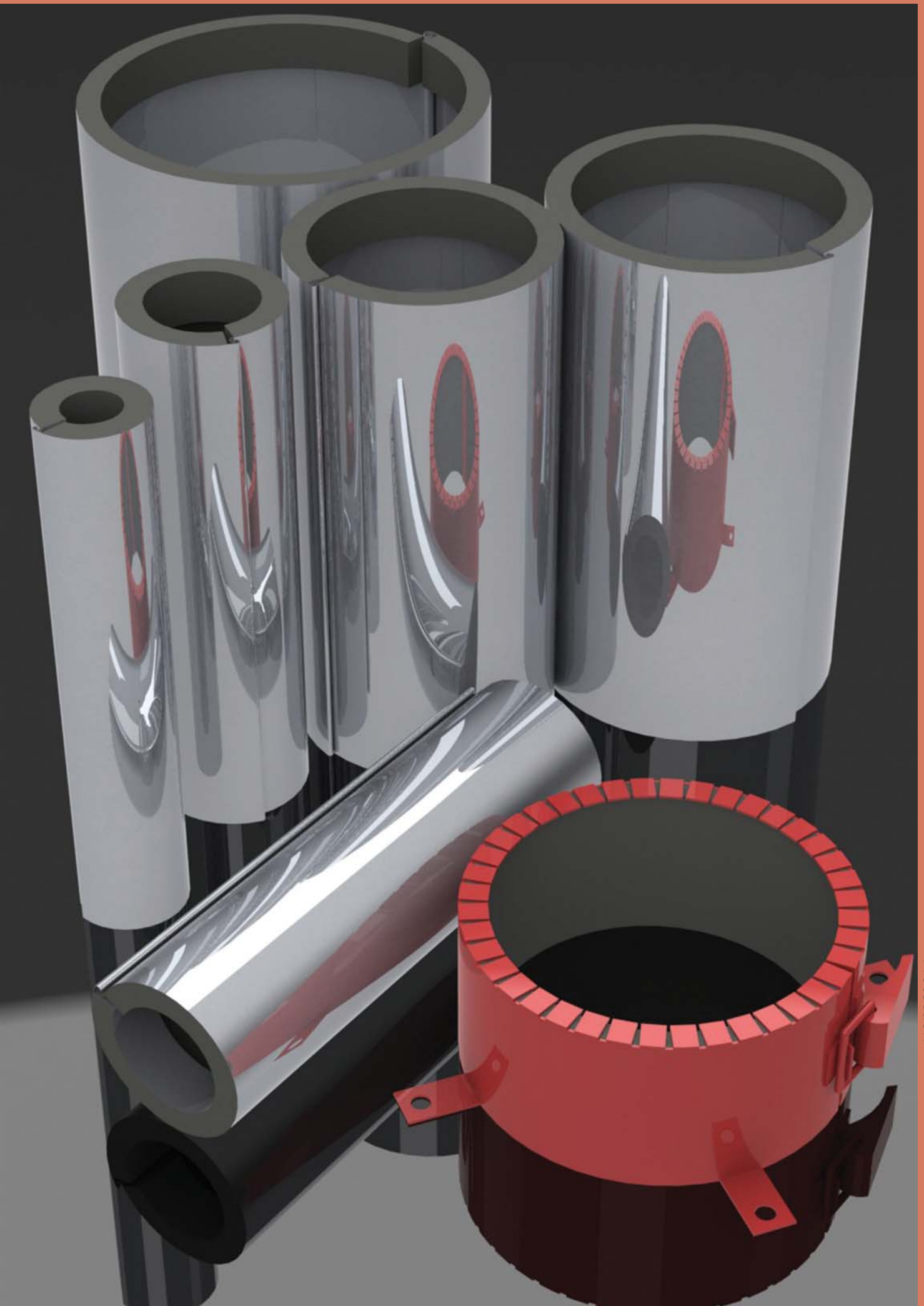


Passive Fire Protection





Off-site Pre Fabricated Goal Post (Available on Request)

