type | O/D wall thickness range (mm) | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|--------------|-------------------------------------|--|---|--------------------|----------------------------------|--|-------------------------|-------------------------------|--|---------------|
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 ⁽⁹⁾ pipe section or Fire Tube conlit pip sections | Cast Iron | 12.1 / 2.3 to 108 / 7.1 | 120 / 60 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 ⁽⁹⁾ pipe section or Fire Tube/Conlit pipe sections | Copper | 50 / 1.8 | 120 / 120 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Lagged with 1000mm long x 20mm thick Rocklap 800 pipe section Insulation | Copper | 15.00 / 0.5 to 108 / 1.0 | 120 / 60 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | Lagged with 1000mm long x 20mm thick Rocklap 800 pipe section Insulation | Copper | 108 / 3.0 | 120 / 90 | |
| | Wall | 150 | Block work or Concrete Wall | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40 thick Rockwool 800 ⁽⁹⁾ insulation or Lagged with Fire Tube/Conlit pipe sections | Steel / Stainless Steel | 88.9 / 4.0 to 170 / 8.0 | 120 / 120 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm | Unlagged ⁽⁶⁾ | Steel / Stainless Steel | 17.1 / 2.3 to 168.3 / 7.1 | 240 / 0 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm | Unlagged | Cast Iron | 17.1 / 2.3 to 108 / 7.1 | 240 / 0 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm | Unlagged ⁽⁶⁾ | Copper | 15.0 / 0.7 to 108 / 1.5 | 240 / 0 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 ⁽⁹⁾ pipe section or Fire Tube/Conlit pipe sections | Steel / Stainless Steel | 17.1 / 2.3 to 168.3 / 7.1 | 180 / 120 | |
| | Wall | 150 | 240min block work or Concrete wall | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube Conlit pipe sections | Cast Iron | 17.1 / 2.3 to 108 / 7.1 | 240 / 120 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube/Conlit pipe sections | Copper | 15.0 / 0.7 to 108 / 1.5 | 240 / 60 ⁽⁶⁾ | |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture Size (mm) | Coated Batt (layers & Thickness) | Seal Detail | Penetration Type | O/D wall thickness range (mm) | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|--------------|-------------------------------------|--|------------------------------------|--------------------|----------------------------------|--|-------------------------|-------------------------------|--|---------------|
| | Wall | 200 | 240min Block work or Concrete wall | 1200 x 600 | 2 x 50mm (with 100mm air gap) | Unlagged ⁽⁶⁾ | Steel / Stainless Steel | 17.1 / 2.3 to 168.3 / 7.1 | 240 / 0 | |
| | Wall | 215 | 240min Block work or Concrete wall | 1200 x 600 | 2 x 60mm (with 85 mm air gap) | Unlagged ⁽⁶⁾ | Steel / Stainless Steel | 17.1 / 2.3 to 168.3 / 7.1 | 240 / 0 | |
| | Wall | 200 | 240min Block work or Concrete Wall | 1200 x 600 | 2 x 50mm (with 100 mm air gap) | Unlagged | Cast Iron | 17.1 / 2.3 to 1008 / 7.1 | 240 / 0 | |
| | Wall | 215 | 240min Block work or Concrete Wall | 1200 c 600 | 2 x 60mm (with 85 mm air gap) | Unlagged | Cast Iron | 17.1 / 2.3 to 108 / 7.1 | 240 / 0 | |
| | Wall | 200 | 240min Block work or Concrete wall | 1200 x 600 | 2 x 50mm (with 100mm air gap) | Unlagged ⁽⁶⁾ | Copper | 15.0 / 0.7 to 108 / 1.5 | 240 / 0 | |
| | Wall | 215 | 240min Block work or Concrete Wall | 1200 x 600 | 2 x 60mm (with 85 mm air gap) | Unlagged | Copper | 15.0 / 0.7 to 108 / 1.5 | 240 / 0 | |
| | Wall | 200 | 240min Block work or Concrete wall | 1200 x 600 | 2 x 50mm (with 100mm air gap) | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube/Conlit pipe sections | Steel / Stainless Steel | 17.1 / 2.3 to 168.3 / 7.1 | 180 / 120 | |
| | Wall | 215 | 240min Block work or Concrete Wall | 1200 x 600 | 2 x 60mm (with 85mm air gap) | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube Conlit pipe sections | Steel / Stainless Steel | 17.1 / 2.3 to 168.3 / 7.1 | 180 / 120 | |
| | Wall | 200 | 240min Block work or Concrete Wall | 1200 x 600 | 2 x 50mm (with 100mm air gap) | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube Conlit pipe sections | Cast Iron | 17.1 / 2.3 to 108 / 7.1 | 180 / 60 | |
| | Wall | 215 | 240min Block work or Concrete Wall | 1200 x 600 | 2 x 50mm (with 100mm air gap) | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube Conlit pipe sections | Cast Iron | 17.1 / 2.3 to 108 / 7.1 | 180 / 60 | |
| | Wall | 200 | 240min Block work or Concrete wall | 1200 x 600 | 2 x 50mm (with 100mm air gap) | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube/Conlit pipe sections | Copper | 15.0 / 0.7 to 108 / 1.5 | 240 / 60 ⁽⁶⁾ | |
| | Wall | 215 | 240min Block work or Concrete Wall | 1200 x 600 | 2 x 60mm (with 85mm air gap) | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube Conlit pipe sections | Copper | 15.0 / 0.7 to 108 / 1.5 | 240 / 60 | |
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 60mm | Unlagged ⁽⁶⁾ | Steel / Stainless Steel | 17.1 / 2.3 to 168.3 / 7.1 | 240 / 0 | |
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 60mm | Unlagged | Cast Iron | 17.1 / 2.3 to 108 / 7.1 | 240 / 0 | |
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 60mm | Unlagged ⁽⁶⁾ | Copper | 15.0 / 0.7 to 108 / 1.5 | 240 / 0 | |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture Size (mm) | Coated Batt (layers & Thickness) | Seal Detail | Penetration Type | O/D wall thickness range (mm) | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|--------------|-------------------------------------|--|----------------------------------|--------------------|----------------------------------|--|-------------------------|-------------------------------|--|---------------|
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube/Conlit pipe sections | Steel / Stainless Steel | 17.1 / 2.3 to 168.3 / 7.1 | 240 / 120 | |
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube Conlit pipe sections | Cast Iron | 17.1 / 2.3 to 108 / 7.1 | 240 / 120 | |
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 60mm | Lagged with 500mm long x 40mm thick Rocklap 800 pipe section or Fire Tube/Conlit pipe sections | Copper | 15.0 / 0.7 to 108 / 1.5 | 240 / 120 | |

Notes:

1. The Fire Performance of the system will be dependant on the seal detail and Pipe type/ diameter. References should be made to manufacturer's literature and Chiltern International Fire Ltd Assessment Report: Chilt/A08152 rev D for further information.
2. For Lightweight flexible wall constructions the partition must be a minimum overall thickness of 130mm and be faced on each side with two layers of type F 15mm thick fire rated plasterboard or equivalent
3. For Rigid wall constructions comprising of 150mm, 200mm or 215mm thick lightweight aerated concrete or block work shall have a minimum density of 750kg/m³.
4. For Rigid floor constructions comprising of 150mm lightweight aerated concrete shall have a minimum density of 800kg/m³.
5. Rockwool FirePro Ablative Coated batt has a density of 180kg/m³ comprising of a rock fibre core coated on both faces with 0.6 - 0.8mm thick (1mm max) Rockwool FirePro Ablative coating, friction fitted centrally within the thickness of the wall and sealed to the construction on both faces with a 30mm x 30mm fillet of Rockwool Acoustic Intumescent Sealant.
6. 120 minutes insulation performance can be achieved using 50mm thick Fire Tube/Conlit seals.
7. Rockwool Insulated Fire sleeves must be fitted on all plastic pipes (30mm thick for pipe Ø up to 110mm and 35mm thick for pipe Ø above 110mm) as they pass by the Rockwool Ablative coated batt and protrude from each face by 45mm. The sleeve shall be sealed into position with a 15mm x 15mm fillet of Rockwool Acoustic Intumescent sealant on each face.
8. Unlagged metal pipes must be sealed with Rockwool Acoustic and Intumescent sealant on both sides of the penetration.
9. Rocklap 800 pipe section may be interchanged with Rocklap H & V pipe section and Rockwool Process Pipe section.

Certificate No: 022b(5) to LPS 1132: Issue 4

Rockwool FirePro Ablative coated Batt - Cable Penetrations

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture Size (mm) | Coated Batt (Layers & Thickness) | Seal Details | Sheathed Cables / Unsheathed Cables Type ⁽⁶⁾ | Cable Diameter (mm) | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|---------------------------------------|-------------------------------------|--|---|--------------------|----------------------------------|--------------------|---|---------------------|--|---------------|
| Rockwool FirePro Ablative Coated Batt | Wall | 150 | Block work / Concrete Wall or 120min Lightweight flexible supporting construction | 1200 x 1200 | 1 x 60mm | 2mm Conlit bandage | All Sheathed Cable types | < 78 | 90 / 60 | 022b/06 |
| | Wall | 150 | Block work / Concrete Wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | 2mm Conlit bandage | All Sheathed Cable types | < 78 | 120 / 60 | |
| | Wall | 150 | Block work / Concrete Wall or 120min Lightweight flexible supporting construction | 1200 x 1200 | 1 x 60mm | 4mm Conlit bandage | All Sheathed Cable types | <21 | 90 / 60 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | 4mm conlit bandage | All Sheathed Cable types | < 21 | 120 / 60 | |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture Size (mm) | Coated Batt (Layers & Thickness) | Seal Details | Sheathed Cables / Unsheathed Cables Type ⁽⁶⁾ | Cable Diameter (mm) | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|--------------|-------------------------------------|--|---|--------------------|--------------------------------------|--|---|---------------------|--|---------------|
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | 4mm Conlit bandage | PVC Sheathed Cable types | 50 | 120 / 60 | |
| | Wall | 150 | Block work/Concrete wall or 120min Lightweight flexible supporting construction | 1200 x 1200 | 1 x 60mm | 4mm Conlit bandage | PVC Sheathed Cable types | 50 | 90 / 60 | |
| | Wall | 150 | 240min Block work or Concrete Wall | 1200 x 1200 | 1 x 60mm | 2mm Conlit bandage | All Sheathed Cable types | < 78 | 90 / 60 | |
| | Wall | 150 | 240min Block work or Concrete Wall | 1200 x 600 | 1 x 60mm | 2mm Conlit bandage | All Sheathed Cable Types | < 78 | 120 / 60 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm or 2 x 50mm (100mm air gap) | 4mm Conlit bandage | All Sheathed Cable types | < 21 | 120 / 60 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm or 2 x 50mm (100mm air gap) | 6mm Conlit bandage ⁽⁷⁾ | All Sheathed Cable types | < 21 | 240 / 120 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm or 2 x 50mm (100mm air gap) | 4mm Conlit bandage | All Sheathed Cable types | 22 to 50 | 60 / 60 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm or 2 x 50mm (100mm air gap) | 6mm Conlit bandage ⁽⁷⁾ | All Sheathed Cable types | 22 to 50 | 240 / 60 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm or 2 x 50mm (100mm air gap) | 6mm Conlit bandage ⁽⁷⁾ | All Sheathed Cable types | 51 to 80 | 120 / 60 | |
| | Wall | 150 | 240min Block work or Concrete wall | 1200 x 600 | 1 x 60mm or 2 x 50mm (100mm air gap) | Rockwool Acoustic Intumescent Sealant fillet | All Sheathed Cable types | < 21 | 120 / 60 | |
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 60mm | 6mm Conlit bandage ⁽⁷⁾ | All Sheathed Cable types | < 21 | 240 / 60 | |
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 6mm | 4mm Conlit bandage | All Sheathed cables (excluding telecoms cables) | < 21 | 240 / 60 | |
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 6mm | 4mm Conlit bandage | Sheathed telecoms cables | < 21 | 120 / 60 | |
| | Floor | 150 | 240min Concrete Floor | 1200 x 600 | 1 x 60mm | 4mm Conlit bandage | PVC Unsheathed cable types | 10 to 24 | 240 / 30 | |
| | Wall | 150 | 240min Concrete or Block work Wall | 1200 x 600 | 1 x 60mm | 4mm Conlit bandage | PVC Unsheathed cable types | 10 to 24 | 120 / 30 | |
| | Wall | 150 | 120min lightweight flexible supporting construction | 1200 x 600 | 1 x 60mm | 4mm Conlit bandage | PVC Unsheathed cable types | 10 to 24 | 120 / 30 | |

Notes :

- The Fire Performance of the system will be dependant on the seal detail and cable type/ diameter. References should be made to manufacturer's literature and Chiltern International Fire Ltd Assessment Report: Chilt/A08152 rev D for further information.
- For Lightweight flexible wall constructions the partition must be a minimum overall thickness of 130mm and be faced on each side with two layers of type F 15mm thick fire rated plasterboard or equivalent
- For Rigid wall constructions comprising of 150mm, 200mm or 215mm thick lightweight aerated concrete or block work shall have a minimum density of 750kg/m²
- For Rigid floor constructions comprising of 150mm lightweight aerated concrete shall have a minimum density of 800kg/m³.
- Rockwool Ablative Coated batt has a density of 180kg/m³ comprising of a rock fibre core coated on both faces with 0.6 - 0.8mm thick (1mm max) Rockwool FirePro Ablative coating, friction fitted centrally within the thickness of the wall and sealed to the construction on both faces with a 30mm x 30mm fillet of Rockwool Acoustic Intumescent Sealant.
- All Cables shall be supported by steel ladders up to 340mm wide x 80mm deep or steel trays (perforated and un-perforated) up to 460mm wide x 25mm deep at all performance periods.
- An Integrity performance of 240 minutes can be achieved if a 6 x 1mm layer Conlit 'bandage' is used which extends 300mm from each face of the Rockwool Ablative Coated batt.

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

8. Cables may be individual or bundled where they penetrate the Rockwool FirePro Ablative Coated Batt system. Cable bundles are limited dependant on size and type of cables and sealing method, reference must be made to Chiltern International Fire Ltd Assessment Report: Chilt/A08152 rev D for details.
9. Seal length extends 325mm from each face of the Ablative Coated Batt for cables > 50mm diameter.

Certificate No: 022b(5) to LPS 1132: Issue 4

Rockwool Ablative Coated Batt - Blank Seals

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture Size (mm) | Coated Batt (Layers & Thickness) | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|---------------------------------------|-------------------------------------|--|---|--------------------|----------------------------------|--|---------------|
| Rockwool FirePro Ablative Coated Batt | Wall | 150 | Lightweight block work wall Note 2 | 600 x 600 | 1 x 50mm | 240 / 30 | 022b/06 |
| | Floor | 150 | Lightweight aerated concrete floor Note 3 | 600 x 600 | 1 x 50mm | 240 / 120 | |
| | Wall | 215 | Masonry wall Note 2 | 1200 x 600 | 1 x 50mm (with 100mm air gap) | 240 / 30 | |
| | Wall | 215 | Masonry wall Note 2 | 1200 x 600 | 2 x 50mm (with 100mm air gap) | 240 / 240 | |
| | Wall | 130 (minimum) | 120 minute plasterboard partition | 1200 x 600 | 1 x 60mm | 120 / 120 | |
| | Wall | 130 (minimum) | 120 minute plasterboard partition | 1200 x 600 | 1 x 60mm | 90 / 90 | |
| | Wall | Note 4 | Drywall masonry, aerated concrete.or concrete | Note 5 | 1 x 60 | 120 / 60 | |

Notes:

1. Rockwool Ablative Coated batt has a density of 180kg/m³ comprising of a rock fibre core coated on both faces with 0.6 - 0.8mm thick (1mm max) Rockwool FirePro Ablative coating, friction fitted centrally within the thickness of the wall and sealed to the construction on both faces with a 30mm x 30mm fillet of Rockwool Acoustic Intumescent Sealant.
2. For Rigid wall constructions comprising of 150mm or 215mm thick lightweight aerated concrete or block work shall have a minimum density of 750kg/m³.
3. For Rigid floor constructions comprising of 150mm lightweight aerated concrete shall have a minimum density of 800kg/m³.
4. The thickness of the wall system will be determined on the construction, but shall be capable of providing at least the same fires resistance of the seal. For the drywall the aperture will be lined with boards identical to the faces of the wall.
5. The batts (1200mm x 600mm) may be installed in a gap of maximum size 2400mm high by 2400mm wide within the supporting construction the batts may be formed from either 1200 x 600mm boards vertically joined or two staggered rows of boards with vertical and horizontal joints. The height, width or area may be increased by 20% for a reduced period of 60 minutes integrity

Certificate No: 022b(5) to LPS 1132: Issue 4

Rockwool Ablative Coated Batt - Head of wall Joint Seals

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Use | Coated Batt (Layers & Thickness) (1) | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|---------------------------------------|--|--|---------------------------------------|--------|--------------------------------------|--|---------------|
| Rockwool FirePro Ablative Coated Batt | Head of masonry wall to soffit of concrete floor | Note 3 | Lightweight block work wall / drywall | Note 2 | 1 x 60mm | 60 / 60 | 022b/06 |
| | Head of masonry wall to soffit of a steel beam flange (min 100mm wide) | Note 3 | Lightweight block work wall / drywall | Note 2 | 1 x 60mm | 60 / 0 | |

Notes:

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

1. Rockwool Ablative Coated batt has a density of 180kg/m³ comprising of a rock fibre core coated on both faces with two layers of 0.8mm thick Rockwool FirePro Ablative coating, joints are butted to each other and sealed with a layer of FirePro mastic, and sealed around the perimeter of the opening with a bead of FirePro mastic to each face.
2. The batts (1200mm x 600mm) may be installed in a gap of maximum size 1200mm high by 2000mm wide, the batts may be formed from either 1200 x 600mm boards vertically joined or two staggered rows of boards with vertical and horizontal joints.
3. The thickness of the wall system will be determined on the construction, but shall be capable of providing at least the same fire resistance of the seal. For the drywall the aperture will be lined with boards identical to the faces of the wall.

