CERTIFICATE OF APPROVAL
No CF 513

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

FSI LIMITED

Westminster Industrial Estate, Tamworth Road,
Measham, DE12 7DS
Tel: 01530 515130 Fax: 01530 273564

Have been assessed against the requirements of the Technical Schedule(s) denoted below and are approved for use subject to the conditions appended hereto:

CERTIFIED PRODUCT	TECHNICAL SCHEDULE
Stopseal Batts & Coating Silverflame Batts & Coating (with Pyrocoustic Sealant)	**TS03 Penetration Sealing Systems**

Signed and sealed for and on behalf of Exova (UK) Limited trading as Warrington Certification

Paul Duggan
Certification Manager

Issued:	20th November 2006
Revised:	5th September 2017
Valid to:	1st May 2022

CERTIFICATE No CF 513
FSI LIMITED

Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

1. This approval relates to the use of Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant) for the fire protection where services are penetrating walls. The detailed scope is given in the Approval Matrix included in this Certificate. This shows the thickness and acceptable services for Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant) required to provide fire resistance periods in accordance with BS 476: Part 20: 1987 or BSEN 1366-3: 2009 of up to 240 minutes for differing services and wall constructions and up to 120 minutes for floor constructions. The scope of this certification complies with the guidelines stated in the ASFP Redbook: 3rd Edition for 3rd party certification schemes.

2. This certification is designed to demonstrate compliance of the product or system specifically with Approved Document B (England and Wales), Section 2 of the Technical Standards (Scotland), Technical Booklet E (N. Ireland). If compliance is required to other regulatory or guidance documents there may be additional considerations or conflict to be taken into account.'

3. The product is approved on the basis of:

   i) Initial type testing
   ii) Audit testing at the frequency specified in TS03
   iii) A design appraisal against TS03
   iv) Inspection and surveillance of factory production control

4. The stud partition drywalls, masonry or concrete walls shall be at least 130 mm thick and have at least the same fire rating as that required for the penetration seal.

5. The services which may be fitted through the seals are cable ladders, cables, pipes and ducts as detailed within the Approval Matrix included in this Certificate.

6. The approval relates to ongoing production. Product and/or its immediate packaging is identified with the manufacturers' name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.

Issued: 20th November 2006
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CERTIFICATE No CF 513
FSI LIMITED

Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BS476 - Up To 120 Minute Flexible and Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick		
Density:	140 kg/m^3 minimum		
Barrier	**Service**	**Integrity**	**Insulation**
Single layer (50 & 60 mm)	Cable Ladder (340 mm wide by 100 mm high max.)	120 minutes	60 minutes
	Cables up to 26 mm diameter	120 minutes	N/A
	Steel pipes up to 60 mm diameter	120 minutes	N/A
	PVC pipes up to 110 mm diameter*	60 minutes	N/A
	Steel ducts (445 mm wide by 445 mm high max.)	120 minutes	N/A
Double layer (100 & 120 mm)	Cable Ladder (340 mm wide by 100 mm high max.)	120 minutes	60 minutes
	Cables up to 26 mm diameter	120 minutes	60 minutes
	Steel pipes up to 60 mm diameter	120 minutes	30 minutes
	PVC pipes up to 110 mm diameter*	60 minutes	N/A
	Steel ducts (445 mm wide by 445 mm high max.)	120 minutes	N/A
* PVC pipes must be used in conjunction with Stopseal Pipe wraps over sealed with ablative coating			
Maximum aperture:	2400 mm high by 1200 mm (120 minutes integrity performance) 2880 mm high by 1440 mm (60 minutes integrity performance) Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions.		
Walls	The walls shall be a minimum of 130 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	**Concrete/masonry walls**: Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant and must be separated by at least 400 mm. **Drywalls:** As above and additionally the aperture must be formed from track sections and be lined with two layers of 15 mm thick Type 'F' gypsum boards.		
Service Coat-Back :	Not required	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 500 mm from the surface of the sealing system on both faces.		

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CERTIFICATE No CF 513
FSI LIMITED

Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BS476 - Up To 240 minutes Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick		
Density:	140 kg/m^3 minimum		
Barrier	**Service**	**Integrity**	**Insulation**
Single layer (50 & 60 mm)	Cable Ladder (340 mm wide by 100 mm high max.)	240 minutes	N/A
	Cables up to 20 mm diameter	240 minutes	N/A
	Areas of seal without services	240 minutes	60 minutes
Double layer (100 & 120 mm)	Cable Ladder (340 mm wide by 100 mm high max.)	240 minutes	60 minutes
	Cables up to 20 mm diameter	240 minutes	60 minutes
	Areas of seal without services	240 minutes	240 minutes
Maximum aperture:	1000 mm high and 660 mm wide subject to a maximum area of 0.6 m^2. Multiple apertures must be separated by a minimum of 200 mm in concrete/masonry constructions.		
Walls	The walls shall be a minimum of 140 mm thick. All concrete or masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	**Concrete/masonry walls**: Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant and must be separated by at least 200 mm.		
Service Coat-Back :	Not required	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 500 mm from the surface of the sealing system on both faces.		

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CERTIFICATE No CF 513
FSI LIMITED

Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BS476 - Up To 120 Minute Rigid Floor Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)			
Coating / DFT:	Silverflame or Stopseal Coating /1 mm thick			
Density:	140 kg/m^3 minimum			
Barrier	**Service**		**Integrity**	**Insulation**
Double layer (100 & 120 mm)	Cable Ladder (340 mm wide by 100 mm high max.)		120 minutes	60 minutes
	Cables up to 20 mm diameter		120 minutes	60 minutes
	Areas of seal without services		120 minutes	120 minutes
Maximum aperture:	1200 mm long and 600 mm wide subject to a maximum area of 0.72 m^2. Multiple apertures must be separated by a minimum of 200 mm in concrete constructions.			
Floors	The floors shall be a minimum of 115 mm thick. All concrete floors shall have at least the same fire rating as that required for the barrier.			
Application Technique:	**Concrete floors**: Boards cut to size (not jointed) and tightly friction fitted into the aperture at mid-depth of the floor. Board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant and must be separated by at least 240 mm.			
Service Coat-Back :	Not required	**U Value:**	Not known	
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 500 mm from the surface of the sealing system on both faces.			

