
LPCB Red Book



Part: 3

Smoke and fire ventilation systems

bre

Foreword by the United Arab Emirates (UAE) Acting Commander in Chief, Major General Rashid Thani Al Matrooshi

As the dynamic environment in our Region progresses, we the UAE Civil Defence Authority, has set forth a number of strategic goals for the delivery of public safety. Our strategic goals observe both the national and Ministry of Interior's strategic plan by;

“Providing an effective firefighting and emergency response system delivered by qualified and well trained people using the latest technologies to ensure lives and properties are safeguarded”

As a result, the UAE can be 'benchmarked' with other Countries that are witnessing a decline in fires and incidents when compared to the density of population. As an example, the number of fire incidents has been reduced by 39% in 2011 compared to 2010, with a marked reduction in small and medium fire incidents, together with a high percentage achievement of a 9 minute response time for first attendance at incidents.

“Providing excellent performance and support during disasters and crises”

Confirmation of performance and support are achieved during disasters and crisis situations. Civil Defence Departments conduct a range of joint fire safety and evacuation drills in association with other safety agencies for both the public and private sectors. Evacuation drills carried out in Dubai during 2011 was estimated at 356 drills, which targeted 178,530 persons. Customer satisfaction percentage achieved was 97.2%. The number of drills carried out has increased by 142.4% compared to the target number set out in our annual plan.

“Spreading a fire safety and awareness culture across the community “

In this regard, a National Safety campaign was launched targeting 'domestic safety' with an achieved target of 50% of homes in UAE being visited during a six month period. This was aimed at preventive awareness and removing violations which threaten public safety. During the campaign, 206,490 houses (61.4% of the total dwellings) were visited, again with a marked customer satisfaction percentage of 92%.

Similarly a National Safety campaign was also executed at industrial areas, with teams visiting industrial facilities at different industrial areas across the country. 31,647 facilities were inspected. The teams also managed to correct violation situations in 13,400 facilities and 53,426 people were trained in the basic skills of firefighting and awareness.

“Equipping operations with the best and appropriate equipment and technologies”

The latest state of the art technologies have been introduced for various services such as, 'e-engineering' for online drawing approval and the '24 x 7 smart system' for building electronic monitoring and protection. Currently 61.7% of buildings are connected to the system and 95.7% surveyed for connection.

In addition, the 'UAE Fire and Life Safety Code of Practice' with our Standard Operating Procedures (SOPs) is considered a first in the region. This will contribute to reduced costs and effort. Ultimately this will result in a decrease in accidents and improve command and control mechanisms.

“Achieving Strategic Partnership with Public/Private and Voluntary Organizations”

By ensuring, through careful selection, that products, systems and installers are approved with a listing by Civil Defence, following rigorous third party certification. This ensures that locally we receive the best performance of fire safety products, systems and technologies.

LPCB is widely recognised as an independent reference for all fire and security safety experts. Their testing laboratories and approvals services together with their leading team of highly qualified expert scientists and engineers, guides us all impeccably towards a qualified framework.



Major General Rashid Thani Al Matrooshi

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

VOLUME 2 LIST OF APPROVED PRODUCTS AND SERVICES

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

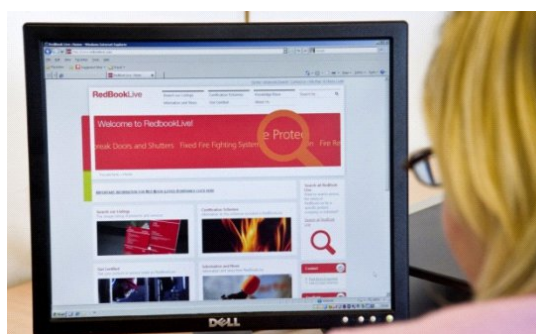
Volume 2: (This Volume)

- **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.

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:-



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Part

3

*SMOKE AND FIRE
VENTILATION SYSTEMS*

PART 3: SMOKE AND FIRE VENTILATION SYSTEMS

INTRODUCTION

Fire ventilation systems are installed to:

- Keep escape and access routes free from smoke.
- Facilitate fire fighting operations by creating a smoke free layer.
- Delay and/or prevent flashover and the subsequent full development of the fire.
- Protect equipment, furnishings, contents, etc.
- Reduce the thermal effects on structural components during a fire.
- Reduce damage caused by thermal decomposition of products and hot gases.

The key components of smoke and fire ventilation systems, i.e. fire dampers, ductwork, smoke curtains and powered smoke and heat exhaust ventilation fans, are listed in this section.

Their functions are:

Fire dampers:

- To maintain compartmentation where air distribution ducts pass through compartment walls and floors.