Kingspan Fire System

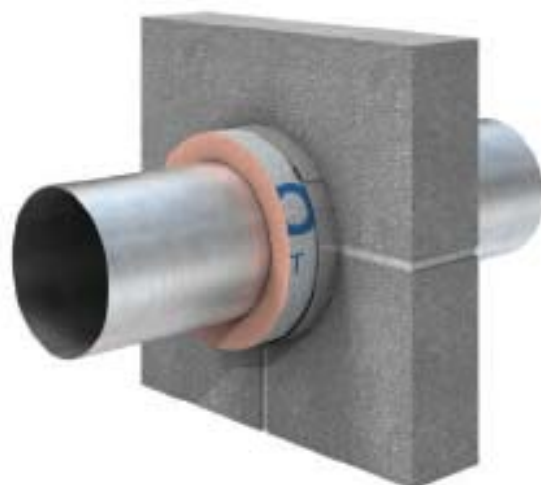
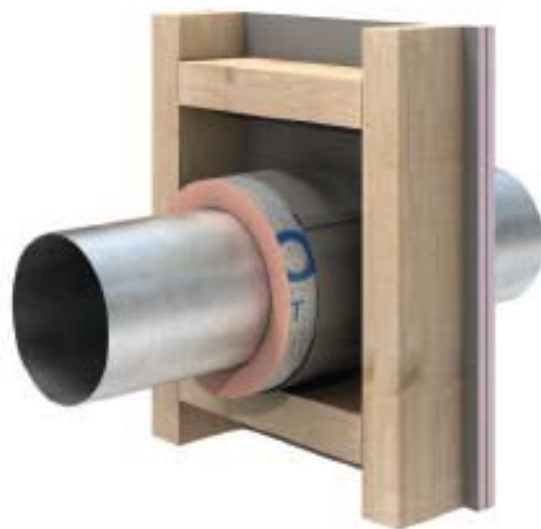
As part of DST Groups complete passive fire protection system offering, Kooltherm® FireSleeves are a unique combination of high performance phenolic insulation, intumescent and stainless steel.

These innovative products act as a 2 hour fire stop on both steel and copper pipe service penetrations through timber frame and block wall applications, and incorporate the excellent fire and smoke performance of Kooltherm® FM Pipe Insulation up to 30mm thick.

Kooltherm® FireSleeves comprise of an outer sleeve of 0.5mm thick stainless steel which is clasp fastening and 205mm in length. It is lined with intumescent material. The stainless steel sleeve, encloses a 300mm length of Kooltherm® FM Pipe Insulation which is also lined with intumescent material.

Kooltherm® FireSleeves can be supplied in the following sizes:

NB INCH	OD MM	THICKNESS			
		20THK Integrity/ Insulation	25THK Integrity/ Insulation	30THK Integrity/ Insulation	40THK Integrity/ Insulation
	15cu	120 / 60t	120 / 60		
1/2	15nb/22cu	120 / 60	120 / 60		
3/4	20nb/28cu	120 / 60	120 / 60		
1	25nb/35cu	120 / 60	120 / 60	120 / 60	
1 1/4	32nb/42cu	120 / 60	120 / 60	120 / 60	
1 1/2	40nb	120 / 60	120 / 60	120 / 60	
	54cu	120 / 60	120 / 60	120 / 60	
2	50nb	120 / 60	120 / 60	120 / 60	
	67cu	120 / 60	120 / 60	120 / 60	
2 1/2	65nb/76cu	120 / 60	120 / 60	120 / 60	
3	80nb	120 / 60	120 / 60	120 / 60	
	108cu	120 / 60	120 / 60	120 / 60	60/60
4	100nb	120 / 60	120 / 60	120 / 60	60/60
5	125nb	120 / 60	120 / 60	120 / 60	60/60
	133cu	120 / 60	120 / 60	120 / 60	60/60
	159cu	120 / 60	120 / 60	120 / 60	60/60
6	150nb	120 / 60	120 / 60	120 / 60	60/60
8	200nb	120 / 60			



Installation Guidance

1. Prepare opening in the wall, with minimal disturbance to surrounding structure.
2. Open Kooltherm® FireSleeve and install the 300mm lined Kooltherm® Insulation onto the pipe. Fit the 205mm stainless steel fire sleeve over the intumescent lined Kooltherm® FM Pipe Insulation and ensure that the stainless steel clasp is fully engaged.
3. Ensure the Kooltherm® FireSleeve is positioned centrally within the opening.
4. Seal any gaps of 5mm or less around the exterior surface of the Kooltherm® FireSleeve with a 2hr Fire Rated Intumescent Mastic. Large gaps over 5mm should be filled with an appropriate fire rated filler or mortar.
5. Install Kooltherm® FM Pipe Insulation flush to the Kooltherm® FireSleeve and vapour seal in accordance with the project specification.