Certificate No: 022b(5) to LPS 1132: Issue 4

Rockwool FirePro Ablative Coated Batt - Dampers

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture size (mm) | Coated batt (Layers & Thickness) (1) | Damper Type | Damper Size | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|---------------------------------------|-------------------------------------|--|---|---|--|--|--|--|---------------|
| Rockwool FirePro Ablative Coated Batt | Wall | 150 | Block work / Concrete Wall or 120min Lightweight flexible supporting construction (2) | Width/height of Batt between damper and supporting construction to be in the range of 150 - 450 mm (± 5% fitting tolerance) | 1 x 60mm (3) | Actionair SmokeShield PTC™ multi-blade, galvansed steel, circular fire damper | 100 - 300mm diameter x 1.2mm-thick casing | 120 / 0 | 022b/06 |
| | Wall | 150 | Block work / Concrete Wall or 120min Lightweight flexible supporting construction (2) | Width/height of Batt between damper and supporting construction to be in the range of 150 - 700 mm (± 5% fitting tolerance) | 1 x 60mm (3) | Actionair SmokeShield PTC™ multi-blade, galvansed steel, circular fire damper | 301 - 355mm diameter x 1.2mm-thick casing | 120 / 0 | |
| | Wall | 150 | Block work / Concrete Wall or 120min Lightweight flexible supporting construction (2) | Width/height of Batt between damper and supporting construction to be in the range of 150 - 450 mm (± 5% fitting tolerance) | 1 x 60mm (3) | Actionair SmokeShield PTC™ multi-blade, galvansed steel, rectangular or oval fire damper | 100mm x 100mm - 300mm x 300mm x 1.2mm-thick casing | 120 / 0 | |
| | Wall | 150 | Block work / Concrete Wall or 120min Lightweight flexible supporting construction (2) | Width/height of Batt between damper and supporting construction to be in the range of 150 - 700 mm (± 5% fitting tolerance) | 1 x 60mm (3) | Actionair SmokeShield PTC™ multi-blade, galvansed steel, rectangular or oval fire damper | 301mm x 301mm - 1000mm x 1000mm x 1.2mm-thick casing | 120 / 0 | |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Aperture size (mm) | Coated batt (Layers & Thickness) (1) | Damper Type | Damper Size | Fire Resistance Integrity / Insulation | LPCB Ref. No. |
|--------------|-------------------------------------|--|--|--|--|---|--|--|---------------|
| | Floor | 150 | Lightweight aerated concrete floor, nominal density 580kg/m ³ (4) | Width of Batt between damper and supporting construction to be a maximum of 700 mm (± 5% fitting tolerance) (5) | 1 x 60mm (3) | Actionair SmokeShield PTC™ multi-blade, galvanised steel, rectangular or oval fire damper | Up to 1000mm x 1000 x 1.2mm-thick casing | 120 / 0 | |

Notes:

- Rockwool Ablative Coated batt has a density of 180kg/m³ comprising of a rock fibre core coated on both faces with a layer 0.8-1.0mm-thick Rockwool FirePro Ablative coating, joints are butted to each other and sealed with a layer of FirePro mastic, and sealed around the perimeter of the opening with a bead of FirePro mastic to each face.
- For Lightweight flexible wall constructions the partition must be a minimum overall thickness of 120mm and be faced on each side with two layers of type 5 Lafarge Gtec 12.5mm thick fire rated plasterboard or equivalent. The voids between the studs are insulated with a layer of 50mm-thick Rockwool RW3 insulation, having a density of 60kg/m³.
- The 60mm thick Rockwool Ablative Coated Batt is cut to size to fit tightly against the damper casing on all four sides, and rested against the plate tack-welded to the damper casing. An additional 20mm-thick pattress of Rockwool Ablative Coated Batt is fitted around the perimeter of the damper on the unexposed side, prior to the steel installation angle being riveted to the stub duct. The edges between the Ablative Coated Batt and supporting construction sealed with a 15mm (nominal radius) bead, of Rockwool Acoustic Intumescent sealant.
- The damper is supported within the Batt using two lengths of 41mm x 41mm Unistrut, 1.5mm-thick. The Unistrut spans the aperture and is bolted to the underside of the concrete floor using 10mm studding passing through the floor.
- Around the perimeter of the aperture lengths of 75mm x 50mm x 6mm-thick steel angle were bolted to the under-side of the concrete slab using M10 steel wedge anchors and M10 studding so that an angle overhangs the opening by between 5mm and 25mm, providing a ledge to support the Ablative Coated Batt.
- The Actionair Smoke/Shield PTC™ multi-blade, galvanised steel casing fire damper has been tested in a Rockwool FirePro Ablative Coated Batt penetration sealing system to the requirements of BS EN 1366-2: 1999 and ISO 10294-1: 1996 only.

Certificate No: 022b(1) to LPS 1132: Issue 4

| Product Name | Cavity Width (mm) | Slab Size (mm) | Fire Resistance (min) integrity | Fire Resistance (min) Insulation | LPCB Ref. No. |
|------------------------------------|-------------------|----------------|---------------------------------|----------------------------------|---------------|
| Rockwool Firepro™ SP Firestop Slab | 50 - 400 | 900 x 650 x 75 | 60 | 60 | 022b/01 |
| | 50 - 400 | 900 x 650 x 90 | 120 | 120 | 022b/02 |

Notes:

- This product is suitable for sealing gaps between a concrete or composite concrete/metal floors and an adjacent masonry, cladding/panel system with non-combustible core or curtain wall, or between the leaves of a masonry cavity wall.
- For cavity widths of 250mm or more, joints between adjacent lengths of firestops should be sealed on the top surface with aluminium foil tape.
- Refer to manufacturer's technical literature for fixing details.

Certificate No: 022b(2) to LPS 1132: Issue 4

| Product Name | Product Type(s) | Wall Width (mm) | Firestop Width (mm) | Application | Fire Resistance (min) Integrity/Insulation | LPCB Ref. No. |
|---|--|-----------------|---------------------|--|--|---------------|
| Rockwool FirePro™ Linear and Trapezoidal Firestop Systems | Trapezoidal Firestop 2B & Linear Firestop 2A | 100 | 100 | Profiled metal deck over block work wall, deck profiles running across the wall line | 120/120 | 022b/03 |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Product Type(s) | Wall Width (mm) | Firestop Width (mm) | Application | Fire Resistance (min) Integrity/Insulation | LPCB Ref. No. |
|--------------|--|-----------------|---------------------|---|---|---------------|
| | Trapezoidal Firestop 2B & Linear | 150 | 150 | Profiled metal deck over blockwork wall, deck profiles running across the wall line | 180/180 | |
| | Trapezoidal Firestop 2B & Linear | 200 | 200 | Profiled metal deck over blockwork wall, deck profiles running across the wall line | 240/240 | |
| | Trapezoidal Firestop 2B & Linear | 100 | 100 | Profiled metal deck over blockwork wall, deck profiles running across the wall line | 120/120 | |
| | Trapezoidal Firestop 2B & Linear | 150 | 150 | Profiled metal deck over blockwork wall, deck profiles running across the wall line | 180/180 | |
| | Trapezoidal Firestop 2B & Linear | 200 | 200 | Profiled metal deck over blockwork wall, deck profiles running across the wall line | 240/240 | |
| | Trapezoidal Firestop 2B & Linear | 100 | 100 | Profiled metal deck over blockwork wall, single deck profile running in line, but asymmetrical with wall line | 120/120 | |
| | Trapezoidal Firestop 2B & Linear | 150 | 150 | Profiled metal deck over blockwork wall, single deck profile running in line, but asymmetrical with wall line | 180/180 | |
| | Trapezoidal Firestop 2B & Linear | 200 | 200 | Profiled metal deck over blockwork wall, single deck profile running in line, but asymmetrical with wall line | 240/240 | |
| | Trapezoidal Firestop 2B & Linear | 100 | 100 | Profiled metal deck over blockwork wall, single deck profile running in line, but asymmetrical with wall line | 120/120 | |
| | Trapezoidal Firestop 2B & Linear | 150 | 150 | Profiled metal deck over blockwork wall, single deck profile running in line, but asymmetrical with wall line | 180/180 | |
| | Trapezoidal Firestop 2B & Linear | 200 | 200 | Profiled metal deck over blockwork wall, single deck profile running in line, but asymmetrical with wall line | 240/240 | |
| | Trapezoidal Firestop 2B & Linear | 100 | 100 | Profiled metal deck over blockwork wall, trapezoidal deck profiles running across wall line | 120/120 | |
| | Trapezoidal Firestop 2B & Linear | 150 | 150 | Profiled metal deck over blockwork wall, trapezoidal deck profiles running across wall line | 180/180 | |
| | Trapezoidal Firestop 2B & Linear | 200 | 200 | Profiled metal deck over blockwork wall, trapezoidal deck profiles running across wall line | 240/240 | |
| | Linear Firestop 2A & Dovetail Infil Strips | 100 | 100 | Profiled metal composite deck over blockwork, Dovetail deck profiles running across wall line | 120/120 | |
| | Linear Firestop 2A & Dovetail Infil Strips | 150 | 150 | Profiled metal composite deck over blockwork, Dovetail deck profiles running across wall line | 180/180 | |
| | Linear Firestop 2A & Dovetail Infil Strips | 200 | 200 | Profiled metal composite deck over blockwork, Dovetail deck profiles running across wall line | 240/240 | |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Product Type(s) | Wall Width (mm) | Firestop Width (mm) | Application | Fire Resistance (min) Integrity/Insulation | LPCB Ref. No. |
|---|--|-----------------|---------------------|---|---|---------------|
| | Trapezoidal Firestop 2B & Linear Firestop 2A | 100 | 100 | Profiled metal composite deck over blockwork, Trapezoidal deck profiles running in line with wall line | 120/120 | |
| | Trapezoidal Firestop 2B & Linear Firestop 2A | 150 | 150 | Profiled metal composite deck over blockwork, Trapezoidal deck profiles running in line with wall line | 180/180 | |
| | Trapezoidal Firestop 2B & Linear Firestop 2A | 200 | 200 | Profiled metal composite deck supported by steel universal beam. Fire resistance times quoted cannot exceed fire resistance of protected beams | 240/240 | |
| | Trapezoidal Firestop 2B | 100 | 100 | Profiled metal composite deck supported by steel universal beam. Fire resistance times quoted cannot exceed fire resistance of protected beams | 120/120 | |
| | Trapezoidal Firestop 2B | 150 | 150 | Profiled metal composite deck supported by steel universal beam. Fire resistance times quoted cannot exceed fire resistance of protected beams | 180/180 | |
| RockwoolFirePro™ Linear and Trapezoidal Firestop Systems | Trapezoidal Firestop 2B | 200 | 200 | Profiled metal composite deck supported by steel universal beam. Fire resistance times quoted cannot exceed fire resistance of protected beams | 240/240 | |
| Rockwool FirePro™ Linear and Trapezoidal Firestop Systems | Trapezoidal Firestop 2B | 100 | 100 | Profiled metal composite deck supported by steel universal beam. Fire resistance times quoted cannot exceed fire resistance of protected beams | 120/120 | |
| | Trapezoidal Firestop 2B | 150 | 150 | Profiled metal composite deck supported by steel universal beam. Fire resistance times quoted cannot exceed fire resistance of protected beams | 180/180 | |
| | Trapezoidal Firestop 2B | 200 | 200 | Profiled metal composite deck supported by steel universal beam. Fire resistance times quoted cannot exceed fire resistance of protected beams | 240/240 | |
| | Linear Firestop 2A | 100 | 100 | Plain concrete deck over blockwork wall | 120/120 | |
| | Linear Firestop 2A | 150 | 150 | Plain concrete deck over blockwork wall | 180/180 | |
| | Linear Firestop 2A | 200 | 200 | Plain concrete deck over blockwork wall | 240/240 | |
| | Linear Firestop 2A | 100 | 100 | Plain concrete deck over blockwork wall, principle of multi-layering fire stops. The head of wall void can be filled by layering two or three firestops provided that the layers thickness does not exceed wall width and the compression/tightness of fit note above is followed | 120/120 | |
| | Linear Firestop 2A | 150 | 150 | Plain concrete deck over blockwork wall, principle of multi-layering fire stops. The head of wall void can be filled by layering two or three firestops provided that the layers thickness does not exceed wall width and the compression/tightness of fit note above is followed | 180/180 | |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Product Type(s) | Wall Width (mm) | Firestop Width (mm) | Application | Fire Resistance (min) Integrity/Insulation | LPCB Ref. No. |
|--------------|--|-----------------|---------------------|---|---|---------------|
| | Linear Firestop 2A | 200 | 200 | Plain concrete deck over blockwork wall, principle of multi-layering fire stops. The head of wall void can be filled by layering two or three firestops provided that the layers thickness does not exceed wall width and the compression/tightness of fit note above is followed | 240/240 | |
| | Trapezoidal Firestop 2B & Linear Firestop 2A | 100 | 100 | Profiled concrete deck over blockwork. Deck profiles running in either direction | 120/120 | |
| | Trapezoidal Firestop 2B & Linear Firestop 2A | 150 | 150 | Profiled concrete deck over blockwork. Deck profiles running in either direction | 180/180 | |
| | Trapezoidal Firestop 2B & Linear Firestop 2A | 200 | 200 | Profiled concrete deck over blockwork. Deck profiles running in either direction | 240/240 | |

Notes:

- 1) When the Firepro Linear and Trapezoidal Firestop Seals are being installed they must be a tight and an accurate fit, closely following the profile of the gap. The Firepro Linear Firestop 2A material must be compressed by at least 5%.
- 2) Gaps between the top of the wall and the soffit of the deck/floor of sizes, other than the tested depth of 25mm, may be sealed providing that the Firepro Linear Firestop 2A is compressed by at least 5%. If more than one layer is used, the layers should be installed simultaneously to ensure that the full width of the gap is uniformly filled.
- 3) The maximum gap size covered by this approval between the top of the wall and the soffit of the deck/floor is the thickness of the wall.
- 4) Where the deck voids run parallel but outside the line of the blockwork wall, Firestop 2A should be fixed to the deck above at maximum 350mm centres.
- 5) Care should be taken that any joints between lengths of Firepro Linear Firestop material should be fitted tightly together with no gaps.
- 6) Therefore this certificate applies to gaps over walls constructed of dense aggregate concrete, lightweight aggregate concrete, clay bricks or concrete blocks, which have a density greater than 400kg/m³.
- 7) This certificate applies to any trapezoidal or dovetail steel deck providing the cavity of the trapezoidal or dovetail steel deck can be adequately filled with the Rockwool Firepro Linear Firestop system.
- 8) When the gap being sealed and is located between a structural steel beam and a profiled steel deck, with or without concrete, the beam should be fire protected with a suitable board system.
- 9) It is assumed that the steel deck will remain horizontal or bow downwards in the event of a fire. If there is a possibility that the configuration of the steel deck and wall or beam being considered is such that an upward deformation of the deck is likely, then a reduced fire performance of the seal can be expected.
- 10) Refer to manufacturer's technical literature for fixing details.

Certificate No: 022b(3) to LPS 1132: Issue 4

| Product Name | Application | Cavity Width (mm) | Barrier Size (mm) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | LPCB Ref. No. |
|--------------------------------------|---|-------------------|-------------------|------------------------------------|-------------------------------------|---------------|
| Rockwool Firepro™ TCB Cavity Barrier | Masonry/timber frame and masonry cavity walls | 50 - 55 | 65 X 65 | 60 | 30 | 022b/04 |
| | Masonry/timber frame and masonry cavity walls | 56 - 65 | 75 x 75 | 60 | 30 | |
| | Masonry/timber frame and masonry cavity walls | 66 - 75 | 85 x 85 | 60 | 30 | |
| | Masonry/timber frame and masonry cavity walls | 76 - 80 | 90 x 90 | 60 | 30 | |

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

| Product Name | Application | Cavity Width (mm) | Barrier Size (mm) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | LPCB Ref. No. |
|--------------|---|-------------------|-------------------|---------------------------------|----------------------------------|---------------|
| | Masonry/timber frame and masonry cavity walls | 81 - 90 | 100 x 100 | 60 | 30 | |
| | Masonry/timber frame and masonry cavity walls | 91 - 100 | 110 x 110 | 60 | 30 | |
| | Masonry/timber frame and masonry cavity walls | 101 - 110 | 120 x 120 | 60 | 30 | |
| | Masonry/timber frame and masonry cavity walls | 111 - 120 | 130 x 130 | 60 | 30 | |
| | Masonry/timber frame and masonry cavity walls | 121 - 130 | 140 x 140 | 60 | 30 | |
| | Masonry/timber frame and masonry cavity walls | 131 - 140 | 150 x 150 | 60 | 30 | |
| | Timber frame | 50 - 55 | 65 x 65 | 30 | 30 | |
| | Timber frame | 56 - 65 | 75 x 75 | 30 | 30 | |
| | Timber frame | 66 - 75 | 85 x 85 | 30 | 30 | |
| | Timber frame | 76 - 80 | 90 x 90 | 30 | 30 | |
| | Timber frame | 81 - 90 | 100 x 100 | 30 | 30 | |
| | Timber frame | 91 - 100 | 110 x 110 | 30 | 30 | |
| | Timber frame | 101 - 110 | 120 x 120 | 30 | 30 | |
| | Timber frame | 111 - 120 | 130 x 130 | 30 | 30 | |
| | Timber frame | 121 - 130 | 140 x 140 | 30 | 30 | |
| | Timber frame | 131 - 140 | 150 x 150 | 30 | 30 | |
| | Timber frame | 50 - 55 | 75 x 75 | 60 | 30 | |
| | Timber frame | 56 - 65 | 75 x 75 | 60 | 30 | |
| | Timber frame | 66 - 75 | 85 x 85 | 60 | 30 | |
| | Timber frame | 76 - 80 | 90 x 90 | 60 | 30 | |
| | Timber frame | 81 - 90 | 100 x 100 | 60 | 30 | |
| | Timber frame | 91 - 100 | 110 x 110 | 60 | 30 | |
| | Timber frame | 101 - 110 | 120 x 120 | 60 | 30 | |
| | Timber frame | 111 - 120 | 130 x 130 | 60 | 30 | |
| | Timber frame | 121 - 130 | 140 x 140 | 60 | 30 | |
| | Timber frame | 131 - 140 | 150 x 150 | 60 | 30 | |
| | Timber frame | 81 - 90 | 100 x 100 | 60 | 60 | |
| | Timber frame | 91 - 100 | 110 x 110 | 60 | 60 | |
| | Timber frame | 101 - 110 | 120 x 120 | 60 | 60 | |
| | Timber frame | 111 - 120 | 130 x 130 | 60 | 60 | |
| | Timber frame | 121 - 130 | 140 x 140 | 60 | 60 | |

Notes:

PART 1: SECTION 3

LPS 1132 WALL & FLOOR PENETRATION AND LINEAR GAP SEALS

1. Rockwool Firepro™ TCB Cavity Barrier is designed for use between the leaves of a masonry cavity wall, timber frame construction, or between a timber frame inner leaf and masonry outer leaf.
2. Barriers can be installed vertically or horizontally.
3. Refer to manufacturer's technical literature for fixing details.

PART 1: SECTION 4

STRUCTURAL STEEL AND CONCRETE MEMBERS FIRE PROTECTION

The protection of the structural integrity of a building is important for life safety of the occupants, fire fighters and for the cost-effective repair of the building post fire. When a building is involved in a fire, structural steelwork and concrete members can resist the damaging effects of the high temperatures generated if suitably protected.