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CERTIFICATE No CF 513
FSI LIMITED

Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 30 Minute Flexible and Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Single layer Patress Both Faces (50 & 60 mm)	570 x 200	500mm wide x 60mm deep steel cable basket containing 3 x type 'B' cable and 20 x bundle of telecoms cables	90	90
		500mm wide x 60mm deep steel cable tray containing 1 x type 'B' cable, 3 x type 'A1' cable, 3 x type 'A2' cable, and 3 x type 'A3' cable		
	200 x 200	20mm dia Adaptaflex SPL20 flexible conduit		
		20mm dia Kopex KSU 316 stainless steel flexible conduit		
		150mm wide x 60mm deep steel cable tray containing 4 x FP200 Gold (Firealarm cable 7mm dia red) Cables		
Maximum aperture:		Multiple apertures must be separated by a minimum of 200 mm in drywalls and in concrete/masonry constructions.		
Walls		The walls shall be a minimum of 75 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Patress installation of Stopseal Coated Batt. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres		
Service Coat-Back :		Not required	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 1025 mm from the surface of the sealing system on both faces.		

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CERTIFICATE No CF 513
FSI LIMITED

Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 60 Minute Flexible and Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick		
Density:	140 kg/m^3 minimum		
Barrier	**Service**	**Integrity**	**Insulation**
Single layer (50 & 60 mm)	[1]Cable Trays and Ladder	60	60
	[1]Cables up to 80 mm diameter	60	60
	[1]100mm diameter bundle telecommunication cables type F	60	60
	[1]Unsheathed electrical cables up to 24mm diameter	60	60
	*Steel or Copper pipes 108mm diameter 1.5mm-14.2mm wall[1]	60	45
[1]Insulated with 6mm FSi Thermal Defense Wrap 300mm either side of the seal [2]Insulated with continuous interrupted 40mm thick stone wool insulation (min 140kg.m^3)			
Maximum aperture:	600mm high by 600mm. Multiple apertures must be separated by a minimum of 400 mm in drywalls and 240 mm in concrete/masonry constructions.		
Walls	The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	**Concrete/masonry walls**: Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant and must be separated by at least 200 mm. **Drywalls:** As above		
Service Coat-Back :	Not required	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 250 mm from the surface of the sealing system on both faces.		

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CERTIFICATE No CF 513
FSI LIMITED

Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick
Density:	140 kg/m^3 minimum

Barrier	Max Opening (mm)	Service	Integrity	Insulation
Double layer (50 & 60 mm)	1200 high by 730 wide	Cable Trays and Ladder	60	60
		Cables up to 21 mm diameter	60	60
		Cables 22mm – 80 mm diameter	60	45
		100mm diameter bundle telecommunication cables type F	60	60
		Unsheathed electrical cables up to 17mm diameter	60	30
		Unsheathed electrical cables 18mm-24mm diameter	60	15
		Steel or copper conduits up to 16mm diameter	60	15
		PVC conduits up to 16mm diameter	60	60
		*Steel or Copper pipes 40mm diameter 1.5mm-14.2mm wall[1]	90	60
		*Steel or Copper pipes 40mm – 159mm diameter 2.3mm-14.2mm wall[3]	60	60
	600 high by 600 wide	Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall[2]	120	45
		Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall[2]	120	60

[1]Insulated with 20mm thick continuous sustained foil faced glass wool insulation (min 80kg.m^3)
[2]Insulated with 25mm thick continuous sustained foil faced glass wool insulation (min 30kg.m^3)
[3]Insulated with 30mm thick continuous sustained foil faced glass wool insulation (min 80kg.m^3)
*Sealed with 15mm deep x 15mm wide annulus FSi Pyrpro HPE Sealant to both faces

Aperture Separation:	Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions.		
Walls	The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :	Not required	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 250 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	1200 high by 730 wide	[1]Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall	45	45
		[1]Steel 42-324mm Ø, 16mm wall		
		[2]Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall	120	45
		[2]Steel 42-324mm Ø, 16mm wall thickness.		
[1]Insulated with 20mm thick local interrupted (400mm) foil faced glass wool insulation (min 40kg.m^3) [2] Coated with FSi PST coating along the penetration 2mm DFT (L/I 400mm)				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions. Clusters of pipes and linear separation of 0mm approved within the Batt		
Walls		The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :		[2] Coated with FSi PST coating along the penetration 2mm DFT (L/I 400mm)	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	1200 high by 750 wide	[1]Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST Insulation (C/S)	120	60
		[1]Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 13-25mm thick K Flex ST insulation (C/S)	120	90
		[1]Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation (C/S)	120	60
		[1]Steel or Copper Pipe 42mm Ø, 1–14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation (C/S)	120	90
		[1]Steel or Copper Pipe 42mm Ø, 1.2–14.2mm wall thickness. 50mm thick glassfibre insulation (C/S)		
[*]2 x 2mm thick layers of PipeBloc EL installed both sides of the Stopseal Fire Batt				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions.		
Walls		The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :		N/A	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)			
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick			
Density:		140 kg/m^3 minimum			
Barrier	**Max Opening (mm)**	**Service**	**Pipe Bloc PCP Ref**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	1200 high by 730 wide	PVC Pipe 32mm Ø, 1.8mm wall	32mm	120	120
		PVC Pipe 40mm Ø, 1.8mm wall	40mm		
		PVC Pipe 50mm Ø, 1.8mm wall	50mm		
		PVC Pipe 55mm Ø, 1.8-2.3mm wall	55mm		
		PVC Pipe 63mm Ø, 2.3-3mm wall	63mm		
		PVC Pipe 75mm Ø, 3.1-4.8mm wall	75mm		
		PVC Pipe 82mm Ø, 3.1-4.8mm wall	82mm		
		PVC Pipe 90mm Ø, 4.2-7.4mm wall	90mm		
		PVC Pipe 100mm Ø, 4.2-7.4mm wall	100mm		
		PVC Pipe 110mm Ø, 4.2-7.4mm wall	110mm		
		PVC Pipe 125mm Ø, 6mm wall	125mm		
		PVC Pipe 140mm Ø, 6.1-7.5mm wall	140mm		
		PVC Pipe 160mm Ø, 6.2-9.5mm wall	160mm		
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions. Clusters of pipes and linear separation of 0mm approved within the Batt			
Walls		The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.			
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Stopseal Fire Batt			
Service Coat-Back :		N/A		**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.			