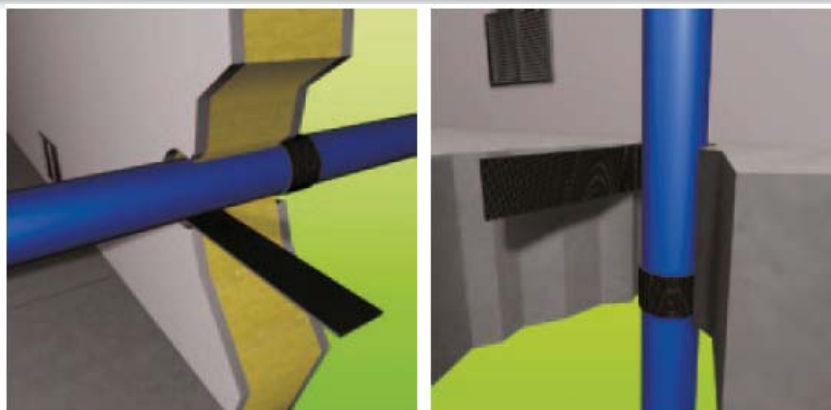


Fire Performance

Kooltherm® FM Pipe Insulation products and Pipe Support systems achieve a BL-s1, d0 classification to EN 13501-1 when tested under the European Fire Classification System (Euroclass) for 'reaction to fire'.



Endless Wrap System



Construction

Intumescent Material
Glass Fibre Mesh
Adhesive backed

For Use With

Insulated Steel Tubes
Plastic Tubes
Insulated Copper Tubes



Endless Wrap wrap gives the users versatility when installing in a multitude of common site conditions, Endless Wrap is supplied in a convenient 25m long, 40mm wide roll.

Endless Wrap is an intumescent material, based on elastomeric thermoplastic polymers combined with active components that provide high a volume expansion and pressure seal in the event of a fire.

As plastics soften or insulation burns away in the heating condition of the fire, Endless Wrap expands to close off the void left by the pipe or insulation.

Compatible pipes and insulation (see tables) are tested to a size of 200mm in diameter through flexible walls and rigid floors and walls, and for use alongside the DST range of products.

Compatible With
PVC
PP
MDPE
PE
PVC-U
PVC-C
ABS
HDPE
SAN+PVC

ENDLESS WRAP CONFIGURATION FOR METALLIC PIPES WITH INSULATION UPTO 120MINS		
INSULATION TYPE	No OF WRAPS	THICKNESS
Phenolic Foam	2	4
Elastomeric Foam	2	4
Glass Wool	2	4
Stone Wool	2	4

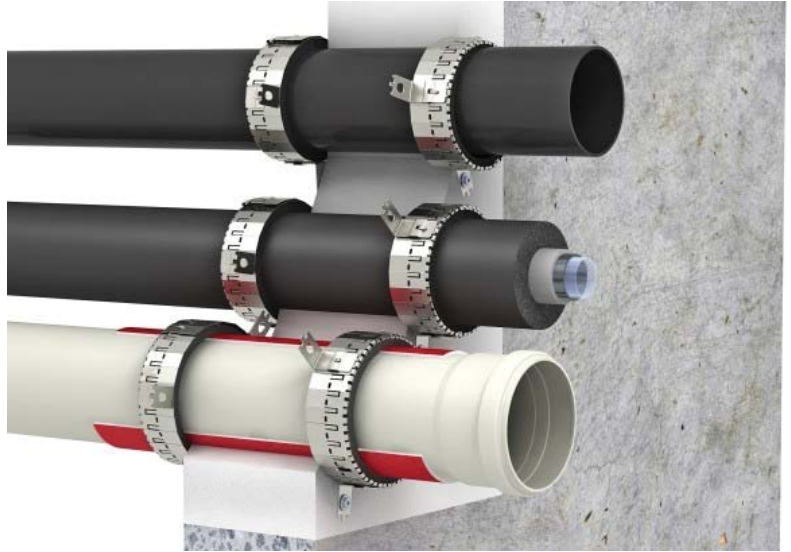
ENDLESS WRAP CONFIGURATION UPTO 120MINS		
PIPE OD	No OF WRAPS	THICKNESS
40	1	2
55		4
63	2	4
75	2	4
82	2	4
90	3	6
110	3	6
125	4	8
160	4	8
200	5	10

