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designated according to Article 29 of the Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment, [www.eota.eu](http://www.eota.eu))

## European Technical Assessment

**ETA 23/0050**  
**of 29/08/2023**

**Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011:** **UL International (Netherlands) B.V.**

**Trade name of the construction product**

Mulcol® Multimastic C System

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

Fire Stopping and Sealing Product:  
• Penetration Seals

**Manufacturer**

Mulcol International BV  
PO Box 93  
4330 AB Middelburg  
The Netherlands

**Manufacturing plant(s)**

L/002

**This European Technical Assessment contains**

240 pages including 3 Annexes 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

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## I. SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

### 1. Technical description of the product

- 1) Mulcol® Multimastic FB is a mineral wool board coated with waterborne Mulcol® Multimastic C ablative firestop coating based on a sustainable polymer system used to reinstate the fire resistance performance of wall and floor constructions where they have been provided with apertures for the penetration of single or multiple services.
- 2) The Mulcol® Multimastic FB is supplied coated on one face, referenced FB1, or on both faces, referenced FB2. The board or boards are then cut to allow the penetration of the required services, before being inserted into or over the aperture in the wall or floor.
- 3) The products below can be used in conjunction with Mulcol® Multimastic FB depending upon the required application and classification (see Annex A/B). These products are subject to separate ETAs.
  - Mulcol® Multimastic SP, firestop mastic
  - Mulcol® Multicollar *Slim*, universal fire collar
  - Mulcol® Multiwrap, fire wrap
  - Mulcol® Multisealant GR, firestop intumescent graphite
  - Mulcol® Multitherm Bandage, thermal insulation
  - Mulcol® Multidisc, firestop disc
  - Mulcol® Multifoam 2K, 2 Component Fire Protection Foam
  - Mulcol® Multifoam Stone, fire protection stone

The applicant has submitted a written declaration that Mulcol® Multimastic FB, Mulcol® Multimastic C and Mulcol® Multimastic SP do not contain substances which have to be classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No 1272/2008 and listed in the "Indicative list on dangerous substances" of the EGDS - taking into account the installation conditions of the construction product and the release scenarios resulting from there.

In addition to the specific clauses relating to dangerous substances contained in this European technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

### 2. Specification of the intended uses of the product in accordance with the applicable European Assessment Document (hereinafter EAD): EAD 350454-00-1104

Detailed information and data is given in Annex A, B and C.

- 1) The intended use of Mulcol® Multimastic FB is to reinstate the fire resistance performance of flexible wall, rigid wall and floor constructions where they are penetrated by various services.
- 2) The specific elements of construction that the system Mulcol® Multimastic FB may be used to provide a penetration seal in, are as follows:
  - a) Flexible walls\*: The wall must have a minimum thickness of 100 mm. Apertures in flexible walls are not required to be lined.
  - b) Rigid walls\*: The wall must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 400 kg/m<sup>3</sup>.
  - c) Rigid floors: The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 400 kg/m<sup>3</sup>.

\* See Annex C for the field of application.

The supporting construction must be classified in accordance with EN 13501-2 for the required fire resistance period.
- 3) The system Mulcol® Multimastic FB may be used to provide a penetration seal with services e.g. cables, cable trays, metal pipes, composite pipes and plastic pipes, with and without insulation, with mixed services within the same seal/aperture (for details see Annex A and B).
- 4) The Mulcol® Multimastic FB panels have a minimum density of 150 kg/m<sup>3</sup> and are of type Isover BSP, Paroc Pyrotech, Rockwool Hardrock, SVT/Flamro or equal.
- 5) The Mulcol® Multimastic C System FB1 (2x 50 mm) and System FB2 (1x 60 mm) may be used to seal apertures in separating elements up to a maximum seal size given in Annex C. The minimum permitted separation between adjacent seals/apertures is 100 mm. Where seals are installed without services (blank), precautions need to be taken to prevent a person stepping onto a horizontal seal or falling onto a vertical seal.
- 6) The provisions made in this European Technical Assessment are based on an assumed working life of 25 years, provided that the conditions laid down in the product datasheet for the packaging/ transport/ storage/ installation/ use/ repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, 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.
- 7) Type Z<sub>2</sub>: Intended for uses in internal conditions with humidity lower than 85 % RH excluding temperatures below 0°C, without exposure to rain or UV.
- 8) Mutual distances between services and minimum support distances are given in Annex C.

- 9) It is allowed, for aesthetic reasons, to apply a  $\geq 25\text{mm}$  overlap of Multimastic C coating on the adjacent construction around the penetration seal, but it is not mandatory.
- 11) If the solution is in combination with the Mulcol® Multiwrap, a maximum of 5 mm protrusion from the surface of the separating element or penetration seal is allowed.
- 12) Insulation types  
The following acoustic insulation types are allowed (or equal):
- ABSound Sonocool
  - Jacomassa / Sonimass
  - Merfisol Silver Alu
  - ThermaCompact TF
- The following elastomeric insulation types are given in Annex A and B (or equal, not limited by brand or type):
- Reaction to fire class  $\leq \text{B-s1, d0}$  – e.g. ArmaFlex Ultima, Kaiflex KK Plus S1
  - Reaction to fire class  $\leq \text{B-s2, d0}$  – e.g. ArmaFlex AF EVO, Kaiflex KK Plus S2 / ST, K-Flex ST
  - Reaction to fire class  $\leq \text{B-s3, d0}$  – e.g. ArmaFlex AF / XG / SH, K-Flex H
  - Reaction to fire class  $\leq \text{C-s2, d0}$  – e.g. Kaiflex HT S2
  - Reaction to fire class  $\leq \text{D-s3, d0}$  – e.g. ArmaFlex NH / SH / HT
- The insulations may also have a  $B_L$ ,  $C_L$  or  $D_L$  classification (linear insulation).
- 13) Pipes types  
The following multi layered pipes (or equal) are allowed:
- Alpex DUO, Valsir Pexal, Valsir Mixal and APE Plain (PE-Xb/AL/PE-Xb)
  - Uponor and Geberit Mepla (PE-RT/AL/PE-RT)
  - Uponor and Henco (PE-Xc/AL/PE-Xc)
  - Uponor and REHAU (PE-Xa) and REHAU (PE-Xc)
  - SP Superpipe and POLYGON PEX (PE-X/AL/PE-X)
  - Valsir Pexal and Valsir Mixal (PE/AL/PE-Xb)
  - Wavin Tigris, Protecta-Line System and Alpex F50 Profi (PE-X/AL/PE)
- The following fibre composite pipes (or equal) are allowed:
- Aquatechnik Fusio PP-R 80, Aquatechnik Fusio PP-RCT
  - Aquatherm Blue-MF, Aquatherm Blue-S, Aquatherm Red-MF, Aquatherm Green-MF, Aquatherm Green-MS, Aquatherm Green-S, Aquatherm Lilac-S, Aquatherm Grey-MS and Aquatherm Orange M
  - Bänninger PP-R, Bänninger Climatec PP-RCT and Bänninger Watertec PP-RCT
- The following low-noise (Silent) pipes (or equal) are allowed:
- Coes PhoNoFire and Coestilen BluePower
  - Geberit Silent PP and Geberit Silent dB 20
  - Girpi Friaphon and Marley Silent
  - Pipelife Master 3 and PhonEX AS
  - Poloplast POLO-KAL NG and Poloplast POLO-KAL 3S
  - Skolan dB
  - Raupiano Plus
  - Valsir Triplus, Wavin SiTech+ and Wavin AS
  - DykaSono
  - Uponor Decibel



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

Product-type: Coated Board		Intended use: Penetration Seal
Assesment method	Essential characteristic	Product Performance
<b><u>BWR 2 Safety in case of fire</u></b>		
EN 13501-1	Reaction to fire	E
EN 13501-1	Resistance to fire	Annex A, B & C
<b><u>BWR 3 Hygiene, health and enviroment</u></b>		
EN 1026	Air permeability	No performance determined
EAD 350454-00-1104, Annex C	Water permeability	No performance determined
Declaration of manufacturer & EN 16516	Release of dangerous substances	IA1, S/W 1 - Declaration of manufacturer
<b><u>BWR 4 Safety in use</u></b>		
EOTA TR 001:2003	Mechanical resistance and stability	No performance determined
EOTA TR 001:2003	Resistance to impact/movement	No performance determined
EOTA TR 001:2003	Adhesion	No performance determined
EAD 350454-00-1104, Clause 2.2.9	Durability	Z <sub>2</sub>
<b><u>BWR 5 Protection against noise</u></b>		
EN 10140-1,2,4,5 / EN ISO 7171-1	Airborne sound insulation	R <sub>w</sub> (C;C <sub>tr</sub> ) = 28 (-1;-3) dB
<b><u>BWR 6 Energy economy and theat retention</u></b>		
EN 12664, EN 12667, EN 12939, EN ISO 8990, EN ISO 6946, EN ISO 14683, EN ISO 10211, EN ISO 10456	Thermal properties	No performance determined
EN ISO 12572, EN 12086, EN ISO 10456	Water vapour permeability	No performance determined

**4. Assessment and Verification of Constancy of Performance (hereinafter AVCP) applied, with reference to its legal base**

According to the decision 1999/454/EC – Commission Decision of date 22nd June 1999 on the procedure for attesting the conformity of construction products pursuant to Article 20(2) of Council Directive 89/106/EEC as regards to fire stopping, fire sealing and fire protective products, published in the Official Journal of the European Union (OJEU) L178/52 of 14/07/1999, see <http://eur-lex.europa.eu/JOIndex.do> of the European Commission<sup>1</sup>, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table(s) applies (apply).

<b>Product(s)</b>	<b>Intended use(s)</b>	<b>Level(s) or class(es)</b>	<b>System(s)</b>
Fire stopping and Fire Sealing Products	For fire compartmentation and/or fire protection or fire performance	Any	1

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

Tasks of the manufacturer:

Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this European Technical Assessment.

The manufacturer may only use initial / raw / constituent materials stated in the technical documentation of this European Technical Assessment.

The factory production control shall be in accordance with the Control Plan of 7th February 2023 relating to the European Technical Assessment ETA 23/0050 issued on 29/08/2023 which is part of the technical documentation of this European Technical Assessment. The “Control Plan” is laid down in the context of the factory production control system operated by the manufacturer and deposited at UL International (Netherlands) B.V.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the Control Plan.

Other tasks of the manufacturer:

Additional information

The manufacturer shall provide a technical data sheet and an installation instruction with the following minimum information:

(a) Technical data sheet:

- Field of application:
- Building elements for which the penetration seal is suitable, type and properties of the building elements like minimum thickness, density, and - in case of lightweight constructions - the construction requirements.
- Limits in size, minimum thickness etc. of the penetration seal
- Construction of the penetration seal including the necessary components and additional products (e.g. backfilling material) with clear indication whether they are generic or specific.
- Services which the penetration seal is suitable, type and properties of the services like material, diameter, thickness etc. in case of pipes including insulation materials; necessary/allowed supports/fixings (e.g. pipe trays)

(b) Installation instruction:

- Steps to be followed
- Procedure in case of retrofitting
- Stipulations on maintenance, repair and replacement

6. Issued on:

29 August 2023

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For and on behalf of UL International (Netherlands) B.V.

## Annex - Resistance to Fire Classification - Mulcol® Multimastic C

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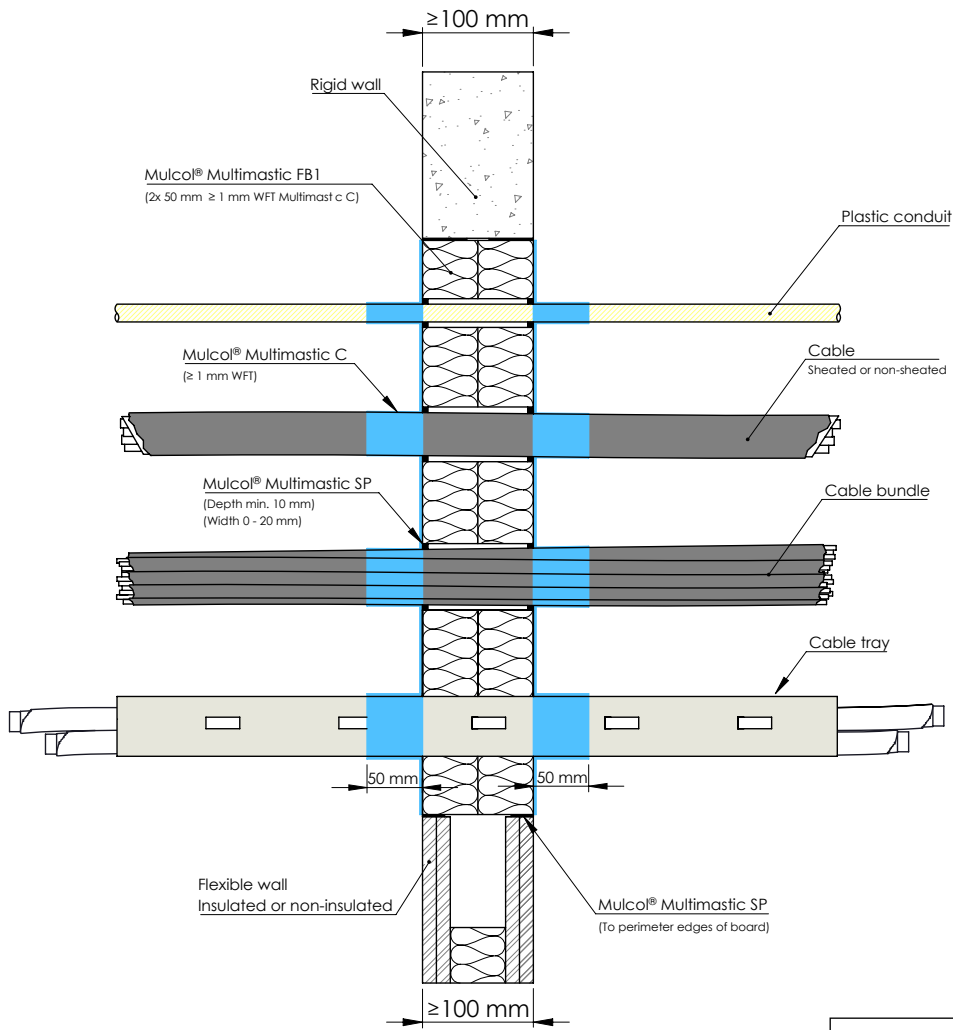
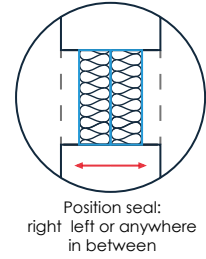
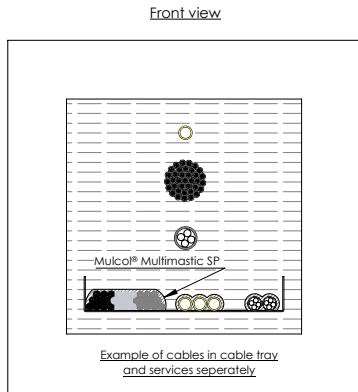
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**A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits**

**A.1.1.1 Cables, trays and conduits - Multimastic C - 50 mm**

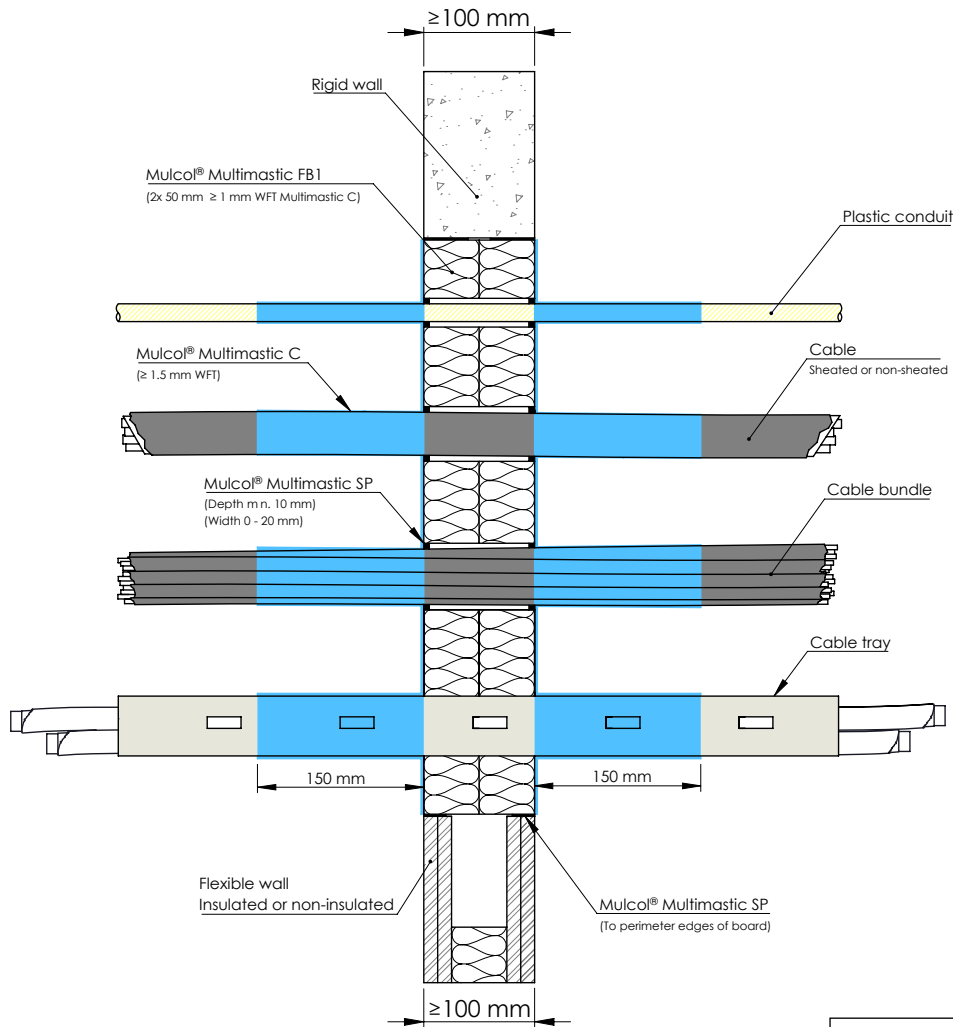
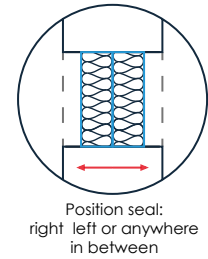
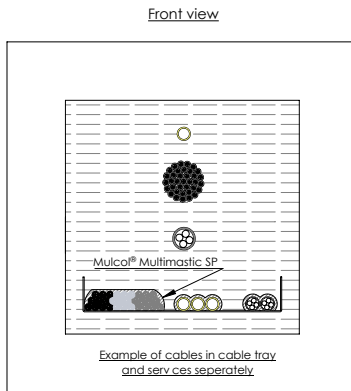


Drawing: PBfw.E-CT-4-MFB1.2.10

Services	Coating	Classification
Metal cable ladders	Coat back 50 mm ≥ 1 mm WFT Multimastic C	<b>EI 60, E 90</b>
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 80 mm		<b>EI 45, E 90</b>
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		<b>EI 60 U/C, E 90 U/C</b>
Non sheathed cables ≤ Ø 24 mm		<b>EI 45 C/U, E 60 C/U</b>
Plastic conduits ≤ Ø 16 mm		<b>EI 60 C/U</b>
Copper conduits ≤ Ø 16 mm		
Steel conduits ≤ Ø 16 mm		

## A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits

### A.1.1.2 Cables, trays and conduits - Multimastic C - 150 mm

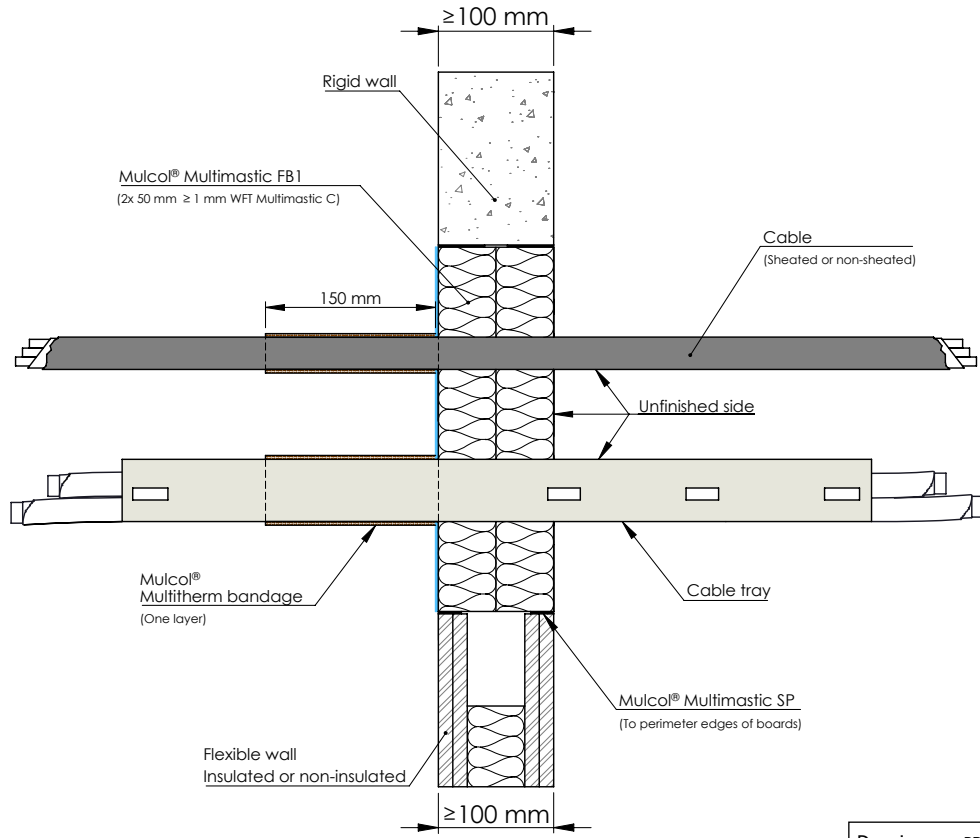
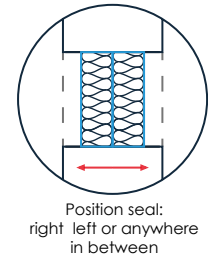
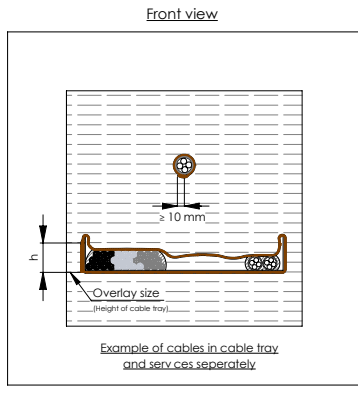


Drawing: PBfw E-CT-4-MFB1 2.10

Services	Coating	Classification
Metal cable ladders	Coat back 150 mm ≥ 1.5 mm WFT Multimastic C	EI 90, E 120
Metal (non-)perforated cable trays		EI 120
Steel wire mesh cable trays (baskets)		EI 90, E 120
Cables ≤ Ø 80 mm		EI 60, E 120
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		EI 120 U/C
Non sheathed cables ≤ Ø 24 mm		EI 45 C/U, E 90 C/U
Plastic conduits ≤ Ø 16 mm		EI 90 C/U
Copper conduits ≤ Ø 16 mm		
Steel conduits ≤ Ø 16 mm		

**A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits**

**A.1.1.3 Cables and trays - Multitherm Bandage**

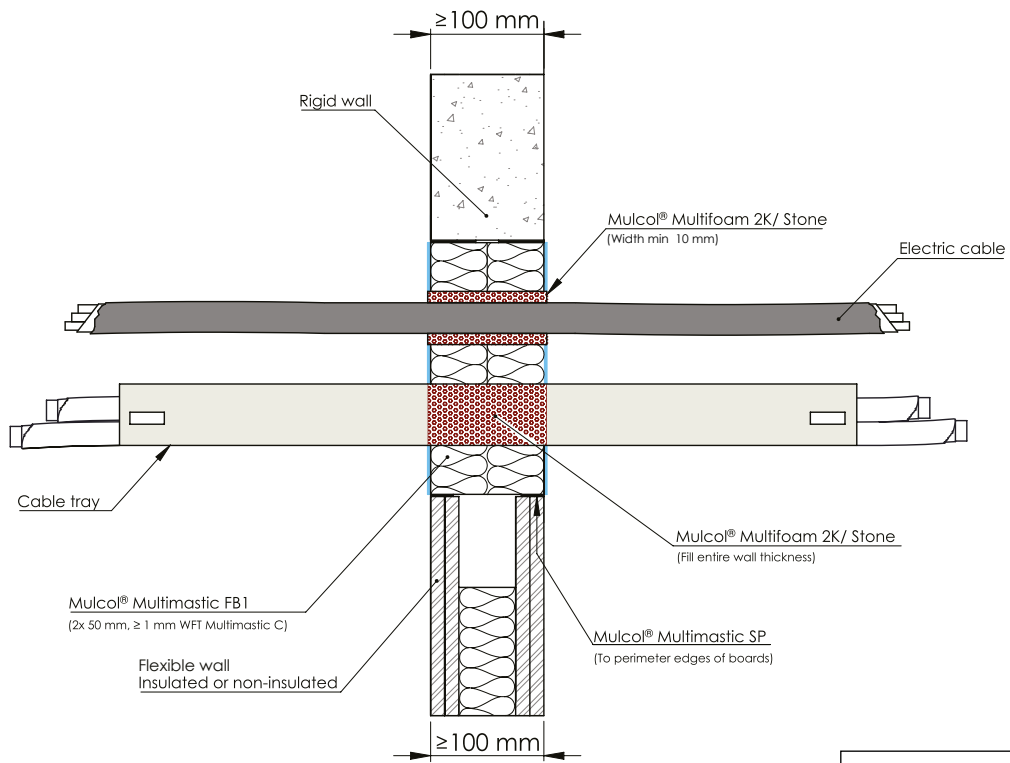
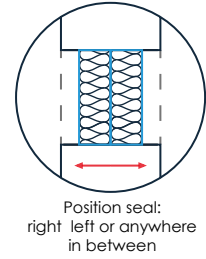
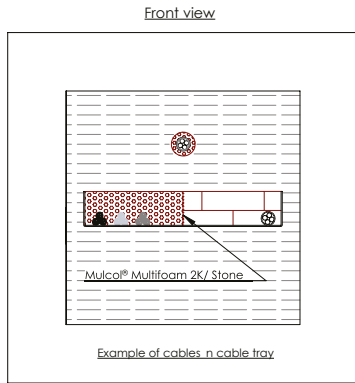


Drawing: PBfw.E-CT-2-MFB1-B1.3.10

Services	Insulation (mm)	Classification
Metal (non-)perforated cable trays	LI 150 - Multitherm Bandage either side	EI 120
Steel wire mesh cable trays (baskets)		
Cables $\leq \varnothing 21$ mm		

**A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits**

**A.1.1.4 Cables and trays - Multifoam 2K**

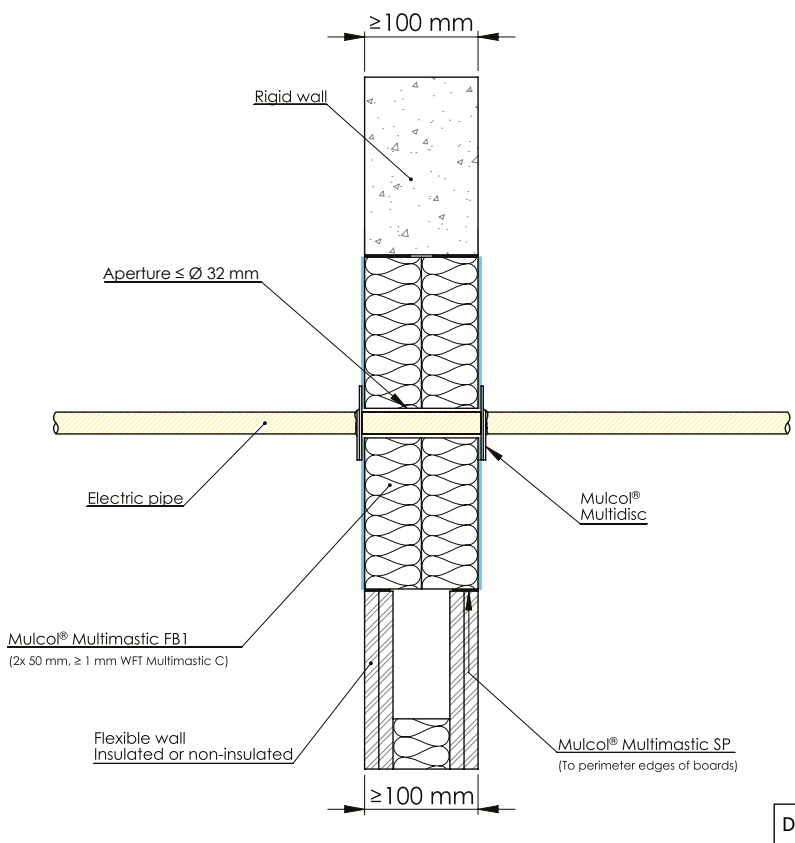
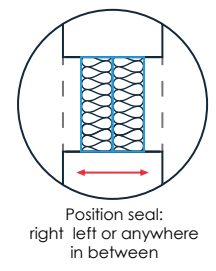
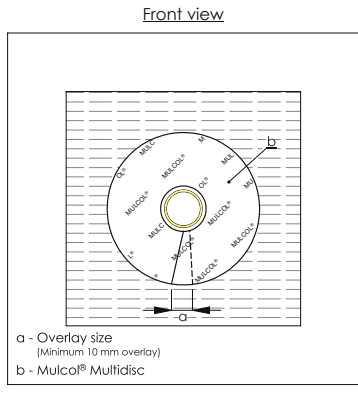


Drawing: PBfw.E-CT-2-MF-MFB1.2.10

Services	Sealing (mm)	Classification
Metal (non-)perforated cable trays	Multifoam 2K / Stone ≥ 0 x 100 (w x d)	<b>EI 120</b>
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm	Multifoam 2K / Stone ≥ 10 x 100 (w x d)	<b>EI 60, E 120</b>

**A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits**

**A.1.1.5 Single plastic conduits - Multidisc**

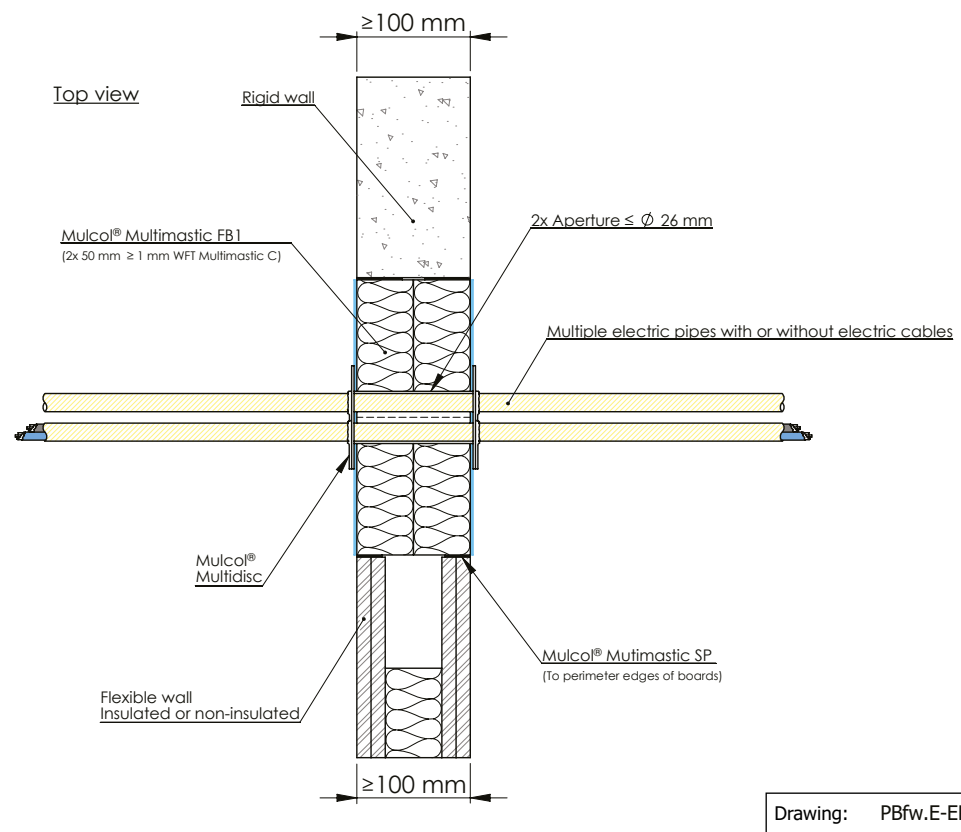
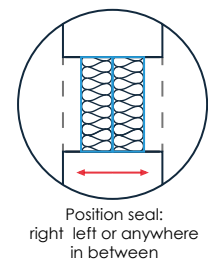
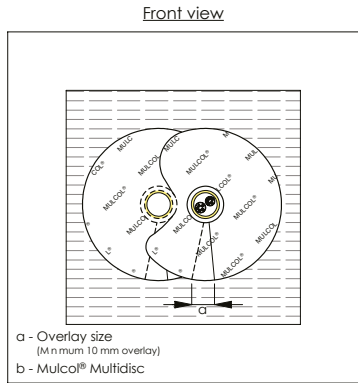


Drawing: PBfw.E-EP-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Plastic conduits ≤ Ø 25 mm, with or without cables	Multidisc	≤ Ø 32	Not required	EI 90 U/U E 120 U/U

**A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits**

**A.1.1.6 Multiple plastic conduits - Multidisc**

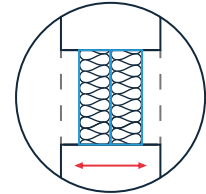
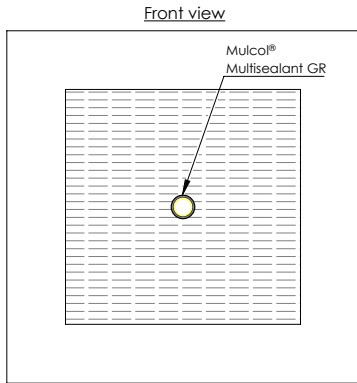


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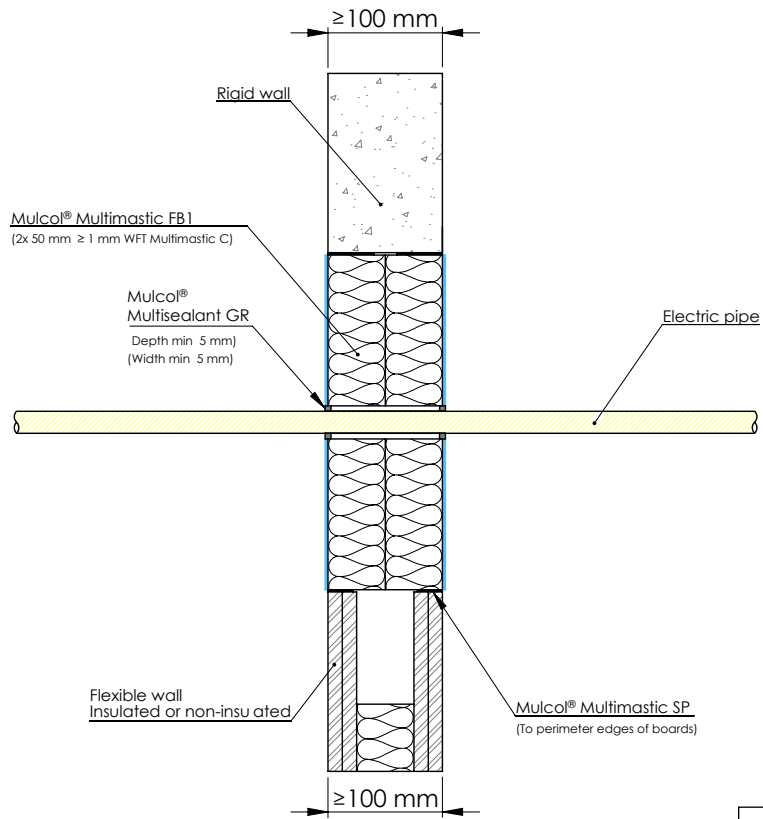
Services	Product	Aperture (mm)	Sealing (mm)	Classification
Multiple plastic conduits ≤ $\varnothing$ 16, up to 5 pcs. with or without cables	Multidisc	≤ $\varnothing$ 32	Not required	EI 90 U/U E 120 U/U

**A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits**

**A.1.1.7 Single plastic conduits - Multisealant GR**



Position seal:  
right left or anywhere  
in between

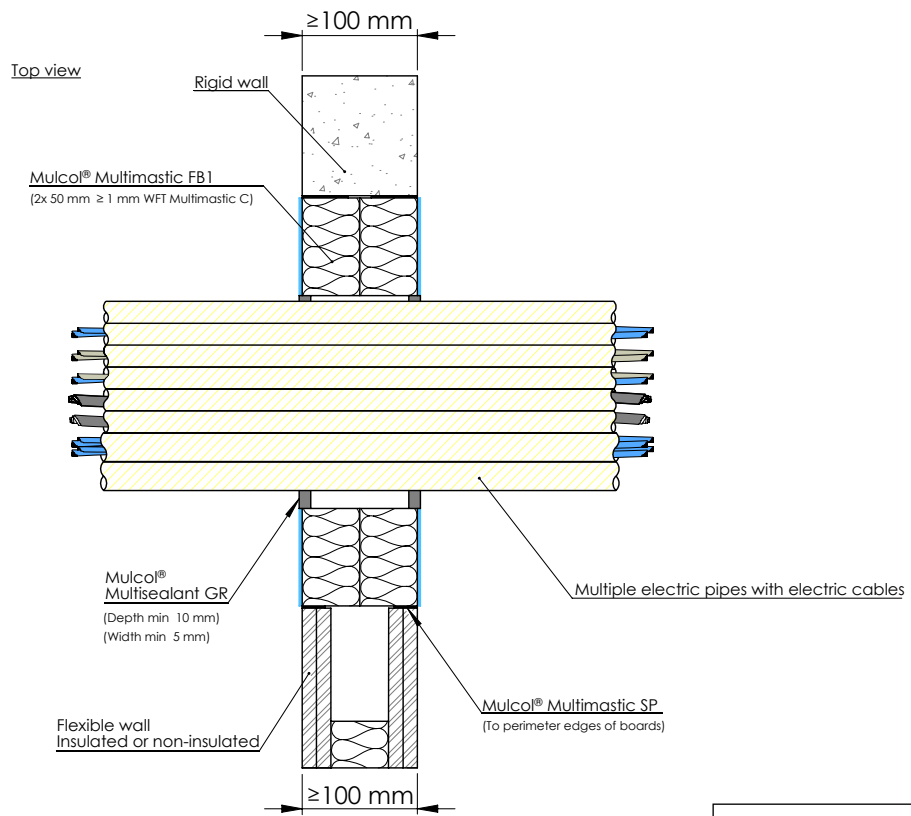
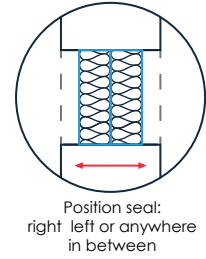
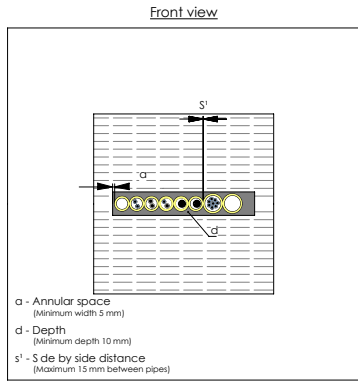


Drawing: PBfw.E-EP-MFB1-G2.0.10

Services	Sealing (mm)	Classification
Plastic conduits ≤ Ø 19 mm, with or without cables	Multisealant GR ≥ 5 x 5 (wxd)	EI 60 U/U, E 90 U/U

**A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits**

**A.1.1.8 Multiple plastic conduits - Multisealant GR**



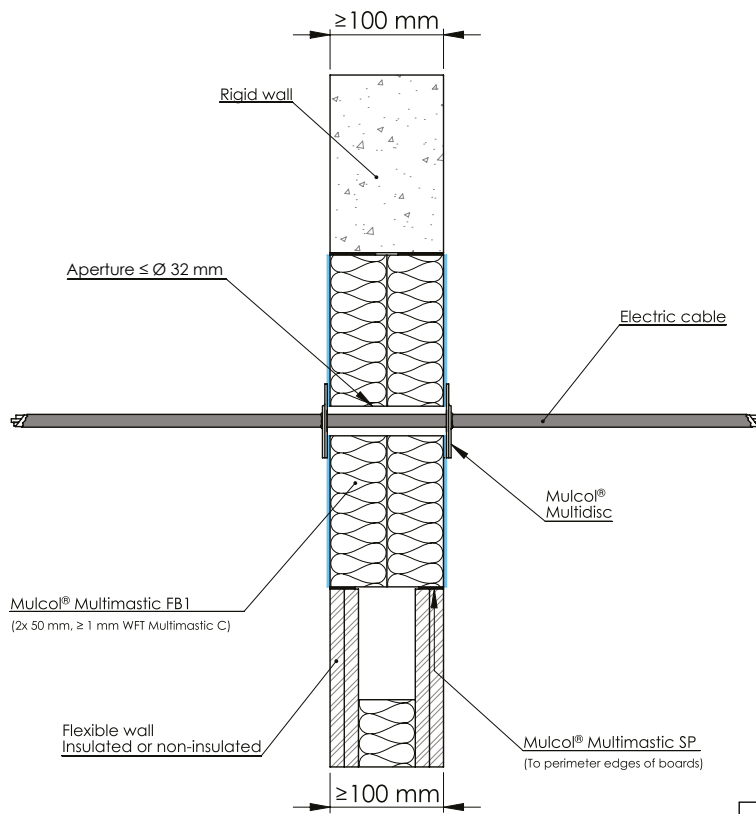
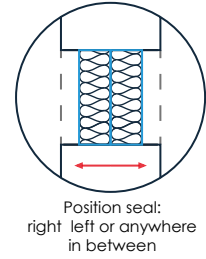
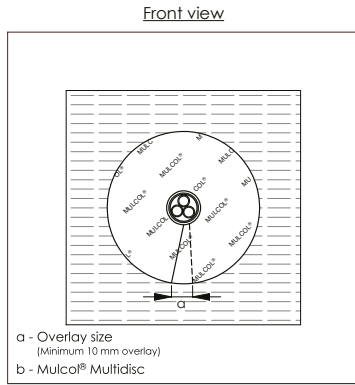
Drawing: PBfw.E-EP8-G2.1.10

Services	Sealing (mm)	Classification
Plastic conduits ≤ Ø 25 mm, with or without cables max 8 pcs.	Multisealant GR ≥ 5 x 10 (wd)	EI 90 U/U



**A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits**

**A.1.1.9 Single cables - Multidisc**

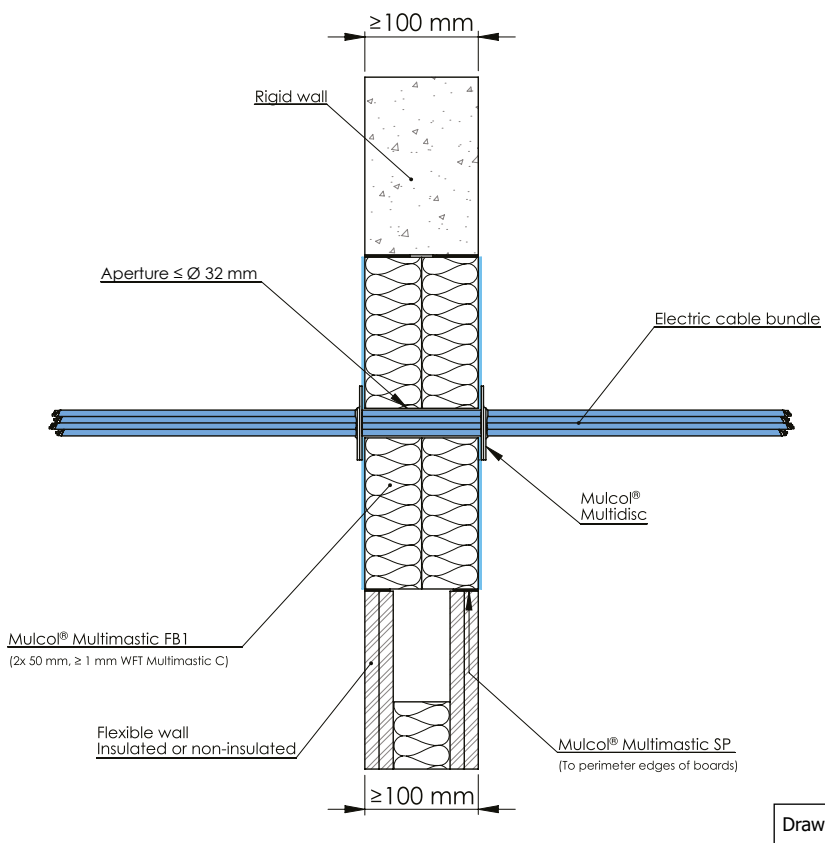
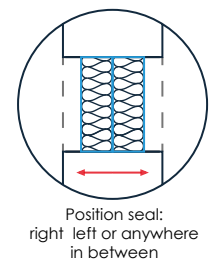
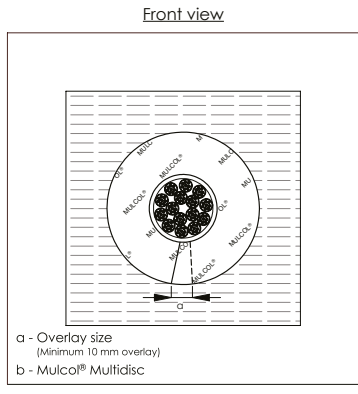


Drawing: PBFw.E-EC-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Single electrical cables $\leq \text{Ø } 21 \text{ mm}$	Multidisc	$\leq \text{Ø } 32$	Not required	<b>EI 90</b>

**A.1.1 Multimastic FB1 - 2x 50 mm - Cables, trays and conduits**

**A.1.1.10 Multiple cables - Multidisc**

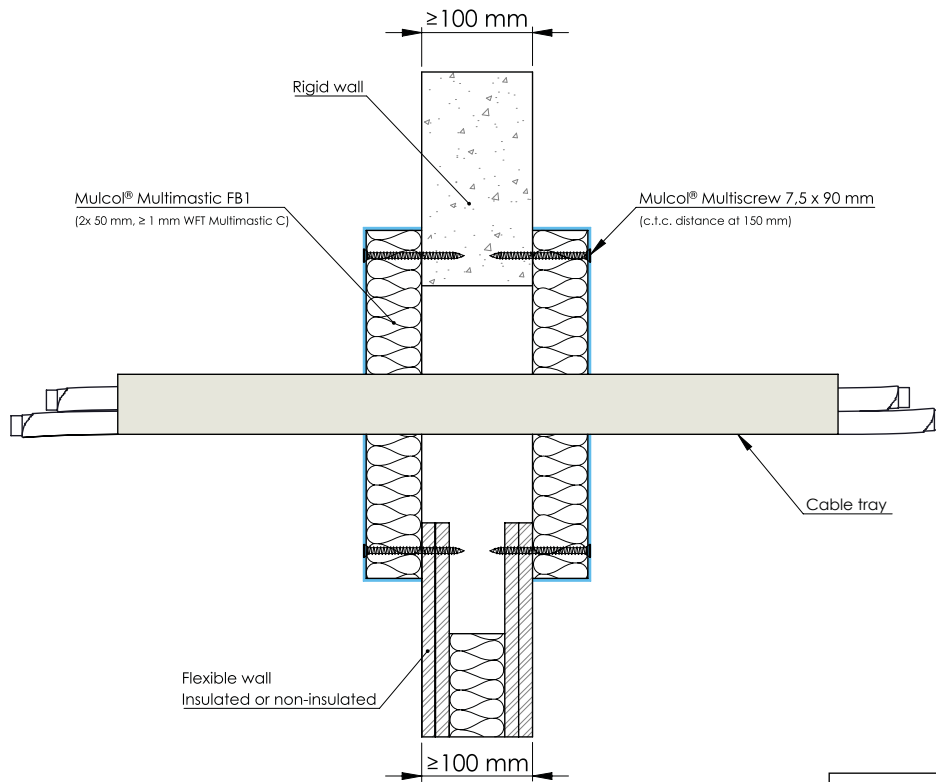
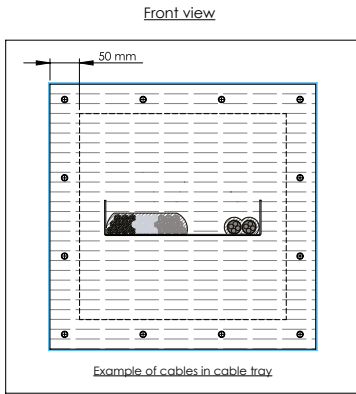


Drawing: PBfw.E-ECB-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Multiple electrical / telecommunication cables max. 15 pcs., max. ≤ Ø 25	Multidisc	≤ Ø 32	Not required	EI 60, E 120

**A.1.2 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Cables, trays and conduits**

**A.1.2.1 Cables, trays and conduits - Multimastic C**

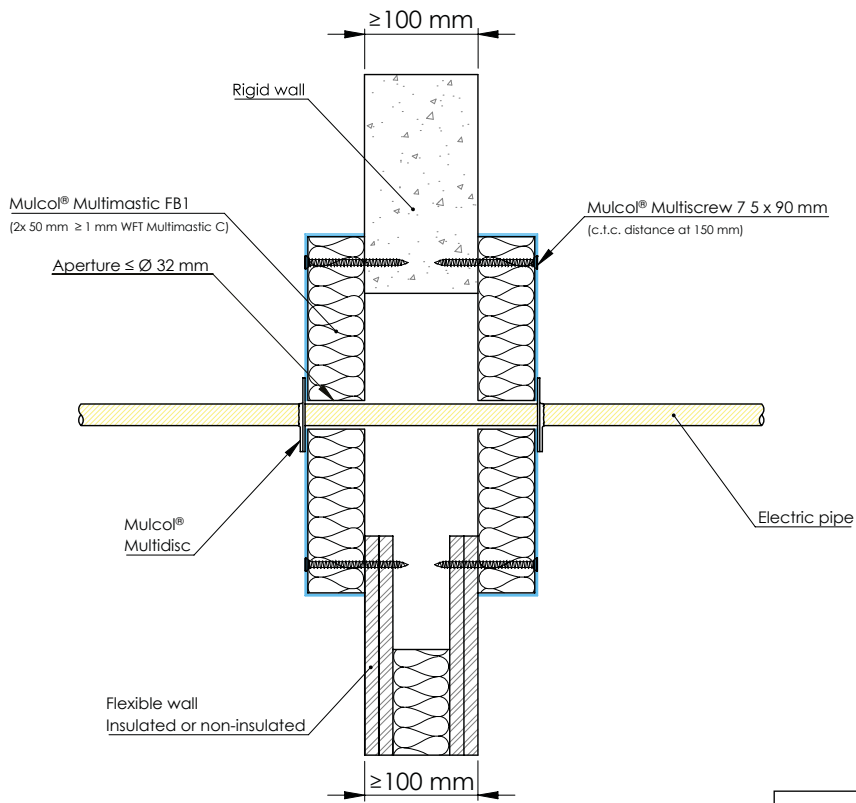
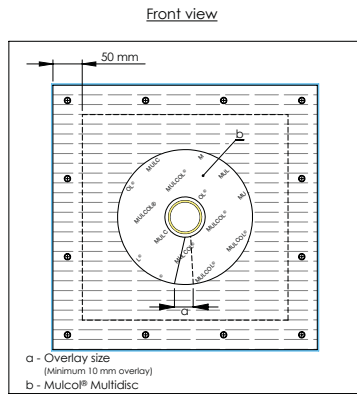


Drawing: PBFw.E-CT-MFB1.2.10

Services	Coating	Classification
Metal cable ladders	Not required	EI 90, E 120
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm		EI 60, E 120

**A.1.2 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Cables, trays and conduits**

**A.1.2.2 Single plastic conduits - Multidisc**

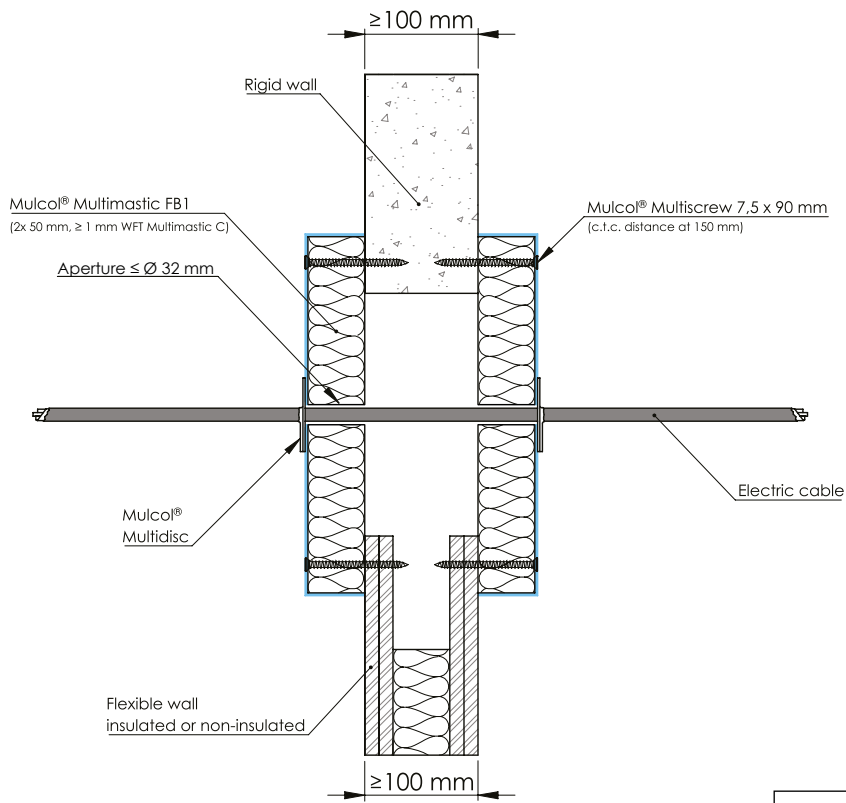
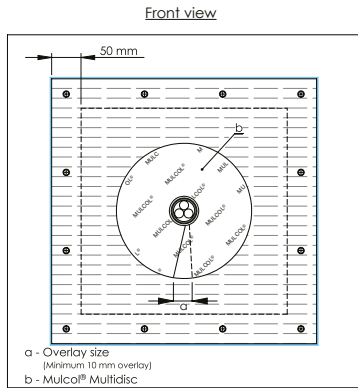


Drawing: PBPfw.E-EP-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Plastic conduits ≤ Ø 19 mm, with or without cables	Multidisc	≤ Ø 32	Not required	EI 120 U/U
Plastic conduits ≤ Ø 25 mm, with or without cables				EI 90 U/U E 120 U/U

**A.1.2 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Cables, trays and conduits**

**A.1.2.3 Single cables - Multidisc**

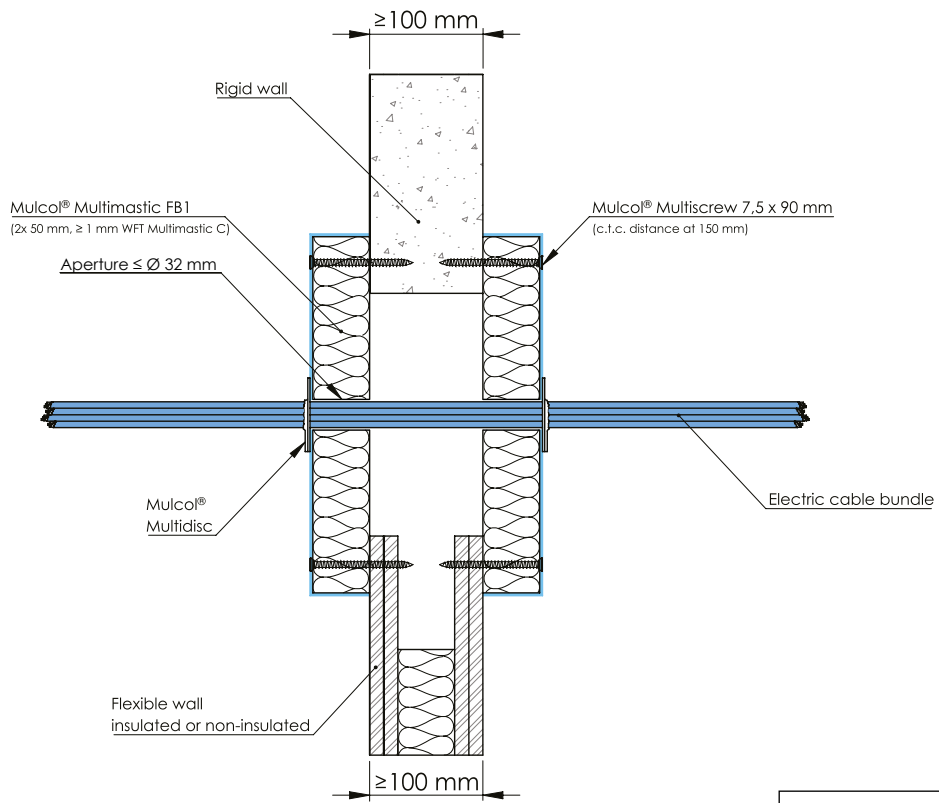
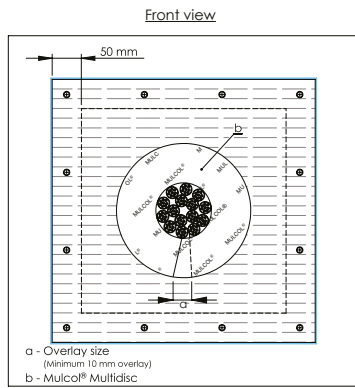


Drawing: PBfw.E-EC-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Single electrical cables ≤ Ø 16 mm	Multidisc	≤ Ø 32	Not required	EI 60, E 90