LPCB approves fire dampers to LPS 1162: *Requirements for the approval of fire dampers.*

Fire resistant ductwork:

- To maintain compartmentation when air distribution ducts pass through compartment walls and floors and where fire resisting dampers are not used to provide the compartmentation.
- To achieve the same fire resistance in terms of integrity and, if required, insulation as required for the compartment walls or floors.

LPCB approves fire resistant ductwork to BS 476: Part 24 *Fire tests on building materials and structures: Method for determination of the fire resistance of ventilation ducts and/or EN 1366 Part 1 Fire resistance tests for service installations Ducts.*

Smoke Extraction Ducts

The purpose of smoke duct systems are for the prevention of transmission of smoke and combustion products from a fire zone, smoke control duct sections are utilised to contain the spillage of otherwise harmful and toxic extinguishing gases from the affected area, and for the control of pressurising and excess air relief within pressurisation systems.

Smoke control ducts are commonly used in smoke and heat control systems. They may serve single compartments or a number of different fire compartments. The systems may be dedicated smoke extraction or possibly a combined environmental ventilation/smoke extraction.

LPCB approves Smoke Extraction Ducts to EN 1366 Part 8 or EN 1366-9 *Fire resistance tests for service installations. Single compartment smoke extraction ducts*

Smoke curtains:

- To create a smoke reservoir by containing and limiting the travel of smoke.
- To channel smoke in a predetermined direction.
- To prevent or retard smoke entry to another area or void.

LPCB approves Smoke curtains to LPS 1182: *Requirements for the approval of fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains.*

Powered smoke and heat exhaust ventilation fans:

- To channel heat and smoke in a predetermined direction.
- To prevent smoke logging of the protected space.

Powered smoke and heat exhaust ventilation fans are approved in accordance with EN 12101-3 *Smoke and heat control systems. Part 3 Specification for powered smoke and heat exhaust ventilation.*

PART 3: SMOKE AND FIRE VENTILATION SYSTEMS

Grease filters used in commercial kitchen extract systems:

- To reduce flammable and volatile grease droplets from the cooking exhaust of commercial cooking equipment.

LPCB categorises and approves grease filters in accordance with the requirements of LPS 1263:

Requirements for the approval and listing of the fire performance of grease filters used in commercial kitchen extract systems.

PART 3: SECTION 1

FIRE DAMPERS

Fire dampers are installed:

- To maintain compartmentation where air distribution ducts pass through compartment walls and floors.
- To achieve the same fire resistance in terms of integrity as required for compartment walls or floors.
- To close completely as soon as a fire is detected.

All the fire resistant dampers listed in Section 1 of this part of the list have been tested and assessed against the requirements of LPS 1162 *Requirements and tests for the LPCB approval of fire dampers*.

BSB Engineering Services Limited

Unit 56, Trinity Trade Centre, Mill Way, Sittingbourne, Kent ME10 2PD, United Kingdom

Tel: +44 (0)1795 422609 • Fax: +44 (0)1795 429543

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

Certificate No: 828a to LPS 1162: Issue 4

Product Name	LPCB Ref. No.
FSD-TD	828a/03
FD	828a/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

Swegon Air Management Limited

Joseph Wilson Industrial Estate, South Street, Whitstable, Kent CT5 3DU, United Kingdom

Tel: +44 (0)1227 276100 • Fax: +44 (0)1227 264262

Website: www.swegonair.co.uk

Certificate No: 017a to LPS 1162: Issue 4

Product Name	LPCB Ref. No.
Fire Shield	017a/01
Smoke Shield PTC	017a/04
CSS Circular Smoke Shield	017a/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

Fire resistant ductwork is installed:

- To maintain compartmentation when air distribution ducts pass through compartment walls and floors where fire resisting dampers are not used to provide the compartmentation
- To achieve the same fire resistance in terms of integrity, and if required insulation, as required for the compartment walls or floors.

All the fire resistant ducts listed in here have been tested and assessed against the requirements of BS 476:Part 24 *Fire tests on building materials and structures: Method for determination of the fire resistance of ventilation ducts* and/or EN 1366 Part 1 *Fire resistance tests for service installations Ducts*.

Certification is limited to the applications and fire resistances given.

