



Product Technical Data Sheet:

TDSCHES

**PFC Corofil High
Expansion Sealant CHES**

ETA Number: 20/1149

20/1147



**SERVICE
PENETRATIONS**



Technical Description of Product



PFC Corofil High Expansion Sealant (CHES) is an acrylic based graphite sealant used to reinstate the fire performance of wall and floor constructions where they have been provided with apertures for the penetration of single or multiple services.

The sealant is applied to the annular space around service(s) to the required depth (please see the relevant application in the tables from page 6 of this data sheet).

PFC Corofil High Expansion Sealant is supplied in 330ml cartridges and can be applied to flexible and rigid walls, rigid floors and PFC Corofil Coated Panel.

Intended Use

The intended use of PFC Corofil High Expansion Sealant is to reinstate the fire resistance performance of flexible and rigid walls, rigid floors and PFC Corofil Coated Panel where they have been penetrated by cables, cable trays, plastic and insulated metallic pipes.

This data sheet shows the only applications the product has been tested in. Please ensure the product has been tested in and is suitable for your application (see PFC Corofil terms and conditions 13.1.1).

Key Points

- Lubrizol approved.
- Seals around combustible pipes up to 125mm (PVC, PE, PP, ABS (up to 90mm) and PEX/MLC (up to 110mm)).
- Seals around elastomeric foam and glass wool insulation when it has been used to insulate metallic pipes.
- Conditioned to type Z_i; Intended for use in internal conditions with humidity equal to or higher than 85% RH excluding temperatures below 0°C, without exposure to rain or UV. This does not take account of the possible effect of substances permeating through the pipe on the penetration seal.
- PFC Corofil High Expansion Sealant has an assumed working life of 10 years, provided that the conditions laid down in this data sheet for the packaging, transport, storage, installation, use and repair are met.
- The indications of a working life can not be assumed as a guarantee given by PFC Corofil, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

Specification

Description	Result		Test Standard	
Fire Resistance performance	Up to EI240 depending on application		EN1366-3:2009	
Airborne Sound	RW (C:Ctr) =52 (-1:-6)		TR024	
Classification Reaction To Fire	'F'		EN13501-1	
Classification Resistance To Fire			EN13501-2	
Colour/Appearance	Grey			
Air Permeability			BS EN 1314-1	
	Results under positive chamber pressure		Results under negative chamber pressure	
Pressure (Pa)	Leakage (m ³ /h)	Leakage (m ³ /m ² /h)	Leakage (m ³ /h)	Leakage (m ³ /m ² /h)
50	0.2	5.6	0.3	8.3
100	0.4	11.1	0.6	16.7
150	0.7	19.4	0.9	25.0
200	1.0	27.8	1.2	33.3
250	1.1	30.6	1.6	44.4
300	1.2	33.3	1.9	52.8
450	2.2	61.1	2.7	75.0
600	2.4	66.7	3.4	94.4

Installation Instructions



- The total amount of cross sections of services (including insulation) must not exceed 60% of the penetration area.
- PFC Corofil High Expansion Sealant may be used to seal apertures in the wall separating element up to 100mm wide x 300mm high.
- PFC Corofil High Expansion Sealant may be used to seal apertures in the floor separating element up to 250mm x 250mm.
- PFC Corofil High Expansion Sealant may be used to seal apertures in PFC Corofil Coated Panel up to 20mm annulus x 50mm deep in walls and 20mm annulus and 25mm deep in floors.
- The minimum permitted separation between seals/apertures is 200mm, cables require no minimum separation.
- Pipes must be installed singular and perpendicular to the surface.
- Services in the walls and floors shall be supported as specified in the tables from page 6.
- The service support construction must be fixed to the building element containing the service penetration, or an adjacent suitable building element, in such a manner that in the case of fire, no additional load is imposed on the seal. Furthermore it is assumed the unexposed face support is maintained for the required period of fire resistance.
- The seals may only be penetrated by the services listed in the tables from page 6. Please ensure the services have been tested for use with PFC Corofil High Expansion Sealant.
- It is assumed that compressed air systems are switched off by other means in the case of fire.
- The function of the pipe seal in case of pneumatic dispatch systems, pressurised air systems etc. is guaranteed only when the systems are shut off in the case of fire.
- This data sheet does not cover the avoidance of destruction of the seal or of the abutting building element(s) by forces caused by temperature changes in case of fire. Nor does it address any risks associated with leakage of dangerous liquids or gases caused by failure of the pipe(s) in case of fire. This has to be considered when designing the pipe system.
- Ensure the surfaces to be sealed are clean, dry and free from loose particles which may affect the adhesion of the sealant to the substrate.
- The ambient temperature should be above 5°C at time of application.
- Install any backing rod as required.
- Apply the sealant around the service penetration to the required width and depth for the application as described in the tables from page 6 below.
- Once applied, smooth off the sealant.

