

## European Technical Assessment

**ETA 21/0024**  
**2024-03-18**

### General Part

**Technical Assessment Body issuing the European Technical Assessment**

RISE Research Institutes of Sweden AB

**Trade name of the construction product**

S&B Fire Wrap System

**Product family to which the construction product belongs**

Fire stopping and fire sealing products -  
Penetration seals

**Manufacturer**

Stål & Brandteknik i Södertälje AB  
Box 19171, SE-152 28 Södertälje, Sweden  
[www.brandteknik.se](http://www.brandteknik.se)

**Manufacturing plant**

Stål & Brandteknik i Södertälje AB  
Klastorpsvägen 13, SE-152 42 Södertälje,  
Sweden

**This European Technical Assessment contains**

29 pages including 2 Annex(es) which form an  
integral part of this assessment.

**This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of**

EAD 350454-00-1104 - Penetration Seals.

**This version replaces**

ETA 21/0024, issued on 2023-08-23

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Specific parts

## **1 Technical description of the product**

The S&B Fire Wrap System is intended to provide solutions to maintain the fire resistance of separating wall and floor elements when and where services pass through.

S&B Fire Wrap System is based on intumescent wraps, insulation materials and sealants.

## **2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)**

### **2.1 Intended use**

The penetration seal is intended to be used temporarily or permanent reinstate the fire resistance performance of rigid concrete walls, concrete floors or flexible walls which are provided with apertures which are penetrated by various plastic pipes, insulated or uninsulated.

Penetrations can be mounted either into 95 mm thick rigid walls or 95 mm thick standardized flexible walls or 150 mm thick rigid floors ( $\geq 550 \text{ kg/m}^3$ ). Wraps are mounted on the surface of the wall or floor or into the wall or floor. The detailed properties are given in annex B.

The provisions made in this European Technical Assessment are based on an assumed working life of 10 years provided the conditions laid down in the technical literature of the manufacturer relating to packaging, transport, storage, installation, use and repair are met. The indications given on the intended working life cannot be interpreted as a guarantee given by the producer or the Technical Assessment Body but are to be regarded only as a means for selecting the appropriate product in relation to the expected economically reasonable working life of the works.

The real working life might be, in normal use conditions, considerably longer without major degradation affecting the Basic requirements for construction works.

### **2.2 Use condition**

The different use conditions as described in European Assessment Document 350454-00-1104, edition September 2017, are the following:

Type X: intended for use in conditions exposed to weathering

Type Y<sub>1</sub>: intended for use at temperatures below 0 °C with exposure to UV but no exposure to rain

Type Y<sub>2</sub>: intended for use at temperatures below 0 °C, but with no exposure to rain no UV

Type Z<sub>1</sub>: 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

Type Z<sub>2</sub>: intended for use in internal conditions with humidity lower than 85% RH excluding temperatures below 0 °C, without exposure to rain or UV

S&B Fire Sealant System meets the requirements for type Z<sub>1</sub>.

Products that meet requirements for type Z<sub>1</sub> also meet the requirements for type Z<sub>2</sub>.

## 2.3 General assumptions

It is assumed that

- > damages to the penetration seal are repaired accordingly,
- > the installation of the penetration seal does not affect the stability of the adjacent building element – even in case of fire,
- > the lintel or floor above the penetration seal is designed structurally and in terms of fire protection such that no additional mechanical load (other than its own weight) is imposed on the penetration seal,
- > the installations are fixed to the adjacent building element in accordance with the relevant regulations in such a way that, in case of fire, no additional mechanical load is imposed to the penetration seal,
- > the support of the installations is maintained for the required period of fire resistance and
- > pneumatic dispatch systems, compressed air systems etc are switched off by additional means in case of fire.

## 3 Performance of the product and references to the methods used for its assessment

### 3.1 Essential characteristics and their performance

Basic requirement		Essential characteristic	Performance	
BWR 2	Safety in case of fire	Reaction to fire	EN 13501-1:2019	See 3.1.1 of the ETA
		Resistance to fire	EN 13501-2:2016	See 3.1.1 of the ETA and Annex A
BWR 3	Hygiene, health and the environment	Air permeability (material property)	EN 1025:2000	No performance assessed
	Hygiene, health and the environment	Air permeability (material property)	Annex C of EAD 350454-00-1104	No performance assessed
	Hygiene, health and the environment	Content, emission and/or release of dangerous substances	EOTA TR 034 EN 16516:2017	See 3.1.2 of the ETA
BWR 4	Safety and accessibility in use	Mechanical resistance and stability	EOTA TR 001	No performance assessed
		Resistance to impact / movement	EOTA TR 001	No performance assessed
		Adhesion	EOTA TR 001	No performance assessed
		Durability	EOTA TR 024	Use condition: Type Z <sub>1</sub>
BWR 5	Protection against noise	Airborne sound insulation	EN ISO 140-3 and EN ISO 140-10 EN ISO 717-1	No performance assessed
BWR 6	Energy economy and heat retention	Thermal properties	EN 12667:2001	No performance assessed
		Water vapour permeability	EN ISO 12572:2016	No performance assessed

### 3.1.1 Safety in case of fire

Essential characteristic	Performance
<i>Reaction to fire</i>	<b>S&amp;B Pipe Wrap/Novipro:</b> class E in accordance with EN 13501-1:2019 <b>Brennix Fire Protection Compound/SMP Brandskyddsmassa/FPS Fire Stop Mortar:</b> class A1 in accordance with EN 13501-1:2019
<i>Resistance to fire</i>	S&B Fire Wrap System was tested according to EAD 350454-00-1104 clause 2.2.2 and EN 1366-3:2009. Based upon the achieved test results and the field of application specified within EN 1366-3:2009 the components in the S&B Fire Wrap System have been classified according to EN 13501-2:2016. The individual fire resistance classes are listed in Annex B of the ETA. The maximum fire resistance class of the penetration seal in separating element depends on the fire resistance class of the penetrated elements. The fire resistance class of the penetration seal is reduced to the fire resistance class of the penetrated element with the lowest fire resistance classification.

### 3.1.2 Hygiene, health and the environment

Essential characteristic	Performance
<i>Content, emission and/or release of dangerous substances</i>	<b>S&amp;B Pipewrap/Novipro:</b> No dangerous substances <b>Brennix Fire Protection Compound/SMP Brandskyddsmassa/FPS Fire Stop Mortar:</b> IA1 - Product with direct contact to indoor air VOC and SVOC emission:< 0.005 mg/m <sup>3</sup> after 28 days <b>Brennix Brandfog:</b> No dangerous substances

#### 4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the decision 1999/454/EC - Commission decision of date 22 June 1999, published in the Official Journal of the European Union (OJEU) L178/52 of 14/07/1999, amended by decision 2001/596/EC - Commission decision of date 8 January 2001, published in the Official Journal of the European Union (OJEU) L209 of 02/08/2001, of the European Commission the system(s) of assessment and verification of constancy of performance (see Annex V to the regulation (EU) No 305/2011) given in the following table applies:

Product(s)	Intended use(s)	Level(s) or class(es)	System(s)
Fire Stopping and Fire Sealing Products	For fire compartmentation and/or fire protection or fire performance	any	1
	For uses subject to regulations on reaction to fire	A1*, A2*, B*, C*	1
		A1**, A2**, B**, C**, D, E	3
		(A1 to E)***, F	4
<p>*Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material)</p> <p>**Products/materials not covered by footnote (*)</p> <p>***Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of class A1 according to Commission Decision 96/603/EC, as amended)</p>			

#### 5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at RISE.

Issued in Borås on 2024-03-18  
By RISE Research Institutes of Sweden AB



Martin Tillander  
Director, Product certification

## **ANNEX A**

### **DESCRIPTION OF PRODUCTS & PRODUCT LITERATURE**

#### **A.1 S&B Pipe Wrap/Novipro (running meter) 60**

The wraps with dimensions (l x w) of 380 x 35 mm, 830 x 35 mm and 1100 x 35 mm. The wraps are delivered in 25 m rolls.

#### **A.2 S&B Pipe Wrap/Novipro (running meter) 120**

The wraps with dimensions (l x w) of 380 x 58 mm, 830 x 58 mm, 1100 x 58 mm, 1260 x 58 mm and 267 x 58 mm. The wraps are delivered in 25 m rolls.

#### **A.3 S&B Pipe Wrap/Novipro 120**

The wraps with dimensions (l x w x t) of 210 x 58 x 4 mm, 285 x 58 x 6 mm, 380 x 58 mm x 6 mm, 440 x 58 x 6 mm and 555 x 58 x 10 mm. The wraps are delivered in polythene casings.

#### **A.4 S&B Pipe Wrap/Novipro 60**

The wraps with dimensions (l x w) of 380 x 35 mm, 830 x 35 mm and 1100 x 35 mm. The wraps are delivered in polythene casings.

#### **A.5 Brennix Fire Protection Compound/SMP Brandskyddsmassa/FPS Fire Stop Mortar**

Brennix Fire Protection Compound/SMP Brandskyddsmassa/FPS Fire Stop Mortar is a gypsum based product delivered in paper bag of about 12 kg.

#### **A.6 Mineral wool Climpipe Alu 2 pipe insulation**

Mineral wool Climpipe Alu 2 is a glass wool product with nominal density 75 kg/m<sup>3</sup> and thickness 60 mm. Coating with aluminium foil.