**A.1.2 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Cables, trays and conduits**

**A.1.2.4 Multiple cables - Multidisc**

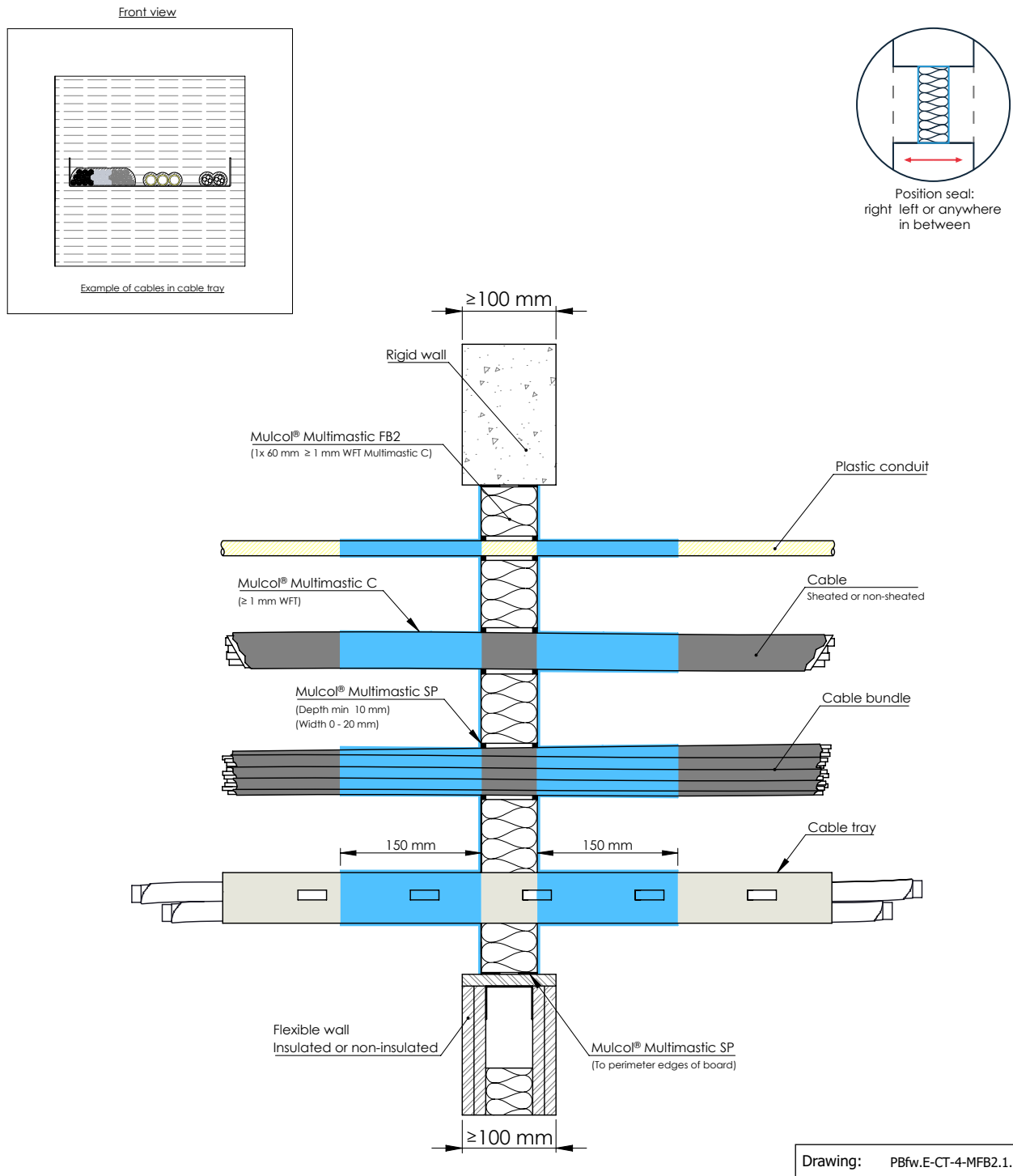


Drawing: PBfw.E-ECB-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Multiple electrical / telecommunication cables max. 15 pcs., max. ≤ Ø 25	Multidisc	≤ Ø 32	Not required	EI 60, E 120

## A.1.3 Multimastic FB2 - 1x 60 mm - Cables, trays and conduits

### A.1.3.1 Cables, trays and conduits - Multimastic C

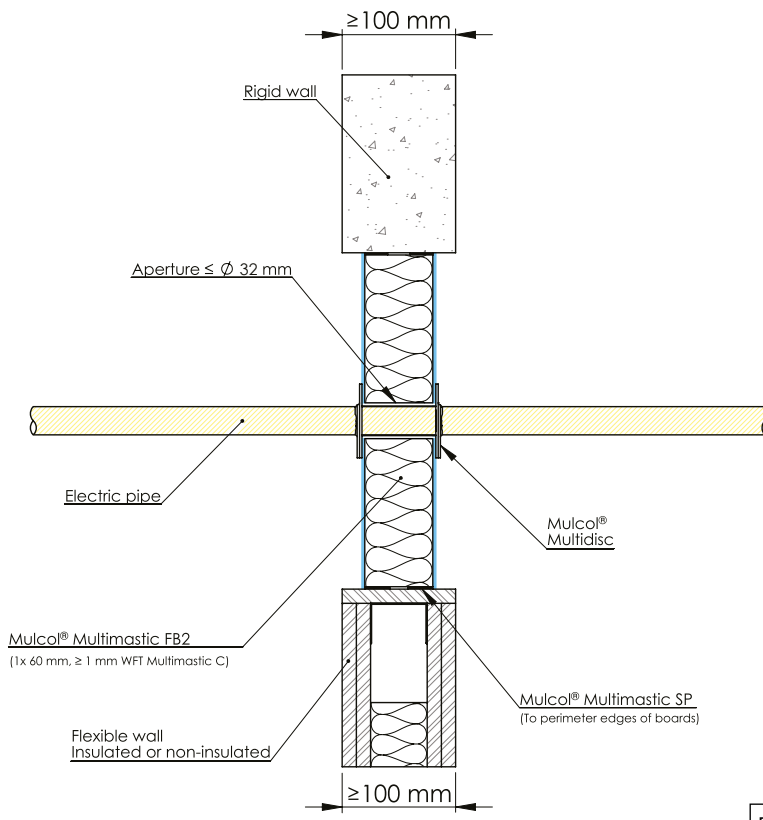
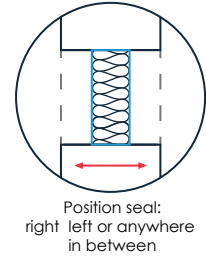
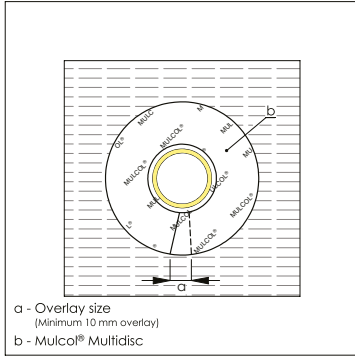


Services	Coating	Classification
Metal cable ladders	Coat back 150 mm ≥ 1 mm WFT	<b>EI 60, E 90</b>
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 80 mm		<b>EI 60</b>
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		<b>EI 60, E 90</b>
Non sheathed cables ≤ Ø 24 mm		<b>EI 45, E 90</b>
Plastic conduits ≤ Ø 16 mm		<b>EI 60 U/C, E 90 U/C</b>
Copper conduits ≤ Ø 16 mm		<b>EI 45 C/U, E 60 C/U</b>
Steel conduits ≤ Ø 16 mm		<b>EI 60 C/U</b>

**A.1.3 Multimastic FB2 - 1x 60 mm - Cables, trays and conduits**

**A.1.3.2 Single plastic conduits - Multidisc**

Front view



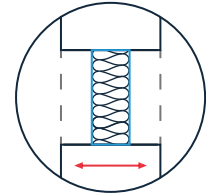
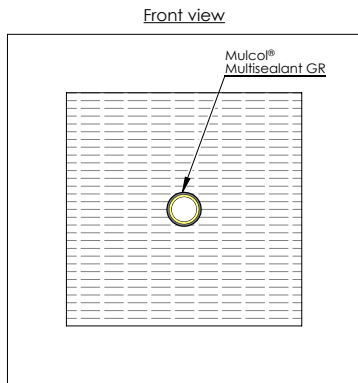
Drawing: PBfw.E-EP-M2-MFB2.1.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Plastic conduits ≤ Ø 25 mm, with or without cables	Multidisc	≤ Ø 32	Not required	EI 60 U/U, E 90 U/U

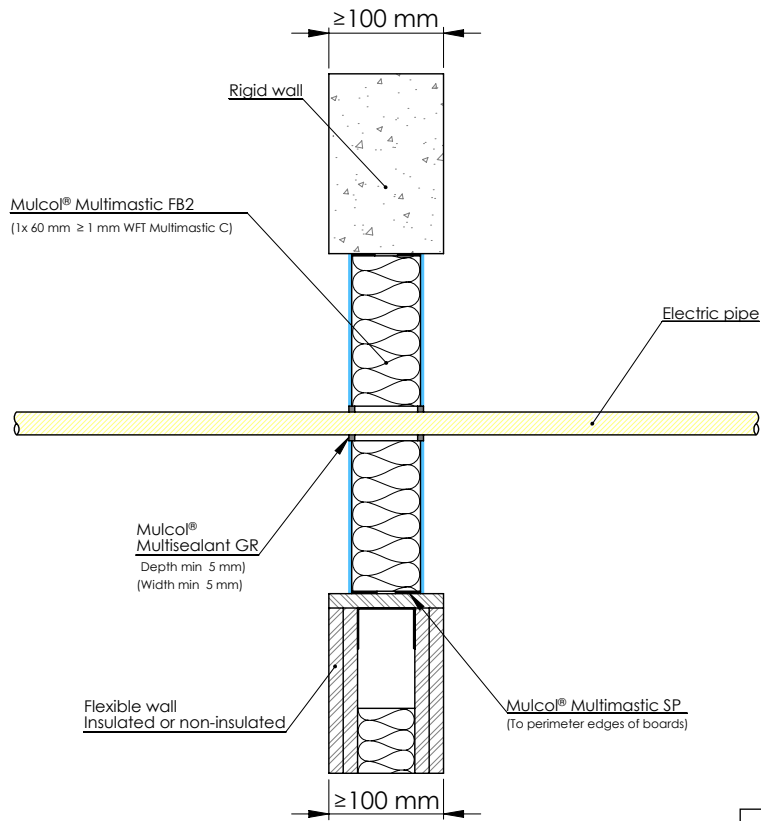


**A.1.3 Multimastic FB2 - 1x 60 mm - Cables, trays and conduits**

**A.1.3.3 Single plastic conduits - Multisealant GR**



Position seal:  
right left or anywhere  
in between

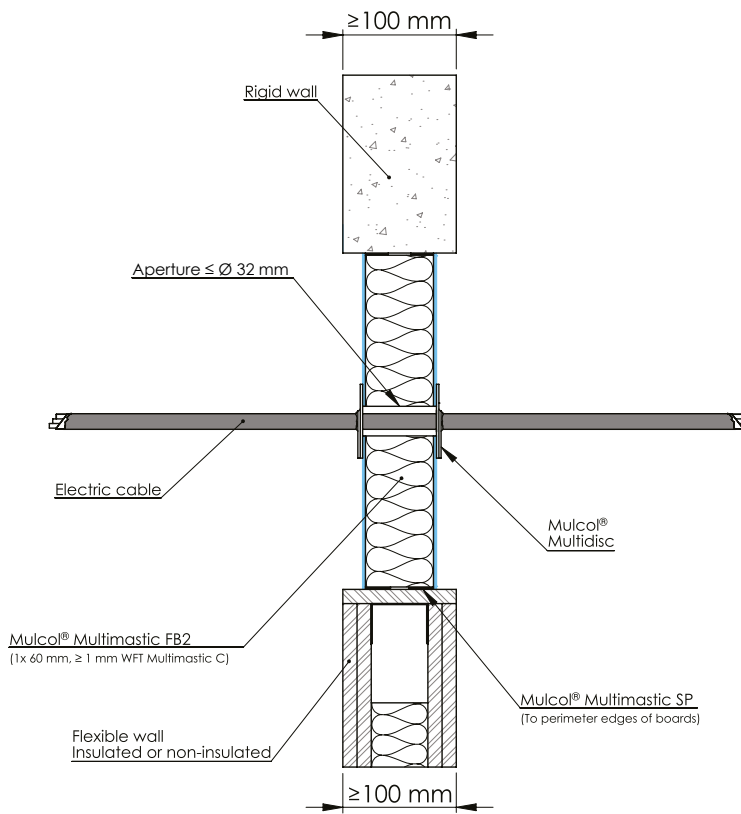
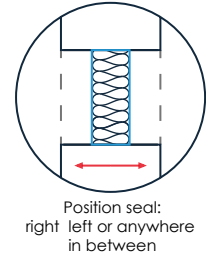
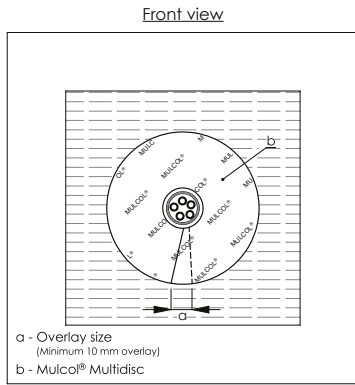


Drawing: PBfw.E-EP-MFB2-G2.0.10

Services	Sealing (mm)	Classification
Plastic conduits ≤ Ø 19 mm, with or without cables	Multisealant GR ≥ 5 x 5 (wxd)	EI 60 U/U, E 90 U/U

## A.1.3 Multimastic FB2 - 1x 60 mm - Cables, trays and conduits

### A.1.3.4 Single cables - Multidisc

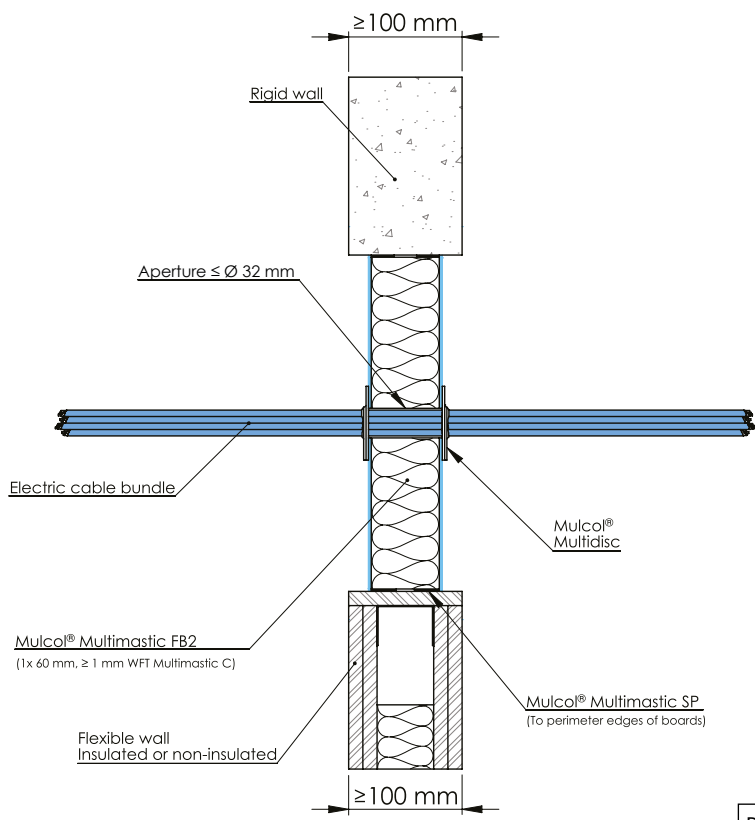
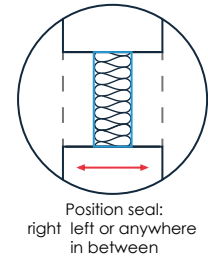
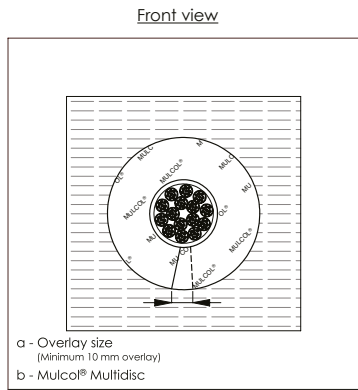


Drawing: PBfw.E-EC-M2-MFB2.1.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Single electrical cables $\leq \text{Ø } 21 \text{ mm}$	Multidisc	$\leq \text{Ø } 32$	Not required	EI 60, E 90

**A.1.3 Multimastic FB2 - 1x 60 mm - Cables, trays and conduits**

**A.1.3.5 Multiple cables - Multidisc**

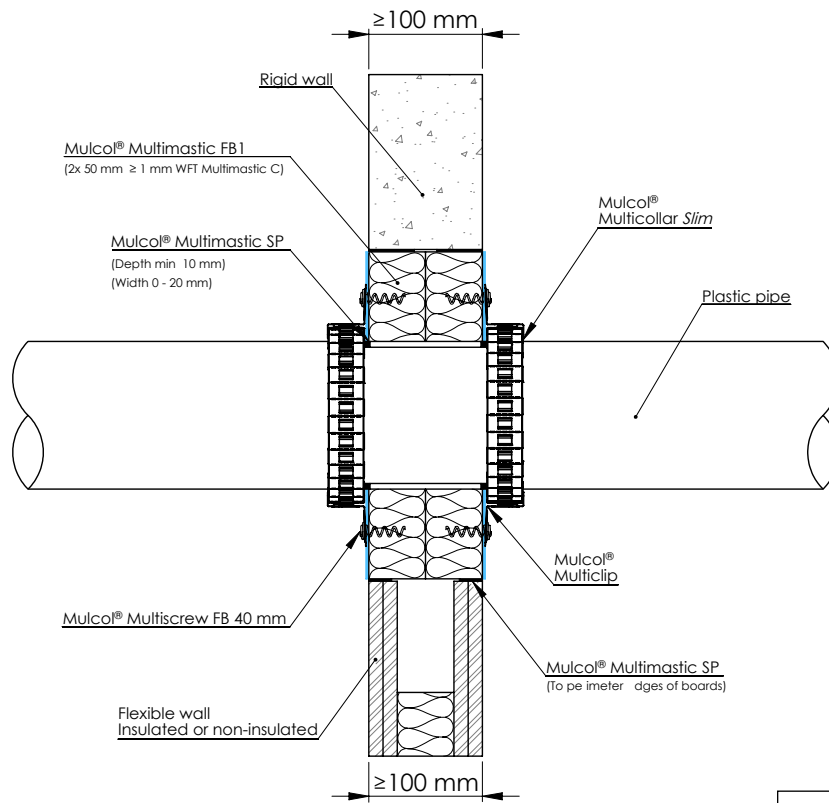
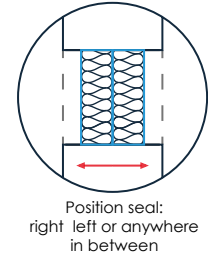
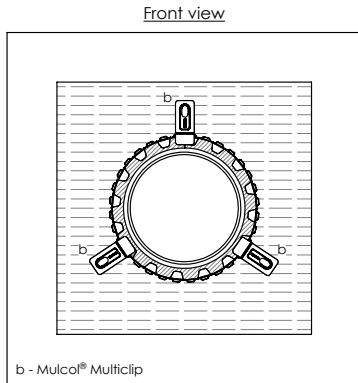


Drawing: PBfw.E-ECB-M2-MFB2.1.10

Services	System	Aperture (mm)	Sealing (mm)	Classification
Multiple electrical / telecommunication cables $\leq \text{Ø } 25 \text{ mm}$	Multidisc	$\leq \text{Ø } 32$	Not required	EI 45, E 90

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.1 Plastic pipes - Multicollar *Slim***

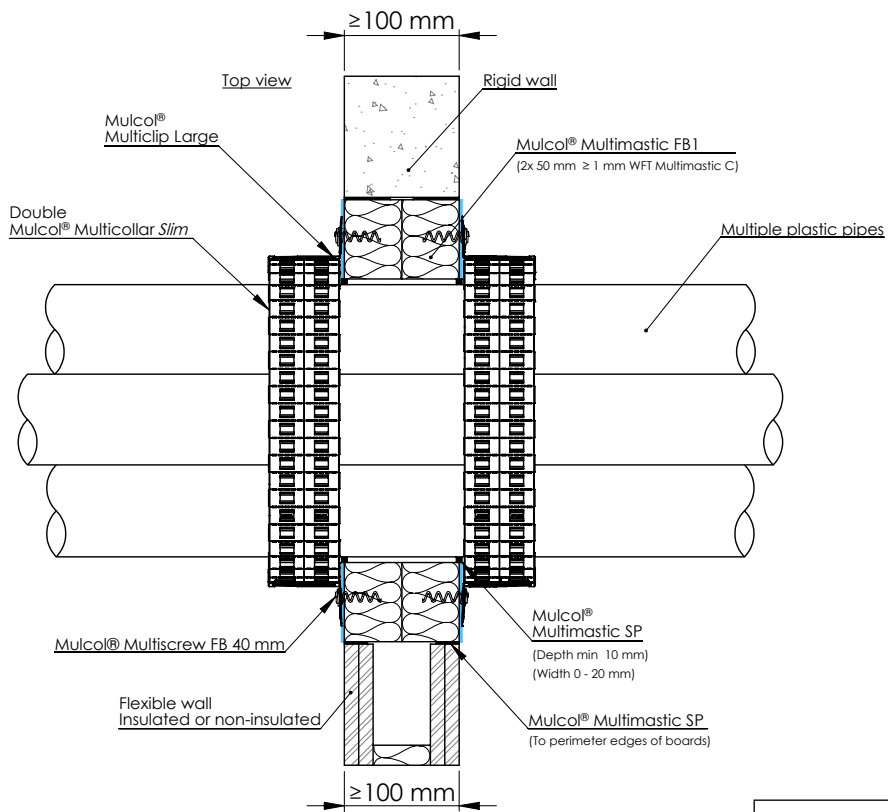
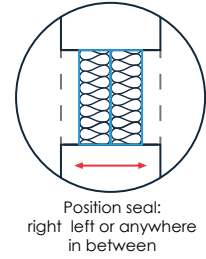
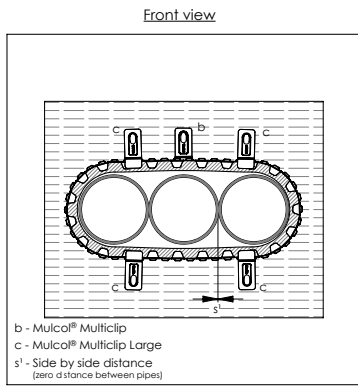


Drawing: PBfw.E-MC30-PP-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7 - 6.6	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 U/U
PP		2.7			
PVC(-U/-C)		2.7			

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.1 Plastic pipes - Multicollar *Slim***



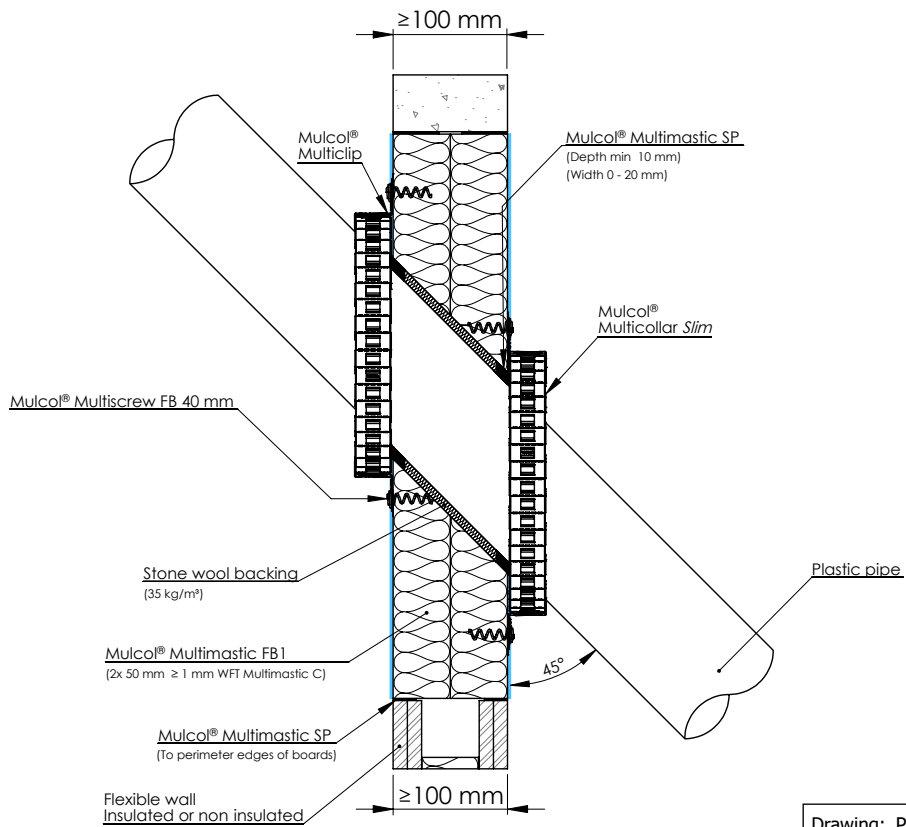
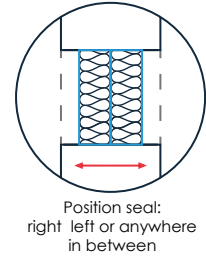
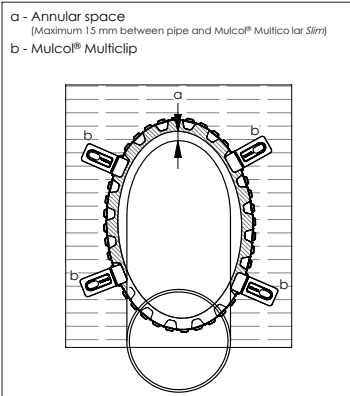
Drawing: PBfw.E-MLP3-20.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	3x ≤ Ø 110	2.7	Multicollar <i>Slim</i> Double	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/C, E 120 U/C

## A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.1.4.2 Plastic pipes perpendicular to 45° - Multicollar Slim

Front view

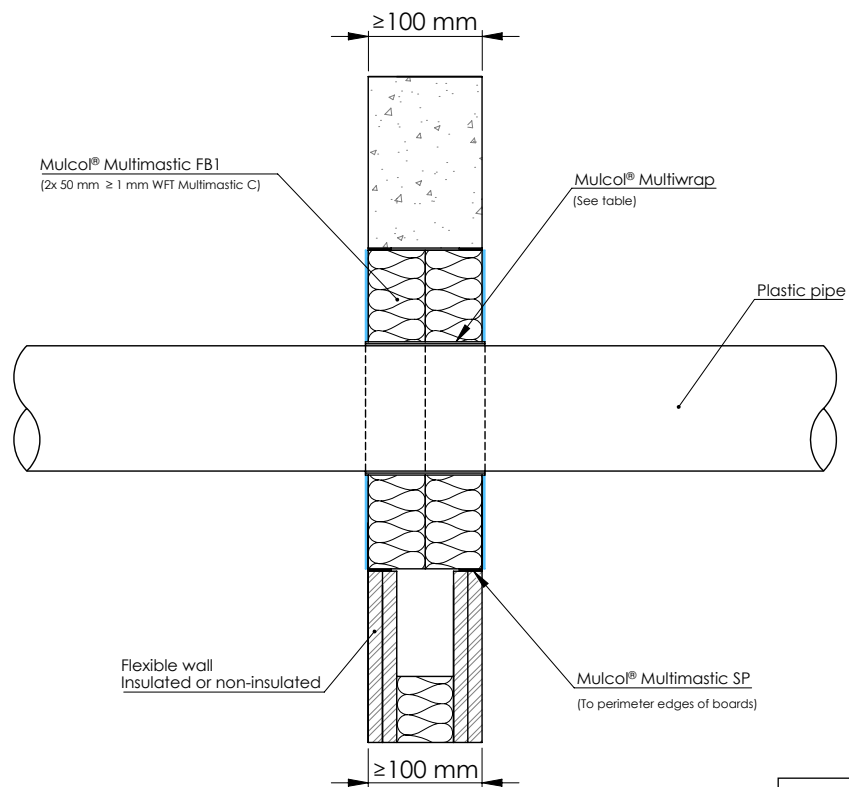
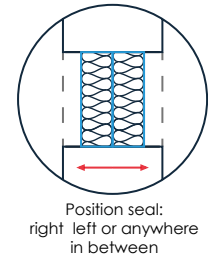
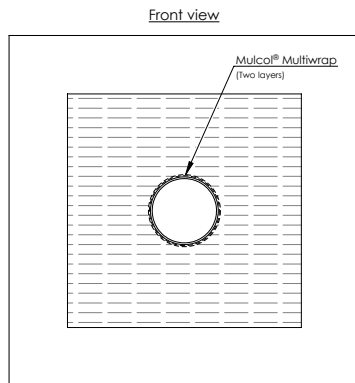


Drawing: PBFw.E-PP-MFB1-10.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 60 U/U, E 90 U/U
PP					
PVC(-U/-C)					

## A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.1.4.3 Plastic pipes - Multiwrap



Drawing: PBfw.E-PP-MW2-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 40	2.3 - 3.7	Multiwrap (2 layers)	EI 120 U/U
	≤ Ø 110	2.7 - 10		EI 120 U/C
PP	≤ Ø 40	2.3 - 3.7		EI 120 U/U
		5.5		EI 120 U/C
PVC(-U/-C)	≤ Ø 110	3.4		EI 120 U/C
	≤ Ø 40	1.8 - 3.7		EI 120 U/U
		1.6		E 120 U/C, EI 90 U/C
		1.6 - 8.1		EI 90 U/C

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes****A.1.4.3 Plastic pipes - Multiwrap**

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE / ABS / SAN+PVC	≤ Ø 125	3.9	Multiwrap (3 layers)	EI 120 U/C
		3.9 - 4.8		EI 90 U/C, E 120 U/C
PP		3.1		EI 120 U/C
PVC(-U/-C)		3.1 - 11.4		EI 90 U/C, E 120 U/C
		3.7 - 4.8		

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP	≤ Ø 110	10.0	Multiwrap (4 layers)	EI 120 U/U
		10.0 - 14.6		EI 90 U/U
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 160	14.6		EI 90 U/C
		5.0		EI 90 U/C, E 120 U/C
PVC(-U/-C)		5.0 - 14.6	EI 90 U/C	

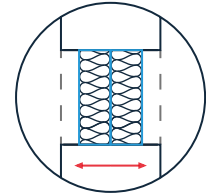
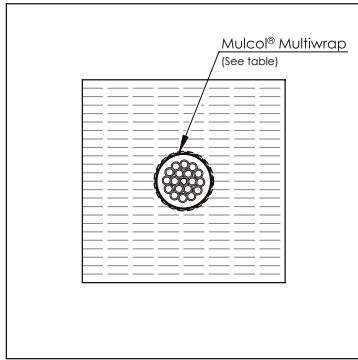
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE / ABS / SAN+PVC	≤ Ø 125	11.4	Multiwrap (5 layers)	EI 120 U/U
PVC(-U/-C)		9.2		



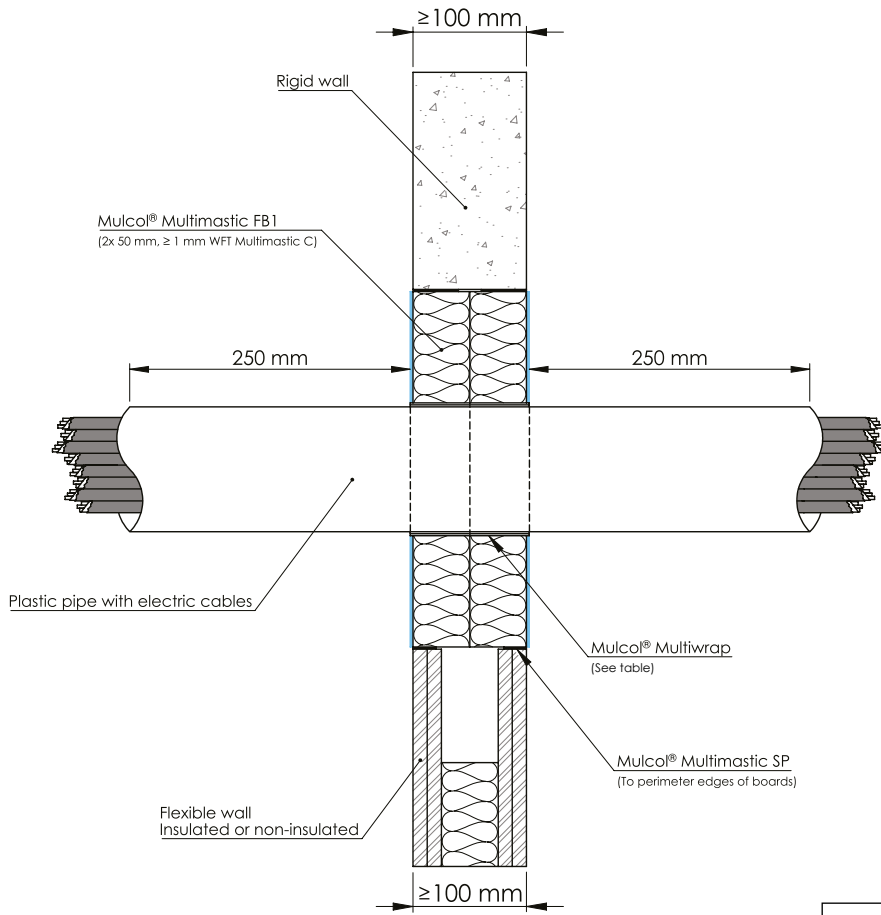
**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.4 Plastic pipes with cables - Multiwrap**

Front view



Position seal:  
right left or anywhere  
in between

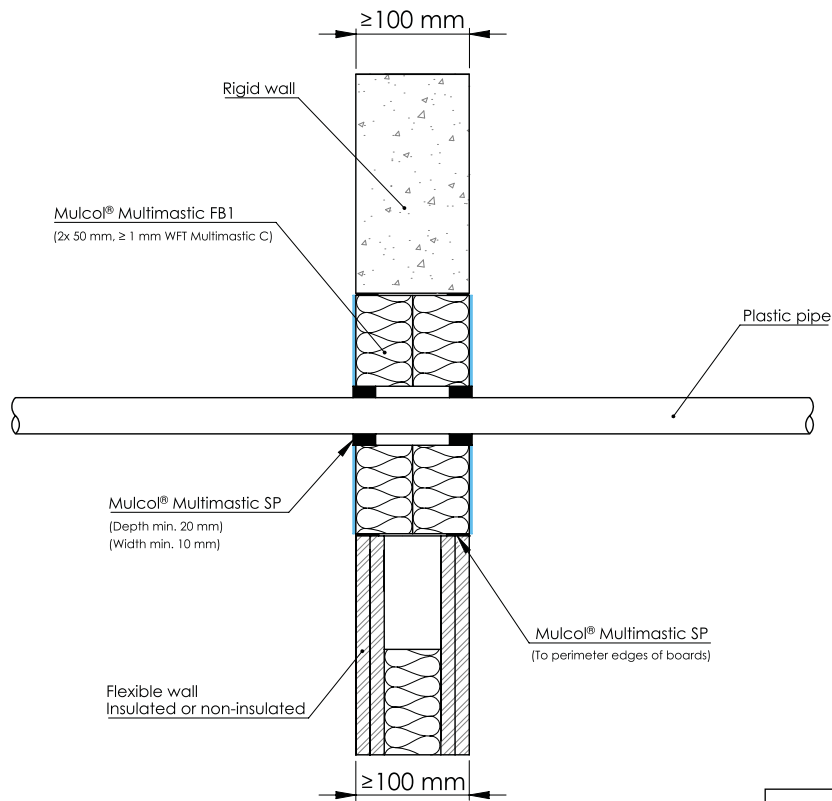
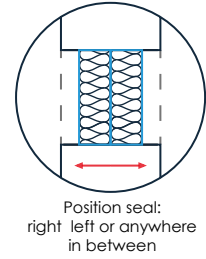
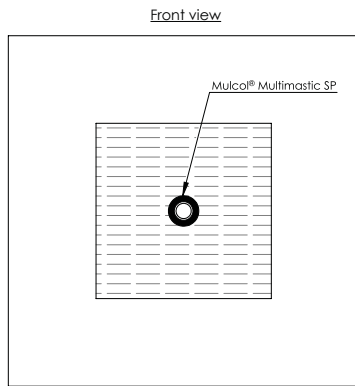


Drawing: PBfw.E-PPEC-MW2-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Allowed Cables	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7 - 10	Multiwrap (2 layers)	Sheathed cables ≤ Ø 80 mm (single or bundled)  Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm	EI 90 U/C, E 120 U/C
PP					
PVC(-U/-C)					

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.5 Plastic pipes - Multimastic SP**

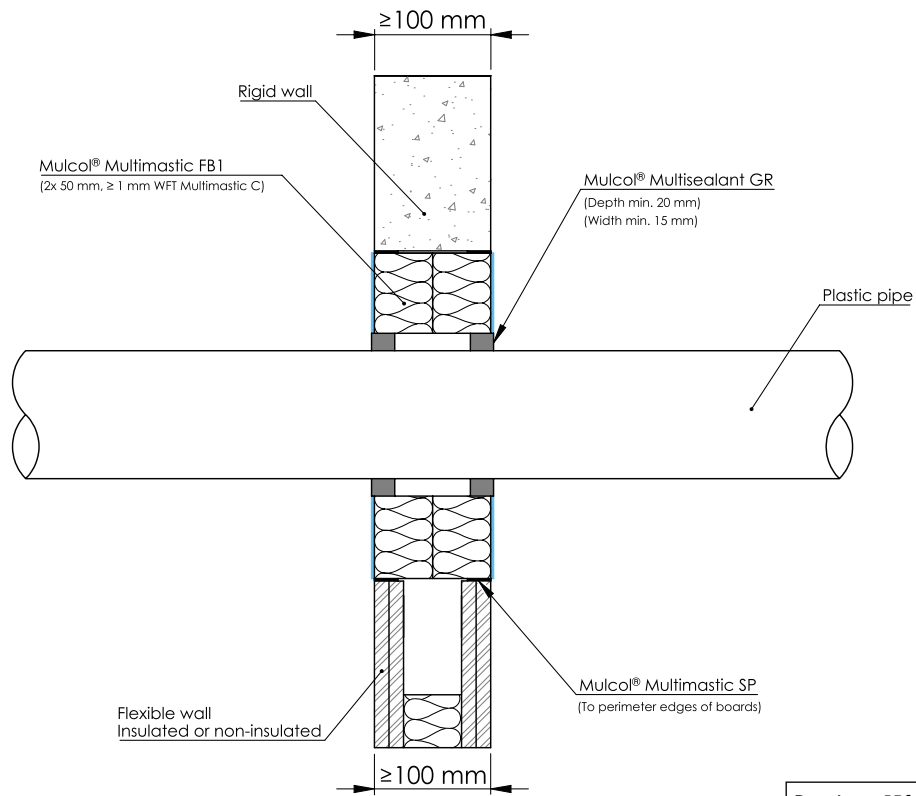
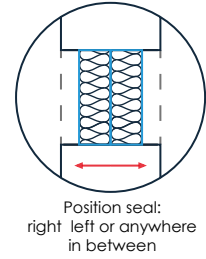
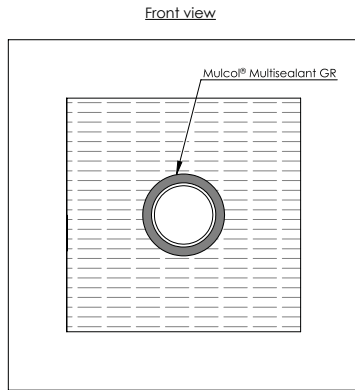


Drawing: PBfw.E-PP-MFB1.2.10

Services	Pipe dimensions (mm)		Sealing (mm)	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 32	2.0 - 3.0	Multimastic SP ≥ 10 x 20 (wxd)	EI 60 U/C
PP		2.0 - 5.4		EI 90 U/C
PVC(-U/-C)		2.0 - 3.0		EI 60 U/C

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.6 Plastic pipes - Multisealant GR**

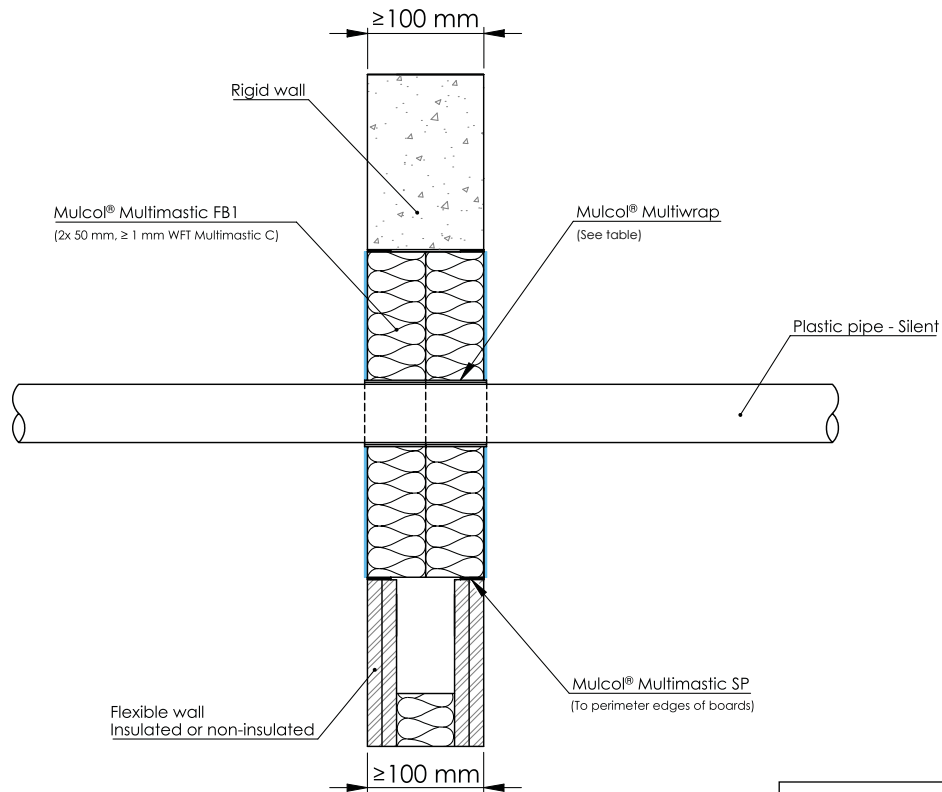
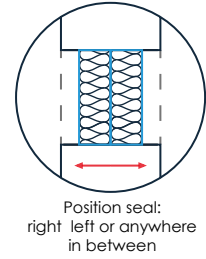
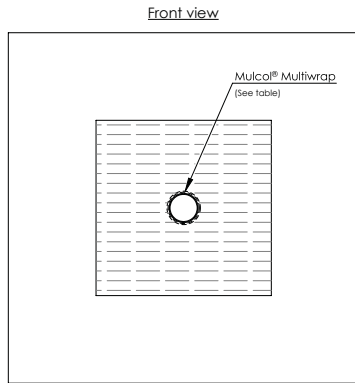


Drawing: PBfw.E-PP-MFB1-G2.4.10

Services	Pipe dimensions (mm)		Sealing (mm)	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7 - 10	Multisealant GR ≥ 15 x 20 (wxd)	EI 60 U/C
	≤ Ø 110	10		EI 120 U/C
PP	≤ Ø 110	2.7 - 10		EI 90 U/C, E 120 U/C
	≤ Ø 110	10		EI 120 U/C
PVC(-U/-C)	≤ Ø 32	1.8	Multisealant GR ≥ 10 x 20 (wxd)	EI 120 U/U
	≤ Ø 50	3		EI 60 U/U
	≤ Ø 110	2.7 - 10	Multisealant GR ≥ 15 x 20 (wxd)	EI 60 U/C
	≤ Ø 110	10		EI 120 U/C

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.7 Plastic pipes (Silent) - Multiwrap**



Drawing: PBfw.E-PPS-MW2-MFB1 2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Raupiano Plus	≤ Ø 50	1.8 - 2.7	Multiwrap (2 layers)	EI 120 U/C
	≤ Ø 110	2.7		
Geberit Silent dB20	≤ Ø 56	3.2 - 6.0		
	≤ Ø 110	6.0		
Wavin SiTech+	≤ Ø 40	2.0		EI 120 U/U
	≤ Ø 40	2.0 - 3.4		EI 120 U/C
	≤ Ø 50	1.8	EI 120 U/U	
Poloplast PoloKal NG	≤ Ø 110	3.4	EI 120 U/C	
	≤ Ø 50	2.0		

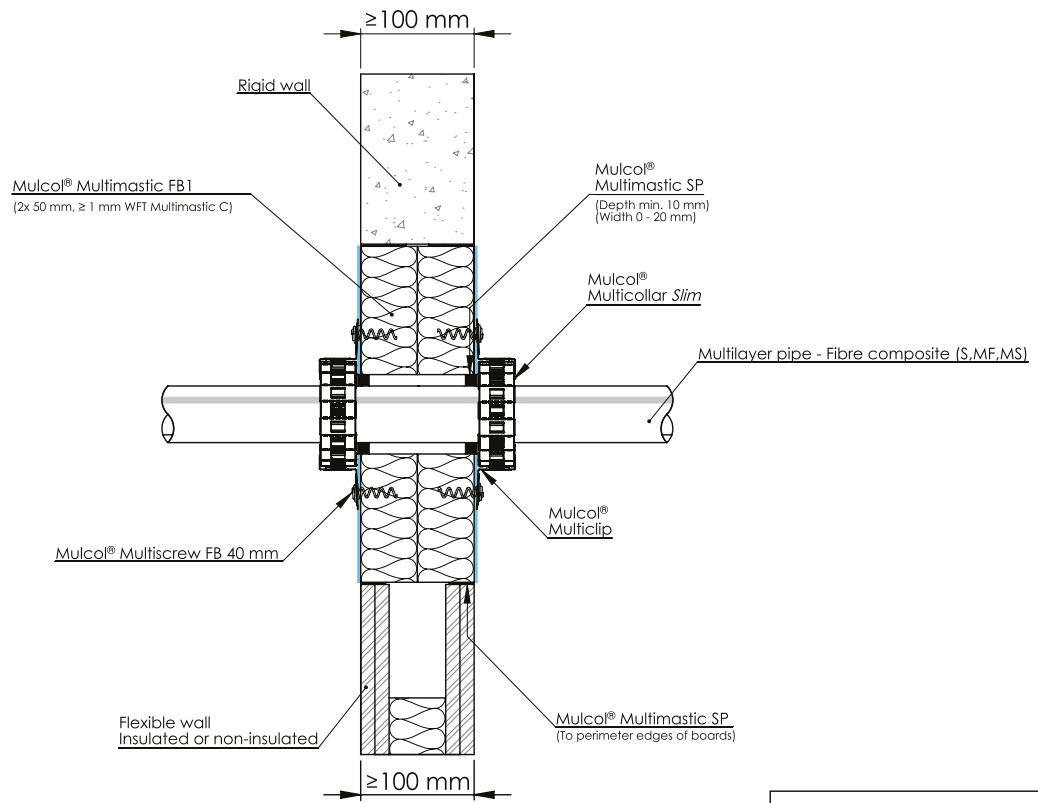
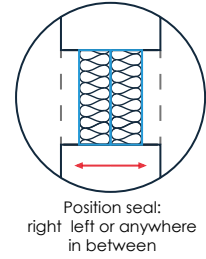
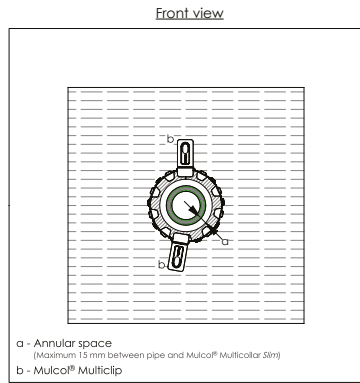
**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes****A.1.4.7 Plastic pipes (Silent) - Multiwrap**

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Raupiano Plus	≤ Ø 110	2.7	Multiwrap (4 layers)	EI 120 U/U
	≤ Ø 160	4.0		EI 90 U/C, E 120 U/C
Poloplast PoloKal NG	≤ Ø 110	3.4		EI 120 U/C

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Raupiano Plus	≤ Ø 160	3.9	Multiwrap (6 layers)	EI 120 U/U
Poloplast PoloKal NG	≤ Ø 160	4.9		EI 90 U/C, E 120 U/C

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.8 PP-R multilayer pipes - Multicollar *Slim***

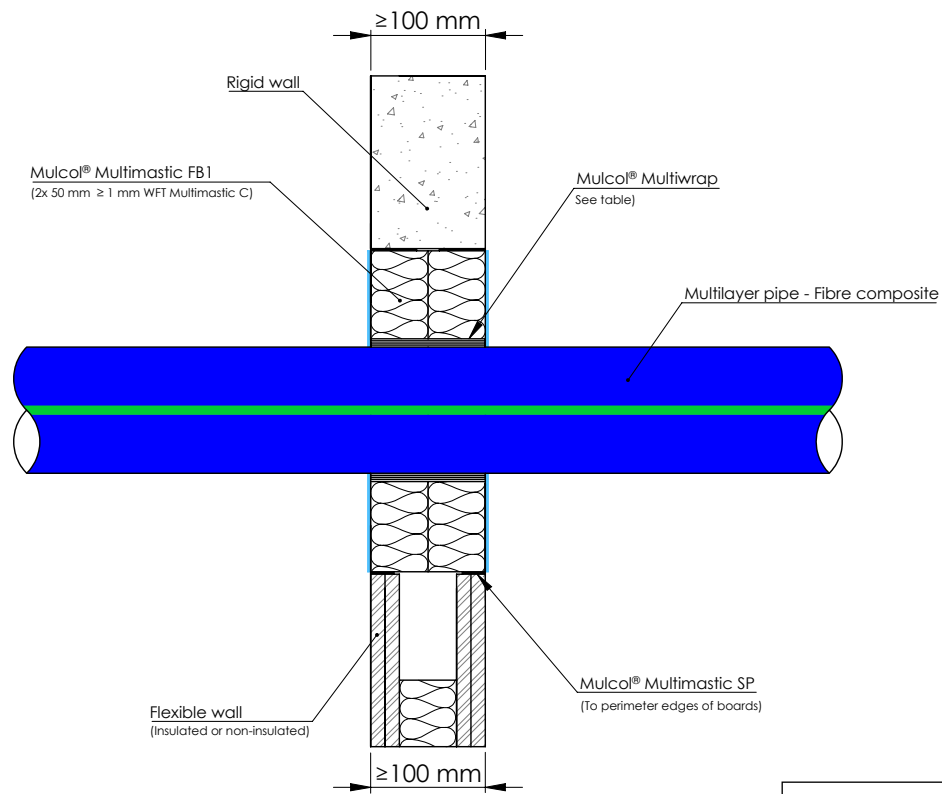
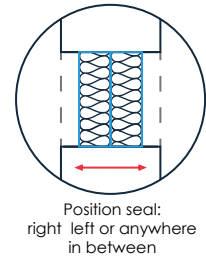
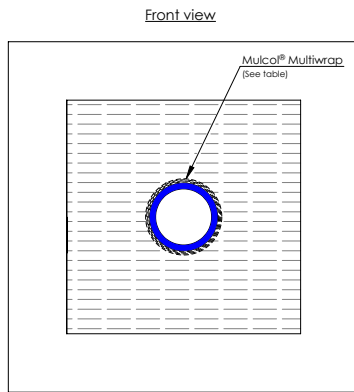


Drawing: PBfw.E-MLF-MC30-10.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Aquatherm Green	≤ Ø 50	6.9	Multicollar <i>Slim</i>	Multimastic SP ≥ 0-20 x 10 (wxh)	EI 120 U/C

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.9 PP-R multilayer pipes - Multiwrap**

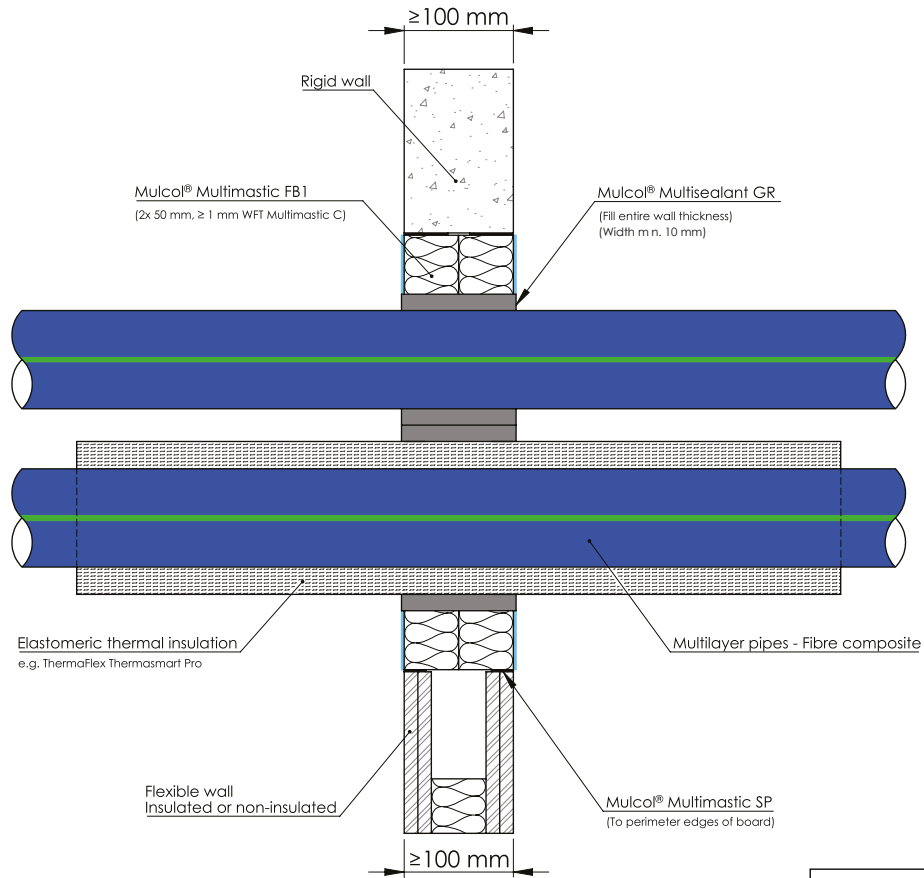
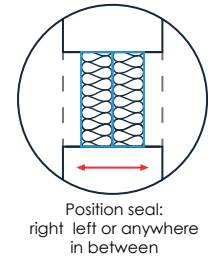
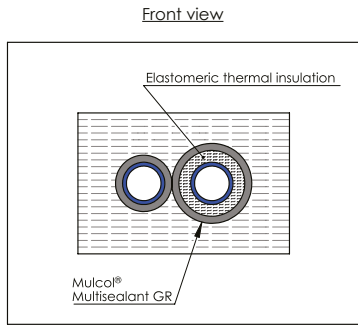


Drawing: PBFw.E-MLF-MW4-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Blue	≤ Ø 40	3.7	Multiwrap (2 layers)	EI 120 U/C
	≤ Ø 50	4.6		EI 120 U/U
	≤ Ø 110	10	Multiwrap (4 layers)	EI 120 U/C

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.10 PP-R multilayer pipes - With or without Elastomer CS - Multisealant GR**



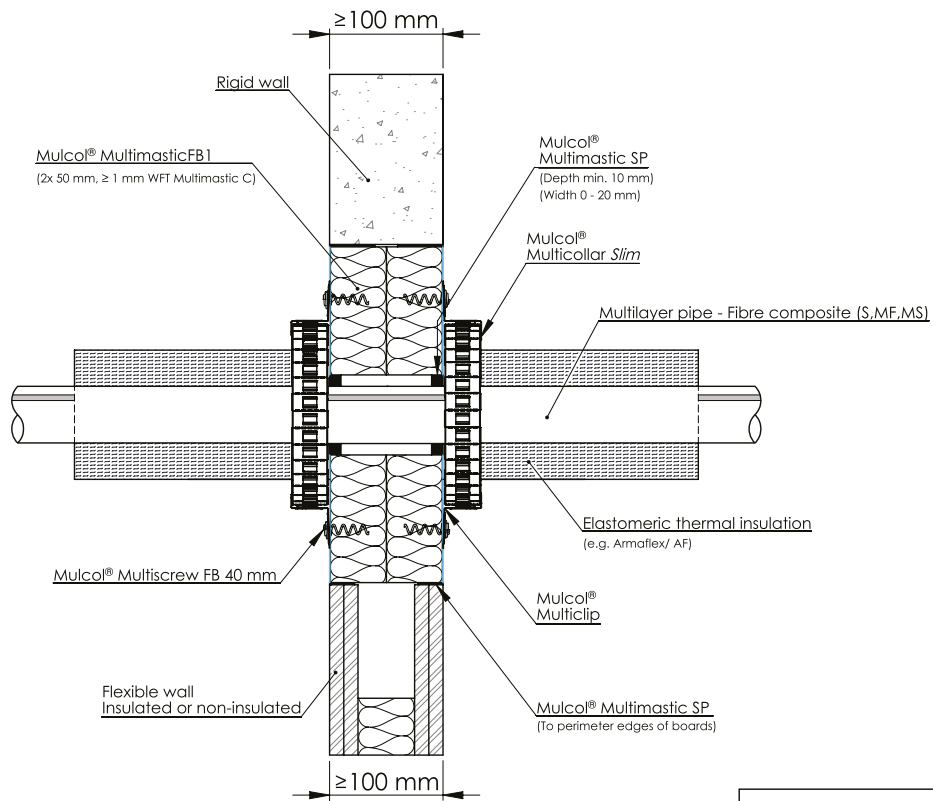
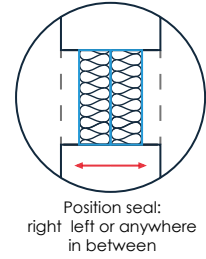
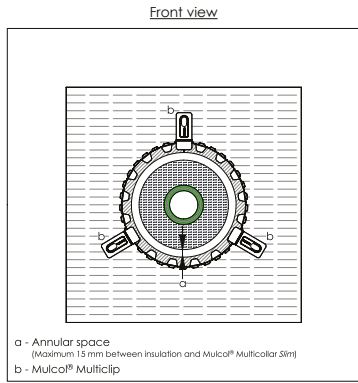
Drawing: PBfw.E-MLF2-MFB-G2.17.40

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
PP-R Multilayer pipes	≤ Ø 90	8.2	ThermaFlex (min. class B <sub>1</sub> -s1, d0 B <sub>1</sub> -s1, d0)	≥ 25	CS	Multisealant GR ≥ 15 x 100 mm (wxd)	EI 60 U/C
	≤ Ø 90	8.2	-	-	-		EI 60 U/C, E 90 U/C