Construction

Stainless Steel
Intumescent Liner
Acoustic Rubber Seals

For Use With

Steel Tubes
Copper Tubes
Plastic Tubes



Description

EC Endless Collar consists of the high performance intumescent material Strip which is wrapped in one or more layers around the pipe or the insulation and fixed with a stainless steel strap and hooks at the wall or ceiling. In the event of a fire, the intumescent material expands with high pressure and thus seals the opening hermetically against flames and smoke. For wall installations one pipe collar on each side of the wall and for ceiling installations one collar on the underside of the ceiling must be provided.

Applications

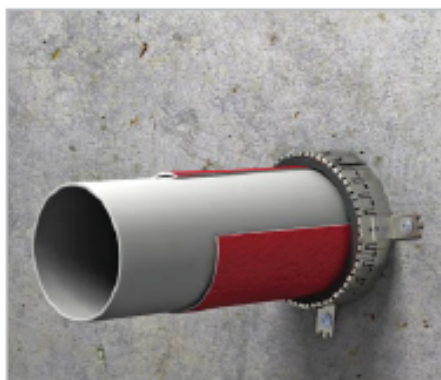
- Sealing of plastic pipes up to max. 160 mm outside diameter in solid walls, drywall partitions and solid ceilings
- Suitable for plastic pipes, mineral fibre reinforced plastics, and plastic composite pipes
- PE acoustic insulation is possible at plastic pipes
- Synthetic rubber insulation on plastic pipes, copper and metal pipes possible
- Useable in combination with ROKU® FPF Fire Protection Foam (straight pipes and corner solutions)

Advantages

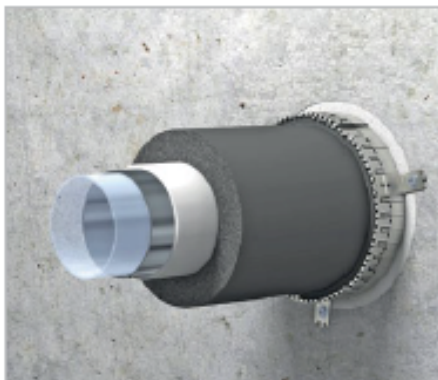
- Flexible solution for individual applications
- Very low installation height of the collar
- One sealing serves for maximum 3 pipes side by side
- Suitable for the application in wet and humid areas
- Slim collar
- For plastic pipes in corner constructions only 2/3 of the pipe sealing may be applied
- Delivery in a practical dispenser box

Endless Collar System Applications

Uninsulated or acoustic insulated plastic pipes



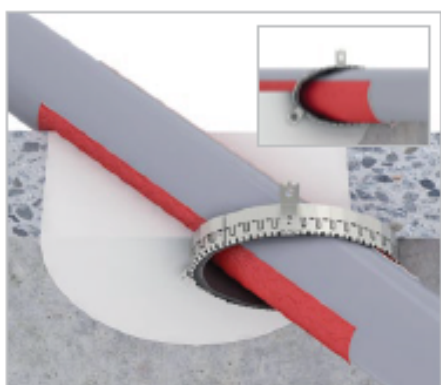
Synthetic rubber insulated aluminium comp pipes