CE-marked in accordance to Declaration of Performance no. SE0002-009.

#### **A.7 Armaflex AF pipe insulation**

Armaflex AF is a foamed elastomeric thermal insulation with thickness 19 mm.

Produced by Armacell GmbH.

#### **A.8 Superwool Plus Blanket**

Superwool Plus Blanket is a ceramic insulation with density 128 kg/m<sup>3</sup> and thickness 25 mm.

Produced by Morgan Advanced Materials.

#### **A.9 Brennix Brandfog**

Brennix Brandfog fire sealant is an acrylic based intumescent.

Produced by Stål & Brandteknik i Södertälje AB.

#### **A.10 Technical product literature**

Technical data sheets for the individual components.

## ANNEX B

### RESISTANCE TO FIRE CLASSIFICATION OF S&B FIRE WRAP SYSTEM

The Brennix Fire Protection Compound is the product name used in the figures below. Other product names for the same product are SMP Brandskyddsmassa and FPS Fire Stop Mortar.

The S&B Pipe Wrap System is the product name used in the figures below. Another product name for the same product is Novipro System.

#### B.1 Penetration seal type

The construction of the penetration seal types is schematically represented in Figures 1 to 18.

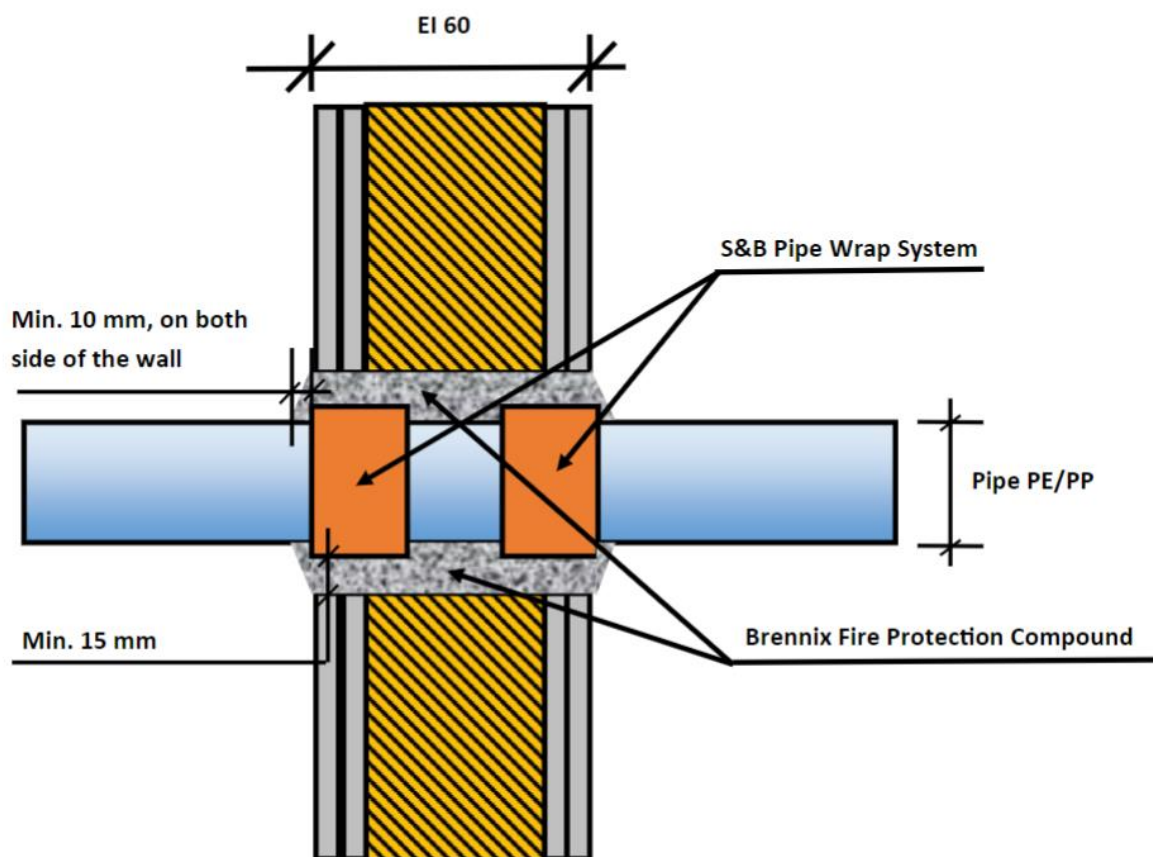


Figure 1. Schematic representation of penetration seal in a flexible wall, uninsulated pipe (type A)



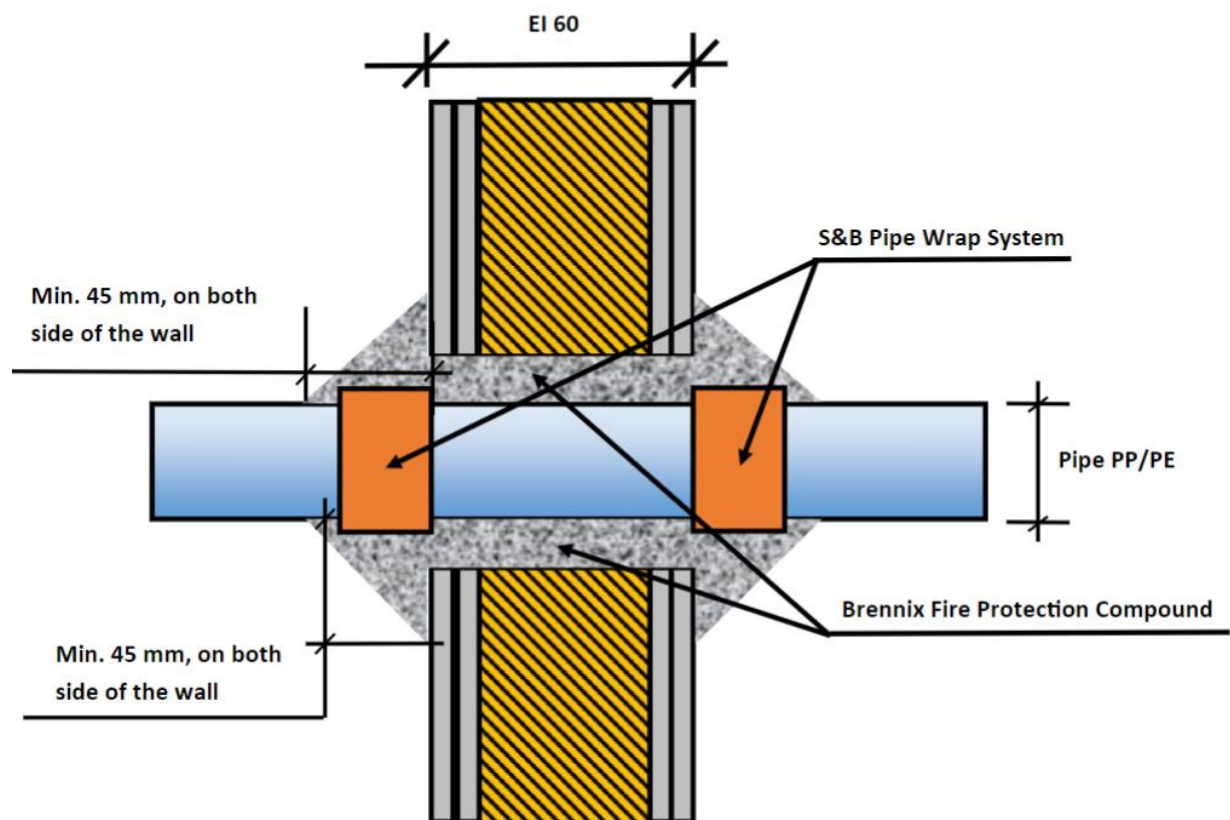


Figure 2. Schematic representation of penetration seal in a flexible wall, uninsulated pipe (type B)