Fenland Fire Contracts Limited

Unit 3, Laburnum Farm, East Hyde, Near Luton, Bedfordshire LU2 9PW, United Kingdom

Tel: +44 (0)1582 723979 • Fax: +44 (0)1582 723980

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

Certificate No: 1176a to SD198 / BS 476: Part 24

Fire Resistant Ducts

Product Name	Duct Type	Condition	Type / density of insulation	Insulation thickness (mm)	Fire Resistance/ Stability	Fire Resistance	LPCB Ref. No.
Fenland Fire Rated Ductwork	Ventilation, Smoke extract or Kitchen extract	Fire outside	None	-	240	-	1176a/01
	Ventilation, Smoke extract or Kitchen extract	Fire inside and outside	None	-	240	-	
	Ventilation, Smoke extract or Kitchen extract	Fire outside	None	-	120	-	
	Ventilation, Smoke extract or Kitchen extract	Fire inside and outside	None	-	120	-	
	Ventilation and Smoke extract	Fire outside	Stone mineral wool/160kg/m ³	30	240	30	1176a/02
	Ventilation and Smoke extract	Fire outside	Stone mineral wool/160kg/m ³	40	240	60	
	Ventilation and Smoke extract	Fire outside	Stone mineral wool/160kg/m ³	45	240	90	
	Ventilation and Smoke extract	Fire outside	Stone mineral wool/160kg/m ³	50	240	120	
	Ventilation and Smoke extract	Fire outside	Stone mineral wool/160kg/m ³	30	120	30	
	Ventilation and Smoke extract	Fire outside	Stone mineral wool/160kg/m ³	40	120	60	
Ventilation and Smoke extract	Fire outside	Stone mineral wool/160kg/m ³	45	120	90		
Ventilation and Smoke extract	Fire outside	Stone mineral wool/160kg/m ³	50	120	120		
Ventilation and Smoke extract	Fire inside and outside	Stone mineral wool/160kg/m ³	40	240	30		

PART 3: SECTION 2.1

FIRE RESISTANT DUCTS

Product Name	Duct Type	Condition	Type / density of insulation	Insulation thickness (mm)	Fire Resistance/ Stability	Fire Resistance	LPCB Ref. No.
	Ventilation and Smoke extract	Fire inside and outside	Stone mineral wool/160kg/m ³	55	240	60	
	Ventilation and Smoke extract	Fire inside and outside	Stone mineral wool/160kg/m ³	70	240	90	
	Ventilation and Smoke extract	Fire inside and outside	Stone mineral wool/160kg/m ³	90	240	120	
	Ventilation and Smoke extract	Fire inside and outside	Stone mineral wool/160kg/m ³	40	120	30	
	Ventilation and Smoke extract	Fire inside and outside	Stone mineral wool/160kg/m ³	55	120	60	
	Ventilation and Smoke extract	Fire inside and outside	Stone mineral wool/160kg/m ³	70	120	90	
	Ventilation and Smoke extract	Fire inside and outside	Stone mineral wool/160kg/m ³	90	120	120	
	Kitchen extract	Fire outside	Stone mineral wool/160kg/m ³	45	120	30	
	Kitchen extract	Fire outside	Stone mineral wool/160kg/m ³	90	120	60	
	Kitchen extract	Fire outside	Stone mineral wool/160kg/m ³	135	120	90	
	Kitchen extract	Fire outside	Stone mineral wool/160kg/m ³	45	240	30	
	Kitchen extract	Fire outside	Stone mineral wool/160kg/m ³	90	240	60	
	Kitchen extract	Fire outside	Stone mineral wool/160kg/m ³	135	240	90	

Notes:

- 1 LPCB Ref. No's 1176a/01 and 1176a/02 - Uninsulated and insulated ductwork systems to be manufactured and installed to the specification and tables as detailed in BRE Global Assessment Report CC258339 issue 2 dated 04 October 2010.
- 2 LPCB Ref. No's 1176a/01 and 1176a/02 - The maximum allowable duct sizes are, rectangular ductwork up to 3000mm wide and 2500mm deep, flat oval ductwork up to 1700mm wide x 400mm deep (3.83m² surface area per metre length) and circular ductwork up to 1250mm diameter

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: 277a to BS 476 Part 24

Product Name	LPCB Ref. No.
Flamebar BW11	277a/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