Substrates

- Flexible walls: PFC Corofil High Expansion Sealant can be installed against flexible walls at minimum 100mm thick, comprising of metal or timber studs lined on both sides with 2 layers of 12.5mm 'type F' gypsum plasterboards according to EN520. In timber stud walls, no part of the penetration shall be closer than 100mm to the timber stud, the cavity must be closed between the penetration seal and the stud and minimum 100mm of either class A1 or A2 insulation according to EN13501-1 shall be provided within the cavity between the penetration seal and the stud.
 - Rigid walls: Minimum 100mm thick and comprised of concrete, aerated concrete or masonry, with a minimum density of 650kg/m³.
 - Rigid floors: Minimum 150mm thick and comprised of concrete, aerated concrete or masonry, with a minimum density of 650kg/m³.
 - PFC Corofil Coated Panel.
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The supporting construction must be classified in accordance with EN13501-2 for the required fire resistance period.

Terminology

Fire resistance classes:

E = Integrity. The length of time it takes for the fire to pass to the non fire side.

I = Insulation. The length of time it takes for the heat of the fire to pass to the non fire side.

Test Condition:

U/U = Uncapped in the furnace/Uncapped outside the furnace.

U/C = Uncapped in the furnace/Capped outside the furnace.

C/U = Capped inside the furnace/Uncapped outside the furnace.

Performance Data



Walls minimum thickness 100mm

Flexible and Rigid Wall

Penetration seal with PFC Corofil High Expansion Sealant. Flexible and rigid walls minimum thickness 100mm - Plastic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant (installed on both faces)	Backing material	Service support	Classification
PVC pipe 40mm ø 1.9mm wall thickness	20mm annulus x 25mm deep	Not required	First support positioned 270mm from both faces of the substrate	E120 C/U
PVC pipe 125mm ø 9.2mm wall thickness				E160 C/U
ABS pipe 40mm ø 1.9mm wall thickness				E120 C/U
HDPP pipe 40mm ø 2mm wall thickness				E120 C/U

Penetration seal with PFC Corofil High Expansion Sealant. Flexible and rigid walls minimum thickness 100mm - Insulated metallic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant (installed on both faces)	Backing material	Service support	Classification
Copper/Steel pipe 40mm ø 1.5mm - 14.2mm wall thickness insulated with 32mm Armaflex AF Locally sustained 650mm	20mm annulus x 25mm deep	Not required	First support positioned 400mm from both faces of the substrate	E120 C/U EI30 C/U
Copper/Steel pipe 40mm - 159mm ø 2.0mm - 14.2mm wall thickness insulated with 32mm Armaflex AF Locally sustained 650mm				E120 C/U EI30 C/U
Copper/Steel pipe 159mm ø 2.0mm - 14.2mm wall thickness insulated with 30mm x 80kg/m ³ 'Pipelane' SGR glass tube Locally sustained 650mm				E120 C/U EI30 C/U