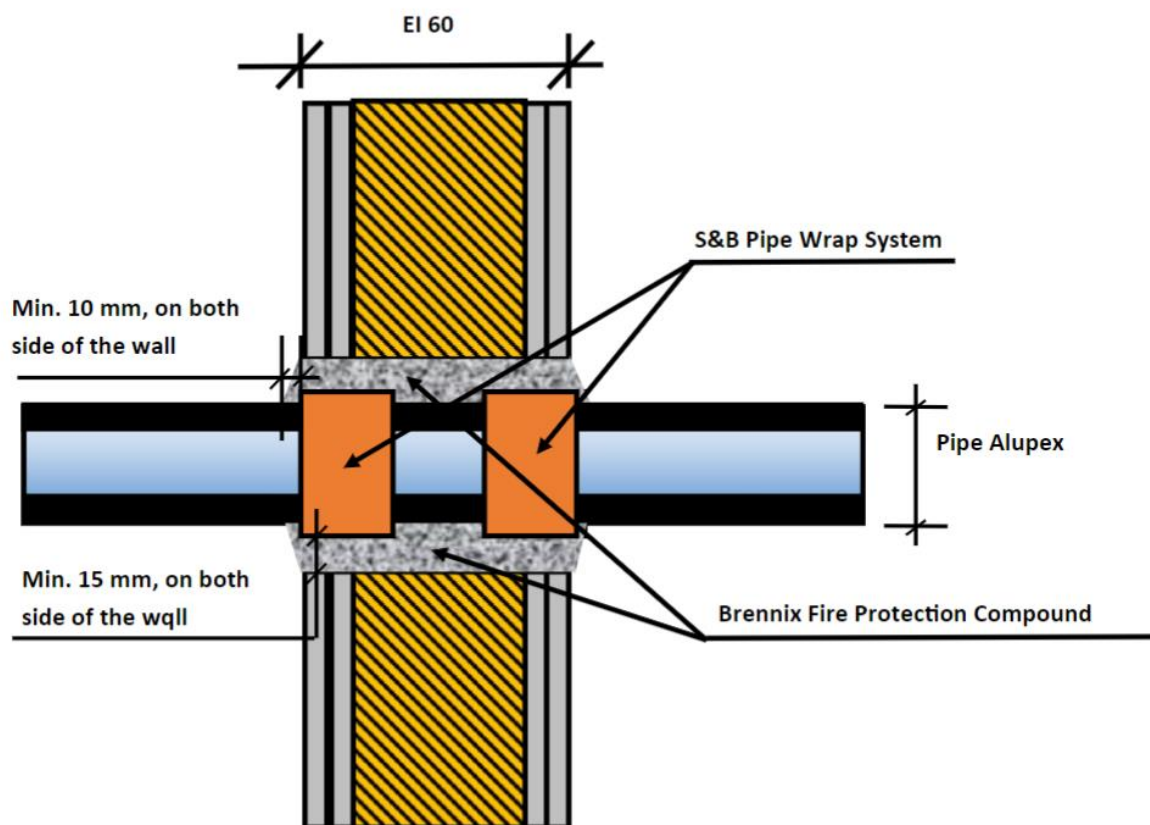


Figure 3. Schematic representation of penetration seal in a flexible wall with Armaflex AF insulated Alupex pipe (type C)

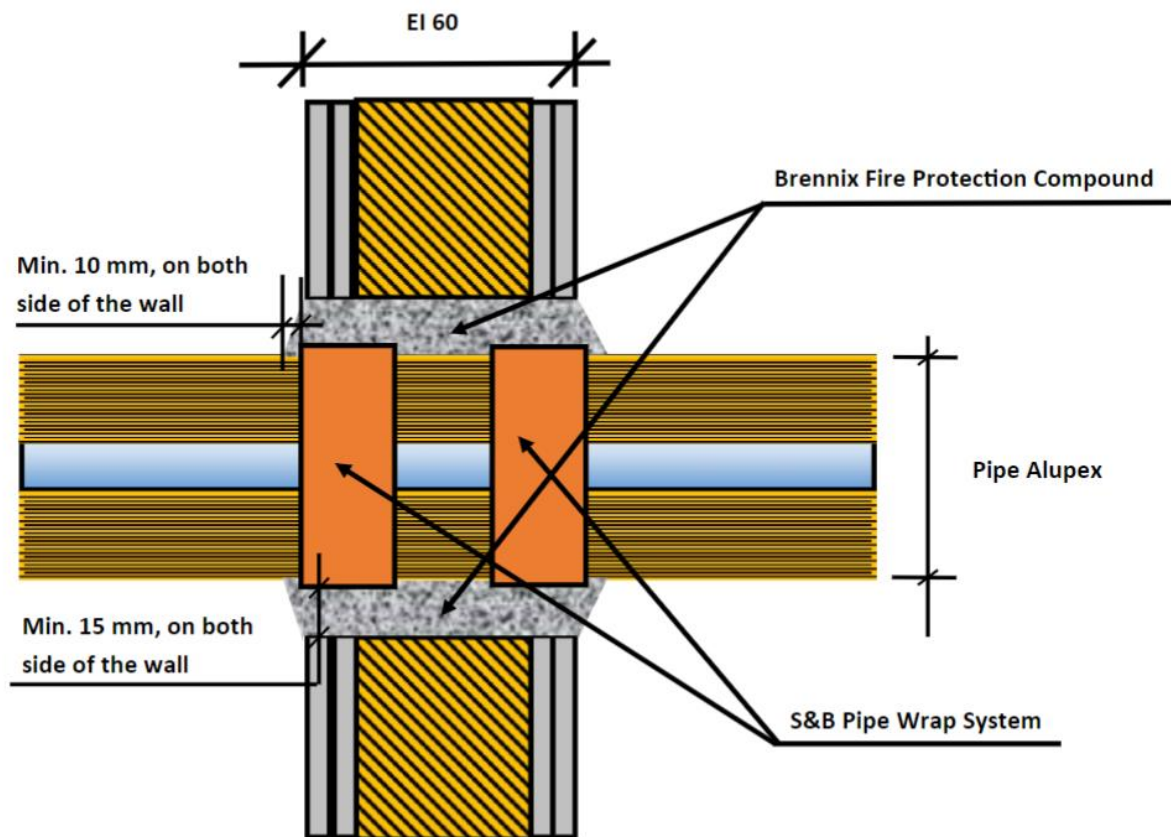


Figure 4. Schematic representation of penetration seal in a flexible wall, mineral wool insulated pipe (type D)

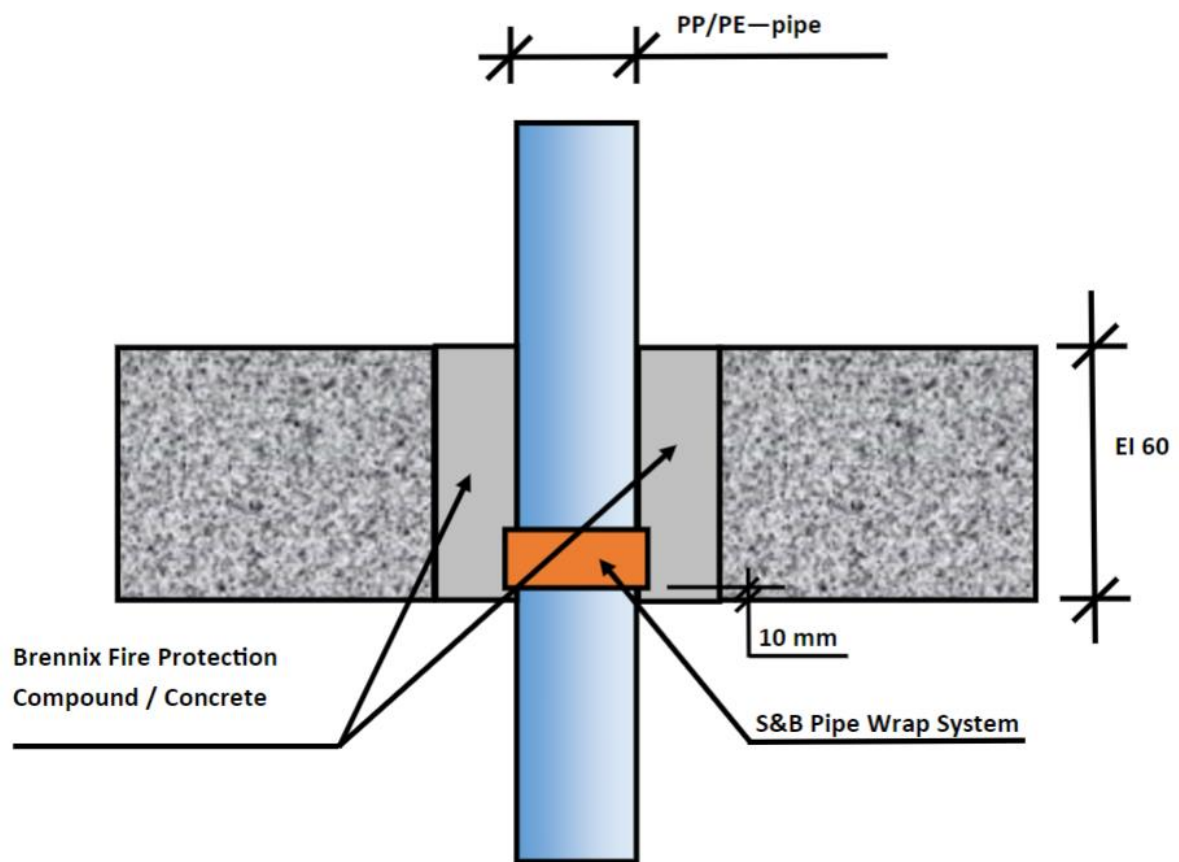


Figure 5. Schematic representation of penetration seal in a rigid floor, uninsulated pipe (type E)