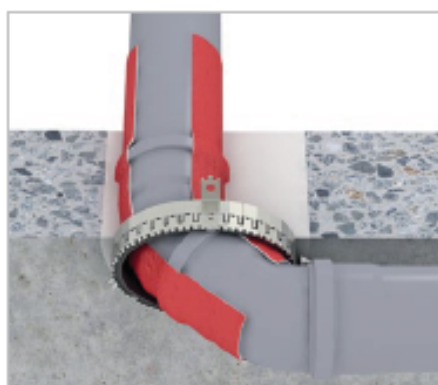
Floor Penetrations



Inclined pipes



45 Degree Elbow



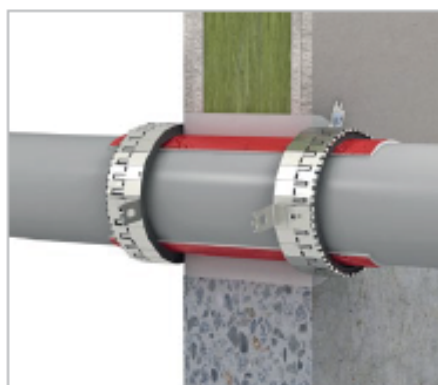
Corner Proximity Issues



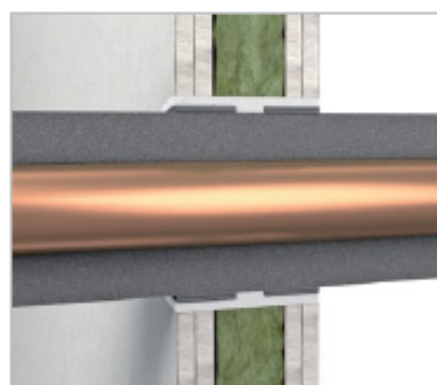
Multiple Pipes - Close Proximity



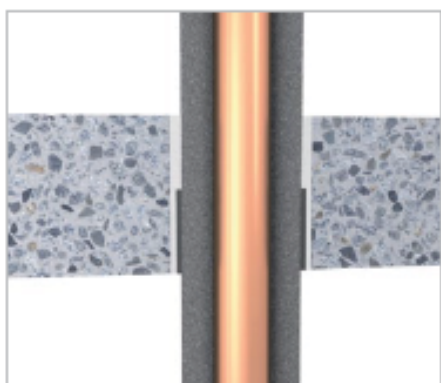
Wall Penetrations



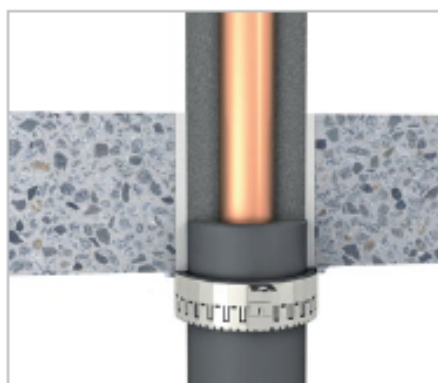
Non-combustible pipes with Wrap into the wall



Non-combustible pipes with wrap into floor



Non-Combustible pipes with a collar on the under side of the floor



CE

Construction

Powder Coated Mild Steel
Intumescent Liner
Activates at 150oC

For Use With

Plastic Tubes to crush the softening plastic pipe and thereby close the penetrations through the fire rated walls and floors.



DST Group Ltd Fire Stop Collars provide a simple and effective method of firestopping plastic pipework where it passes through compartment walls and floors.

Tested to BS476 Part 20, Fire Stop Collars will provide up to 4 hours' fire protection.

- Simple to install
- Water resistant
- Maintenance Free
- Available to suit pipe sizes ranging from 55 to 355mm O.D.

DST Group Ltd Firestop Collars

DST Group Ltd Firestop Collars fixed to both sides of wall

Description

DST Group Ltd Firestop Collars consist of a powder coated steel sleeve containing a flexible graphite based intumescent liner, manufactured to suit the pipework to be firestopped. Integral toggles are opened up and the collar is simply fitted around the plastic pipe. The toggles are closed and the collar is pushed flush to the surface of the wall or underside of floor. The collar is then securely fastened to the structure by means of fire resistant fixings threaded through fixing tabs. Any gaps of up to 25mm wide around the pipework should be filled with DST Group Ltd Acoustic Intumescent Sealant. For gaps greater than 25mm DST Group Ltd Firestop Compound can be used.

Under fire conditions the intumescent material swells filling the void left by the burnt out plastic.