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Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick
Density:	140 kg/m^3 minimum

Barrier	Max Opening (mm)	Service	Pipe Bloc PCP Ref	Integrity	Insulation
Double layer (50 & 60 mm)	1200 high by 730 wide	PP Pipe 32mm Ø, 2.9mm wall	32mm	120	120
		PP Pipe 40mm Ø, 2.9mm wall	40mm		
		PP Pipe 50mm Ø, 2.9mm wall	50mm		
		PP Pipe 55mm Ø, 2.9-4.4mm wall	55mm		
		PP Pipe 63mm Ø, 2.9-4.4mm wall	63mm		
		PP Pipe 75mm Ø, 2.8-6.7mm wall	75mm		
		PP Pipe 82mm Ø, 2.8-6.7mm wall	82mm		
		PP Pipe 90mm Ø, 2.7-10mm wall	90mm		
		PP Pipe 100mm Ø, 2.7-10mm wall	100mm		
		PP Pipe 110mm Ø, 2.7-10mm wall	110mm		
		PP Pipe 125mm Ø, 3.1mm wall	125mm		
		PP Pipe 140mm Ø, 3.5-8mm wall	140mm		
		PP Pipe 160mm Ø, 4-14.6mm wall	160mm		

Aperture Separation:	Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions. Clusters of pipes and linear separation of 0mm approved within the Batt		
Walls	The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Stopseal Fire Batt		
Service Coat-Back :	N/A	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)				
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick				
Density:		140 kg/m^3 minimum				
Barrier	**Max Opening (mm)**	**Service**		**Pipe Bloc PCP Ref**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	1200 high by 730 wide	PE Pipe 32mm Ø, 2.9mm wall		32mm	120	120
		PE Pipe 40mm Ø, 2.9mm wall		40mm		
		PE Pipe 50mm Ø, 2.9mm wall		50mm		
		PE Pipe 55mm Ø, 2.9-4.4mm wall		55mm		
		PE Pipe 63mm Ø, 2.9-4.4mm wall		63mm		
		PE Pipe 75mm Ø, 2.8-6.7mm wall		75mm		
		PE Pipe 82mm Ø, 2.8-6.7mm wall		82mm		
		PE Pipe 90mm Ø, 2.7-10mm wall		90mm		
		PE Pipe 100mm Ø, 2.7-10mm wall		100mm		
		PE Pipe 110mm Ø, 2.7-10mm wall		110mm		
		PE Pipe 125mm Ø, 3.1mm wall		125mm		
		PE Pipe 140mm Ø, 3.9-5.8mm wall		140mm		
		PE Pipe 160mm Ø, 4.9-9.5mm wall		160mm		
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions. Clusters of pipes and linear separation of 0mm approved within the Batt				
Walls		The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.				
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Stopseal Fire Batt				
Service Coat-Back :		N/A		**U Value:**	Not known	
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.				

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CERTIFICATE No CF 513
FSI LIMITED

Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Walls

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick
Density:	140 kg/m^3 minimum

Barrier	Max Opening (mm)	Service	Pipe Bloc EL Ref	Integrity	Insulation
Double layer (50 & 60 mm)	1200 high by 730 wide	PVC Pipe 40mm Ø, 1.9mm wall thickness. 25 mm thick Kingspan Kooltherm FM insulation (C/S)	3 x 2mm thickness	120	90
		PVC Pipe 40mm Ø, 3mm wall thickness. 15 mm thick Kingspan Kooltherm FM insulation (C/S)	3 x 2mm thickness	120	120
		PVC Pipe 110mm Ø, 4.2mm wall thickness. 25 mm thick Kingspan Kooltherm FM insulation (C/S)	5 x 2mm thickness	120	90
		PVC Pipe 110mm Ø, 6.6mm wall thickness. 20 mm thick Kingspan Kooltherm FM insulation (C/S)	5 x 2mm thickness	120	90
		PVC Pipe 40mm Ø, 1.9mm wall thickness. 32 mm thick Armacell Armaflex Class O (C/S)	3 x 2mm thickness		
		PVC Pipe 40mm Ø, 3mm wall thickness. 9 mm thick Armacell Armaflex Class O (C/S)	3 x 2mm thickness		
		PVC Pipe 110mm Ø, 4.2mm wall thickness. 32 mm thick Armacell Armaflex Class O (C/S)	5 x 2mm thickness	120	120
		PVC Pipe 110mm Ø, 6.6mm wall thickness. 13 mm thick Armacell Armaflex Class O (C/S)	5 x 2mm thickness	120	90
PipeBloc EL installed both sides of the Stopseal Fire Batt					

Aperture Separation:	Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions.		
Walls	The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :	N/A	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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CERTIFICATE No CF 513
FSI LIMITED

Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Walls

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Single layer Patress Both Faces (50 & 60 mm)	1200 high x 750 wide	[1]Electrical cables upto 80mm Ø	120	120
		[1]Cable Trays and Ladders		
		[1]100 mm diameter bundle telecommunication cable type "F"		
		[1]Unsheathed electrical cables up to 24mm Ø		
		[1]Steel or Copper Conduits up to 16mm Ø		
		[1]Plastic conduits up to 16mm Ø		
[1]Cables and cable trays wrapped with a single layer of 40mm thick, 40kg/m3 Stonewool (L/I 300mm)				
Maximum aperture:		Multiple apertures must be separated by a minimum of 200 mm in drywalls and in concrete/masonry constructions.		
Walls		The walls shall be a minimum of 75 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Patress installation of Stopseal Coated Batt. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres		
Service Coat-Back :		Not required	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick
Density:	140 kg/m^3 minimum