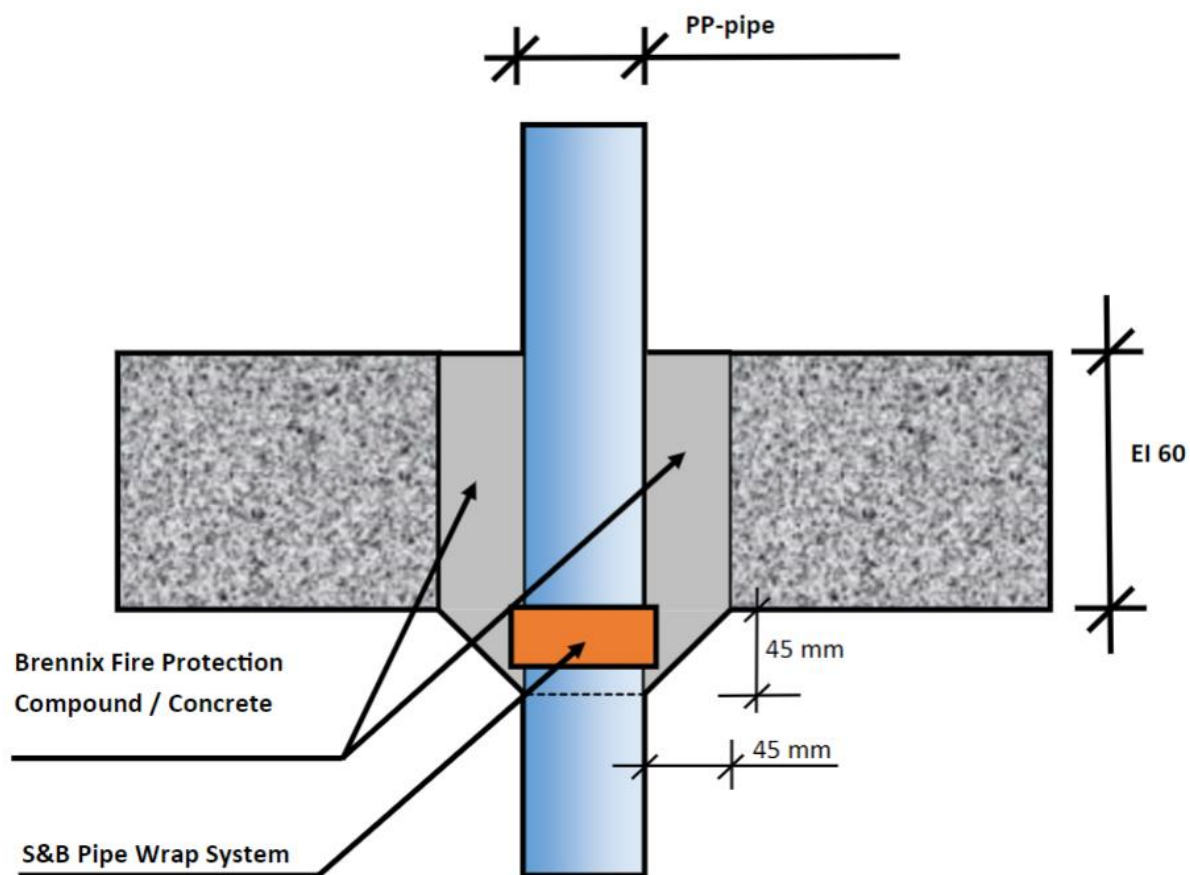


Figure 6. Schematic representation of penetration seal in a rigid floor, uninsulated pipe (type F)

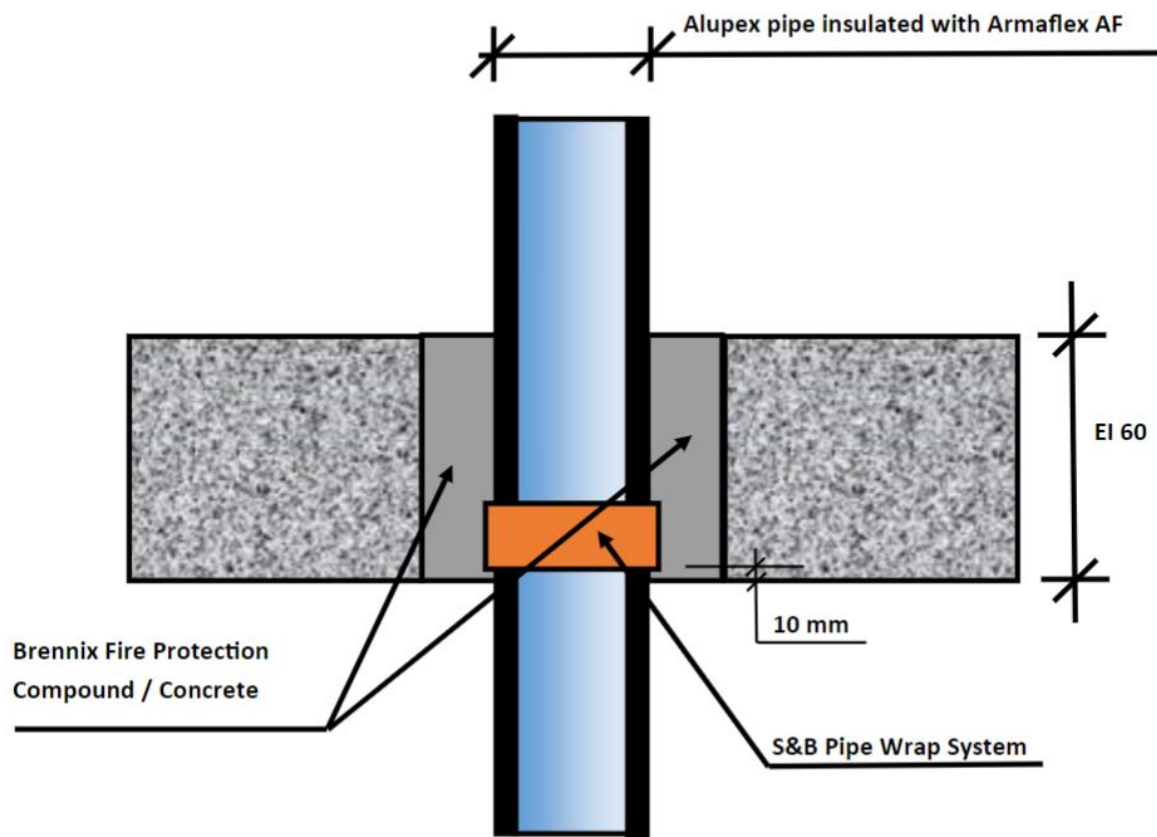


Figure 7. Schematic representation of penetration seal in a rigid floor, Armaflex insulated pipe (type G)

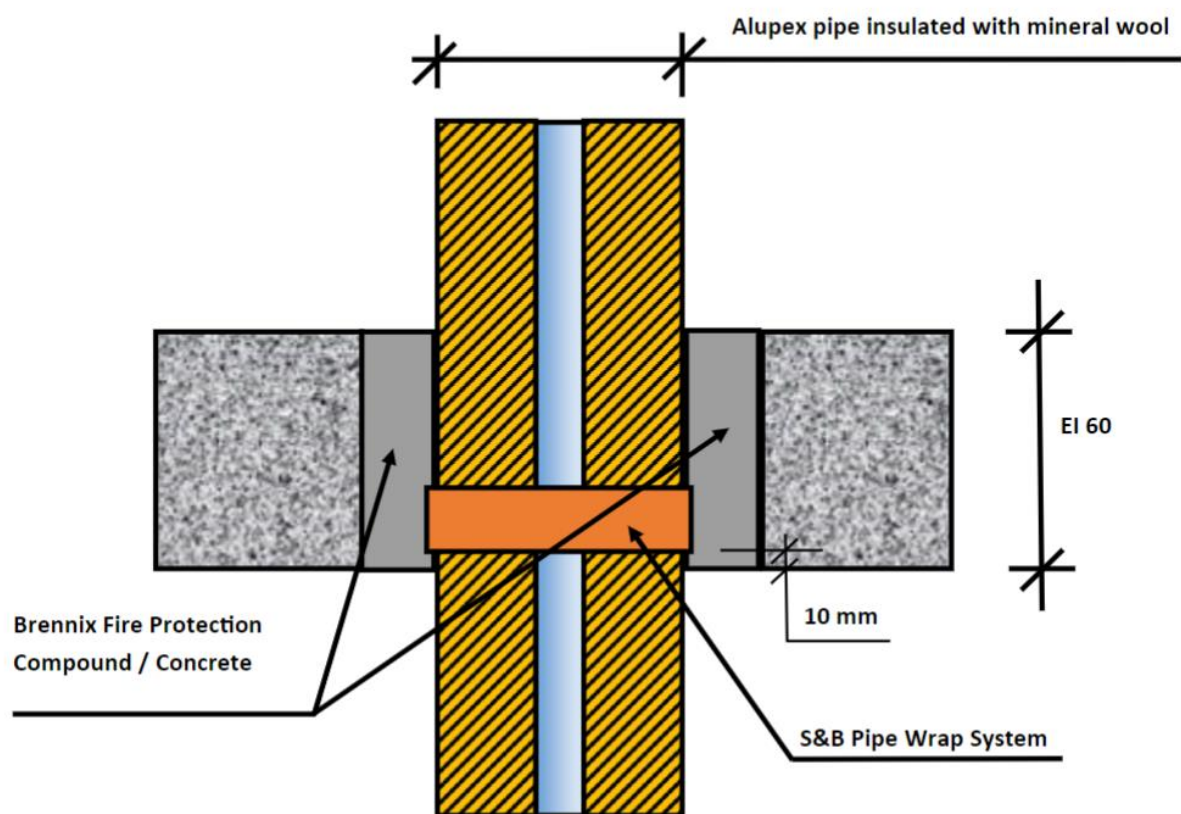


Figure 8. Schematic representation of penetration seal in a rigid floor, mineral wool insulated pipe (type H)