Performance Data



Walls minimum thickness 120mm
Flexible and Rigid Wall

Penetration seal with PFC Corofil High Expansion Sealant. Flexible and rigid walls minimum thickness 120mm - plastic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant (installed on both faces)	Backing material	Service support	Classification
PVC pipe 40mm ø 1.9mm - 3.0mm wall thickness	10mm annulus x 25mm deep	Not required	First support positioned 150mm from both faces of the substrate	EI120 U/C
PVC pipe 125mm ø 4.8mm - 7.4mm wall thickness	16mm annulus x 25mm deep	30mm deep x 80kg/m ³ stone wool		EI120 U/C
HDPE pipe 63mm ø 7.2mm wall thickness, cables up to 21mm	300mm wide x 100mm high x 25mm deep	Not required		EI120 U/C
HDPE pipe 90mm ø 9.2mm wall thickness	12.5mm annulus x 25mm deep	Not required		EI120 U/C
ABS pipe 90mm ø 6mm wall thickness	12.5mm annulus x 25mm deep	Not required		EI120 U/C

Penetration seal with PFC Corofil High Expansion Sealant. Flexible and rigid walls minimum thickness 120mm - Insulated metallic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant (installed on both faces)	Backing material	Service support	Classification
Copper/Steel pipe 60mm ø 0.8mm - 14.2mm wall thickness insulated with 32mm Armaflex AF continued sustained	20mm annulus x 25mm deep	Not required	First support positioned 150mm from both faces of the substrate	E120 U/C E190 U/C
Copper/Steel pipe 15mm ø 0.8mm - 7.0mm wall thickness insulated with 13mm Armaflex AF continued sustained	15mm annulus x 25mm deep			EI120 U/C

Performance Data



Floors minimum thickness 150mm
Rigid floor

Penetration seal with PFC Corofil High Expansion Sealant. Rigid floors minimum thickness 150mm - Plastic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant (installed on both faces)	Backing material	Service support	Classification
PP pipe 110mm ø 3.7mm wall thickness	20mm annulus x 25mm deep	100mm deep x 45kg/m ³ stone wool	First support positioned 250mm from the upper face of the substrate	EI30 U/C
PP pipe 110mm ø 10.7mm wall thickness				EI120 U/C
PP pipe 50mm ø 2.1mm wall thickness				EI240 U/C
PE pipe 40mm ø 4.1mm wall thickness				EI240 U/C
PE pipe 125mm ø 7.6mm wall thickness				EI60 U/C
PE pipe 125mm ø 11.4mm wall thickness				EI90 U/C
PVC pipe 40mm ø 2.0mm wall thickness				EI240 U/C
PVC pipe 114mm ø 3.6mm wall thickness				E90 U/C EI45 U/C
PVC pipe 114mm ø 8.1mm wall thickness				EI120 U/C

Performance Data



Floors minimum thickness 150mm

Rigid floor

Penetration seal with PFC Corofil High Expansion Sealant. Rigid floors minimum thickness 150mm - Insulated metallic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant (installed on both faces)	Backing material	Service support	Classification
Copper/Steel pipe 41mm - 159mm ø 2.5mm - 14.2mm wall thickness insulated with 16mm - 32mm Armaflex AF Continued sustained	20mm annulus x 25mm deep	100mm deep x 45kg/m ³ stone wool	First support positioned 250mm from the upper face of the substrate	EI120 U/C
Copper/Steel pipe 41mm ø 1.4mm - 14.2mm wall thickness insulated with 16mm Armaflex AF continued sustained				E240 U/C EI60 U/C

Penetration seal with PFC Corofil High Expansion Sealant. Rigid floors minimum thickness 150mm - Cables.				
Penetration Specification	PFC Corofil High Expansion Sealant (installed on both faces)	Backing material	Service support	Classification
Electric cables 0mm - 21mm ø	Maximum 200mm x 200mm x 25mm deep Minimum 50mm x 50mm x 25mm deep	100mm deep x 45kg/m ³ stone wool	First support positioned 250mm from the upper face of the substrate	E180 EI20
Electric cables 22mm - 80mm ø				E120 EI20
Electric cables Non sheathed 0mm - 24mm ø				E180 EI15
Electric cables Telecomm cables up to 21mm ø in bundles of up to 100mm diameter				E180 EI20

