

Technical Data Sheet

S-Line Pillows

UIC of product-type: SLINE

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CE Certification
Air Permeability
Movement Rigid Walls
Pipes Linear joints
Acoustic Rating
Trays Rigid Floors
CE Certification
Air Permeability



CE Certification
Penetration Seals
Movement Rigid Walls
Metallic Pipes Linear
Flexible Walls Acoustic
Cable Trays Rigid Floors
Plastic Pipes CE Certification
Air Permeability



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Product Technical Data

ETA 13-1056
CE-1121-CPR-JA5008

Product Overview

Technical Description of S-Line Fire Pillows

S-Line Fire Pillows are an ideal product to create a temporary or permanent fire barrier around all types of services to prevent the passage of fire through a compartment wall or floor, especially suitable where services are continuously being changed or replaced.

S-Line Fire Pillows are filled with organic fillers and intumescent additives in a waterproof glass cloth bag.

Intended Use

The specific elements of construction that the system S-Line Fire Pillows may be used to provide a penetration seal in, are as follows:

- Fire Resistance EN 1366-3 EI 120 and BS 476 - 240mins.
- Fire Classification EN13501-2.
- Certifire 3rd Party Accreditation CF514.
- IET (IEE) 17th Edition Fire Stop Compliant to Regulation 527.1-3 - Electrical Installations.
- BS 7671-2008 Chapter 42 & 52 - Electrical Installations Fire Resistance.
- Fire resistance tested in rigid walls & floors.
- Tested with Metallic Pipes, Cables, Cable Bunches, Cable Trays and Cable Ladders.

Key Product Points

- Acoustic Isolation EN10140 - 46dB.
- Air Permeability EN1026 - 420Pa.
- Reaction Temperature 180°C.
- High Expansion Ratio.
- Remains flexible between -20°C to +130°C.
- Moisture resistant lining.
- Suitable for indoor and outdoor locations up to 1m².
- Contributes to Green Building.
- Non-combustible and non-toxic.
- Ease of installation and long life.



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Description	Result	Test Standard
Packaging	Sizes as above table in boxes of 25 or 50	
Colour	Silver, White, Black or Red by request	
Fire Resistance	EI 120, 240mins	EN 1366-4, BS 476
Insulation	120mins	EN 1366-4
Classification	EN 13501-2	
Acoustic Isolation	46dB	EN 10140
Air Permeability	420Pa, 100Pa 22.8/31.1 m ³ /h/m ²	EN 1026
Expected Shelf Life	N/A	N/A

Installation for S-Line Fire Pillows

Ensure that the aperture and services in question are tested with S-Line Fire Pillows, and the site conditions are within the application specification.

All services and apertures need to be clean and clear of all dust and loose particles. The aperture temperature needs to be at 5°C or above at time of installation.

Install the S-Line Fire Pillows in such a way that all joints are staggered in each layer until you have filled all gaps within the wall. Pack pillows tightly into the opening around the services to a minimum depth of 150mm. Always ensure that large voids are completely filled and S-Line pillows are installed in a manner that ensures a tight compression fit.

Size and Quantity Chart

	Large	Small	Sausage
Form Supplied	330mm x 200mm x 45mm	330mm x 200mm x 25mm	330mm x 50mm x 20mm
Weight Supplied	385gms	185gms	50gms
Estimated Quantity required per m²	113 in Wall or Floor	180 in Wall or Floor	As required to fill small voids



Performance Data - Walls

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Substrates

The walls shall be a minimum of **150mm thick**. Drywalls shall comprise a minimum of 2 layers of 'Type F' Gypsum board on both faces, with minimum 50mm studs. Masonry / Concrete walls shall have a minimum density for concrete or brick of 780kg/m³ and for aerated concrete blocks of 600kg/m³. All walls shall have at least the same fire resistance as that required for the sealing system.

Service support requirements

Services should be rigidly supported via steel angles, hangers or channels, not further than 400mm from the surface of the sealing system on both faces of the wall and top face of the floor unless specified otherwise in the performance data.