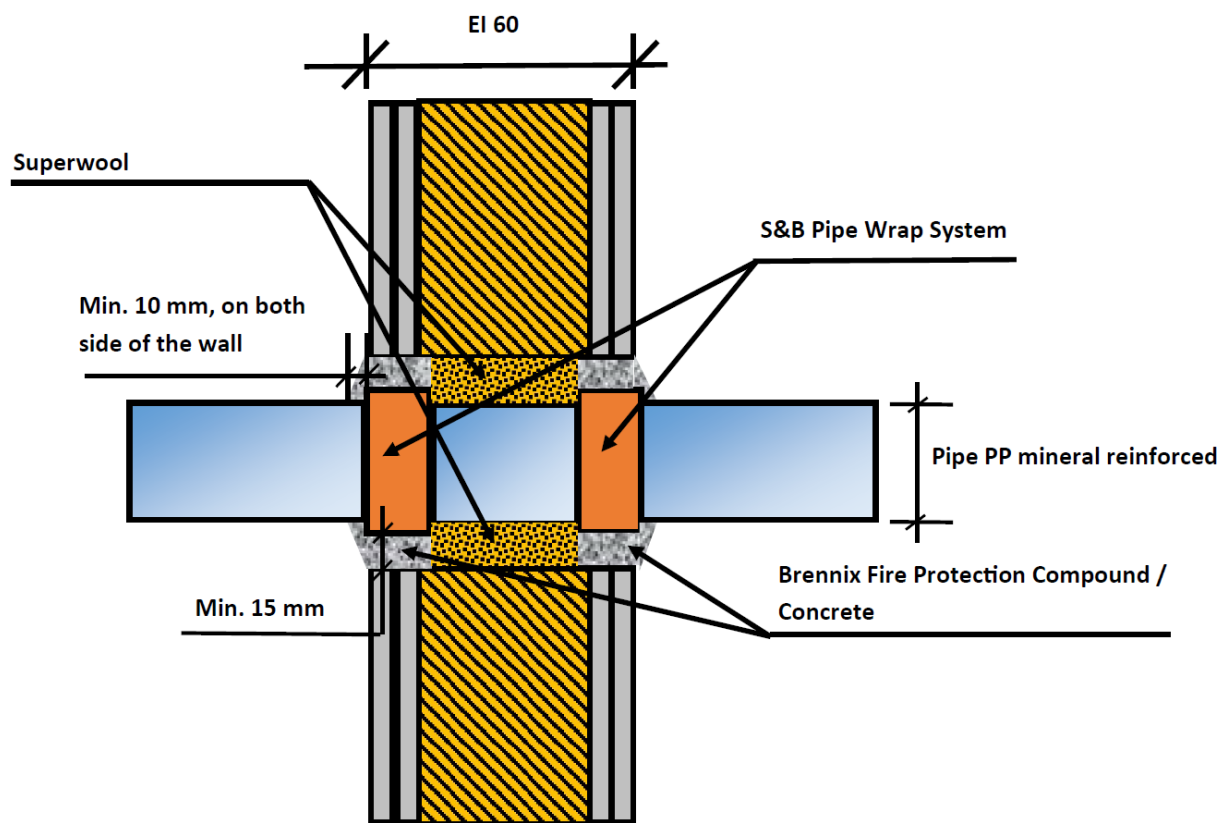


Figure 9. Schematic representation of penetration seal in a flexible wall Pipe PP mineral reinforced (type I)



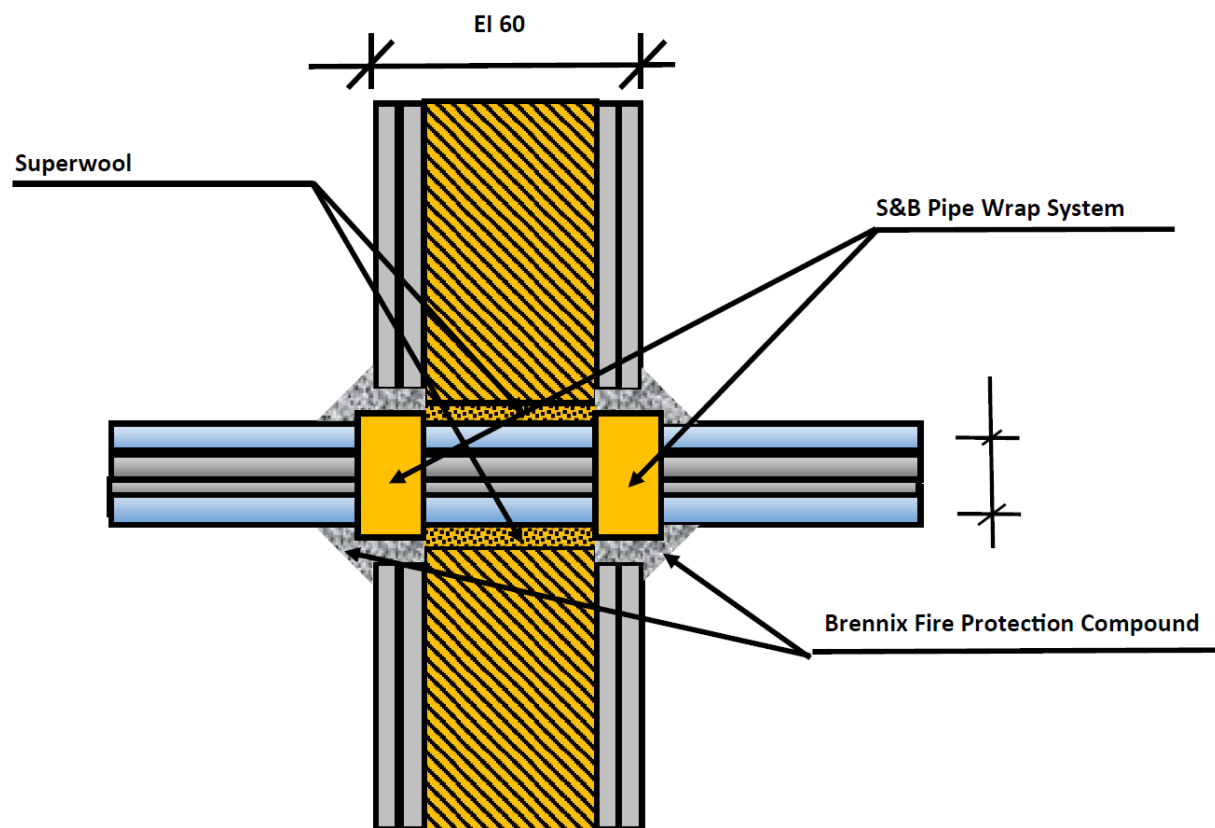


Figure 10. Schematic representation of penetration seal in a flexible wall Pipe Alupex (type J)

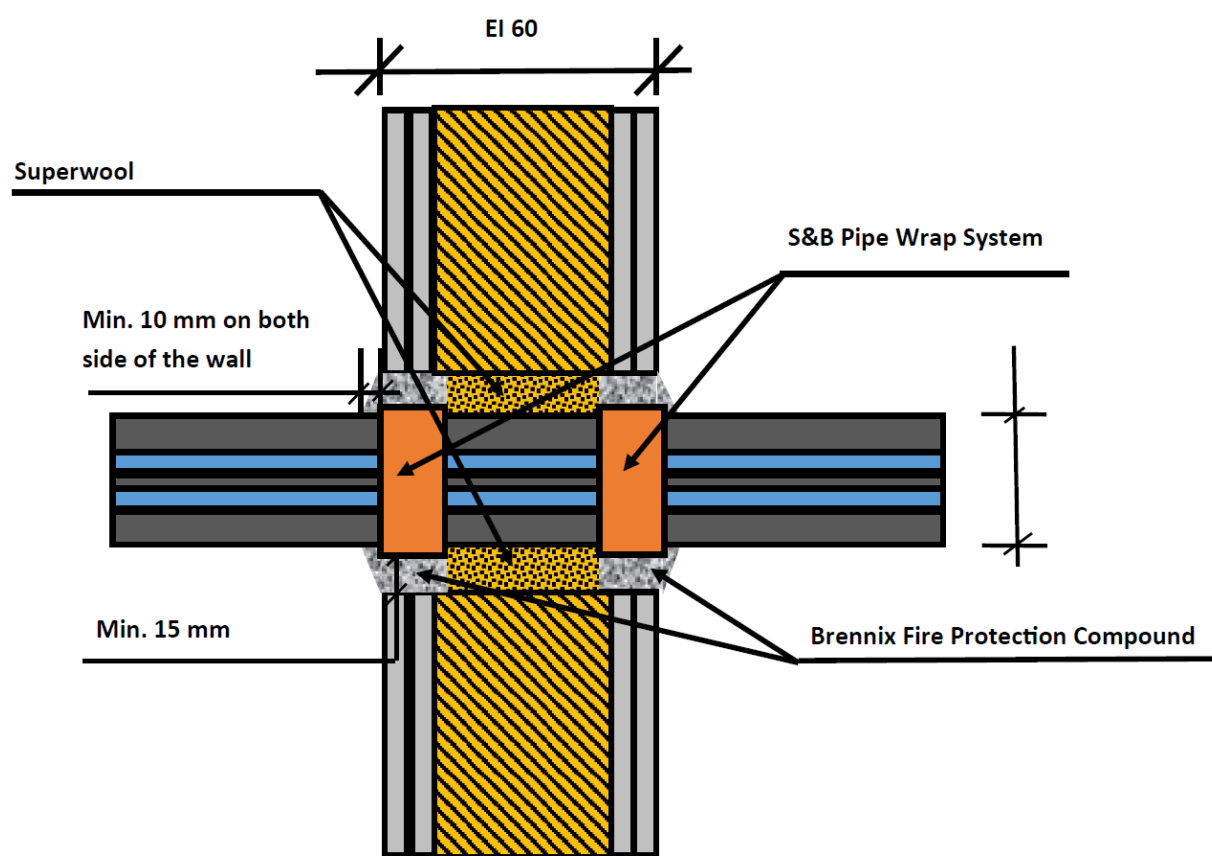


Figure 11. Schematic representation of penetration seal in a flexible wall Pipe Ecoflex (type K)