Performance Data



Walls minimum thickness 100mm
Flexible and Rigid wall with PFC Corofil Coated Panel

Penetration seal with PFC Corofil High expansion Sealant. Flexible and rigid walls minimum thickness 100mm with PFC Corofil Coated Panel - Insulated metallic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant (installed on both faces of the coated panel)	Maximum aperture for PFC Corofil Coated Panel	Service support	Classification
Copper/Steel pipe 40mm ø 1.5mm - 14.2mm wall thickness insulated with 20mm thick x 80kg/m ³ foil faced glass wool continued sustained	15mm annulus x 15mm deep, incorporating a 15mm fillet projecting from the face of the seal	Double layer of 50mm coated panel maximum 600mm wide x 600mm high	First support positioned 400mm from both faces of the substrate	EI60 C/U
Copper/Steel pipe 159mm ø 2.3mm - 14.2mm wall thickness insulated with 30mm thick x 80kg/m ³ foil faced glass wool continued sustained				E90 C/U EI60 C/U
Steel pipe 40mm ø 1.7mm - 14.2mm wall thickness insulated with 20mm thick x 80kg/m ³ foil faced glass wool continued sustained				E90 C/U EI60 C/U
Steel pipe 150mm ø 2.3mm - 14.2mm wall thickness insulated with 30mm thick x 80kg/m ³ foil faced glass wool continued sustained				EI60 C/U
Copper/Steel pipe 40mm ø 1.5mm - 14.2mm wall thickness insulated with 20mm thick x 80kg/m ³ foil faced glass wool continued sustained	15mm annulus x 15mm deep	Double layer of 50mm coated panel 730mm wide x 1200mm high	First support positioned 250mm from both faces of the substrate	E90 U/C EI60 U/C
Copper/Steel pipe 40mm - 159mm ø 2.3mm - 14.2mm wall thickness insulated with 30mm thick x 80kg/m ³ foil faced glass wool continued sustained				EI60 U/C

Performance Data



Walls minimum thickness 150mm
Rigid wall with PFC Corofil Coated Panel

Penetration seal with PFC Corofil High Expansion Sealant. Rigid walls minimum thickness 150mm with PFC Corofil Coated Panel - Plastic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant	Maximum aperture for PFC Corofil Coated Panel	Service support	Classification
PVC pipe 50mm ø 2.4mm - 7.4mm wall thickness	20mm annulus x 50mm deep (full depth of panel)	Single layer 50mm maximum aperture 750mm wide x 1100mm high	First support positioned 400mm from both faces of the substrate	EI45 U/C
PVC pipe 50mm ø 2.4mm - 7.4mm wall thickness up to 125mm ø 4.8mm - 7.4mm wall thickness				EI30 U/C
Uponor Multi Layer Composite (MLC) pipe 40mm ø 4.0mm wall thickness				E45 U/C EI30 U/C
Uponor Multi Layer Composite (MLC) pipe 50mm ø 4.5mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 63mm ø 6.0mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 75mm ø 7.5mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 90mm ø 8.5mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 110mm ø 10.0mm wall thickness				

Penetration seal with PFC Corofil High Expansion Sealant. Rigid walls minimum thickness 150mm - Cables.				
Penetration Specification	PFC Corofil High Expansion Sealant	Maximum aperture for PFC Corofil Coated Panel	Service support	Classification
500mm Perforated cable tray*	20mm gap full 50mm depth of the PFC Corofil Coated Panel	Single layer of 50mm maximum aperture 750mm wide x 1100mm high	First support positioned 400mm from both faces of the substrate	EI30
Electric cables* - Up to 21mm ø				E145
Electric cables* - 1 off C1				
Electric cables* - 1 off C2				
Electric cables* - 1 off C3				

*All cables coated with 2mm DFT PFC Corofil Ablative Coating 300mm along the cables on both sides of the seal