Fire Rating

Outside Ø of Pipework (mm)	Fire Rating (hours)
55 - 250	2 - 4
275 - 315	3
330 - 355	1

Suitable for sealing UPVC, Polypropylene, HDPE and ABS plastic

Specification

Install DST Group Ltd Fire Stop Collars to provide up to 1,2,3 or 4 hours' fire protection to all plastic pipework. Installation to be fully in accordance with manufacturer's instructions. See below for contact details.

Intumescent Acrylic Mastic



Description

Intumescent Sealant is suitable for sealing joints and service penetrations in fire walls, partitions, fire rated door frames and glazing systems. Tested to BS476 Parts 20 and 22, DST Group Ltd Acoustic Intumescent Sealant provides up to 4 hours fire protection in joints of up to 30mm wide

Suitable for

- Perimeter pointing around door and window frames
- Sealing small openings in fire walls and floors.
- Sealing around plastic pipe or cable penetrations which have been protected with the recommended DST Group Ltd Intumescent product eg. Fire Sleeve Pipe Wraps.

Features

- Fire rating up to 4 hours.
- Excellent adhesion to many common building substrates.
- Joint movement accommodation +/-17.5%.
- DST Acrylic Sealant expands by approximately 20% in fire conditions.
- DST Acrylic Sealant is fully paintable.

Testing

- Tested to BS476 Part 20:1987 and other International Standards.

Health and Safety

- According to 91/155/EEC Revision No.1.

Joint Size (mm)	Depth of Sealant (mm)	Integrity (mins)	Insulation (mins)	Backing	Type of Seal
10	10	240	30	PE Foam	Single
15	10	240	30	PE Foam	Single
20	15	240	120	PE Foam	Dual
20	20	240	60	C144 Firestrip	Single
30	20	240	120	PE Foam	Dual
30	15	240	30	C144 Firestrip	Single

Substrate Performance	
Glass	
Glass (normal)	yes
Glass (stained)	yes
Glass (reflective)	yes
Metals	
Aluminium (milled)	yes
Aluminium (anodised)	yes
Steel	yes
Steel (galvanised)	yes
Lead	N/R
Painted Surfaces	
Acrylic	test
Varnish	test
Polyester	yes
Polyurethane	yes
Plastic Materials	
PVC	yes
Acrylic/Fibreglass	yes
Polycarbonate	test
Polymethacrylate	test
Masonry	
Concrete	yes
Brick	yes
Plaster	yes
Tile	yes

Chart Key

Use without primer - Yes
Check for suitability - Test
Not Recommended - N/R

PE Foam - Closed cell polyethylene backer rod (nominal density 35kg/m3)

MF - Mineral Wool Fibre (nominal density 100kg/m3)

NB. All tests were carried out with sealant on fire side of furnace.

Description

DST Group Ltd Fire Rated Foam is suitable for filling gaps in fire rated block/brickwork walls and concrete floors.

- Up to 2 hours fire protection & Simple to install
- Suitable up to 40mm wide
- Excellent adhesion
- Insulation benefits
- Maintenance Free



DST Fire Rated Expanding Foam is a polyurethane based product which sets into its elastic form by using moisture present in the atmosphere.

Is it suitable for filling gaps around window and door frames, backfilling around service penetrations and filling irregular or awkward gaps. DST Fire Rated Expanding Foam expands to 40 times its original volume.

DST Fire Rated Expanding Foam is fire rated up to 2 hours and offers excellent adhesion to many common building substrates and once cured the foam can be cut, sawn, painted and plastered over.

Installation

Surfaces must be firm, clean and free of dust and loose particles. The cavity or voided area to be filled should be moistened with water to aid adhesion to the substrate. It may be necessary to use a primer prior to the application of the foam. Ensure the surrounding area is protected, particularly when using in retro-fit situations.

Shake the can thoroughly, then attach the adapter to the canister nozzle.

It is important to use the foam within temperature controlled environment, the minimum temperature to which the foam can be installed should be no less than 20°C. If the temperature is below 20°C the foam may show signs of slumping and irregular expansion.