Barrier	Max Opening (mm)	Service	Integrity	Insulation
Single layer Patress Both Faces (50 & 60 mm)	1200 high x 750 wide	[1]Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST Insulation (C/S)	120	60
		[1]Steel or Copper Pipe 42-159mm Ø, 1.2 – 14.2mm wall thickness. 25mm thick K Flex ST insulation (C/S)	120	90
		[1]Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST insulation (C/S)	120	120
		[1]Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation (C/S)	120	90
		[1]Steel or Copper Pipe 42mm Ø, 1–14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation (C/S)	120	120
		[1]Steel or Copper Pipe 42mm Ø, 1.2–14.2mm wall thickness. 50mm thick glassfibre insulation min. 30kg/m^3 (C/S)	120	90
	600 high x 600 wide	Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m^3 (C/S)	120	90
		Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m^3 (C/S)	120	120

[1]2 x 2mm thick layers of PipeBloc EL installed both sides of the substrate within the patress installation

Maximum aperture:	Multiple apertures must be separated by a minimum of 200 mm in drywalls and in concrete/masonry constructions.		
Walls	The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	Patress installation of Stopseal Coated Batt. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres		
Service Coat-Back :	Not required	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick
Density:	140 kg/m^3 minimum

Barrier	Max Opening (mm)	Service	Pipe Bloc PCP Ref	Integrity	Insulation
Single layer Patress Both Faces (50 & 60 mm)	1200 high by 730 wide	PVC Pipe 32mm Ø, 1.8mm wall	32mm	120	120
		PVC Pipe 40mm Ø, 1.8mm wall	40mm		
		PVC Pipe 50mm Ø, 1.8mm wall	50mm		
		PVC Pipe 55mm Ø, 1.8-2.3mm wall	55mm		
		PVC Pipe 63mm Ø, 2.3-3mm wall	63mm		
		PVC Pipe 75mm Ø, 3.1-4.8mm wall	75mm		
		PVC Pipe 82mm Ø, 3.1-4.8mm wall	82mm		
		PVC Pipe 90mm Ø, 4.2-7.4mm wall	90mm		
		PVC Pipe 100mm Ø, 4.2-7.4mm wall	100mm		
		PVC Pipe 110mm Ø, 4.2-7.4mm wall	110mm		
		PVC Pipe 125mm Ø, 6mm wall	125mm		
		PVC Pipe 140mm Ø, 6.1-7.5mm wall	140mm		
		PVC Pipe 160mm Ø, 6.2-9.5mm wall	160mm		

Aperture Separation:	Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions. Clusters of pipes and linear separation of 0mm approved within the Batt		
Walls	The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	Patress installation of Stopseal Coated Batt. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Stopseal Fire Batt		
Service Coat-Back :	N/A	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)			
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick			
Density:		140 kg/m^3 minimum			
Barrier	**Max Opening (mm)**	**Service**	**Pipe Bloc PCP Ref**	**Integrity**	**Insulation**
Single layer Patress Both Faces (50 & 60 mm)	1200 high by 730 wide	PP Pipe 32mm Ø, 2.9mm wall	32mm	120	120
		PP Pipe 40mm Ø, 2.9mm wall	40mm		
		PP Pipe 50mm Ø, 2.9mm wall	50mm		
		PP Pipe 55mm Ø, 2.9-4.4mm wall	55mm		
		PP Pipe 63mm Ø, 2.9-4.4mm wall	63mm		
		PP Pipe 75mm Ø, 2.8-6.7mm wall	75mm		
		PP Pipe 82mm Ø, 2.8-6.7mm wall	82mm		
		PP Pipe 90mm Ø, 2.7-10mm wall	90mm		
		PP Pipe 100mm Ø, 2.7-10mm wall	100mm		
		PP Pipe 110mm Ø, 2.7-10mm wall	110mm		
		PP Pipe 125mm Ø, 3.1mm wall	125mm		
		PP Pipe 140mm Ø, 3.5-8mm wall	140mm		
		PP Pipe 160mm Ø, 4-14.6mm wall	160mm		
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions. Clusters of pipes and linear separation of 0mm approved within the Batt			
Walls		The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.			
Application Technique:		Patress installation of Stopseal Coated Batt. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Stopseal Fire Batt			
Service Coat-Back :		N/A		**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.			

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)				
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick				
Density:		140 kg/m^3 minimum				
Barrier	**Max Opening (mm)**	**Service**		**Pipe Bloc PCP Ref**	**Integrity**	**Insulation**
Single layer Patress Both Faces (50 & 60 mm)	1200 high by 730 wide	PE Pipe 32mm Ø, 2.9mm wall		32mm	120	120
		PE Pipe 40mm Ø, 2.9mm wall		40mm		
		PE Pipe 50mm Ø, 2.9mm wall		50mm		
		PE Pipe 55mm Ø, 2.9-4.4mm wall		55mm		
		PE Pipe 63mm Ø, 2.9-4.4mm wall		63mm		
		PE Pipe 75mm Ø, 2.8-6.7mm wall		75mm		
		PE Pipe 82mm Ø, 2.8-6.7mm wall		82mm		
		PE Pipe 90mm Ø, 2.7-10mm wall		90mm		
		PE Pipe 100mm Ø, 2.7-10mm wall		100mm		
		PE Pipe 110mm Ø, 2.7-10mm wall		110mm		
		PE Pipe 125mm Ø, 3.1mm wall		125mm		
		PE Pipe 140mm Ø, 3.9-5.8mm wall		140mm		
		PE Pipe 160mm Ø, 4.9-9.5mm wall		160mm		
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions. Clusters of pipes and linear separation of 0mm approved within the Batt				
Walls		The walls shall be a minimum of 100 mm thick. All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.				
Application Technique:		Patress installation of Stopseal Coated Batt. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Stopseal Fire Batt				
Service Coat-Back :		N/A		**U Value:**	Not known	
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.				