Firespray International Limited

Flamebar House, South Road, Templefields, Harlow, Essex CM20 2AR, United Kingdom

Tel: +44 (0)1279 634 230 • Fax: +44 (0)1279 634 232

E-mail: info@firespray.eu.com • Website: www.firespray.eu.com

Certificate No: 415a to BS 476 Part 24

Product Name	LPCB Ref. No.
Flamebar BW11	415a/01

PART 3: SECTION 2.1**FIRE RESISTANT DUCTS**

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

Firetrace Ductwork Limited

19 Marshall Road, Eastbourne, Sussex BN22 9AD, United Kingdom

Tel: 01323 400680 • Fax: 01323 400690

Website: www.firetrace-ductwork.co.uk

Certificate No: 1345a to SD 198 (Appendix B12)/BS 476-24:1987

Product Name	Duct Type	Condition	Duct Orientation Vertical V- or Horizontal H-	Type/density of insulation	Insulation Thickness (mm)	Fire Resistance (Integrity/Stability)	Fire Resistance Insulation	LPCB Ref. No.
Caswell Firesafe	Ventilation Smoke OutletKitchen Extract	Fire inside (Type B) & Fire outside (Type A)	V or H	None	-	240	-	1345a/01
	Ventilation Smoke Outlet	Fire inside (Type B) & Fire outside (Type A)	V or H	Mineral wool 160 kg/m ³	25	30	30	1345a/02
	Ventilation Smoke Outlet	Fire inside (Type B) & Fire outside (Type A)	H	Mineral wool 160 kg/m ³	40	60	60	
	Kitchen Extract	Fire inside (Type B) & Fire outside (Type A)	H	Mineral wool 160 kg/m ³	40	30	30	
	Ventilation Smoke Outlet	Fire inside (Type B) & Fire outside (Type A)	V or H	Mineral wool 160 kg/m ³	70	90	90	
	Ventilation Smoke Outlet	Fire inside (Type B) & Fire outside (Type A)	H	Mineral wool 160 kg/m ³	90	120	120	
	Kitchen Extract	Fire inside (Type B) & Fire outside (Type A)	H	Mineral wool 160 kg/m ³	90	60	60	
	Ventilation Smoke Outlet	Fire inside (Type B) & Fire outside (Type A)	V	Mineral wool 160 kg/m ³	30	60	60	
	Ventilation Smoke Outlet	Fire inside (Type B) & Fire outside (Type A)	V	Mineral wool 160 kg/m ³	50	90	90	
	Ventilation Smoke Outlet	Fire inside (Type B) & Fire outside (Type A)	V or H	Mineral wool 100 kg/m ³	50	30	30	1345a/03

PART 3: SECTION 2.1

FIRE RESISTANT DUCTS

Product Name	Duct Type	Condition	Duct Orientation Vertical V- or Horizontal H-	Type/density of insulation	Insulation Thickness (mm)	Fire Resistance (Integrity/Stability)	Fire Resistance Insulation	LPCB Ref. No.
	Ventilation Smoke Outlet	Fire inside (Type B) & Fire outside (Type A)	V or H	Mineral wool 100 kg/m ³	100 (2x50)	60	60	1345a/04

Notes:

- LPCB Ref. No's 1345a/01, 1345a/02, 1345a/03 and 1345a/04 - Uninsulated and Insulated Ductwork systems to be manufactured and installed to the specifications as detailed in Report no 335274 Issue 2 dated 15 July 2014.
- LPCB Ref. No 1345a/02 Mineral wool specification: Rockwool FirePro Duct Slab with a nominal density of 160kg/m³. The boards of maximum size 2000mm x 1200mm, have thicknesses of 25, 30, 40, 50, 70 and 90mm.
- LPCB Ref. No 1345a/03 Mineral wool specification: Rockwool RW5 Slab, 50mm thick and 100 kg/m³ nominal density.
- LPCB Ref. No 1345a/04 Mineral wool specification: Rockwool Marine Firebatt 2000, 100mm (2 x 50mm) thick and 100 kg/m³ nominal density.
- LPCB Ref. No's 1345a/01- covers rectangular and circular ductwork up to 3000mm wide x 3000mm high, reference Firesafe Tables 1 to 4 and circular ductwork up to 1250mm diameter Table 9. The Firesafe systems may also be employed as attenuator casings as defined in Assessment Report no.335274 Issue 2 dated 15 July 2014 however the LPCB approval does not cover the attenuator itself.
- LPCB Ref. No's 1345a/02 - maximum size of steel duct without extra support to insulation for rectangular and circular insulated ductwork when insulation material thick 25mm, 30mm, 90mm is up to 1000mm x 1000mm, when insulation material thick 70mm - up to 1200mm x 1200mm and when insulation material thick 40mm, 50mm, 70mm - 1500mm x 1500mm. Where insulation is required for circular ducts, Firepro Duct Slab is fitted around the duct as a square box in the same manner as for rectangular ducts. On horizontal ducts additional hangers are fitted at 1510mm maximum centres. Where the diameter of the steel duct exceeds 610mm then studwelded pins and washers must be fitted at the mid-width of the board in the same manner as for rectangular ducts.
- LPCB Ref. No's 1345a/03 1345a/04 - covers rectangular and circular insulated ductwork up to 1000mm x 1000mm.
- LPCB Ref. No's 1345a/01, 1345a/02, 1345a/03 and 1345a/04 - Details of the modified penetration seal system, where the duct passes through fire compartment walls or floors, are shown in Firesafe drawings no's. CF213A, CF311B & CF312. The parts of the steel collars are bolted together instead of welded and that, for insulated ducts, a gasket of ceramic tape 100mm wide x 3mm thick is fitted between the collar and the duct wall on all four sides of the duct.
- LPCB Ref. No's 1345a/01, 1345a/02, 1345a/03 and 1345a/04 - thin film paint finishes may be applied to the outside of the steel ductwork. The foil facing of insulated ducts may also be painted provided that the paint is water based. The paint finish must comply with the reaction to fire requirements for the building in which the ductwork is being installed.
- LPCB Ref. No's 1345a/01, 1345a/02, 1345a/03 and 1345a/04 - an assessment report No 335274 covers systems manufactured from galvanised steel, mild steel and stainless steel and ducts over 3m longest side (in panel construction).