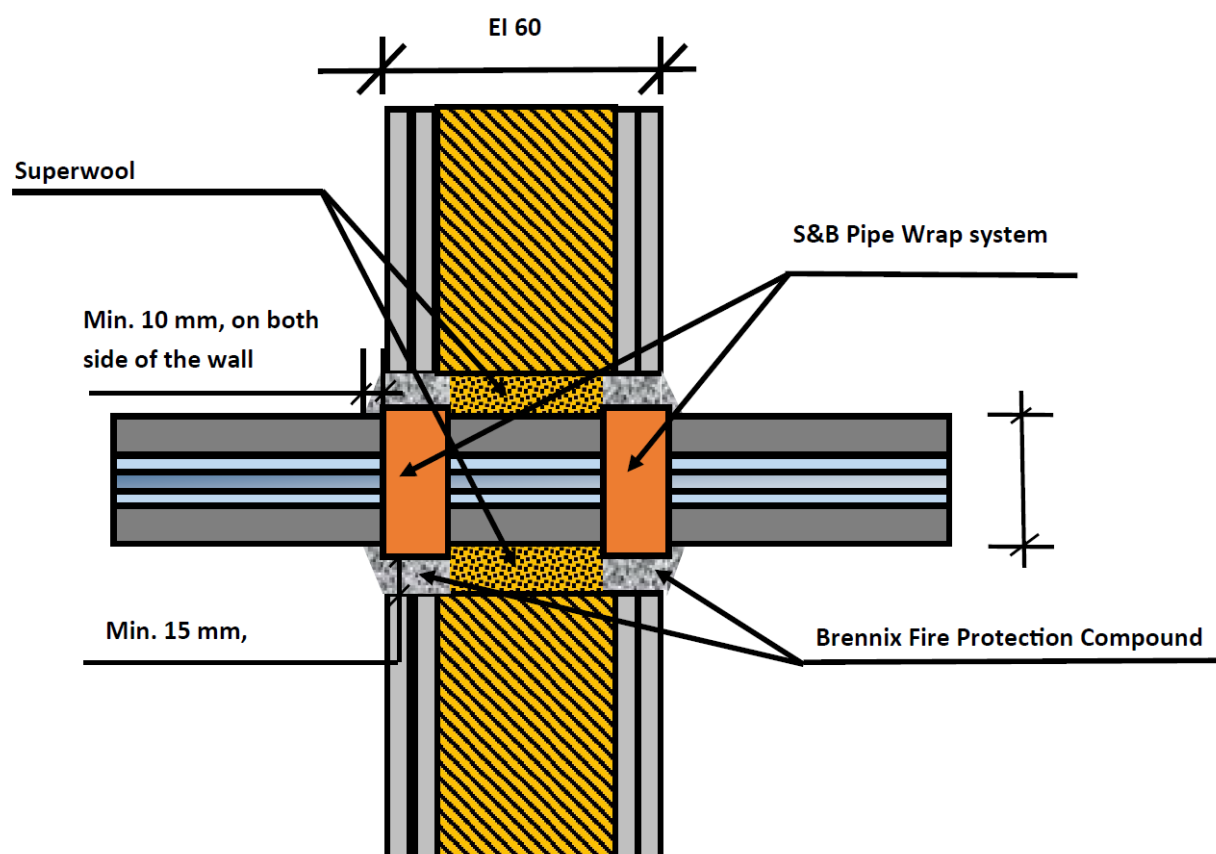


Figure 13. Schematic representation of penetration seal in a flexible wall Pipe PEX RR (type M)

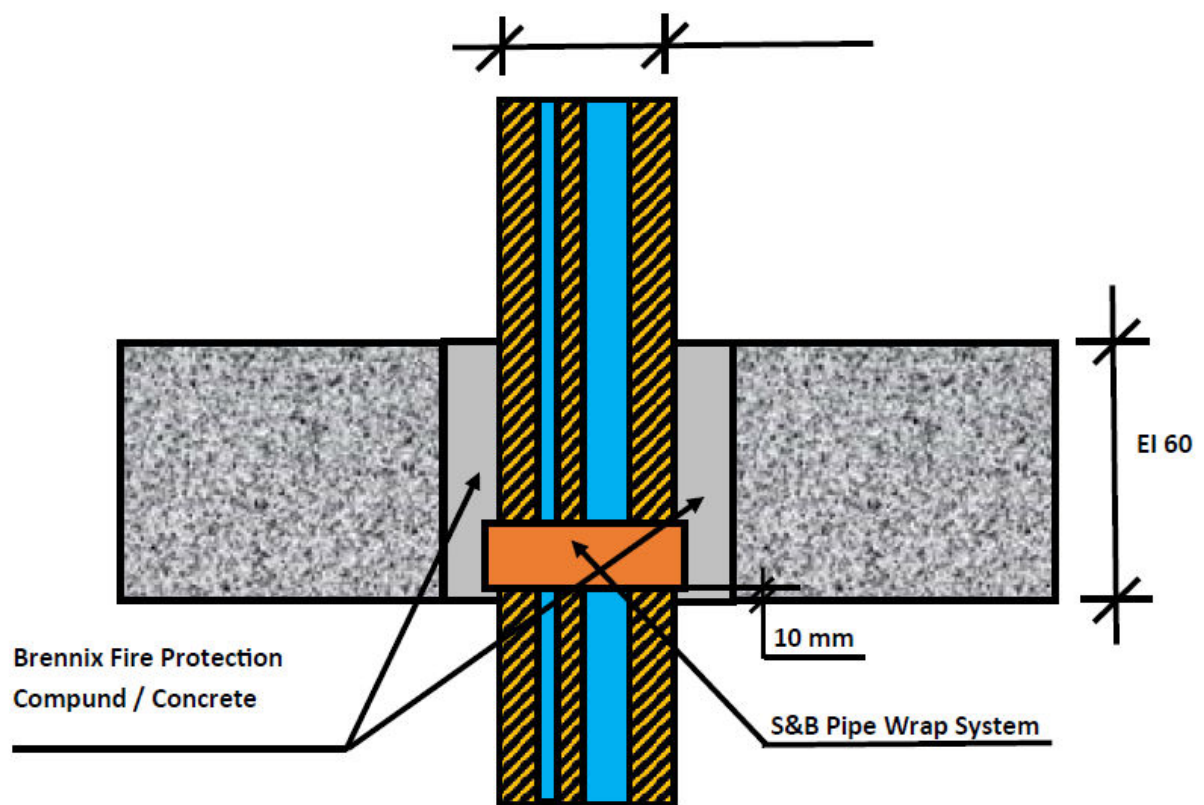


Figure 14. Schematic representation of penetration seal in a rigid floor Pipe Alupex (type N)

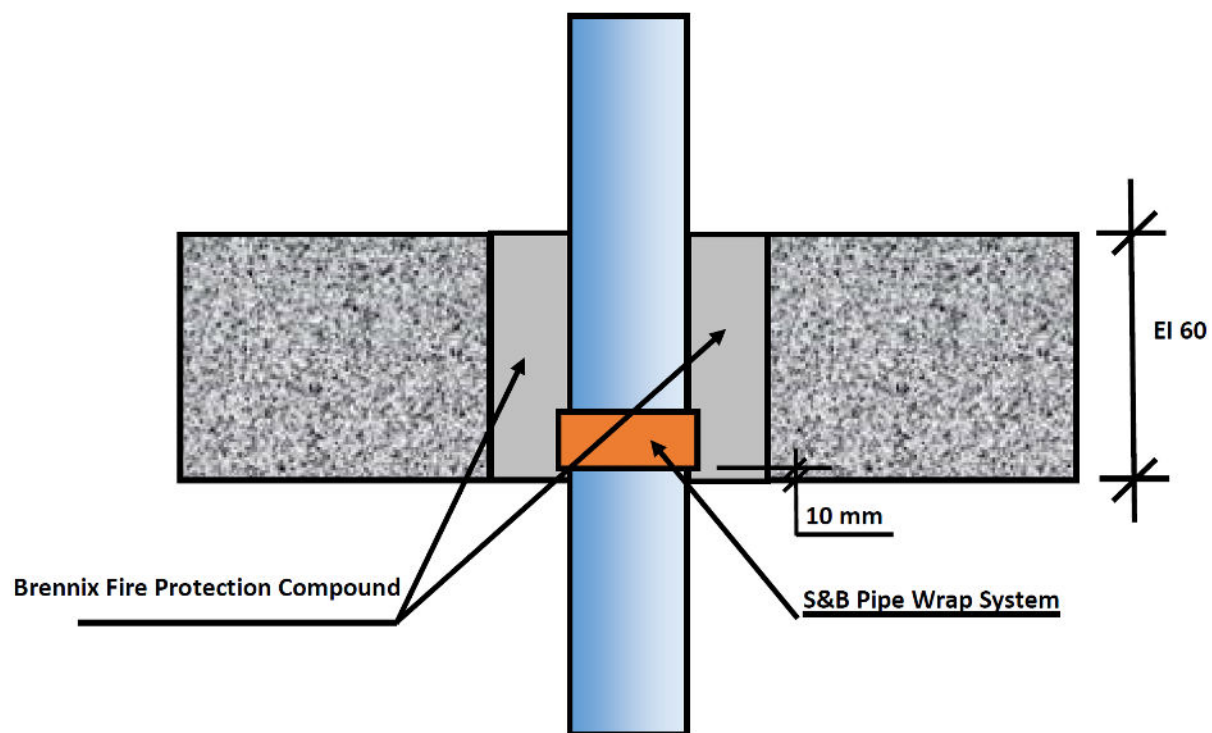


Figure 15. Schematic representation of penetration seal in a rigid floor Pipe PP (type O)