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 90 Minute Flexible and Rigid Wall Construction

<table>
<tr><td colspan="2">Product Name:</td><td colspan="5">Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)</td></tr>
<tr><td colspan="2">Coating / DFT:</td><td colspan="5">Silverflame or Stopseal Coating/1mm thick</td></tr>
<tr><td colspan="2">Density:</td><td colspan="5">140 kg/m^3 minimum</td></tr>
<tr><td>Barrier</td><td>Max Opening (mm)</td><td>Service</td><td>Pipe Bloc PWP/EL Ref</td><td>Integrity</td><td>Insulation</td></tr>
<tr><td>Single layer Patress Both Faces (50 & 60 mm)</td><td>600 high by 600 wide</td><td>Pipe type as below</td><td><table><tr><th colspan="2">Intumescent Thickness</th></tr><tr><th>Pipe Diameter</th><th>Intumescent Material</th></tr><tr><td>ø 32 mm - ø 50 mm</td><td>40 mm (W) x 2 mm (T)</td></tr><tr><td>ø 51 mm - ø 82 mm</td><td>40 mm (W) x 4 mm (T)</td></tr><tr><td>ø 83 mm - ø 115 mm</td><td>40 mm (W) x 6 mm (T)</td></tr><tr><td>ø 116 mm - ø 160 mm</td><td>40 mm (W) x 8 mm (T)</td></tr><tr><td>ø 161 mm - ø 200 mm</td><td>40 mm (W) x 10 mm (T)</td></tr><tr><td>ø 201 mm - ø 250 mm</td><td>40 mm (W) x 12 mm (T)</td></tr></table></td><td colspan="2">Integrity and Insulation ratings as per tables below</td></tr>
<tr><td colspan="2">Aperture Separation:</td><td colspan="5">Multiple apertures must be separated by a minimum of 200 mm in drywalls and concrete/masonry constructions.
Clusters of pipes and linear separation of 0mm approved within the Batt</td></tr>
<tr><td colspan="2">Walls</td><td colspan="5">The walls shall be a minimum of 100 mm thick.
All concrete, masonry or drywalls shall have at least the same fire rating as that required for the barrier.</td></tr>
<tr><td colspan="2">Application Technique:</td><td colspan="5">Patress installation of Stopseal Coated Batt. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres
PipeBloc PWP/EL Wrap secured internally within both faces of the Stopseal Fire Batt</td></tr>
<tr><td colspan="2">Service Coat-Back :</td><td colspan="2">N/A</td><td>U Value:</td><td>Not known</td></tr>
<tr><td colspan="2">Service Support Requirements:</td><td colspan="5">Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.</td></tr>
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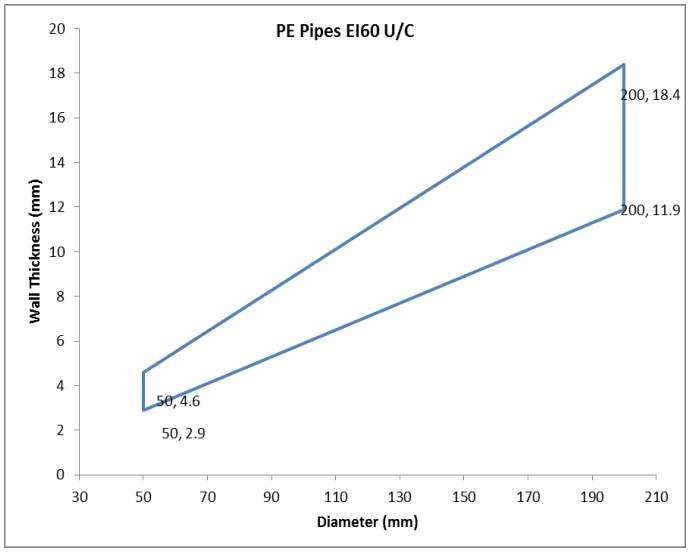

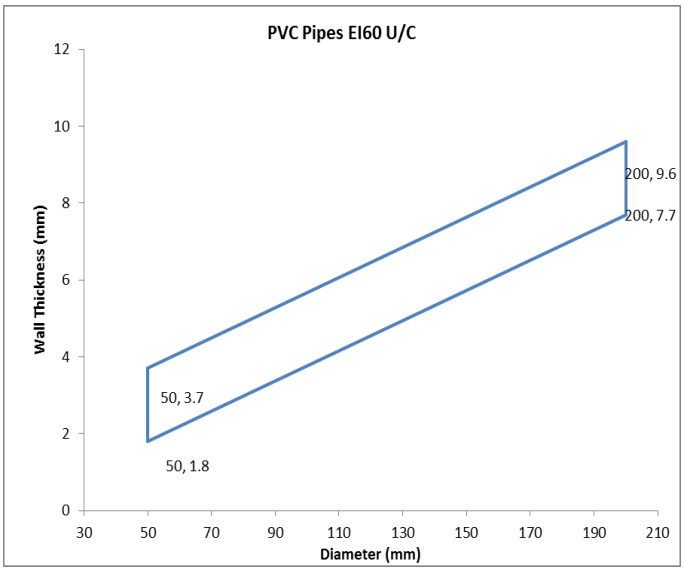

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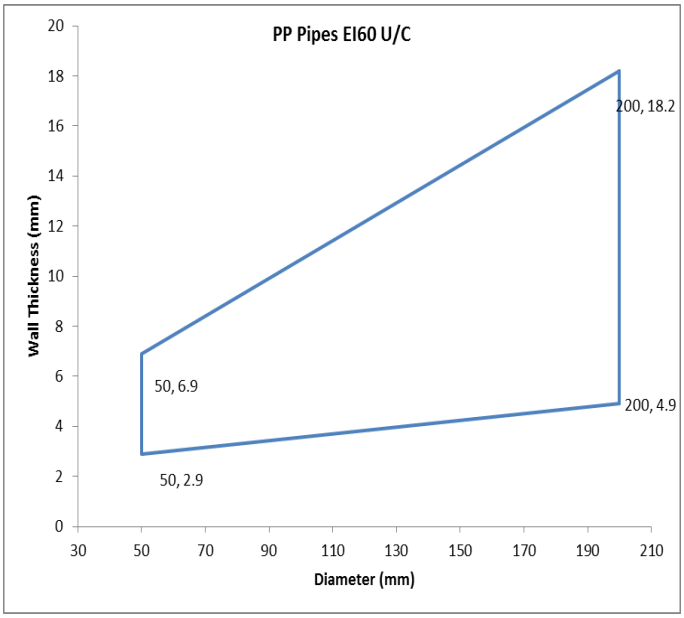