Terminology

Fire performance in accordance with EN1366-3, EN1366-4, Classification 13501-2:2007 + A1:2009, ETAG-026, Air Permeability EN1026, Sound EN10140. Fire resistance classes are: E = Integrity, the product can withstand the fire from the non-fire side, I =Insulation, the product can withstand the temperature travelling down the service, U/U = Uncapped inside and outside the furnace, U/C = Uncapped inside and Capped outside the furnace, C/U = Capped inside and Uncapped outside the furnace.

Substrates

The floors shall be a minimum of **150mm thick**. Masonry / Concrete floors shall have a minimum density for concrete or brick of 780kg/m³ and for aerated concrete blocks of 600kg/m³. All floors shall have at least the same fire rating as that required for the Sealing system.

Service support requirements

Services should be rigidly supported via steel angles, hangers or channels, not further than 400mm from the surface of the sealing system on both faces of wall and top side of the floor unless specified otherwise in the performance data.

Terminology

Fire performance in accordance with EN1366-3, EN1366-4, Classification 13501-2:2007 + A1:2009, ETAG-026, Air Permeability EN1026, Sound EN10140. Fire resistance classes are: E = Integrity, the product can withstand the fire from the non-fire side, I =Insulation, the product can withstand the temperature travelling down the service, U/U = Uncapped inside and outside the furnace, U/C = Uncapped inside and Capped outside the furnace, C/U = Capped inside and Uncapped outside the furnace.

RIGID WALL

S-Line Fire Pillows Penetration Seals 300 mm deep, in Rigid Walls with a minimum thickness of 150mm.

Services	Classification
Telecom cables up to 21mm Ø (single or bundles up 100mm Ø).	EI 120
Electrical cables up to 21mm Ø.	EI 120
Electrical cables up to 50mm Ø.	E 120, EI 90
Electrical cables up to 80mm Ø.	E 120, EI 90
Unsheathed wires up to 24mm Ø.	EI 120
Steel or Copper conduits and tubes up to 16mm Ø.	EI 120
Plastic (any) conduits and tubes up to 16mm Ø.	EI 120
Cables trays or ladders up to 300mm wide.	E 120, EI 60
Cables trays up to 500mm wide.	E 120, EI 90

S-Line Fire Pillow Penetrations Seals 300mm deep, in Rigid Walls with a minimum thickness of 150mm.

Services	Classification
165mm Ø x 5.6-14.2mm thick mild steel pipe.	E 120 C/U



Performance Data - Walls

Tested to BS 476

RIGID WALL

S-Line Fire Pillow Penetration Seals 300mm deep, in Rigid Walls with a minimum thickness of 150mm.

Services	Classification
48mm Ø x 3.5-14.2mm thick steel pipe with 300mm Local Interrupted (LI) FSi Thermal Defense Wrap 7mm thick.	EI 120 C/U
113mm Ø x 3.5-14.2mm thick steel pipe with 300mm Local Interrupted (LI) FSi Thermal Defense Wrap 10mm thick.	EI 120 C/U

S-Line Fire Pillow Penetration Seals 300mm deep, in Rigid Walls with a minimum thickness of 150mm.

Services	Classification
108mm Ø x 1.5-14.2mm thick copper pipe.	E 120 C/U, EI 90 C/U

S-Line Fire Pillow Penetration Seals 300mm deep, in Rigid Walls with a minimum thickness of 150mm.

Services	Classification
54mm Ø x 1.0-14.2mm thick copper pipe with 2 layers of insulation.	EI 120

S-Line Fire Pillow Penetration Seals 300mm deep, in Rigid Walls with a minimum thickness of 150mm.