Ductwork Manufacturers

The following Companies manufacture the products listed on this certificate to a specification issued and controlled by Firetrace Ductwork Limited

These Companies are audited by the LPCB to ensure the product certification requirements are met.

Airtrace Sheet Metal Limited (LPCB Ref. No. 1345)
19 Marshal Road
Eastbourne
East Sussex
BN22 9AD

Flameshield Products Limited

9 Zillah Gardens, Wigmore, Gillingham, Kent ME8 0EE, United Kingdom

Tel: 0800 3289980

E-mail: info@flameshieldproducts.co.uk

Certificate No: 785d to SD198 (Appendix B12) / EN 1366-1

Product Name	LPCB Ref. No.
FlameshieldEN	785d

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 3: SECTION 2.1

FIRE RESISTANT DUCTS

Certificate No: 785a to BS 476: Part 24

Product Name	LPCB Ref. No.
Flameshield	785a/03
	785a/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

Kent Ductwork Limited

Units 7-9 Swaisland Drive, Crayford Industrial Estate, , Kent DA1 4HS, United Kingdom

Tel: 01322 558887

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

Certificate No: 1336a to BS 476-24

Product Name	Duct Type	Condition	Type/Density of insulation	Insulation Thickness(mm)	Fire Resistance (Integrity/stability)	Fire Resistance Insulation	LPCB Ref. No.
Flameshield	Ventilation	Fire inside	None	-	240	-	1336a/03
	Smoke outlet	Fire inside	None	-	120	-	
	Kitchen extract	Fire inside	None	-	120	-	
	Ventilation	Fire outside	None	-	120	-	1336a/04
	Smoke Outlet	Fire outside	None	-	120	-	
	Kitchen Extract	Fire outside	None	-	120	-	
	Ventilation	Fire inside	Mineral wool 165 kg/m ³	40	120	30	
Ventilation	Fire inside	Mineral wool 165 kg/m ³	55	120	60		
Ventilation	Fire inside	Mineral wool 165 kg/m ³	70	120	90		
Ventilation	Fire inside	Mineral wool 165 kg/m ³	90	240	120		
Ventilation	Fire outside	Mineral wool 165 kg/m ³	30	120	30		
Ventilation	Fire outside	Mineral wool 165 kg/m ³	40	120	60		
Ventilation	Fire outside	Mineral wool 165 kg/m ³	45	120	90		
Ventilation	Fire outside	Mineral wool 165 kg/m ³	50	120	120		
Smoke outlet	Fire inside	Mineral wool 165 kg/m ³	40	120	30		
Smoke outlet	Fire inside	Mineral wool 165 kg/m ³	55	120	60		
Smoke outlet	Fire inside	Mineral wool 165 kg/m ³	70	120	90		
Smoke outlet	Fire inside	Mineral wool 165 kg/m ³	90	120	120		
Smoke outlet	Fire outside	Mineral wool 165 kg/m ³	30	120	30		
Smoke outlet	Fire outside	Mineral wool 165 kg/m ³	40	120	60		
Smoke outlet	Fire outside	Mineral wool 165 kg/m ³	45	120	90		
Smoke outlet	Fire outside	Mineral wool 165 kg/m ³	50	120	120		
Kitchen extract	Fire inside	Mineral wool 165 kg/m ³	45	120	30		
Kitchen extract	Fire inside	Mineral wool 165 kg/m ³	90	120	60		