**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.11 PP-R multilayer pipes - Elastomer LI 300 / CI - Multicollar *Slim***



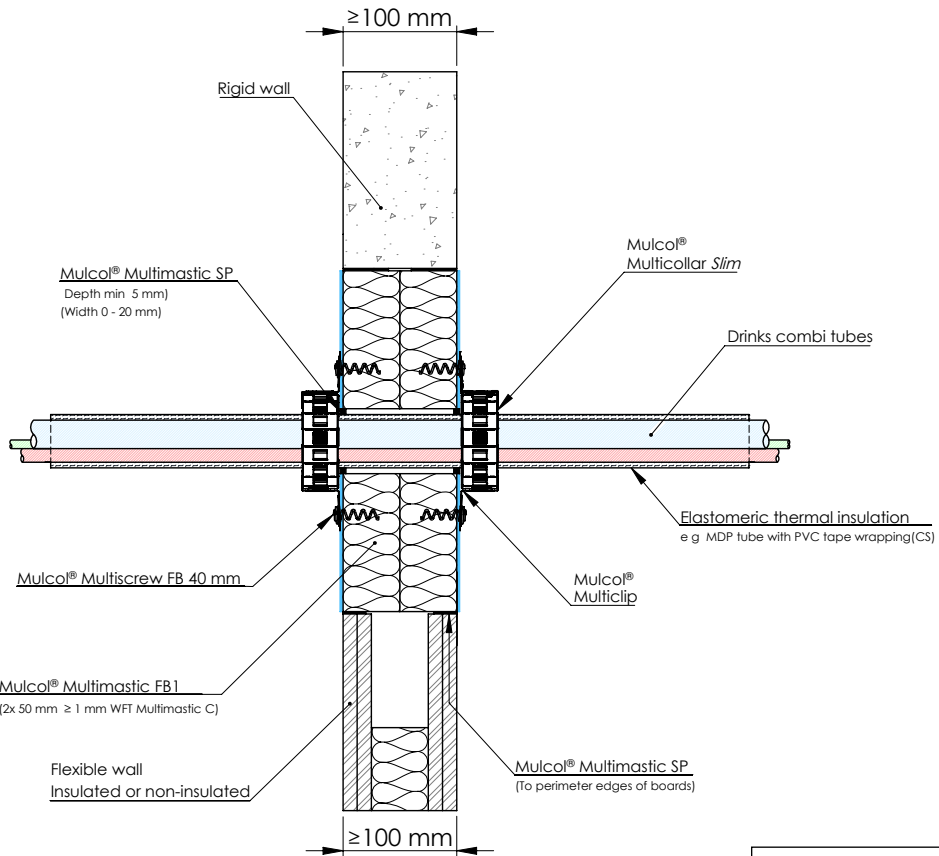
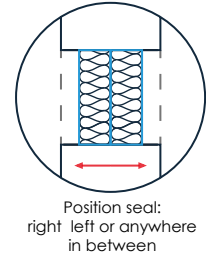
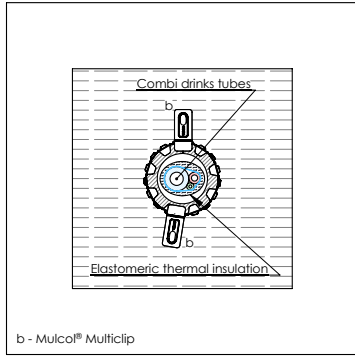
Drawing: PBFw.E-MLF-MC30-10.0.22

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Aquatherm Green	≤ Ø 50	6.9	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LI 300 / CI	Multicollar <i>Slim</i>	EI 120 U/C

**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.12 Beverage dispense tubing - Multicollar *Slim***

Front view

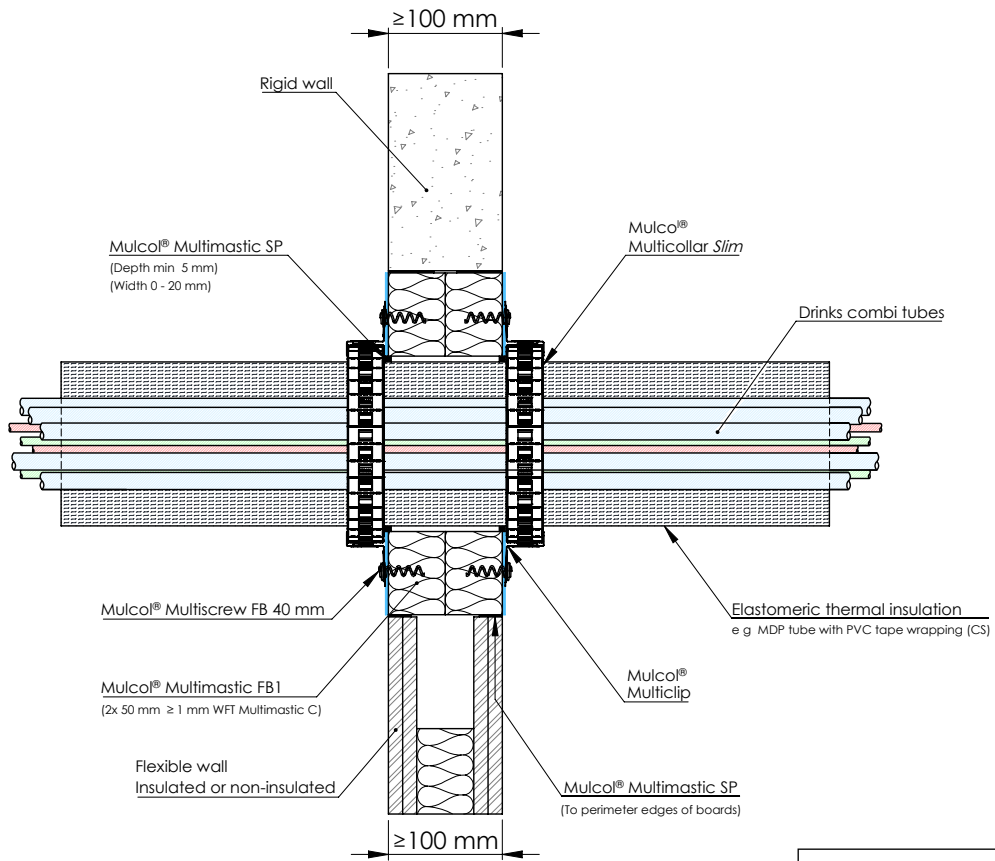
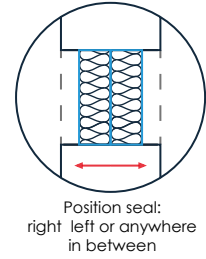
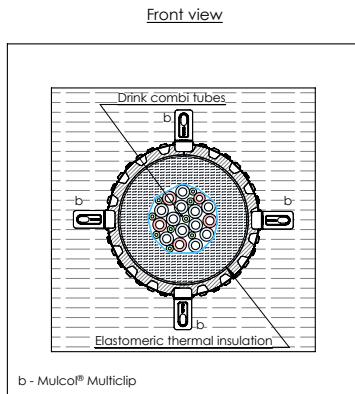


Drawing: PBfw.E-DCT3-MC30-10.0.22

Services	Dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Hoses no.	Type	Thickness (mm)	Configuration			
Drinks tubing system	≤ Ø 47	≤ 3	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	Multimastic SP ≥ 0-20 x 5 (wxd)	EI 60 U/C

## A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.1.4.13 Beverage dispense tubing - Multicollar *Slim*



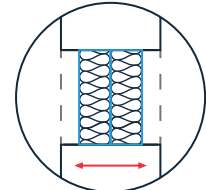
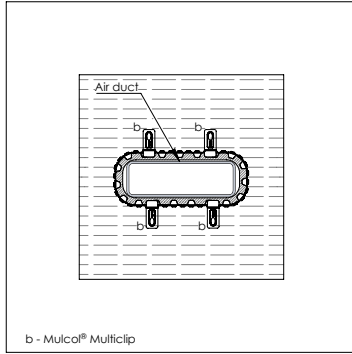
Drawing: PBfw.E-DCT52-MC30-10.0 22

Services	Dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Hoses no.	Type	Thickness (mm)	Configuration			
Drinks tubing system	≤ Ø 145	≤ 52	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	Multimastic SP ≥ 0-20 x 5 (wxd)	EI 60 U/C

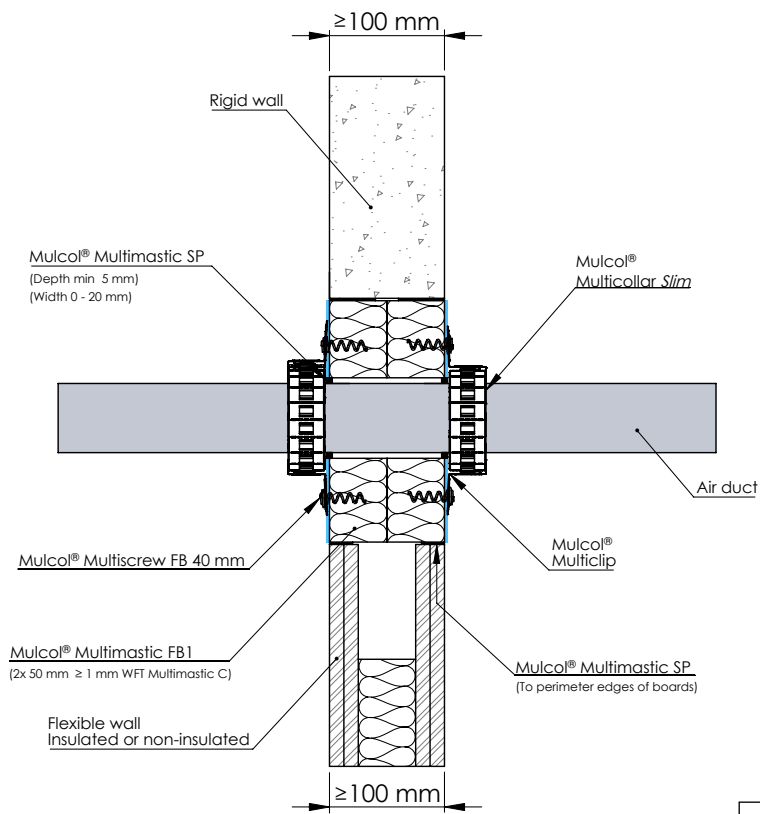
**A.1.4 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.1.4.14 Rectangular duct - Multicollar Slim**

Front view



Position seat:  
right left or anywhere  
in between

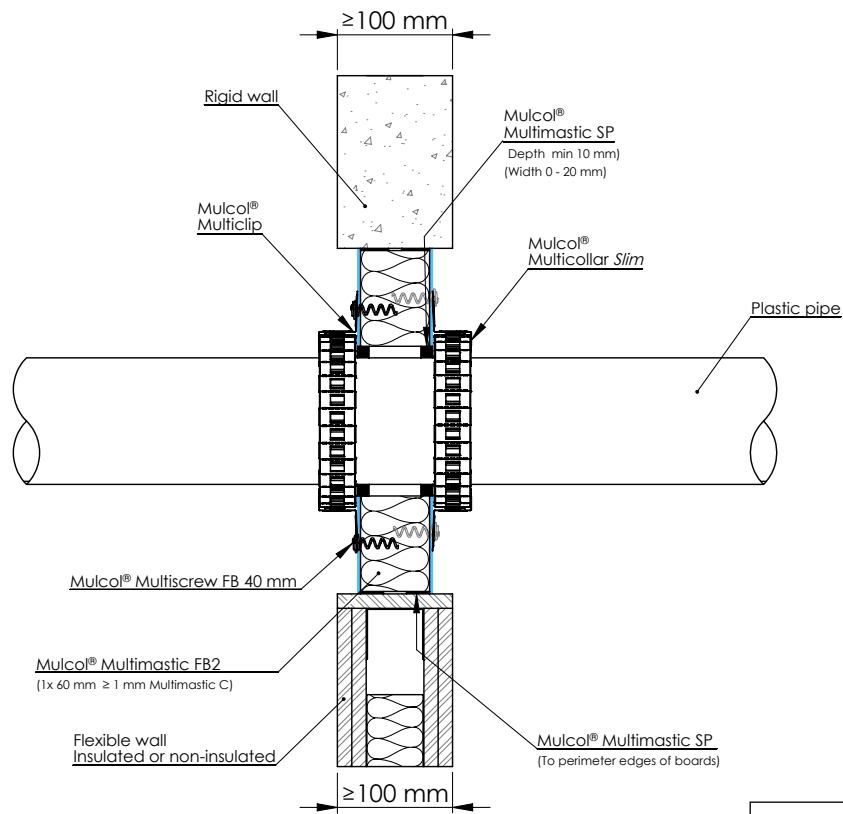
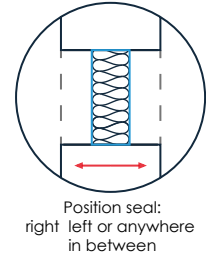
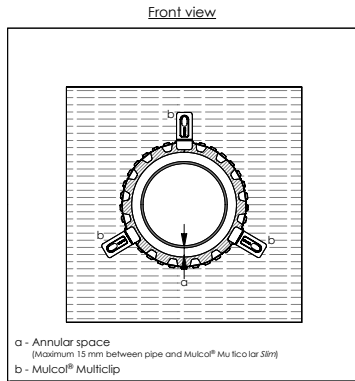


Drawing: PBfw.E-AD-MFB1.2.10

Services	Duct dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Rectangular plastic duct	≤ 220 x 90	1.0	Multicollar Slim	Multimastic SP ≥ 0-20 x 5 (wxd)	EI 45 U/C
		2.0			EI 120 U/C

## A.1.5 Multimastic FB2 - 1x 60 mm - Combustible pipes

### A.1.5.1 Plastic pipes - Multicollar *Slim*

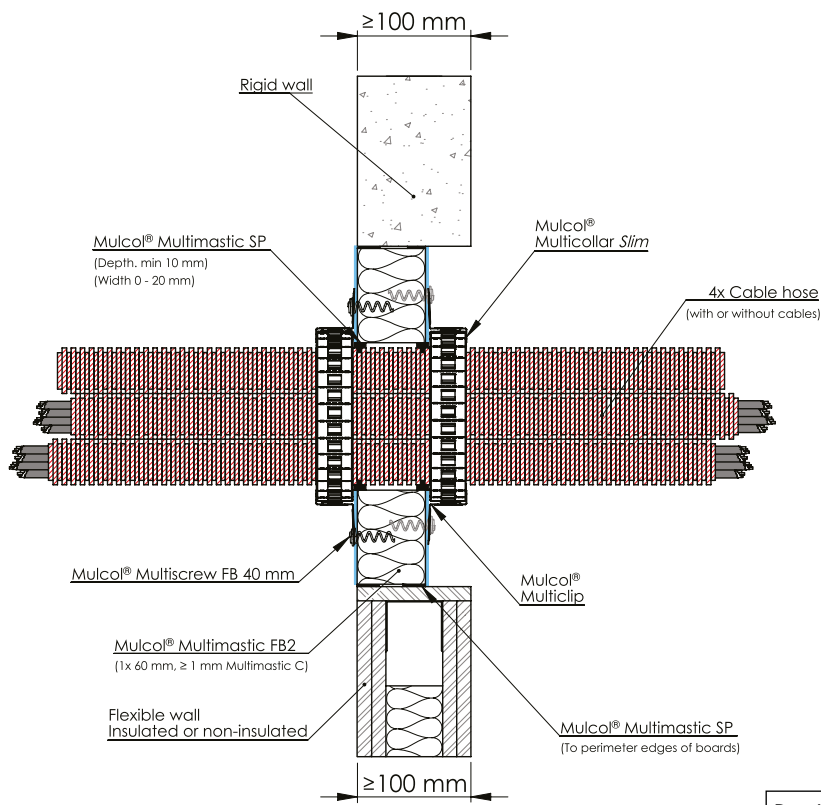
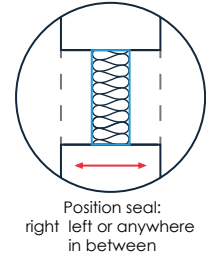
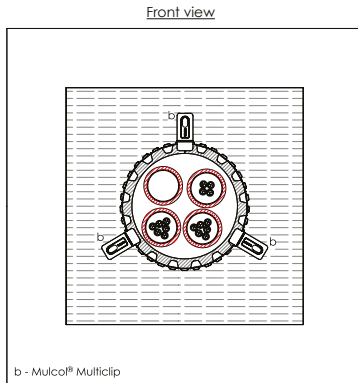


Drawing: PBfw.E-PP-MFB2.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar <i>Slim</i>	Multimastic SP ≥ 0-20 x 10 (wxd)	EI 120 U/U
PVC(-U/-C)					

**A.1.5 Multimastic FB2 - 1x 60 mm - Combustible pipes**

**A.1.5.2 Flexible plastic hoses with cables - Multicollar *Slim***

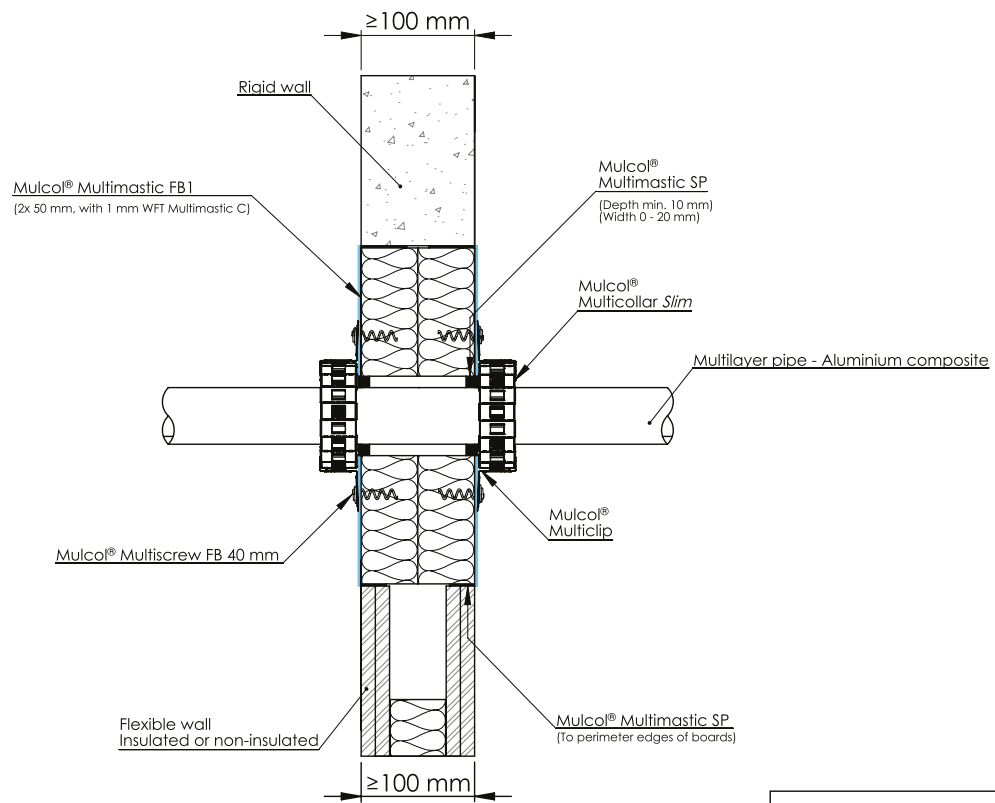
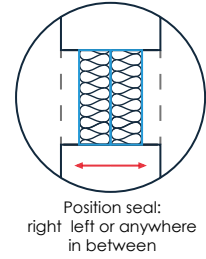
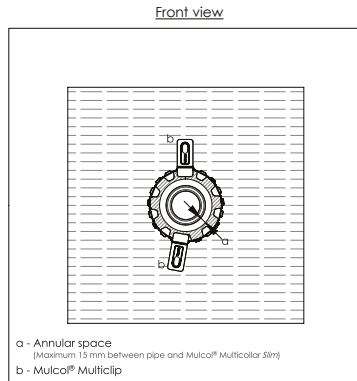


Drawing: PBfw.E-ECH4-MC30-MFB2.1.30

Services	Number of sleeves	Product	Sealing (mm)	Classification
Ribbed PE-sleeve conduit ≤ Ø 63 mm, with or without cables	≤ 4	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/C, E 120 U/C

## A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)

### A.1.6.1 Multilayer pipes (MLC) - Multicollar *Slim*

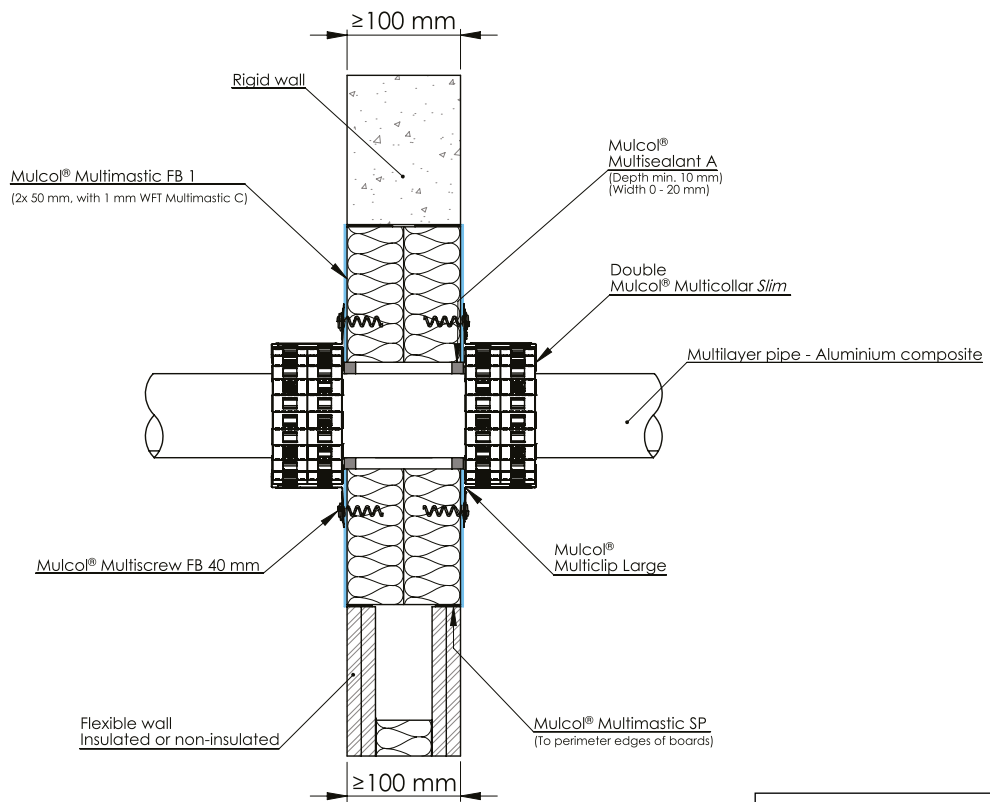
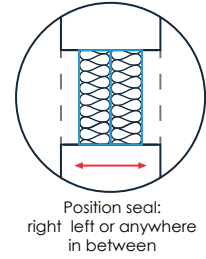
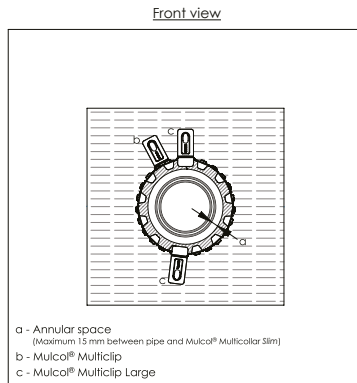


Drawing: PBFw.E-MLA-MC30-MFB1.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 20	2.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 U/C
	≤ Ø 25	3.5			
	≤ Ø 32	3.0			
	≤ Ø 40	3.5			
	≤ Ø 40	4.0			
	≤ Ø 50	4.0			
	≤ Ø 63	4.5			EI 90 U/C, E 120 U/C

## A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)

### A.1.6.1 Multilayer pipes (MLC) - Multicollar *Slim*



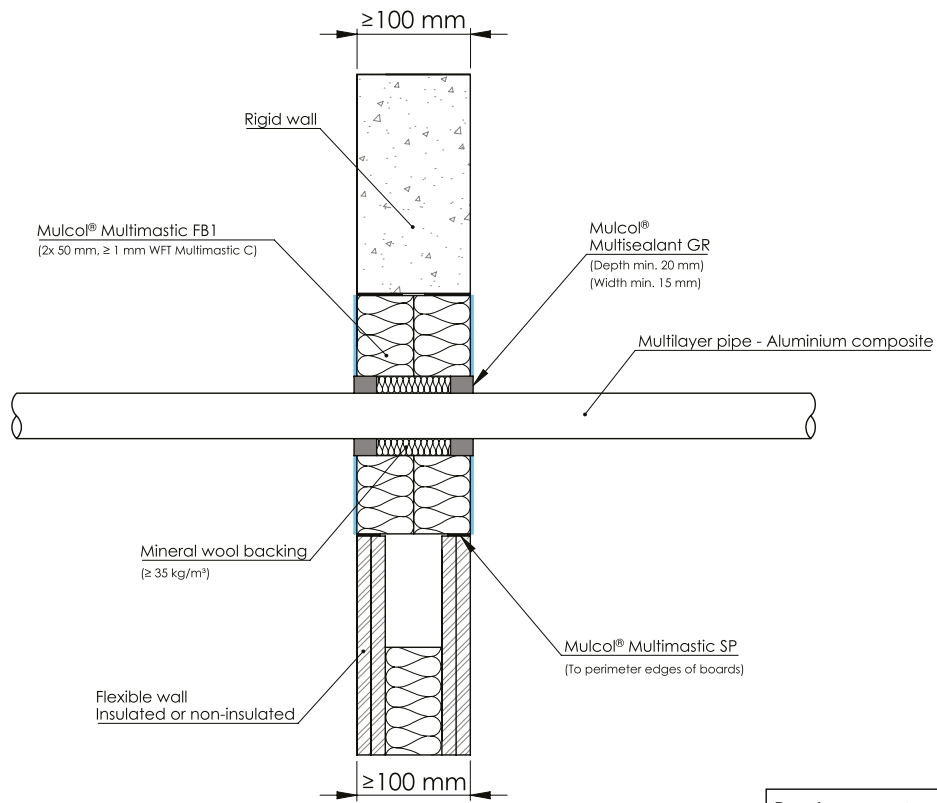
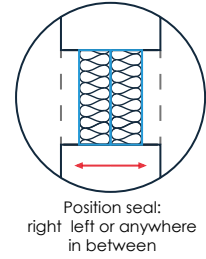
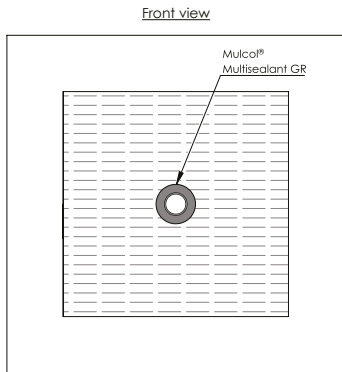
Drawing: PBFw.E-MLA-MC60-MFB1.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 75	6.0	Multicollar <i>Slim</i> Double	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/C, E 120 U/C



**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.2 Multilayer pipes (MLC) - Multisealant GR**



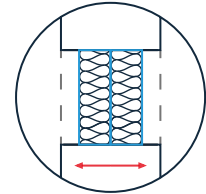
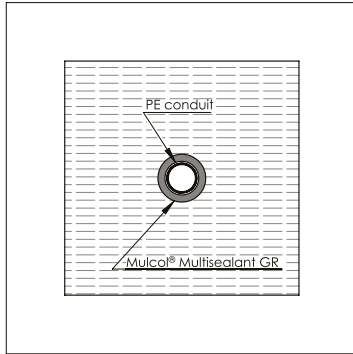
Drawing: PBfw.E-MLA-G2.4.10

Services	Pipe dimensions (mm)		Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 20	2.0	Multisealant GR ≥ 15 x 20 (wxd)	Stone wool (≥ 35 kg/m <sup>3</sup> )	EI 120 U/C
	≤ Ø 32	3.0			
	≤ Ø 40	3.5 - 4.0			

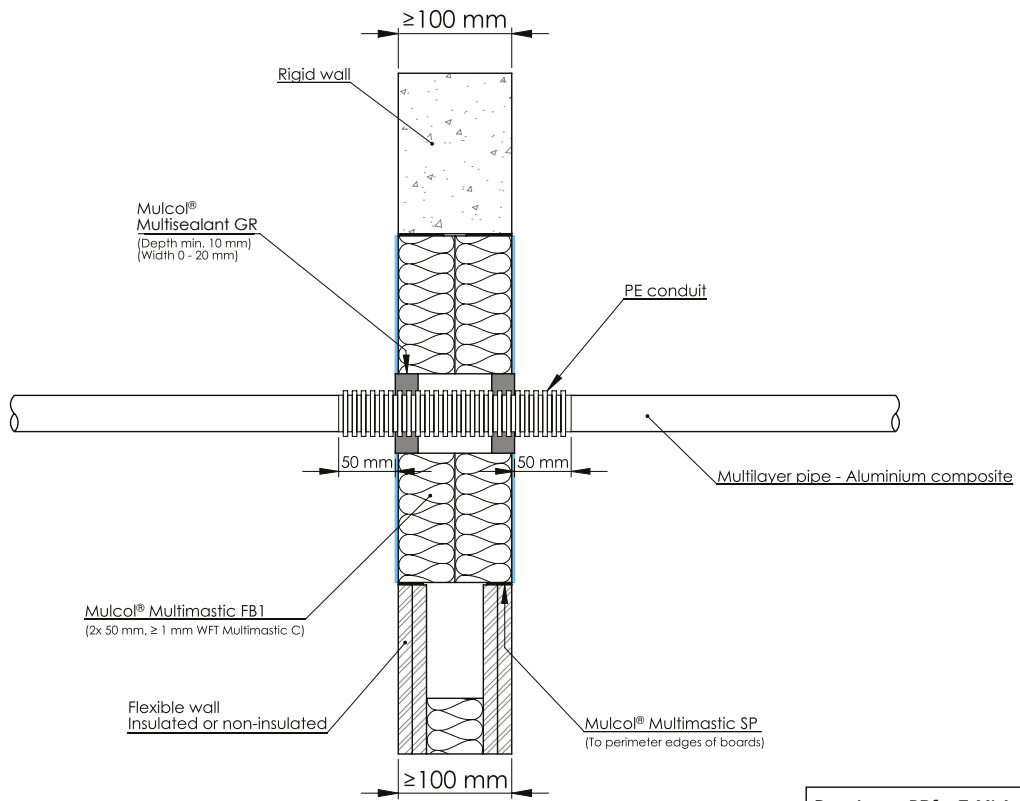
**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.3 Multilayer pipes (MLC) - Conduit - Multisealant GR**

Front view



Position seal:  
right left or anywhere  
in between

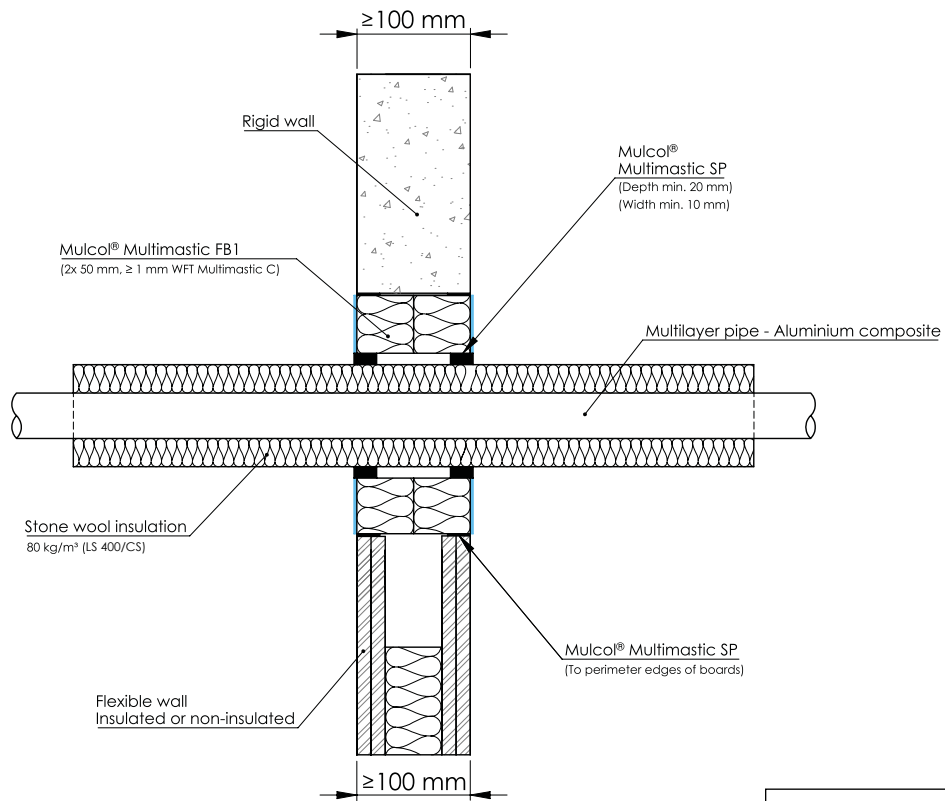
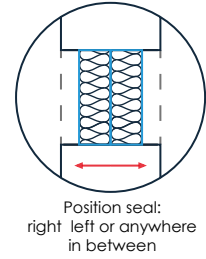
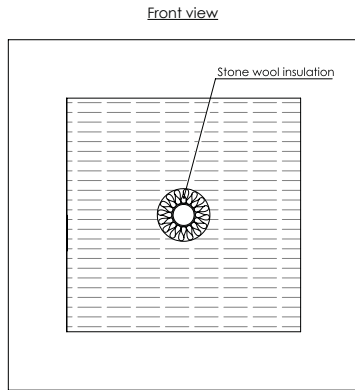


Drawing: PBfw.E-MLA-MFB1.2.30

Services	Pipe dimensions (mm)		Conduit			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Outer dimension (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 32	3.0	PE-conduit ribbed	≤ Ø 40	LS 50 / CS	Multisealant GR 0-20 x ≥ 10 (wxd)	EI 60 U/C

**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.4 Multilayer pipes (MLC) - Stone wool LS 400 / CS**

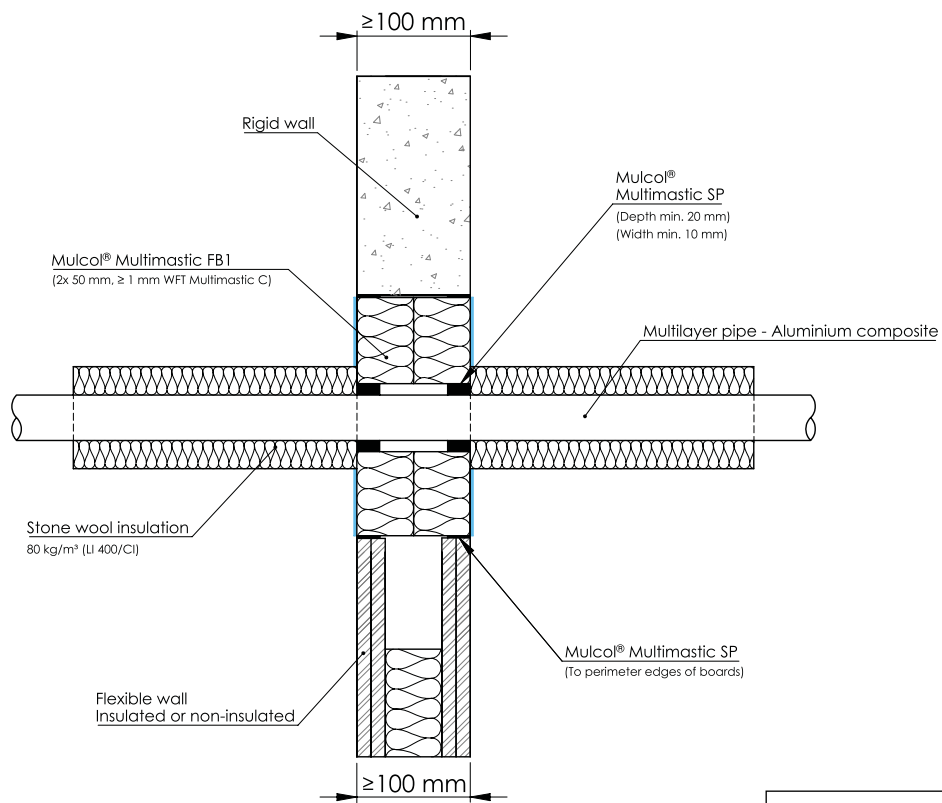
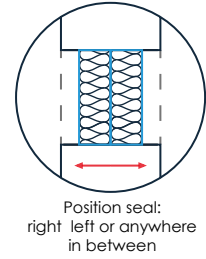
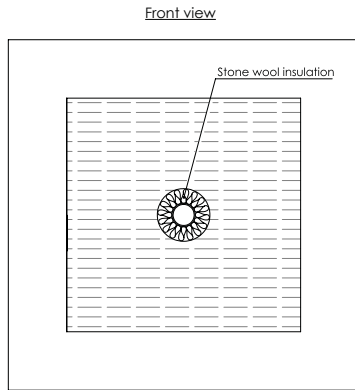


Drawing: PBfw.E-MLA-MFB1.2.20.LS

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 32	3.0 to 6.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	≥ 25	LS 400 / CS	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 U/C
	≤ Ø 75	6.0					EI 90 U/C

**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.5 Multilayer pipes (MLC) - Stone wool LI 400 / CI**

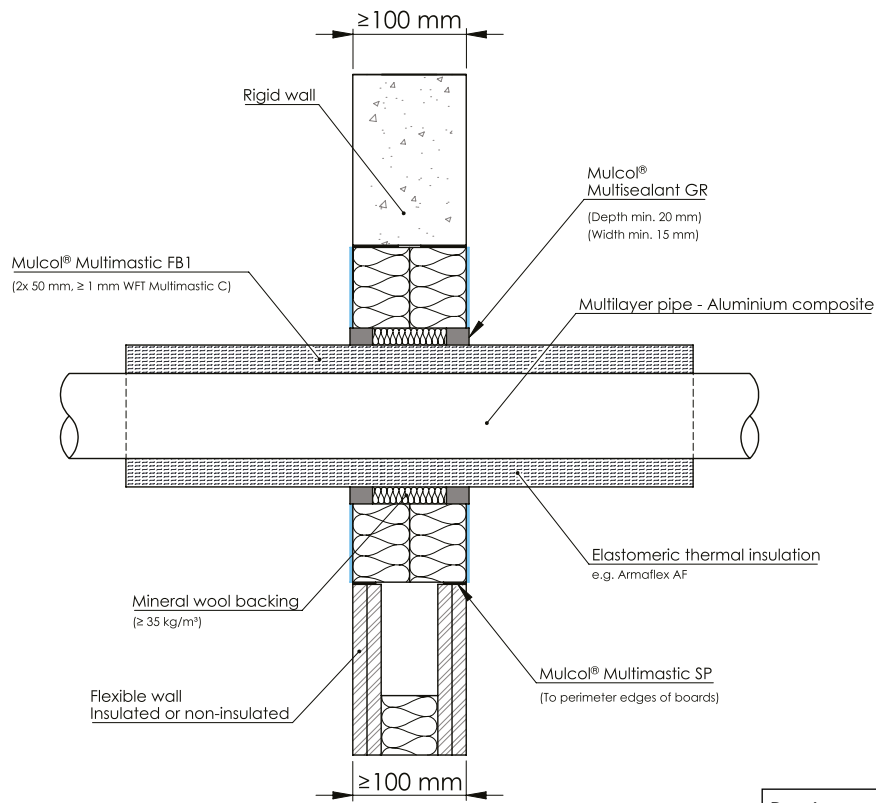
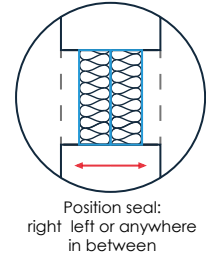
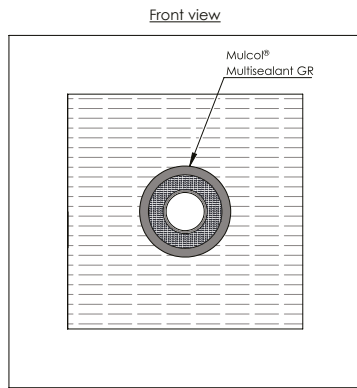


Drawing: PBfw.E-MLA-MFB1.2.20.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 40	3.5	Stone wool (≥ 80 kg/m <sup>3</sup> )	≥ 25	LI 400 / CI	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/C

**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.6 Multilayer pipes (MLC) - Elastomer LS 400 / CS - Multisealant GR**

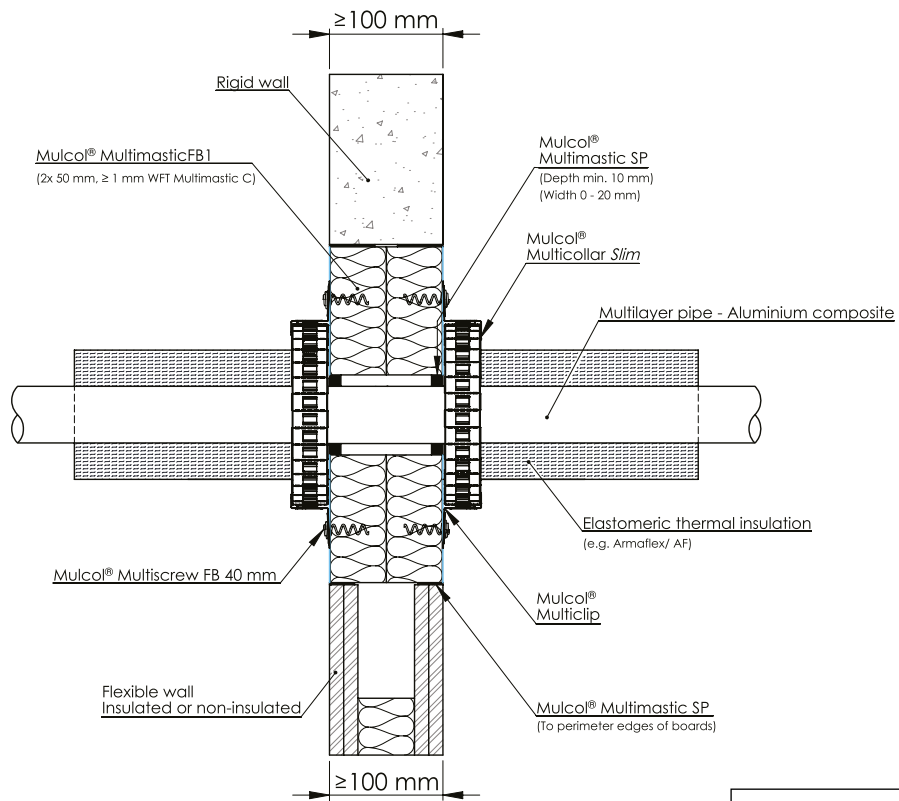
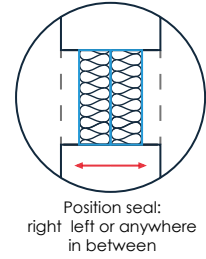
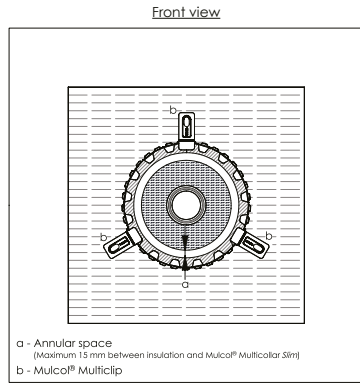


Drawing: PBFw.E-MLA-G2.4.22

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 20	2.0	ArmaFlex AF (min. class B-s3, d0 BL-s3, d0)	9 - 32	LS 300 / CS LI 300 / CI	Multisealant GR ≥ 15 x 20 mm (wxd)	EI 90 U/C E 120 U/C
	≤ Ø 32	3.0					
	≤ Ø 40	3.5					
	≤ Ø 50	4.0					
	≤ Ø 63	4.5					
	≤ Ø 75	6.0					EI 90 U/C E 120 U/C

**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.7 Multilayer pipes (MLC) - Elastomer LI 300 / CI - Multicollar Slim**



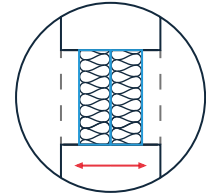
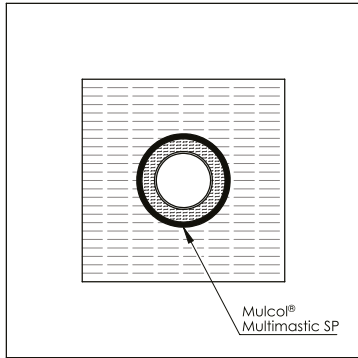
Drawing: PBfw.E-MLA-MC30-10.0.22

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Backing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration				
Multilayer pipes (MLC)	≤ Ø 50	4.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LI 300 / CI	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	25 mm stone wool (≥ 33kg/m <sup>3</sup> )	EI 120 U/C

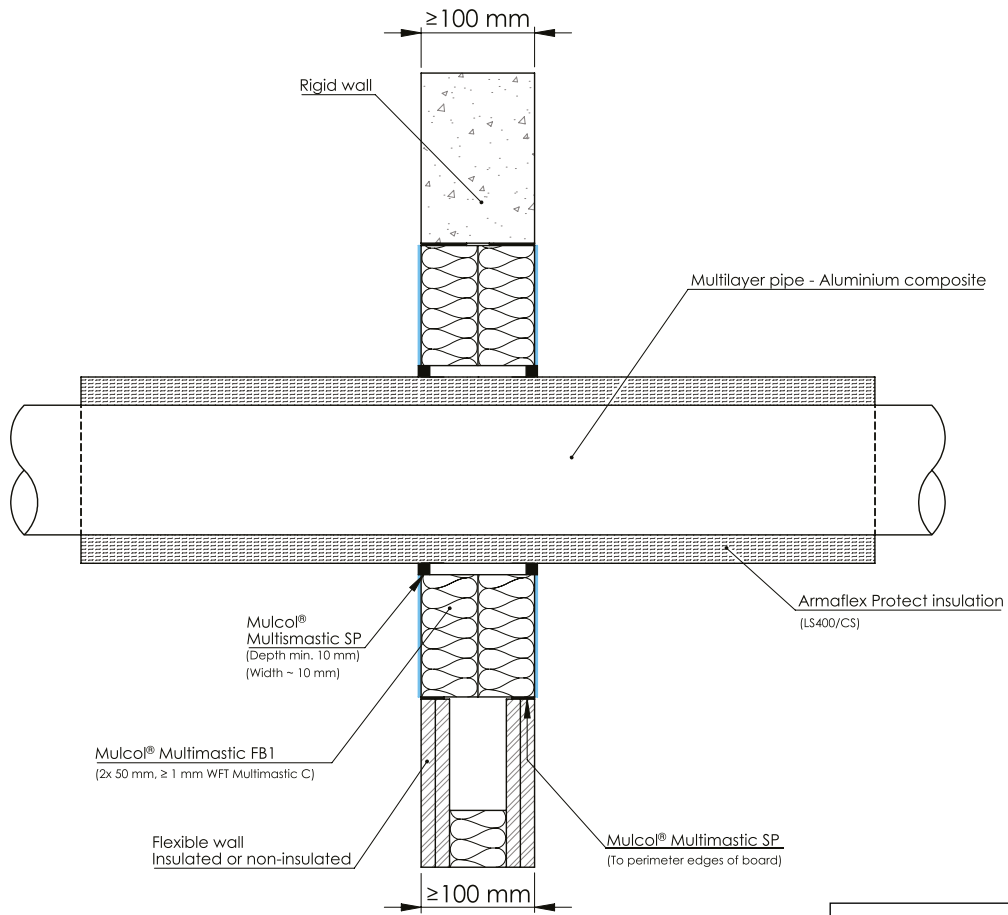
**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.8 Multilayer pipes (MLC) - ArmaFlex Protect LS 400 / CS - Multimastic SP**

Front view



Position seal:  
right left or anywhere  
in between

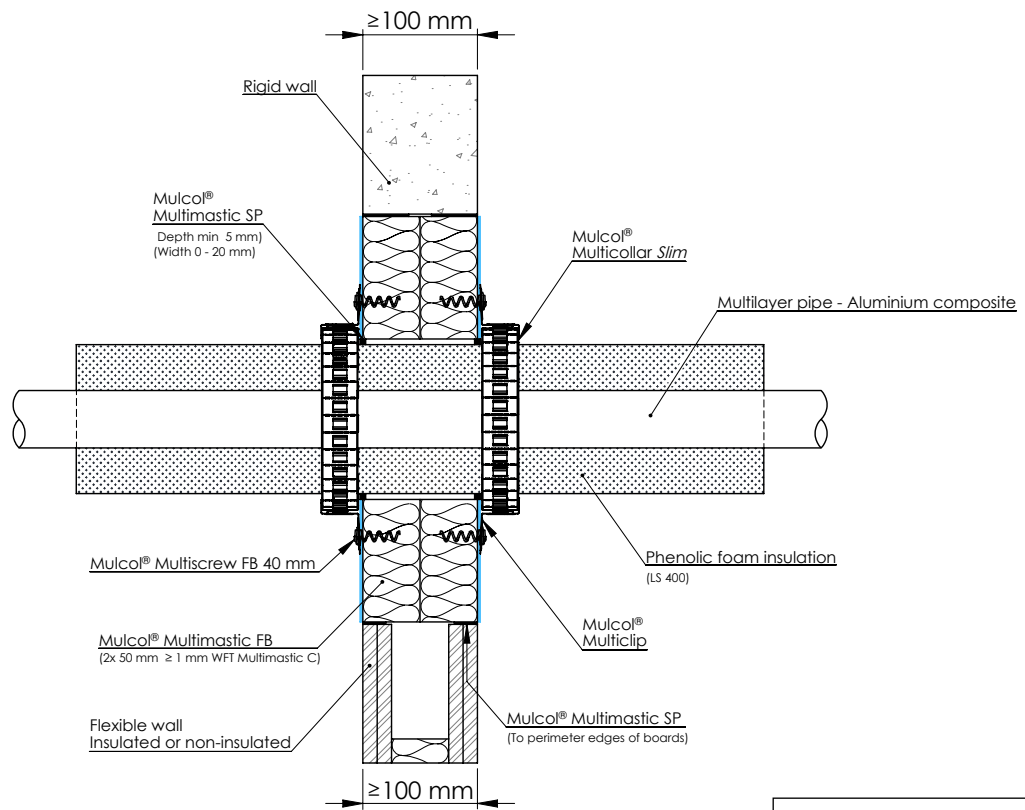
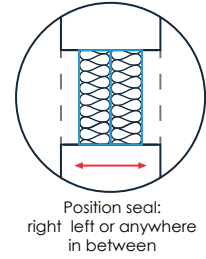
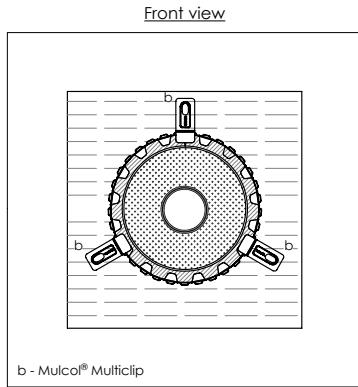


Drawing: PBfw.E-MLA-MFB1.2.10

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 26	3.0	ArmaFlex Protect	20	LS 400 / CS	Multimastic SP 10 x ≥ 10 (wxd)	EI 120 U/C
	≤ Ø 75	5.0		25			

**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.9 Multilayer pipes (MLC) - Phenolic foam LS 400 / CS - Multicollar Slim**



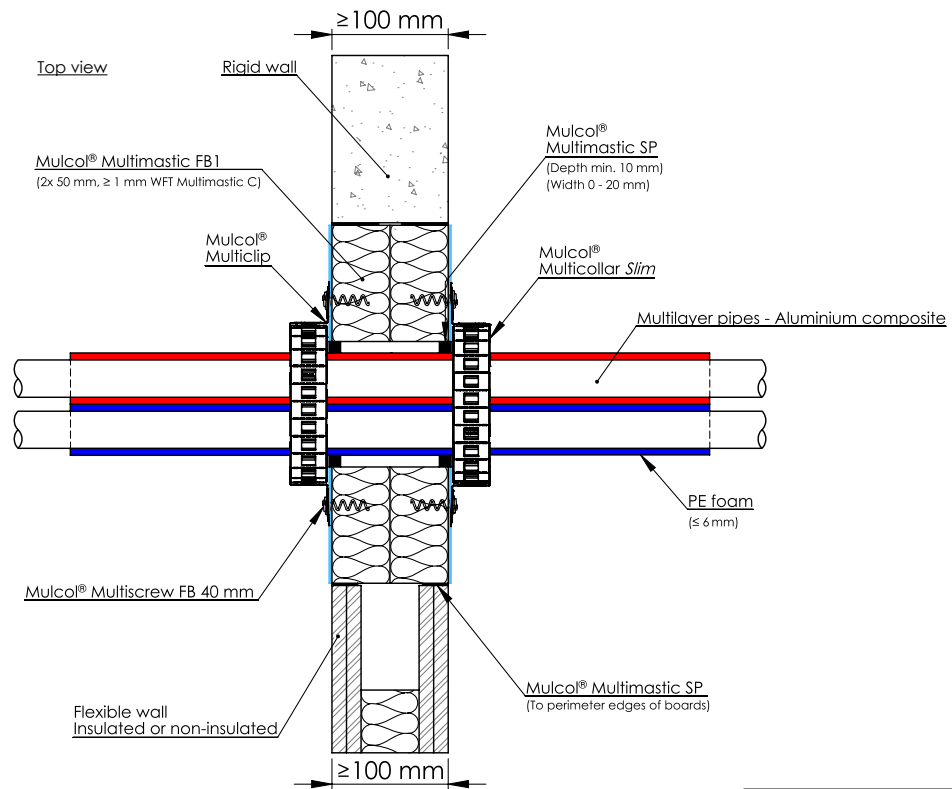
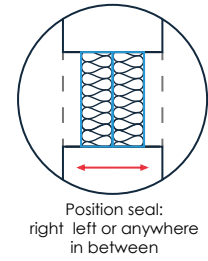
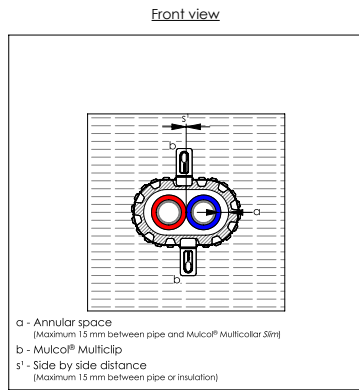
Drawing: PBfw.E-MLA-MC30-MFB1 0 22

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipes (MLC)	≤ Ø 20	2.0	Kingspan Kooltherm	15 - 40	LS 400 / CS	Multicollar Slim	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 60 U/C
	≤ Ø 40	3.5						
	≤ Ø 63	4.5						



## A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)

### A.1.6.10 Multiple Multilayer pipes (MLC) - PE foam - Multicollar Slim

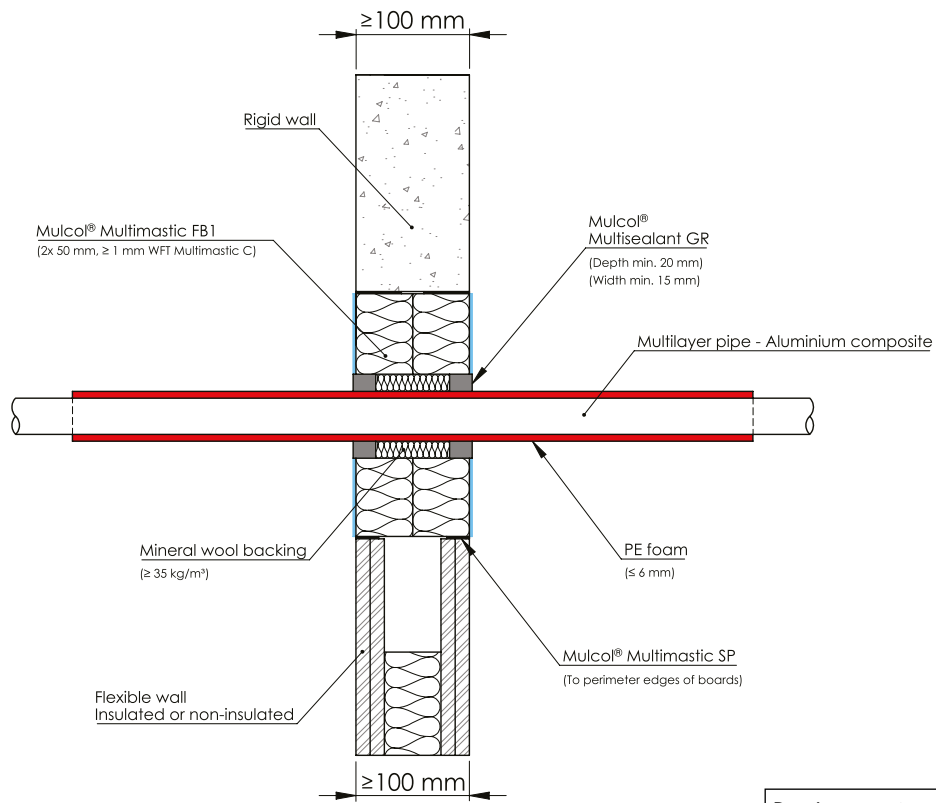
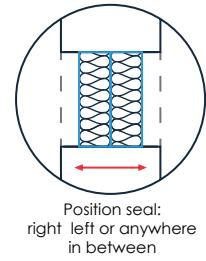
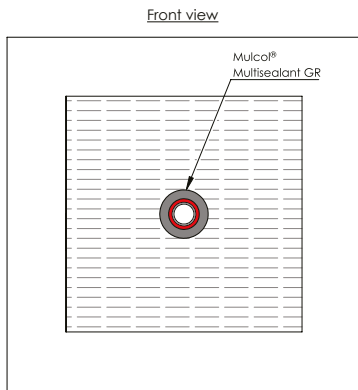


Drawing: PBfw.E-MC30-MLP2-10.0.2

Services	Pipe dimensions (mm)		Number of pipes	Insulation			Product	Sealing	Classification
	Outer dimension	Wall thickness		Type	Thickness (mm)	Configuration			
Multilayer pipes (MLC)	≤ Ø 15	2.0	≤ 12	PE foam	6	LS 400 / CS LI 400 / CI	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 U/C