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Single layer (50 & 60 mm)	600 high by 600 wide	[1]Electrical cables up to 80mm Ø	60	60
		[1]Cable Trays and Ladders		
		[1]100 mm diameter bundle telecommunication cable type "F"		
		[1]Unsheathed electrical cables up to 24mmØ		
		[2]Steel or Copper Pipe 108mm Ø, 1.5mm – 14.2mm Wall	60	45
	730 high by 1100 wide	Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall	45	45
		Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall	45	15
[1]Cables and cable trays wrapped with a single layer of 6mm thick FSi Thermal Defense Wrap (L/I 300mm) [2]Pipes Insulated with 40mm thick continued sustained stone wool insulation (min 140kg.m^3) [3]Pipes Insulated with 40mm thick local interrupted (300mm) stone wool insulation (min 40kg.m^3)				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in concrete/masonry constructions.		
Walls		The walls shall be a minimum of 150 mm thick. All concrete and masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :		N/A	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Single layer (50 & 60 mm)	750 high by 1100 wide	[1]500mm perforated cable tray	30	30
		[1]Electrical cables up to 21mm ø	45	45
		[1]1 off 'C1' Cable		
		[1]1 off 'C2' Cable		
		[1]1 off 'C3' Cable		
[1]All cables coated with 2mm DFT PST Coating 300mm along the cables both sides of the seal				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in concrete/masonry constructions.		
Walls		The walls shall be a minimum of 150 mm thick. All concrete and masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :		N/A	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick
Density:	140 kg/m^3 minimum

Barrier	Max Opening (mm)	Service	Integrity	Insulation
Single layer (50 & 60 mm)	750 high by 1100 wide	Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall	45	30
		Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall		
		Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall		
		Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall		
		Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall		
		Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall		

[1]Pyropro HPE 20mm annulus full 50mm depth of the Stopseal Coated Batt

Aperture Separation:	Multiple apertures must be separated by a minimum of 200 mm in concrete/masonry constructions.		
Walls	The walls shall be a minimum of 150 mm thick. All concrete and masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :	N/A	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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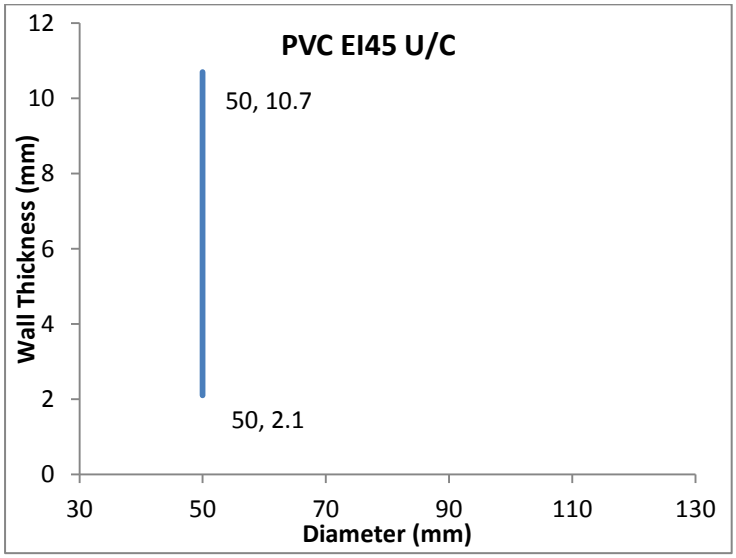
Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Single layer (50 & 60 mm)	750 high by 1100 wide	[1]Service Type As Tables Below	Ratings as Tables Below	
[1]Pyropro HPE 20mm annulus full 50mm depth of the Stopseal Coated Batt				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in concrete/masonry constructions.		
Walls		The walls shall be a minimum of 150 mm thick. All concrete and masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :		N/A	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		



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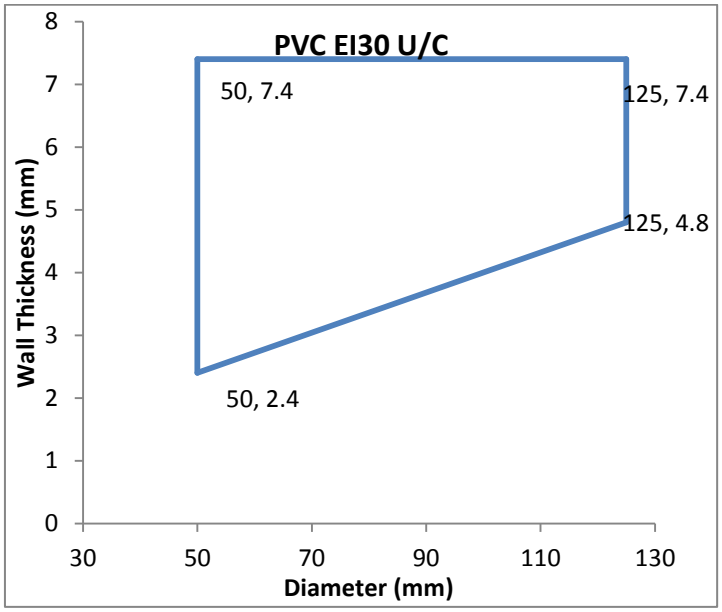