Isolatek International (Europe) Limited

Icon Business Centre, Lake View Drive, Sherwood Park, Nottingham NG15 0DT, United Kingdom

Tel: 01623 726242

E-mail: pbrownhill@isolatek.com • Website: www.isolatek.com

Certificate No: 1189b to SD198 (Appendix B16) / EN 13381-3

ISOLATEK® type CP-2, Concrete slab protected by 36mm of ISOLATEK® Type CP-2 for fire resistance periods of 30 - 180 minutes

| Product Name | Depth in slab (mm) | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | LPCB Ref. No. |
|------------------------|--------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------|
| | | 1363-1 (min) 30 | 1363-1 (min) 60 | 1363-1 (min) 90 | 1363-1 (min) 120 | 1363-1 (min) 150 | 1363-1 (min) 160 | |
| ISOLATEK® Type CP-2 | 0 | 55 | 86 | 103 | 130 | 151 | 169 | 1189b/01 |
| | 15 | 40 | 68 | 85 | 106 | 124 | 139 | |
| | 30 | 33 | 58 | 73 | 93 | 109 | 122 | |
| | 45 | 29 | 51 | 67 | 86 | 102 | 114 | |
| | 60 | 26 | 45 | 61 | 79 | 94 | 107 | |
| | 75 | 22 | 37 | 52 | 68 | 83 | 96 | |
| | 130 | 18 | 26 | 38 | 49 | 60 | 71 | |

Certificate No: 1189b to SD198 (Appendix B6) / EN 13381-3

ISOLATEK® type CP-2, Concrete slab protected by 36mm of ISOLATEK® Type CP-2 for fire resistance periods of 210 - 360 minutes

| Product Name | Depth in slab (mm) | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | LPCB Ref. No. |
|------------------------|--------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------|
| | | 1363-1 (min) 210 | 1363-1 (min) 240 | 1363-1 (min) 270 | 1363-1 (min) 300 | 1363-1 (min) 330 | 1363-1 (min) 360 | |
| ISOLATEK® Type CP-2 | 0 | 185 | 202 | 220 | 238 | 255 | 273 | 1189b/01 |
| | 15 | 152 | 166 | 182 | 198 | 214 | 229 | |
| | 30 | 135 | 147 | 158 | 171 | 184 | 198 | |
| | 45 | 126 | 137 | 148 | 159 | 171 | 184 | |
| | 60 | 116 | 127 | 137 | 147 | 157 | 168 | |
| | 75 | 107 | 116 | 125 | 134 | 142 | 150 | |
| | 130 | 79 | 86 | 93 | 98 | 103 | 108 | |

Certificate No: 1189b to SD198 (Appendix B16) / EN 13381-3

ISOLATEK® type CP-2, Concrete slab protected by 11mm of ISOLATEK® Type CP-2 for fire resistance periods of 30 - 180 minutes

| Product Name | Depth in slab (mm) | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | Duration of exposure under EN | LPCB Ref. No. |
|------------------------|--------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------|
| | | 1363-1 (min) 30 | 1363-1 (min) 60 | 1363-1 (min) 90 | 1363-1 (min) 120 | 1363-1 (min) 150 | 1363-1 (min) 180 | |
| ISOLATEK® Type CP-2 | 0 | 194 | 305 | 403 | 484 | 550 | 607 | 1189b/01 |

PART 1: SECTION 4

STRUCTURAL STEEL AND CONCRETE MEMBERS FIRE PROTECTION

| Product Name | Depth in slab (mm) | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | LPCB Ref. No. |
|--------------|--------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------|
| | | (min) 30 | (min) 60 | (min) 90 | (min) 120 | (min) 150 | (min) 180 | |
| | 15 | 124 | 193 | 266 | 335 | 396 | 453 | |
| | 30 | 91 | 141 | 192 | 254 | 307 | 355 | |
| | 45 | 70 | 117 | 151 | 202 | 249 | 294 | |
| | 60 | 55 | 102 | 128 | 162 | 204 | 245 | |
| | 75 | 44 | 92 | 115 | 133 | 162 | 197 | |
| | 130 | 27 | 50 | 74 | 89 | 99 | 109 | |

Certificate No: 1189b to SD198 (Appendix B16) / EN 13381-3

ISOLATEK® type CP-2, Concrete slab protected by 11mm of ISOLATEK® Type CP-2 for fire resistance periods of 210 - 360 minutes

| Product Name | Depth in slab (min) | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | LPCB Ref. No. |
|---------------------|---------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------|
| | | (min) 210 | (min) 240 | (min) 270 | (min) 300 | (min) 330 | (min) 360 | |
| ISOLATEK® Type CP-2 | 0 | 657 | 706 | 749 | 789 | 822 | 852 | 1189b/01 |
| | 15 | 505 | 554 | 599 | 638 | 674 | 706 | |
| | 30 | 400 | 443 | 483 | 520 | 554 | 586 | |
| | 45 | 336 | 374 | 411 | 446 | 478 | 507 | |
| | 60 | 284 | 320 | 356 | 390 | 422 | 450 | |
| | 75 | 233 | 268 | 296 | 327 | 356 | 382 | |
| | 130 | 126 | 147 | 168 | 187 | 205 | 219 | |

Certificate No: 1189b to SD198 (Appendix B16) / EN 13381-3

ISOLATEK® type CP-2, Concrete beam of minimum 450mm x 150mm protected by 13mm of ISOLATEK® Type CP-2

| Product Name | Depth in slab (mm) | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | Duration of exposure under EN 1363-1 | LPCB Ref. No. |
|---------------------|--------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------|
| | | (min) 30 | (min) 60 | (min) 90 | (min) 120 | (min) 150 | (min) 180 | (min) 210 | (min) 240 | (min) 270 | |
| ISOLATEK® Type CP-2 | 54 | 102 | 169 | 254 | 340 | 424 | 507 | 568 | 662 | 728 | 1189b/01 |
| | 78 | 90 | 153 | 226 | 310 | 388 | 463 | 531 | 607 | 696 | |
| | 106 | 70 | 133 | 174 | 249 | 326 | 401 | 473 | 538 | 615 | |

Notes:

- LPCB Ref No. 1189b/01 the fire performance of ISOLATEK® Type CP-2 when applied to slabs is determined by a function of:
 - the thickness of ISOLATEK® Type CP-2 applied (mm);
 - the standard concrete temperature (°C);
 - the duration of the thermal exposure under the standard time temperature curve as defined in EN1363-1.
- LPCB Ref No. 1189b/01 the fire performance of ISOLATEK® Type CP-2 when applied to beams is determined by a function of:
 - the thickness of ISOLATEK® Type CP-2 applied (mm);
 - the standard concrete temperature (°C);
 - along a diagonal axis;
 - the duration of the thermal exposure under the standard time temperature curve as defined in EN 1363-1.
- LPCB Ref No. 1189b/01 the expected fire resistance period will be dependent on the load bearing concrete assembly and application of ISOLATEK® Type CP-2, please refer to manufacturer's short form application guide version 07/13 or Assessment Report 2012-Efectis-R9392b dated July 2013.

PART 1: SECTION 4

STRUCTURAL STEEL AND CONCRETE MEMBERS FIRE PROTECTION

PPG Coatings Europe BV

Oceanenweg 2, 1047 BB, Amsterdam, The Netherlands

Tel: +31 20 407 5050 • Fax: +31 20 407 5059

E-mail: macooper@ppg.com • Website: www.ppgpmc.com

Certificate No: 1192n to SD198 (Appendix B15)/AS 4100

| Product Name | LPCB Ref. No. |
|---------------------------------|----------------------|
| STEELGUARD 751 / STEELGUARD 851 | 1192n/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Promat Rsearch and Technology Centre NV

Bormstraat 24, B-2830, Tisselt, Belgium

Tel: +32 1 571 33 51 • Fax: +32 1 571 82 29

E-mail: info@promat.be • Website: www.promat.be

Certificate No: 935a to SD198 (Appendix B15)/BS 476 part 21

| Product Name | LPCB Ref. No. |
|----------------------|----------------------|
| Cafco SPRAYFILM® WB3 | 935a/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

This section covers structural steel fire protection with use of board or cementitious coverings approved to LPS 1107 *Requirements, Tests and Methods of Assessment of Passive Fire Protection Systems for Structural Steelwork*.

Isolatek International (Europe) Limited

Icon Business Centre, Lake View Drive, Sherwood Park, Nottingham NG15 0DT, United Kingdom

Tel: 01623 726242

E-mail: pbrownhill@isolatek.com • Website: www.isolatek.com

Certificate No: 1189a to LPS 1107: Issue 1.2

ISOLATEK® type CP-2

| Product Name | Steel Section | Steel Section factor range | DFT dry film thickness range (mm) | Critical temperature range (° C) | Fire resistance period (mins) | LPCB Ref. No. |
|------------------------|--------------------------|----------------------------|-----------------------------------|---|-------------------------------|---------------|
| ISOLATEK® Type CP-2 | I- and H-section beams | 90 - 350 | 8 - 57 | 350, 400, 450, 500, 550, 600, 620, 650, 700 | 30, 60, 90, 120, 180 & 240 | 1189a/01 |
| | I- and H-section columns | 90 - 350 | 8 - 55 | 350, 400, 450, 500, 550, 600, 650, 700 | 30, 60, 90, 120, 180 & 240 | |
| | Hollow section columns | 90 - 350 | 9 - 55 | 350, 400, 450, 500, 600, 650, 700 | 30, 60, 90, 120, 180 & 240 | |

Notes:

1 LPCB Ref No. 1189a/01 the expected fire resistance period will be dependent on steel preparation and application of ISOLATEK® type CP-2, please refer to manufacturers short form application guide version 07/13 or BRE Global Assessment report CC 84928 dated 29 April 2013.

A copy of the certificate, confirming the relationship between the protection thickness, critical temperature and fire resistance period, may be viewed online by clicking on the product name in the associated entry on www.RedBookLive.com

Promat Fire Protection L.L.C

PO Box 123945, Plot No. 597-921, Dubai Investment Park 2, Dubai, United Arab Emirates

Tel: 00 971 0 4 885 3070 • Fax: 00 971 0 4 885 3588

E-mail: info@promatfp.ae • Website: www.promatfp.ae

Certificate No: 1388b to LPS 1107

PROMATECT®-250

| Product Name | LPCB Ref. No. |
|----------------|---------------|
| PROMATECT®-250 | 1388b/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Promat UK Ltd

The Sterling Centre, Eastern Road, Bracknell, Berkshire RG12 2TD, United Kingdom

Tel: +44 (0)1344 381300 • Fax: +44 (0)1344 381301

Website: www.promat.co.uk

Certificate No: 762b(1) to LPS 1107: Issue 1 BS 476: Part 21: 1987

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

Cafco® 300, required thickness when protecting hollow section beams and columns at a critical temperature of 600°C

| Product Name | LPCB Ref. No. |
|------------------------------|---------------|
| CAFCO® 300 PROMASPRAY ® P300 | 762b/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Rockwool Limited

Wern Tarw, Pencoed, Bridgend, Mid Glamorgan CF35 6NY, United Kingdom

Tel: +44 (0)1656 862621 • Fax: +44 (0)1656 862302

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

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 150°C, using a Rockwool FirePro™ Glue adhesive-fix method

| Product Name | Fixed Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|---------------|--------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire | 25 | 65 | 19 | - | - | - | - | 022d/02 |
| | 30 | 101 | 24 | - | - | - | - | |
| | 40 | 250 | 38 | 20 | - | - | - | |
| | 50 | 250 | 56 | 27 | 18 | - | - | |
| | 60 | 250 | 84 | 36 | 23 | - | - | |
| | 70 | 250 | 129 | 47 | 29 | - | - | |
| | 75 | 250 | 164 | 54 | 32 | 18 | - | |
| | 80 | 250 | 216 | 61 | 36 | 19 | - | |
| | 90 | 250 | 250 | 79 | 43 | 23 | - | |
| | 100 | 250 | 250 | 104 | 53 | 26 | 18 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 200°C, using a Rockwool FirePro™ Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 130 | 26 | - | - | - | - | 022d/02 |
| | 30 | 250 | 34 | 18 | - | - | - | |
| | 40 | 250 | 55 | 27 | 17 | - | - | |
| | 50 | 250 | 89 | 37 | 24 | - | - | |
| | 60 | 250 | 150 | 51 | 31 | 17 | - | |
| | 70 | 250 | 250 | 69 | 39 | 21 | - | |
| | 75 | 250 | 250 | 80 | 44 | 23 | - | |
| | 80 | 250 | 250 | 94 | 49 | 25 | - | |
| | 90 | 250 | 250 | 130 | 61 | 30 | 20 | |
| | 100 | 250 | 250 | 189 | 76 | 35 | 23 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 250°C, using a Rockwool FirePro™ Glue adhesive-fix method

| Product Name | Fire Tube wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 250 | 38 | 20 | - | - | - | 022d/02 |
| | 30 | 250 | 50 | 25 | 17 | - | - | |
| | 40 | 250 | 83 | 38 | 24 | - | - | |
| | 50 | 250 | 138 | 53 | 33 | 19 | - | |
| | 60 | 250 | 248 | 73 | 43 | 23 | - | |
| | 70 | 250 | 250 | 100 | 55 | 29 | 19 | |
| | 75 | 250 | 250 | 117 | 62 | 32 | 21 | |
| | 80 | 250 | 250 | 138 | 69 | 35 | 23 | |
| | 90 | 250 | 250 | 196 | 87 | 41 | 27 | |
| | 100 | 250 | 250 | 250 | 109 | 48 | 31 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 300°C, using a Rockwool FirePro™ Glue adhesive-fix method

| Product Name | Fire Tube wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 250 | 48 | 25 | - | - | - | 022d/02 |
| | 30 | 250 | 65 | 31 | 20 | - | - | |
| | 40 | 250 | 112 | 47 | 29 | - | - | |
| | 50 | 250 | 198 | 66 | 40 | 22 | - | |
| | 60 | 250 | 250 | 92 | 52 | 28 | 19 | |
| | 70 | 250 | 250 | 129 | 67 | 34 | 23 | |
| | 75 | 250 | 250 | 153 | 76 | 38 | 25 | |
| | 80 | 250 | 250 | 182 | 85 | 41 | 27 | |
| | 90 | 250 | 250 | 250 | 108 | 49 | 32 | |
| | 100 | 250 | 250 | 250 | 137 | 58 | 37 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 350°C, using a Rockwool FirePro™ Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|----------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 250 | 64 | 30 | 19 | - | - | 022d/02 |
| | 30 | 250 | 89 | 38 | 24 | - | - | |
| 40FirePro™ Fire Tube | 40 | 250 | 168 | 58 | 35 | 19 | - | |
| | 50 | 250 | 250 | 84 | 48 | 26 | 17 | |
| FirePro™ Fire Tube | 60 | 250 | 250 | 122 | 63 | 32 | 22 | |
| | 70 | 250 | 250 | 178 | 83 | 40 | 26 | |
| | 75 | 250 | 250 | 219 | 94 | 44 | 29 | |
| | 80 | 250 | 250 | 250 | 107 | 48 | 31 | |
| | | | | | | | | |

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------|-------------------------------|--|--|--|---|---|---|---------------|
| | 90 | 250 | 250 | 250 | 139 | 58 | 36 | |
| | 100 | 250 | 250 | 250 | 182 | 69 | 42 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 400°C, using a Rockwool FirePro™ Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 250 | 91 | 37 | 24 | - | - | 022d/02 |
| | 30 | 250 | 130 | 48 | 29 | - | - | |
| | 40 | 250 | 250 | 74 | 43 | 23 | - | |
| | 50 | 250 | 250 | 111 | 59 | 31 | 21 | |
| | 60 | 250 | 250 | 165 | 79 | 39 | 26 | |
| | 70 | 250 | 250 | 250 | 105 | 48 | 31 | |
| | 75 | 250 | 250 | 250 | 120 | 53 | 34 | |
| | 80 | 250 | 250 | 250 | 137 | 58 | 37 | |
| | 90 | 250 | 250 | 250 | 182 | 70 | 43 | 022d/01 |
| | 100 | 250 | 250 | 250 | 246 | 84 | 50 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 550°C, using a Rockwool FirePro™ Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 250 | 250 | 83 | 44 | 23 | - | 022d/02 |
| | 30 | 250 | 250 | 111 | 56 | 28 | 19 | |
| | 40 | 250 | 250 | 193 | 84 | 40 | 26 | |
| | 50 | 250 | 250 | 250 | 121 | 53 | 34 | |
| | 60 | 250 | 250 | 250 | 172 | 68 | 42 | |
| | 70 | 250 | 250 | 250 | 245 | 85 | 52 | |
| | 75 | 250 | 250 | 250 | 250 | 95 | 57 | |
| | 80 | 250 | 250 | 250 | 250 | 106 | 62 | |
| | 90 | 250 | 250 | 250 | 250 | 129 | 73 | |
| | 100 | 250 | 250 | 250 | 250 | 158 | 86 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 150°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 54 | - | - | - | - | - | 022d/02 |
| | 30 | 80 | - | - | - | - | - | |
| | 40 | 196 | - | - | - | - | - | |
| | 50 | 250 | 48 | - | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 200°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 96 | - | - | - | - | - | 022d/02 |
| | 30 | 168 | - | - | - | - | - | |
| | 40 | 250 | 47 | - | - | - | - | |
| | 50 | 250 | 74 | - | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 250°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 176 | - | - | - | - | - | 022d/02 |
| | 30 | 250 | 42 | - | - | - | - | |
| | 40 | 250 | 67 | - | - | - | - | |
| | 50 | 250 | 105 | 45 | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 300°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 250 | - | - | - | - | - | 022d/02 |
| | 30 | 250 | 51 | - | - | - | - | |

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------|-------------------------------|--|--|--|---|---|---|---------------|
| | 40 | 250 | 83 | - | - | - | - | |
| | 50 | 250 | 132 | 53 | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 350°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 250 | 48 | - | - | - | - | 022d/02 |
| | 30 | 250 | 63 | - | - | - | - | |
| | 40 | 250 | 107 | 45 | - | - | - | |
| | 50 | 250 | 182 | 63 | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 400°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 250 | 61 | - | - | - | - | 022d/02 |
| | 30 | 250 | 82 | - | - | - | - | |
| | 40 | 250 | 144 | 54 | - | - | - | |
| | 50 | 250 | 250 | 77 | 45 | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool FirePro™ Fire Tube when protecting structural steelwork at a design temperature of 550°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|--------------------|-------------------------------|--|--|--|---|---|---|---------------|
| FirePro™ Fire Tube | 25 | 250 | 149 | 50 | - | - | - | 022d/02 |
| | 30 | 250 | 220 | 64 | - | - | - | |
| | 40 | 250 | 250 | 98 | 54 | - | - | |
| | 50 | 250 | 250 | 145 | 74 | - | - | |