**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.11 Multilayer pipes (MLC) - PE foam - Multisealant GR**

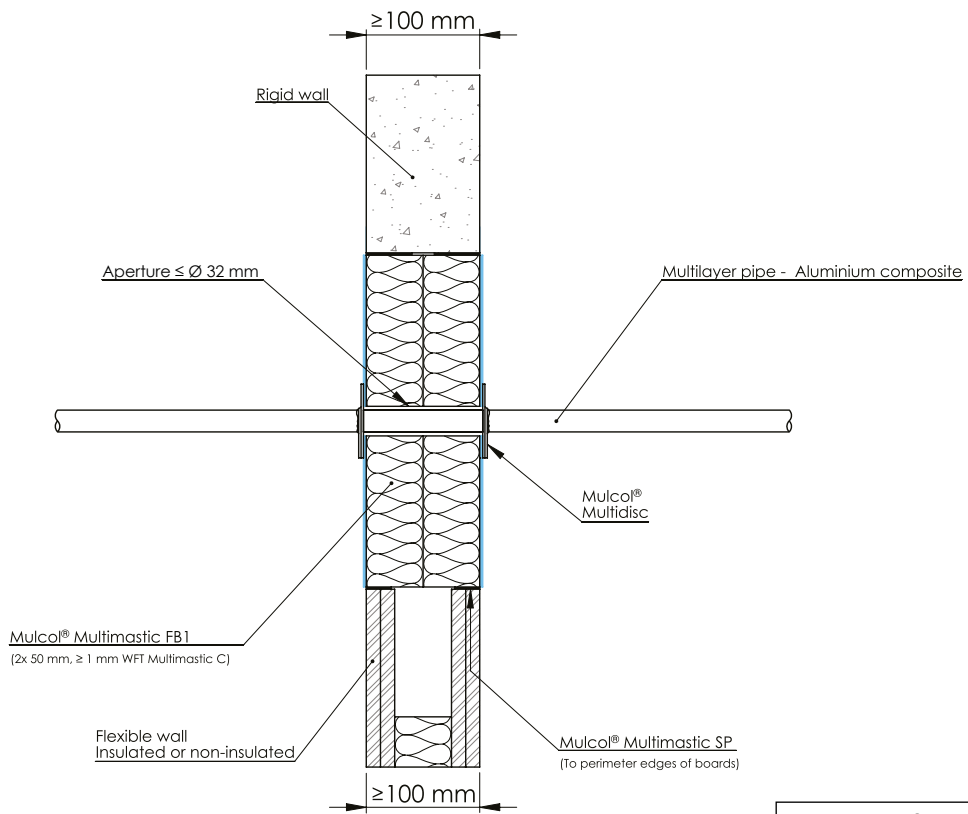
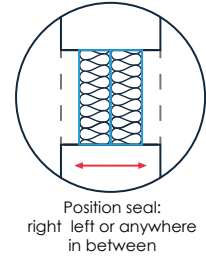
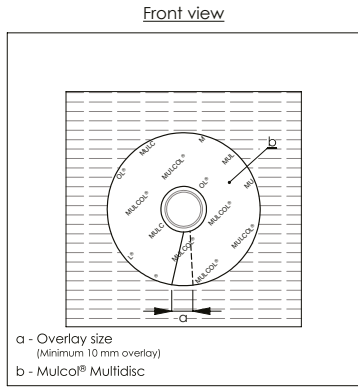


Drawing: PBfw.E-MLA\_pr-G2.4.23

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 32	2.0 - 3.0	PE Foam	≤ 6	LS 300 / CS LI 300 / CI	Multisealant GR ≥ 15 x 20 (wxd)	EI 120 U/C

**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.12 Multilayer pipes (MLC) - Multidisc**

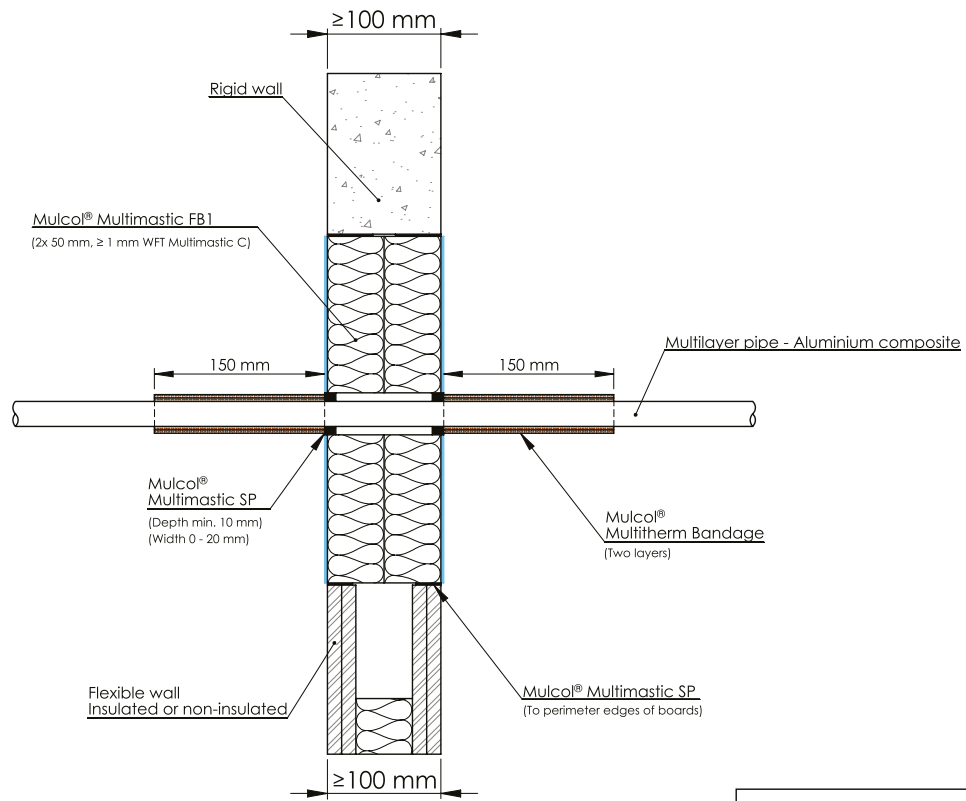
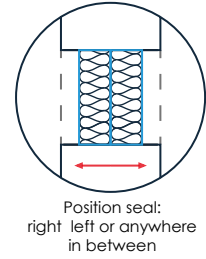
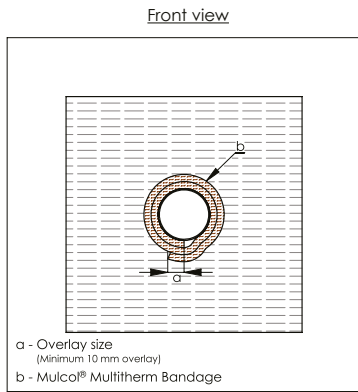


Drawing: PBfw.E-MLA-M2.0.10

Services	Pipe dimensions (mm)		Aperture (mm)	Product	Sealing (mm)	Classification
	Outer diameter	Wall thickness				
Multilayer pipes (MLC)	≤ Ø 16	2.0	≤ Ø 32	Multidisc	Not required	EI 90 U/C E 120 U/C

**A.1.6 Multimastic FB1 - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.6.13 Multilayer pipes (MLC) - Multitherm Bandage**

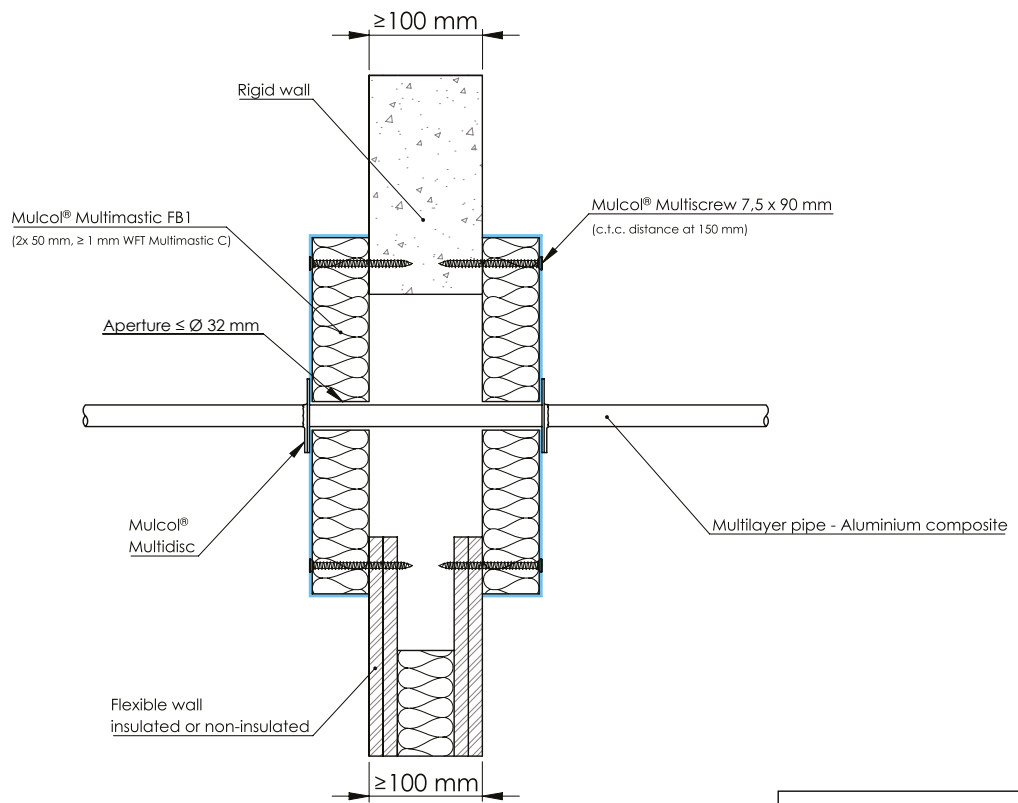
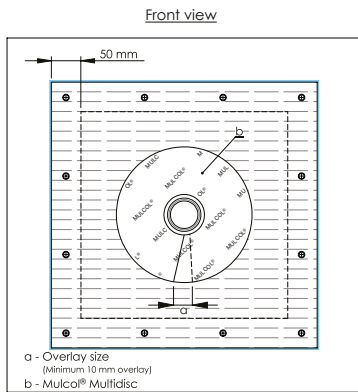


Drawing: PBfw.E-MLA-MFB1-B2.1.20

Services	Pipe dimensions (mm)		Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 16	2.0	Multimastic SP 0-20 x ≥ 10 (wxd)	LI 150 two layers	EI 120 U/C
	≤ Ø 25	3.5			
	≤ Ø 26	3.0			

**A.1.7 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Multilayer pipes (MLC)**

**A.1.7.1 Multilayer pipes (MLC) - Multidisc**



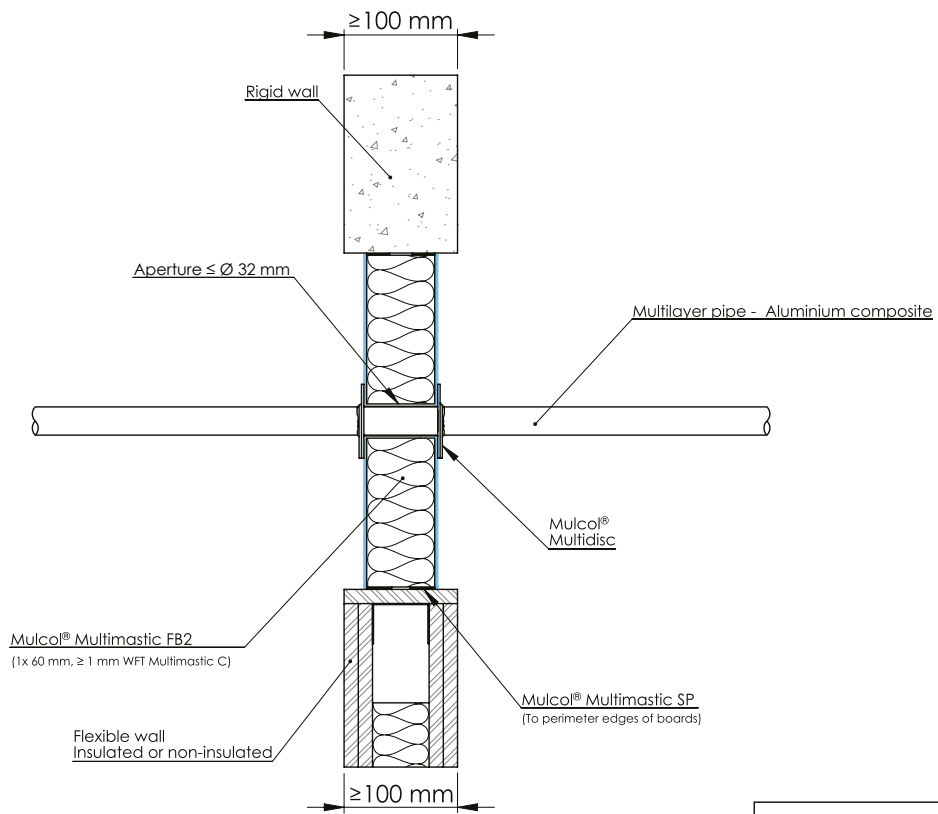
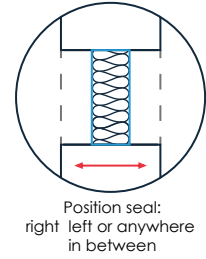
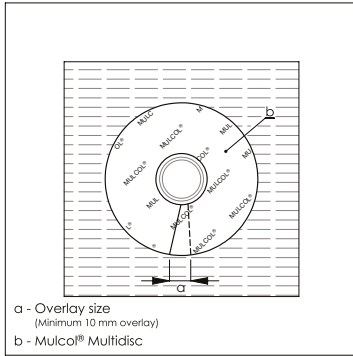
Drawing: PBPfw-MLA-M2.0.10

Services	Pipe dimensions (mm)		Aperture (mm)	Product	Sealing (mm)	Classification
	Outer diameter	Wall thickness				
Multilayer pipes (MLC)	≤ Ø 16	2.0	≤ Ø 32	Multidisc	Not required	EI 60 U/C E 120 U/C

**A.1.8 Multimastic FB2 - 1x 60 mm - Multilayer pipes (MLC)**

**A.1.8.1 Multilayer pipes (MLC) - Multidisc**

Front view

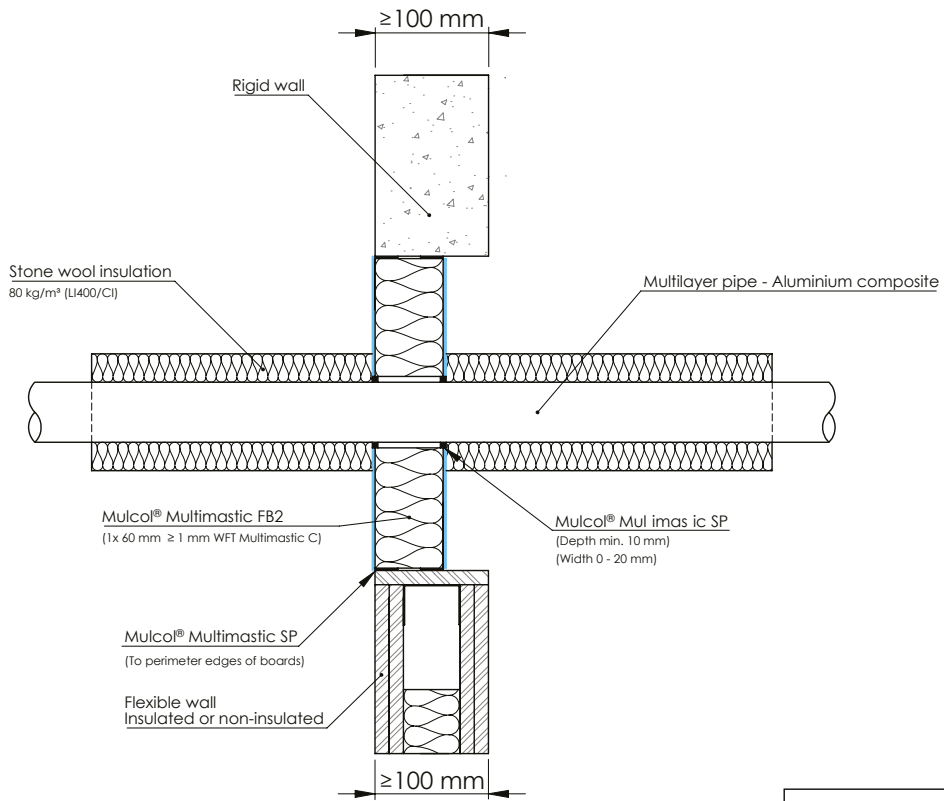
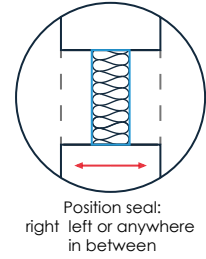
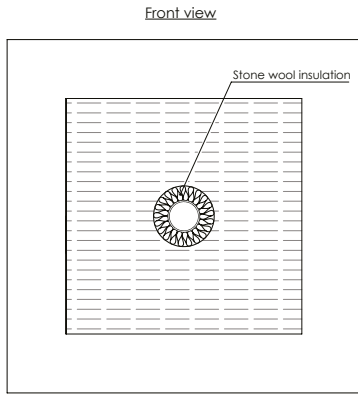


Drawing: PBfw.E-MLA-MFB2.1.10-M2.0.10

Services	Pipe dimensions (mm)		Aperture (mm)	Product	Sealing (mm)	Classification
	Outer diameter	Wall thickness				
Multilayer pipes (MLC)	≤ Ø 16	2.0	≤ Ø 32	Multidisc	Not required	EI 45 U/C E 120 U/C

**A.1.8 Multimastic FB2 - 1x 60 mm - Multilayer pipes (MLC)**

**A.1.8.2 Multilayer pipes (MLC) - Stone wool LI 400 / CI**

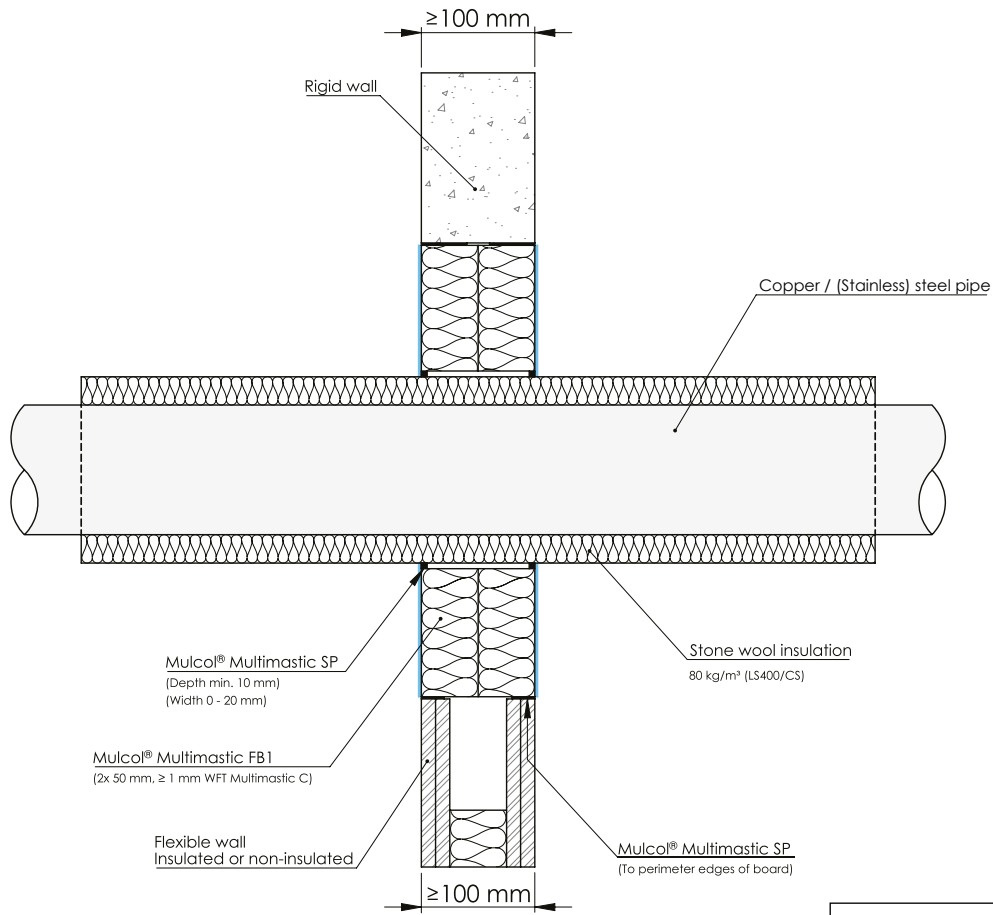
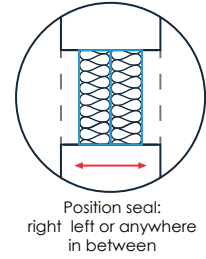
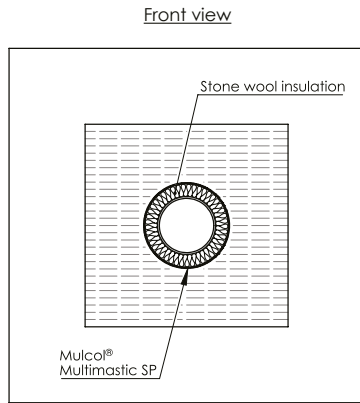


Drawing: PBfw.E-MLA-MFB2.1.20

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 40	3.5	Stone wool (≥ 80 kg/m³)	≥ 25	LI 400 / CI	Multimastic SP 0-10 x ≥ 10 (wxd)	EI 45 U/C E 60 U/C

# A.1.9 Multimastic FB1 - 2x 50 mm - Metal pipes insulated mineral wool

## A.1.9.1 Copper and steel pipes - Stone wool LS 400 / CS



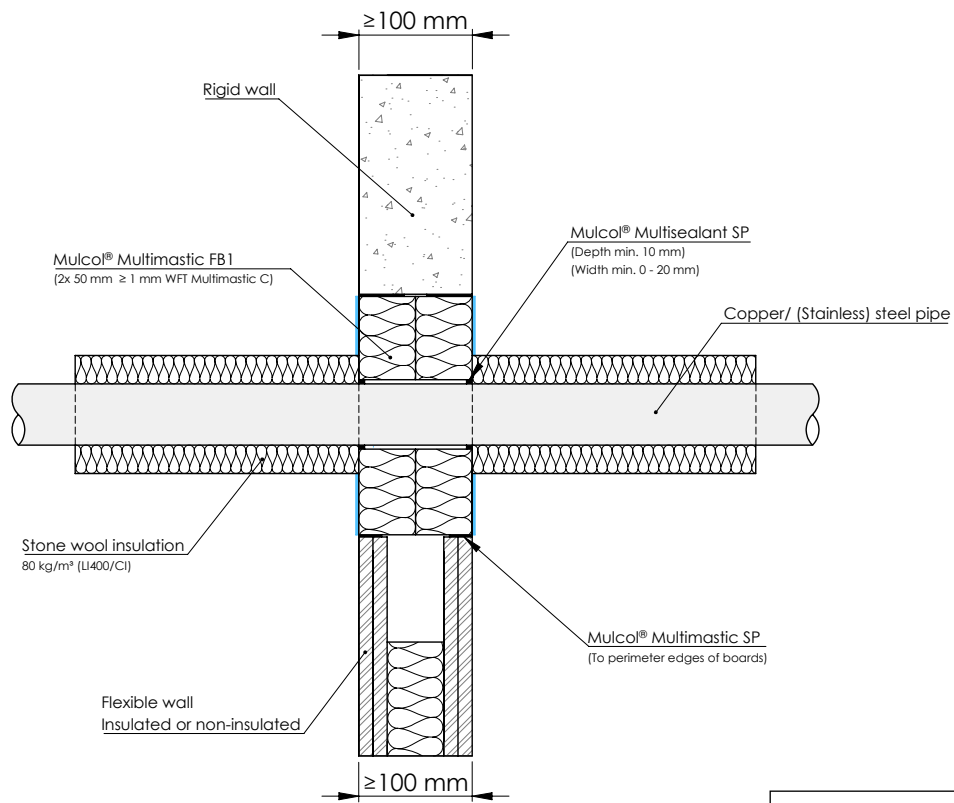
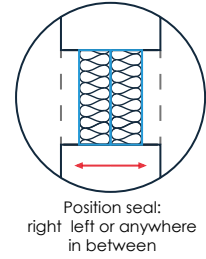
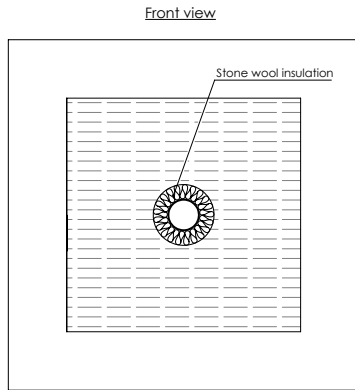
Drawing: PBfw.E-ST-MFB1.2.20.LS

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m³)	25	LS 400 / CS	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5					
(Stainless) Steel / cast iron	≤ Ø 12	≥ 1.5					
	≤ Ø 114.3	≥ 3.6					
	≤ Ø 219.1	≥ 4.0					
	≤ Ø 324	≥ 3.7	30	CS	EI 60 C/U EI 60 C/U, E 120 C/U EI 90 C/U, E 120 C/U		



**A.1.9 Multimastic FB1 - 2x 50 mm - Metal pipes insulated mineral wool**

**A.1.9.2 Copper and steel pipes - Stone wool LI 400 / CI**



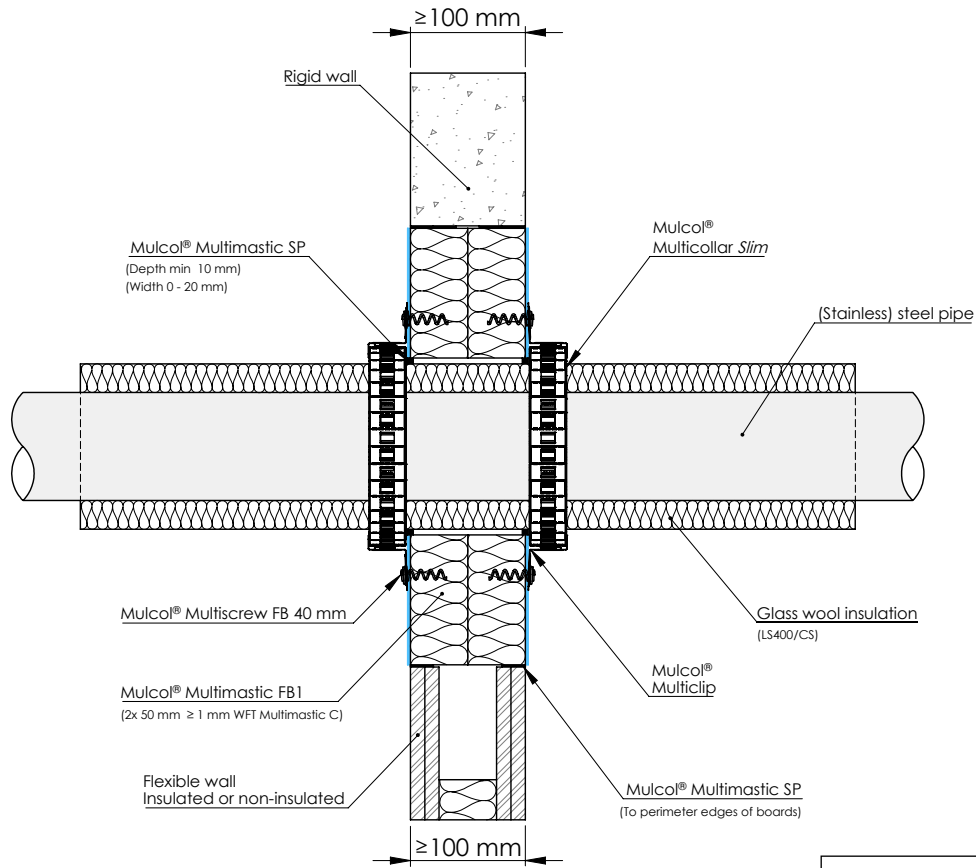
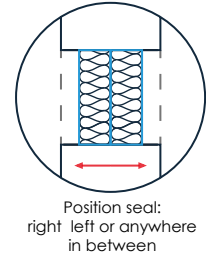
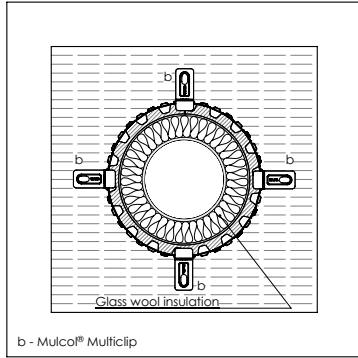
Drawing: PBfw.E-CU-MFB1.2.20.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	≥ 25	LI 400 / CI	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5					
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6					
	≤ Ø 324	≥ 3.7					

**A.1.9 Multimastic FB1 - 2x 50 mm - Metal pipes insulated mineral wool**

**A.1.9.3 Steel pipes - Glass wool LS 400 / CS - Multicollar Slim**

Front view

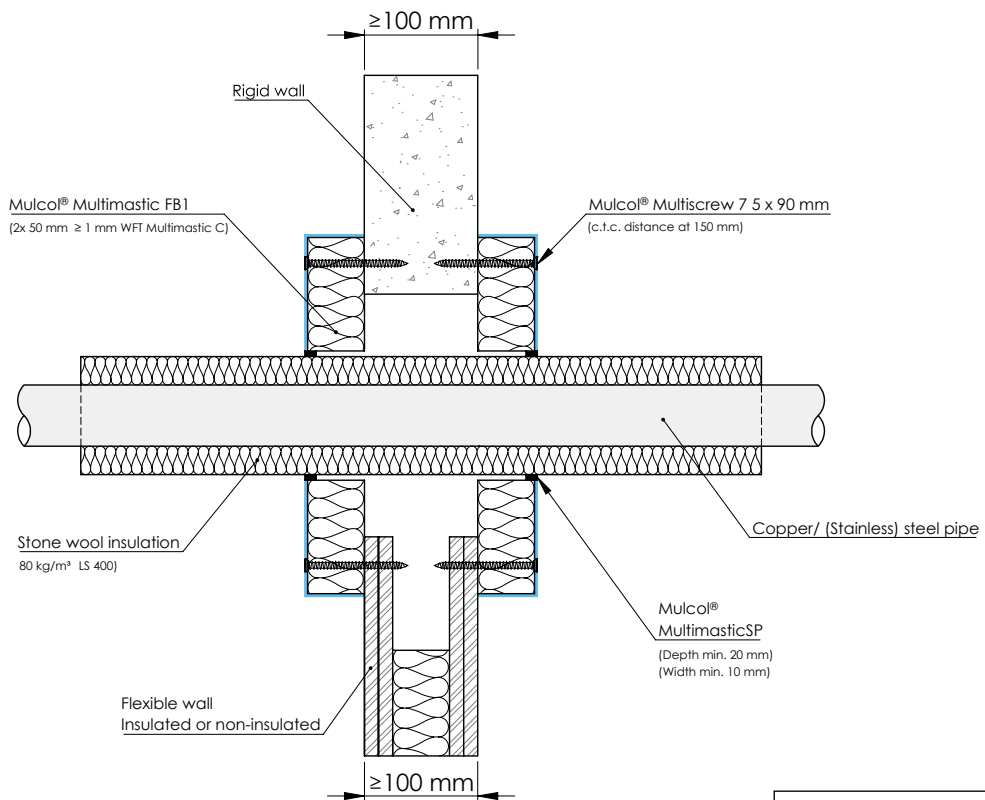
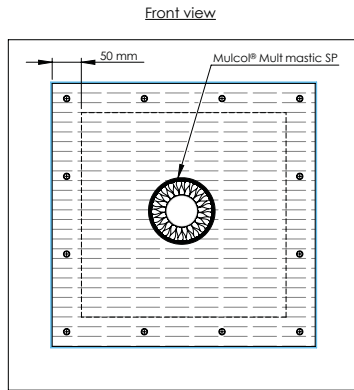


Drawing: PBfw.E-ST-MC30-MFB1 2 20

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
(Stainless) Steel / cast iron	≤ Ø 76.2	≥ 3.3	Glass wool (≥ 33 kg/m³)	30	LS 400 / CS	Multicollar Slim	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 C/U
	≤ Ø 139.7	≥ 4.0		50				EI 120 C/U
								EI 60 C/U
								EI 90 C/U

## A.1.10 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Metal pipes insulated mineral wool

### A.1.10.1 Copper and steel pipes - Stone wool LS 400 / CS

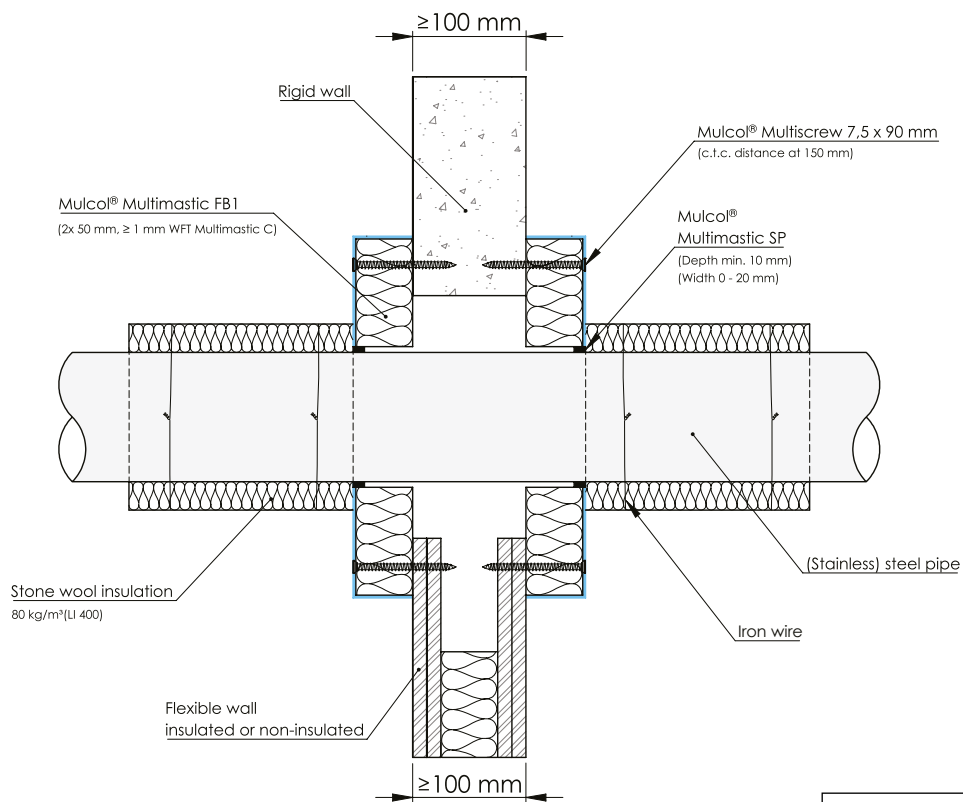
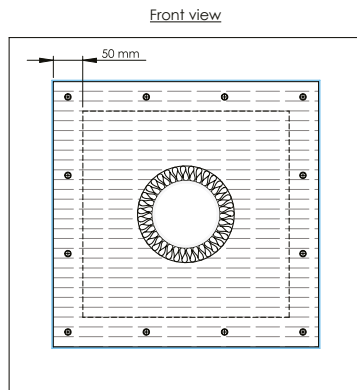


Drawing: PBPfw.E-CU-MFB1.2.20.LS

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	25	LS 400 / CS	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5					
(Stainless) Steel / cast iron	≤ Ø 12	≥ 1.5					
	≤ Ø 114.3	≥ 3.6					
	≤ Ø 219.1	≥ 4.0					
	≤ Ø 324	≥ 3.7		30	CS		
						EI 60 C/U, E 120 C/U	
						EI 90 C/U, E 120 C/U	

## A.1.10 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Metal pipes insulated mineral wool

### A.1.10.2 Copper and steel pipes - Stone wool LI 400 / CI

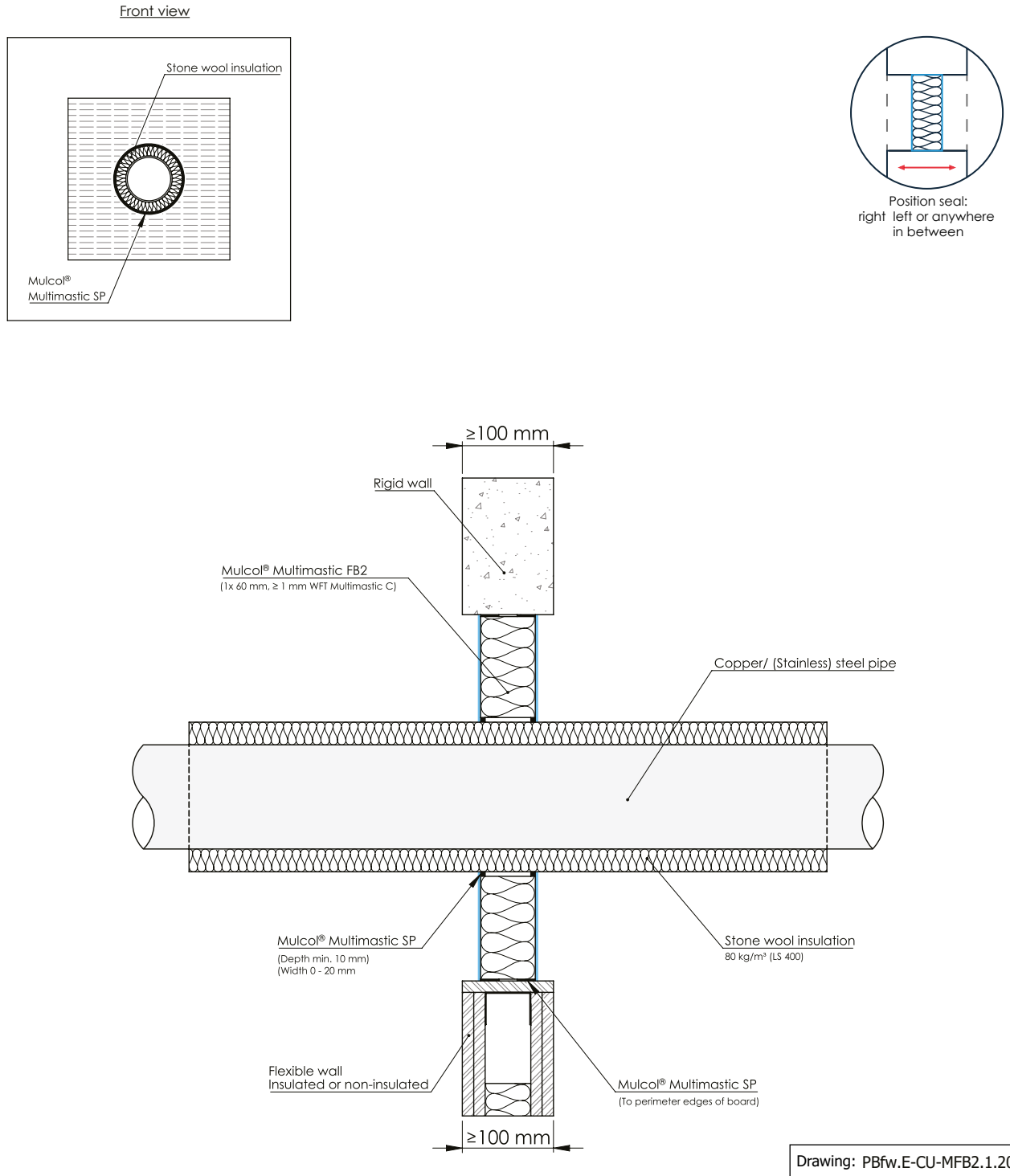


Drawing: PBPfw.E-ST-MFB1.2.20.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	$\leq \text{Ø } 22$	$\geq 1.0$	Stone wool ( $\geq 80 \text{ kg/m}^3$ )	$\geq 25$	LI 400 / CI	Multimastic SP 0-20 x $\geq 10$ (wxd)	<b>EI 120 C/U</b>
	$\leq \text{Ø } 54$	$\geq 1.5$					
(Stainless) Steel / cast iron	$\leq \text{Ø } 114.3$	$\geq 3.6$					
	$\leq \text{Ø } 324$	$\geq 3.7$					

**A.1.11 Multimastic FB2 - 1x 60 mm - Metal pipes insulated mineral wool**

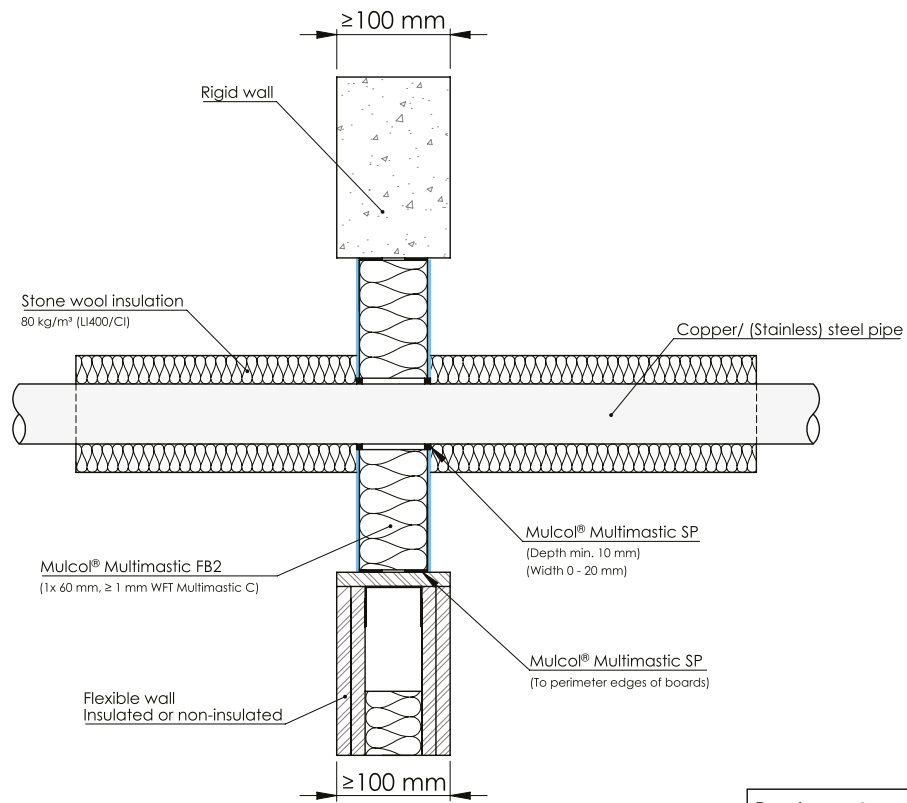
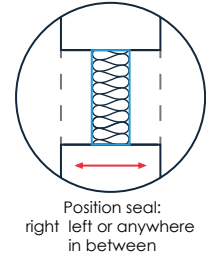
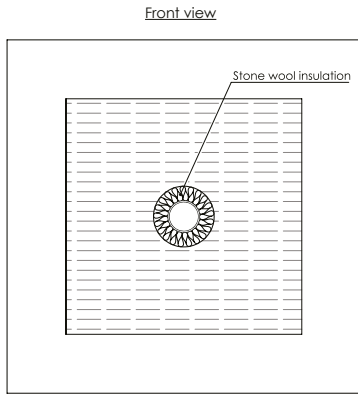
**A.1.11.1 Copper and steel pipes - Stone wool LS 400 / CS**



Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	25	LS 400 / CS	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 C/U E 90 C/U
	≤ Ø 54	≥ 1.5					
(Stainless) Steel / cast iron	≤ Ø 12	≥ 1.5		30			EI 90 C/U E 120 C/U
	≤ Ø 114.3	≥ 3.6					
	≤ Ø 324	≥ 3.7		EI 60 C/U			

**A.1.11 Multimastic FB2 - 1x 60 mm - Metal pipes insulated mineral wool**

**A.1.11.2 Copper and steel pipes - Stone wool LI 400 / CI**



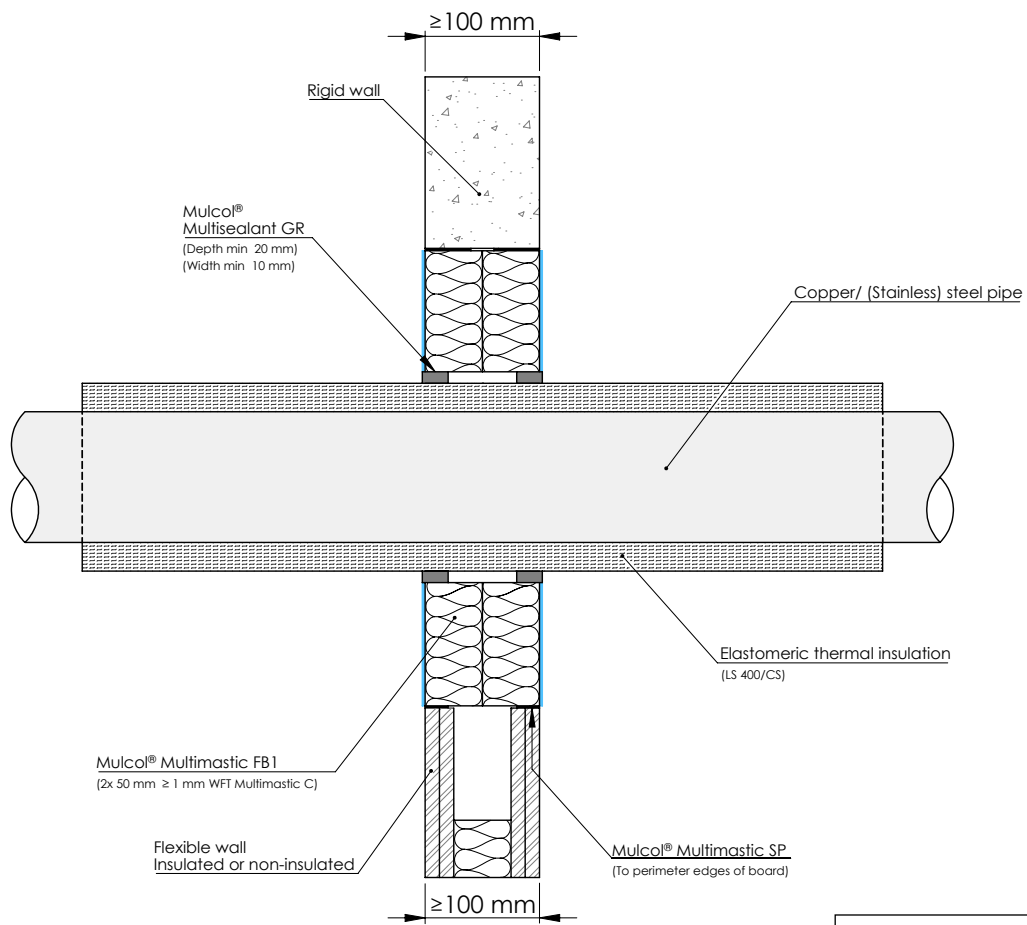
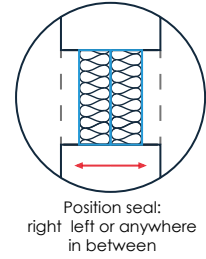
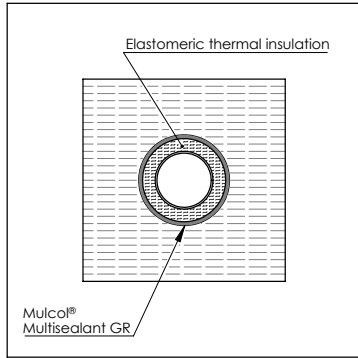
Drawing: PBfw.E-CU-MFB2.1.20.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	≥ 25	LI 400 / CI	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 C/U
	≤ Ø 54	≥ 1.5					
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6					

**A.1.12 Multimastic FB1 - 2x 50 mm - Metal pipes insulated elastomer**

**A.1.12.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

Front view



Drawing: PBfw.E-CU-MFB1-G2.4.22

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 90 C/U, E 120 C/U
				8.5 - 38			EI 90 C/U
				13.5 - 38			EI 30 C/U, E 90 C/U
	≤ Ø 54	≥ 1.5		13.5	CS		EI 90 C/U
				13.5 - 38			EI 60 C/U, E 90 C/U
				38			EI 90 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3	8.5	LS 400 / CS	EI 90 C/U, E 120 C/U		
			8.5 - 38		EI 90 C/U		
	≤ Ø 114.3	≥ 3.6	15 - 43		EI 45 C/U, E 90 C/U		
			43		EI 60 C/U, E 90 C/U		

**A.1.12 Multimastic FB1 - 2x 50 mm - Metal pipes insulated elastomer**

**A.1.12.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3	Kaiflex KK Plus (min. class B-s2, d0 B <sub>L</sub> -s2, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 120 C/U

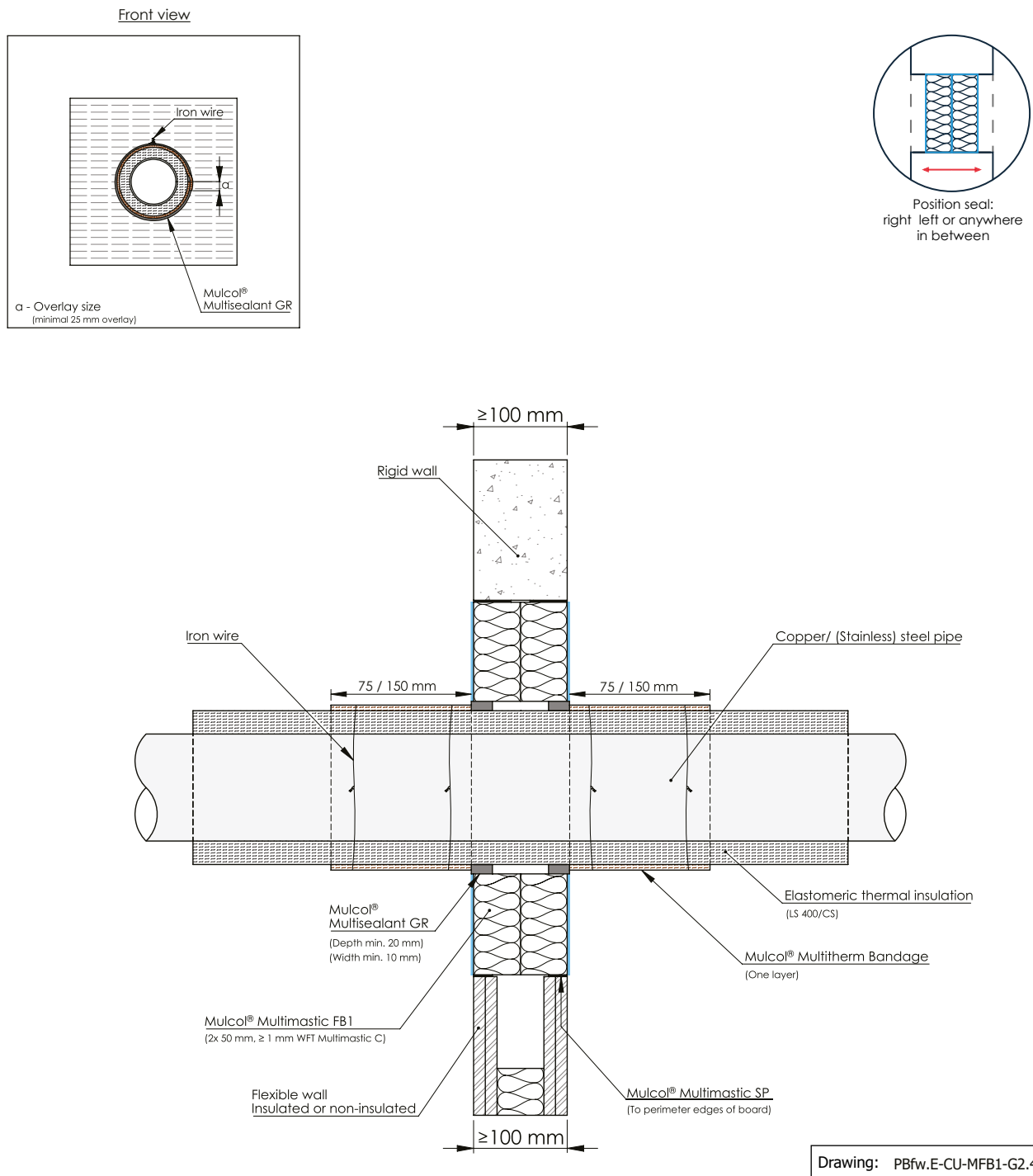
Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex NH (min. class D-s3, d0 D <sub>L</sub> -s3, d0)	9	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 90 C/U
				9 - 25			EI 60 C/U
	≤ Ø 54	≥ 1.5		13	CS		EI 45 C/U, E 90 C/U
				13			EI 60 C/U, E 90 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3	ArmaFlex NH (min. class D-s3, d0 D <sub>L</sub> -s3, d0)	13 - 25	LS 400 / CS		EI 45 C/U
				9			EI 90 C/U, E 120 C/U
	≤ Ø 114.3	≥ 3.6		9 - 25			EI 60 C/U, E 90 C/U
				19 - 25			EI 45 C/U
			25	EI 60 C/U, E 90 C/U			

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification			
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration					
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Ultima (min. class B-s1, d0 B <sub>L</sub> -s1, d0)	9 - 32	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 60 C/U, E 120 C/U			
				32			EI 90 C/U			
	≤ Ø 54	≥ 1.5		13			EI 60 C/U, E 120 C/U			
				13 - 32			EI 60 C/U, E 90 C/U			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		ArmaFlex Ultima (min. class B-s1, d0 B <sub>L</sub> -s1, d0)			32	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 90 C/U
							9			EI 120 C/U
	≤ Ø 114.3	≥ 3.6					9 - 32			EI 90 C/U, E 120 C/U
							13			EI 90 C/U
			13 - 32	EI 60 C/U, E 120 C/U						



## A.1.12 Multimastic FB1 - 2x 50 mm - Metal pipes insulated elastomer

### A.1.12.2 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR - Multitherm Bandage



Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	LI ≥ 75 one layer (one wire)	EI 90 C/U, E 120 C/U
	≤ Ø 54	≥ 1.5		8.5 - 38				CS
				13.5 - 38	EI 30 C/U, E 90 C/U			
	≤ Ø 54	≥ 1.5		13.5 - 38	LS 400 / CS			EI 60 C/U, E 90 C/U
38			EI 90 C/U					
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		8.5	LS 400 / CS		LI ≥ 150 one layer (two wires)	EI 90 C/U, E 120 C/U
	≤ Ø 114.3	≥ 3.6		8.5 - 38				
				18.5				
	≤ Ø 114.3	≥ 3.6		18.5 - 43		EI 90 C/U		

## A.1.12 Multimastic FB1 - 2x 50 mm - Metal pipes insulated elastomer

### A.1.12.2 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR - Multitherm Bandage

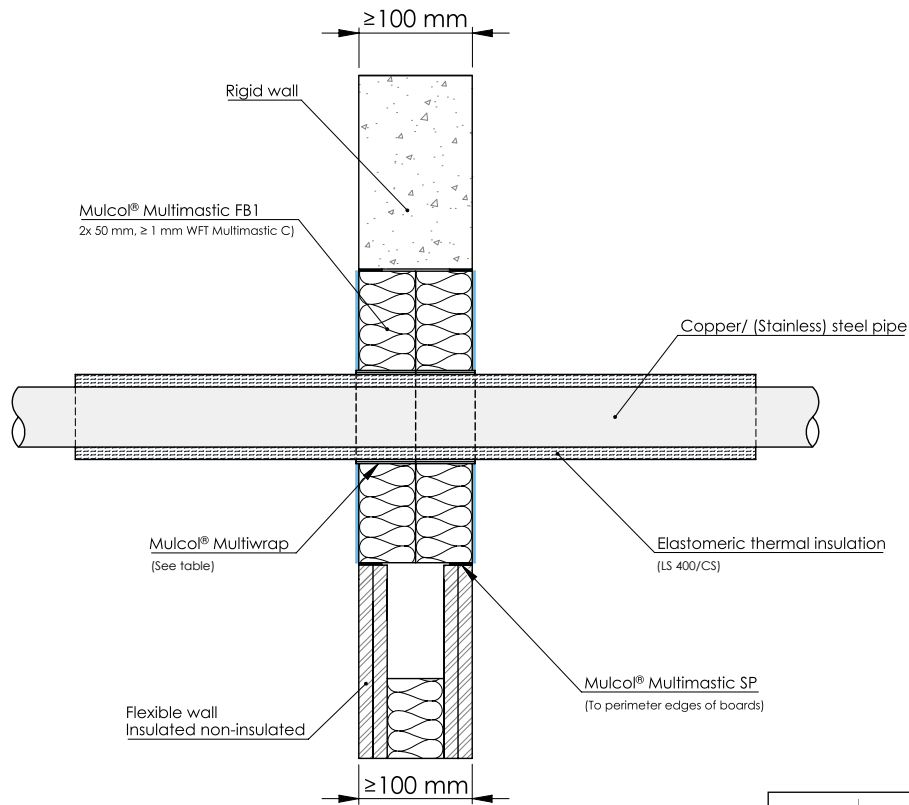
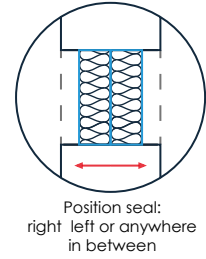
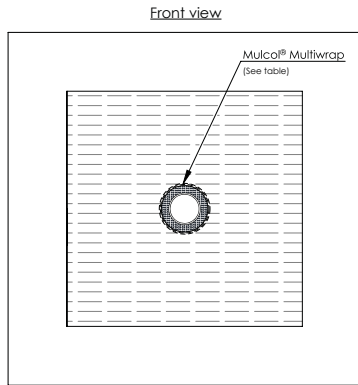
Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 54	≥ 1.5	Kaiflex KK Plus (min. class B-s2, d0 B <sub>L</sub> -s2, d0)	13.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	LI ≥ 75 one layer (two wires)	EI 120 C/U
				13.5 - 35.5			LI ≥ 150 one layer (two wires)	EI 90 C/U, E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		8.5			LI ≥ 75 one layer (two wires)	EI 120 C/U
				8.5 - 35.5			LI ≥ 150 one layer (two wires)	EI 90 C/U, E 120 C/U
				15 - 35.5			EI 90 C/U, E 120 C/U	
				35.5 - 40			EI 120 C/U	
	≤ Ø 114.3	≥ 3.6						