PART 3: SECTION 2.1

FIRE RESISTANT DUCTS

Product Name	Duct Type	Condition	Type/Density of insulation	Insulation Thickness(mm)	Fire Resistance (Integrity/stability)	Fire Resistance Insulation	LPCB Ref. No.
	Kitchen extract	Fire outside	Mineral wool 165 kg/m ³	45	120	30	
	Kitchen extract	Fire outside	Mineral wool 165 kg/m ³	90	120	60	

Notes:

1. LPCB Ref. No's 1336a/03 and 1336a/04 - Uninsulated and Insulated Ductwork systems to be manufactured and installed to the specifications as detailed in BRE Assessment Report CC 255037 Issue 7 dated 11 January 2012.
2. LPCB Ref. No's 1336a/03 and 1336a/04 - covers rectangular and flat oval ductwork up to 3000mm wide x 2000mm deep, reference Flameshield Tables 1 - Issue F & 4 - Issue E and circular ductwork up to 1250mm diameter, reference Flamshield Tables 5 - Issue D & 6 - Issue D. The Flameshield systems may also be employed as attenuator casings as defined in BRE Assessment Report CC 255037 Issue 7 dated 11 January 2012 however the LPCB approval does not cover the attenuator itself.
3. LPCB Ref. No's 1336a/03 and 1336a/04 - Approval also covers Uninsulated and Insulated duct systems manufactured to Flameshield Table 20 - Issue F for ventilation duct applications only with a fire resistance integrity and stability period of up to 120 minutes as detailed in BRE Assessment Report CC 255037 Issue 7 dated 11 January 2012.

Kent Ductwork Limited Manufacturers

The following Company manufacture the products listed on this certificate to a specification issued and is audited by the LPCB to ensure the product certification requirements are met.

Kent Ductwork Limited (**LPCB Ref. 1336**)

Units 7/9 Crayford Industrial Estate

Swaisland Drive

Crayford

Dartford

DA1 4HS

Certificate No: 1336b to SD198 (Appendix B12)/EN 1366-1

Product Name	LPCB Ref. No.
FlameshieldEN	1336b/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: 1336c to SD198 (Appendix B17)/EN 1366-8

Product Name	LPCB Ref. No.
FlameshieldEN	1336c

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

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Certificate No: 022f to BS476 : Part 24 : 1987

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	Ventilation vertical orientation	Fire Outside	100 x 1000	25	30	30	022f/01

PART 3: SECTION 2.1**FIRE RESISTANT DUCTS**

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	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	
	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	

PART 3: SECTION 2.1

FIRE RESISTANT DUCTS

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	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	
	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	
	Ventilation vertical orientation	Fire Outside	1000 x 1000	25	30	30	
	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	
	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	

PART 3: SECTION 2.1**FIRE RESISTANT DUCTS**

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 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	
	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	
	Kitchen extract	Fire Outside	1500 x 1500	40	30	30	
	Kitchen extract	Fire Outside	1000 x 1000	90	60	60	

PART 3: SECTION 2.2

SMOKE EXTRACTION DUCTS

The purpose of smoke duct systems are for the prevention of transmission of smoke and combustion products from a fire zone, smoke control duct sections are utilised to contain the spillage of otherwise harmful and toxic extinguishing gases from the affected area, and for the control of pressurising and excess air relief within pressurisation systems.

Smoke control ducts are commonly used in smoke and heat control systems. They may serve single compartments or a number of different fire compartments. The systems may be dedicated smoke extraction or possibly a combined environmental ventilation/smoke extraction.

LPCB approves Smoke Extraction Ducts to EN 1366 Part 8 *Fire resistance tests for service installations. Smoke extraction ducts* or EN 1366-9 *Fire resistance tests for service installations. Single compartment smoke extraction ducts*

Flameshield Products Limited

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E-mail: info@flameshieldproducts.co.uk

Certificate No: 785e to SD198 (Appendix B17)/EN 1366-8

Product Name	LPCB Ref. No.
FlameshieldEN	785e/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

Smoke curtains are used:

- To create a smoke reservoir by containing and limiting the travel of smoke.
- To channel smoke in a predetermined direction.
- To prevent or retard smoke entry to another area or void.

All the smoke curtains listed in Section 3 of this part of the list have been tested and assessed against the requirements of LPS 1182 *Requirements and tests for fixed fabric smoke curtains, fixed metal smoke curtains and powered smoke curtains*.

Currently there are no products listed in this section.

PART 3: SECTION 4

POWERED SMOKE AND HEAT EXHAUST VENTILATION

Powered smoke and heat exhaust ventilation fans are used:

- To channel heat and smoke in a predetermined direction.
- To prevent smoke logging of the protected space.