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 150°C, using a Rockwool Conlit Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹ for a fire resistance period of 30min) | Limiting section factor (m ⁻¹ for a fire resistance period of 60min) | Limiting section factor (m ⁻¹ for a fire resistance period of 90min) | Limiting section factor (m ⁻¹ for a fire resistance period of 120min) | Limiting section factor (m ⁻¹ for a fire resistance period of 180min) | Limiting section factor (m ⁻¹ for a fire resistance period of 240min) | LPCB Ref. No. |
|------------------|-------------------------------|---|---|---|--|--|--|---------------|
| Conlit Fire Tube | 25 | 65 | 19 | - | - | - | - | 022d/02 |
| | 30 | 101 | 24 | - | - | - | - | |
| | 40 | 250 | 38 | 20 | - | - | - | |
| | 50 | 250 | 56 | 27 | 18 | - | - | |
| | 60 | 250 | 84 | 36 | 23 | - | - | |
| | 70 | 250 | 129 | 47 | 29 | - | - | |
| | 75 | 250 | 164 | 54 | 32 | 18 | - | |
| | 80 | 250 | 216 | 61 | 36 | 19 | - | |
| | 90 | 250 | 250 | 79 | 43 | 23 | - | |
| | 100 | 250 | 250 | 104 | 53 | 26 | 18 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 200°C, using a Rockwool Conlit Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹ for a fire resistance period of 30min) | Limiting section factor (m ⁻¹ for a fire resistance period of 60min) | Limiting section factor (m ⁻¹ for a fire resistance period of 90min) | Limiting section factor (m ⁻¹ for a fire resistance period of 120min) | Limiting section factor (m ⁻¹ for a fire resistance period of 180min) | Limiting section factor (m ⁻¹ for a fire resistance period of 240min) | LPCB Ref. No. |
|------------------|-------------------------------|---|---|---|--|--|--|---------------|
| Conlit Fire Tube | 25 | 130 | 26 | - | - | - | - | 022d/02 |
| | 30 | 250 | 34 | 18 | - | - | - | |
| | 40 | 250 | 55 | 27 | 17 | - | - | 022d/04 |
| | 50 | 250 | 89 | 37 | 24 | - | - | 022d/02 |
| | 60 | 250 | 150 | 51 | 31 | 17 | - | |
| | 70 | 250 | 250 | 69 | 39 | 21 | - | |
| | 75 | 250 | 250 | 80 | 44 | 23 | - | |
| | 80 | 250 | 250 | 94 | 49 | 25 | - | |
| | 90 | 250 | 250 | 130 | 61 | 30 | 20 | |
| | 100 | 250 | 250 | 189 | 76 | 36 | 23 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 250°C, using a Rockwool Conlit Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹ for a fire resistance period of 30min) | Limiting section factor (m ⁻¹ for a fire resistance period of 60min) | Limiting section factor (m ⁻¹ for a fire resistance period of 90min) | Limiting section factor (m ⁻¹ for a fire resistance period of 120min) | Limiting section factor (m ⁻¹ for a fire resistance period of 180min) | Limiting section factor (m ⁻¹ for a fire resistance period of 240min) | LPCB Ref. No. |
|------------------|-------------------------------|---|---|---|--|--|--|---------------|
| Conlit Fire Tube | 25 | 250 | 38 | 20 | - | - | - | 022d/02 |
| | 30 | 250 | 50 | 25 | 17 | - | - | |
| | 40 | 250 | 83 | 38 | 24 | - | - | |

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹ for a fire resistance period of 30min) | Limiting section factor (m ⁻¹ for a fire resistance period of 60min) | Limiting section factor (m ⁻¹ for a fire resistance period of 90min) | Limiting section factor (m ⁻¹ for a fire resistance period of 120min) | Limiting section factor (m ⁻¹ for a fire resistance period of 180min) | Limiting section factor (m ⁻¹ for a fire resistance period of 240min) | LPCB Ref. No. |
|--------------|-------------------------------|---|---|---|--|--|--|---------------|
| | 50 | 250 | 138 | 53 | 33 | 19 | - | |
| | 60 | 250 | 248 | 73 | 43 | 23 | - | |
| | 70 | 250 | 250 | 100 | 55 | 29 | 19 | |
| | 75 | 250 | 250 | 117 | 62 | 32 | 21 | |
| | 80 | 250 | 250 | 138 | 69 | 35 | 23 | |
| | 90 | 250 | 250 | 196 | 87 | 41 | 27 | |
| | 100 | 250 | 250 | 250 | 109 | 48 | 31 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 300°C, using a Rockwool Conlit Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹ for a fire resistance period of 30min) | Limiting section factor (m ⁻¹ for a fire resistance period of 60min) | Limiting section factor (m ⁻¹ for a fire resistance period of 90min) | Limiting section factor (m ⁻¹ for a fire resistance period of 120min) | Limiting section factor (m ⁻¹ for a fire resistance period of 180min) | Limiting section factor (m ⁻¹ for a fire resistance period of 240min) | LPCB Ref. No. |
|------------------|-------------------------------|---|---|---|--|--|--|---------------|
| Conlit Fire Tube | 25 | 250 | 48 | 25 | - | - | - | 022d/02 |
| | 30 | 250 | 65 | 31 | 20 | - | - | |
| | 40 | 250 | 112 | 47 | 29 | - | - | |
| | 50 | 250 | 198 | 66 | 40 | 22 | - | |
| | 60 | 250 | 250 | 92 | 52 | 28 | 19 | |
| | 70 | 250 | 250 | 129 | 67 | 34 | 23 | |
| | 75 | 250 | 250 | 153 | 76 | 38 | 25 | |
| | 80 | 250 | 250 | 182 | 85 | 41 | 27 | |
| | 90 | 250 | 250 | 250 | 108 | 49 | 32 | |
| | 100 | 250 | 250 | 250 | 137 | 58 | 37 | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 350°C, using a Rockwool Conlit Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹ for a fire resistance period of 30min) | Limiting section factor (m ⁻¹ for a fire resistance period of 60min) | Limiting section factor (m ⁻¹ for a fire resistance period of 90min) | Limiting section factor (m ⁻¹ for a fire resistance period of 120min) | Limiting section factor (m ⁻¹ for a fire resistance period of 180min) | Limiting section factor (m ⁻¹ for a fire resistance period of 240min) | LPCB Ref. No. |
|------------------|-------------------------------|---|---|---|--|--|--|---------------|
| Conlit Fire Tube | 25 | 250 | 64 | 30 | 19 | - | - | 022d/02 |
| | 30 | 250 | 89 | 38 | 24 | - | - | |
| | 40 | 250 | 168 | 58 | 35 | 19 | - | |
| | 50 | 250 | 250 | 84 | 48 | 26 | 17 | |
| | 60 | 250 | 250 | 122 | 63 | 32 | 22 | |
| | 70 | 250 | 250 | 178 | 83 | 40 | 26 | |
| | 75 | 250 | 250 | 219 | 94 | 44 | 29 | |
| | 80 | 250 | 250 | 250 | 107 | 48 | 31 | |
| | 90 | 250 | 250 | 250 | 139 | 58 | 36 | |
| | 100 | 250 | 250 | 250 | 182 | 69 | 42 | |

PART 1: SECTION 4.1**LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS**

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 550°C, using a Rockwool Conlit Glue adhesive-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|------------------|-------------------------------|--|--|--|---|---|---|---------------|
| Conlit Fire Tube | 25 | 250 | 250 | 83 | 44 | 23 | - | 022d/02 |
| | 30 | 250 | 250 | 111 | 56 | 28 | 19 | |
| | 40 | 250 | 250 | 193 | 84 | 40 | 26 | |
| | 50 | 250 | 250 | 250 | 121 | 53 | 34 | |
| | 60 | 250 | 250 | 250 | 172 | 68 | 42 | |
| | 70 | 250 | 250 | 250 | 245 | 85 | 52 | |
| | 75 | 250 | 250 | 250 | 250 | 95 | 57 | |
| | 80 | 250 | 250 | 250 | 250 | 106 | 62 | |
| | 90 | 250 | 250 | 250 | 250 | 129 | 73 | |
| | 100 | 250 | 250 | 250 | 250 | 158 | 86 | 022d/03 |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 150°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|------------------|-------------------------------|--|--|--|---|---|---|---------------|
| Conlit Fire Tube | 25 | 54 | - | - | - | - | - | 022d/02 |
| | 30 | 80 | - | - | - | - | - | |
| | 40 | 196 | - | - | - | - | - | |
| | 50 | 250 | 48 | - | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 200°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|------------------|-------------------------------|--|--|--|---|---|---|---------------|
| Conlit Fire Tube | 25 | 96 | - | - | - | - | - | 022d/02 |
| | 30 | 168 | - | - | - | - | - | |
| | 40 | 250 | 47 | - | - | - | - | |
| | 50 | 250 | 74 | - | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 250°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|------------------|-------------------------------|--|--|--|---|---|---|---------------|
| Conlit Fire Tube | 25 | 176 | - | - | - | - | - | 022d/02 |
| | 30 | 250 | 42 | - | - | - | - | |
| | 40 | 250 | 67 | - | - | - | - | |
| | 50 | 250 | 105 | 45 | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 300°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|------------------|-------------------------------|--|--|--|---|---|---|---------------|
| Conlit Fire Tube | 25 | 250 | - | - | - | - | - | 022d/02 |
| | 30 | 250 | 51 | - | - | - | - | |
| | 40 | 250 | 83 | - | - | - | - | |
| | 50 | 250 | 132 | 53 | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 350°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|------------------|-------------------------------|--|--|--|---|---|---|---------------|
| Conlit Fire Tube | 25 | 250 | 48 | - | - | - | - | 022d/02 |
| | 30 | 250 | 63 | - | - | - | - | |
| | 40 | 250 | 107 | 45 | - | - | - | |
| | 50 | 250 | 182 | 63 | - | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 400°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|------------------|-------------------------------|--|--|--|---|---|---|---------------|
| Conlit Fire Tube | 25 | 250 | 61 | - | - | - | - | 022d/02 |
| | 30 | 250 | 82 | - | - | - | - | |
| | 40 | 250 | 144 | 54 | - | - | - | |
| | 50 | 250 | 250 | 77 | 45 | - | - | |

Certificate No: 022d(1) to LPS 1107: Issue 1

Limiting section factors for Rockwool Conlit Fire Tube when protecting structural steelwork at a design temperature of 550°C, using a Pin-fix method

| Product Name | Fire Tube Wall Thickness (mm) | Limiting section factor (m ⁻¹) for a fire resistance period of 30min | Limiting section factor (m ⁻¹) for a fire resistance period of 60min | Limiting section factor (m ⁻¹) for a fire resistance period of 90min | Limiting section factor (m ⁻¹) for a fire resistance period of 120min | Limiting section factor (m ⁻¹) for a fire resistance period of 180min | Limiting section factor (m ⁻¹) for a fire resistance period of 240min | LPCB Ref. No. |
|------------------|-------------------------------|--|--|--|---|---|---|---------------|
| Conlit Fire Tube | 25 | 250 | 149 | 50 | - | - | - | 022d/01 |
| | 30 | 250 | 220 | 64 | - | - | - | |
| | 40 | 250 | 250 | 98 | 54 | - | - | |
| | 50 | 250 | 250 | 145 | 74 | - | - | |

Certificate No: 022d to LPS 1107: Issue 1

| Product Name | Exposure | Additional Information | LPCB Ref. No. |
|----------------------------|---------------------------|---|---------------|
| Rockwool FirePro™ BeamClad | Internal and semi exposed | Thickness range 25mm to 110mm. Fire resistance 30-240min (see tables below). Faced and unfaced boards are available, refer to manufacturer's technical literature for fixing details. | 022d/01 |

Certificate No: 022d to LPS 1107: Issue 1

3 Sided Protection of Steel Beams, Supporting Concrete/Composite Decks Using The Clip Fix Or Stud Welded Pins/Dry Joint System (critical failure temperature 620°C)

| Product Name | Board Thickness (mm) | Performance Hp/A 30min | Performance Hp/A 60min | Performance Hp/A 90min | Performance Hp/A 120min | LPCB Ref. No. |
|----------------------------|----------------------|------------------------|------------------------|------------------------|-------------------------|---------------|
| Rockwool FirePro™ BeamClad | 25 | 260 | 260 | 260 | 95 | 022d/01 |
| | 30 | 260 | 260 | 260 | 124 | |
| | 35 | 260 | 260 | 260 | 159 | |
| | 40 | 260 | 260 | 260 | 200 | |
| | 45 | 260 | 260 | 260 | 251 | |
| | 50 | 260 | 260 | 260 | 260 | |
| | 60 | 260 | 260 | 260 | 260 | |

Certificate No: 022d to LPS 1107: Issue 1

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

3 Sided Protection Of Steel Beams, Supporting Concrete/Composite Decks Using The Bonded Noggin/Dry Joint System (critical failure temperature 620°C)

| Product Name | Board Thickness (mm) | Performance Hp/A 30min | Performance Hp/A 60min | Performance Hp/A 90min | Performance Hp/A 120min | LPCB Ref. No. |
|----------------------------|----------------------|------------------------|------------------------|------------------------|-------------------------|---------------|
| Rockwool FirePro™ BeamClad | 25 | 260 | 260 | 196 | 73 | 022d/01 |
| | 30 | 260 | 260 | 260 | 93 | |
| | 35 | 260 | 260 | 260 | 116 | |
| | 40 | 260 | 260 | 260 | 143 | |
| | 45 | 260 | 260 | 260 | 173 | |
| | 50 | 260 | 260 | 260 | 209 | |
| | 55 | 260 | 260 | 260 | 252 | |
| | 60 | 260 | 260 | 260 | 260 | |

Certificate No: 022d to LPS 1107: Issue 1

3 Sided Protection Of Steel Beams, Supporting Concrete/Composite Decks Using The Bonded Noggin Or Stud Welded Pins/Glued Joint System (critical failure temperature 620°C)

| Product Name | Board Thickness (mm) | Performance Hp/A 30min | Performance Hp/A 60min | Performance Hp/A 90min | Performance Hp/A 120min | Performance Hp/A 180min | Performance Hp/A 240min | LPCB Ref. No. |
|----------------------------|----------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|-------------------------|---------------|
| Rockwool FirePro™ BeamClad | 25 | 260 | 260 | 260 | 168 | 52 | - | 022d/01 |
| | 30 | 260 | 260 | 260 | 235 | 65 | - | |
| | 35 | 260 | 260 | 260 | 260 | 80 | 45 | |
| | 40 | 260 | 260 | 260 | 260 | 95 | 53 | |
| | 45 | 260 | 260 | 260 | 260 | 113 | 62 | |
| | 50 | 260 | 260 | 260 | 260 | 132 | 70 | |
| | 55 | 260 | 260 | 260 | 260 | 154 | 80 | |
| | 60 | 260 | 260 | 260 | 260 | 178 | 90 | |
| | 65 | 260 | 260 | 260 | 260 | 206 | 100 | |
| | 70 | 260 | 260 | 260 | 260 | 237 | 112 | |
| | 75 | 260 | 260 | 260 | 260 | 260 | 124 | |
| | 80 | 260 | 260 | 260 | 260 | 260 | 136 | |
| | 85 | 260 | 260 | 260 | 260 | 260 | 150 | |
| | 90 | 260 | 260 | 260 | 260 | 260 | 165 | |
| | 95 | 260 | 260 | 260 | 260 | 260 | 181 | |
| | 100 | 260 | 260 | 260 | 260 | 260 | 199 | |
| 110 | 260 | 260 | 260 | 260 | 260 | 238 | | |

Certificate No: 022d to LPS 1107: Issue 1

4 Sided Protection Of Steel Beams And Columns Using The Clip Fix Or Stud Welded Pins/Dry Joint System (critical failure temperature 550°C)

| Product Name | Board Thickness (mm) | Performance Hp/A 30min | Performance Hp/A 60min | Performance Hp/A 90min | Performance Hp/A 120min | LPCB Ref. No. |
|----------------------------|----------------------|------------------------|------------------------|------------------------|-------------------------|---------------|
| Rockwool FirePro™ BeamClad | 25 | 260 | 260 | 148 | 65 | 022d/01 |
| | 30 | 260 | 260 | 260 | 84 | |
| | 35 | 260 | 260 | 260 | 104 | |
| | 40 | 260 | 260 | 260 | 128 | |
| | 45 | 260 | 260 | 260 | 155 | |
| | 50 | 260 | 260 | 260 | 187 | |
| | 55 | 260 | 260 | 260 | 225 | |
| | 60 | 260 | 260 | 260 | 260 | |

Certificate No: 022d to LPS 1107: Issue 1

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

4 Sided Protection Of Steel Beams And Columns Using The Bonded Noggin/Dry Joint System (critical failure temperature 550°C)

| Product Name | Board Thickness (mm) | Performance Hp/A 30min | Performance Hp/A 60min | Performance Hp/A 90min | Performance Hp/A 120min | LPCB Ref. No. |
|----------------------------|----------------------|------------------------|------------------------|------------------------|-------------------------|---------------|
| Rockwool FirePro™ BeamClad | 25 | 260 | 260 | 146 | 65 | 022d/01 |
| | 30 | 260 | 260 | 202 | 83 | |
| | 35 | 260 | 260 | 260 | 103 | |
| | 40 | 260 | 260 | 260 | 126 | |
| | 45 | 260 | 260 | 260 | 153 | |
| | 50 | 260 | 260 | 260 | 184 | |
| | 55 | 260 | 260 | 260 | 221 | |
| | 60 | 260 | 260 | 260 | 260 | |

Certificate No: 022d to LPS 1107: Issue 1

4 Sided Protection Of Steel Beams Using The Bonded Noggin Or Stud Welded Pins/Glued Joint System (critical failure temperature 550°C)

| Product Name | Board Thickness (mm) | Performance Hp/A 30min | Performance Hp/A 60min | Performance Hp/A 90min | Performance Hp/A 120min | Performance Hp/A 180min | Performance Hp/A 240min | LPCB Ref. No. |
|----------------------------|----------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|-------------------------|---------------|
| Rockwool FirePro™ BeamClad | 25 | 260 | 260 | 260 | 98 | 40 | - | 022d/01 |
| | 30 | 260 | 260 | 260 | 130 | 50 | - | |
| | 35 | 260 | 260 | 260 | 168 | 61 | - | |
| | 40 | 260 | 260 | 260 | 216 | 73 | 43 | |
| | 45 | 260 | 260 | 260 | 260 | 85 | 50 | |
| | 50 | 260 | 260 | 260 | 260 | 99 | 57 | |
| | 55 | 260 | 260 | 260 | 260 | 114 | 65 | |
| | 65 | 260 | 260 | 260 | 260 | 131 | 73 | |
| | 65 | 260 | 260 | 260 | 260 | 150 | 81 | |
| | 70 | 260 | 260 | 260 | 260 | 170 | 90 | |
| | 75 | 260 | 260 | 260 | 260 | 193 | 99 | |
| | 80 | 260 | 260 | 260 | 260 | 219 | 109 | |
| | 85 | 260 | 260 | 260 | 260 | 248 | 120 | |
| | 90 | 260 | 260 | 260 | 260 | 260 | 131 | |
| | 95 | 260 | 260 | 260 | 260 | 260 | 144 | |
| | 100 | 260 | 260 | 260 | 260 | 260 | 157 | |
| 110 | 260 | 260 | 260 | 260 | 260 | 186 | | |

Certificate No: 022d to LPS 1107: Issue 1

4 Sided Protection Of Steel Columns Using The Bonded Noggin Or Stud Welded Pins/Glued Joint System (critical failure temperature 550°C)

| Product Name | Board Thickness (mm) | Performance Hp/A 30min | Performance Hp/A 60min | Performance Hp/A 90min | Performance Hp/A 120min | Performance Hp/A 180min | Performance Hp/A 240min | LPCB Ref. No. |
|----------------------------|----------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|-------------------------|---------------|
| Rockwool FirePro™ BeamClad | 25 | 260 | 260 | 149 | 65 | - | - | 022d/01 |
| | 30 | 260 | 260 | 207 | 83 | - | - | |
| | 35 | 260 | 260 | 260 | 104 | 45 | - | |
| | 40 | 260 | 260 | 260 | 128 | 54 | - | |
| | 45 | 260 | 260 | 260 | 155 | 62 | - | |
| | 50 | 260 | 260 | 260 | 187 | 72 | 44 | |
| | 55 | 260 | 260 | 260 | 225 | 82 | 50 | |
| | 60 | 260 | 260 | 260 | 260 | 92 | 55 | |
| | 65 | 260 | 260 | 260 | 260 | 104 | 61 | |
| | 70 | 260 | 260 | 260 | 260 | 116 | 68 | |
| | 75 | 260 | 260 | 260 | 260 | 129 | 74 | |
| | 80 | 260 | 260 | 260 | 260 | 143 | 81 | |
| | 85 | 260 | 260 | 260 | 260 | 159 | 88 | |
| | 90 | 260 | 260 | 260 | 260 | 176 | 96 | |
| | 95 | 260 | 260 | 260 | 260 | 194 | 103 | |
| | 100 | 260 | 260 | 260 | 260 | 214 | 124 | |

PART 1: SECTION 4.1

LPS 1107 STRUCTURAL STEEL FIRE PROTECTION - BOARD AND CEMENTITIOUS COVERINGS

| Product Name | Board Thickness (mm) | Performance Hp/A 30min | Performance Hp/A 60min | Performance Hp/A 90min | Performance Hp/A 120min | Performance Hp/A 180min | Performance Hp/A 240min | LPCB Ref. No. |
|---------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------|
| | 110 | 260 | 260 | 260 | 260 | 260 | 129 | |

Saint-Gobain Construction Products UK Ltd t/a British Gypsum

Head Office, East Leake, Loughborough, Leicester LE12 6HX, United Kingdom

Tel: +44 (0) 115 945 6123 • Fax: +44 (0)844 5618816

E-mail: bgtechnical.enquiries@bpb.com • Website: www.british-gypsum.com

Certificate No: 162a to LPS 1107: Issue 1

| Product Name | LPCB Ref. No. |
|---------------------|----------------------|
| Glasroc F FIRECASE | 162a/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

The protection of the structural integrity of a building is important for life safety of the occupants, fire fighters and for the cost-effective repair of the building post fire. When a building is involved in a fire, structural steelwork can resist the damaging effects of the high temperatures generated if suitably protected.