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	750 high by 1100 wide	[21]500mm perforated cable tray	120	120
		[21]Electrical cables up to 21mm ø		
		[21]1 off 'C1' Cable		
		[21]1 off 'C2' Cable	120	90
		[21]1 off 'C3' Cable	120	120
	730 high by 1100 wide	[3]Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall	120	60
		[3]Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall	120	30
[1]All cables coated with 2mm DFT PST Coating 300mm along the cables both sides of the seal [2]Pyropro HPE 20mm annulus full 50mm depth of the Stopseal Coated Batt [3]Pipes Insulated with 40mm thick local interrupted (300mm) stone wool insulation (min 40kg.m^3)				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in concrete/masonry constructions.		
Walls		The walls shall be a minimum of 150 mm thick. All concrete and masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :		[1]All cables coated with 2mm DFT PST Coating 300mm along the cables both sides of the seal	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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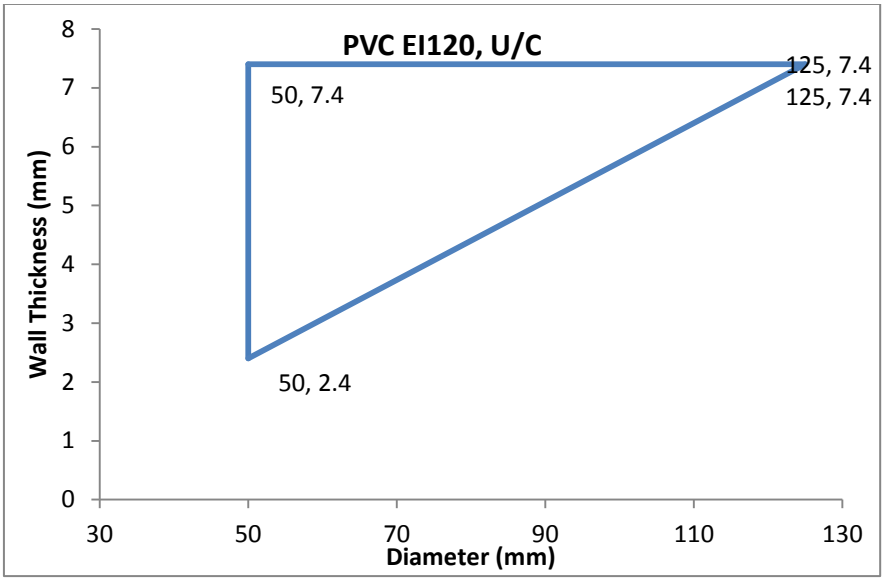
Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	750 high by 1100 wide	[1]Service Type As Tables Below	Ratings as Tables Below	
[1]Pyropro HPE 20mm annulus full 50mm depth of the Stopseal Coated Batt				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in concrete/masonry constructions.		
Walls		The walls shall be a minimum of 150 mm thick. All concrete and masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :		N/A	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		



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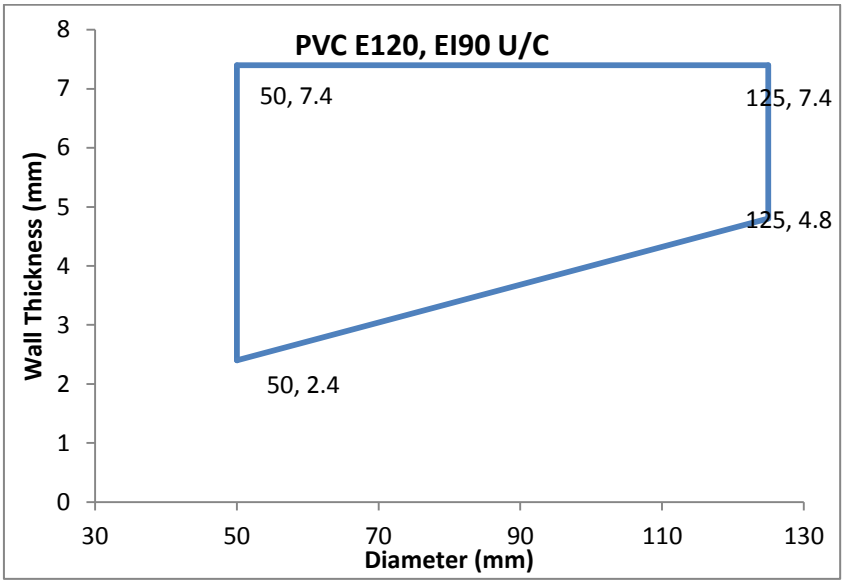

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Wall Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	750 high by 1100 wide	[1]Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall	120	120
		[1]Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall		
		[1]Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall		
		[1]Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall		
		[1]Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall		
		[1]Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall		
[1]Pyropro HPE 20mm annulus full 50mm depth of the Stopseal Coated Batt				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in concrete/masonry constructions.		
Walls		The walls shall be a minimum of 150 mm thick. All concrete and masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant		
Service Coat-Back :		N/A	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick		
Density:	140 kg/m^3 minimum		
Barrier	**Service**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	Cable Trays and Ladder	120	120
	Cables up to 21 mm diameter	120	120
	Cables 22mm – 80 mm diameter	120	90
	100mm diameter bundle telecommunication cables type F	120	120
	Unsheathed electrical cables up to 24mm diameter	120	120
All services insulted with FSi P40/40 stone wool 40mm thick (40kg/m^3) 200mm either side of the seal			
Maximum aperture:	1200mm high by 730 mm. Multiple apertures must be separated by a minimum 240 mm in concrete/masonry constructions.		
Walls	The walls shall be a minimum of 100 mm thick. The minimum density for the concrete or brick of the wall is 780kg/m^3 and for walls made of concrete blocks is 600kg/m^3. All concrete, masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	**Concrete/masonry walls**: Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant and must be separated by at least 240 mm.		
Service Coat-Back :	Not required	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 250 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Wall Construction

Product Name:	Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:	Silverflame or Stopseal Coating/1mm thick		
Density:	16 0 kg/m^3 minimum		
Barrier	**Service**	**Integrity**	**Insulation**
Double layer (60 mm)	Cable Trays and Ladder	120	120
	Cables up to 21 mm diameter	120	120
	Cables 22mm – 80 mm diameter	120	90
	100mm diameter bundle telecommunication cables type F	120	120
	Unsheathed electrical cables up to 24mm diameter	120	120
All services insulted with FSi P40/40 stone wool 40mm thick (40kg/m^3) 200mm either side of the seal			
Maximum aperture:	1200mm high by 730 mm. Multiple apertures must be separated by a minimum 240 mm in concrete/masonry constructions.		
Walls	The walls shall be a minimum of 100 mm thick. The minimum density for the concrete or brick of the wall is 780kg/m^3 and for walls made of concrete blocks is 600kg/m^3. All concrete, masonry walls shall have at least the same fire rating as that required for the barrier.		
Application Technique:	**Concrete/masonry walls**: Boards tightly friction fitted into the aperture at mid-depth of the wall. Board joints and the board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant and must be separated by at least 240 mm.		
Service Coat-Back :	Not required	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 250 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Approval Matrix BSEN 1366-3: 2009 - Up To 120 Minute Rigid Floor Construction

Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	1100 high by 700 wide	*500mm perforated cable tray	60	60
		*Electrical cables up to 21mm ø		
		*1 off 'C1' Cable		
		*1 off 'C2' Cable		
		*1 off 'C3' Cable		
		[1]Electrical cables upto 80mm dia		
		[1]Cable Trays and Ladders		
		[1]100 mm diameter bundle telecommunication cable type "F"		
		[1]Unsheathed electrical cables up to 17mm dia		
		[1]Unsheathed electrical cables 18-24mm dia		
		[1]Steel or Copper Conduits up to 16mm		
		[1]Plastic conduits up to 16mm		
		[1]Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall	120	120
		[1]Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall		30

[1]Cables, Pipes and cable trays wrapped with a single layer of 40mm thick stonewool, min 40kg/m^3 (L/I 300mm)
[2]Insulated with 25mm thick continuous sustained foil faced glass wool insulation (min 30kg.m^3)
[3]Insulated with 30mm thick continuous sustained foil faced glass wool insulation (min 80kg.m^3)
* Pyropro HPE 20mm annulus full 50mm depth of the Stopseal Coated Batt

Aperture Separation:	Multiple apertures must be separated by a minimum of 200 mm in floor constructions.		
Floors	The floors shall be a minimum of 150 mm thick. All concrete floors shall have at least the same fire rating as that required for the barrier.		
Application Technique:	Boards cut to and tightly friction fitted into the aperture at mid-depth of the floor. Board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant and must be separated by at least 200 mm.		
Service Coat-Back :	Not required	**U Value:**	Not known
Service Support Requirements:	Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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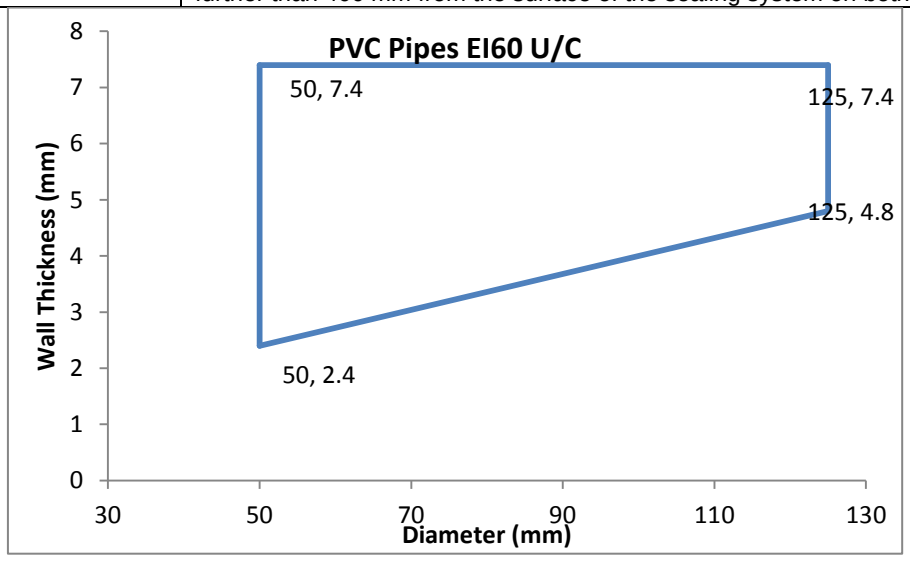
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	750 high by 1100 wide	[1]Service Type As Tables Below	Ratings as Tables Below	
[1]Pyropro HPE 20mm annulus full 50mm depth of the Stopseal Coated Batt				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in floor constructions.		
Floors		The floors shall be a minimum of 150 mm thick. All concrete floors shall have at least the same fire rating as that required for the barrier.		
Application Technique:		Boards cut to and tightly friction fitted into the aperture at mid-depth of the floor. Board to aperture junction is sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant. Apertures for penetrating items are to be tightly fitting and be sealed with Silverflame or Stopseal coating or Pyrocoustic Sealant and must be separated by at least 200 mm.		
Service Coat-Back :		N/A	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		



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Product Name:		Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)		
Coating / DFT:		Silverflame or Stopseal Coating/1mm thick		
Density:		140 kg/m^3 minimum		
Barrier	**Max Opening (mm)**	**Service**	**Integrity**	**Insulation**
Double layer (50 & 60 mm)	750 high by 1100 wide	[1]Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall	60	60
		[1]Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall		
		[1]Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall		
		[1]Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall		
		[1]Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall		
		[1]Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall		
[1]Pyropro HPE 20mm annulus full 50mm depth of the Stopseal Coated Batt				
Aperture Separation:		Multiple apertures must be separated by a minimum of 200 mm in floor constructions.		
Floors		The floors shall be a minimum of 150 mm thick. All concrete floors shall have at least the same fire rating as that required for the barrier.		
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Service Coat-Back :		N/A	**U Value:**	Not known
Service Support Requirements:		Services should be rigidly supported via steel angles, hangars or channels, not further than 400 mm from the surface of the sealing system on both faces.		

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Silverflame Batts & Coating/Stopseal Batts & Coating (with Pyrocoustic Sealant)

Air Permeability: EN1026	Pressure (Pa)	Positive pressure ($m^3/h/m^2$)	Negative pressure ($m^3/h/m^2$	**Weather Capability:**	Not evaluated by this approval
	50	0.8	1.5		
	100	1.4	1.8		
Acoustic Rating: BS EN ISO 10140-2:2010	**1 x 50mm thick**			**Movement Capability:**	Not evaluated by this approval
	$R_w(C;C_{tr})$		22(0;-3)dB		
	D_{new}(C;Ctr)		32(0;3)dB		
	2 x 50mm thick				
	$R_w(C;C_{tr})$		28(0;-3)dB		
	D_{new}(C;Ctr)		38(0;3)dB		

Further Information

Further information regarding the details contained in this data sheet may be obtained from FSi Limited (Tel: 01530 515130).

Further information regarding CERTIFIRE certification and other approved products can be obtained from CERTIFIRE (Tel: 01925 646777, website: www.warringtonfire.net)

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