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex NH (min. class D-s3, d0 D <sub>L</sub> -S3, d0)	9	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	LI ≥ 75 one layer (two wires)	EI 90 C/U
				9 - 25				EI 60 C/U
	≤ Ø 54	≥ 1.5		13				CS
				13	EI 60 C/U, E 90 C/U			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		13 - 25	LS 400 / CS			EI 45 C/U
				9				EI 90 C/U, E 120 C/U
	≤ Ø 114.3	≥ 3.6		9 - 25				EI 60 C/U, E 90 C/U
				19 - 25				EI 45 C/U
			25		EI 60 C/U, E 90 C/U			

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Multitherm Bandage	Classification			
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration						
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Ultima (min. class B-s1, d0 B <sub>L</sub> -s1, d0)	9 - 32	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	LI ≥ 75 one layer (two wires)	EI 90 C/U, E 120 C/U			
				32				EI 90 C/U			
	≤ Ø 54	≥ 1.5		13				LI ≥ 150 one layer (two wires)	EI 120 C/U		
				13 - 32					EI 90 C/U		
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		9				LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	LI ≥ 75 one layer (two wires)	EI 120 C/U
				9 - 32							EI 90 C/U, E 120 C/U
	≤ Ø 114.3	≥ 3.6		13 - 32							EI 90 C/U
				32							EI 90 C/U, E 120 C/U

**A.1.12 Multimastic FB1 - 2x 50 mm - Metal pipes insulated elastomer**

**A.1.12.3 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap**



Drawing: PBfw.E-CU-MW2-MFB1.2.22

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 12	≥ 1.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9	LS 400 / CS	Multiwrap (2 layers)	EI 120 C/U, E 180 C/U
	≤ Ø 35	≥ 1.1		35			EI 90 C/U, E 120 C/U
	≤ Ø 54	≥ 1.5		60		Multiwrap (3 layers)	EI 120 C/U
				38			EI 90 C/U, E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6		15	CS	Multiwrap (2 layers)	EI 60 C/U, E 120 C/U
	≤ Ø 219.1	≥ 4.0		32			EI 45 C/U, E 120 C/U
						≤ Ø 324	≥ 3.7
	Multiwrap (3 layers)	EI 60 C/U, E 120 C/U					
		EI 45 C/U, E 180 C/U					
EI 90 C/U, E 180 C/U							

**A.1.12 Multimastic FB1 - 2x 50 mm - Metal pipes insulated elastomer**

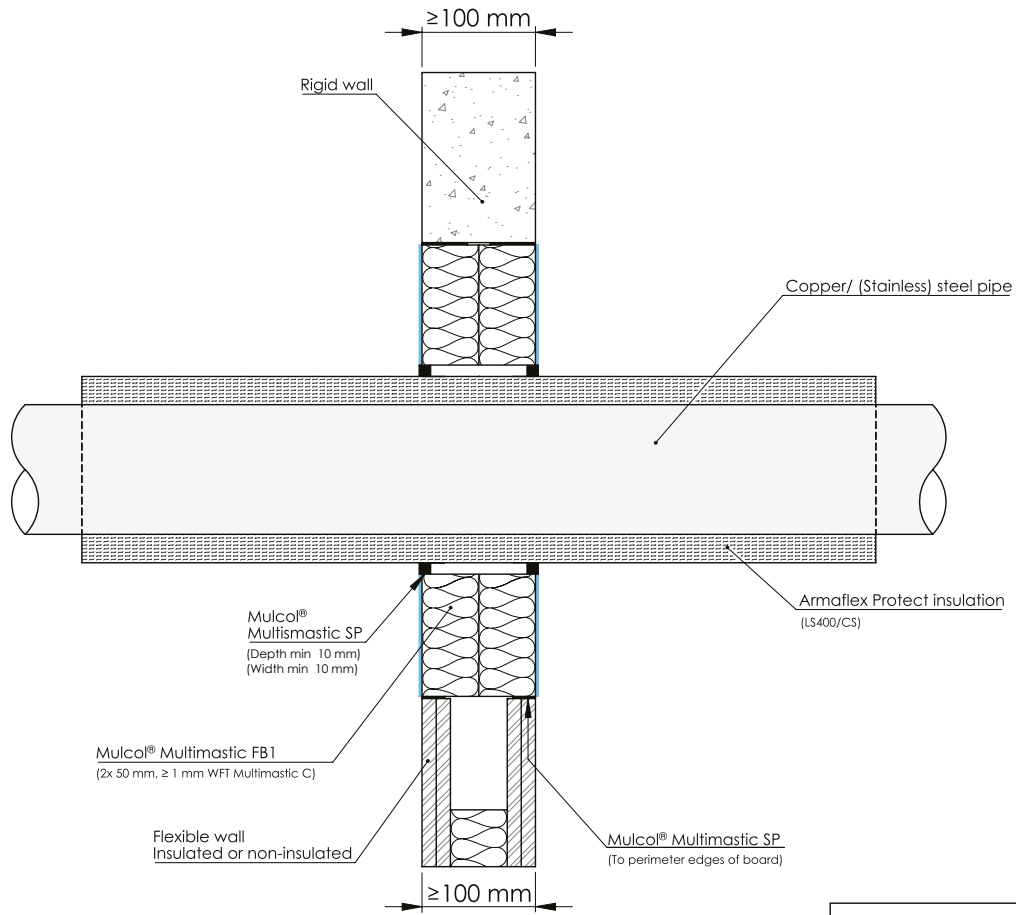
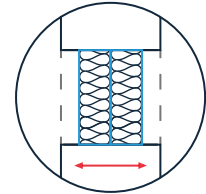
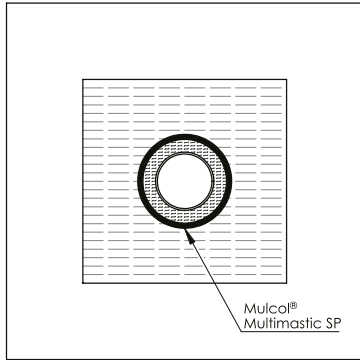
**A.1.12.3 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap**

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Kaiflex ST (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LS 400 / CS	Multiwrap (2 layers)	EI 90 C/U, E 120 C/U
				32			EI 120 C/U
≤ Ø 54	≥ 1.5	13 - 32		EI 30 C/U, E 120 C/U			
		32		EI 60 C/U, E 120 C/U			
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6		13			EI 60 C/U, E 120 C/U
	≤ Ø 168.3	≥ 4.5		13 - 32			EI 45 C/U, E 120 C/U
			32	EI 60 C/U, E 120 C/U			

**A.1.12 Multimastic FB1 - 2x 50 mm - Metal pipes insulated elastomer**

**A.1.12.4 Copper and steel pipes - ArmaFlex Protect LS 400 / CS**

Front view



Drawing: PBfw.E-CU-MFB1.2.10

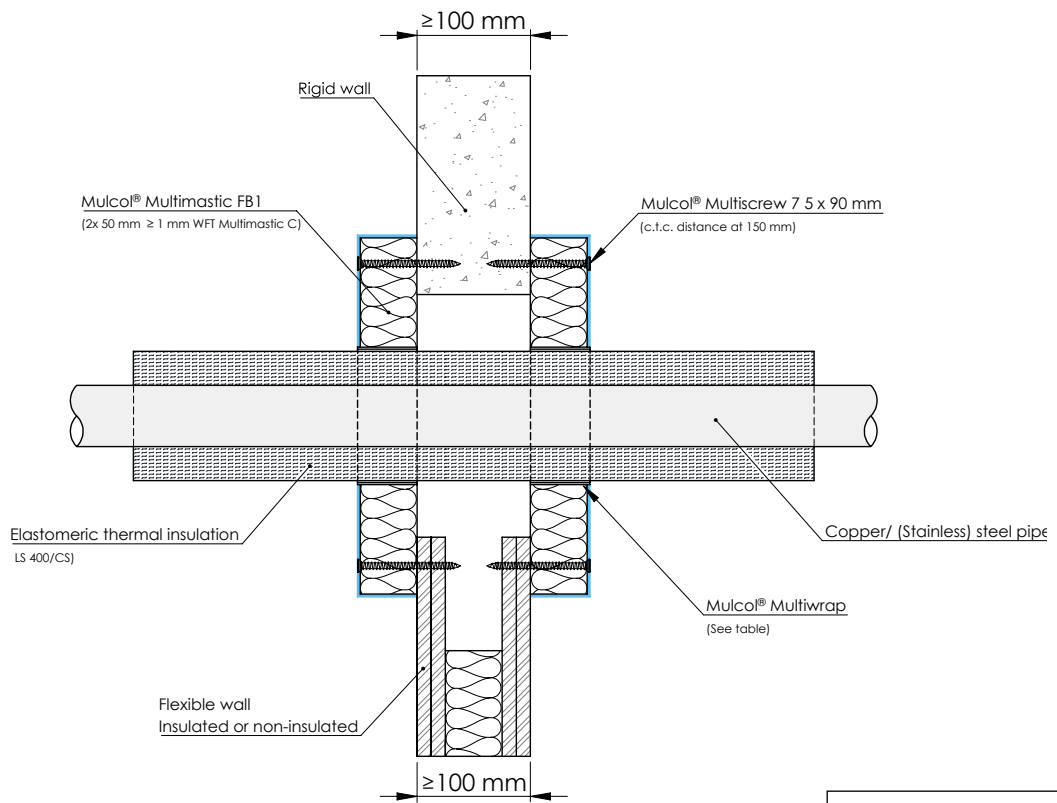
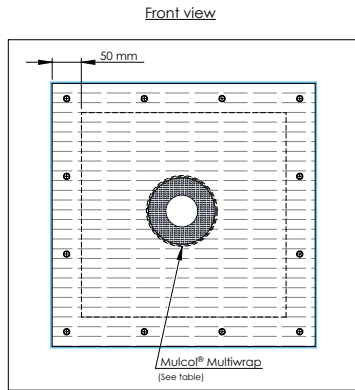
Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Protect	20 - 25	LS 400 / CS	Multimastic SP 10 x ≥ 10 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5		25			EI 90 C/U, E 120 C/U

**A.1.13**

**Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Metal pipes insulated elastomer**

**A.1.13.1**

**Copper and steel pipes - Elastomer LS400 / CS - Multiwrap**

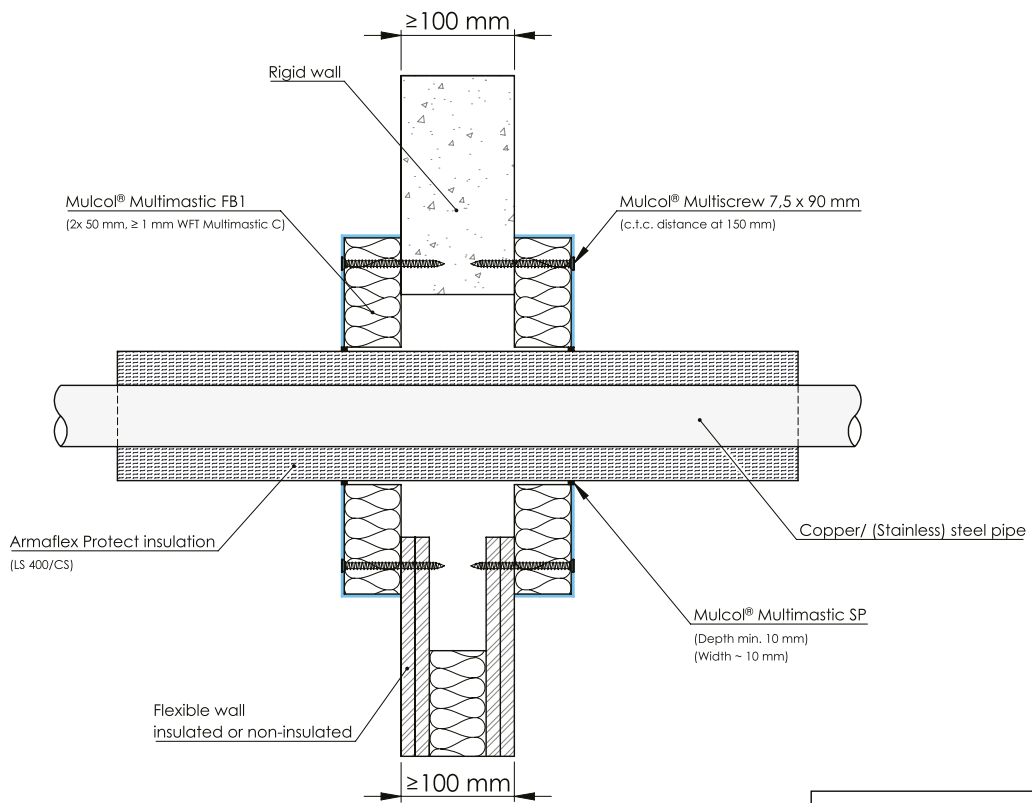
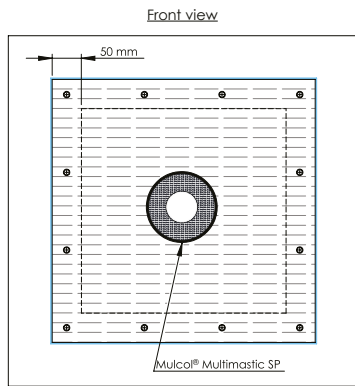


Drawing: PBPfw.E-CU-MW2-MFB1.2.22

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 54	≥ 1.5	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	38	LS 400 / CS	Multiwrap (2 layers)	EI 60 C/U, E 120 C/U

**A.1.13 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Metal pipes insulated elastomer**

**A.1.13.2 Copper and steel pipes - ArmaFlex Protect LS 400 / CS**

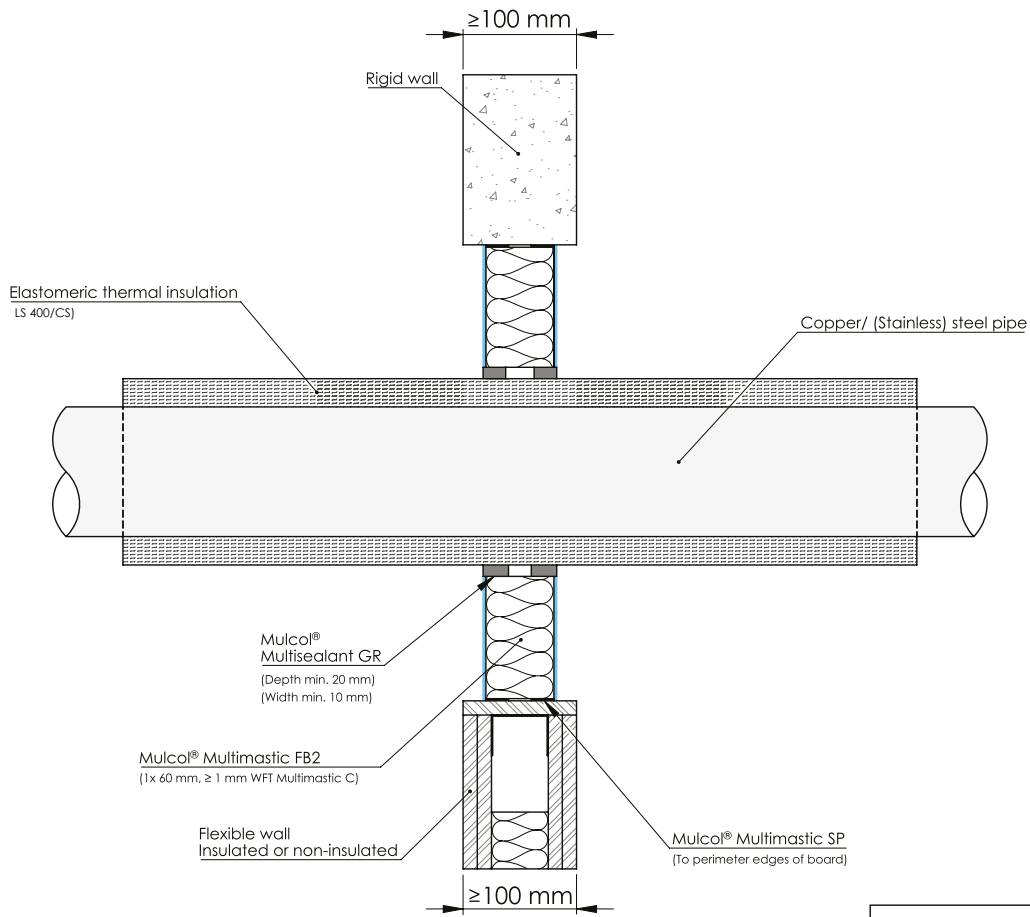
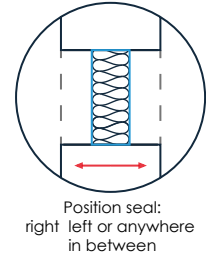
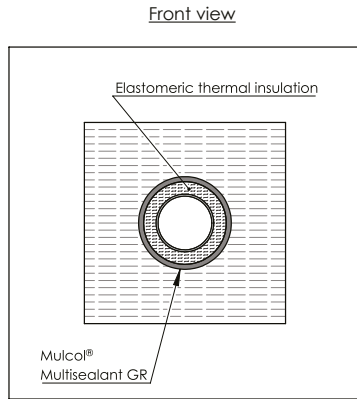


Drawing: PBPfw.E-CU-MFB1.2.22

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Protect	20 - 25	LS 400 / CS	Multimastic SP 10 x ≥ 10 (wxd)	EI 120 U/C
	≤ Ø 54	≥ 1.5		25			EI 90 C/U, E 120 C/U

**A.1.14 Multimastic FB2 - 1x 60 mm - Metal pipes insulated elastomer**

**A.1.14.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**



Drawing: PBfw.E-CU-MFB2-G2.4.22

Services	Pipe dimensions (mm)		Type	Insulation		System (mm)	Classification
	Outer dimension	Wall thickness		Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxhd)	EI 60 C/U, E 90 C/U
	≤ Ø 54	≥ 1.5		8.5 - 33.5			EI 60 C/U, E 120 C/U
13.5 - 38				EI 45 C/U, E 60 C/U			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		8.5 - 43	CS		EI 60 C/U
	≤ Ø 114.3	≥ 3.6		15 - 43			EI 45 C/U, E 60 C/U
				15 - 43	EI 60 C/U		
			43	LS 400 / CS	EI 60 C/U		



**A.1.14 Multimastic FB2 - 1x 60 mm - Metal pipes insulated elastomer**

**A.1.14.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

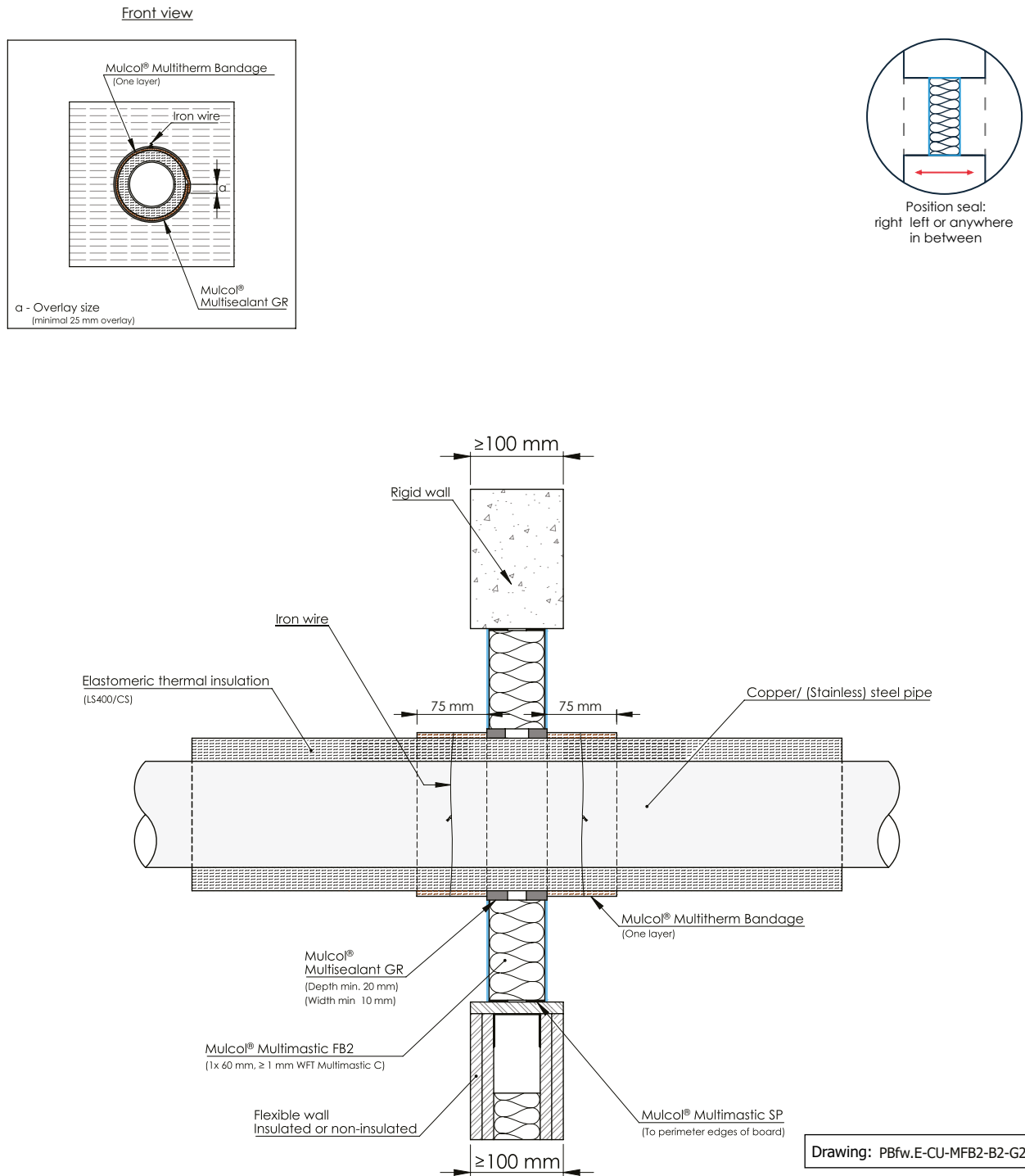
Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Kaiflex KK Plus (min. class B-s2, d0 B <sub>L</sub> -s2, d0)	35.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 45 C/U / E 90 C/U
	≤ Ø 54	≥ 1.5		35.5			EI 45 C/U / E 90 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		8.5			EI 90 C/U / E 120 C/U
	≤ Ø 114.3	≥ 3.6		8.5 - 40			EI 45 C/U / E 120 C/U
				15 - 40			EI 45 C/U / E 90 C/U

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex NH (min. class D-s3, d0 D <sub>L</sub> -S3, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 30 C/U, E 60 C/U
				9 - 25	CS		EI 60 C/U
				25	LS 400 / CS		EI 60 C/U
	≤ Ø 54	≥ 1.5		13	CS		EI 45 C/U, E 120 C/U
				13	CS		EI 60 C/U, E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		13 - 25	LS 400 / CS		EI 45 C/U, E 60 C/U
				9			EI 60 C/U, E 120 C/U
				9 - 25			EI 60 C/U
≤ Ø 114.3	≥ 3.6	13 - 25		EI 60 C/U			

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Ultima (min. class B-s1, d0 B <sub>L</sub> -S1, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 45 C/U, E 120 C/U
				25			EI 60 C/U, E 120 C/U
	≤ Ø 54	≥ 1.5		13 - 32			EI 45 C/U, E 90 C/U
				32			EI 60 C/U, E 90 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		9 - 32			EI 60 C/U, E 90 C/U
				32			EI 60 C/U, E 120 C/U
	≤ Ø 114.3	≥ 3.6		13 - 32			EI 90 C/U, E 120 C/U

## A.1.14 Multimastic FB2 - 1x 60 mm - Metal pipes insulated elastomer

### A.1.14.2 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR - Multitherm Bandage



Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	8.5 - 33.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	LI ≥ 75 one layer (one wire)	<b>EI 60 C/U</b>
	≤ Ø 54	≥ 1.5		17 - 43				
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		8.5 - 43				
	≤ Ø 114.3	≥ 3.6		15 - 43				

## A.1.14 Multimastic FB2 - 1x 60 mm - Metal pipes insulated elastomer

### A.1.14.2 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR - Multitherm Bandage

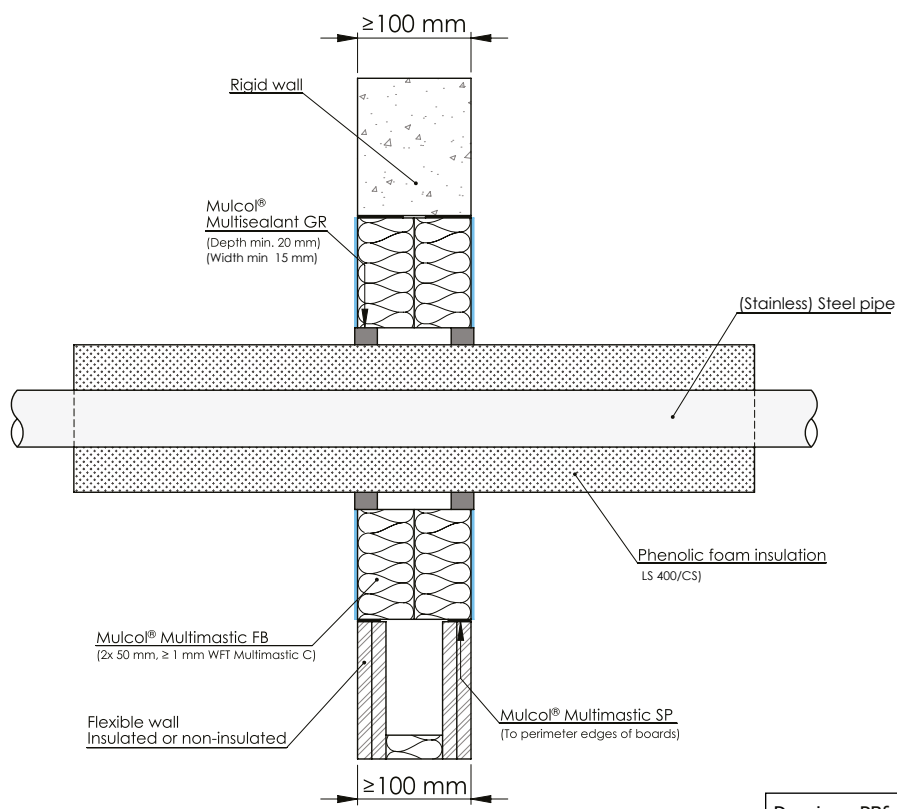
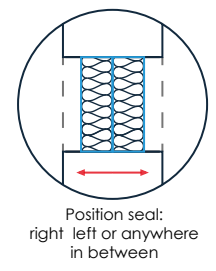
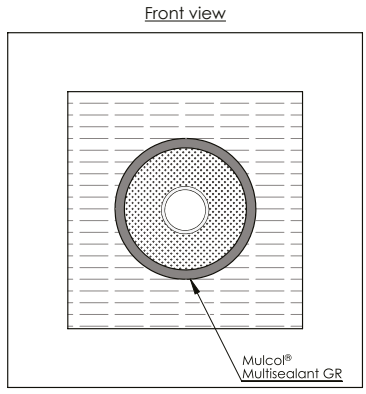
Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Kaiflex KK Plus (min. class B-s2, d0 B <sub>L</sub> -s2, d0)	9 - 35.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	LI ≥ 75 one layer (one wire)	EI 60 C/U
	≤ Ø 54	≥ 1.5		21 - 35.5				
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		8.5 - 35.5				
	≤ Ø 114.3	≥ 3.6		15 - 40				

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex NH (min. class D-s3, d0 D <sub>L</sub> -S3, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	LI ≥ 75 one layer (one wire)	EI 60 C/U
	≤ Ø 54	≥ 1.5		13 - 25				
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		9 - 25				
	≤ Ø 114.3	≥ 3.6		13 - 25				

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Ultima (min. class B-s1, d0 B <sub>L</sub> -S1, d0)	13 - 32	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	LI ≥ 75 one layer (one wire)	EI 60 C/U
	≤ Ø 54	≥ 1.5		13 - 32				
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		9 - 32				
	≤ Ø 114.3	≥ 3.6		13 - 32				

**A.1.15 Multimastic FB1 - 2x 50 mm - Metal pipes insulated phenolic foam**

**A.1.15.1 Steel pipes - Phenolic foam LS 400 / CS - Multisealant GR**

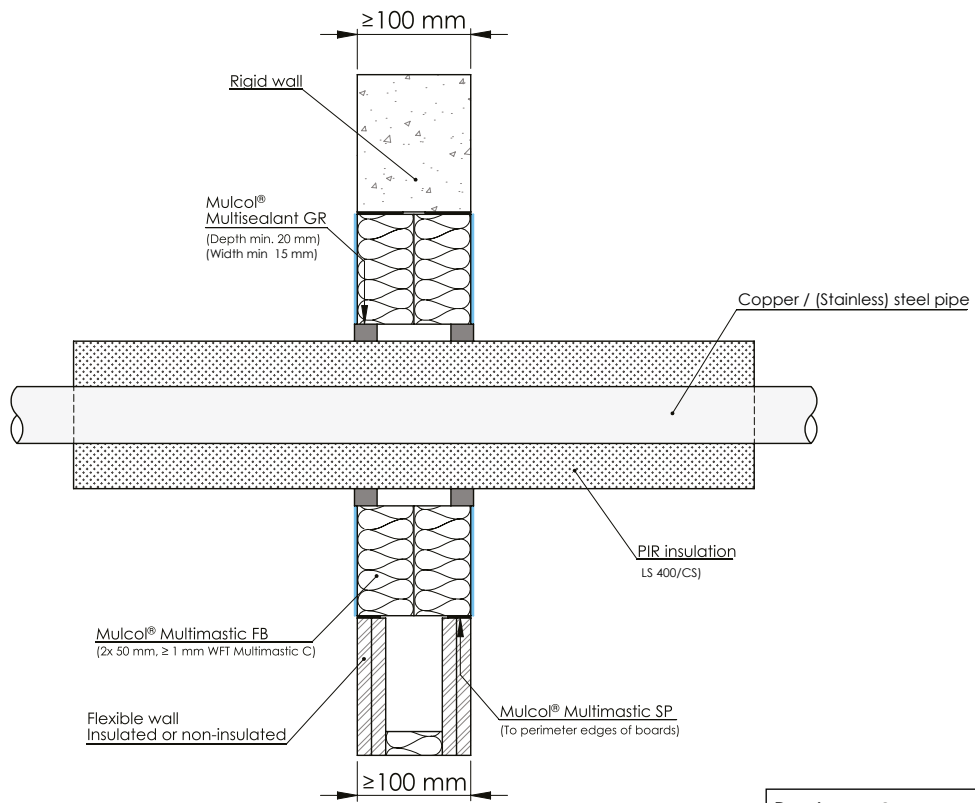
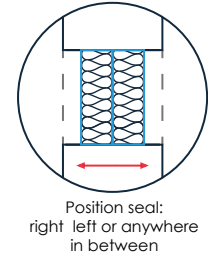
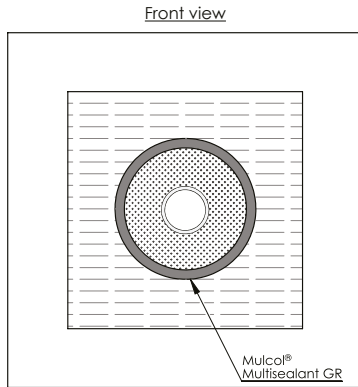


Drawing: PBfw.E-ST-MFB1-G2.4.27

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3	Kingspan Kooltherm	15 - 45	LS 400 / CS	Multisealant GR ≥ 15 x 20 (wxd)	EI 60 C/U
	≤ Ø 114.3	≥ 3.6		20 - 45			

**A.1.16 Multimastic FB1 - 2x 50 mm - Metal pipes insulated PIR foam**

**A.1.16.1 Copper and steel pipes - PIR foam LS 400 / CS - Multisealant GR**



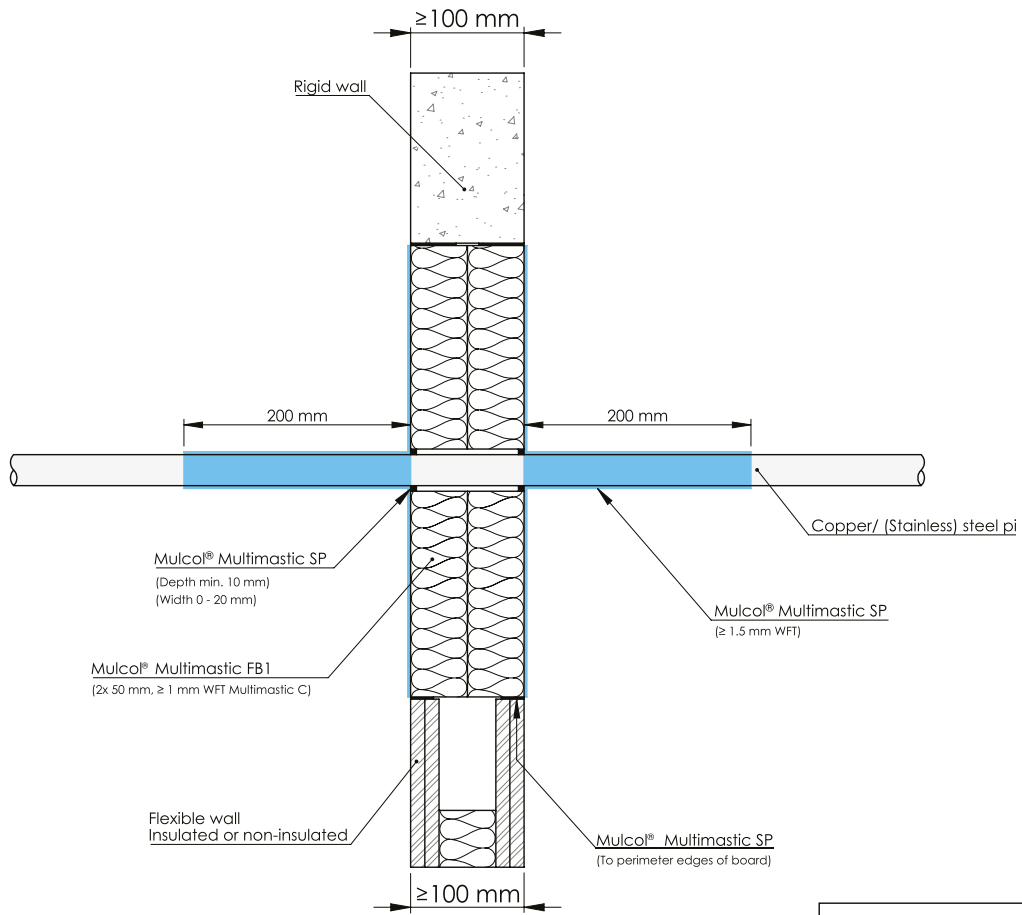
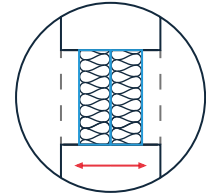
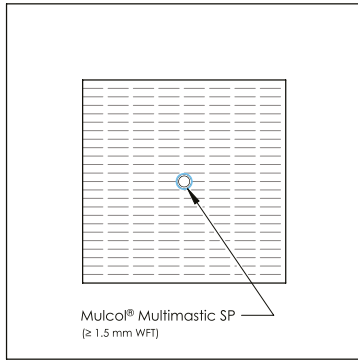
Drawing: PBfw.E-CU-MFB1-G2.4.28

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	PIR (min. class E)	20 - 40	LS 400 / CS	Multisealant GR ≥ 15 x 20 (wxd)	EI 60 C/U
	≤ Ø 54	≥ 1.5		25 - 40			
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6					

**A.1.17 Multimastic FB1 - 2x 50 mm - Metal pipes uninsulated**

**A.1.17.1 Copper and steel pipes - Multimastic SP**

Front view



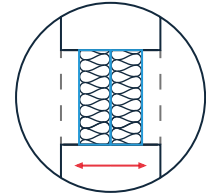
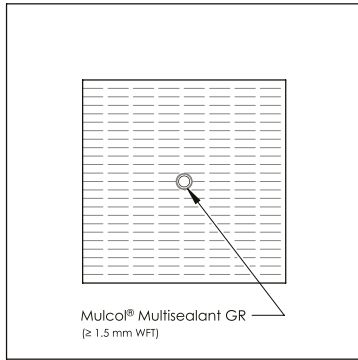
Drawing: PBfw.E-CU-MFB1-SPC.1.10

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Multimastic SP	1.5 WFT	LI 200	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 C/U
(Stainless) Steel / cast iron	≤ Ø 16	≥ 1.0					EI 120 C/U
	≤ Ø 26.9	≥ 2.6					EI 90 C/U
	≤ Ø 42.4	≥ 3.2					EI 120 C/U
	≤ Ø 60.3	≥ 3.6					EI 60 C/U
							EI 120 C/U

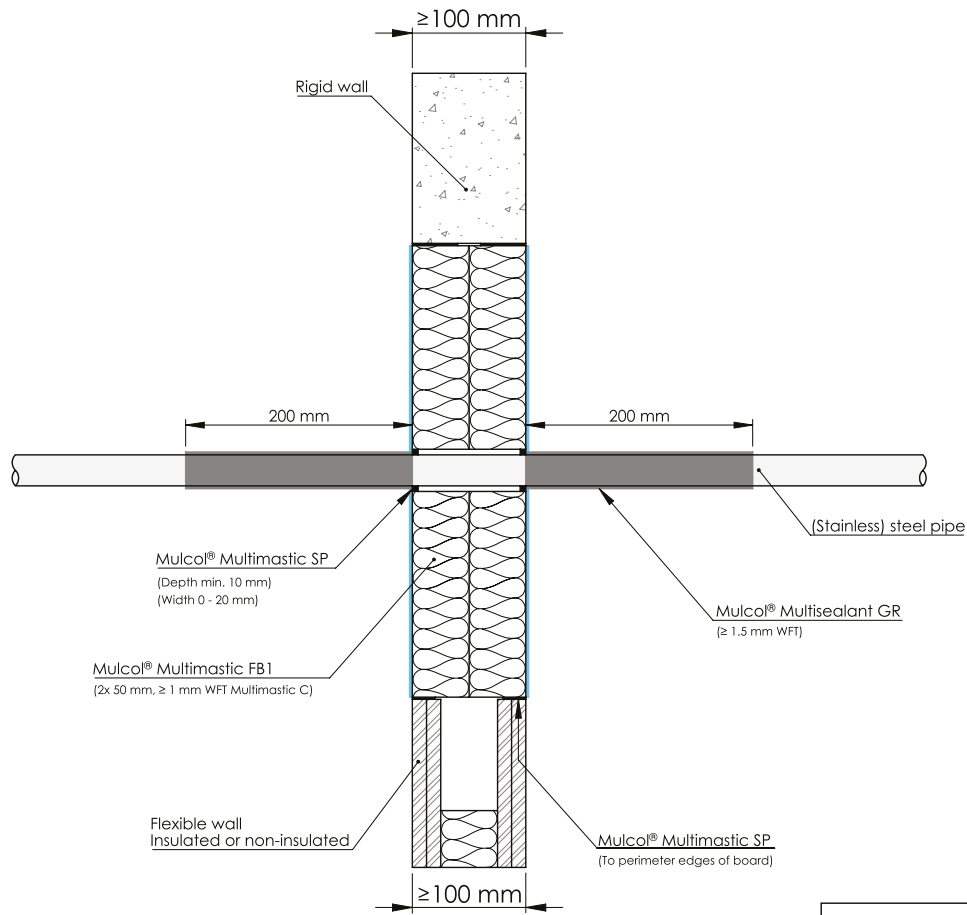
**A.1.17 Multimastic FB1 - 2x 50 mm - Metal pipes uninsulated**

**A.1.17.2 Steel pipes - Multisealant GR**

Front view



Position seal:  
right left or anywhere  
in between

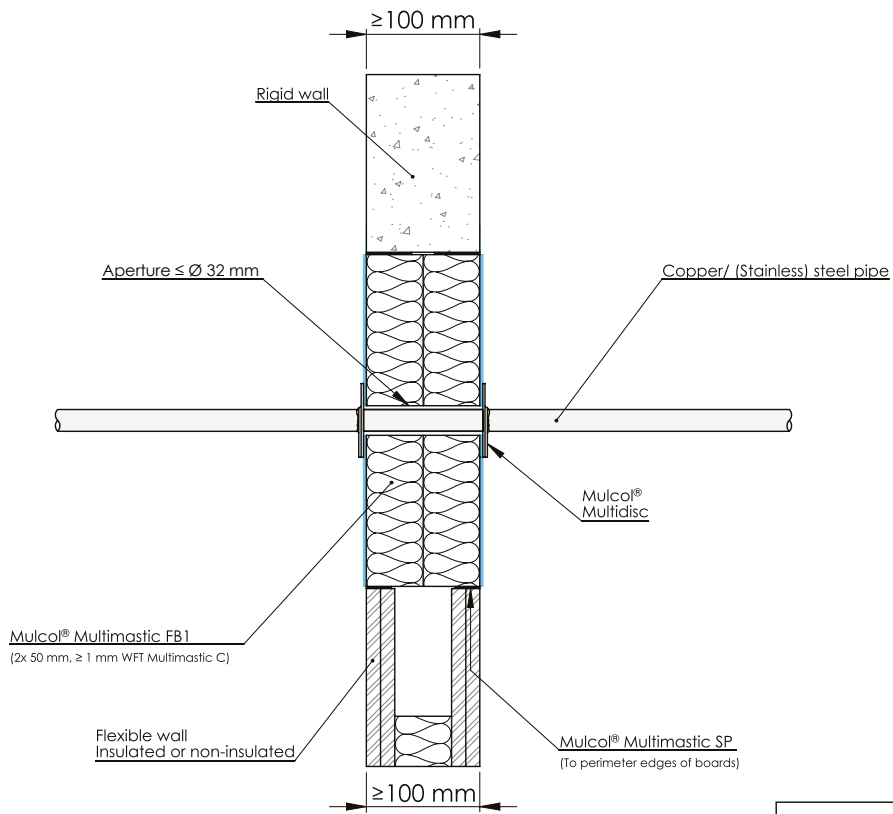
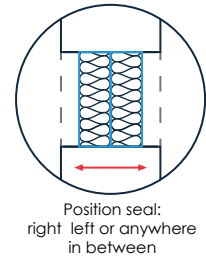
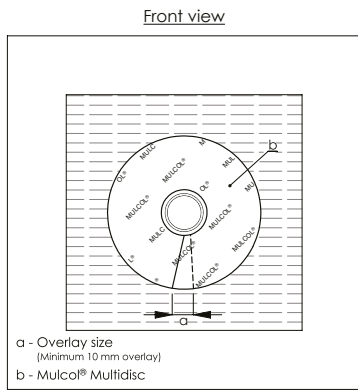


Drawing: PBfw.E-ST-MFB1-GRC.1.10

Services	Pipe dimensions (mm)		Coating	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.6	Coat back 200 mm ≥ 1.5 mm WFT Multisealant GR	Multisealant GR 0-20 x ≥ 10 (wxd)	EI 90 C/U, E 120 C/U
	≤ Ø 60.3	≥ 3.6			

**A.1.17 Multimastic FB1 - 2x 50 mm - Metal pipes uninsulated**

**A.1.17.3 Copper and steel pipes - Multidisc**



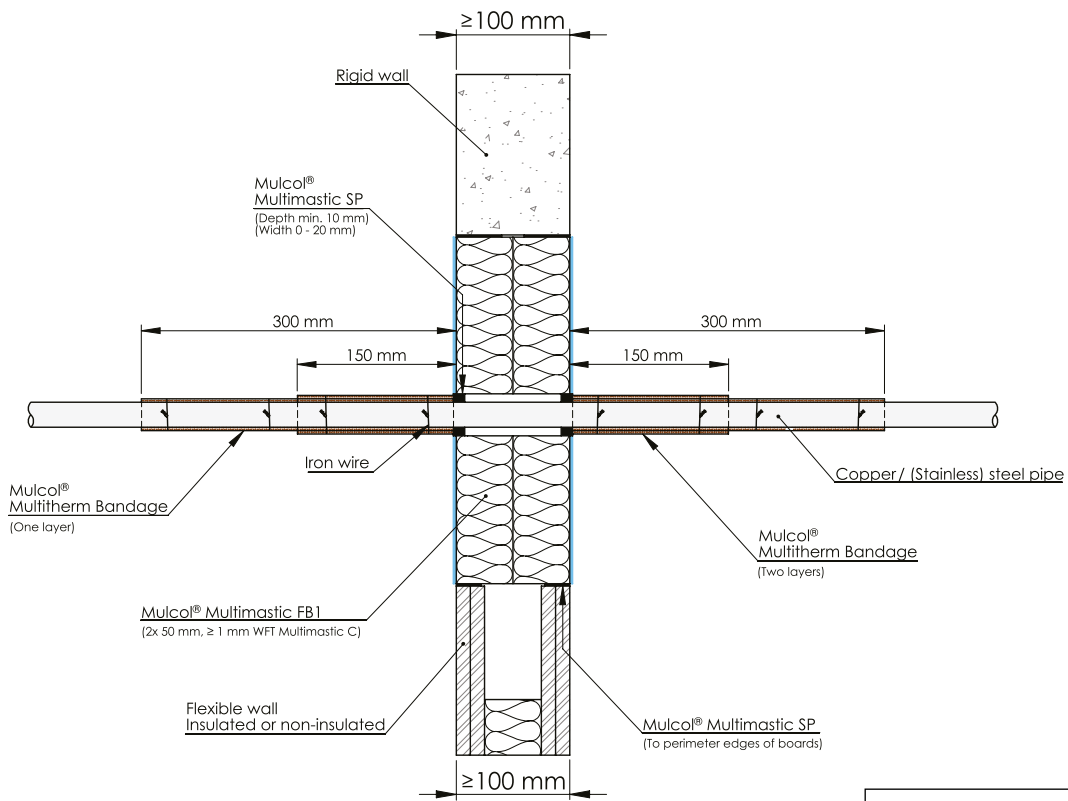
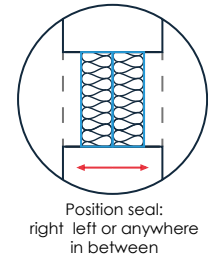
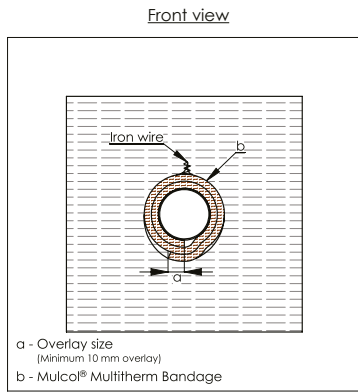
Drawing: PBfw.E-MLA-M2.0.10

Services	Pipe dimensions (mm)		Product	Aperture (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness				
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Multidisc	≤ Ø 32	Not required	EI 45 C/U, E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 17.2					EI 90 C/U



**A.1.17 Multimastic FB1 - 2x 50 mm - Metal pipes uninsulated**

**A.1.17.4 Copper and steel pipes - Multitherm Bandage**

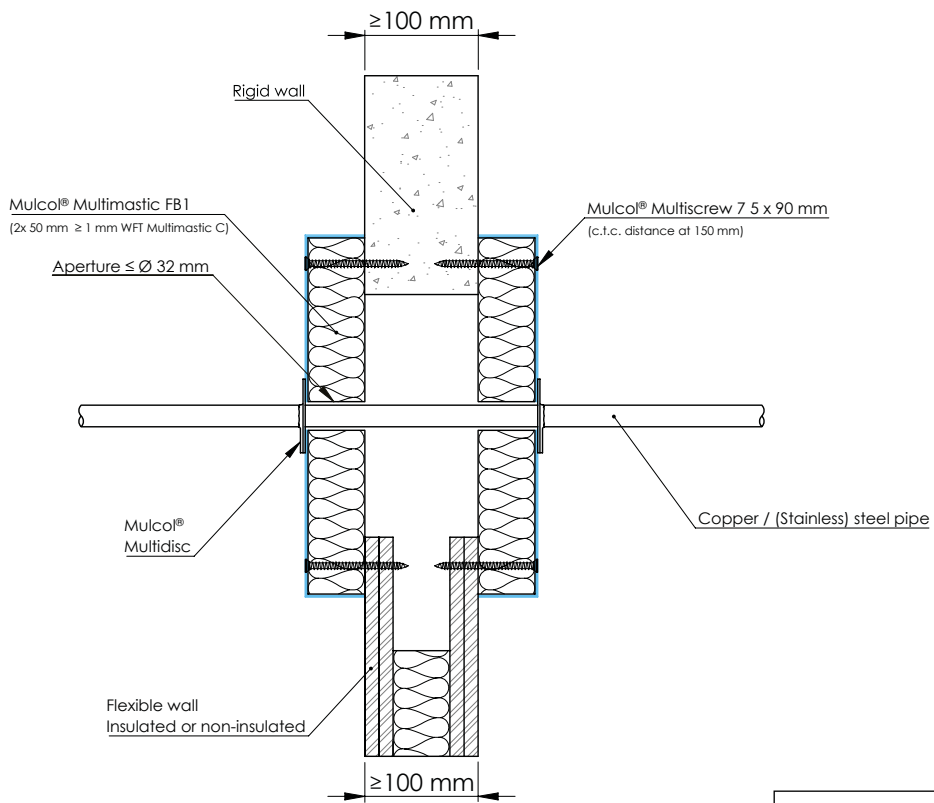
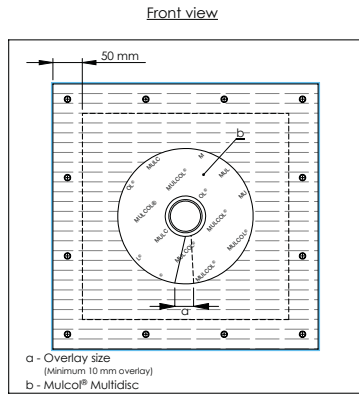


Drawing: PBfw.E-CU-MFB1-B2.3.21

Services	Pipe dimensions (mm)		Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Multimastic SP 0-20 x ≥ 10 (wxd)	LI 150 two layers (two wires)	EI 30 C/U, E 120 C/U
	≤ Ø 15	≥ 1.0		LI 150 two layers (two wires) + LI 300 one layer (two wires)	EI 60 C/U, E 120 C/U
	≤ Ø 54	≥ 1.5			EI 45 C/U, E 120 C/U
	≤ Ø 88.9	≥ 2.0			EI 30 C/U, E 120 C/U

**A.1.18 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Metal pipes uninsulated**

**A.1.18.1 Copper and steel pipes - Multidisc**

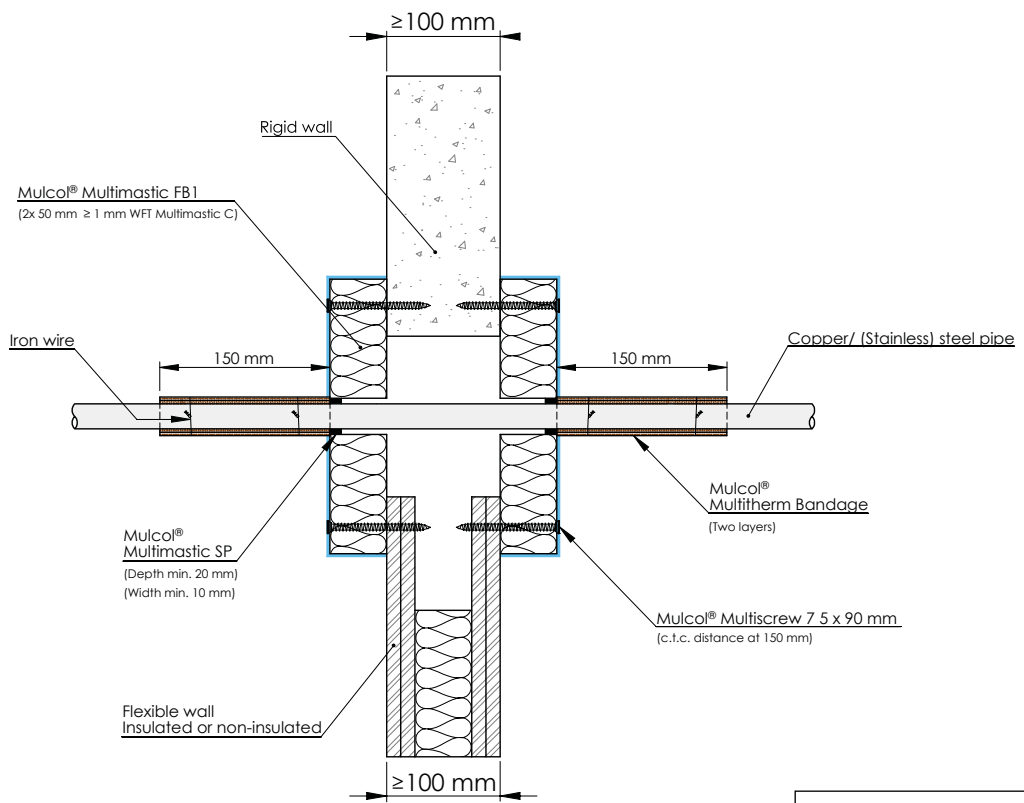
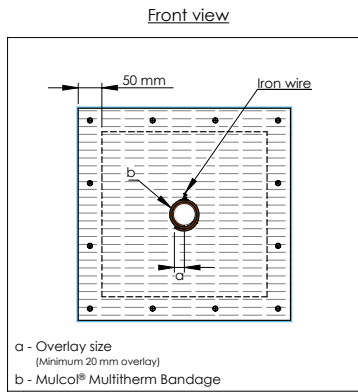


Drawing: PBPfw.E-CU-M2.0.10

Services	Pipe dimensions (mm)		Product	Aperture (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness				
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Multidisc	≤ Ø 32	Not required	EI 45 C/U, E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 17.2					EI 90 C/U

**A.1.18 Multimastic FB1 Pattress fixed to wall - 2x 50 mm - Metal pipes uninsulated**

**A.1.18.2 Copper and steel pipes - Multitherm Bandage**



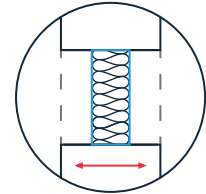
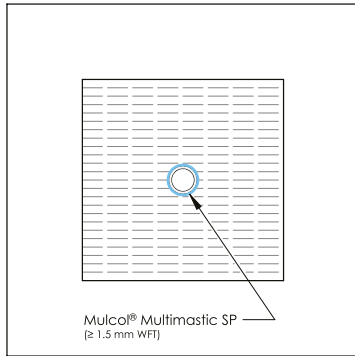
Drawing: PBfw.E-CU-MFB1-B2.1.20

Services	Pipe dimensions (mm)		Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Multimastic SP 0-20 x ≥ 10 (wxd)	LI 150 two layers (two wires)	EI 120 C/U
	≤ Ø 15	≥ 1.5		LI 150 two layers (two wires) + LI 300 one layer (two wires)	EI 45 C/U, E 120 C/U
	≤ Ø 54	≥ 2.0			EI 30 C/U, E 120 C/U

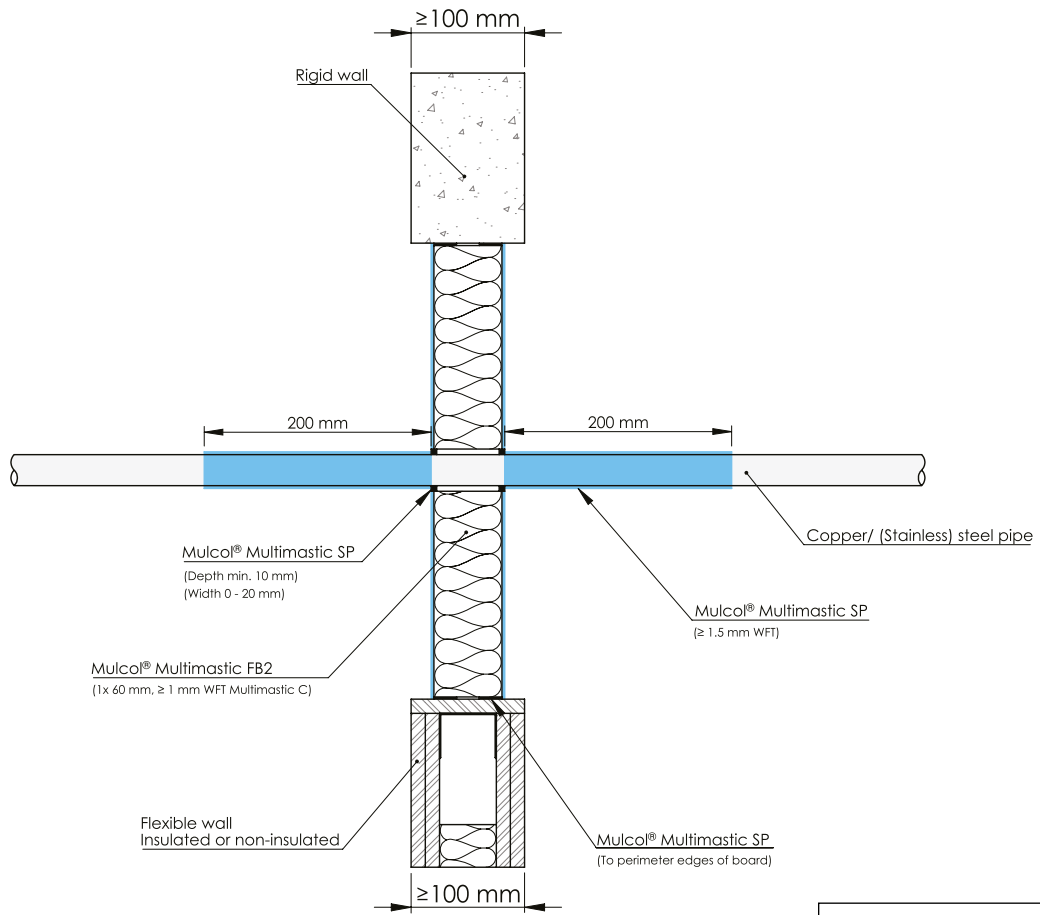
**A.1.19 Multimastic FB2 - 1x 60 mm - Metal pipes uninsulated**