This section covers structural steel fire protection with use of intumescent thin film coatings approved to SD075 *Fire Protection for Structural Steelwork (Intumescent Systems)* (BS 476: Parts 20 & 21).

International Paint Limited

Stoneygate Lane, Felling, Gateshead, Tyne & Wear NE10 0JY, United Kingdom

Tel: +44 (0) 191 469 6111 • Fax:

E-mail: Neil.Wheat@akzonobel.com • Website: www.international-pc.com

Certificate No: 1109a(1) to SD198 Appendix B15 / BS 476: Part 21

Interchar 1190

| Product Name | Steel Section | Steel Section factor range (Hp/A) | DFT dry film thickness range (mm) | Critical Temperature Range (° C) | Fire Resistance period (mins) | Appendix No. | LPCB Ref. No. |
|----------------|---|-----------------------------------|-----------------------------------|--|-----------------------------------|--------------|----------------------------------|
| Interchar 1190 | I- and H- section beams, 3 sided exposure | 30 - 320 | 0.770 - 4.366 | 350, 400, 450, 500, 550, 600, 620, 650 & 700 | 15, 30, 45, 60, 75, 90, 105 & 120 | 1 | 1111a/01 1307a/01 1372a/01 |
| | I- and H- section columns, 4 sided exposure | 30 - 365 | 0.586 - 7.620 | 350, 400, 450, 500, 550, 600, 650 & 700 | 15, 30, 45, 60, 75, 90, 105 & 120 | 2 | |
| | Rectangular and Circular hollow section columns, 4 sided exposure | 30 - 225 | 1.211 - 8.641 | 350, 400, 450, 500, 520, 550, 600, 650 & 700 | 15, 30, 45, 60, 75, 90, 105 & 120 | 3 | |

Notes:

- Please refer to the relevant appendix number referenced in the table above to view the relationship between DFT dry film thickness, Critical Temperature and Fire Resistance Period.
- LPCB Ref. 1111a/01, 1307a/01 & 1372a/01 - Interchar 1190 Intumescent dry film thickness excludes the primer and top coat (where applicable) thickness. Interchar 1190 is airless spray applied in multiple coats until the desired thickness is achieved.
- Results from analysis of I or H -Sections are directly applicable to angles, channels and T-Sections for the same section factor, whether they are used as individual elements or as a bracing.
- The results of the analysis for I and H -Section columns can be applied to I and H -Section beams exposed on all four sides up to the maximum dry film thickness of 4.366mm
- Approved Manufacturers

The following Companies manufacture the product listed on this certificate

These Companies are audited by the LPCB to ensure the product certification requirements are met:

International Paint Limited (LPCB Ref. 1111)

Holmedalen 3
424 22 Angered
Sweden

AkzoNobel Saudi Arabia Ltd (LPCB Ref. 1307)

(International Paint)
Second Industrial City
Abquiq Road
Makkah Street
PO Box 37, Dammam 31411
Kingdom of Saudi Arabia

ICI Dulux Pty Ltd, (LPCB Ref. 1372)

Marine & Protective Coatings
1 Paint Place

PART 1: SECTION 4.2

STRUCTURAL STEEL FIRE PROTECTION - INTUMESCENT THIN FILM COATINGS

Dickens Road, Box 565
Umbongitwini 4120
Durban
South Africa

A copy of the certificate, confirming the relationship between DFT dry film thickness, critical temperature and fire resistance period, must be viewed online by clicking on the product name in the associated entry on www.RedBookLive.com

Certificate No: 1109a(2) to SD198 (Appendix B15)/BS 476: Part 21

Interchar 1260

| Product Name | Steel Section | Steel Section factor range (HP/A) | DFT Dry Film Thickness Range (mm) | Critical Temperature Range (°C) | Fire Resistance Period (mins) | Appendix No. | LPCB Ref. No. |
|----------------|---|-----------------------------------|-----------------------------------|---|-------------------------------|--------------|---------------------|
| Interchar 1260 | I- and H- section beams, 3 sided exposure | 70 - 330 | 0.135 - 1.163 | 350, 400, 450, 500, 550, 600, 620, 650, 700 & 750 | 15, 30, 45, 60, 75 & 90 | 1 | 1111a/02 / 1307a/02 |
| | I- and H- section columns, 4 sided exposure | 90 - 365 | 0.143 - 1.146 | 350, 400, 450, 500, 550, 600, 650, 700 & 750 | 15, 30, 45, 60, 75 & 90 | 2 | |
| | Rectangular and circular hollow section columns, 4 sided exposure | 75 - 290 | 0.224 - 2.176 | 350, 400, 450, 500, 520, 550, 600, 650, 700 & 750 | 15, 30, 45, 60, 75 & 90 | 3 | |
| | Rectangular and circular hollow section beams, 3 sided exposure | 75 - 290 | 0.224 - 2.046 | 350, 400, 450, 500, 550, 579, 600, 650, 700 & 750 | 15, 30, 45, 60, 75 & 90 | 4 | |

Notes:

1. Please refer to the relevant appendix number referenced in the table above to view the relationship between DFT dry film thickness, Critical Temperature and Fire Resistance Period.
2. LPCB Ref. 1111a/02 & 1307a/02 – Interchar 1260 Intumescent dry film thickness excludes the primer and top coat (where applicable) thickness. Interchar 1260 is approved for use with Intergrad 266, a two pack epoxy primer, applied to the prepared steel surface in accordance with ISO 8501-1 to Sa 2½. An intumescent coating are applied using airless paint spray equipment.
3. Results from analysis of I- of H- sections are directly applicable to angles, channels and T- sections for the same section factor, whether used as individual elements or as bracing.
4. The results of the analysis for columns can be applied to beams exposed on all four sides up to a maximum dry film thickness of 1.146 mm for I- and H- sections and 2.176 mm for rectangular hollow sections.

Approved Manufacturers

The following Companies manufacture the product listed on this certificate
These Companies are audited by the LPCB to ensure the product certification requirements are met.

International Paint limited (LPCB Ref. 1111)

Holmedalen 3
424 22 Angered
Sweden

AkzoNobel Saudi Arabia Limited (LPCB Ref 1307)

(International Paint)
Second Industrial City
Abquiq Road
Makkah Street
PO Box 37, Dammam 31411
Kingdom of Saudi Arabia

A copy of the certificate, confirming the relationship between DFT dry film thickness, critical temperature and fire resistance period, must be viewed online by clicking on the product name in the associated entry on www.RedBookLive.com

PPG Coatings Europe BV

Oceanenweg 2, 1047 BB, Amsterdam, The Netherlands

Tel: +31 20 407 5050 • Fax: +31 20 407 5059

E-mail: macooper@ppg.com • Website: www.ppgpmc.com

Certificate No: 1192a to SD198 Appendix B15 / EN 1363-1:1999

STEELGUARD™701 / STEELGUARD™801

| Product Name | Steel Section | Steel Section factor range (Hp/A) | DFT dry film thickness range (mm) | Critical Temperature Range (° C) | FireResistance Period(mins) | Appendix No. | LPCB Ref. No. |
|---------------------------------|---------------------------|-----------------------------------|-----------------------------------|--|-----------------------------|--------------|---------------|
| STEELGUARD™701 / STEELGUARD™801 | Circular steel solid rods | 40 - 215 | 0.24 - 4.82 | 350, 400, 450, 500, 550, 600, 650, 700 & 750 | 30, 60, 90 & 120 | 1 | 1192a/01 |

A copy of the certificate, confirming the relationship between DFT dry film thickness, critical temperature and fire resistance period must be viewed online by clicking on the product name in the associated entry on www.RedBookLive.com

Certificate No: 1192b to SD198 (Appendix B15) / EN 13381-8: 2010

STEELGUARD™701 / STEELGUARD™801

| Product Name | Steel Section | Steel Section Factor Range (Hp/A) | DFT Dry Film Thickness Range (mm) | Critical Temperature Range (° C) | Fire Resistance Period (mins) | Appendix No. | LPCB Ref. No. |
|---------------------------------|---|-----------------------------------|-----------------------------------|--|-------------------------------|--------------|---------------|
| STEELGUARD™701 / STEELGUARD™801 | I & H Section Beams, 3 Sided Exposure | 60 - 315 | 0.257 - 0.501 | 350, 400, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 700 | 15, 20, 30, 45, 60, 90 & 120 | 1 | 1192b/01 |
| | I & H Section Columns, 4 Sided Exposure | 70 - 310 | 0.232 - 1.046 | 350, 400, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 700 | 15, 20, 30, 45, 60 & 90 | 2 | |
| | I & H Section Beams, 4 Sided Exposure | 70 - 310 | 0.232 - 1.487 | 350, 400, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 700 | 15, 20, 30, 45, 60 & 90 | 3 | |
| | Circular Hollow Section Columns | 50 - 220 | 0.581 - 2.218 | 350, 400, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 700 | 15, 20, 30, 45 & 60 | 4 | |
| | Rectangular / Square Hollow Section Columns, 4 Sided Exposure | 50 - 235 | 0.629 - 2.284 | 350, 400, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 700 | 15, 20, 30, 45 & 60 | 5 | |

Notes:

- Please refer to the relevant appendix number referenced in the table above to view the relationship between DFT dry film thickness, Critical Temperature and Fire Resistance Period.
- LPCB Ref No. 1192b/01 - STEELGUARD™ 701 / STEELGUARD™ 801 is approved for use with Amercoat 71, a two part, epoxy-based primer, applied to the steel at a normal dry film thickness of 50µm (microns) prior to application of the STEELGUARD™ 701 / STEELGUARD™ 801. The primer and intumescent coating are applied using airless paint spray equipment.

PART 1: SECTION 4.2

STRUCTURAL STEEL FIRE PROTECTION - INTUMESCENT THIN FILM COATINGS

A copy of the certificate and required appendix confirming the relationship between DFT dry film thickness, Critical Temperature and Fire Resistance period must be viewed online by clicking on the links on the associated entry on www.redbooklive.com

Certificate No: 1192c to SD198 (Appendix B15) / BS 476-21: 1987

STEELGUARD™701 / STEELGUARD™801

| Product Name | Steel Section | Steel Section Factor range (Hp/A) | DFT Dry Film Thickness Range (mm) | Critical Temperature Range (° C) | Fire Resistance Period (mins) | Appendix No. | LPCB Ref. No. |
|---------------------------------|---|-----------------------------------|-----------------------------------|---|-------------------------------|--------------|---------------|
| STEELGUARD™701 / STEELGUARD™801 | I & H Section Beams, 3 Sided Exposure | 60 - 315 | 0.243 - 1.574 | 350, 400, 450, 500, 550, 600, 620, 650 | 30, 45, 60, 75 & 90 | 1 | 1192c/01 |
| | I & H Section Columns, 4 Sided Exposure | 70 - 440 | 0.192 - 2.204 | 350, 400, 450, 500, 550, 600, 650, 700 | 30, 45, 60, 75 & 90 | 2 | |
| | I & H Section Beams, 4 Sided Exposure | 70 - 440 | 0.192 - 1.564 | 350, 400, 450, 500, 550, 600, 620, 650, 700 | 30, 45, 60, 75 & 90 | 3 | |

Notes:

1. Please refer to the relevant appendix number referenced in the table above to view the relationship between DFT dry film thickness, Critical Temperature and Fire Resistance Period.
2. LPCB Ref No. 1192c/01 - STEELGUARD™ 701 / STEELGUARD™ 801 is approved for use with Amercoat 71, a two part, epoxy-based primer, applied to the steel at a normal dry film thickness of 50µm (microns) prior to application of the STEELGUARD™ 701 / STEELGUARD™ 801. The primer and intumescent coating are applied using airless paint spray equipment

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the product name in the associated entry on www.RedBookLive.com

Certificate No: 1192d to SD198 (Appendix B15)/EN 13381-8:2010

STEELGUARD™702 / STEELGUARD™802

| Product Name | Steel Section | Steel Section Factor range (Hp/A) | DFT Dry Film Thickness Range (mm) | Critical Temperature Range (° C) | Fire Resistance Period (mins) | Appendix No. | LPCB Ref. No. |
|---------------------------------|---|-----------------------------------|-----------------------------------|--|-------------------------------|--------------|---------------|
| STEELGUARD™702 / STEELGUARD™802 | Circular Hollow Section Columns | 50 - 235 | 0.717 3.822 | 350, 400, 450, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 700 | 15, 20, 30, 45, 60 & 90 | 1 | 1192d/01 |
| | Rectangular/Square Hollow Section Columns | 50 - 215 | 0.722 3.595 | 350, 400, 450, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 700 | 15, 20, 30, 45, 60 & 90 | 2 | |

Notes:

1. Please refer to the relevant appendix number referenced in the table above to view the relationship between DFT dry film thickness, Critical Temperature and Fire Resistance Period.
2. LPCB Ref. No. 1192d/01 - STEELGUARD™ 702 / STEELGUARD™ 802 is approved for use with Amercoat 71P, a two part polyimide cured epoxy-based primer, applied to the steel at a normal dry film thickness of 100µm (microns) prior to application of the STEELGUARD™ 702 / STEELGUARD™ 802. The primer and intumescent coating are applied using airless paint spray equipment.

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the product name in the associated entry on www.RedBookLive.com

PART 1: SECTION 4.2

STRUCTURAL STEEL FIRE PROTECTION - INTUMESCENT THIN FILM COATINGS

Certificate No: 1192j to SD 198 (Appendix B15)/EN 13381-8

| Product Name | Steel Section | Steel Section Factor range(Hp/A) | DFT DryFilm Thickness Range (mm) | Critical Temperature Range (° C) | Fire Resistance Period (mins) | Appendix No. | LPCB Ref. No. |
|--------------------|--|----------------------------------|----------------------------------|--|-------------------------------|--------------|---------------|
| STEELGUARD™ 601 | I- & H- Section Beams,3 sided exposure | 65 - 325 | 0.269 - 1.537 | 350, 400, 450, 500, 550, 600, 650, 700 | 15, 20, 30, 45, 60 & 90 | 1 | 1192j/01 |
| | I- & H- Section Columns,4 sided exposure | 70 - 345 | 0.269 - 2.032 | 350, 400, 450, 500, 550, 600, 650, 700 | 15, 20, 30, 45, 60 & 90 | 2 | |

Notes:

1. Please refer to the relevant appendix number referenced in the table above to view the relationship between DFT dry film thickness, Critical Temperature and Fire Resistance Period.
2. LPCB Ref. No. 1192j/01- STEELGUARD 601 is approved for use with Amercoat 71, a two part, epoxy-based primer, applied to the steel at a normal dry film thickness of 50µm (microns) prior to application of the STEELGUARD 601. The primer and intumescent coating are applied using airless paint spray equipment.
3. Results from analysis of I or H -sections are directly applicable to angles, channels and T- sections for the same section factor, whether used as individual elements or as bracing.
4. The results of the analysis for columns can be applied to I- and H- section beams exposed on all four sides up to the maximum dry film thickness of 1.537 mm.

Approved Manufacturers

The following Companies manufacture the product listed on this certificate. These Companies are audited by the LPCB to ensure the product certification requirements are met.

PPG Coatings Europe BV
Oceanenweg 2
1047 BB Amsterdam
The Netherlands

PPG Deco Polska sp.z.o.o. (LPCB no 1253)
Lewkowlec Branch
63-400 Ostrow Wlkp
Lewkowlec 68
Poland

Certificate No: 1192f to SD 198 (Appendix B15)/BS 476-21:1987

| Product Name | Steel Section | Steel Section Factor range(Hp/A) | DFT Dry Film Thickness Range (mm) | Critical Temperature Range (° C) | Fire Resistance Period (mins) | Appendix No. | LPCB Ref. No. |
|---|--|----------------------------------|-----------------------------------|--|-------------------------------|--------------|---------------|
| STEELGUARD 549 / STEELGUARD 550 / STEELGUARD 560 | I and H Section Beams, 3 Sided exposure | 25 - 320 | 0.250 - 3.550 | 375, 400, 450, 475, 500, 525, 550, 620, 700 & 725 | 30, 60, 90 & 120 | 1 | 1192f/01 |
| | I and H Section Columns, 4 Sided Exposure | 25 - 400 | 0.250 - 3.550 | 550 | 30, 60, 90 & 120 | 2 | |
| | Circular Hollow Section Columns, 4 Sided Exposure | 15 - 320 | 0.250 - 4.650 | 550 | 30, 60, 90 & 120 | 3 | |
| | Rectangular Hollow Section Columns, 4 Sided Exposure | 15 - 320 | 0.250 - 4.600 | 500 | 30, 60, 90 & 120 | 4 | |

PART 1: SECTION 4.2

STRUCTURAL STEEL FIRE PROTECTION - INTUMESCENT THIN FILM COATINGS

| Product Name | Steel Section | Steel Section Factor range(Hp/A) | DFT Dry Film Thickness Range (mm) | Critical Temperature Range (° C) | Fire Resistance Period (mins) | Appendix No. | LPCB Ref. No. |
|--------------|--|----------------------------------|-----------------------------------|----------------------------------|-------------------------------|--------------|---------------|
| | Rectangular Hollow Section Beams, 3 Sided Exposure | 25 - 320 | 0.250 - 2.150 | 575 | 30, 60 & 90 | 5 | |

Notes:

- Please refer to the relevant appendix number referenced in the table above to view the relationship between DFT dry film thickness, Critical Temperature and Fire Resistance Period.
- LPCB Ref. No. 1192f / 01 - STEELGUARD 549 / STEELGUARD 550 / STEELGUARD 560 thicknesses shown in table is intumescent only. The intumescent coating are applied using airless paint spray equipment.
- Results from analysis of I- or H-sections are directly applicable to angles, channels and T-sections for the same section factor, whether used as individual elements or as bracing.
- The results of the analysis for I- and H-section columns can be applied to I- and H-section beams exposed on all four sides up to a maximum dry film thickness of 3.550mm

Approved Manufacturers

The following Companies manufacture the product listed on this certificate. These Companies are audited by the LPCB to ensure the product certification requirements are met.