Gap Width (mm)	Gap Depth (mm)	Fire Rating Integrity	Fire Rating Insulation
10mm	200mm	120 minutes	120 minutes
20mm	200mm	120 minutes	120 minutes
30mm	200mm	120 minutes	120 minutes
40mm	200mm	120 minutes	120 minutes

Transportation & Storage

Not classified as hazardous for road, rail or sea transport. Not generally suitable for transport by air. Cans should not be left in overheated environment, temperatures above 50°C or exposed to direct sunlight. Ensure that empty cans are disposed of safely in accordance with local regulations.

Note

The expanding foam is fire rated - it is not intumescent. Maximum gap width 40mm.



Description

DST Group Ltd Intumescent Pipe Wraps offer a simple and more economic alternative to Firestop collars for firestopping plastic pipework and electrical trunking in walls and floors. Tested to BS476 Part 20, Intumescent Pipe Wraps will provide up to 4 hours' fire protection.

DST Group Ltd Intumescent Pipe Wraps offer a simple and more economic alternative to Firestop collars for firestopping plastic pipework and electrical trunking in walls and floors. Tested to BS476 Part 20, Intumescent Pipe Wraps will provide up to 4 hours' fire protection.

- Simple installation
- No mechanical fixings
- Water resistant
- Load bearing
- Maintenance free
- Available to suit pipe sizes up to 160mm O.D.
- Available to fit most electrical trunking sizes.

DST Group Ltd Intumescent Pipe Wrap sealed into compartment wall with DST Group Firestop Compound. DST Group Ltd Intumescent Pipe Wrap sealed into compartment floor using DST Group Firestop Compound.

Description

Pipe Wraps comprise layers of a graphite based intumescent sheet encapsulated in a polythene sheath. The product is manufactured to be wrapped around the outside diameter of the pipework or trunking and is secured by means of a self-adhesive strip. The Intumescent Pipe Wrap is then positioned within the compartment wall or floor so that the edge of the product is left exposed at the face of the wall or soffit.

The Intumescent Pipe Wrap is then sealed into the structure with DST Group Ltd Firestop Compound.

Under fire conditions, the intumescent material expands against the structure and fills the void left by the burnt out plastic.

For walls it may be necessary to fit two wraps depending on the fire risk areas concerned and if the wall thickness exceeds 150mm.

Fire Rating

Outside Ø of Pipework (mm)	Fire Rating (hours)
55	2 - 4
82	2 - 4
110	2 - 4
160	2 - 4

Specification

Install DST Group Ltd Intumescent Pipe Wraps to provide up to 4 hours' fire protection to all plastic pipework and electrical trunking where they pass through fire rated walls and floors. Installation to be fully in accordance with manufacturer's instructions. See below for contact details.

Description

DST Group Ltd fire Pillows will provide up to 4 hours' fire protection to metal services and cables passing through compartment floors and walls.

- Simple installation
- Easy to remove and reinstate whilst changing services
- Dry System
- Maintenance free



DST Group Ltd C300P Intumescent Pillows friction fitted between services and firewall DST Group C300P Intumescent Pillows forming cavity barrier underneath raised access floor.

Description

DST Group Ltd C300 P Intumescent Pillows are simply packed tightly in between penetrating services and the wall. In a floor, pillows are additionally supported by means of a mesh support system. (See diagram)

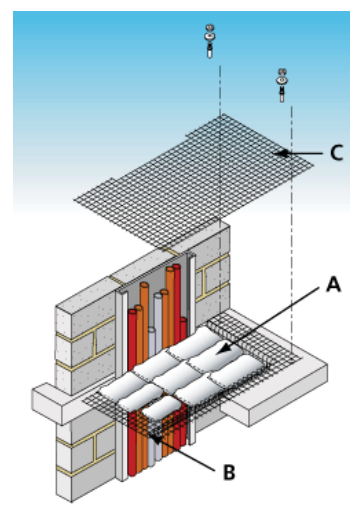
Under fire conditions, DST Group Ltd C300 P Intumescent Pillows expand several times their original volume to form an effective seal around service penetrations.