**A.1.19.1 Copper and steel pipes - Multimastic SP**

Front view



Position seal:  
right left or anywhere  
in between



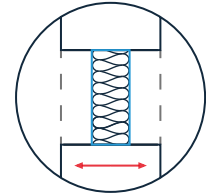
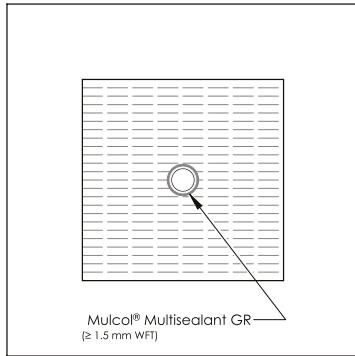
Drawing: PBfw.E-CU-MFB2-SPC.1.10

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Multimastic SP	1.5 WFT	LI 200	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 30 C/U E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.6					EI 60 C/U
	≤ Ø 42.4	≥ 3.2					E 120 C/U
	≤ Ø 60.3	≥ 3.6					

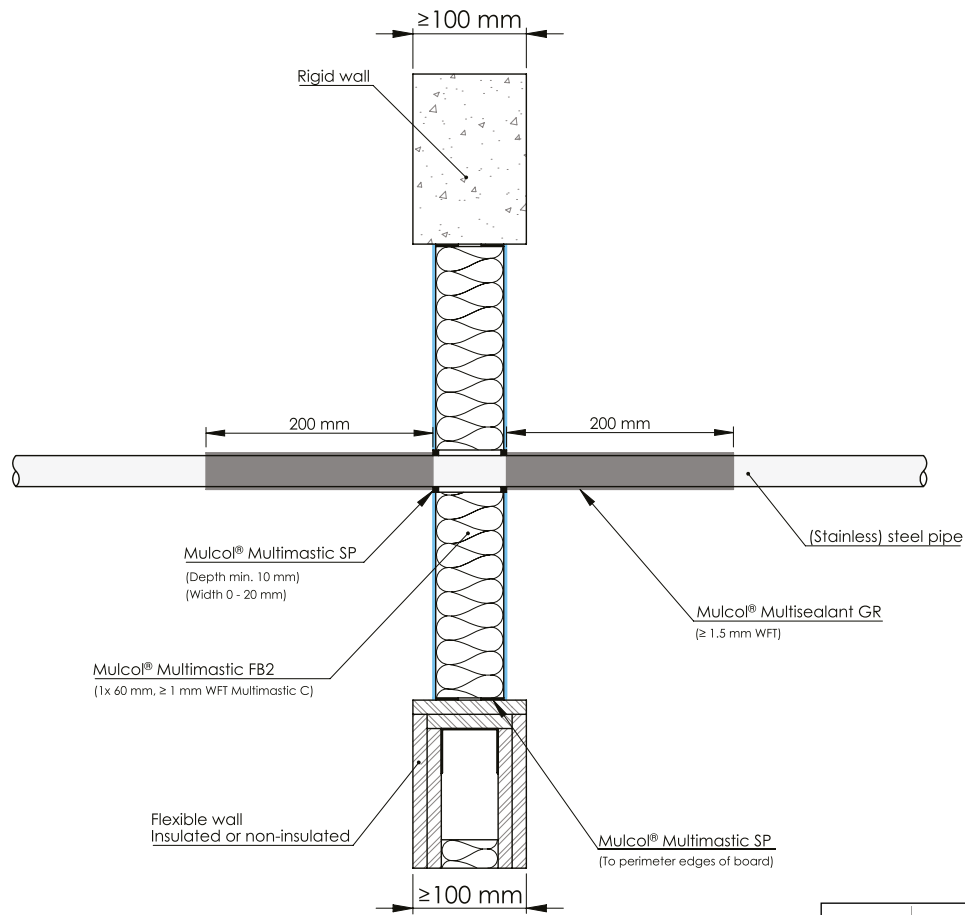
**A.1.19 Multimastic FB2 - 1x 60 mm - Metal pipes uninsulated**

**A.1.19.2 Steel pipes - Multisealant GR**

Front view



Position seal:  
right left or anywhere  
in between

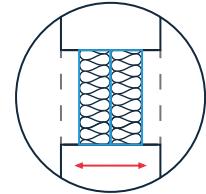


Drawing: PBFw.E-ST-MFB2-GRC.1.10

Services	Pipe dimensions (mm)		Coating	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.6	Coat back 200 mm ≥ 1.5 mm WFT Multisealant GR	Multisealant GR 0-20 x ≥ 10 (wxd)	EI 60 C/U, E 120 C/U
	≤ Ø 60.3	≥ 3.6			

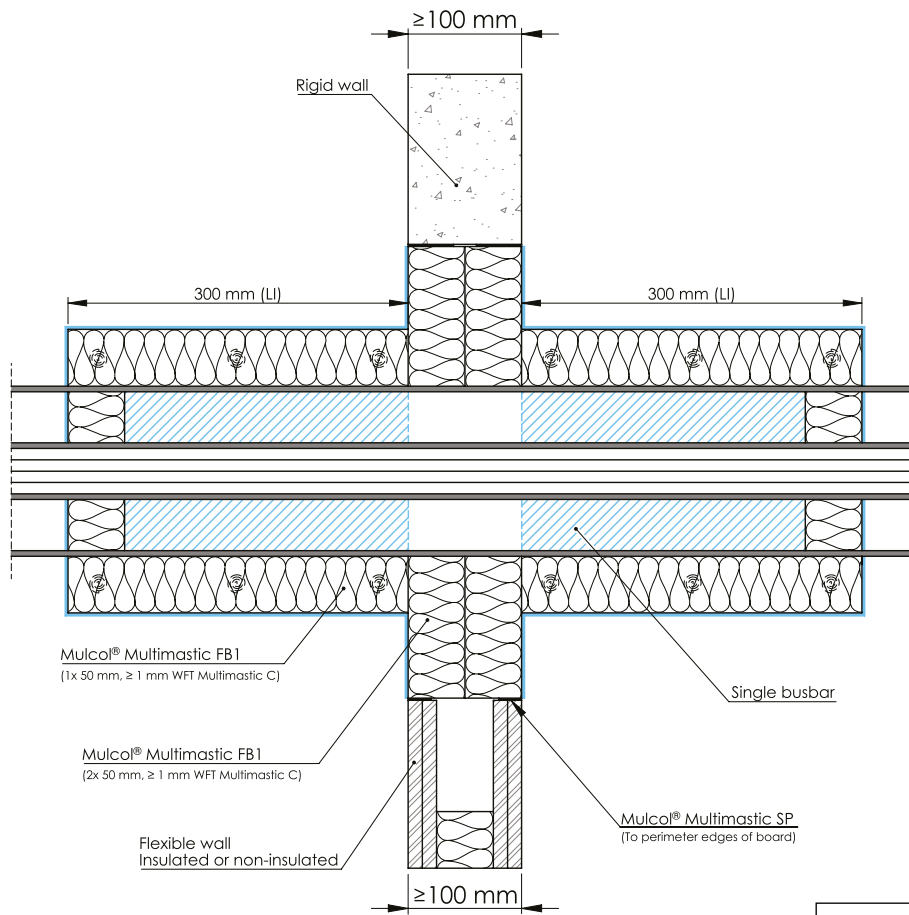
**A.1.20 Multimastic FB1 - 2x 50 mm - Busbars**

**A.1.20.1 Single busbar - LI 300**



Position seat:  
right left or anywhere  
in between

Side view

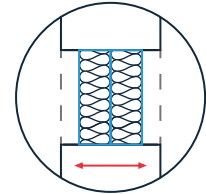


Drawing: PBfw.E-1BB-MFB1.2.10

Services	Service dimensions		Insulation			Classification
	Outside	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	≤ 150 x 250 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 300 / CI	<b>EI 60</b>

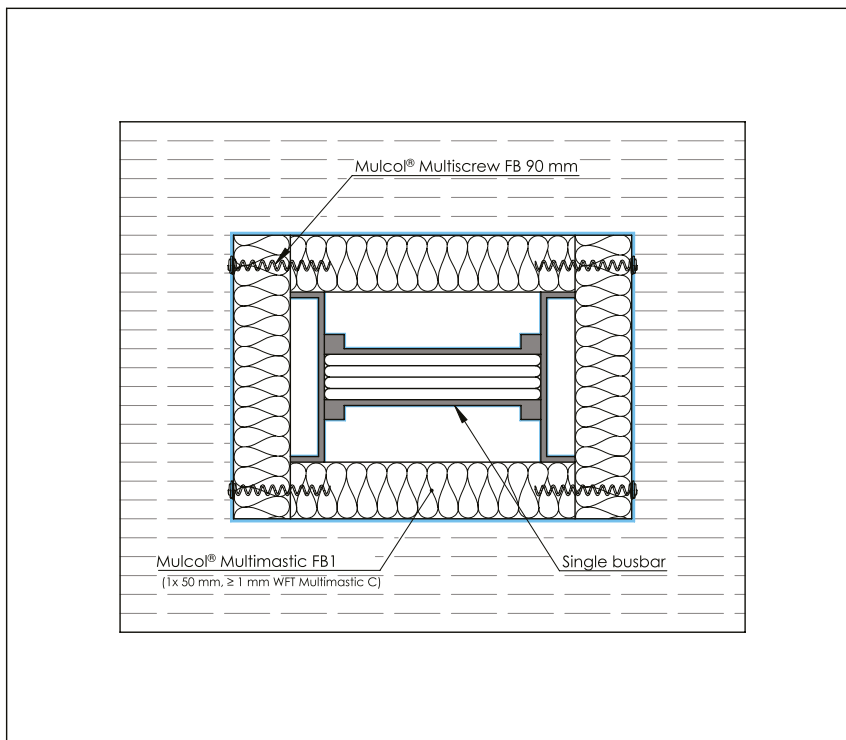
**A.1.20 Multimastic FB1 - 2x 50 mm - Busbars**

**A.1.20.1 Single busbar - LI 300**



Position seal:  
right left or anywhere  
in between

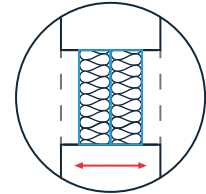
Front view



Drawing: PBfw.E-1BB-MFB1.2.10

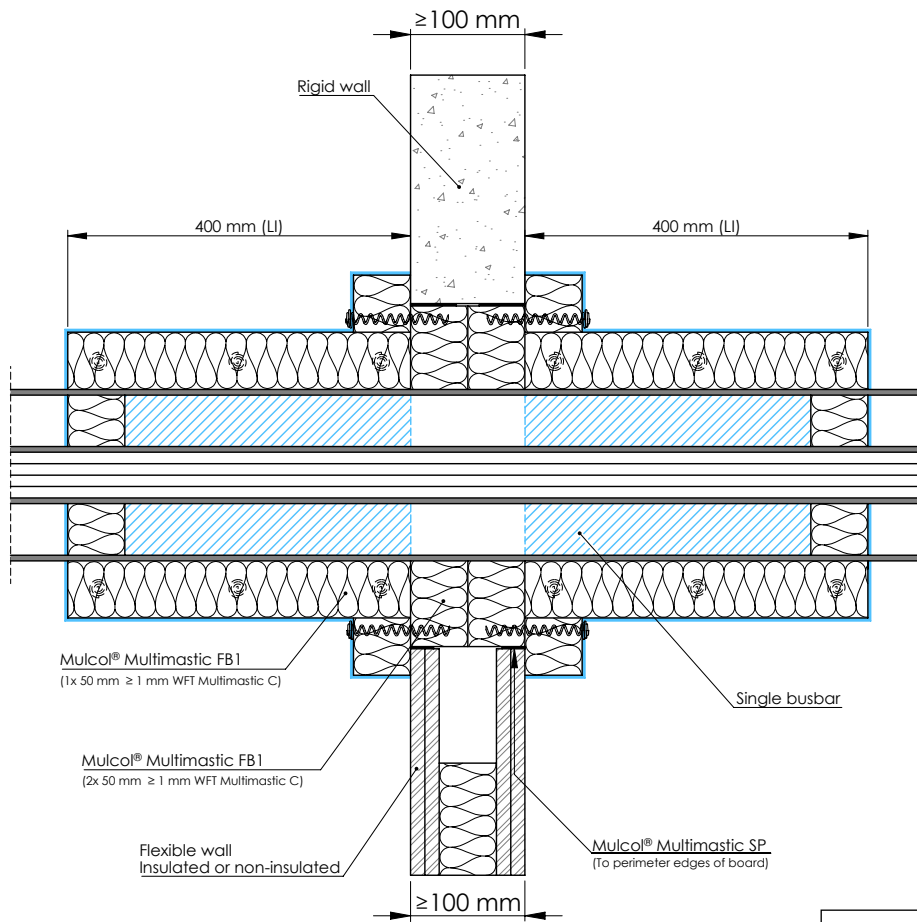
**A.1.20 Multimastic FB1 - 2x 50 mm - Busbars**

**A.1.20.2 Single busbar - LI 400**



Position seat:  
right left or anywhere  
in between

Side view



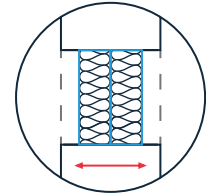
Drawing: PBfw.E-1BB-MFB1.2.10

Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	≤ 150 x 250 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	<b>EI 120</b>



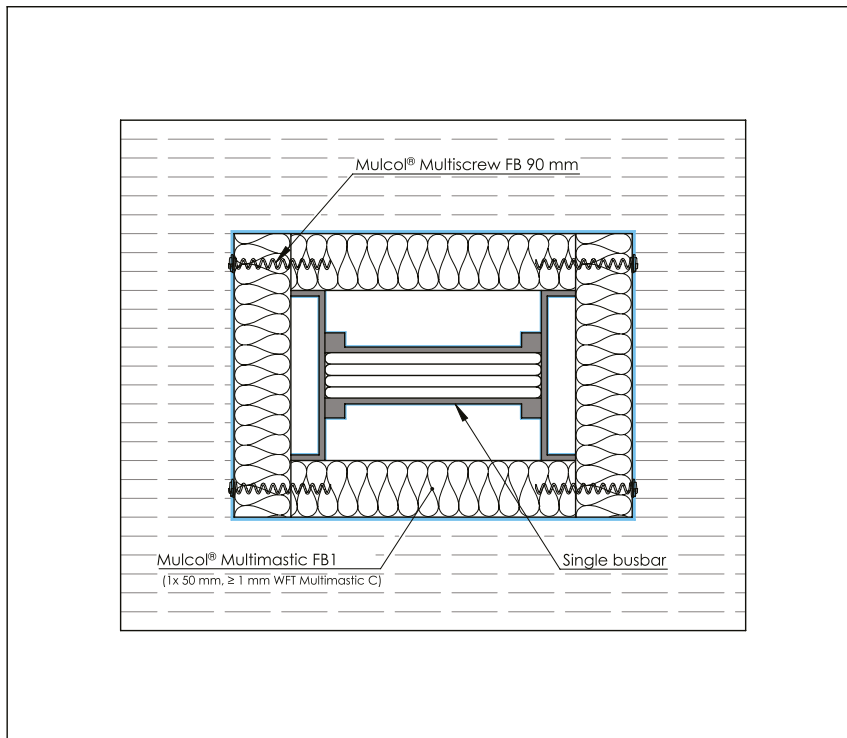
**A.1.20 Multimastic FB1 - 2x 50 mm - Busbars**

**A.1.20.2 Single busbar - LI 400**



Position seat:  
right left or anywhere  
in between

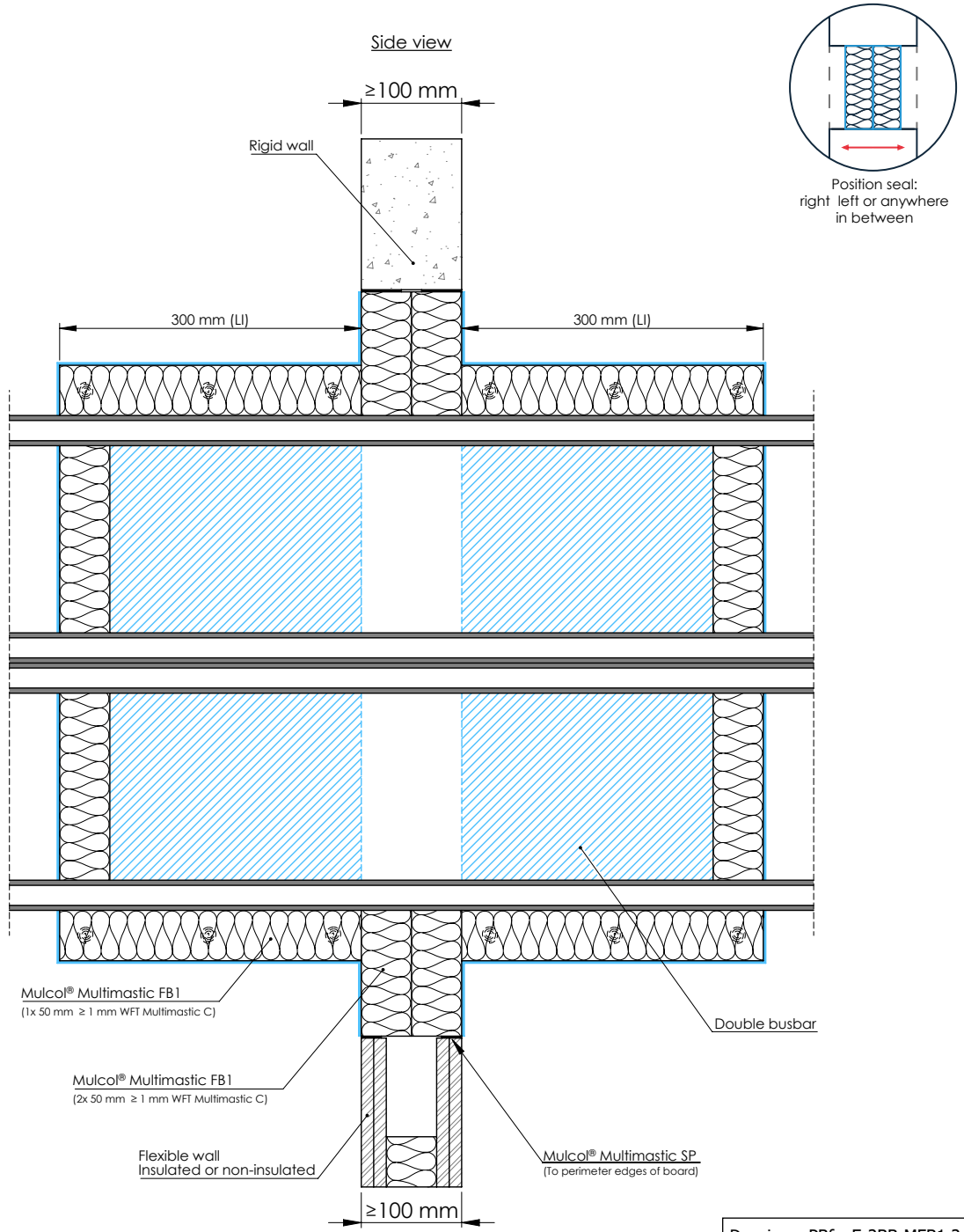
Front view



Drawing: PBfw.E-1BB-MFB1.2.10

**A.1.20 Multimastic FB1 - 2x 50 mm - Busbars**

**A.1.20.3 Multiple busbars - LI 300**



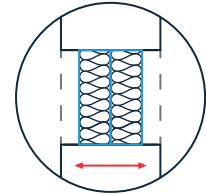
Drawing: PBfw.E-2BB-MFB1.2.10

Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Double busbar	≤ 150 x 500 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 300 / CI	<b>EI 60</b>

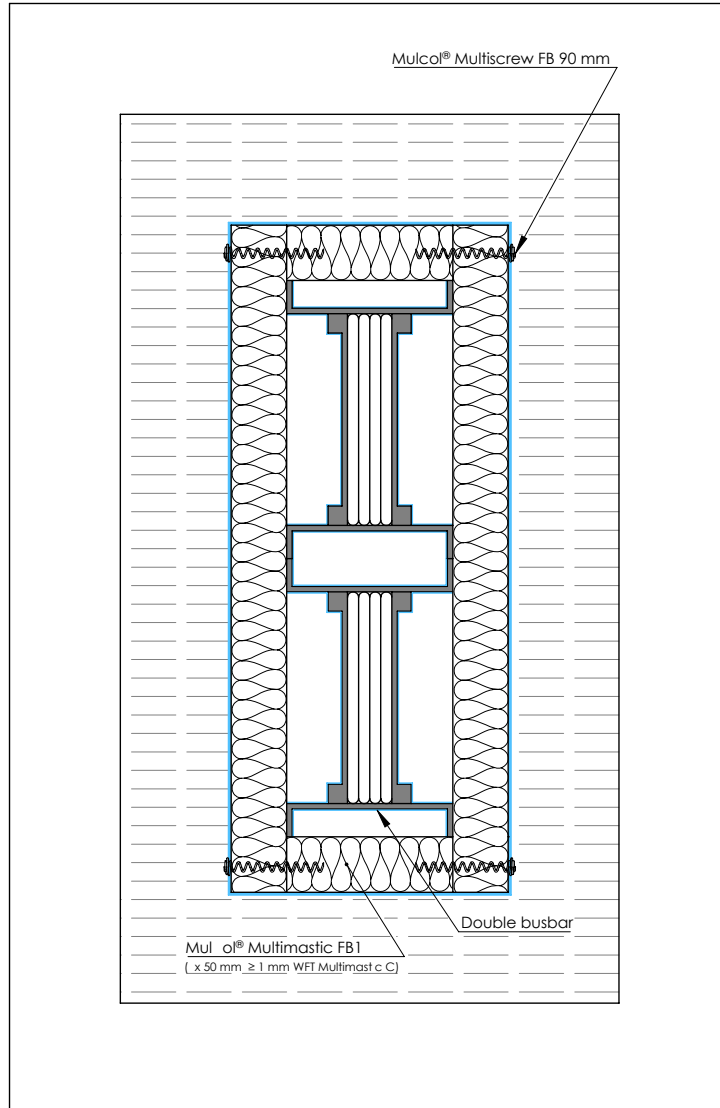
**A.1.20 Multimastic FB1 - 2x 50 mm - Busbars**

**A.1.20.3 Multiple busbars - LI 300**

Front view



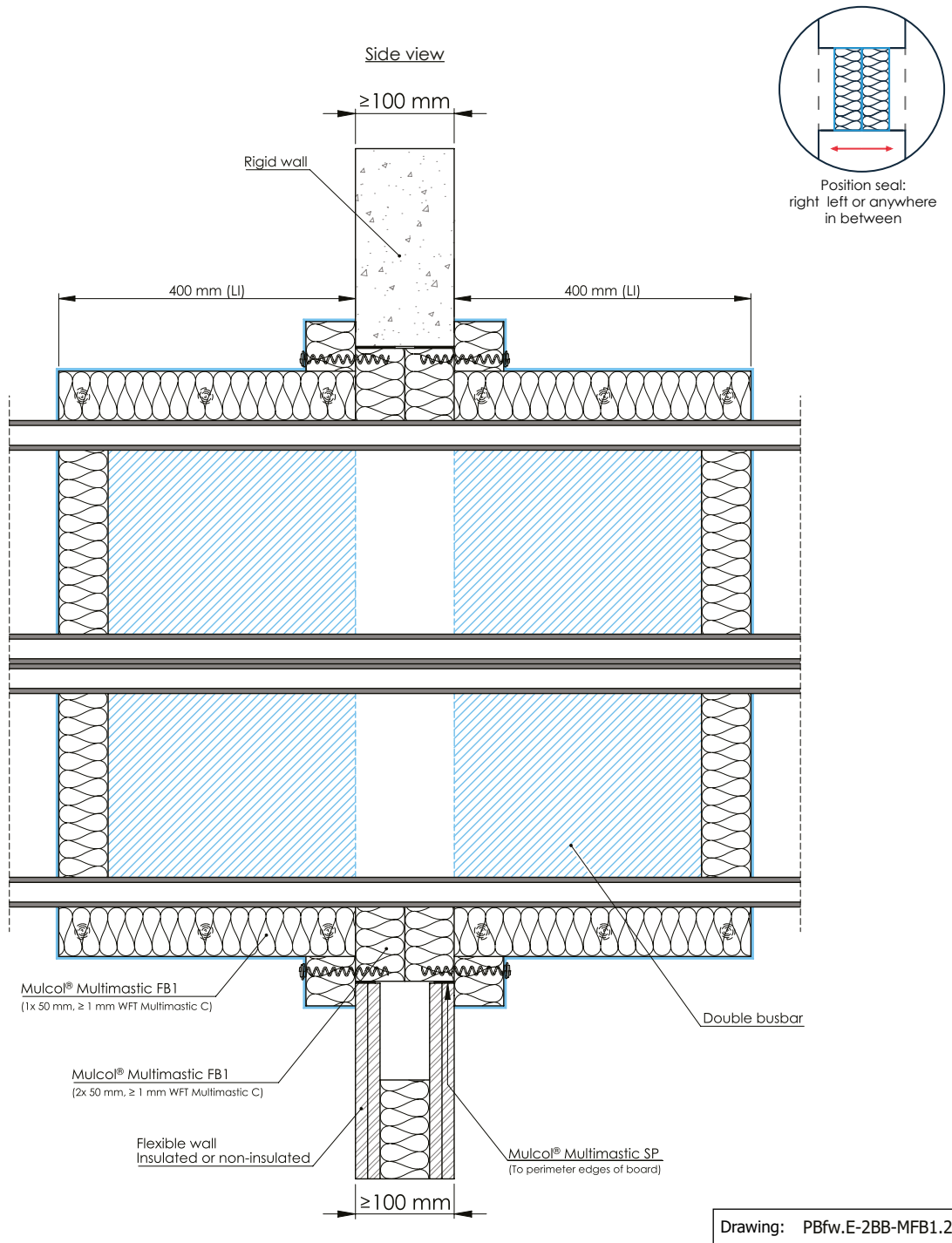
Position seal:  
right left or anywhere  
in between



Drawing: PBfw.E-2BB-MFB1.2.10

**A.1.20 Multimastic FB1 - 2x 50 mm - Busbars**

**A.1.20.4 Multiple busbars - LI 400**

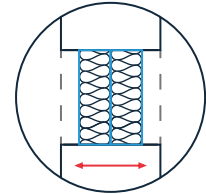


Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Double busbar	≤ 150 x 500 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	<b>EI 120</b>

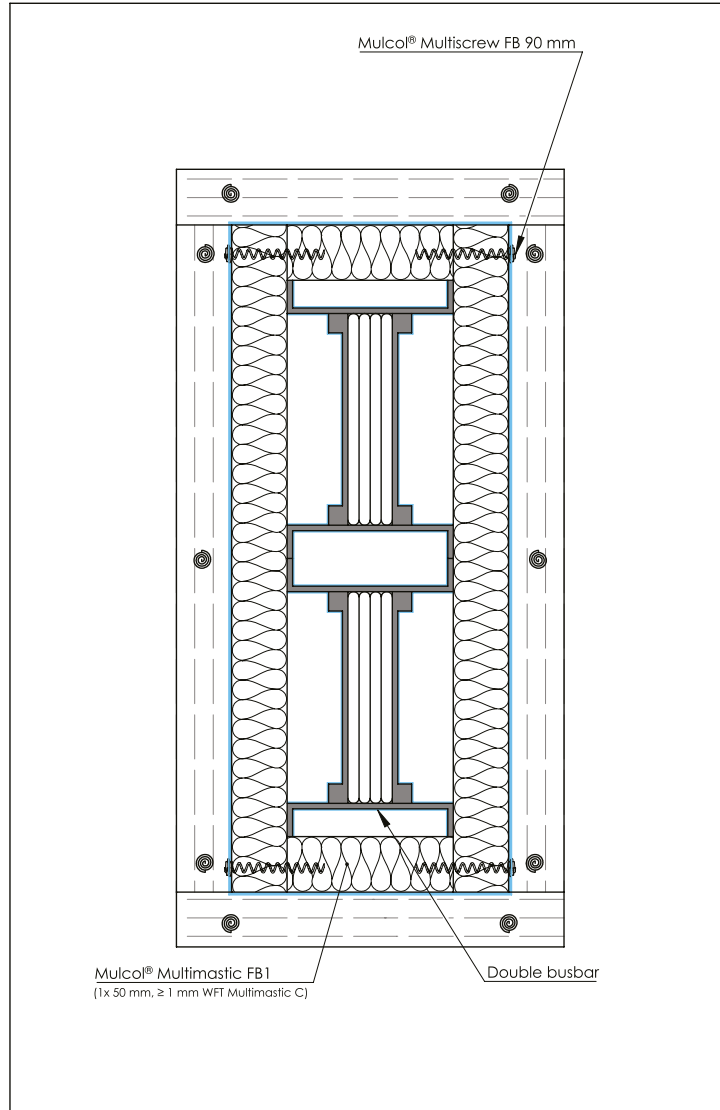
**A.1.20 Multimastic FB1 - 2x 50 mm - Busbars**

**A.1.20.4 Multiple busbars - LI 400**

Front view



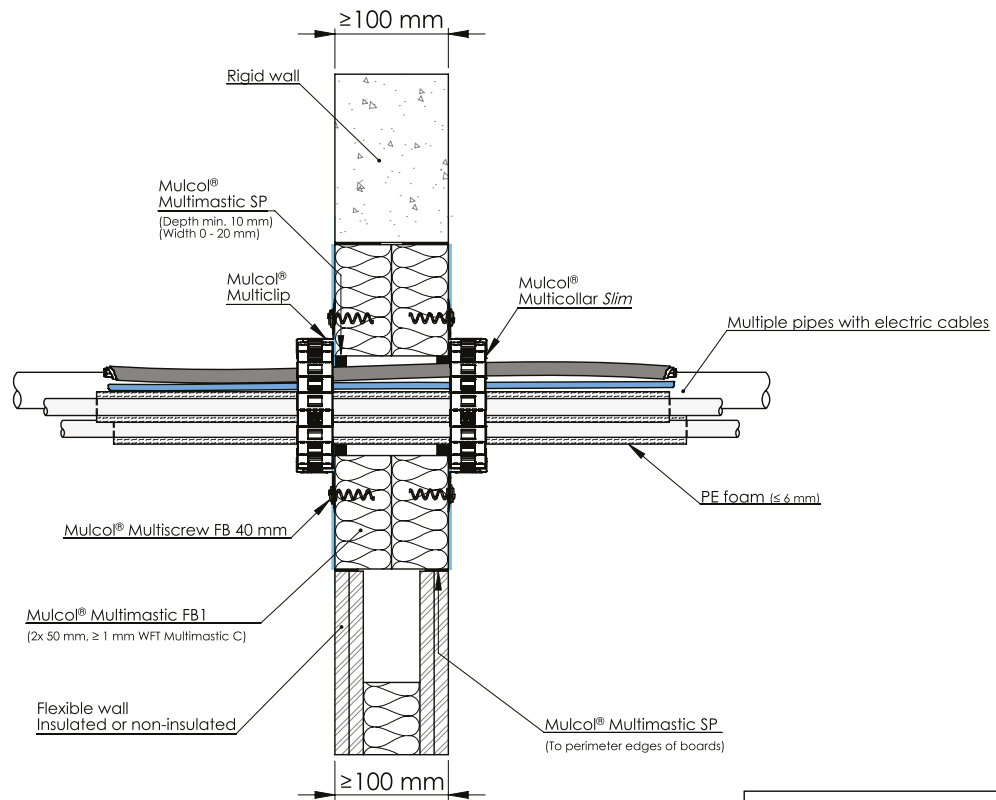
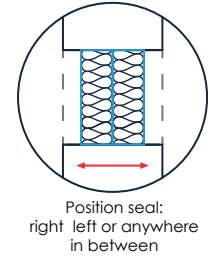
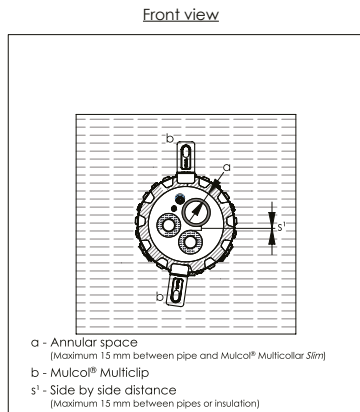
Position seat:  
right left or anywhere  
in between



Drawing: PBfw.E-2BB-MFB1.2.10

## A.1.21 Multimastic FB1 - 2x 50 mm - Multiple services

### A.1.21.1 Airconditioning set - Multicollar *Slim*



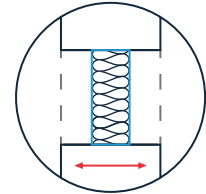
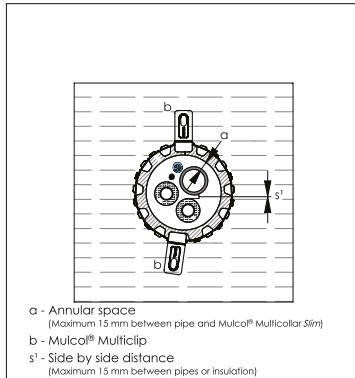
Drawing: PBfw.E-MLP5-MFB1.2.40

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer diameter	Wall thickness	Type	Thickness (mm)	Configuration		
Set of airconditioning pipes	$2x \leq \varnothing 15$	1.5	PE foam	$\geq 6$	LS 400 / CS LI 400 / CI	Multicollar <i>Slim</i>	EI 60 C/U E 120 C/U
PVC-U / PVC-C	$\leq \varnothing 40$	3.0	-	-	-		EI 60 U/U E 120 U/U
Telecommunication cable	UTP Cat 5/6	-	-	-	-		EI 60 E 120
Sheathed cable	$\leq 5 \times 2.5$ mm <sup>2</sup>	-	-	-	-		

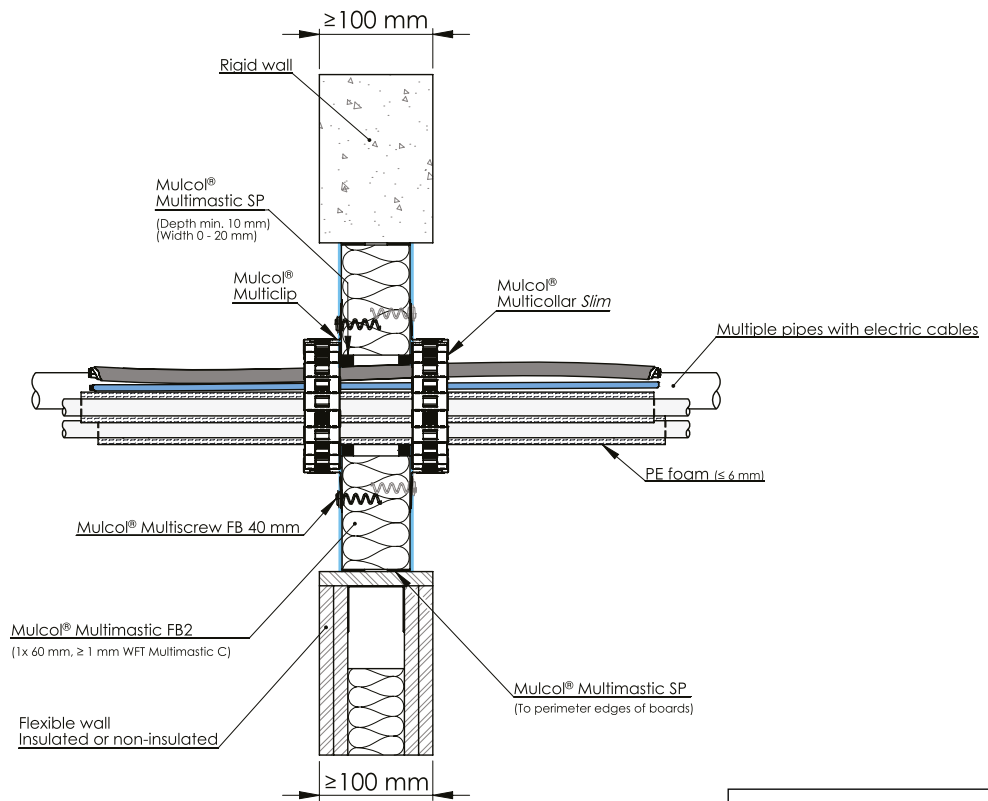
## A.1.22 Multimastic FB2 - 1x 60 mm - Multiple services

### A.1.22.1 Airconditioning set - Multicollar Slim

Front view



Position seal:  
right left or anywhere  
in between

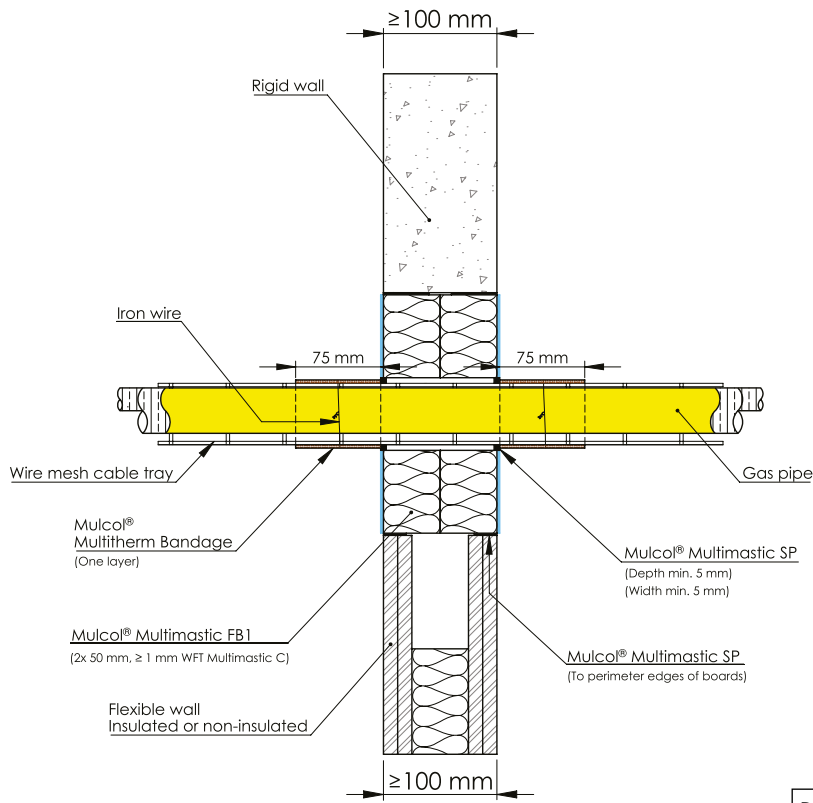
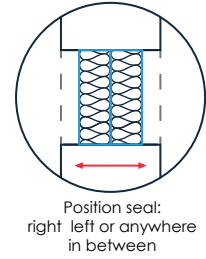
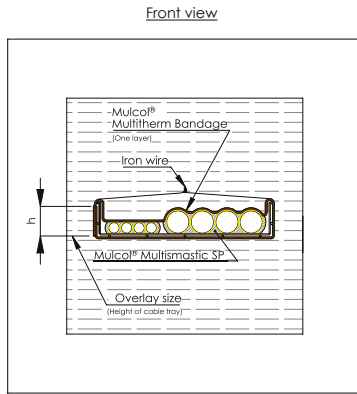


Drawing: PBfw.E-MLP5-MFB2.1.40

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer diameter	Wall thickness	Type	Thickness (mm)	Configuration		
Set of airconditioning pipes	$2x \leq \varnothing 15$	1.5	PE foam	$\geq 6$	LS 400 / CS LI 400 / CI	Multicollar Slim	EI 60 C/U E 120 C/U
PVC-U / PVC-C	$\leq \varnothing 40$	3.0	-	-	-		EI 60 U/U E 120 U/U
Telecommunication cable	UTP Cat 5/6	-	-	-	-		EI 60 E 120
Sheathed cable	$\leq 5 \times 2.5$ mm <sup>2</sup>	-	-	-	-		

**A.1.23 Multimastic FB1 - 2x 50 mm - Gas pipes**

**A.1.23.1 Corrugated stainless steel tube gas (CSST) pipes**



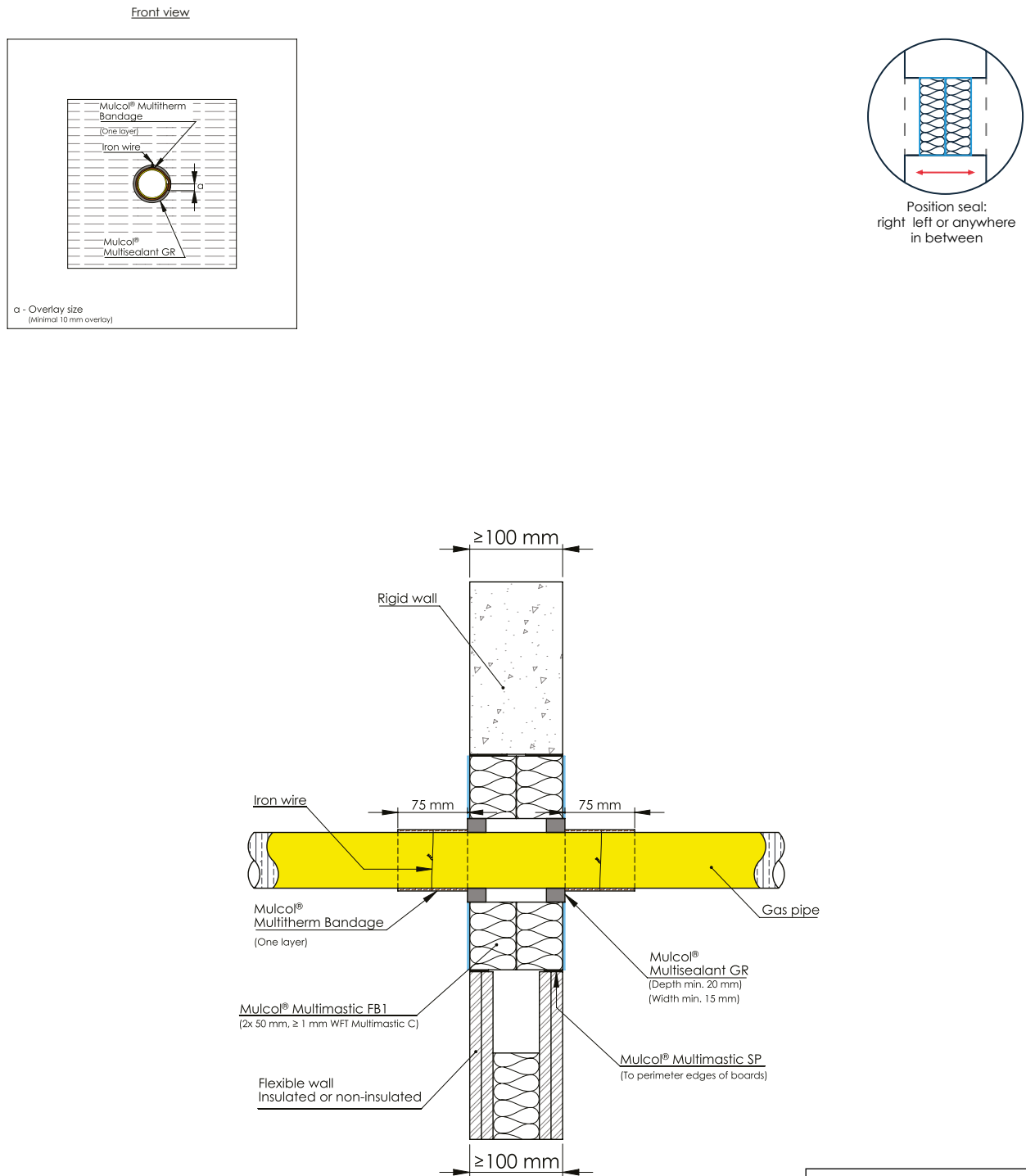
Drawing: PBfw.E-CT-MFB1.2.10

Services	Service dimensions (mm)		Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Number of pipes			
Corrugated stainless steel tube (CSST) gas pipes in wire mesh cable tray	≤ Ø 19.9	≤ 3	Multimastic SP ≥ 5 x 5 (wxd)	LI 75 one layer (one wire)	EI 60 U/C
	≤ Ø 40.8	≤ 3			
	≤ Ø 60.3	≤ 1			



## A.1.23 Multimastic FB1 - 2x 50 mm - Gas pipes

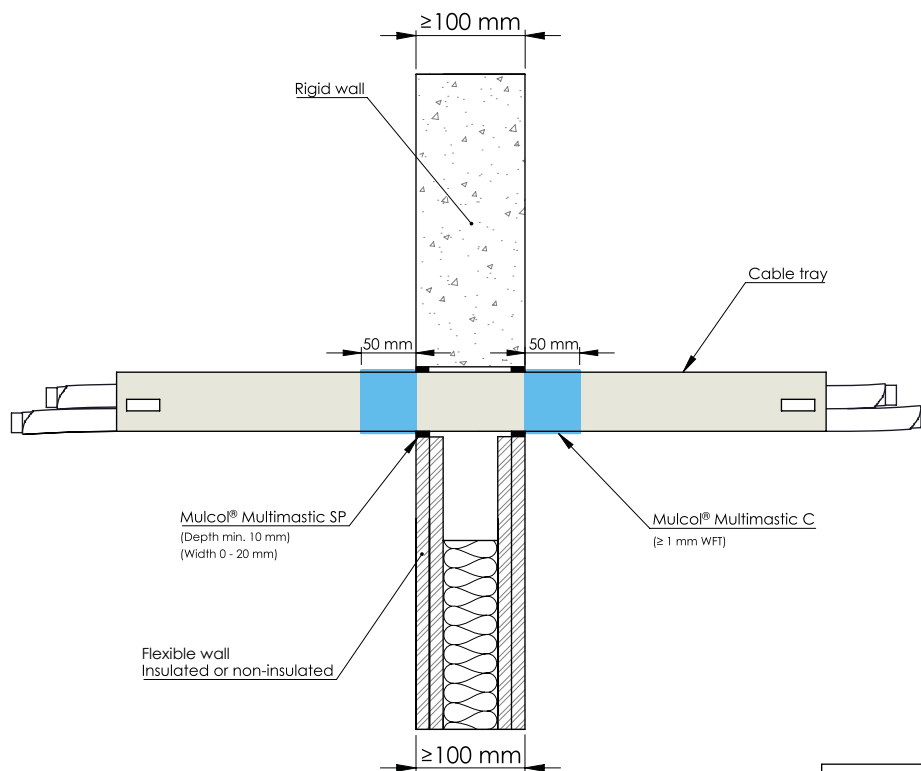
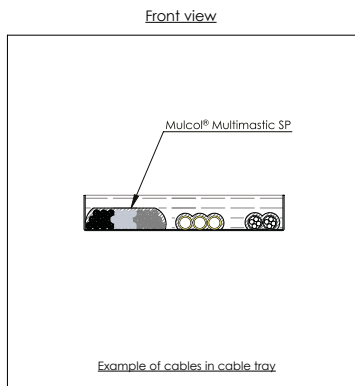
### A.1.23.2 Corrugated stainless steel tube gas (CSST) pipes - Multisealant GR - Multitherm Bandage



Services	Service dimensions (mm)		Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Number of pipes			
Corrugated stainless steel tube (CSST) gas pipes	≤ Ø 19.9	≤ 2	Multisealant GR ≥ 15 x 20 (wxd)	LI 75 one layer (one wire)	EI 60 U/C
	≤ Ø 40.8	≤ 1			
	≤ Ø 60.3	≤ 1			

## A.1.24 Directly through wall - Cables, trays and conduits

### A.1.24.1 Cables, trays and conduits - Multimastic C - 50 mm

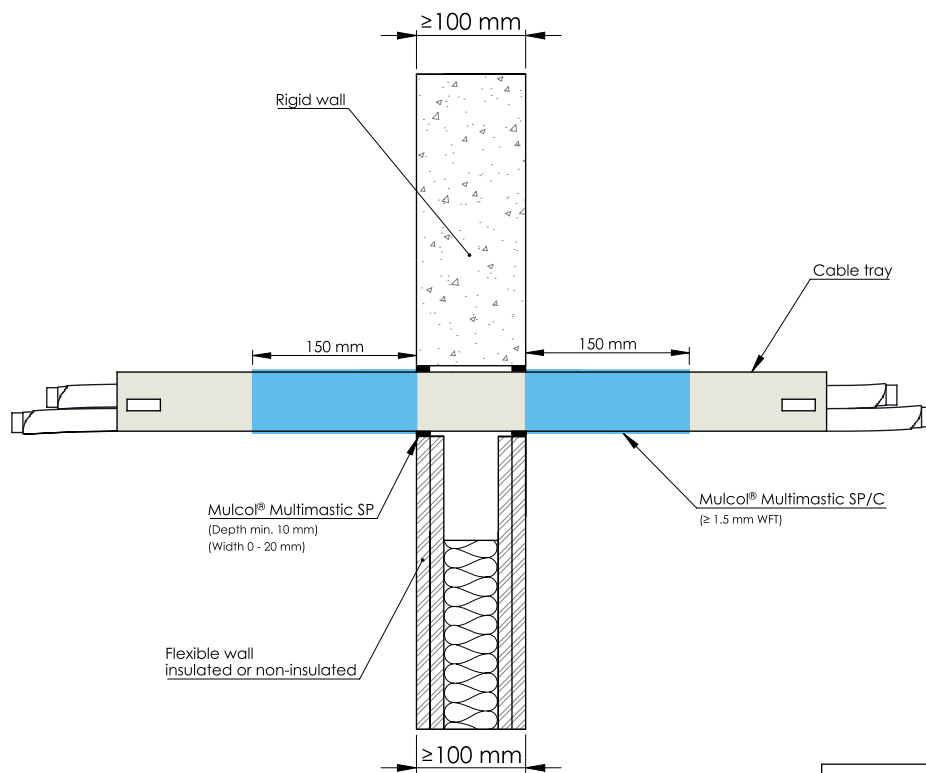
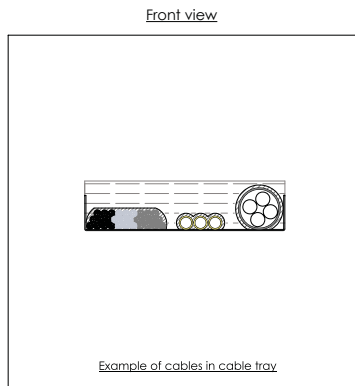


Drawing: FW.E-PB-CT-0.10\_50

Services	Coating	Classification
Metal cable ladders	Coat back 50 mm ≥ 1 mm WFT	<b>EI 60, E 90</b>
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 80 mm		
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		<b>EI 45, E 90</b>
Non sheathed cables ≤ Ø 24 mm		<b>EI 60 U/C, E 90 U/C</b>
Plastic conduits ≤ Ø 16 mm		<b>EI 45 C/U, E 60 C/U</b>
Copper conduits ≤ Ø 16 mm		<b>EI 60 C/U</b>
Steel conduits ≤ Ø 16 mm		

## A.1.24 Directly through wall - Cables, trays and conduits

### A.1.24.2 Cables, trays and conduits - Multimastic C - 150 mm

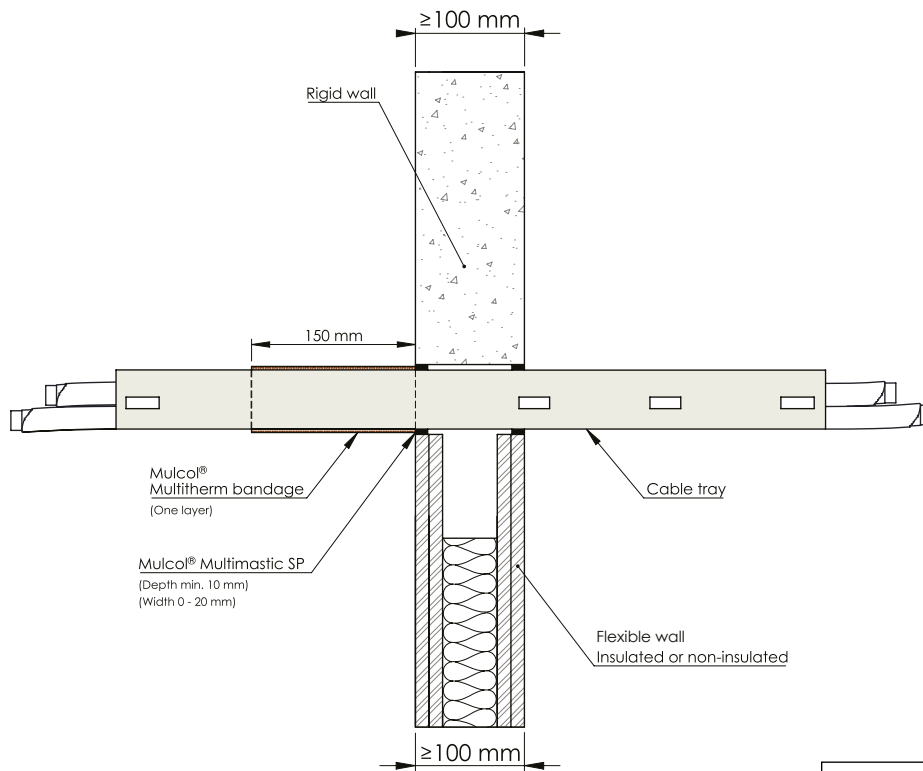
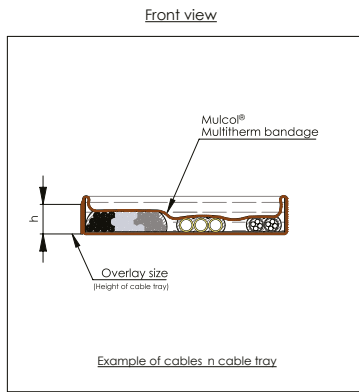


Drawing: FW.E-PB-CT-0.10\_150

Services	Coating	Classification
Metal cable ladders	Coat back 150 mm ≥ 1.5 mm WFT	EI 90, E 120
Metal (non-)perforated cable trays		EI 120
Steel wire mesh cable trays (baskets)		EI 90, E 120
Cables ≤ Ø 80 mm		EI 60, E 120
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		EI 120 U/C
Non sheathed cables ≤ Ø 24 mm		EI 45 C/U, E 90 C/U
Plastic conduits ≤ Ø 16 mm		EI 90 C/U
Copper conduits ≤ Ø 16 mm		
Steel conduits ≤ Ø 16 mm		

**A.1.24 Directly through wall - Cables, trays and conduits**

**A.1.24.3 Cables, trays and conduits - Multitherm Bandage**

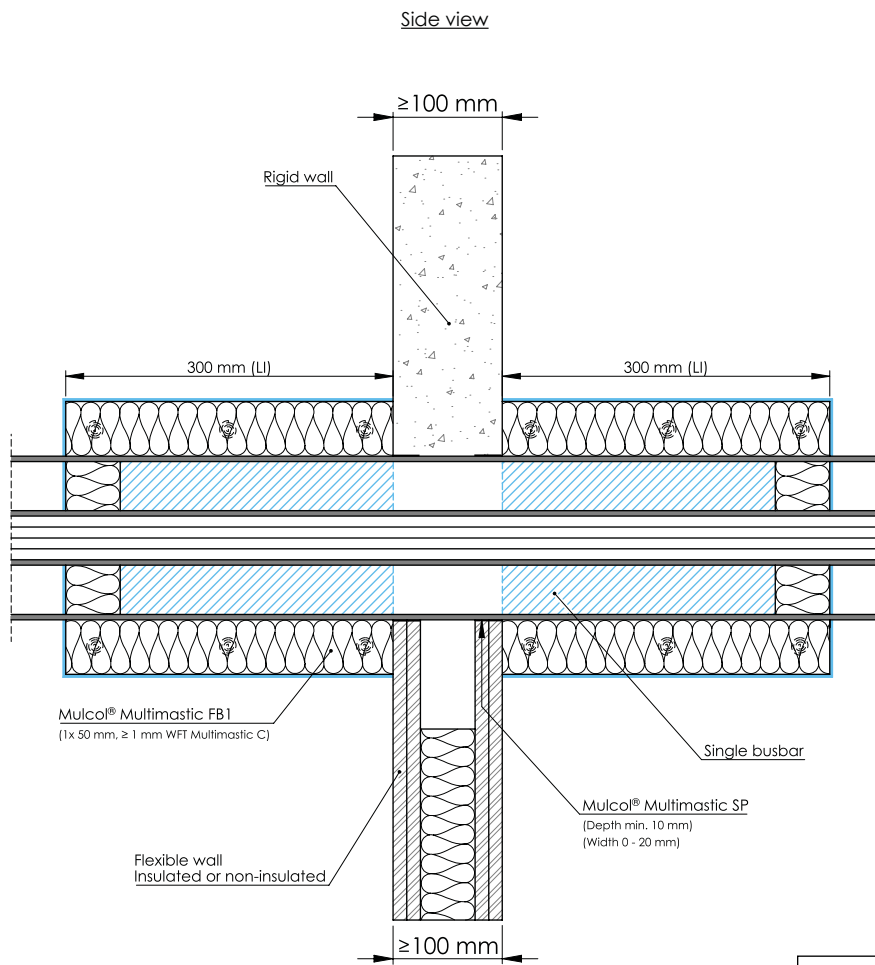


Drawing: FW.E-PB-CT-B1.3.10

Services	Insulation (mm)	Classification
Metal (non-)perforated cable trays	LI 150 - Multitherm Bandage either side	<b>EI 120</b>
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm		