Element of construction	Services	Additional requirements	Integrity	Insulation
Masonry/ concrete wall min 150mm thick	Telecom cables up to 21mm Ø (single or bundles up to 100m).	None	120 minutes	120 minutes
	Electrical cables up to 21mm Ø.	None	120 minutes	120 minutes
	Electrical cables up to 50mm Ø.	Cables lagged*	120 minutes	90 minutes
	Electrical cables up to 80mm Ø.	Cables lagged*	120 minutes	90 minutes
	Unsheathed wires up to 24mm Ø	Cables lagged*	120 minutes	120 minutes
	Steel or Copper conduits and tubes up to 16mm Ø.	None	120 minutes	120 minutes
	Plastic (any) conduits and tubes up to 16mm Ø.	None	120 minutes	120 minutes
	Cable tray/ladder up to 300mm wide.	None	120 minutes	60 minutes
	Cable tray up to 500mm wide.	None	120 minutes	90 minutes
	54mm Ø x 1.0mm thick copper pipe with 15mm Armaflex insulation.	Pipe lagged***	120 minutes	120 minutes
	108mm Ø x 1.5mm thick copper pipe.	Pipe lagged*	120 minutes	90 minutes
	48mm Ø x 3.5mm thick mild steel pipe.	Pipe lagged**	120 minutes	120 minutes
	113mm Ø x 4.5mm thick copper pipe.	Pipe lagged***	120 minutes	120 minutes
	165mm Ø x 5.6mm thick mild steel pipe.	None	120 minutes	-
*Lagging:	To be formed from 2 or more pillows stitched together around the service to a minimum length of 300mm on both sides of the wall/main seal.			
**Lagging:	To be formed from Thermal Defense Wrap 1 to a minimum length of 300mm on both sides of the wall/main seal.			
***Lagging:	To be formed from Thermal Defense Wrap 2 to a minimum length of 300mm on both sides of the wall/main seal.			
Application Technique:	1100mm by 1100mm			



Performance Data - Walls and Floors

Tested to BS 476

RIGID WALL AND FLOOR

S-Line Fire Pillow Penetration Seals in Rigid Wall and Floor.						
Orientation	Services	Integrity/ Insulation	Required Pillows Thickness For Fire Resistance Periods (minimum)			
			30 mins	60 mins	90 mins	120 mins
Floor	No	Int. & Ins.	150mm	150mm	200mm	200mm
	Yes	Int. & Ins.	150mm	200mm	250mm	300mm
	Yes	Int. only	150mm	150mm	200mm	200mm
Wall	No	Int. & Ins.	150mm	180mm	250mm	300mm
	Yes	Int. & Ins.	150mm	200mm	250mm	300mm
	Yes	Int. only	180mm	180mm	250mm	300mm
Penetrating Services:		Cable ladders and communication cables.				
Maximum aperture:		1000mm by 1000mm				
Wall/floor thickness:		The floors and walls shall be a minimum of 100mm thick for periods of up to 60 minutes fire resistance and 150mm (floor) and 200mm (wall) thick for periods of 90 minutes and 120 minutes fire resistance. The minimum density for the concrete of the floor or wall is 780kg/m ³ and for walls made of concrete blocks is 600kg/m ³ .				
Application Technique:		<p>Floors: Steel mesh (50mm square with 5mm wire) is mechanically fixed either to the soffit of the floor or within the reveal of the aperture via vertical returns at the edges of the mesh. The fire pillows are tightly packed into the opening and around the services.</p> <p>Walls: The fire pillows are tightly packed into the opening and around the services (no mesh is required).</p>				



Extended Scope of Works

ETA 13-1056
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Direct field of application – DiAP and Extended Field of Application- EXAP

DiAP and EXAP rules are an output from European harmonization of fire testing methods, classifications and product standards where applicable. At a national level, experienced persons or fire test organisations have previously provided assessments of expected performance based on expert judgement and opinion, however these rules allow interpretation through the specific EN 1366 test standard.

DiAP and EXAP rules are provided in the EN 1366 and EN 15882 test standards series. They are derived from information obtained from tests carried out in accordance with relevant EN 1366 tests at recognised laboratories in Europe. The test results achieved by a particular design may be directly applied to a limited number of variations without recourse to expert advice, providing the design remains substantially as tested. EXAPs shall be based on primary test evidence to a specific part of the EN 1366 series and may be supplemented by appropriate test evidence generated from other sources, or other relevant historical data. The EXAP rules consider changes in the tested design beyond the scope of direct application and may also consider variations to the tested design.

Direct field of application - DiAP

Fire Stopping systems of this type are often complicated by extensive changes in modern buildings and their influence on the fire hazard should be considered carefully. The fire hazard can be reduced by providing penetration seals at the points where the services pass through fire separating elements (walls/floors).