PPG Coatings SPRL / BVBA
(LPCB No 1264)
Tweemontstraat 104
BE-2100 Deurne
Antwerp
Belgium

PPG Deco Polska sp. z.o.o.
(LPCB No 1253)
Lewkowlec Branch
63-400 Ostrow Wlkp
Lewkowlec 68
Poland

Certificate No: 1192k to SD 198 (Appendix B15)/ISO 834: Part 10

| Product Name | Steel Section | Steel Section Factor range (Hp/A) | DFT Dry Film Thickness Range (mm) | Critical Temperature Range (° C) | Fire Resistance Period (mins) | Appendix No. | LPCB Ref. No. |
|-----------------------------------|---|-----------------------------------|-----------------------------------|--|-----------------------------------|--------------|---------------|
| STEELGUARD™ 751 / STEELGUARD™ 851 | I- section beams, 3 sided exposure | 65 - 325 | 0.690 4.528 | 350, 400, 450, 500, 538, 550, 593, 600, 650, 700 & 750 | 15, 30, 45, 60, 75, 90, 105 & 120 | 1 | 1192k/01 |
| | I- section columns, 4 sided exposure | 65 - 355 | 1.415 5.575 | 350, 400, 450, 500, 538, 550, 593, 600, 650, 700 & 750 | 15, 30, 45, 60, 75, 90, 105 & 120 | 2 | |
| | Circular hollow section columns with all round exposure | 45 - 230 | 2.035 7.218 | 350, 400, 450, 500, 538, 550, 593, 600, 650, 700 & 750 | 15, 30, 45, 60, 75, 90, 105 & 120 | 3 | |
| | Rectangular hollow section columns 4 sided exposure | 45 - 245 | 2.096 7.150 | 350, 400, 450, 500, 538, 550, 593, 600, 650, 700 & 750 | 15, 30, 45, 60, 75, 90, 105 & 120 | 4 | |
| | Rectangular hollow section beams 3 sided exposure | 45 - 245 | 0.673 3.696 | 350, 400, 450, 500, 538, 550, 593, 600, 650, 700 & 750 | 15, 30, 45, 60, 75, 90, 105 & 120 | 5 | |

Notes:

- Please refer to the relevant appendix number referenced in the table above to view the relationship between DFT dry film thickness, Critical Temperature and Fire Resistance Period.

PART 1: SECTION 4.2

STRUCTURAL STEEL FIRE PROTECTION - INTUMESCENT THIN FILM COATINGS

2. LPCB Ref. No. 1192k/01 - STEELGUARD 751 / STEELGUARD 851 thicknesses shown in table is intumescent only. The intumescent coating are applied using airless paint spray equipment.
3. Results from analysis of I- or H- sections are directly applicable to angles, channels and T- sections for the same section factor, whether used as individual elements or as bracing.
4. The results of the analysis for columns can be applied to beams exposed on all four sides up to a maximum dry film thickness of 4.528mm for I- and H- sections and 3.696mm for rectangular hollow sections.

Approved Manufacturers

The following Companies manufacture the product listed on this certificate. These Companies are audited by the LPCB to ensure the product certification requirements are met.

PPG Coatings SPRL / BVBA
(LPCB No 1249)
Tweemontstraat 104
BE-2100 Deurne
Antwerp
Belgium

Certificate No: 1192m to SD198 (Appendix B15) / BS476-21: 1987

| Product Name | LPCB Ref. No. |
|---------------------|----------------------|
| STEELGUARD 651 | 1192m/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 1192g to SD 198 (Appendix B15) / BS 476-21:1987

| Product Name | LPCB Ref. No. |
|---------------------|----------------------|
| STEELGUARD 564 | 1192g/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 1192l to SD198 (Appendix B15) / EN 13381-8

| Product Name | LPCB Ref. No. |
|---------------------|----------------------|
| STEELGUARD 651 | 1192l/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 4.3

STRUCTURAL CONCRETE MEMBERS FIRE PROTECTION

The products listed in section are assessed against the requirements of Scheme Document SD198 which details the requirements of the approval and certification process, and prEN 13381-3 (DPC 12/30259154 DC dated 15/05/2012) which specifies a test and assessment method for determining the contribution of fire protection systems to the fire resistance of structural concrete members, for instance slabs, floors, roofs and walls and which can include integral beams and columns. The concrete can be lightweight, normal weight or heavyweight concrete and of all strength classes (e.g. 20/25 to 50/60 for normal strength concrete and for high strength concrete 55/67 to 90/105). The test method, test results and the assessment method are not applicable to structural hollow concrete members and therefore the LPCB approvals in this section do not apply to such applications.

The member shall contain steel reinforcing bars.

The approval is applicable to all fire protection materials used for the protection of concrete members and includes sprayed materials, coatings, cladding protection systems and multi-layer or composite fire protection materials, with or without a gap between the fire protection material and the concrete member.

PART 1: SECTION 5

PROTECTIVE COVERING MATERIALS & SCAFFOLD CLADDING

This section includes LPS 1207 *Fire requirements for protective covering materials* which are used during the construction of new buildings and renovation of existing buildings, and LPS 1215 *Requirements for the LPCB Approval and Listing of Scaffold cladding materials*.

PART 1: SECTION 5.1

LPS 1207 PROTECTIVE COVERING MATERIALS

During the construction of new buildings and renovation of existing buildings, it is common to use sheeting made from plastic or similar materials to provide protection against the weather, dust and other materials produced by work in adjacent areas. If a material complies with LPS 1207 *Fire requirements for protective covering materials* it will not add significantly to the fire risk. This standard is referred to in *The Joint Code of Practice on the Protection from Fire of Construction Sites & Buildings Undergoing Renovation, 8th Edition* published by the FPA in association with RISC Authority

Florprotec Limited

Relay Park, Relay Drive, Tamworth B77 5PR, United Kingdom

Tel: +44 (0)1827 831440 • Fax: +44 (0)1827 831441

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

Certificate No: 527a-x1 to LPS 1207: Issue 3.0

Florprotec® Pyrolay

| Product Name | LPCB Ref. No. |
|---------------------|----------------------|
| Florprotec® Pyrolay | 527a-x1/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 5.1.1

LPS 1207 PROTECTIVE COVERING MATERIALS - SHEETING

Bainbridge International Limited

Unit 8, Flanders Park, Flanders Road, Hedge End, Southampton, Hampshire SO30 2FZ, United Kingdom

Tel: 01489 776050 • Fax: 01489 776055

E-mail: info@bainbridgeint.co.uk • Website: www.coverguard.com

Certificate No: 1058a to LPS 1207 Issue 3

| Product Name | LPCB Ref. No. |
|---|---------------|
| Wall Cover Guard | 1058a/01 |
| Floor Cover Guard CG1036DP / CG1072DP CG1336DP / CG1372DP CG2536DP / CG2572DP CG4036DP / CH4072DP | 1058a/02 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Core Industrial Plastics Limited

Unit 15, A1 Ferrybridge Business Park, Fishergate, Knottingley, West Yorkshire WF11 8NA, United Kingdom

Tel: +44 (0)1977 676072 • Fax: +44 (0)1977 676069

E-mail: sales@coreplastics.co.uk

Certificate No: 803a to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|--|---------------|
| Total Board - Flame Retardant Protection Board | 803a/01 |
| | 803a/02 |
| | 803a/03 |
| Breathable Floor Protection | 803a/05 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Coveris Flexibles (Gainsborough) UK Limited

Brackenborough Road, Louth, Lincolnshire LN11 0AX, United Kingdom

Tel: +44 (0)1507 617800 • Fax: +44 (0)1507 601681

E-mail: Sean.Bramall@coveris.com

Certificate No: 499a to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|---|---------------|
| Tuffreefl Flame Retardant (G6) - Orange | 499a/08 |
| Tuffreefl Flame Retardant (G6) - White | 499a/09 |
| Tuffreefl Flame Retardant (G6) - Orange | 499a/10 |
| Tuffreefl Flame Retardant (G6) - White | 499a/11 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 5.1.1

LPS 1207 PROTECTIVE COVERING MATERIALS - SHEETING

Distriplast Flandre SAS

BP 20106, F 53944, Dunkerque Cedex 2, France
Tel: +33 3 28 29 2480 • Fax: +33 3 28 29 24 93
Website: www.distriplast.com

Certificate No: 1353a to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|--------------------|---------------|
| FT BLL2 Diplast FR | 1353a/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Don & Low Ltd, Nonwovens

Glamis Road, Forfar, Angus DD8 1EY, United Kingdom
Tel: +44 (0)1307 452600 • Fax: +44 (0)1307 452635
E-mail: nonwovens@donlow.co.uk • Website: www.donlow.com

Certificate No: 726a to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|--|---------------|
| Daltex Flame Retardant Spunbound (A100E5TFR) | 726a |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

DS SMITH CORREX (Trading as a division of DS Smith Plastics Limited)

Madleaze Industrial Estate, Bristol Road, Gloucester GL1 5SG, United Kingdom
Tel: +44 (0)1452 316500 • Fax: +44 (0)1452 300436
E-mail: sales@kayplast.com • Website: www.dssmithcorrex.com

Certificate No: 227a to LPS 1207: Issue 2

| Product Name | Thickness (mm) | Weight (g/m ²) | LPCB Ref. No. |
|--|----------------|----------------------------|---------------|
| Correx Twinwall (black) | 2.0 to 6.0 | 250 to 1500 | 227a/01 |
| Correx Twinwall (coloured & translucent) | 2.0 to 6.0 | 250 to 1500 | 227a/02 |

Florprotec Limited

Relay Park, Relay Drive, Tamworth B77 5PR, United Kingdom
Tel: +44 (0)1827 831440 • Fax: +44 (0)1827 831441
E-mail: sales@florprotec.co.uk • Website: www.floorprotection.co.uk

Certificate No: 871a to LPS1207: Issue 2.1

| Product Name | Thickness | Weight (g/m ²) | LPCB Ref. No. |
|--------------|------------|----------------------------|---------------|
| CPP-FR | 0.16 ± 10% | 84 ± 5% | 871a/01 |

Notes

PART 1: SECTION 5.1.1

LPS 1207 PROTECTIVE COVERING MATERIALS - SHEETING

1. LPCB Ref. No. 871a/01 covers white base sheet material, with or without additional printed areas, with a printed product marking band as required by LPS 1207 Issue 2 clause 4.

Certificate No: 527a-x1 to LPS 1207: Issue 3

Florprotec Pyrolay

| Product Name | LPCB Ref. No. |
|---------------------|---------------|
| Florprotec® Pyrolay | 527a-x1/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 726a-x2 to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|--------------------------|---------------|
| Florprotec® Breatha-Flor | 726a-x2/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Icopal Limited

Barton Dock Road, Stretford, Manchester M32 0YL, United Kingdom

Tel: +44 (0)161 865 4444 • Fax: +44 (0)161 865 8433

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

Certificate No: 572c to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|----------------------------------|---------------|
| Monarflex Super T Plus Firesmart | 572c/03 |
| Monarflex Stripe Firesmart | 572c/04 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Industrial Textiles & Plastics Ltd

Stillington Road, Easingwold, York YO61 3FA, United Kingdom

Tel: +44 (0)1347 825200 • Fax: +44 (0)1347 825222

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

Certificate No: 1351a to LPS 1207 Issue 3

Powerclad

| Product Name | LPCB Ref. No. |
|----------------|---------------|
| Powerclad PMFR | 1351a/01 |
| Powerclad SDFR | 1351a/02 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 965a to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|----------------|---------------|
| Powerclad PMFR | 965a/01 |
| Powerclad SDFR | 965a/02 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 5.1.1

LPS 1207 PROTECTIVE COVERING MATERIALS - SHEETING

IPB N.V.

Steenovenstraat 30, B-8790 Waregem, Belgium
Tel: + 32 (0)56 60 79 19 • Fax: + 32 (0)56 61 08 85
E-mail: david.stofferis@iplast.be • Website: www.iplast.be

Certificate No: 365a to LPS 1207: Issue 3

Biplex

| Product Name | Thickness (mm) | Weight (g/m ²) | Base Material Colour | Assessed for additional print (logos, advertising etc) ^{Note 1} | LPCB Ref. No. |
|--------------|----------------|----------------------------|----------------------|--|---------------|
| Biplex | 2.0 ± 5% | 250 ± 5% | White | Yes | 365a/01 |
| | 2.0 ± 5% | 250 ± 5% | Black | Yes | 365a/02 |

Notes:

- All approved product shall be suitable marked in accordance with the requirements of LPS 1207: Issue 3, Clause 5. additional print refers to, for example, distributor, contractor or contract logos or pictures, product use and additional site safety information or advertising, and is applied in addition to the required approval marking of clause 5.

Certificate No: 365a to LPS 1207: Issue 2

| Product Name | Thickness(mm) | Weight (g/m ²) | LPCB Ref. No. |
|--------------|---------------|----------------------------|---------------|
| Biplex White | 4.0 ± 5% | 1000 ± 5% | 365a/01 |

Notes:

- LPCB Ref. No. 365a/01 covers printed and non-printed material with a printed product marking band as required by LPS 1207: Issue 2 Clause 4
- The above product is approved under LPS 1207: Issue 2

Karton S.p.A.

Viale Europa 7, 33077 Sacile (PN), Italy
Tel: +39 0434 788811 • Fax: +39 0434 788822
E-mail: piera.bressan@karton.it • Website: www.karton.it

Certificate No: 1234a to LPS 1207: Issue 3.0

| Product Name | Thickness (mm) | Weight (g/m ²) | LPCB Ref. No. |
|--|-----------------|----------------------------|---------------|
| CartonPlast Flame Retardant Board, Black | 2.0 to 3.0 ± 5% | 250 to 400 ± 5% | 1234a/01 |
| CartonPlast Flame Retardant Board, White | 2.0 to 3.0 ± 5% | 250 to 400 ± 5% | 1234a/02 |

Notes:

- LPCB Ref No 1234a/01 and 1234a/02 covers printed and non-printed materials with a printed product marking band as required by LPS1207: Issue 3 clause 5.

Northern Ireland Plastics Limited

39 Shrigley Road, Killyleagh, Co. Down, Northern Ireland BT30 9SR, United Kingdom
Tel: +44 (0)2844 828753/4 • Fax: +44 (0)2844 828809
E-mail: info@niplastics.com

Certificate No: 341a to LPS 1207 Issue 3

| Product Name | LPCB Ref. No. |
|------------------------------|---------------|
| Corriboard Twin Wall (White) | 341a/01 |
| Corriboard Twin Wall (Black) | 341a/02 |

PART 1: SECTION 5.1.1

LPS 1207 PROTECTIVE COVERING MATERIALS - SHEETING

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Ockwells Limited

Unit 6, Transigo, Gables Way, Thatcham, Berkshire RG19 4ZA, United Kingdom
Tel: +44 (0)1635 876336 • Fax: +44 (0)1635 876338
E-mail: sales@ockwell.co.uk • Website: www.ockwells.co.uk

Certificate No: 726a-x1 to LPS 1207: Issue3

Protective Covering Materials

| Product Name | LPCB Ref. No. |
|----------------|---------------|
| FloorShield FR | 726a-x1/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 742a-x1 to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|---------------------|---------------|
| Ockwells Twinshield | 742a-x1/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 341a-x1 to LPS 1207 Issue 3

| Product Name | LPCB Ref. No. |
|-----------------------------|---------------|
| Ockwells Twinshield (White) | 341a-x1/01 |
| Ockwells Twinshield (Black) | 341a-x1/02 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 227a-x1 to LPS 1207 Issue 2

| Product Name | LPCB Ref. No. |
|--------------|---------------|
| TwinShield | 227a-x1/01 |
| | 227a-x1/02 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Ondaplast SpA

Via Crocetta, 3310, Longiano (FC) 47020, Italy
Tel: +39 0547 56616 • Fax: +39 0547 54087
E-mail: renzo.rossi@ondaplast.com • Website: www.ondaplast.com

Certificate No: 742a to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|---|---------------|
| RE-FLAM twin wall flame retardant sheet, natural colour | 742a/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 5.1.1

LPS 1207 PROTECTIVE COVERING MATERIALS - SHEETING

Protec International Limited

Construction House, Adlington Industrial Estate, Adlington, Cheshire SK10 4NL, United Kingdom

Tel: +44 (0)1625 855666 • Fax: +44 (0)1625 855601

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

Certificate No: 843a to LPS 1207: Issue 3.0

| Product Name | LPCB Ref. No. |
|---|----------------------|
| CushionGard FR | 843a/01 |
| Breather Shield FR | 843a/02 |
| Bath Protector FR | 843a/03 |
| Bidet Protector FR | |
| Door Protector Sheet FR | |
| Edge Protector FR | |
| Hob & Oven Protector FR | |
| Proplex - Translucent | |
| Proplex FR HD | |
| Sink Protector FR | |
| Stair Protector FR | |
| WC Protector FR | |
| WC Protector FR (Concealed Cistern) | |
| Window and Door Sill Protector | |
| FR Bubble Wrap | 843a/04 |
| Proplex - Black | 843a/05 |
| Tekgard - TK 100 & TK 200 | 843a/06 |
| Door Sleeve FR | 894a/02 |
| FR Polythene - Heavy, Medium and Light Duty | |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Protecta Screen Limited

Unit 3, Driberg Way, Braintree, Essex CM7 1NB, United Kingdom

Tel: 0870 121 8670

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

Certificate No: 1172a/01 to LPS 1207 Issue 2

| Product Name | Thickness (mm) | Weight (g/m²) | LPCB Ref. No. |
|---------------------|-----------------------|---------------------------------|----------------------|
| Carpet Safe FR | 0.065 nominal | 75 ± 10% | 1172a/01 |

Notes:

1. LPCB Ref No. 1172a/01 Carpet Safe FR is available in white only and can be a printed or non-printed material with a printed product marking band as required by LPS 1207 Issue 2 Clause 4.
2. LPCB Ref No. 1172a/01 Carpet Safe FR is a self-adhesive film.
3. LPCB Ref No. 1172a/01 Carpet Safe FR, the thickness quoted is the nominal film thickness pre-embossed, weight quoted is inclusive of adhesive.

Certificate No: 726a-x4 to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|---------------------|----------------------|
| Breather-Poly FR™ | 726a-x4/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

RPC bpi indupac Greenock (trading as a division of British Polythene Limited)

96 Port Glasgow Road, Greenock, Scotland PA15 2UL, United Kingdom

Tel: +44 (0)1475 501100 • Fax: +44 (0)1475 743256

Website: www.bpipoly.com

Certificate No: 521a to LPS 1207 Issue 3

| Product Name | LPCB Ref. No. |
|---|---------------|
| Visqueen Door Sleeves | 521a/03 |
| Visqueen Flame Retardant Polythene Protection | |
| Visqueen Megafilm | |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Sansetsu (UK) Limited

16- 17 Brunleys Road, Kiln Farm, Milton Keynes MK11 3EW, United Kingdom

Tel: 01908 264750 • Fax: 01908 563868

E-mail: danny.winters@sansetsu.co.uk • Website: www.sansetsu.co.uk

Certificate No: 1200a to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|-----------------------|---------------|
| Sancell Premium 10 FR | 1200a/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Sealed Air Limited

Telford Way, Kettering, Northants NN16 8UN, United Kingdom

Tel: 01536 315 700 • Fax: 01536 315 702

E-mail: kettering.orders@sealedair.com • Website: www.sealedair.com

Certificate No: 505b to LPS 1207: Issue 3

| Product Name | Thickness (mm) | Weight (g/m ²) | Base material colour | Assessed for additional print (logos, advertising etc) (see note 1) | LPCB Ref. No. |
|--------------|----------------|----------------------------|----------------------|---|---------------|
| EMFR | 4mm Bubble | 60 ± 2 | White | No | 505b/03 |

Note:

- All approved product shall be suitably marked in accordance with the requirement of LPS 1207: Issue 3, clause 5. Additional print refers to, for example, distributor, contractor or contract logos or pictures, product use and additional site safety information or advertising, and is applied in addition to the required approval marking of clause 5.