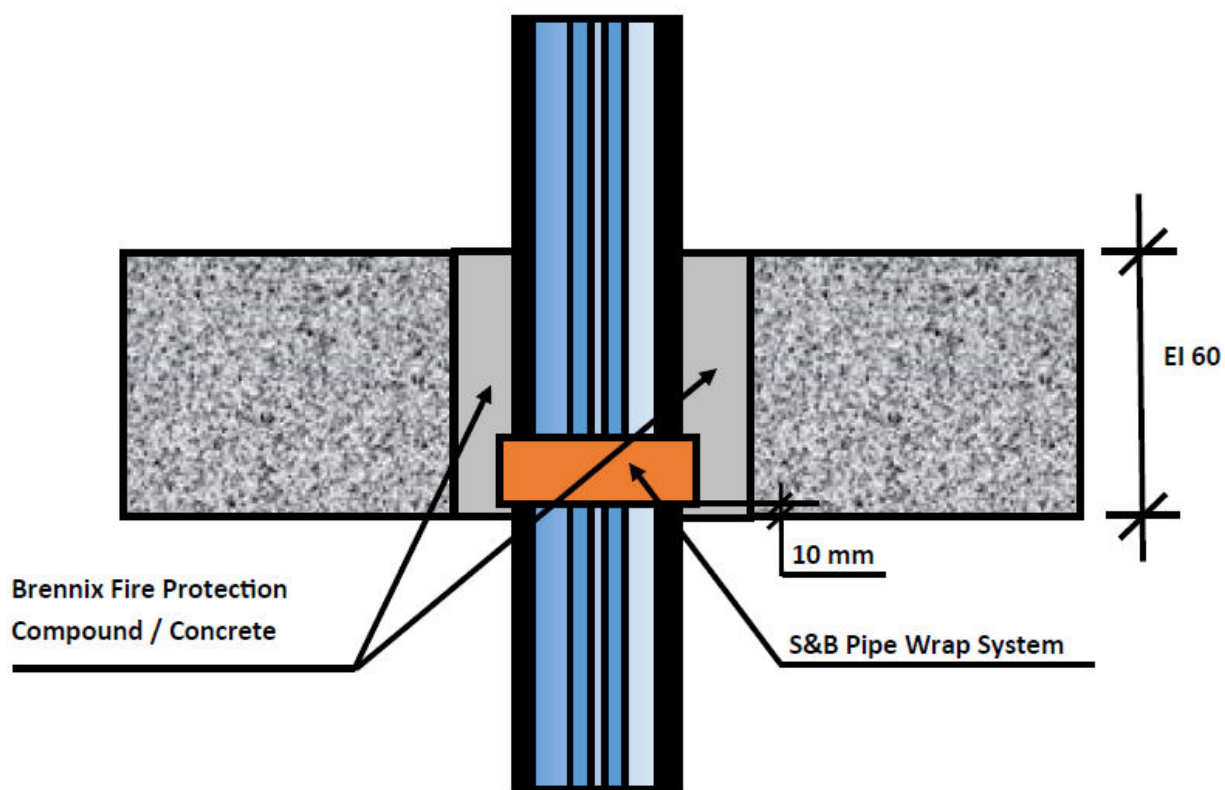


Figure 16. Schematic representation of penetration seal in a rigid floor Pipe PP Ecoflex (type P)

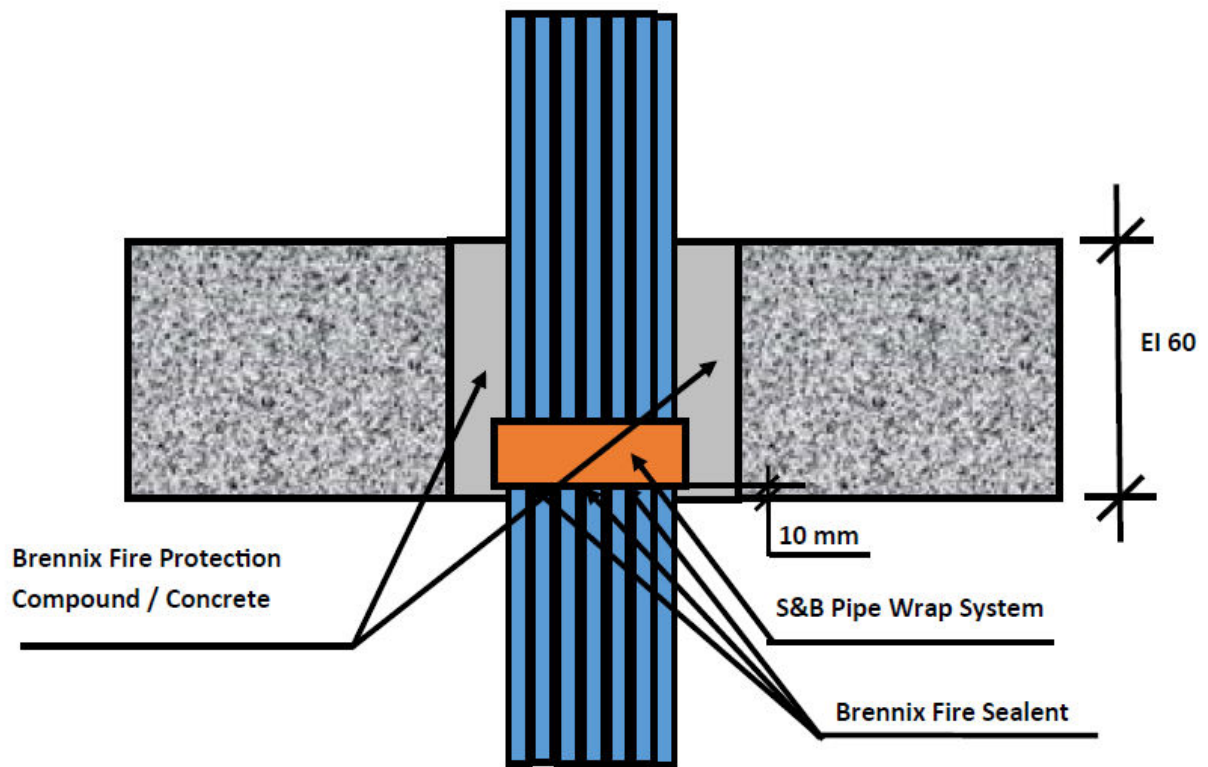


Figure 17. Schematic representation of penetration seal in a rigid floor Pipe VP/Flex (type Q)



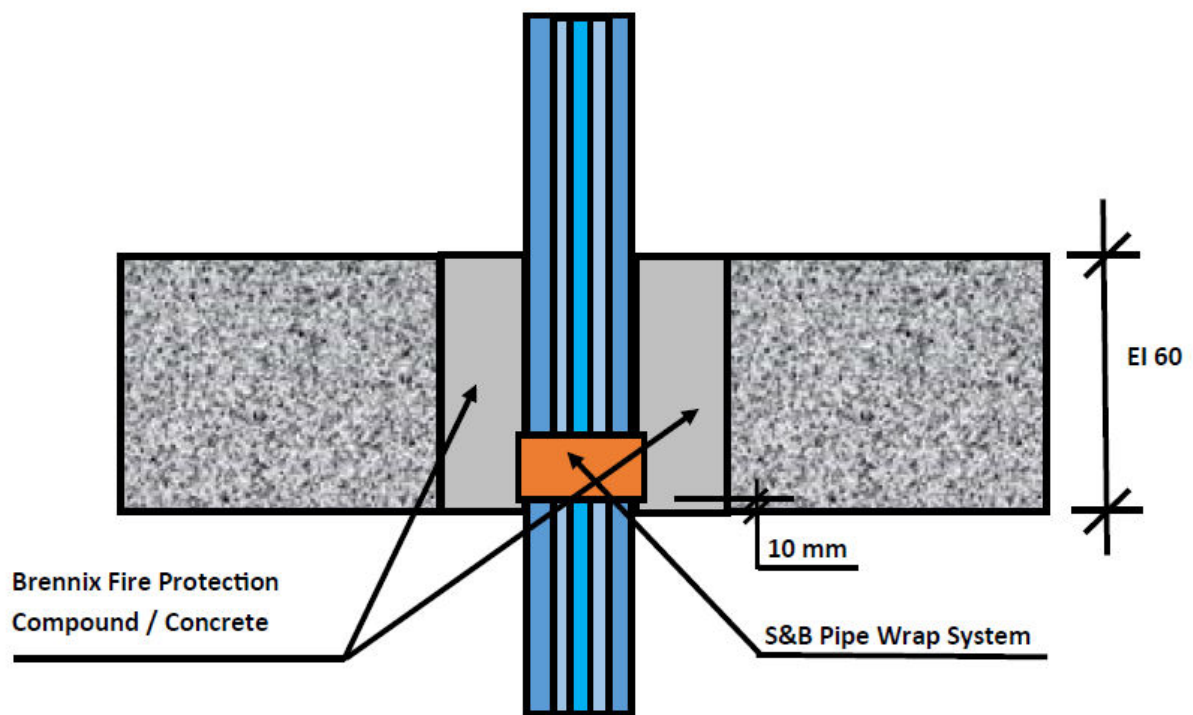


Figure 18. Schematic representation of penetration seal in a rigid floor Pipe PEX RR (type R)