All the fans listed have been approved against the requirements of EN 12101-3 *Smoke and heat control systems. Part 3 Specification for powered smoke and heat exhaust ventilation.*

Elta Fans Limited

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Additional Manufacturing Site

46 Third Avenue, Pensnett Trading Estate, Kingswinford, West Midlands DY6 7US, United Kingdom

Certificate No: 937a to SD 198 (Appendix B13/EN 12101-3:2002)

Product Name	Model	Application Classes	Response delay	Resistance to fire class	Motor temp. rating ¹	LPCB Ref. No.
SmokeVent axial fan (notes 2, 5, 6, 7, 8)	LCS025, LCS031, LCS035, LCS040, LCS045, LCS050, LCS056, LCS063, LCS071, LCS080, LCS090, LCS100, LCS112, LCS125, LCS140, LCS160, LCS180, LCS200, SCS025, SCS031, SCS035, SCS040, SCS045, SCS050, SCS056, SCS063, SCS071, SCS080, SCS090, SCS100, SCS112, SCS125, SCS140, SCS160, SCS180, SCS200, LCSCR025, LCSCR031, LCSCR035, LCSCR040, LCSCR045, LCSCR050, LCSCR056, LCSCR063, LCSCR071, LCSCR080, LCSCR090, LCSCR100, LCSCR112, LCSCR125, LCSCR140, LCSCR160, LCSCR180, LCSCR200	insulated or uninsulated; smoke reservoir or non smoke reservoir; dual purpose or emergency use	N/A	F200	Class F / Class H	937a/01
SmokeVent axial fan (notes 5, 7, 8, 9)	LCS040k2-A10/34/B, LCS125R4-A12/37B	uninsulated; smoke reservoir; dual purpose	N/A	F200	Class F / Class H	

PART 3: SECTION 4

POWERED SMOKE AND HEAT EXHAUST VENTILATION

Product Name	Model	Application Classes	Response delay	Resistance to fire class	Motor temp. rating ¹	LPCB Ref. No.
JetVent Impulse (flanged - standard thrust) axial fan (notes 2, 5, 6, 7, 8)	JFSU-CPA-315 2/4-3, JFSU-CPA-400 2/4-3, JFSU-CPA-400 2-3, JFSR-CPA-315 2/4-3, JFSR-CPA-400 2/4-3, JFSR-CPA-400 2-3	insulated or uninsulated; smoke reservoir or non smoke reservoir; dual purpose or emergency use	N/A	F200	Class F / Class H	
JetVent Impulse (flanged - enhanced thrust) axial fan (notes 2, 5, 6, 7, 8)	LCS031-CPU 2/4-3, LCS035-CPU 2/4-3, LCS040-CPU 2/4-3, LCS031-CPR 2/4-3, LCS035-CPR 2/4-3, LCS040-CPR 2/4-3	insulated or uninsulated; smoke reservoir or non smoke reservoir; dual purpose or emergency use	N/A	F200	Class F / Class H	
JetVent Impulse (flanged standard and enhanced thrust) axial fan (notes 3, 5, 6, 7, 8)	JFU/F3-315, JFR/F3-315, JFU/F3-355, JFR/F3-355, JFU/F3-400, JFR/F3-400	Uninsulated; smoke reservoir or non smoke reservoir; dual purpose or emergency use	N/A	F300 ⁴	Class F / Class H	937a/02
SmokeVent axial fan (notes 2, 5, 6, 7, 8)	LCS025, LCS031, LCS035, LCS040, LCS045, LCS050, LCS056, LCS063, LCS071, LCS080, LCS090, LCS100, LCS112, LCS125, LCS140, LCS160, LCS180, LCS200, SCS025, SCS031, SCS035, SCS040, SCS045, SCS050, SCS056, SCS063, SCS071, SCS080, SCS090, SCS100, SCS112, SCS125, SCS140, SCS160, SCS180, SCS200, LCSCR025, LCSCR031, LCSCR035, LCSCR040, LCSCR045, LCSCR050, LCSCR056, LCSCR063, LCSCR071, LCSCR080, LCSCR090, LCSCR100, LCSCR112, LCSCR125, LCSCR140, LCSCR160, LCSCR180, LCSCR200	insulated or uninsulated; smoke reservoir or non smoke reservoir; dual purpose or emergency use	N/A	F300 ⁴	Class F / Class H	
SmokeVent axial fan (notes 3, 5, 7, 9)	JFSR-CPA 400 2-3, LCS125-R4-A12/29/B	uninsulated; smoke reservoir; dual purpose	N/A	F300 ⁴	Class F / Class H	
JetVent impulse (flanged - standard thrust) axial fan (notes 2, 5, 6, 7, 8)	JFSU-CPA-315 2/4-3, JFSU-CPA-400 2/4-3, JFSU-CPA-400 2-3, JFSR-CPA-315 2/4-3, JFSR-CPA-400 2/4-3, JFSR-CPA-400 2-3	insulated or uninsulated; smoke reservoir or non smoke reservoir; dual purpose or emergency use	N/A	F300 ⁴	Class F / Class H	
JetVent impulse (flanged - enhanced thrust) axial fan (notes 2, 5, 6, 7, 8)	LCS031-CPU 2/4-3, LCS035-CPU 2/4-3, LCS040-CPU 2/4-3, LCS031-CPR 2/4-3, LCS035-CPR 2/4-3, LCS040-CPR 2/4-3	insulated or uninsulated; smoke reservoir or non smoke reservoir; dual purpose or emergency use	N/A	F300 ⁴	Class F / Class H	