Solicom SA

Grand-Rue 26A, L-8372 Hobscheid, Luxembourg

Tel: +352 26957256 • Fax: +352 26958056

E-mail: info@solicom-verisafe.com • Website: www.solicom-verisafe.com

Certificate No: 789a to LPS 1207 Issue 3

PART 1: SECTION 5.1.1

LPS 1207 PROTECTIVE COVERING MATERIALS - SHEETING

| Product Name | LPCB Ref. No. |
|---------------------|----------------------|
| Verisafe 200 | 789a/01 |
| Verisafe B1 280 | 789a/03 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Swiftec Group

Castlepoint, Castle Way, Ellon, Aberdeenshire AB41 9RG, United Kingdom

Tel: +44 (0)1358 720888 • Fax: +44 (0)1358 720880

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

Certificate No: 1205a to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|---------------------------------------|----------------------|
| Antimar® Airtech FR Breathable Fleece | 1205a/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 1205e to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|---------------------|----------------------|
| Antinox® 2/250 FR | 1205e/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 1205c to LPS 1207: Issue 3.0

| Product Name | LPCB Ref. No. |
|--|----------------------|
| Antimar® 125 mu FR Orange Polythene Sheeting | 1205c/01 |
| Antimar® 125 mu FR White Polythene Sheeting | |
| Antimar® 50 mu FR White Polythene Sheeting | |
| Dustban® 125 mu Screening | |
| Dustban® 75 mu Screening | |
| Dustban® 75mu Flame Retardant Door Sleeves | |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Swiftguard

Redlands, Coulsdon, Surrey CR5 2HT, United Kingdom

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

Certificate No: 726a-x3 to LPS 1207: Issue 3

| Product Name | LPCB Ref. No. |
|-------------------------------------|----------------------|
| Swiftguard Breathable FR Protection | 726a-x3/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Total Polyfilm Limited

Armytage Road, The Industrial Estate, Brighouse, West Yorkshire HD6 1PT, United Kingdom
 Tel: +44 (0)1484 714313 • Fax: +44 (0)1484 720452

Certificate No: 527a to LPS 1207: Issue 2

Frapol Sheeting

| Product Name | Thickness (mm) | Weight (g/m ²) | LPCB Ref. No. |
|--------------|----------------------|----------------------------|---------------|
| Frapol HD | 0.200 to 0.300 ± 10% | 186 to 279 ± 10% | 527a/01 |
| Frapol LD | 0.050 to 0.099 ± 10% | 46 to 92 ± 10% | |
| Frapol MD | 0.100 to 0.199 ± 10% | 93 to 185 ± 10% | |

Note:

- LPCB Ref No 527a/01 covers printed and non printed materials with a printed product marking band as required by LPS1207: Issue 2 Clause 4. The approval covers natural (white) and pigmented film.

Tufcoat Limited

3 Garden Close, Langage Business Park, Plymouth PL7 5EU, United Kingdom
 Tel: +44(0) 1752 227 333 • Fax: +44(0) 1752 261 642
 E-mail: info@tufcoat.co.uk • Website: www.tufcoat.co.uk

Certificate No: 1212a to LPS 1207: Issue 3

Tufcoat 300µm Environmental Shrink-Wrap

| Product Name | Thickness (mm) | Weight Weight (g/m ²) | Base Material Colour | Assessed for additional print(logos, advertising etc) ^{Note 1.} | LPCB Ref. No. |
|---|----------------|-----------------------------------|----------------------|--|---------------|
| Tufcoat 300µm Environmental Shrink-Wrap | 0.29 ± 10% | 287 ± 5% | White | No | 1212a/01 |

Notes:

- All approved product shall be suitably marked in accordance with the requirements of LPS 1207: Issue 3. Clause 5. Additional print refers to, for example, distributor, contractor or contract logos or pictures, product use and additional site safety information or advertising, and is applied in addition to the required approval marking of clause 5.

Ultrimax Coatings Limited

Clayfield Industrial Estate, Tickhill Road, Doncaster DN4 8QG, United Kingdom
 Tel: 01302 856 666 • Fax: 01302 571 510
 E-mail: Jodie.Hughes@ultrimaxcoatings.co.uk • Website: www.ultrimaxstore.com

Certificate No: 521a-x1 to LPS 1207 Issue 3

| Product Name | LPCB Ref. No. |
|--------------|---------------|
| Tuffalo | 521a-x1/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 5.1.2

LPS 1207 PROTECTIVE COVERING MATERIALS - PRE-FORMED

Temporary Floor Protection (TFP) Limited

1st Floor, Wellington House, 209 - 217 High Street, Hampton Hill, Twickenham TW12 1NP, United Kingdom

Tel: 0208 894 4984 • Fax: 0208 894 3390

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

Certificate No: 1214a to LPS 1207 Issue 3

| Product Name | LPCB Ref. No. |
|----------------------|----------------------|
| TecDura LD Stickymat | 1214a/03 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Scaffold cladding materials such as sheeting and netting are often used externally during construction, refurbishment or demolition of buildings to provide protection. Historically, there have been a number of significant losses associated with fires involving scaffolding. Scaffold cladding materials should not add to the fire risk if they comply with LPS 1215 *Requirements for the LPCB approval and listing of scaffold cladding materials*. This standard is referred to in *The Joint Code of Practice on the Protection from Fire of Construction Sites & Buildings Undergoing Renovation, 8th Edition* published by the FPA in association with RISC Authority

Note: LPS 1215:Issue 3 does not cover other features required of scaffold materials, such as resistance to wind, rain penetration, resistance to tearing or impact damage.

Icopal Limited

Barton Dock Road, Stretford, Manchester M32 0YL, United Kingdom

Tel: +44 (0)161 865 4444 • Fax: +44 (0)161 865 8433

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

Certificate No: 572d to LPS 1215: Issue 4

| Product Name | LPCB Ref. No. |
|--|---------------|
| Monarflex Temporary Roof Cover Flamesafe | 572d/02 |
| Monarflex Stripe Firesmart | 572d/05 |
| Monarflex Scaffband Flamesafe | 572d/06 |
| Monarflex Super T Plus Firesmart | 572d/07 |
| Monarflex Monarsound Flamesafe | 572d/08 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Industrial Textiles & Plastics Ltd

Stillington Road, Easingwold, York YO61 3FA, United Kingdom

Tel: +44 (0)1347 825200 • Fax: +44 (0)1347 825222

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

Certificate No: 1351b to LPS 1215

Powerclad

| Product Name | LPCB Ref. No. |
|----------------|---------------|
| Powerclad PMFR | 1351b/01 |
| Powerclad SDFR | 1351b/02 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Certificate No: 965b to LPS 1215: Issue 4

| Product Name | LPCB Ref. No. |
|----------------------|---------------|
| Powerclad PMFR | 965b/01 |
| Powerclad KR 1215 FR | 965b/03 |
| Powerclad SDFR | 965b/04 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

PART 1: SECTION 5.2

LPS 1215 SCAFFOLD CLADDING MATERIALS

Protec International Limited

Construction House, Adlington Industrial Estate, Adlington, Cheshire SK10 4NL, United Kingdom

Tel: +44 (0)1625 855666 • Fax: +44 (0)1625 855601

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

Certificate No: 843c to LPS 1215: Issue 4

| Product Name | LPCB Ref. No. |
|---------------------|---------------|
| Proscaff Premium FR | 843c/01 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Solicom SA

Grand-Rue 26A, L-8372 Hobscheid, Luxembourg

Tel: +352 26957256 • Fax: +352 26958056

E-mail: info@solicom-verisafe.com • Website: www.solicom-verisafe.com

Certificate No: 789b to LPS 1215 Issue 4

| Product Name | LPCB Ref. No. |
|-----------------|---------------|
| Verisafe 320 | 789b/01 |
| Verisafe B1 280 | 789b/03 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com

Tufcoat Limited

3 Garden Close, Langage Business Park, Plymouth PL7 5EU, United Kingdom

Tel: +44(0) 1752 227 333 • Fax: +44(0) 1752 261 642

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

Certificate No: 1212b to LPS 1215: Issue 4

Tufcoat 300µm Environmental Shrink-Wrap

| Product Name | Thickness (mm) | Weight Weight (g/m ²) | Base Material Colour | Assessed for additional print(logos, advertising etc) ^{Note 1.} | LPCB Ref. No. |
|---|----------------|-----------------------------------|----------------------|--|---------------|
| Tufcoat 300µm Environmental Shrink-Wrap | 0.29 ± 10% | 287 ± 5% | White | No | 1212b/01 |

Notes:

1. All approved product shall be suitably marked in accordance with the requirements of LPS 1215: Issue 4. Clause 4. Additional print refers to, for example, distributor, contractor or contract logos or pictures, product use and additional site safety information or advertising, and is applied in addition to the required approval marking of clause 4.

The materials listed in this section can be used to sub-divide such voids as service shafts, roof and floor spaces and restrict the spread of fire. In the absence of a specific test standard for cavity barriers these products meet the performance requirements of BS 476:Part 22:1987 *Methods for determination of the fire resistance of non-loadbearing elements of construction* or EN 1364-1 *Fire resistance tests for non-loadbearing elements, walls* or 1364-2 *Fire resistance tests for non-loadbearing elements, ceilings* as set down in Approved Document B. The *LPC Design Guide for the Fire Protection of Buildings: 2000* covers the design issues in Section 4.5.

The assessment methodology used in LPS 1208 also applies to the performance assessment for these products.

Culimeta-Saveguard Limited

Tame Valley Mill, Wainwright Street, Dukinfield, Cheshire SK16 5NB, United Kingdom

Tel: +44 (0)161 344 2484 • Fax: +44 (0)161 344 2486

E-mail: sales@culimeta-saveguard.com

Certificate No: 552a to LPS 1208: Issue 2

| Product Name | Specification high x wide (mm) | Orientation V-Vertical Resistance (min) Integrity | Layer of fabric | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | LPCB Ref. No. |
|-----------------|--------------------------------|---|-----------------|---------------------------------|----------------------------------|---------------|
| FIREHALT 120/60 | 3000 x 3000 | V | Double | 120 | 60 | 552a/01 |
| FIREHALT 120/30 | 3000 x 3000 | V | Single | 120 | 30 | 552a/02 |
| FIREHALT 60/30 | 6000 x 20000 | V | Single | 60 | 30 | 552a/03 |
| FIREHALT 30/30 | 6000 x 20000 | V | Single | 30 | 30 | 552a/04 |
| VALBARR 120/60 | 3000 x 3000 | V | Double | 120 | 60 | 552a/05 |
| VALBARR 120/30 | 3000 x 3000 | V | Single | 120 | 30 | 552a/06 |
| VALBARR 60/30 | 6000 x 20000 | V | Single | 60 | 30 | 552a/07 |
| VALBARR 30/30 | 6000 x 20000 | V | Single | 30 | 30 | 552a/08 |

Notes:

1. The barriers can only be installed vertically;
2. The barriers joints between individual runs in a barrier must be fixed with 2 rows of 10mm staples at 100mm staggered vertical centres and can only be installed vertically;
3. LPCB Ref no's 552a/01, 552a/05 are provided in a double layer configuration to provide a compartmentation performance of 120 minutes integrity and 60 minutes insulation;
4. LPCB Ref no's 552a/01, 552a/05 the two layers of fabric may be jointed together by means of hot melt, thermos softening adhesive spots such that it can be supplied as a single fabric component;
5. The barrier should be clamped into a concrete aperture using galvanised mild steel stud sections of dimensions 25mm by 25mm by 0.5mm thick, to the head and galvanised mild steel angle sections of dimensions 25mm by 25mm by 0.5mm thick to the remaining three edges. The stud fixing by steel Rawlbolts, M6 10P, centres 250mm.
6. Approved Manufacturers

The following Companies manufacture the product listed on this certificate. These Companies are audited by the LPCB to ensure the product certification requirements are met.

Culimeta-Saveguard Ltd
(LPCB Ref. No 552)

Dukinfield
Cheshire
SK16 5NB
United Kingdom

PART 1: SECTION 6

CAVITY FIRE BARRIERS

Rockwool Limited

Wern Tarw, Pencoed, Bridgend, Mid Glamorgan CF35 6NY, United Kingdom

Tel: +44 (0)1656 862621 • Fax: +44 (0)1656 862302

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

Certificate No: 022c to LPS 1208: Issue 2

| Product Name | Product | Specification | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grading | LPCB Ref. No. |
|---------------------------------------|-----------------------|---|---------------------------------|----------------------------------|---------|---------------|
| Rockwool Firepro™ Fire Barrier System | ½ hour Cavity Barrier | 1 layer 50mm thick | 60 | 15 | FR15 | 022c/01 |
| | ½ hour Fire Barrier | 1 layer 60mm Fire Barrier foil faced overlapped joints | 60 | 30 | FR30 | |
| | 1 hour Fire Barrier | 2 layers 50mm Fire Barrier staggered vertical joints | 60 | 60 | FR60 | |
| | 1½ Hour Fire Barrier | 2 layers 50mm Fire Barrier staggered vertical joints | 90 | 90 | FR90 | |
| | 2 hour Fire Barrier | 2 layers 60mm Fire Barrier foil faced separated by 40mm air gap | 120 | 120 | FR120 | |

Notes:

1. This product is supplied in 1m widths, with a length of 4m for 50mm thick Fire Barrier and 3.5m for 60mm thick Fire Barrier.
2. The maximum allowable drop is 6m without a support frame. Where the additional section is joined the barrier should be overlapped by at least 100mm and stitched.
3. Refer to manufacturer's technical literature for fixing details.

Certificate No: 022c to LPS1208: Issue 2

Rockwool Firepro Fire Barrier Slab

| Product Name | Cavity Width (mm) | Slab Size (mm) | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | Grade | LPCB Ref. No. |
|-------------------------------------|-------------------|------------------|---------------------------------|----------------------------------|-------|---------------|
| Rockwool Firepro™ Fire Barrier Slab | Up to 1000 | 1000 x 600 x 100 | 240 | 60 | FR60 | 022c/02 |

Notes:

1. Where the slab is penetrated by services, the fire resistance is reduced to 90 minutes integrity and 60 minutes insulation. The size of the penetrations should not exceed steel pipes having a diameter of 33.5mm external diameter, or steel cable trays 305mm wide x 50mm high x 0.9mm thick. Rockwool Acoustic and Fire Sealant should also be applied to all butt edges to form a tight bond when a penetration passes through the slab. The Acoustic and Fire Sealant should be tapered from 16mm deep at the face of the slab to nothing at a distance of 40mm to both faces.
2. Refer to manufacturer's technical literature for fixing details.

Temporary buildings are widely used on construction sites as site offices, canteens and rest areas etc. On some large construction sites the number of temporary buildings can form a virtual village; a fire starting in one of these temporary buildings could be catastrophic if the fire were to break out and spread to other temporary buildings or to the building under construction.

LPS 1195:Part 1 *Specification for Testing of Temporary Buildings for Use on Construction Sites* specifies the test and performance requirements for temporary buildings for use on construction sites at locations less than 6m from buildings under construction/refurbishment. The basic objective is to prevent a fire which has started in a temporary building from spreading to adjacent combustible materials, other temporary buildings or to the building under construction. A temporary building tested and approved by LPCB to this standard can be regarded as meeting the appropriate requirements of "The Joint Code of Practice on the Protection from Fire of Construction Sites and Buildings Undergoing Renovation".

PART 1: SECTION 8

PRODUCTS ASSESSED FOR USE IN SURFACE AND SUB SURFACE TRANSPORT APPLICATIONS

The products listed in this section have been assessed for use in rail transport applications in which the means of escape from a fire is limited as a result of:

- Difficulties in escaping from moving vehicles.
- The location of the fire (sub surface tunnels, viaducts, termini).
- Restricted egress from tunnels and sub surface termini.

Under such circumstances, it is essential that the materials used in the construction and furnishings of vehicles and sub surface constructions have the appropriate fire performance in terms of fire resistance and reaction to fire, including spread of flame, smoke and toxic fume emission.

This scheme provides independent third party approval for fire performance of products which have been tested and, where appropriate, classified in accordance with standards and codes of practice recognised by the transport industry or produced by the relevant transport bodies such as London Underground Limited (LUL), International Maritime Organisation (IMO) etc.

Products gaining LPCB approval under this scheme are primarily for use in transport applications such as rolling stock, shipping, motor vehicles and within transport infrastructure such as underground tunnels and transport termini.