DST Group Ltd C300 P Intumescent Pillows are suitable for use with:

- Metal pipework
- Cable trays
- Electrical trunking (inside and outside)

Key to diagram:

- A DST Group C300P Intumescent Pillows
- B Basket of galvanised steel wire mesh
50mm x 50mm squares, wire diameter 2.5mm
mesh basket mechanically fixed to floor slab
- C Wire mesh as above, overlapping basket mesh
and tied together with steel wire



DST Group Ltd C300P Intumescent Pillows supported by mesh cage in service riser floor.

Estimating Quantities

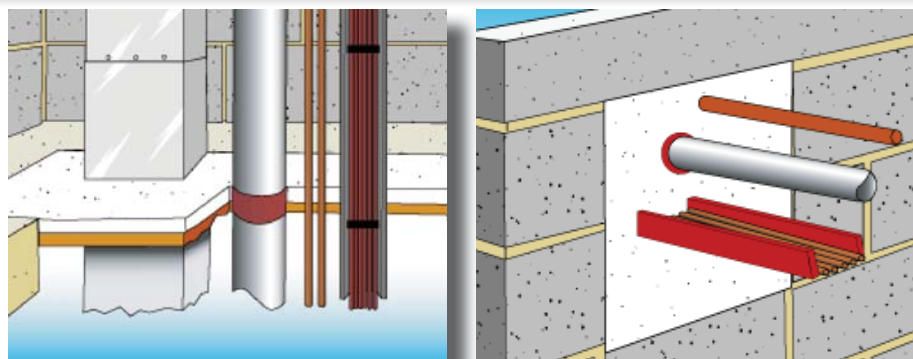
Pillows are available in four sizes and the table below outlines approximate quantities of each size to fill one m2 area.

Pillow Size (mm)	Approximate N ^o
300 x 200 x 30	165 per m ² opening
300 x 150 x 30	220 per m ² opening
300 x 100 x 30	330 per m ² opening
300 x 50 x 30	660 per m ² opening

Fire Rating

DST Group Ltd C300P Intumescent Pillows will provide 4 hours' fire integrity and 2 hours' insulation rating as tested in accordance with BS476 Part 20.

Install DST Group C300 Ltd P Intumescent Pillows to provide up to 4 hours rating. Installation to be fully in accordance with manufacturer's instructions.



Description

DST Group Ltd Firestop Compound is used to provide a fire rated seal around service penetrations in fire rated walls and floors.

Tested to BS476 Part 20, Firestop Compound provides up to 6 hours fire protection.

Smoke seal

- Good acoustic insulation
- Suitable for making good around most types of service penetrations
- Load bearing
- Simple installation
- No smoke emission
- Maintenance free
- Unaffected by humidity

Description

Firestop Compound is a specially formulated gypsum based mortar, which is mixed with water to be trowelled or poured around service penetrations.

In floors, DST Group Ltd permanent shutter panel (50mm) is cut and friction fitted between services and the edges of the floor slab. Firestop Compound is then trowelled over the shutter to a depth of 25mm thick.* This is allowed to cure. The Firestop Compound is then mixed to a pouring grade and tops the seal up to the required depth. In walls, Firestop Compound is mixed into a stiff consistency for trowelling into openings.* Firestop Compound sets in 30-45 minutes and is capable of accommodating foot traffic in approximately 72 hours.

*Plastic pipework must be protected with either DST Group Ltd Fire Stop Collars or Intumescent Pipe Wraps. (See data sheets)

Fire Rating

Fire Rating	Thickness of Compound (mm)
1 - 2 hours	75
3 - 6 hours	100

Coverage

Thickness of Compound (mm)	Number of Bags / m ²
75	3.15
100	4.2
150	6.3

These are approximate calculations based on 22kg bags. The coverage does not take into account the percentage of the hole filled with services.

Acoustic Rating

Thickness of Compound (mm)	Weighted Sound Reduction Index (Rw)
75	39 db
100	46 db
150	51 db

Load Bearing

Thickness of Compound (mm)	Load Bearing Area Free of Service (mm)
75	500 x 500
100	750 x 750

Openings larger than 750mm x 750mm clear area need to be reinforced. Please contact our technical department for details.

Specification

Install DST Group Ltd Firestop Compound to provide 1,2,3 or 4 hour fire rating to all service penetrations through all fire rated walls and floors. Installation to be fully in accordance with manufacturer's instructions.