Performance Data



Walls minimum thickness 150mm
Rigid wall with PFC Corofil Coated Panel

Penetration seal with PFC Corofil High Expansion Sealant. Rigid walls minimum thickness 150mm with PFC Corofil Coated Panel – Plastic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant	Maximum aperture for PFC Corofil Coated Panel	Service support	Classification
PVC pipe 50mm ø 2.4mm – 7.4mm wall thickness up to 125mm ø 7.4mm wall thickness	20mm annulus x 25mm deep (on both faces of panel)	Double layer 50mm maximum aperture 750mm wide x 1100mm high	First support positioned 400mm from both faces of the substrate	EI120 U/C
PVC pipe 50mm ø 2.4mm – 7.4mm wall thickness up to 125mm ø 4.8mm – 7.4mm wall thickness				EI20 U/C EI90 U/C
Uponor Multi Layer Composite (MLC) pipe 40mm ø 4.0mm wall thickness				EI120 U/C
Uponor Multi Layer Composite (MLC) pipe 50mm ø 4.5mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 63mm ø 6.0mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 75mm ø 7.5mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 90mm ø 8.5mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 110mm ø 10.0mm wall thickness				

Penetration seal with PFC Corofil High Expansion Sealant. Rigid walls minimum thickness 150mm – Cables.				
Penetration Specification	PFC Corofil High Expansion Sealant	Maximum aperture for PFC Corofil Coated Panel	Service support	Classification
500mm Perforated cable tray*	20mm annulus x 25mm deep on both faces of the PFC Corofil Coated Panel	Double layer of 50mm maximum aperture 750mm wide x 1100mm high	First support positioned 400mm from both faces of the substrate	EI120
Electric cables* - Up to 21mm ø				EI20 EI90
Electric cables* - 1 off C1				
Electric cables* - 1 off C2				
Electric cables* - 1 off C3				

*All cables coated with 2mm DFT PFC Corofil Ablative Coating 300mm along the cables on both sides of the seal

Performance Data



Floors minimum thickness 150mm
Rigid floor with PFC Corofil Coated Panel

Penetration seal with PFC Corofil High Expansion Sealant. Rigid floors minimum thickness 150mm with PFC Corofil Coated Panel – Plastic pipes.				
Penetration Specification	PFC Corofil High Expansion Sealant	Maximum aperture for PFC Corofil Coated Panel	Service support	Classification
PVC pipe 50mm ø 2.4mm – 7.4mm wall thickness up to 125mm ø 4.8mm – 7.4mm wall thickness	20mm annulus x 25mm deep (on both faces of panel)	Double layer 50mm maximum aperture 750mm wide x 1100mm high	First support positioned 400mm from both faces of the substrate	EI60 U/C
Uponor Multi Layer Composite (MLC) pipe 40mm ø 4.0mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 50mm ø 4.5mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 63mm ø 6.0mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 75mm ø 7.5mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 90mm ø 8.5mm wall thickness				
Uponor Multi Layer Composite (MLC) pipe 110mm ø 10.0mm wall thickness				

Penetration seal with PFC Corofil High Expansion Sealant. Rigid floors minimum thickness 150mm – Cables.				
Penetration Specification	PFC Corofil High Expansion Sealant	Maximum aperture for PFC Corofil Coated Panel	Service support	Classification
500mm Perforated cable tray*	20mm annulus x 25mm deep to both faces of the PFC Corofil Coated Panel	Double layer of 50mm maximum aperture 750mm wide x 1100mm high	First support positioned 400mm from both faces of the substrate	EI60
Electric cables* - Up to 21mm ø				
Electric cables* - 1 off C1				
Electric cables* - 1 off C2				
Electric cables* - 1 off C3				
*All cables coated with 2mm DFT PFC Corofil Ablative Coating 300mm along the cables on both sides of the seal				



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King Georges Trading Estate | Davis Road | Chessington | KT9 1TT
T. +44 (0) 208 391 0533
E. sales@pfc-corofil.com | tech@pfc-corofil.com | W. pfc-corofil.com



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