MCT Brattberg AB

SE 37192 Karlskrona, Sweden

Tel: +46 (0) 455 375200 • Fax: +46 (0) 455 375290

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

UK Office:

MCT Brattberg Ltd, Commerce Street, Carrs Industrial Estate, Haslingden BB4 5JT, United Kingdom

Tel: +44 (0)1706 244890 • Fax: +44 (0)1706 244891

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

Certificate No: 628a to LPS 1132: Issue 4

| Product Name | Use | Element of Construction | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | LPCB Ref. No. |
|-------------------------------------|-------------|---------------------------|---------------------------------|----------------------------------|---------------|
| RGB 2, 4, 6, 8 & RGB 180, 240 & 360 | Cables | Concrete or masonry Floor | 240 | 120 | 628a/01 |
| | Steel pipe | Concrete or masonry Floor | 240 | 60 | |
| | Cables | Concrete or masonry Wall | 240 | 60 | |
| | Steel pipes | Concrete or masonry Wall | 240 | 60 | |
| RGO 2, 4, 6, 8 & RGO 180, 240 & 360 | Cables | Concrete or masonry Floor | 240 | 120 | 628a/02 |
| | Steel pipes | Concrete or masonry Floor | 240 | 60 | |
| | Cables | Concrete or masonry Wall | 240 | 60 | |

PART 1: SECTION 8**PRODUCTS ASSESSED FOR USE IN SURFACE AND SUB SURFACE TRANSPORT APPLICATIONS**

| Product Name | Use | Element of Construction | Fire Resistance (min) Integrity | Fire Resistance (min) Insulation | LPCB Ref. No. |
|----------------------------------|-------------|---------------------------|---------------------------------|----------------------------------|---------------|
| RGP 50, 70, 100, 150, 200 & 300 | Steel pipes | Concrete or masonry Wall | 240 | 60 | 628a/03 |
| | Cables | Concrete or masonry Floor | 360 | 120 | |
| | Steel pipes | Concrete or masonry Floor | 240 | 60 | |
| | Cables | Concrete or masonry Wall | 360 | 120 | |
| RGPO 50, 70, 100, 150, 200 & 300 | Steel pipes | Concrete or masonry Wall | 240 | 60 | 628a/04 |
| | Cables | Concrete or masonry Floor | 360 | 120 | |
| | Steel pipes | Concrete or masonry Floor | 240 | 60 | |
| | Cables | Concrete or masonry Wall | 360 | 120 | |
| | Steel pipes | Concrete or masonry Wall | 240 | 60 | |

Note:

1. Please refer to manufacturer's product data for maximum aperture sizes and installation details.

Rockwool Limited

Wern Tarw, Pencoed, Bridgend, Mid Glamorgan CF35 6NY, United Kingdom

Tel: +44 (0)1656 862621 • Fax: +44 (0)1656 862302

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

Certificate No: 022f to BS 476: Part 24: 1987

FirePro™ Fire Duct Systems

| Product Name | Duct Type | Condition | Maximum Duct Size (ht x wt) (mm) | Insulation Thickness (mm) | Fire Resistance Integrity (min) | Fire Resistance Insulation (min) | LPCB Ref. No. |
|----------------------------|----------------------------------|--------------|----------------------------------|---------------------------|---------------------------------|----------------------------------|---------------|
| FirePro™ Fire Duct Systems | Ventilation vertical orientation | Fire Outside | 1000 x 1000 | 25 | 30 | 30 | 022f/01 |
| | Ventilation vertical orientation | Fire Outside | 1000 x 1000 | 30 | 60 | 60 | |
| | Ventilation vertical orientation | Fire Outside | 1500 x 1500 | 50 | 90 | 90 | |
| | Ventilation vertical orientation | Fire Outside | 1500 x 1500 | 70 | 120 | 120 | |
| | Ventilation vertical orientation | Fire Outside | 1525 dia. | 25 | 30 | 30 | |
| | Ventilation vertical orientation | Fire Outside | 1525 dia. | 30 | 60 | 60 | |

PART 1: SECTION 8

PRODUCTS ASSESSED FOR USE IN SURFACE AND SUB SURFACE TRANSPORT APPLICATIONS

| Product Name | Duct Type | Condition | Maximum Duct Size (ht x wt) (mm) | Insulation Thickness (mm) | Fire Resistance Integrity (min) | Fire Resistance Insulation (min) | LPCB Ref. No. |
|---------------------|------------------------------------|------------------|---|----------------------------------|--|---|----------------------|
| | Ventilation vertical orientation | Fire Outside | 1525 dia. | 50 | 90 | 90 | |
| | Ventilation vertical orientation | Fire Outside | 1525 dia. | 70 | 120 | 120 | |
| | Ventilation horizontal orientation | Fire Outside | 1000 x 1000 | 25 | 30 | 30 | |
| | Ventilation horizontal orientation | Fire Outside | 1500 x 1500 | 40 | 60 | 60 | |
| | Ventilation horizontal orientation | Fire Outside | 1200 x 1200 | 70 | 90 | 90 | |
| | Ventilation horizontal orientation | Fire Outside | 1000 x 1000 | 90 | 120 | 120 | |
| | Ventilation horizontal orientation | Fire Outside | 1525 dia. | 25 | 30 | 30 | |
| | Ventilation horizontal orientation | Fire Outside | 1525 dia. | 40 | 60 | 60 | |
| | Ventilation horizontal orientation | Fire Outside | 1525 dia. | 70 | 90 | 90 | |
| | Ventilation horizontal orientation | Fire Outside | 1525 dia. | 90 | 120 | 120 | |
| | Ventilation vertical orientation | Fire Inside | 1000 x 1000 | 25 | 30 | 30 | |
| | Ventilation vertical orientation | Fire Inside | 1000 x 1000 | 30 | 60 | 60 | |
| | Ventilation vertical orientation | Fire Inside | 1500 x 1500 | 50 | 90 | 90 | |
| | Ventilation vertical orientation | Fire Inside | 1500 x 1500 | 70 | 120 | 120 | |
| | Ventilation vertical orientation | Fire Inside | 1525 dia. | 25 | 30 | 30 | |
| | Ventilation vertical orientation | Fire Inside | 1525 dia. | 30 | 60 | 60 | |
| | Ventilation vertical orientation | Fire Inside | 1525 dia. | 50 | 90 | 90 | |
| | Ventilation vertical orientation | Fire Inside | 1525 dia. | 70 | 120 | 120 | |
| | Ventilation horizontal orientation | Fire Inside | 1000 x 1000 | 25 | 30 | 30 | |
| | Ventilation horizontal orientation | Fire Inside | 1500 x 1500 | 40 | 60 | 60 | |
| | Ventilation horizontal orientation | Fire Inside | 1200 x 1200 | 70 | 90 | 90 | |
| | Ventilation horizontal orientation | Fire Inside | 1000 x 1000 | 90 | 120 | 120 | |
| | Ventilation horizontal orientation | Fire Inside | 1525 dia. | 25 | 30 | 30 | |

PART 1: SECTION 8

PRODUCTS ASSESSED FOR USE IN SURFACE AND SUB SURFACE TRANSPORT APPLICATIONS

| Product Name | Duct Type | Condition | Maximum Duct Size (ht x wt) (mm) | Insulation Thickness (mm) | Fire Resistance Integrity (min) | Fire Resistance Insulation (min) | LPCB Ref. No. |
|--------------|-------------------------------------|--------------|----------------------------------|---------------------------|---------------------------------|----------------------------------|---------------|
| | Ventilation horizontal orientation | Fire Inside | 1525 dia. | 40 | 60 | 60 | |
| | Ventilation horizontal orientation | Fire Inside | 1525 dia. | 70 | 90 | 90 | |
| | Ventilation horizontal orientation | Fire Inside | 1525 dia. | 90 | 120 | 120 | |
| | Smoke Outlet vertical orientation | Fire Outside | 1000 x 1000 | 25 | 30 | 30 | |
| | Smoke Outlet vertical orientation | Fire Outside | 1000 x 1000 | 30 | 60 | 60 | |
| | Smoke Outlet vertical orientation | Fire Outside | 1500 x 1500 | 50 | 90 | 90 | |
| | Smoke Outlet vertical orientation | Fire Outside | 1500 x 1500 | 70 | 120 | 120 | |
| | Smoke Outlet vertical orientation | Fire Outside | 1525 dia. | 25 | 30 | 30 | |
| | Smoke Outlet vertical orientation | Fire Outside | 1525 dia. | 30 | 60 | 60 | |
| | Smoke Outlet vertical orientation | Fire Outside | 1525 dia. | 50 | 90 | 90 | |
| | Smoke Outlet vertical orientation | Fire Outside | 1525 dia. | 70 | 120 | 120 | |
| | Smoke Outlet horizontal orientation | Fire Outside | 1000 x 1000 | 25 | 30 | 30 | |
| | Smoke Outlet horizontal orientation | Fire Outside | 1500 x 1500 | 40 | 60 | 60 | |
| | Smoke Outlet horizontal orientation | Fire Outside | 1200 x 1200 | 70 | 90 | 90 | |
| | Smoke Outlet horizontal orientation | Fire Outside | 1000 x 1000 | 90 | 120 | 120 | |
| | Smoke Outlet horizontal orientation | Fire Outside | 1525 dia. | 25 | 30 | 30 | |
| | Smoke Outlet horizontal orientation | Fire Outside | 1525 dia. | 40 | 60 | 60 | |
| | Smoke Outlet horizontal orientation | Fire Outside | 1525 dia. | 70 | 90 | 90 | |

PART 1: SECTION 8

PRODUCTS ASSESSED FOR USE IN SURFACE AND SUB SURFACE TRANSPORT APPLICATIONS

| Product Name | Duct Type | Condition | Maximum Duct Size (ht x wt) (mm) | Insulation Thickness (mm) | Fire Resistance Integrity (min) | Fire Resistance Insulation (min) | LPCB Ref. No. |
|--|-----------------|--------------|----------------------------------|---------------------------|---------------------------------|----------------------------------|---------------|
| Smoke Outlet horizontal orientation | Smoke Outlet | Fire Outside | 1525 dia. | 90 | 120 | 120 | |
| Smoke Outlet vertical orientation | Smoke Outlet | Fire Inside | 1000 x 1000 | 25 | 30 | 30 | |
| Smoke Outlet vertical orientation | Smoke Outlet | Fire Inside | 1000 x 1000 | 30 | 60 | 60 | |
| Smoke Outlet vertical orientation | Smoke Outlet | Fire Inside | 1500 x 1500 | 50 | 90 | 90 | |
| Smoke Outlet vertical orientation | Smoke Outlet | Fire Inside | 1500 x 1500 | 70 | 120 | 120 | |
| Smoke Outlet vertical orientation | Smoke Outlet | Fire Inside | 1525 dia. | 25 | 30 | 30 | |
| Smoke Outlet vertical orientation | Smoke Outlet | Fire Inside | 1525 dia. | 30 | 60 | 60 | |
| Smoke Outlet vertical orientation | Smoke Outlet | Fire Inside | 1525 dia. | 50 | 90 | 90 | |
| Smoke Outlet vertical orientation | Smoke Outlet | Fire Inside | 1525 dia. | 70 | 120 | 120 | |
| Smoke Outlet horizontal orientation | Smoke Outlet | Fire Inside | 1000 x 1000 | 25 | 30 | 30 | |
| Smoke Outlet horizontal orientation | Smoke Outlet | Fire Inside | 1500 x 1500 | 40 | 60 | 60 | |
| Smoke Outlet horizontal orientation | Smoke Outlet | Fire Inside | 1200 x 1200 | 70 | 90 | 90 | |
| Smoke Outlet horizontal orientation | Smoke Outlet | Fire Inside | 1000 x 1000 | 90 | 120 | 120 | |
| Smoke Outlet horizontal orientation | Smoke Outlet | Fire Inside | 1525 dia. | 25 | 30 | 30 | |
| Smoke Outlet horizontal orientation | Smoke Outlet | Fire Inside | 1525 dia. | 40 | 60 | 60 | |
| Smoke Outlet horizontal orientation | Smoke Outlet | Fire Inside | 1525 dia. | 70 | 90 | 90 | |
| Smoke Outlet horizontal orientation | Smoke Outlet | Fire Inside | 1525 dia. | 90 | 120 | 120 | |
| Kitchen Extract | Kitchen Extract | Fire Outside | 1500 x 1500 | 40 | 30 | 30 | |

PART 1: SECTION 8

PRODUCTS ASSESSED FOR USE IN SURFACE AND SUB SURFACE TRANSPORT APPLICATIONS

| Product Name | Duct Type | Condition | Maximum Duct Size (ht x wt) (mm) | Insulation Thickness (mm) | Fire Resistance Integrity (min) | Fire Resistance Insulation (min) | LPCB Ref. No. |
|--------------|-----------------|--------------|----------------------------------|---------------------------|---------------------------------|----------------------------------|---------------|
| | Kitchen Extract | Fire Outside | 1000 x 1000 | 90 | 60 | 60 | |

Certificate No: 22b to LPS 1132: Issue 4

FirePro™ Acoustic Intumescent sealant

| Product Name | Element of Construction Orientation | Element of Construction Thickness (mm) | Element of Construction Material | Maximum Joint Width (mm) | Configuration: Fire Side Depth of Sealant (mm) | Configuration: Backing Material | Configuration: Non-fire Side Depth of Sealant (mm) | Fire Resistance (min) Integrity (E) | Fire Resistance (min) Insulation (I) | LPCB Ref. No. |
|---------------------------------------|-------------------------------------|--|----------------------------------|--------------------------|--|---------------------------------|--|-------------------------------------|--------------------------------------|---------------|
| FirePro™ Acoustic Intumescent Sealant | floor | 230 | AC/AC | 50 | 25 | Ethafoam Ø 50mm | | 155 | 105 | 022b/05 |
| | floor | 230 | Softwood/AC | 25 | 12 | Ethafoam Ø 30mm | | 51 | 44 | |
| | floor | 230 | Hardwood/AC | 50 | 25 | Ethafoam Ø 50mm | | 47 | 47 | |
| | floor | 230 | Steel/AC | 50 | 25 | Ethafoam Ø 50mm | | 72 | 62 | |
| | floor | 250 | AC/AC | 30 | 15 | Ethafoam Ø 40mm | | 243 | 65 | |
| | floor | 250 | AC/AC | 15 | 10 | Ethafoam Ø 25mm | | 243 | 29 | |
| | floor | 250 | AC/AC | 20 | | Polyethylene Ø 20mm | 10 | 155 | 47 | |
| | floor | 250 | AC/AC | 50 | | Polyethylene Ø 50 x 25mm | 25 | 240 | 92 | |
| | floor | 250 | AC/AC | 10 | | Polyethylene Ø 10mm | 6 | 240 | 207 | |
| | floor | 250 | AC/AC | 25 | | Polyethylene Ø 25mm | 15 | 240 | 73 | |
| | floor | 250 | Hardwood/AC | 15 | 10 | Ethafoam Ø 15mm | | 53 | 53 | |
| | floor | 250 | Steel/AC | 15 | 10 | Ethafoam Ø 25mm | | 243 | 29 | |
| | wall | 150 | AC/AC | 30 | 30 | Polyethylene 30 x 15 | 30 | 265 | 265 | |
| | wall | 150 | AC/AC | 15 | 15 | Polyethylene 15 x 15 | 15 | 265 | 230 | |
| | wall | 150 | AC/AC | 10 | 10 | Polyethylene 10 x 15 | 10 | 265 | 265 | |
| | wall | 150 | AC/AC | 10 | 10 | Polyethylene 10 x 15 | | 200 | 166 | |
| | wall | 150 | AC/AC | 15 | 15 | Polyethylene 15 x 15 | | 227 | 227 | |
| | wall | 150 | AC/AC | 30 | 30 | Polyethylene 30 x 15 | | 240 | 233 | |
| | wall | 200 | AC/AC | 50 | 25 | Ethafoam Ø 50mm | | 245 | 82 | |
| | wall | 200 | Hardwood/AC | 50 | 25 | Ethafoam Ø 50mm | | 96 | 93 | |
| | wall | 200 | Softwood/AC | 25 | 12 | Ethafoam Ø 30mm | | 55 | 54 | |
| | wall | 200 | Steel/AC | 50 | 25 | Ethafoam Ø 50mm | | 77 | 39 | |
| | wall | 215 | AC/AC | 30 | 15 | Ethafoam Ø 40mm | | 243 | 44 | |
| | wall | 215 | AC/AC | 15 | 10 | Ethafoam Ø 25mm | | 243 | 29 | |
| | wall | 215 | Hardwood/AC | 15 | 10 | Ethafoam Ø 25mm | | 40 | 29 | |
| | wall | 215 | Steel/AC | 15 | 10 | Ethafoam Ø 25mm | | 243 | 16 | |
| | wall | 250 | AC/AC | 20 | | Polyethylene Ø 20mm | 10 | 240 | 122 | |
| | wall | 250 | AC/AC | 40 | | Polyethylene Ø 40mm | 20 | 240 | 95 | |
| | wall | 250 | AC/AC | 10 | | Polyethylene Ø 10mm | 10 | 240 | 240 | |
| | wall | 250 | AC/AC | 25 | | Polyethylene Ø 25mm | 20 | 240 | 126 | |

Note:

AC – Aerated Concrete.

Ethafoam – Open cell polyethylene foam rod

Please refer to Rockwool installation instructions for further details

PART 1: SECTION 9

FIRE PROTECTED TIMBER STAIRS

The timber escape stairs listed in this section are assessed against the requirements of Scheme Document SD 198 which details the requirements of the approval and certification process, and BD2569 Fire Performance of Escape Stairs Guidance Document which details the method of test and assessment for escape stairs based on a realistic fire scenario. The procedure consists of a fire test to evaluate the reaction-to-fire performance of the stair assembly and a subsequent load test to evaluate the structural performance of the stair assembly following a fire incident. The scheme applies only to stairs used in:

- Single occupancy dwellings
- Communal areas in blocks of flats
- Areas where people may congregate as defined in Table 1 of BS 6399-13.

This approval scheme is run in partnership with the British Woodworking Federation (BWF).

Jeld-Wen UK Ltd

Snow Hill, Melton Mowbray, Leicestershire LE13 1PD, United Kingdom

Tel: 0845 122 2890

E-mail: staircustomerservices@jeld-wen.co.uk • Website: www.jeld-wen.co.uk/stairs

Certificate No: 1023a to SD198/BD2569 Fire Protected Timber Escape Stair

Fire Protected Timber Escape Stair

| Product Name | Stair Geometry | Timber Type Treads/Risers | Timber Type Other Timber Components (Strings/handrail, newel posts and balusters) | Stair Treatment applied | LPCB Ref. No. |
|-------------------------------|-----------------------|----------------------------------|--|--------------------------------|----------------------|
| Jeld-Wen Fire Protected Stair | Straight flight | FR MDF / FR MDF | Kerto-S / Hemlock | Pressure Impregnation | 1023a/01 |
| | Straight flight | FR MDF / FR MDF | Kerto-S / Softwood | Intumescent coating | 1023a/02 |
| | Straight flight | FR MDF / FR MDF | Kerto-S / Softwood | Jeld-Wen 3 part primer | 1023a/03 |
| | Dog-leg | Parana Pine/Plywood | Kerto-S / Hemlock | Intumescent coating | 1023a/04 |
| | Dog-leg | MDF / MDF | Kerto-S / Hemlock | Intumescent coating | 1023a/05 |
| | Dog-leg | FR MDF / FR MDF | Kerto-S / Hemlock | Pressure Impregnation | 1023a/06 |
| | Dog-leg | Parana Pine/Plywood | Kerto-S / Hemlock | Pressure Impregnation | 1023a/07 |
| | Dog-leg | FR MDF / FR MDF | Kerto-S / Hemlock | Intumescent coating | 1023a/08 |

Notes:

1. All stair cases must be under-drawn with a single 12.5mm layer of Type F plasterboard fixed to the strings with 25mm clout nails at 150mm maximum centres.
2. The maximum permitted span for the treads are 1160mm between strings.
3. LPCB ref No. 1023a/04, 1023a/05, 1023a/06, 1023a/07 and 1023a/08 Dog-leg systems cover alternative geometries to those tested such as left or right handed returns with a minimum distance of 110mm between return flights and a minimum landing of 2340mm .
4. Approved installation configurations and Timber treatment processes are shown below.

The products listed in this section are approved to:-

LPS 1158: Requirements and tests for fire resistant glazing systems

This Standard details the requirements for the certification of fire resisting glazing.

Fire resisting glazing systems consist of one or more transparent or translucent panes with a suitable method of mounting, with e.g. frames, seals and fixing materials, capable of satisfying the appropriate fire resistance criteria.

It is applicable to both insulating and non-insulating glass/glazing systems having fire resistances of Up to 240 minutes in either horizontal and/or vertical orientations.

The applicable test standards are:-

- BS 476: Part 20
- EN 1364 Part 1

Alufire Sp.Z o.o.Sp.K

Ul. Warszawka 64a, 87-148 Lysomice K. Torunia, , Poland

Tel: +48 56 674 88 11 • Fax: +48 56 674 88 10

E-mail: biuro@alufire.pl • Website: <http://www.alufire.biz.pl/>

Certificate No: 1406a to LPS 1158

| Product Name | LPCB Ref. No. |
|--------------------------|----------------------|
| ALUFIRE EI30 | 1406a/01 |
| ALUFIRE EI60 | 1406a/02 |
| ALUFIRE EI120 | 1406a/03 |
| ALUFIRE Vision Line EI30 | 1406a/04 |
| ALUFIRE Vision Line EI60 | 1406a/05 |

A copy of the certificate, confirming the full scope of approval including notes relating to the superscript references in the above table, may be viewed online by clicking on the certificate link in the associated entry on www.RedBookLive.com