PART 3: SECTION 4

POWERED SMOKE AND HEAT EXHAUST VENTILATION

Product Name	Model	Application Classes	Response delay	Resistance to fire class	Motor temp. rating ¹	LPCB Ref. No.
SmokeVent axial fan (notes 2, 5, 6, 7, 8)	LCS025, LCS031, LCS035, LCS040, LCS045, LCS050, LCS056, LCS063, LCS071, LCS080, LCS090, LCS100, LCS112, LCS125, SCS025, SCS031, SCS035, SCS040, SCS045, SCS050, SCS056, SCS063, SCS071, SCS080, SCS090, SCS100, SCS112, SCS125, LCSCR025, LCSCR031, LCSCR035, LCSCR040, LCSCR045, LCSCR050, LCSCR056, LCSCR063, LCSCR071, LCSCR080, LCSCR090, LCSCR100, LCSCR112, LCSCR125	insulated or uninsulated; smoke reservoir or non smoke reservoir; dual purpose or emergency use	N/A	F400	Class F / Class H	937a/03
JetVent centrifugal (Mark I) fan (notes 3, 5, 8)	JISU-CPC-50N, JISU-CPC-100N,	uninsulated; smoke reservoir; dual purpose or emergency use	N/A	F300	Class F / Class H	937a/04
JetVent -centrifugal (Mark II) fan (notes 3, 5, 8)	JISU-2-CPC-50N, JISU-2-CPC-60N, JISU-2-CPC-100N, JISU-2-CPC-120N	uninsulated; smoke reservoir; dual purpose or emergency use	N/A	F300 ⁴	Class F / Class H	937a/05
JetVent impulse (unflanged - standard thrust) axial fan (notes 3, 5, 8)	JVSU-CPA-315 2/4-3, JVSU-CPA-400 2-3, JVSU-CPA-400 2/4-3, JVSR-CPA-315 2/4-3, JVSR-CPA-400 2-3 JVSR-CPA-400 2/4-3	uninsulated; smoke reservoir; dual purpose or emergency use	N/A	F300 ⁴	Class F / Class H	937a/06

Notes:

1. Motor temperature rating - classes given refer to temperature rise at ambient and motor insulation as detailed in section 4.2 of EN 12101-3: 2002.
2. Both horizontal and vertical installation is permitted.
3. Horizontal installation only is permitted.
4. Tested to 300°C for 120 minutes.
5. Only certified accessories should be used.
6. Use of guide vanes is permitted. Where this is the case the model code has +GV added, e.g. LCS025+GV.
7. Fan coding of units held within Select stock will be prefixed by the letter 'S', and the size expressed in mm (i.e. LCS025 becomes SLCS250)
8. No ducted cooling air is required.
9. Vertical installation only is permitted.

LPS 1263 *Requirements for the LPCB Approval and Listing of the Fire Performance of Grease Filters Used in Commercial Extract systems.*

This standard covers the test procedures and method of calculating the fire performance rating of grease filters used for the reduction of flammable and volatile grease droplets from the cooking exhaust of commercial cooking equipment in such situations as restaurant kitchens, canteens or similar food preparation areas where it is necessary to reduce the cooking exhaust via a ventilation system.

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Certificate No: 996a to LPS 1263 issue 1.2

Product Name	Nominal filter size (w x h x t) (mm)	Nominal flow rate (m ³ /h)	LPS 1263 Grade	LPCB Ref. No.
KSA Filter	498 x 330 x 51.6	786	GF90	996a/01

Notes:

1. LPCB ref 996a/01 The KSA filter is manufactured from Grade 304 S16 stainless steel with 0.4mm thick filter fins and 0.8mm casing.
2. LPCB ref 996a/01 KSA filter is approved as part of a Kitchen Ventilation system with 400, 555 and 555UV canopy profiles only.