The impact of fire on a construction or service system can vary considerably. A strict scientific approach to the problem of adequate testing of a sealing system would, therefore, be to design a series of tests each of which corresponds to a specified fire situation and arrangement. However, such an approach would probably fail due to its economic consequences, as tests of this type are very timeconsuming and costly. The method of test described in the EN 1366 series has therefore been designed with the intention of covering a wide range of fire situations in a minimum of tests. To allow a wider field of application, standard configurations are defined on the basis of general experience and historic data wherever possible. As frequently a number of influencing parameters was considered when defining the standard configurations, not all of which may be addressed explicitly in the field of direct application rules (e.g. metalscreen of cables). To allow nevertheless flexibility a modular approach was taken as far as possible so that various combinations of standard configuration elements can be used to fit the needs of the user.

Where a nonstandard configuration was used, the field of application is restricted to what was tested, however the field of direct application rules given in the various parts of the EN 1366 series may be applied, subject to deviating rules given in the annexes of each part. Rules cover supporting construction, orientation, penetrating services, service supports, penetration seal size, distances and overall configurations of penetration seal materials and services to be included.

Extended Field of Application- EXAP

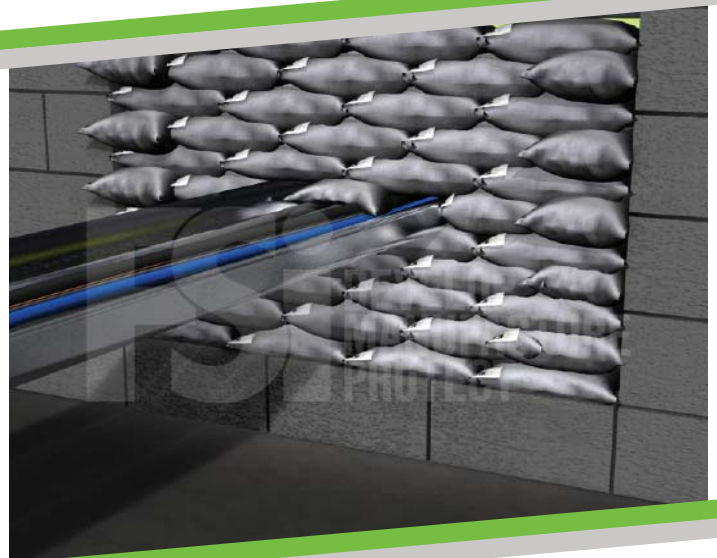
The purpose EXAP document is to provide the principles and guidance for the preparation of extended application documents for penetration sealing systems tested in accordance with the EN 1366 and EN 15882 series. The field of the extended application document is additional to the direct field of application given within the relevant part of EN 1366 and may be applied to or based on a single test, or a number of tests, which provide the relevant information for the formulation of an extended application.

There are a number of practical limitations on the size and design of elements that can be tested by the standard methods of fire resistance test. When these elements are required to be larger, or are of a modified design, there is a necessity to be able to confirm their performance, without the ability of being able to test them. To achieve this, extended application documents for the various elements are used.

Due to the diverse nature of materials and constructions used to seal openings in fire resistant separating elements it has been necessary to separate the extended application principles into generic seal types within the specific EXAP EN 15882 series. Often more than one variation is to be incorporated, should this be the case the overall effect shall be considered. Principles common to all generic seal types are given in the EXAP and rules for each specific generic seal type are given. The Annex provide rules for the application of test results and provides information relating to the extended application of those test results on for service penetrations.

Variables for each seal type, which require consideration included are as follows:

- 1) Separating element;
- 2) Type of service;
- 3) Size of service;
- 4) Seal size and configuration
- 5) Material changes (components or formulation) – comparison test approach, reduced test program
- 6) Orientation
- 7) Penetration seals at the head of walls (like a linear joint) – consider the issue of movement
- 8) Penetration seals at slab edges (like a linear joint) – consider the issue of movement
- 9) Distances of penetration seals to other openings in the separating element e.g. doors



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