## B.2 Classifications

Service	Aperture (mm)	Penetration seal type	Supporting construction	Classification
Pipe PE (EN 1519), diameter 110 mm, thickness 4.3 mm	180	A, B	Flexible wall Rigid wall	EI 15-U/C
Pipe PE (EN 1519), diameter 160 mm, thickness 6.2 mm	230	A, B	Flexible wall Rigid wall	EI 15-U/C
Pipe PE (EN 1451), diameter 50 mm, thickness 3.0 mm	120	A, B	Flexible wall Rigid wall	EI 60-U/C
Pipe PP (EN 1451), diameter 50 mm, thickness 1.8 mm	180	A, B	Flexible wall Rigid wall	EI 60-U/C
Pipe PP mineral reinforced (EN 1451), diameter 50 mm, thickness 2.0 mm	150	I	Flexible wall Rigid wall	EI 90-U/C
Pipe PP Muff mineral reinforced (EN 1451), diameter 50 mm	150	I	Flexible wall Rigid wall	EI 90-U/C
Pipe PP Muff mineral reinforced (EN 1451), diameter 75 mm	175	I	Flexible wall Rigid wall	EI 90-U/C
Pipe PP (EN 1451), diameter 110 mm, thickness 2.7-3.8 mm	180	A, B	Flexible wall Rigid wall	EI 60-U/C
Pipe PP mineral reinforced (EN 1451), diameter 110 mm, thickness 3.8 mm	210	I	Flexible wall Rigid wall	EI 90-U/C
Pipe PP Muff mineral reinforced (EN 1451), diameter 110 mm	210	I	Flexible wall Rigid wall	EI 90-U/C
Pipe PP (EN 1451), diameter 160 mm, thickness 3.9 mm	230	A, B	Flexible wall Rigid wall	EI 60-U/C
Pipe PP mineral reinforced (EN 1451), diameter 160 mm, thickness 5.4 mm	260	I	Flexible wall Rigid wall	EI 90-U/C
Pipe PP (EN 1451), diameter 200 mm, thickness 3.0 mm	300	I	Flexible wall Rigid wall	EI 90-U/C
Pipe Alupex <sup>1)</sup> , diameter 16 mm, thickness 2.0 mm, Armaflex AF insulated	130	C	Flexible wall Rigid wall	EI 60-U/C
Pipe Alupex <sup>1)</sup> , diameter 16-50 mm, thickness 2.0-4.0 mm, mineral wool insulated	120-165	D	Flexible wall Rigid wall	EI 60-U/C

Service	Aperture (mm)	Penetration seal type	Supporting construction	Classification
Pipe Alupex <sup>1)</sup> , diameter 25-58 mm, thickness 3.0-4.0 mm, Armaflex AF insulated	140-160	C	Flexible wall Rigid wall	EI 60-U/C
Two insulated pipes Alupex <sup>1)</sup> , diameter 40/20 mm, thickness 4.0/2.5 mm, insulated together	270	J	Flexible wall Rigid wall	EI 90-U/C
Pipe Ecoflex 2x35x3.5 mm + insulation diameter 175 mm EN 1451	275	K	Flexible wall Rigid wall	EI 90-U/C
Bundle of 20 flexible plastic pipes designated "VP-rör" EN 1451 4 pieces diameter 50 mm 8 pieces diameter 32 mm 8 pieces diameter 20 mm	260	L	Flexible wall Rigid wall	EI 20-U/C
Bundle of 20 flexible plastic pipes designated "Flexrör" EN 1451 4 pieces diameter 50 mm 8 pieces diameter 32 mm 8 pieces diameter 20 mm	260	L	Flexible wall Rigid wall	EI 90-U/C
Plastic pipe "PEX RR Skyddsrör 25" (16x2) EN 1451 with 50 mm insulation of cellular rubber	145	M	Flexible wall Rigid wall	EI 90-U/C
Pipe PE (EN 1519), diameter 160 mm, thickness 3.9 mm	230	E, F	Rigid floor	EI 60-U/C
Pipe Alupex <sup>1)</sup> , 32 mm, thickness 3.0 mm, Armaflex AF insulated	155	G	Rigid floor	EI 90-U/C
Pipe Alupex <sup>1)</sup> , diameter 16-50 mm, thickness 2.0-3.5 mm, Armaflex AF insulated	120-140	G	Rigid floor	EI 90-U/C
Pipe Alupex <sup>1)</sup> , diameter 16-50 mm, thickness 2.0-4.0 mm, mineral wool insulated	120-255	H	Rigid floor	EI 90-U/C
Two pipe Alupex <sup>1)</sup> , diameter 20/40 mm, thickness 2.5/4.0 mm, mineral wool insulated together EN 1451	270	N	Rigid floor	EI 60-U/C
Pipe PP (EN 1451-1), diameter 50 mm, thickness 1.8 mm	120	E, F	Rigid floor	EI 90-U/C
Pipe PP Mineral reinforced, diameter 50 mm, thickness 2.0 mm, EN 1451	150	O	Rigid floor	EI 60-U/C

Service	Aperture (mm)	Penetration seal type	Supporting construction	Classification
Pipe PP Muff Mineral reinforced, diameter 50 mm, EN 1451	150	O	Rigid floor	EI 60-U/C
Pipe PP Muff Mineral reinforced, diameter 75 mm, EN 1451	175	O	Rigid floor	EI 60-U/C
Pipe PP (EN 1451-1), diameter 110 mm, thickness 2.7 mm	180	E, F	Rigid floor	EI 90-U/C
Pipe PP Mineral reinforced, diameter 110 mm, thickness 3.8 mm, EN 1451	210	O	Rigid floor	EI 60-U/C
Pipe PP Muff Mineral reinforced, diameter 110 mm, EN 1451	210	O	Rigid floor	EI 60-U/C
Pipe PP Ecoflex 2x32 incl. insulation, diameter 175 mm, EN 1451	275	P	Rigid floor	EI 60-U/C
Pipe PP Mineral reinforced, diameter 160 mm, thickness 5.4 mm	260	O	Rigid floor	EI 60-U/C
Pipe PP Mineral reinforced, diameter 200 mm, thickness 5.9 mm, EN 1451	300	O	Rigid floor	EI 45-U/C
Pipe PE (EN 1519), diameter 110 mm, thickness 4.3 mm	180	E, F	Rigid floor	EI 90-U/C
Pipe PE (EN 1519), diameter 160 mm, thickness 6.2 mm	230	E, F	Rigid floor	EI 90-U/C
Bundle of 20 plastic pipes "VP-rör" 4 pieces diameter 50 mm 8 pieces diameter 32 mm 8 pieces diameter 20 mm EN 1451	260	Q	Rigid floor	EI 60-U/C
Bundle of 20 flexible plastic pipes "Flexrör" 4 pieces diameter 50 mm 8 pieces diameter 32 mm 8 pieces diameter 20 mm EN 1451	260	Q	Rigid floor	EI 60-U/C
Two pipes "Skyddsror 25 (16x2) placed inside insulating pipe "PEX RR Cellplast" diameter 50 mm. EN 1451	145	R	Rigid floor	EI 60-U/C

- 1) Product designation "PAL Universalrör". Supplied by Lagerstedt & Krantz AB.
- 2) Product designation "Flexrör". Supplied by Tälje Elprodukter AB.
- 3) Product designation "VP-rör". Supplied by Tälje Elprodukter AB.
- 4) Product designation "PEX RR Skyddsror 25" (16x2), 10 mm insulation of cellular rubber. Supplied by UponorAB.

The classifications for rigid floors are valid only from the lower side.

Wrap: two layers up to pipe diameter 55 mm, three layers for diameter 82-127 mm, five layers for diameter 160 mm and six layers for diameter 200 mm.

Minimum 200 mm between penetrations.

Service supporting construction through the supporting construction are not allowed.

Max 400 mm from the supporting construction to the first service supporting construction.

Rigid floor: minimum thickness 150 mm and minimum density 550 kg/m<sup>3</sup>

Rigid wall: minimum thickness 95 mm and minimum density 450 kg/m<sup>3</sup>

Flexible wall: minimum thickness 95 mm and classified in accordance to EN 13501-2 for the required fire resistance class