**A.1.25 Directly through wall - Busbars**

**A.1.25.1 Single busbar - LI 300**



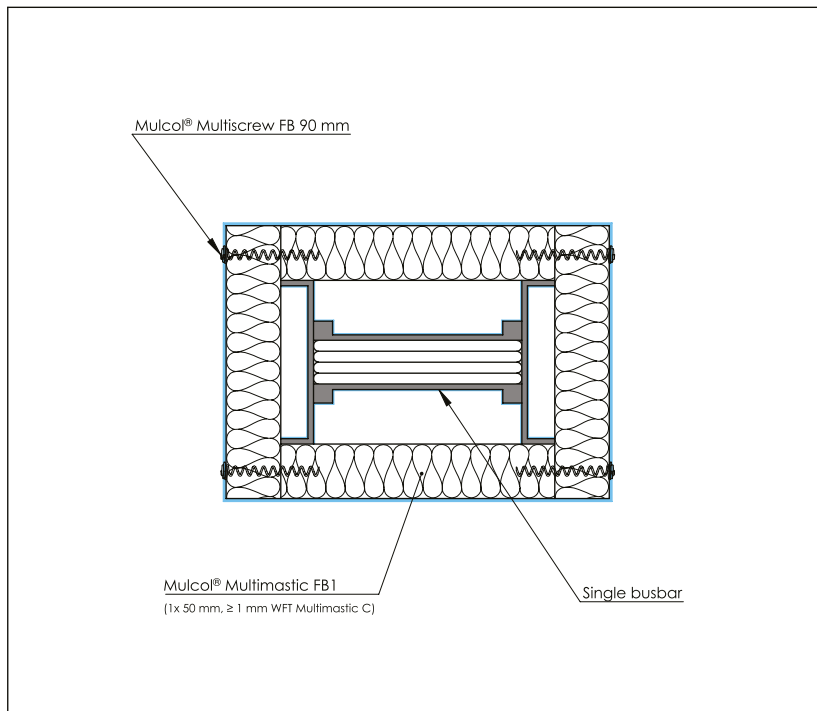
Drawing: FW.E-1BB-0.10.LI300

Services	Service dimensions		Insulation			Classification
	Outside	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	≤ 150 x 250 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 300 / CI	<b>EI 60</b>

**A.1.25**      **Directly through wall - Busbars**

**A.1.25.1**    **Single busbar - LI 300**

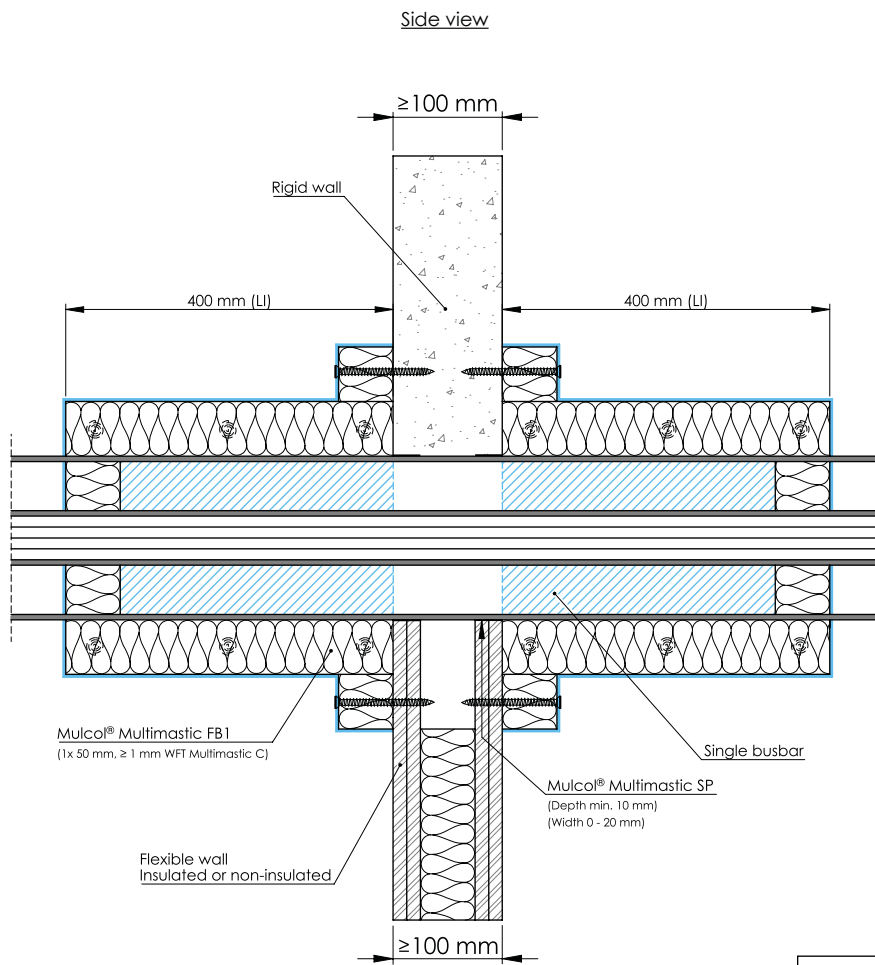
Front view



Drawing:    FW.E-1BB-0.10.LI300

**A.1.25 Directly through wall - Busbars**

**A.1.25.2 Single busbar - LI 400**



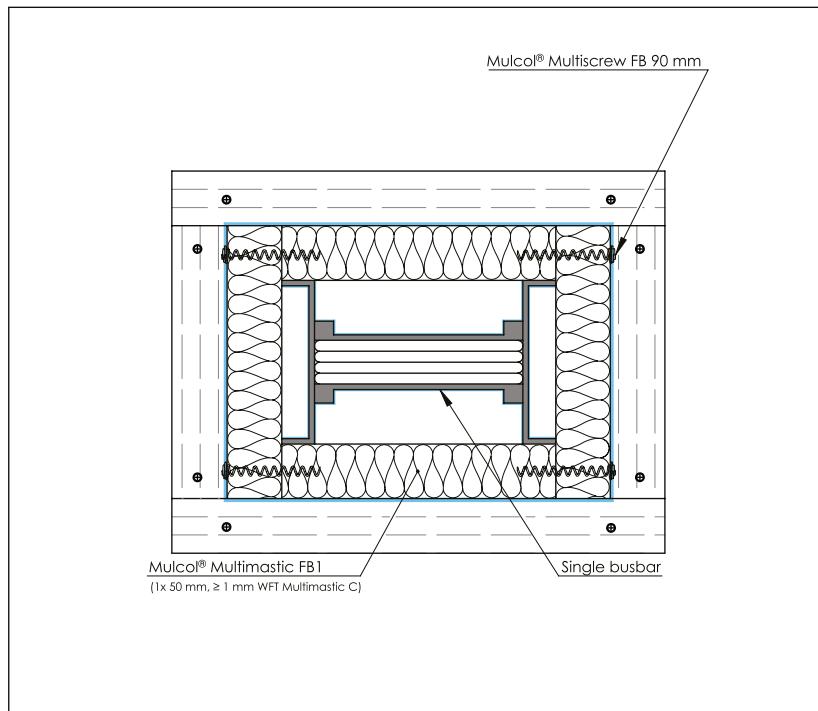
Drawing: FW-E-1BB-0.10.LI400

Services	Service dimensions		Insulation			Classification
	Outside	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	≤ 150 x 250 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	EI 120

**A.1.25 Directly through wall - Busbars**

**A.1.25.2 Single busbar - LI 400**

Front view

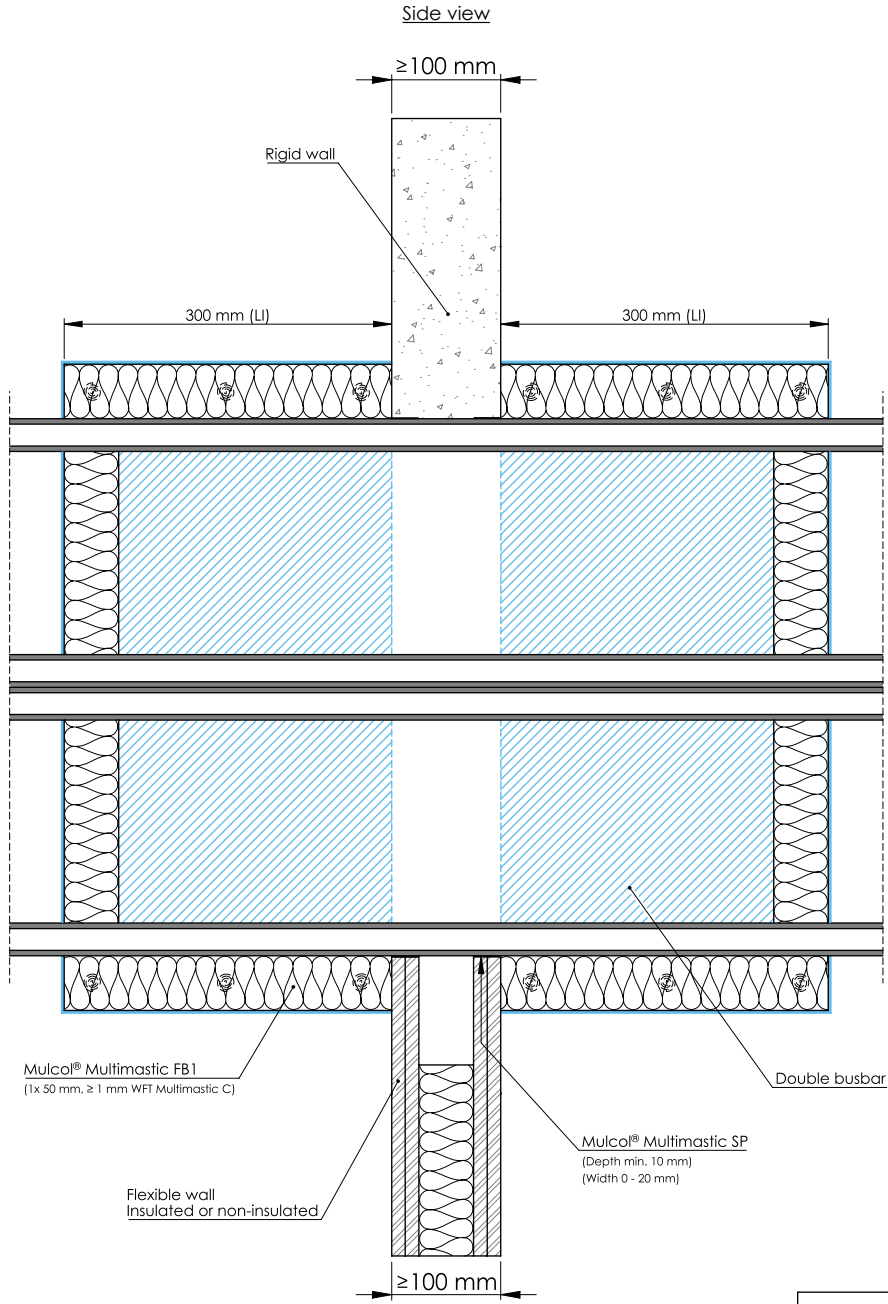


Drawing: FW-E-1BB-0.10.LI400



**A.1.25 Directly through wall - Busbars**

**A.1.25.3 Multiple busbars - LI 300**



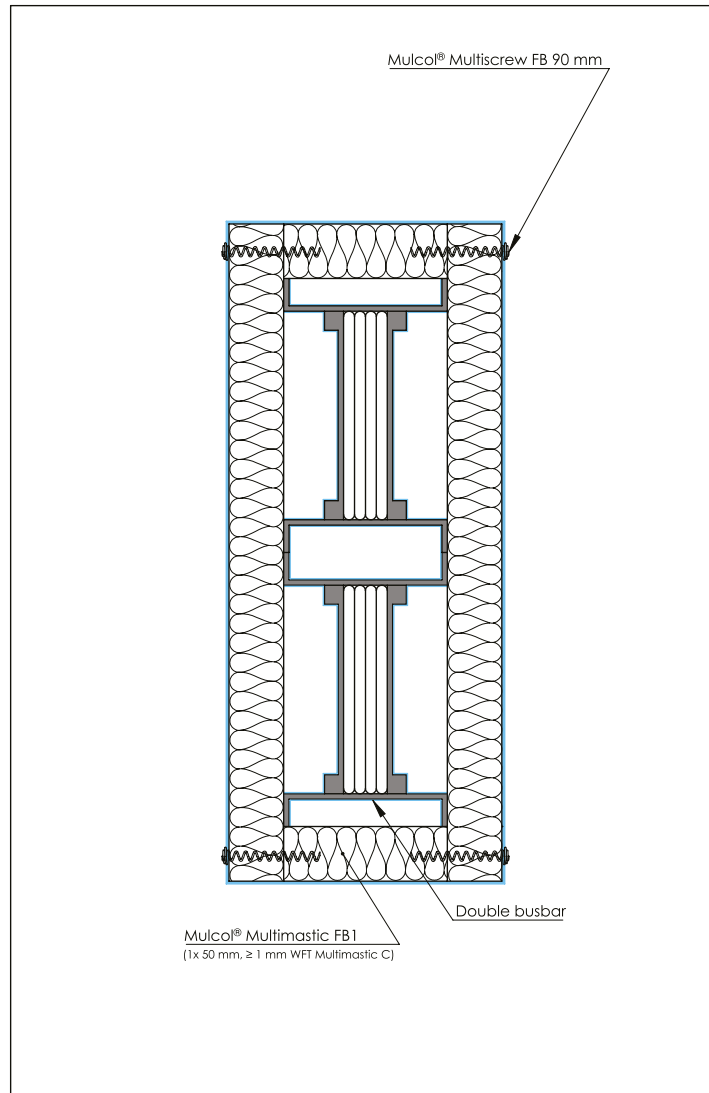
Drawing: FW-E-2BB-0.10.LI300

Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Double busbar	≤ 150 x 500 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 300 / CI	<b>EI 60</b>

**A.1.25 Directly through wall - Busbars**

**A.1.25.3 Multiple busbars - LI 300**

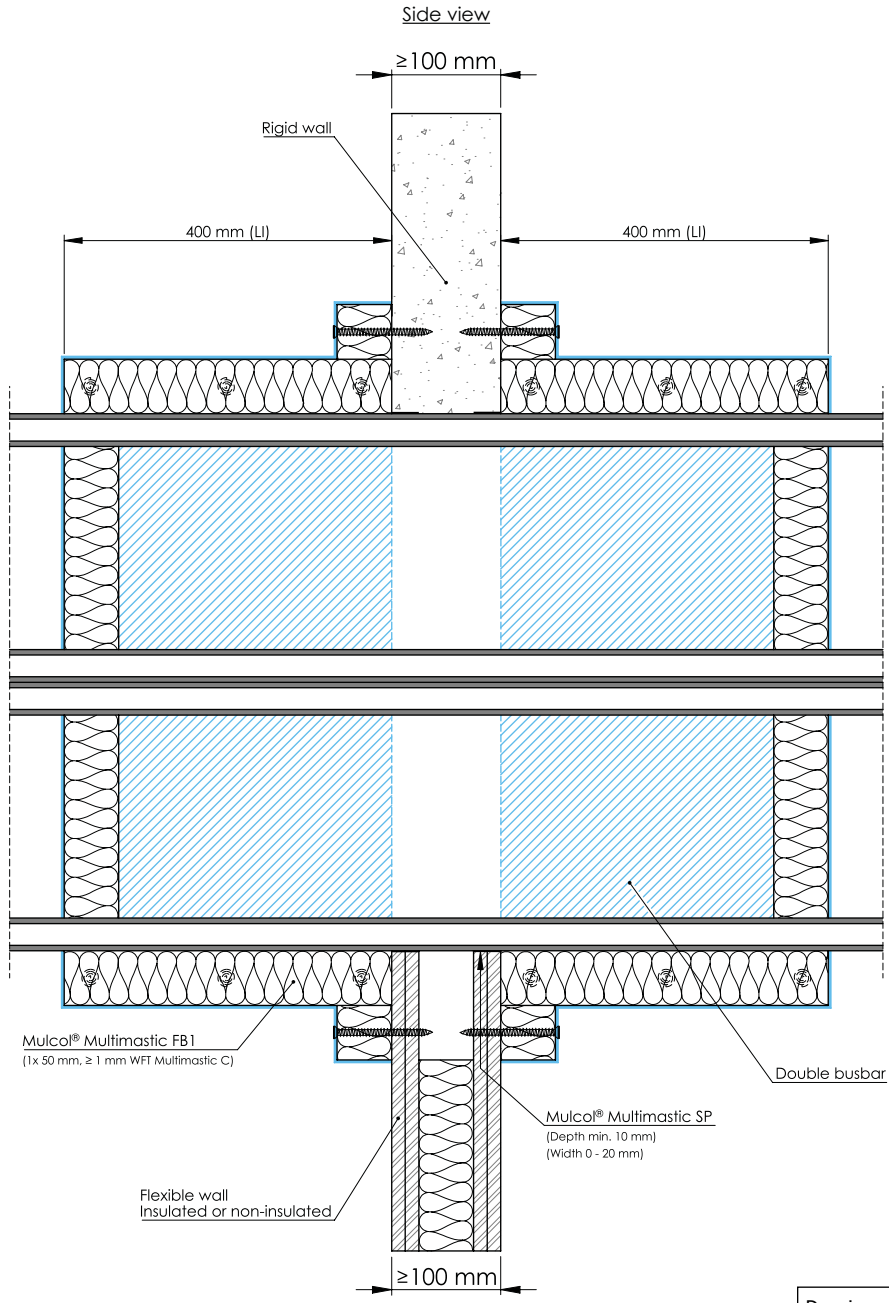
Front view



Drawing: FW-E-2BB-0.10.LI300

**A.1.25 Directly through wall - Busbars**

**A.1.25.4 Multiple busbars - LI 400**



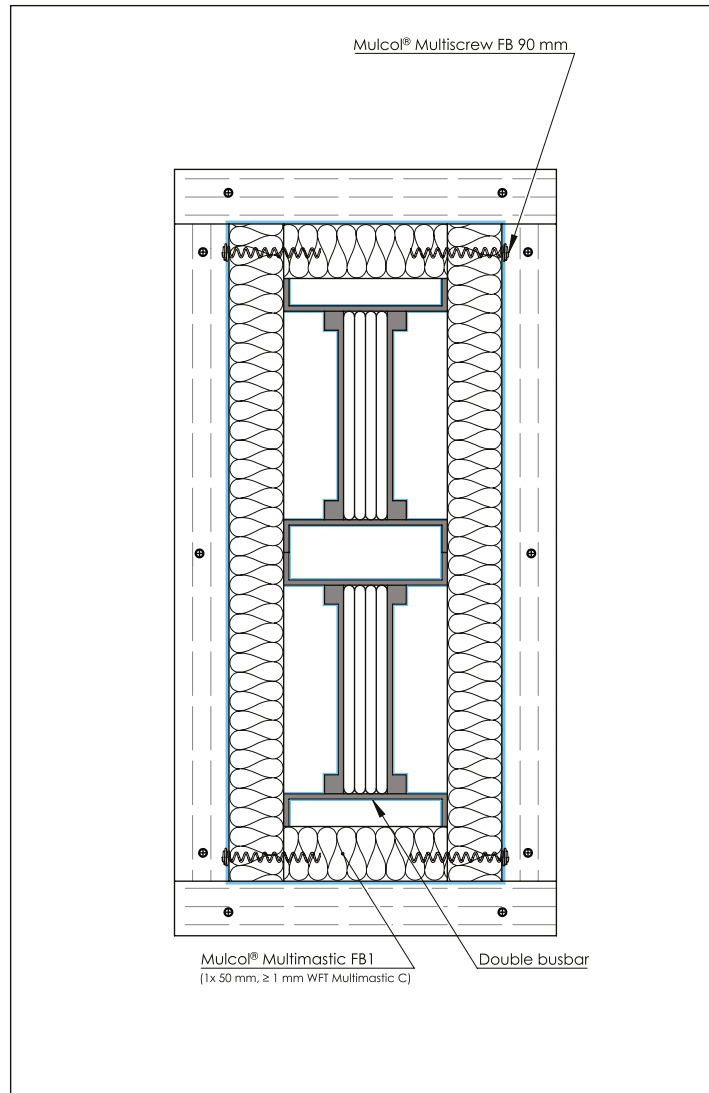
Drawing: FW.E-2BB-0.10.LI400

Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Double busbar	$\leq 150 \times 500$ mm	max. 6 x $\leq 200$ mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	<b>EI 120</b>

**A.1.25 Directly through wall - Busbars**

**A.1.25.4 Multiple busbars - LI 400**

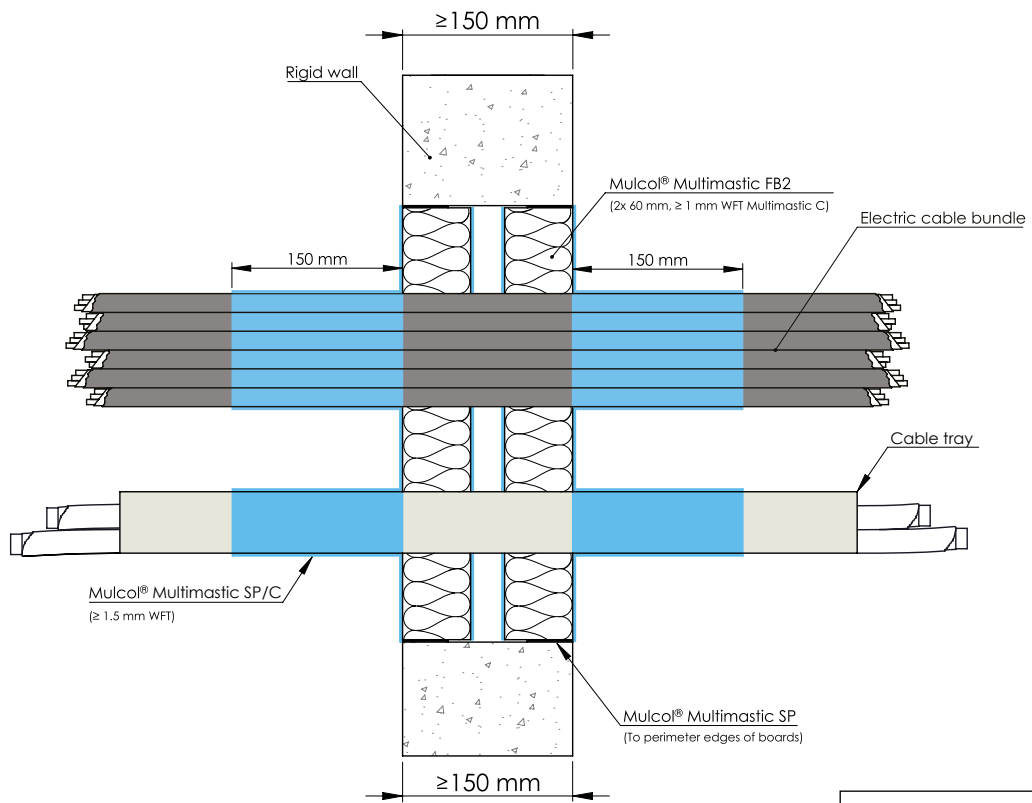
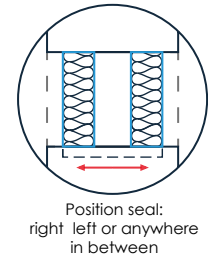
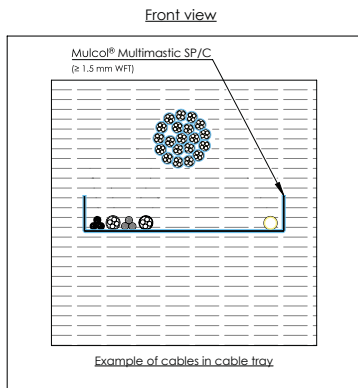
Front view



Drawing: FW.E-2BB-0.10.LI400

**A.2.1 Multimastic FB2 - 2x 60 mm - Cables, trays and conduits**

**A.2.1.1 Cables and trays - Multimastic C**

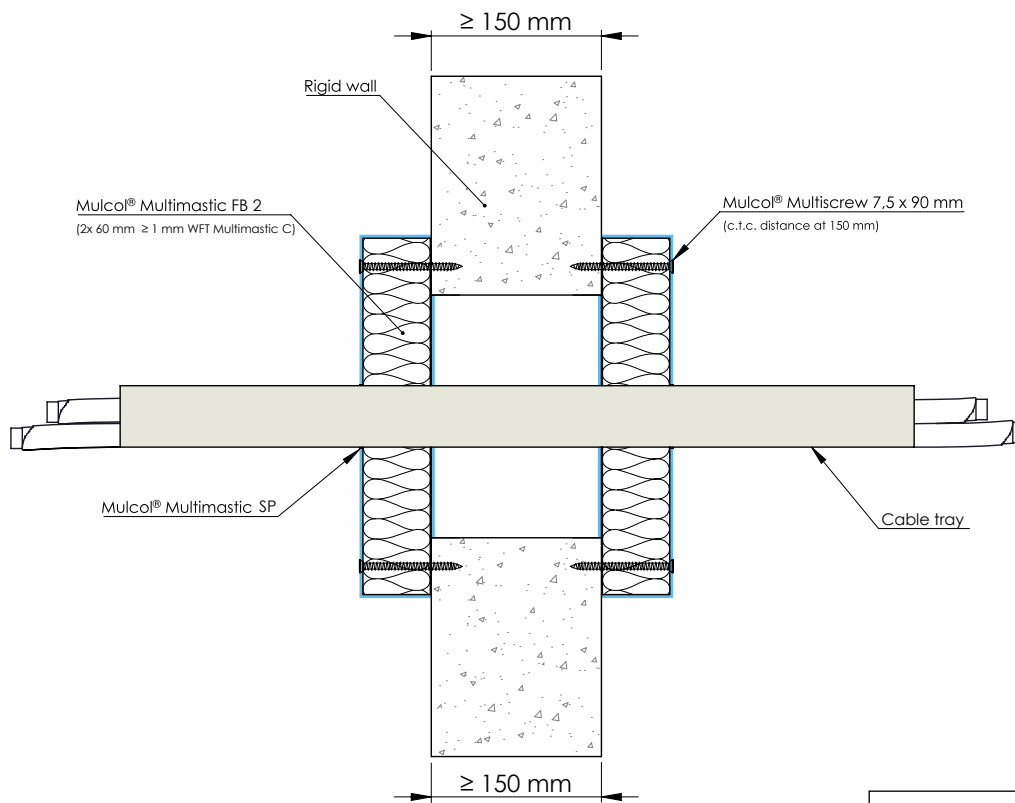
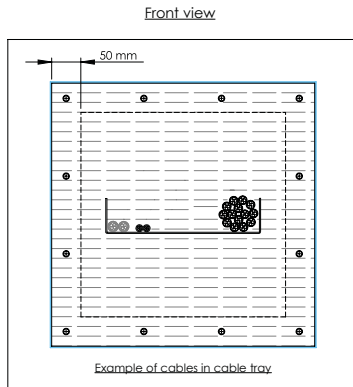


Drawing: RW150.E-CT-ECB-MFB2.2.10

Services	Coating	Classification
Metal cable ladders	Coat back 150 mm ≥ 1.5 mm WFT Multimastic C	EI 240
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm		EI 120
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		EI 180 U/C
Plastic conduits ≤ Ø 16 mm		

## A.2.2 Multimastic FB2 Pattress - 2x 60 mm - Cables, trays and conduits

### A.2.2.1 Cables and trays - Multimastic C



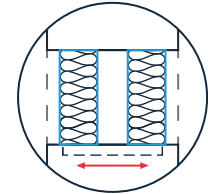
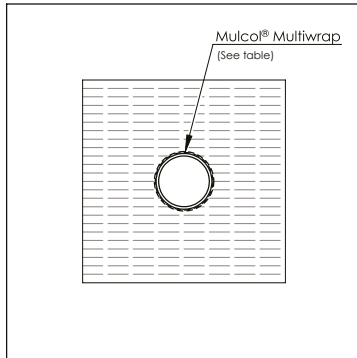
Drawing: RW150-P-CT-MFB2.2.10

Services	Coating	Classification
Metal cable ladders	Not required	EI 240
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm		EI 180, E 240
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		EI 240
Non sheathed cables ≤ Ø 24 mm		EI 90, E 240

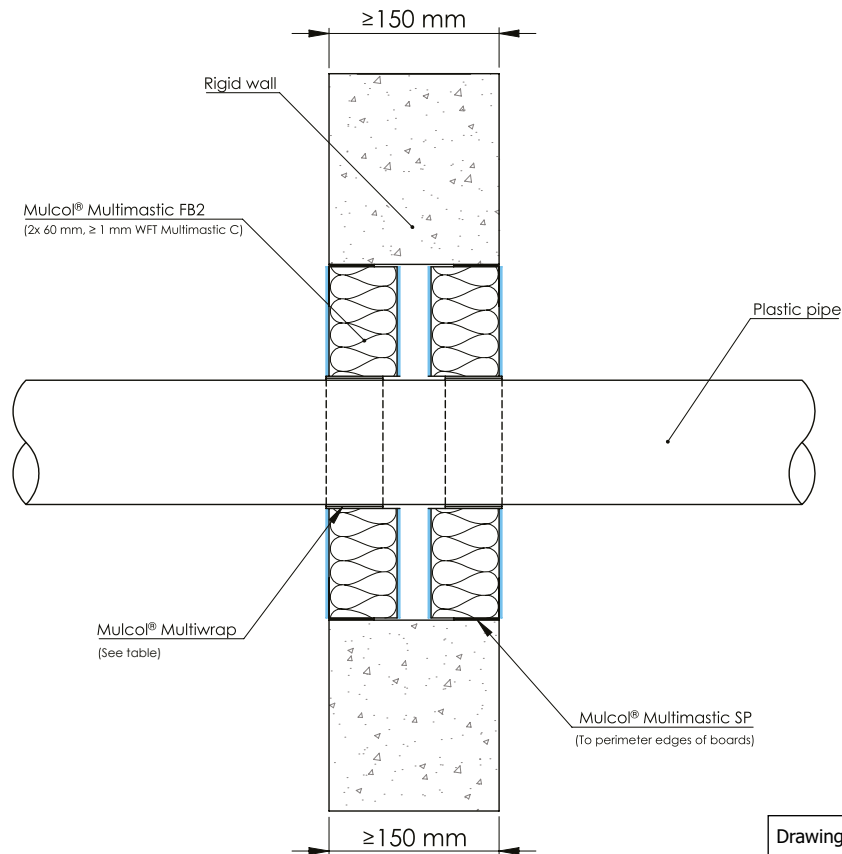
## A.2.3 Multimastic FB2 - 2x 60 mm - Combustible pipes

### A.2.3.1 Plastic pipes - Multiwrap

Front view



Position seal:  
right left or any in between

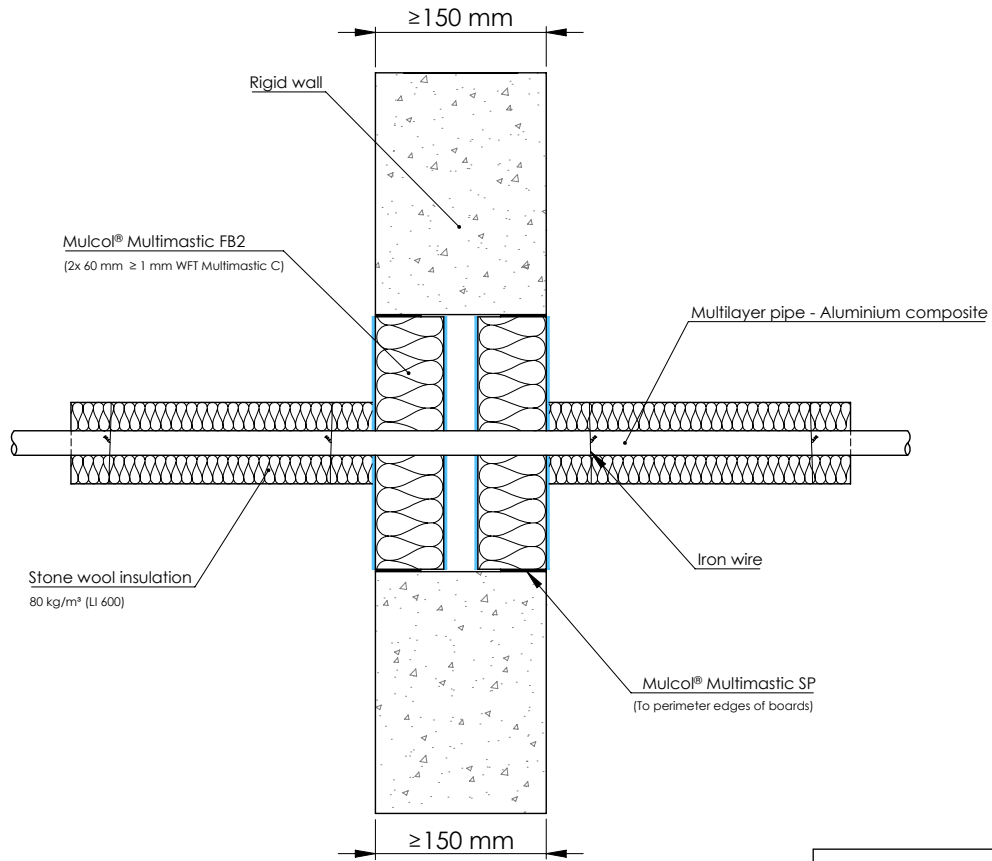
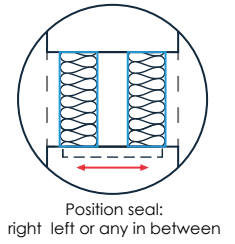
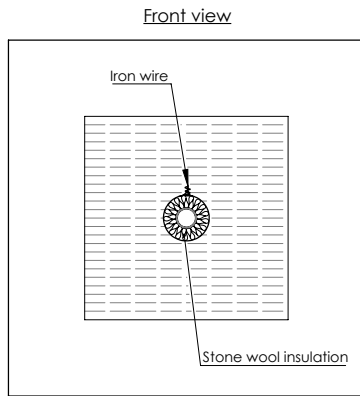


Drawing: RW150-PP-MW2-MFB2.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 40	2.0 to 5.5	Multiwrap (1 layer)	EI 240 U/C
	≤ Ø 110	3.4	Multiwrap (2 layers)	
		≤ Ø 160	4.0 to 9.5	Multiwrap (6 layers)
	9.5			
PP	≤ Ø 40	1.8 to 5.5	Multiwrap (1 layer)	EI 240 U/C
PVC(-U/-C)	≤ Ø 40	2.0 to 5.5	Multiwrap (1 layer)	EI 180 U/C, E 240 U/C
	≤ Ø 110	2.7 to 8.6	Multiwrap (2 layers)	
	≤ Ø 160	4.0 to 11.8	Multiwrap (6 layers)	

**A.2.4 Multimastic FB2 - 2x 60 mm - Multilayer pipes (MLC)**

**A.2.4.1 Multilayer pipes (MLC) - Stone wool LI 600 / CI**



Drawing: RW150-MLA-MFB2.2.20

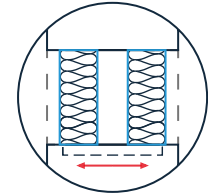
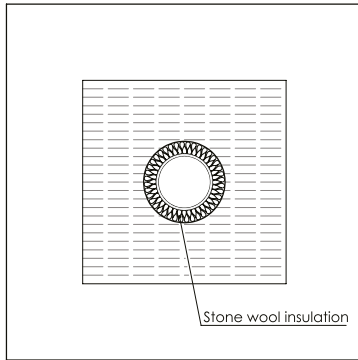
Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Multilayer pipes (MLC)	≤ Ø 20	2.0	Stone wool (≥ 80 kg/m³)	≥ 25	LI 600 / CI	EI 240 C/U



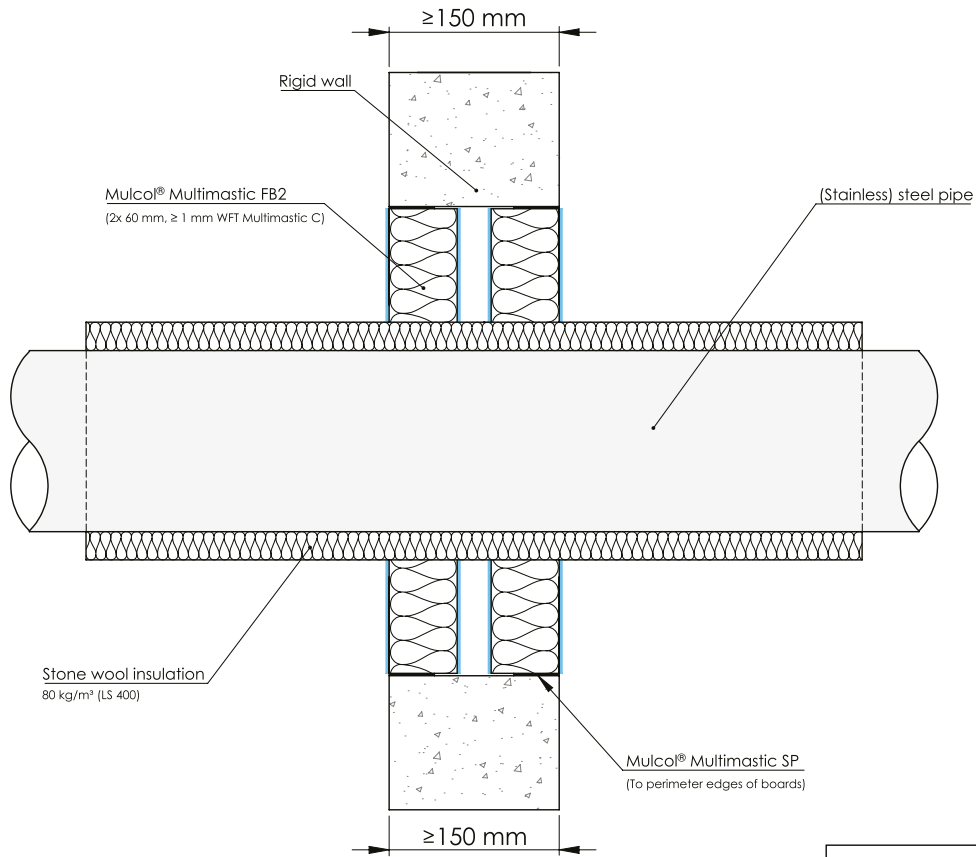
**A.2.5 Multimastic FB2 - 2x 60 mm - Metal pipes insulated mineral wool**

**A.2.5.1 Steel pipes - Stone wool LS 400 / CS**

Front view



Position seat:  
right left or any in between

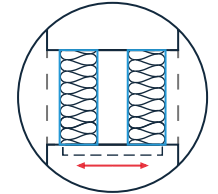
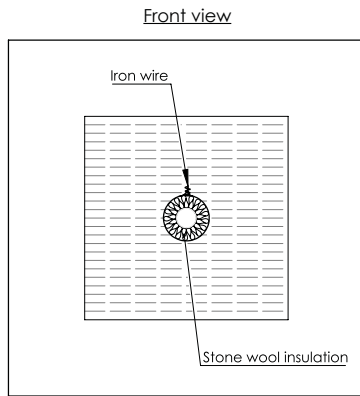


Drawing: RW150.E-ST-MFB2.2.20

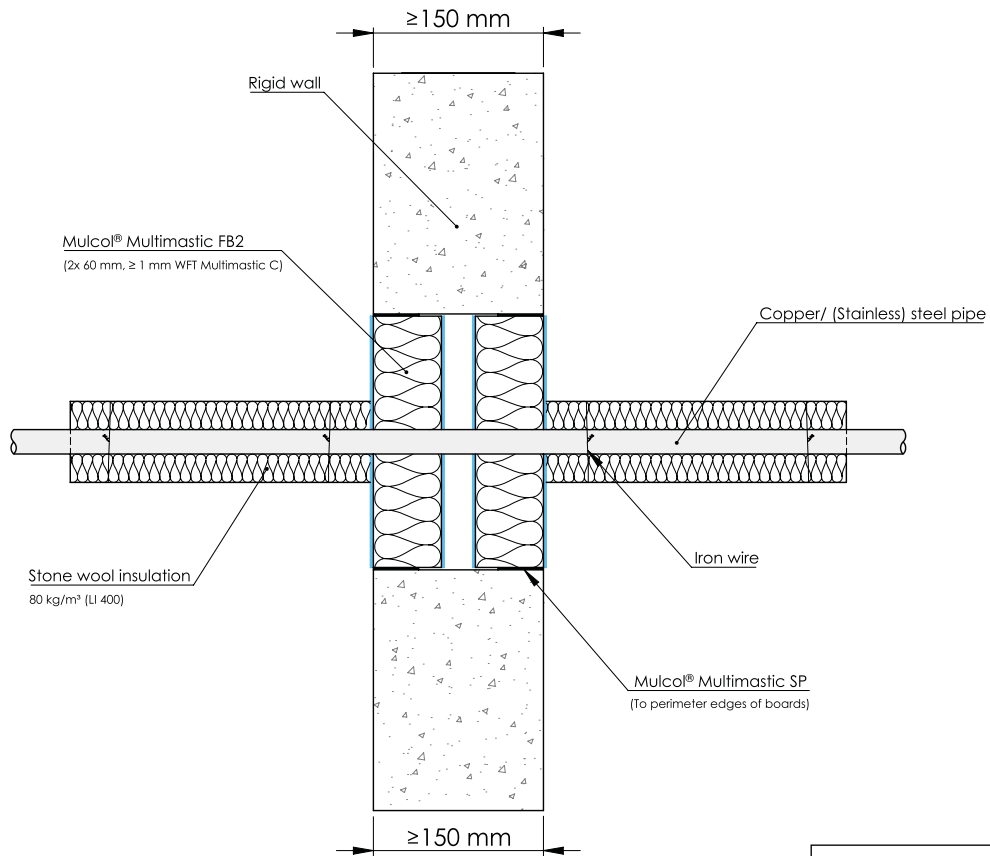
Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
(Stainless) Steel / cast iron	≤ Ø 40	≥ 1.0	Stone wool (≥ 80 kg/m³)	30	LS 400 / CS	EI 90 C/U
	≤ Ø 324	≥ 3.7				E 180 C/U
						EI 90 C/U
						E 180 C/U

## A.2.5 Multimastic FB2 - 2x 60 mm - Metal pipes insulated mineral wool

### A.2.5.2 Copper and steel pipes - Stone wool LI / CI



Position seal:  
right left or any in between



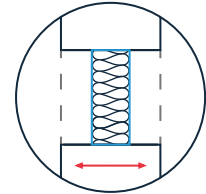
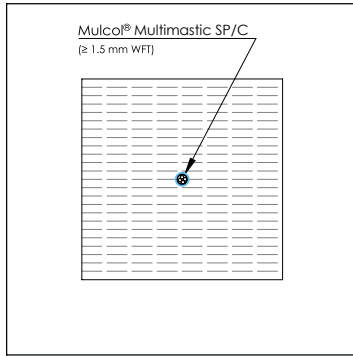
Drawing: RW150.E-CU-MFB2.2.20

Services	Pipe dimensions (mm)		Insulation			Classification		
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m³)	≥ 25	LI 400 / CI	EI 90 C/U, E 240 C/U		
					CI	EI 120 C/U, E 240 C/U		
	≤ Ø 54	≥ 1.5			LI 400 / CI	EI 120 C/U		
					LI 500 / CI	EI 90 C/U, E 240 C/U		
(Stainless) Steel / cast iron	≤ Ø 40	≥ 1.0				≥ 30	CI	EI 120 C/U, E 240 C/U
							LI 400 / CI	EI 180 C/U
	≤ Ø 114.3	≥ 3.6					LI 600 / CI	EI 240 C/U
							LI 400 / CI	EI 120 C/U
	≤ Ø 219	≥ 4.0	LI 600 / CI	EI 120 C/U, E 240 C/U				
			CI	EI 180 C/U, E 240 C/U				
	≤ Ø 324	≥ 3.7	LI 400 / CI	EI 120 C/U				
		≥ 6.3	LI 500 / CI	EI 180 C/U, E 240 C/U				

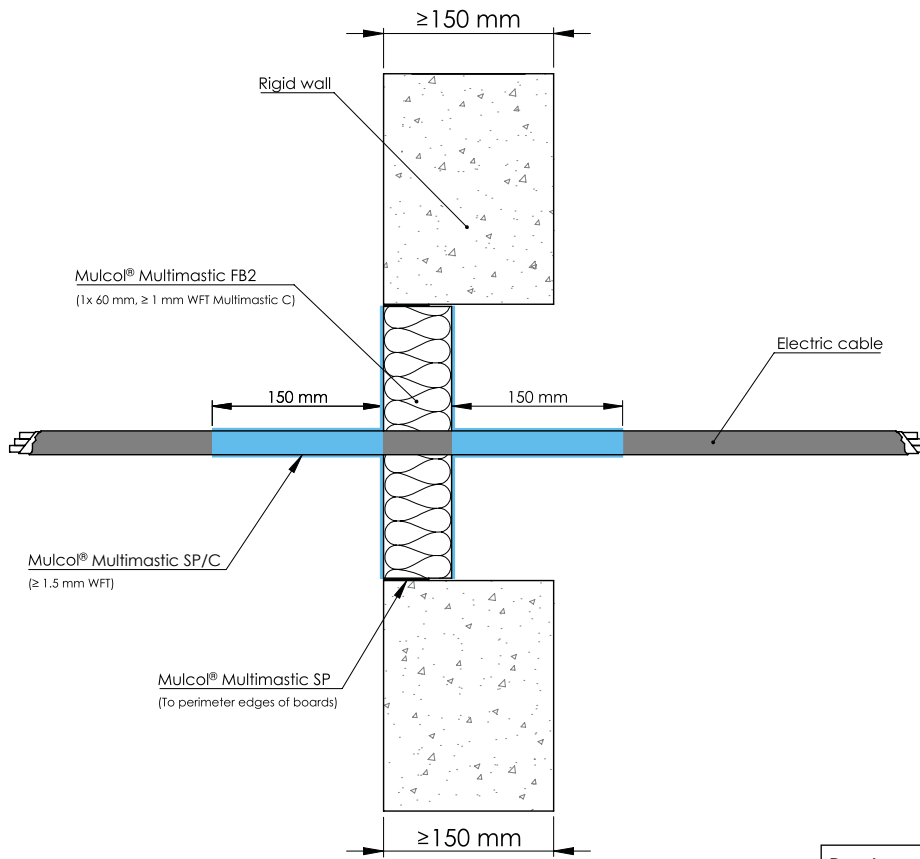
**A.2.6 Multimastic FB2 - 1x 60 mm - Cables, trays and conduits**

**A.2.6.1 Cables - Multimastic C**

Front view



Position seal:  
right left or anywhere  
in between



Drawing: RW150-EC-MFB2.1.10

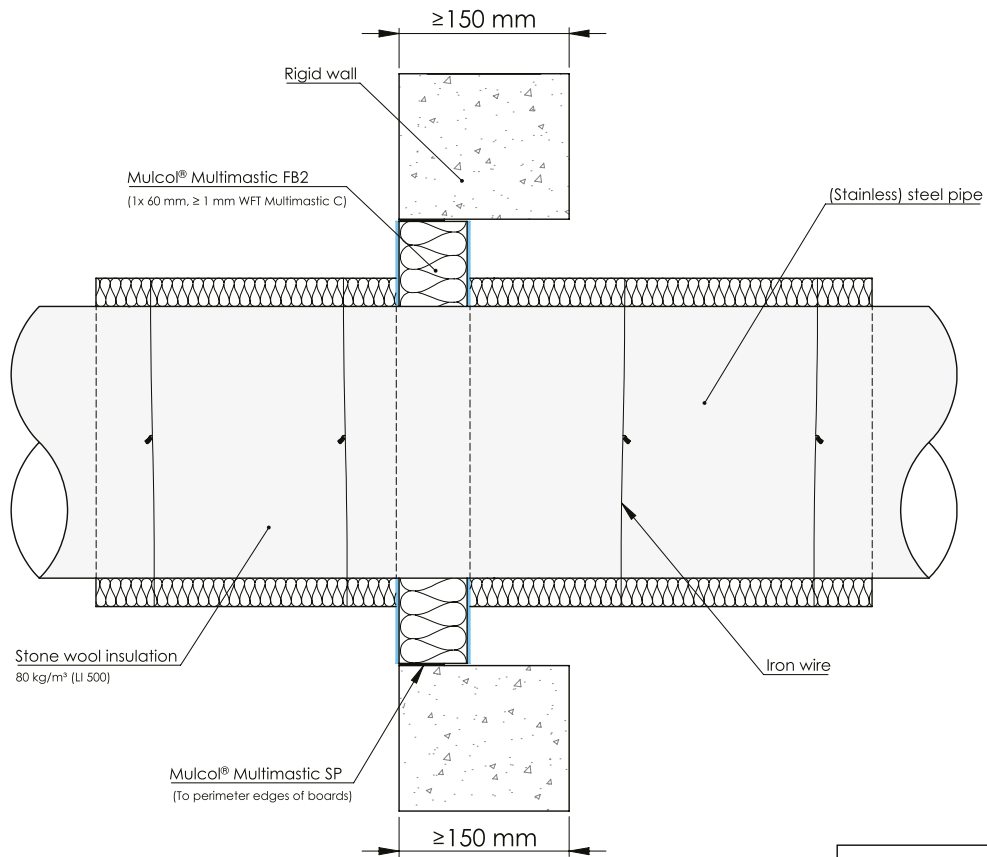
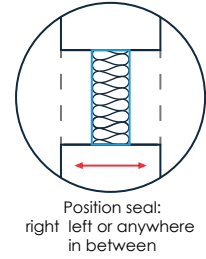
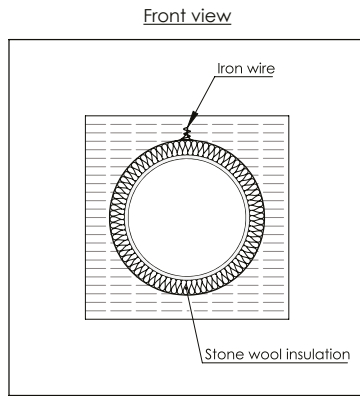
Services	Coating	Classification
Cables ≤ Ø 21 mm (single)	Coat back 150 mm, ≥ 1 mm WFT	EI 45, E 240

**A.2.7**

**Multimastic FB2 - 1x 60 mm - Metal pipes insulated mineral wool**

**A.2.7.1**

**Copper and steel pipes - Stone wool LI / CI**

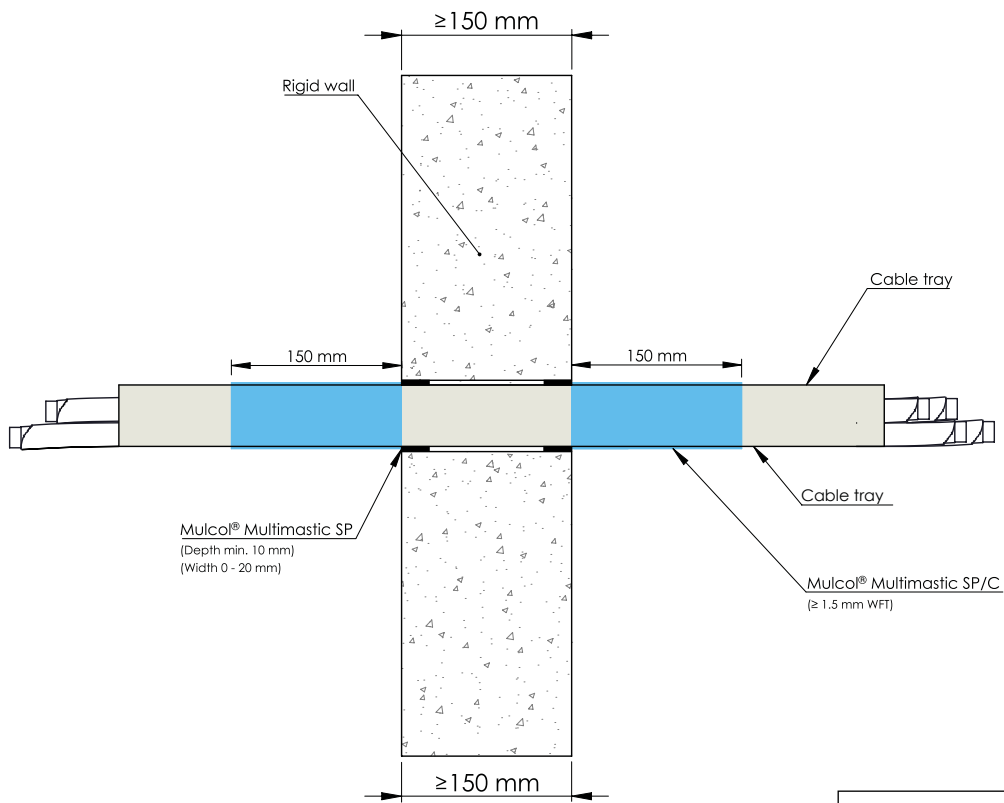
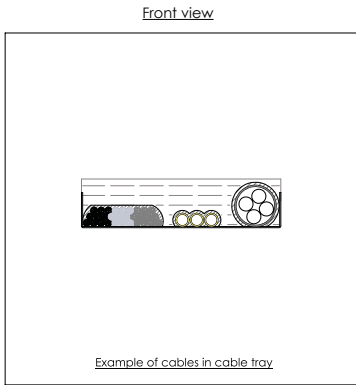


Drawing: RW150.E-ST-MFB2.1.20

Services	Pipe dimensions (mm)		Insulation			Classification	
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	≥ 25	LI 500 / CI	EI 90 C/U, E 240 C/U	
					CI	EI 120 C/U, E 240 C/U	
	≤ Ø 54	≥ 1.5			LI 500 / CI	EI 90 C/U, E 240 C/U	
					CI	EI 120 C/U, E 240 C/U	
(Stainless) Steel / cast iron	≤ Ø 40	≥ 1.0			≥ 30	LI 600 / CI	EI 240 C/U
	≤ Ø 219	≥ 4.0				CI	EI 120 C/U, E 240 C/U
						CI	EI 180 C/U, E 240 C/U

**A.2.8 Directly through wall - Cables, trays and conduits**

**A.2.8.1 Cables, trays and conduits - Multimastic C - 150 mm**

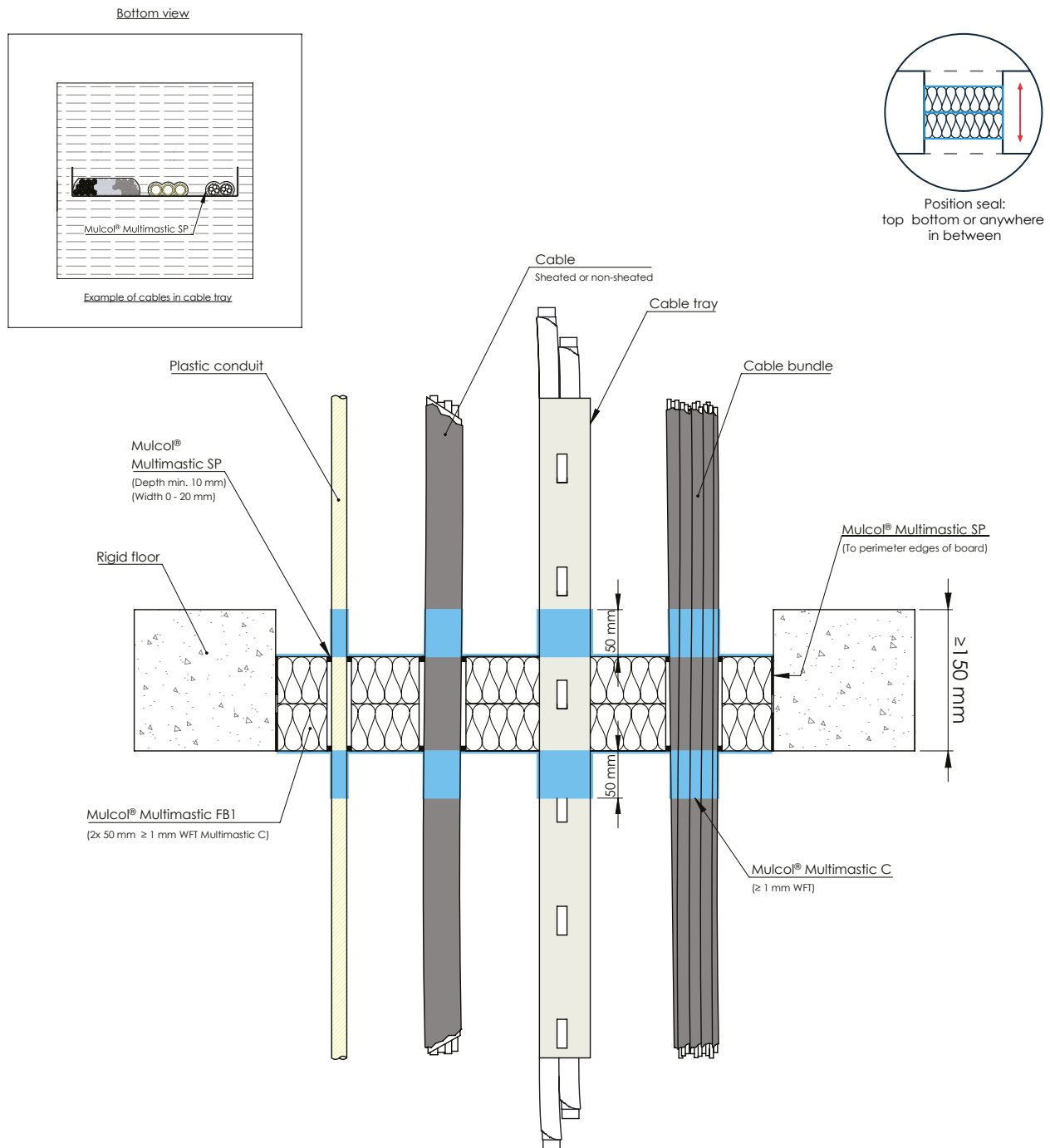


Drawing: RW150.E-PB-CT-0.10

Services	Coating	Classification
Metal cable ladders	Coat back 150 mm ≥ 1.5 mm WFT Multimastic SP/C	EI 240
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm		EI 120, E 180
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		EI 180 U/C
Plastic conduits ≤ Ø 16 mm		

## B.1.1 Multimastic FB1 - 2x 50 mm no cavity - Cables, trays and conduits

### B.1.1.1 Cables, trays and conduits - Multimastic C

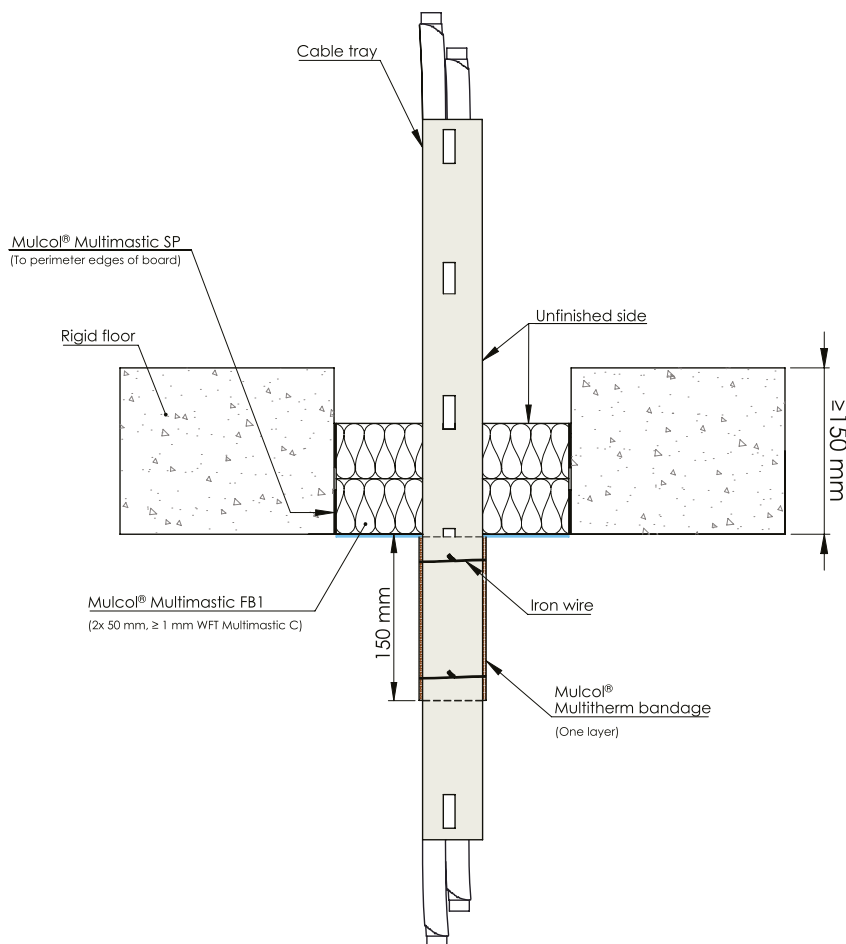
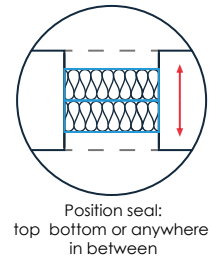
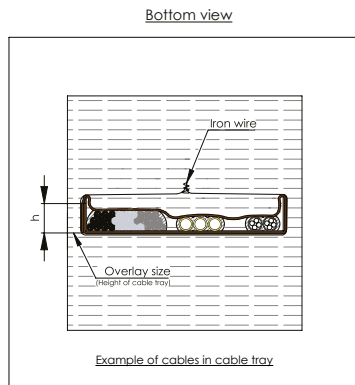


Drawing: PBrf.E-CT-4-MFB1.2.10

Services	Coating	Classification
Metal cable ladders	Coat back 50 mm ≥ 1 mm WFT Multimastic C	EI 90, E 120
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		EI 60, E 120
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		EI 90 U/C, E 120 U/C
Cables ≤ Ø 50 mm		EI 45, E 120
Plastic conduits ≤ Ø 16 mm		
Non sheathed cables ≤ Ø 24 mm		

## B.1.1 Multimastic FB1 - 2x 50 mm no cavity - Cables, trays and conduits

### B.1.1.2 Cables and trays - Multitherm Bandage

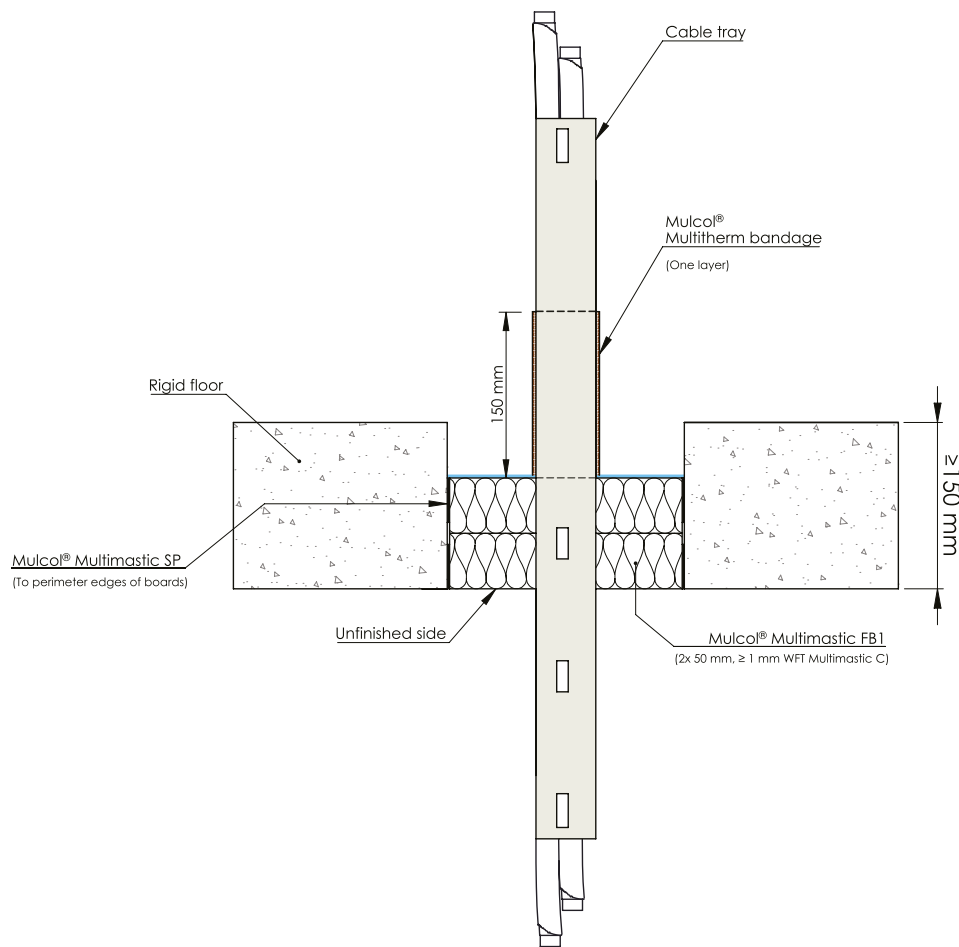
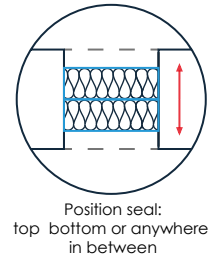
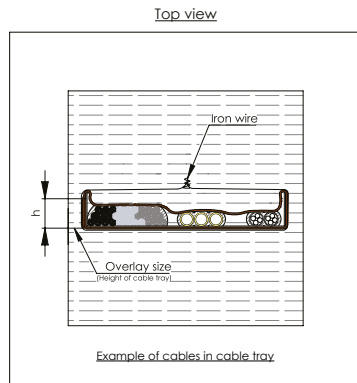


Drawing: PBrf,E-CT-MFB1-B1.1.10

Services	Insulation (mm)	Classification
Metal cable ladders	LI 150 Multitherm Bandage bottom of floor (two wires)	EI 60, E 120
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm		

**B.1.1 Multimastic FB1 - 2x 50 mm no cavity - Cables, trays and conduits**

**B.1.1.2 Cables and trays - Multitherm Bandage**



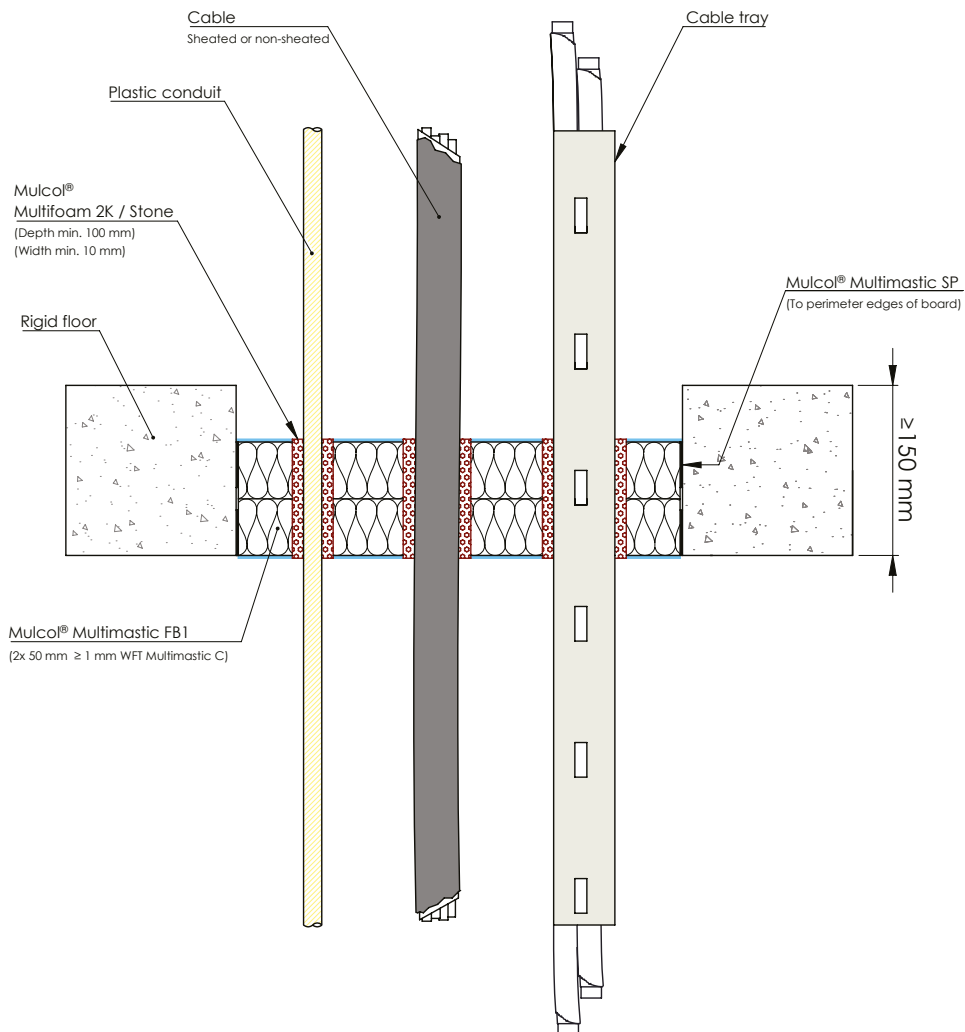
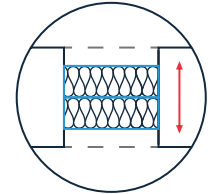
Drawing: PBrf.E-CT-MFB1-B3.1.10

Services	Insulation (mm)	Classification
Metal cable ladders	LI 150 - Multitherm Bandage top of floor	<b>EI 90 E 120</b>
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm		



**B.1.1 Multimastic FB1 - 2x 50 mm no cavity - Cables, trays and conduits**

**B.1.1.3 Cables and trays - Multifoam 2K**



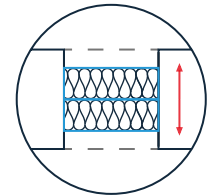
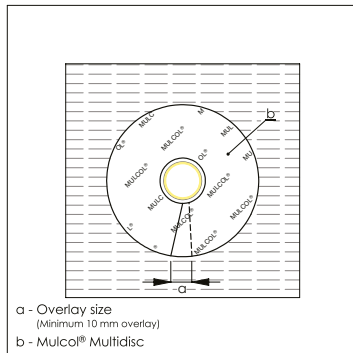
Drawing: PBrf.E-CT-3-MF-MFB1.2.10

Services	Sealing (mm)	Classification
Metal cable ladders	Multifoam 2K / Stone ≥ 0 x 100 (wxd)	<b>EI 60 E 120</b>
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm	Multifoam 2K / Stone ≥ 10 x 100 (wxd)	<b>EI 60 C/U, E 90 C/U</b>
Plastic conduits ≤ Ø 16 mm		

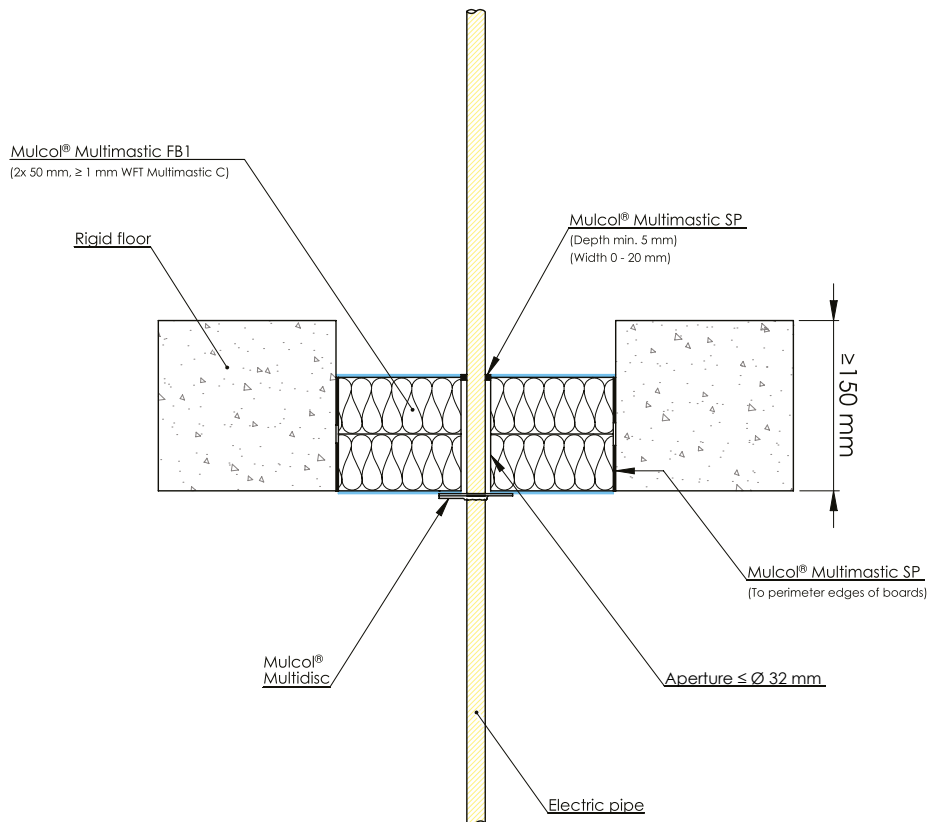
## B.1.1 Multimastic FB1 - 2x 50 mm no cavity - Cables, trays and conduits

### B.1.1.4 Single plastic conduits - Multidisc

Bottom view



Position seal:  
top bottom or anywhere  
in between

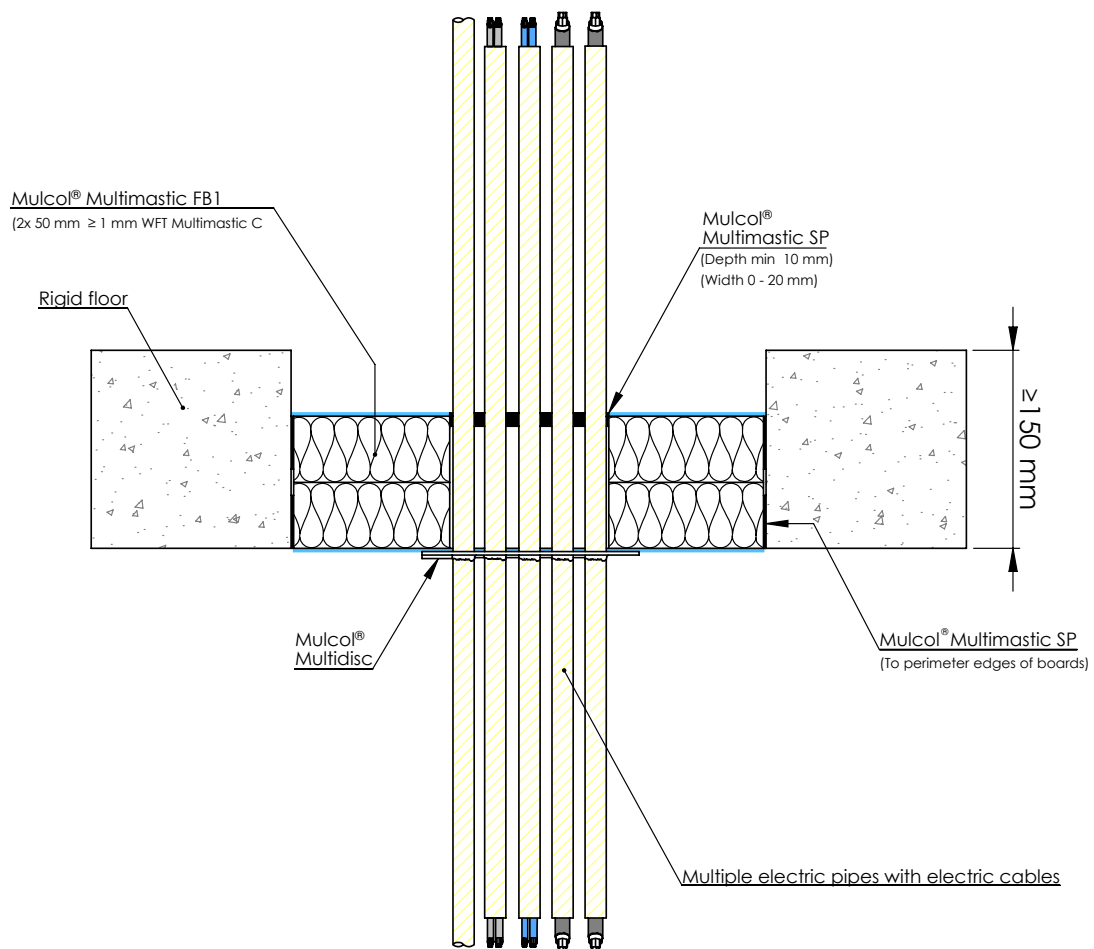
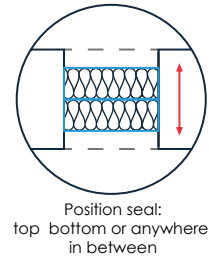
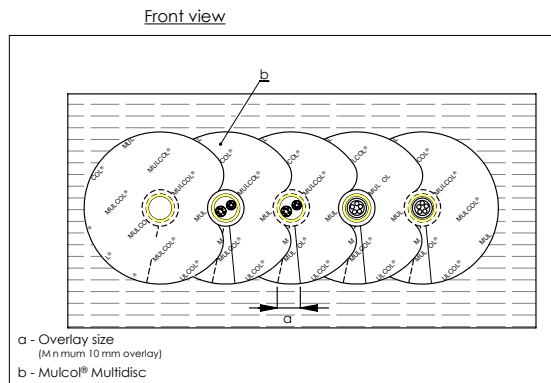


Drawing: PBrf.E-MFB1-EP19-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Plastic conduits $\leq \text{Ø } 25 \text{ mm}$ , with or without cables	Multidisc bottom of floor	$\leq \text{Ø } 32$	Multimastic SP 0-20 x $\geq 5$ (wxd) top of floor	EI 90 U/U, E 120 U/U

## B.1.1 Multimastic FB1 - 2x 50 mm no cavity - Cables, trays and conduits

### B.1.1.5 Multiple plastic conduits - Multidisc



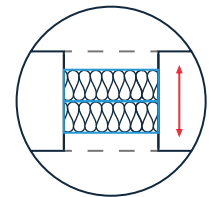
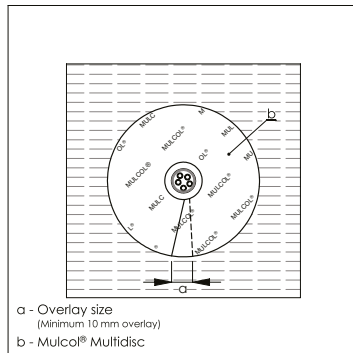
Drawing: PBrf.E-EP-M5.0.30

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Multiple plastic conduits, max 5 pcs. ≤ Ø 16 mm, with or without cables	Multidisc bottom of floor	≤ Ø 32	Multimastic SP 0-10 x ≥ 20 (wxd) top of floor	EI 90 U/U, E 120 U/U

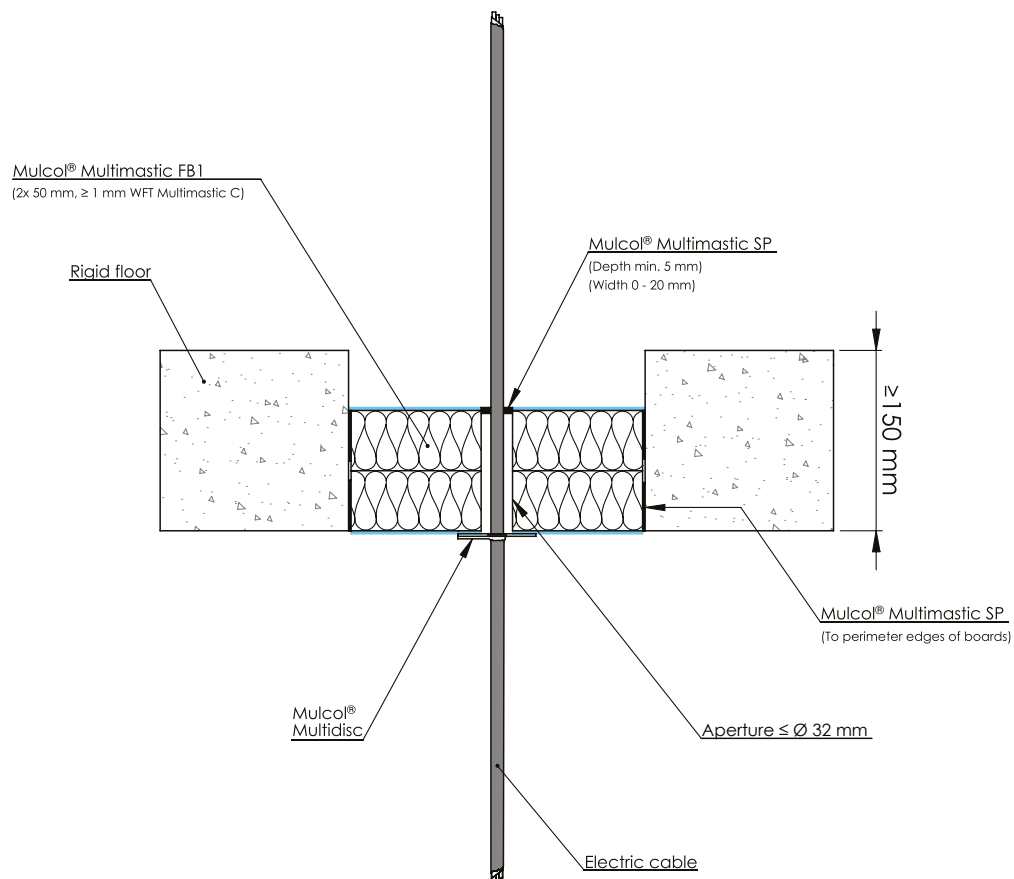
## B.1.1 Multimastic FB1 - 2x 50 mm no cavity - Cables, trays and conduits

### B.1.1.6 Single cables - Multidisc

Bottom view



Position seal:  
top bottom or anywhere



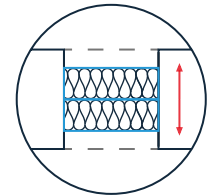
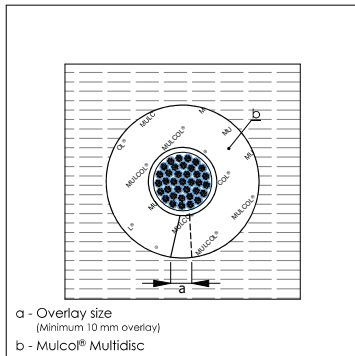
Drawing: PBrf.E-MFB1-EC-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Cables ≤ Ø 12 mm (e.g. YMVK 5x2.5 mm <sup>2</sup> )	Multidisc bottom of floor	≤ Ø 32	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 90, E 120

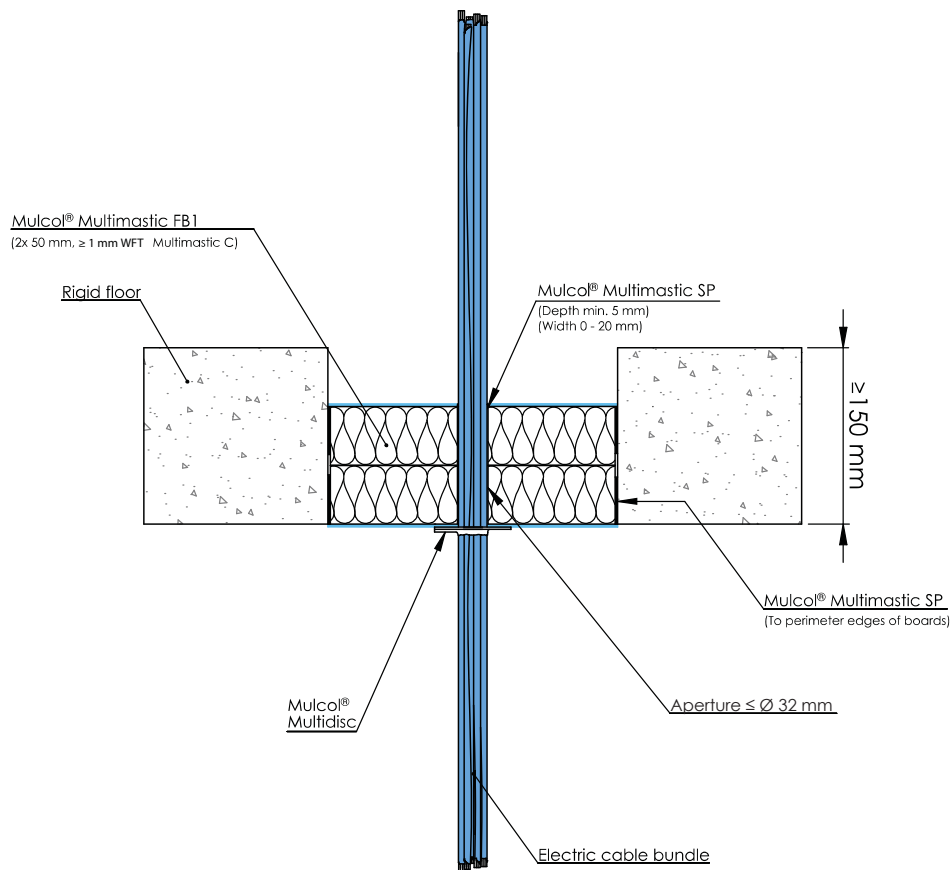
**B.1.1 Multimastic FB1 - 2x 50 mm no cavity - Cables, trays and conduits**

**B.1.1.7 Multiple cables - Multidisc**

Bottom view



Position seal:  
top bottom or anywhere  
in between

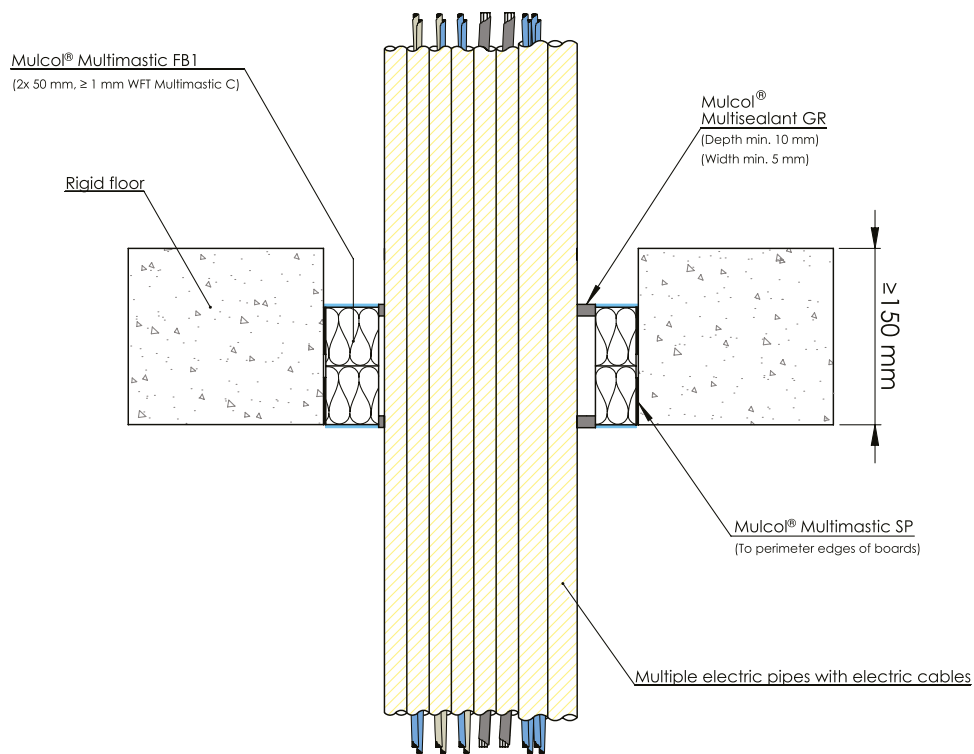
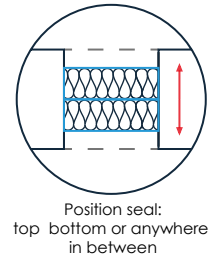
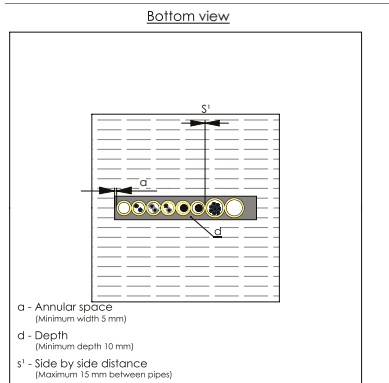


Drawing: PBrf.E-MFB1-ECB-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Telecommunication cables ≤ Ø 15 max 15 pcs	Multidisc bottom of floor	≤ Ø 32	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 60, E 120

**B.1.1 Multimastic FB1 - 2x 50 mm no cavity - Cables, trays and conduits**

**B.1.1.8 Multiple plastic conduits - Multisealant GR**

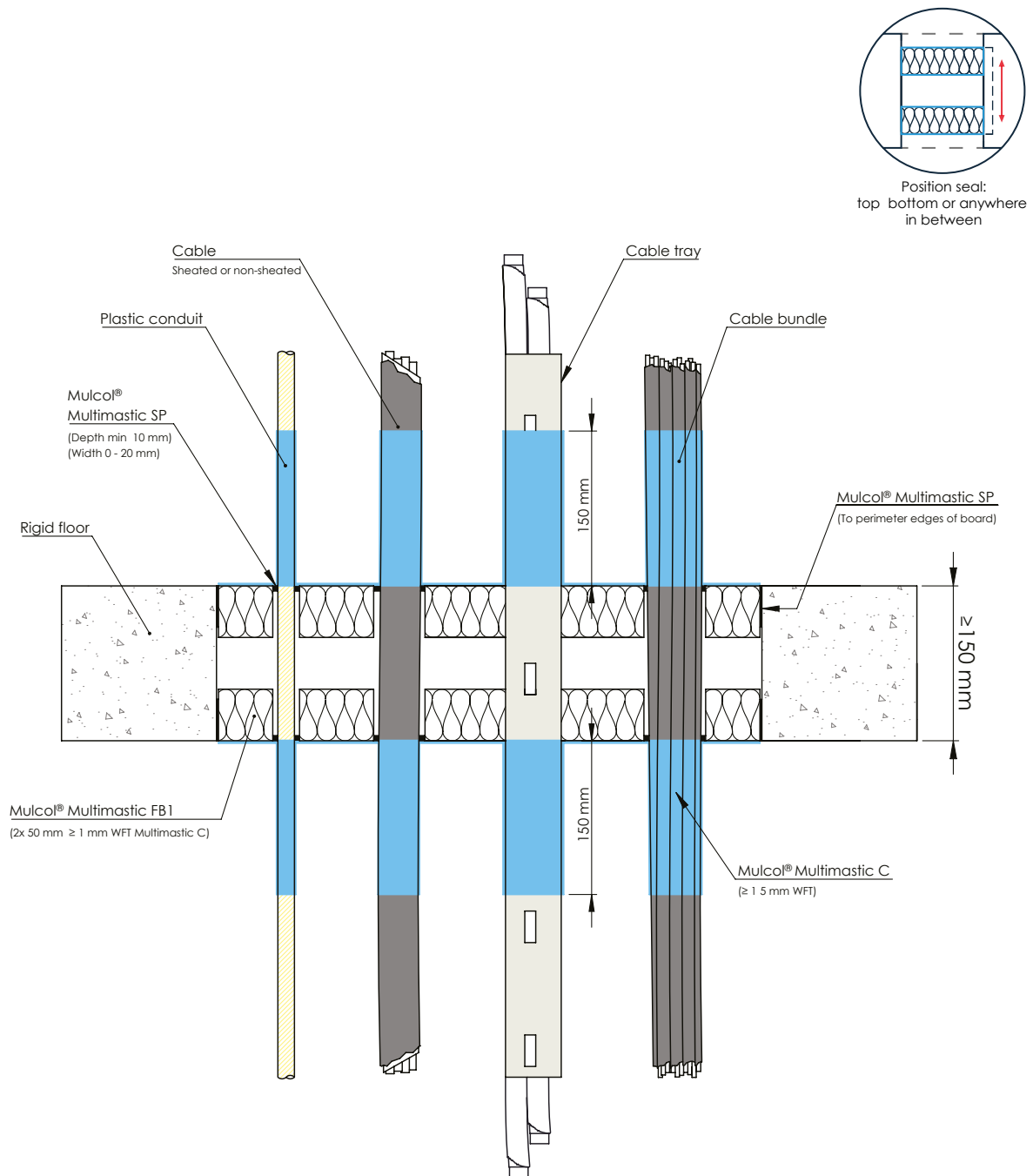


Drawing: PBrf.E-EP8-G2.1.10

Services	Sealing (mm)	Classification
Multiple plastic conduits ≤ Ø 25 mm, max 8 pcs. with or without cables	Multisealant GR ≥ 5x10 mm (wxd)	EI 90 U/U

## B.1.2 Multimastic FB1 - 2x 50 mm cavity 50 mm - Cables, trays and conduits

### B.1.2.1 Cables, trays and conduits - Multimastic C

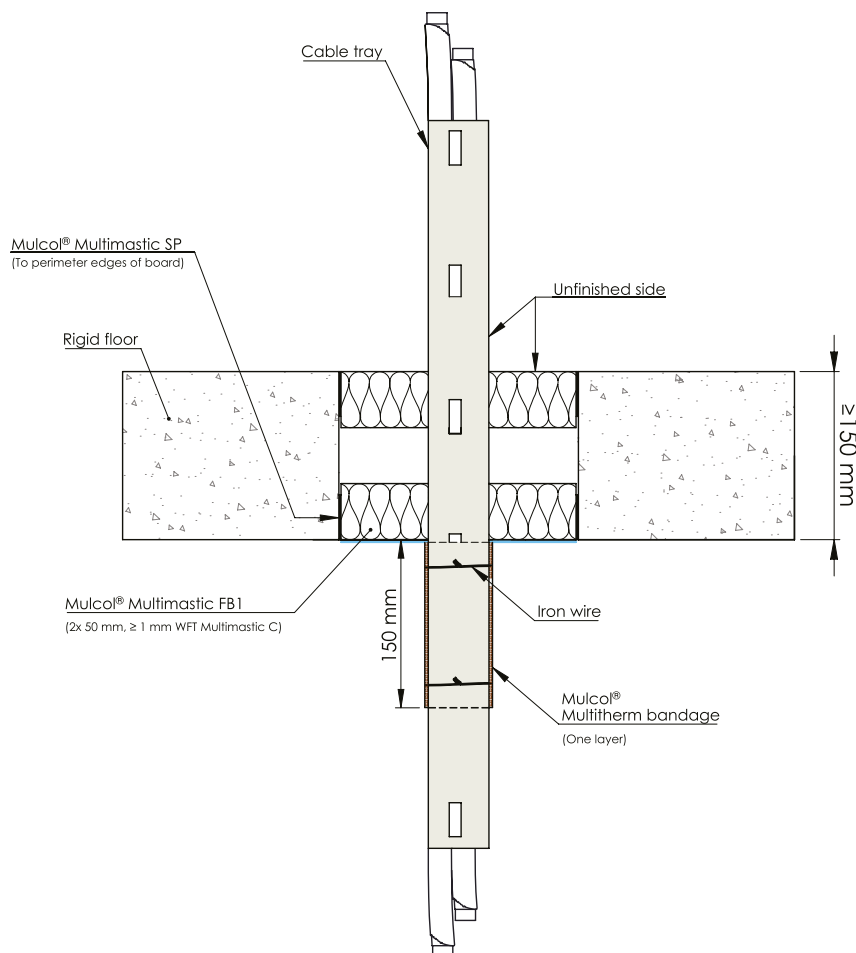
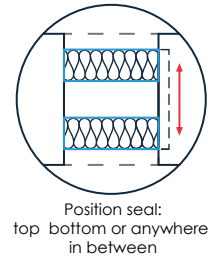
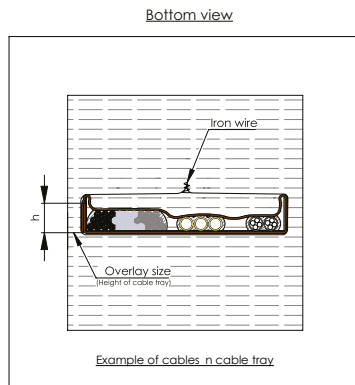


Drawing: PBrf.E-CT-4-MFB1.2.10.C

Services	Coating	Classification
Metal cable ladders	Coat back 150 mm ≥ 1.5 mm WFT Multimastic C	<b>EI 120</b>
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		<b>EI 120 U/C</b>
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		
Non sheathed cables ≤ Ø 17 mm		<b>EI 90, E 120</b>
Plastic conduits ≤ Ø 16 mm		
Cables ≤ Ø 80 mm		
Non sheathed cables ≤ Ø 24 mm		

## B.1.2 Multimastic FB1 - 2x 50 mm cavity 50 mm - Cables, trays and conduits

### B.1.2.2 Cables and trays - Multitherm Bandage



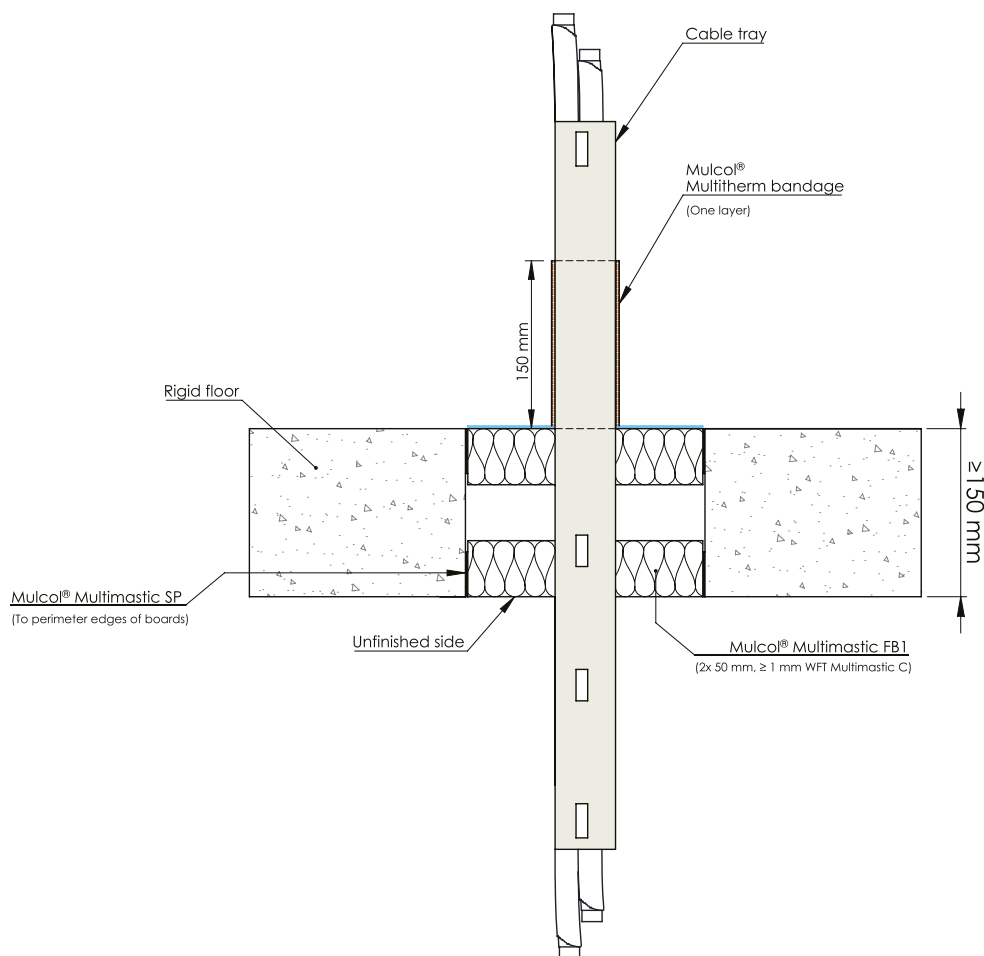
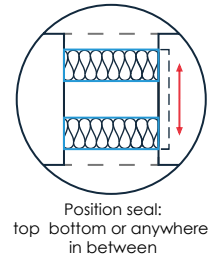
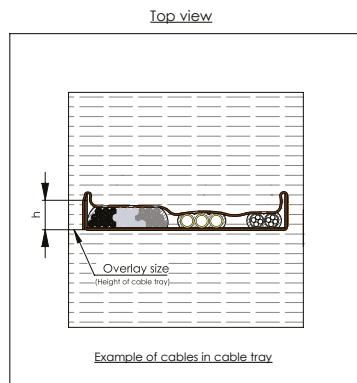
Drawing: PBrf.E-CT-MFB1-B1.1.10.C

Services	Insulation	Classification
Metal cable ladders	LI 150 Multitherm Bandage bottom of floor (two wires)	EI 60, E 120
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm		



## B.1.2 Multimastic FB1 - 2x 50 mm cavity 50 mm - Cables, trays and conduits

### B.1.2.2 Cables and trays - Multitherm Bandage

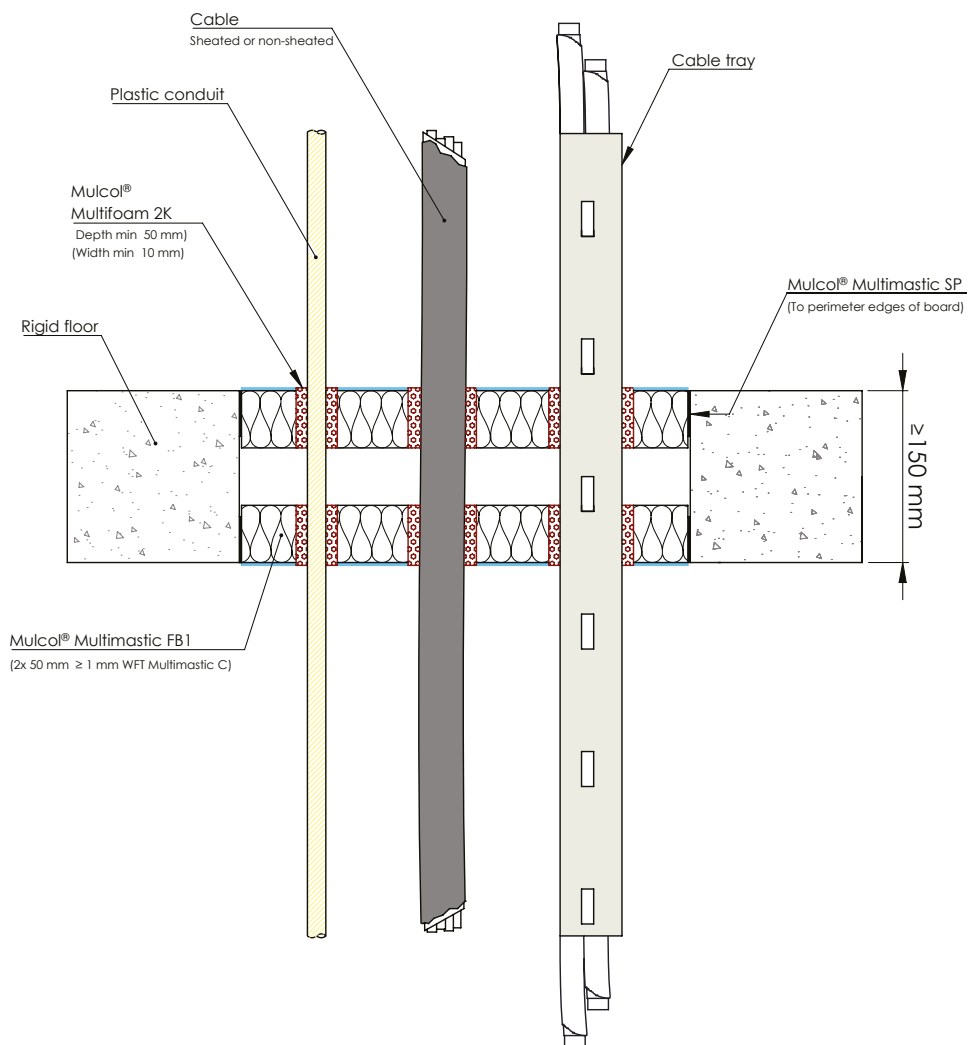
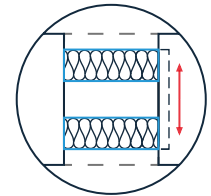


Drawing: PBrf.E-CT-MFB1-B3.1.10.C

Services	Insulation	Classification
Metal cable ladders	LI 150 Multitherm Bandage top of floor	EI 90, E 120
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm		

**B.1.2 Multimastic FB1 - 2x 50 mm cavity 50 mm - Cables, trays and conduits**

**B.1.2.3 Cables and trays - Multifoam 2K**



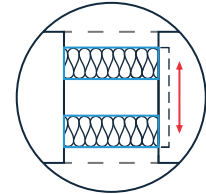
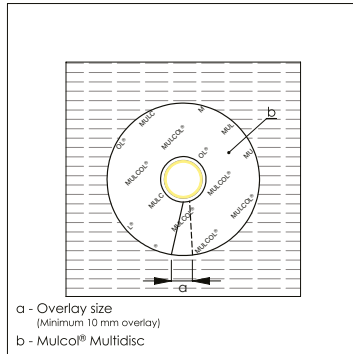
Drawing: PBrf.E-CT-3-MF-MFB1.2.10.C

Services	Sealing (mm)	Classification
Metal cable ladders	Multifoam 2K / Stone ≥ 0 x 100 (wxd)	<b>EI 60, E 120</b>
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm	Multifoam 2K / Stone ≥ 10 x 100 (wxd)	<b>EI 60, E 90</b>
Plastic conduits ≤ Ø 16 mm		

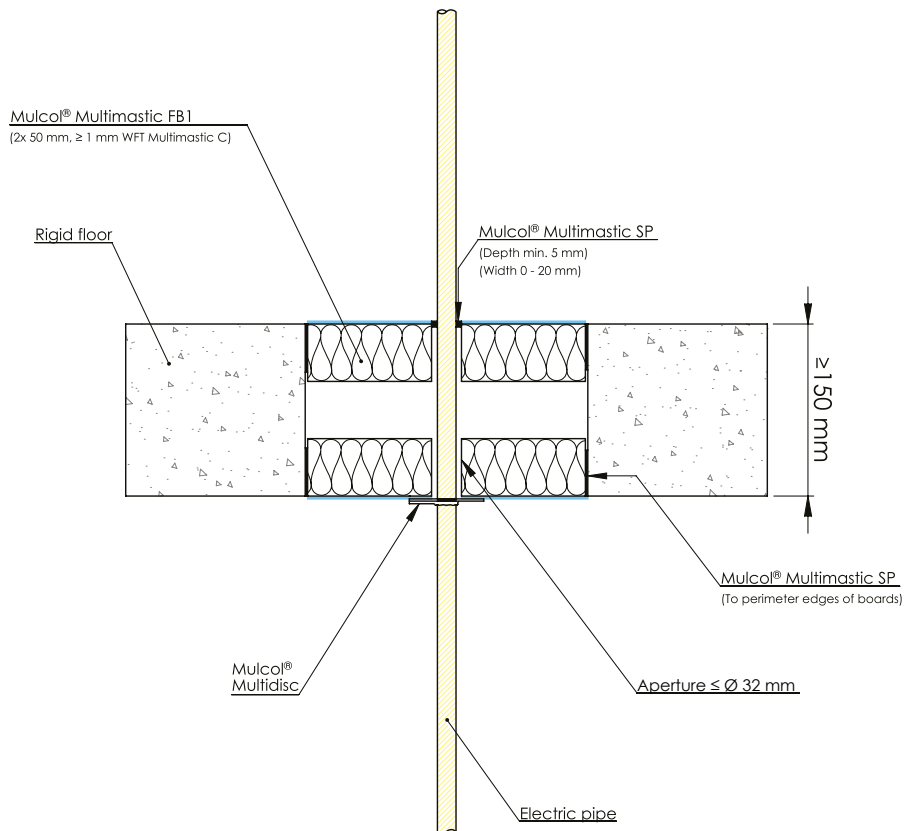
## B.1.2 Multimastic FB1 - 2x 50 mm cavity 50 mm - Cables, trays and conduits

### B.1.2.4 Single plastic conduits - Multidisc

Bottom view



Position seal:  
top bottom or anywhere  
in between

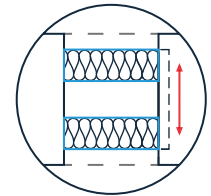
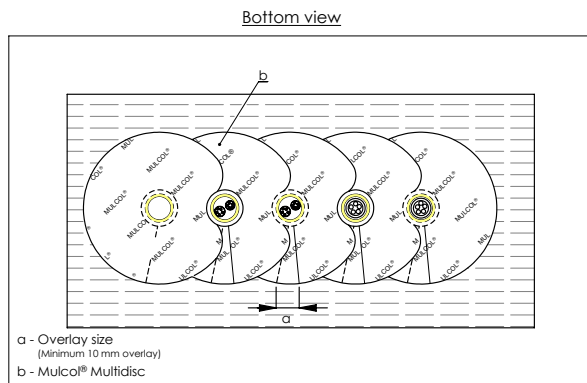


Drawing: PBrf E-MFB1-EP19-M2.0.10.C

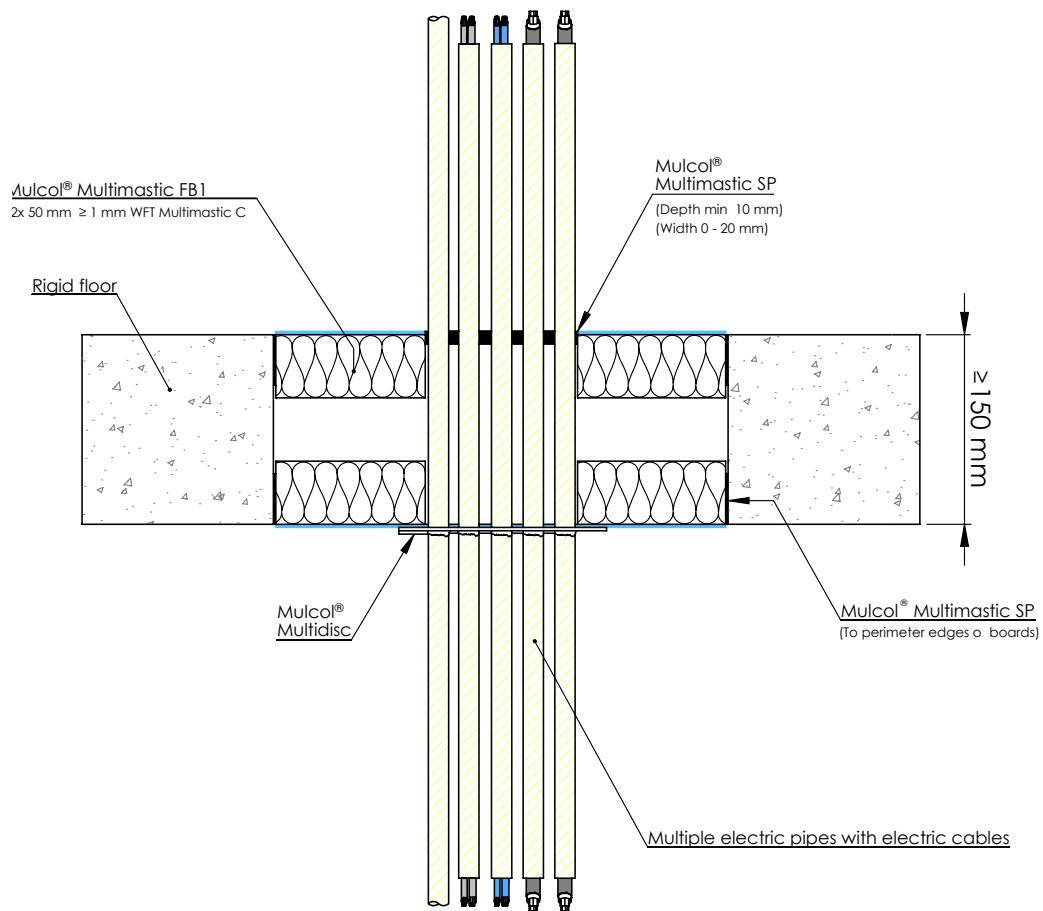
Services	Product	Aperture (mm)	Sealing (mm)	Classification
Plastic conduits $\leq \text{Ø } 25 \text{ mm}$ with or without cables	Multidisc bottom of floor	$\leq \text{Ø } 32$	Multimastic SP 0-20 x $\geq 5$ (wxd) top of floor	EI 90 U/U, E 120 U/U

## B.1.2 Multimastic FB1 - 2x 50 mm cavity 50 mm - Cables, trays and conduits

### B.1.2.5 Multiple plastic conduits - Multidisc



Position seal:  
top bottom or anywhere  
in between



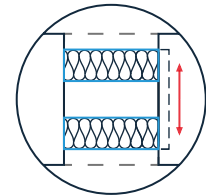
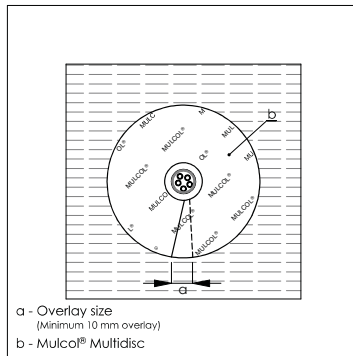
Drawing: PBrf.E-EP-M5.0.30.C

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Plastic conduits ≤ Ø 25 mm with or without cables	Multidisc bottom of floor	≤ Ø 32	Multimastic SP ≥ 0-20 x 5 (wxd) top of floor	EI 90 U/U, E 120 U/U

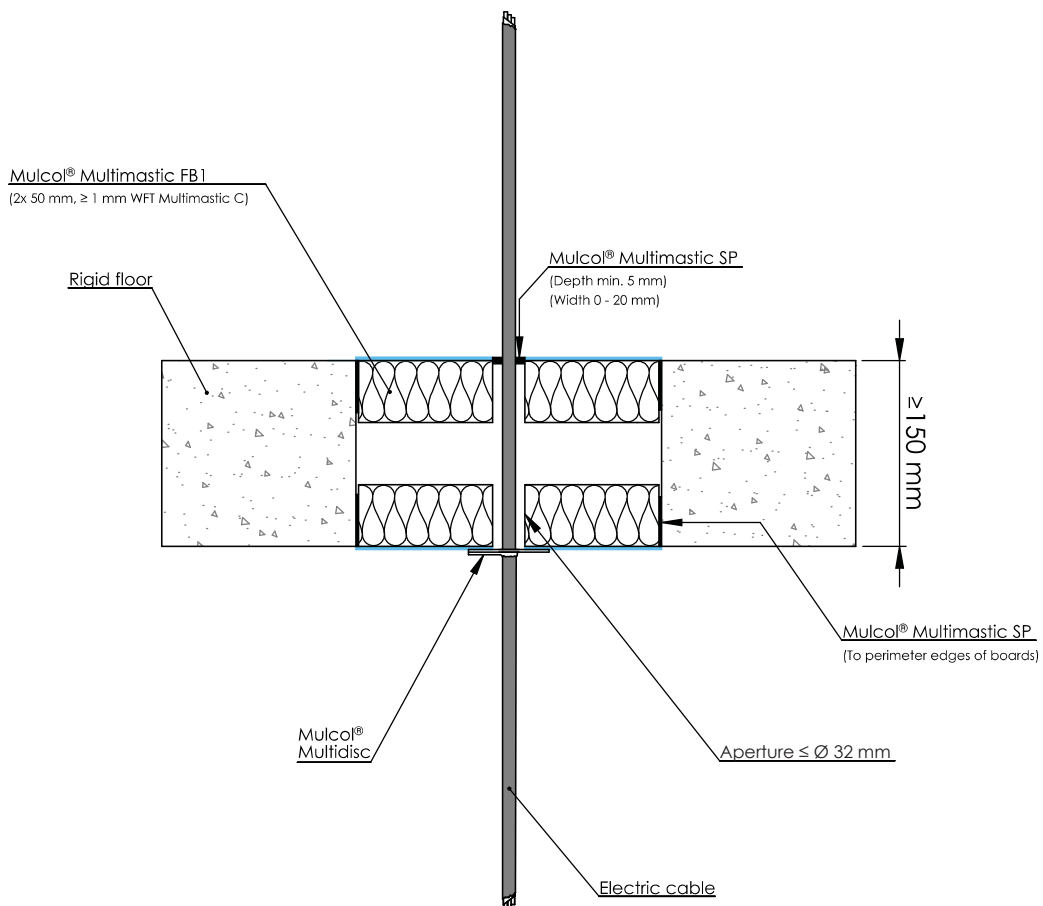
## B.1.2 Multimastic FB1 - 2x 50 mm cavity 50 mm - Cables, trays and conduits

### B.1.2.6 Single cables - Multidisc

Bottom view



Position seal:  
top bottom or anywhere  
in between



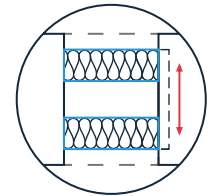
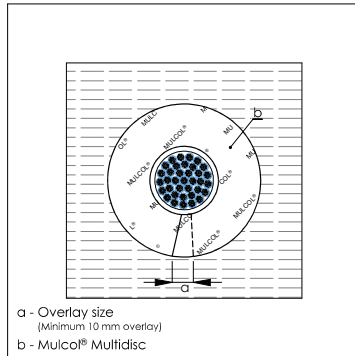
Drawing: PBrf.E-MFB1-EC-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Cables ≤ Ø 12 mm (e.g. YMKV 5x2.5 mm <sup>2</sup> )	Multidisc bottom of floor	≤ Ø 32	Multimastic SP ≥ 0-20 x 5 (wxd) top of floor	EI 120

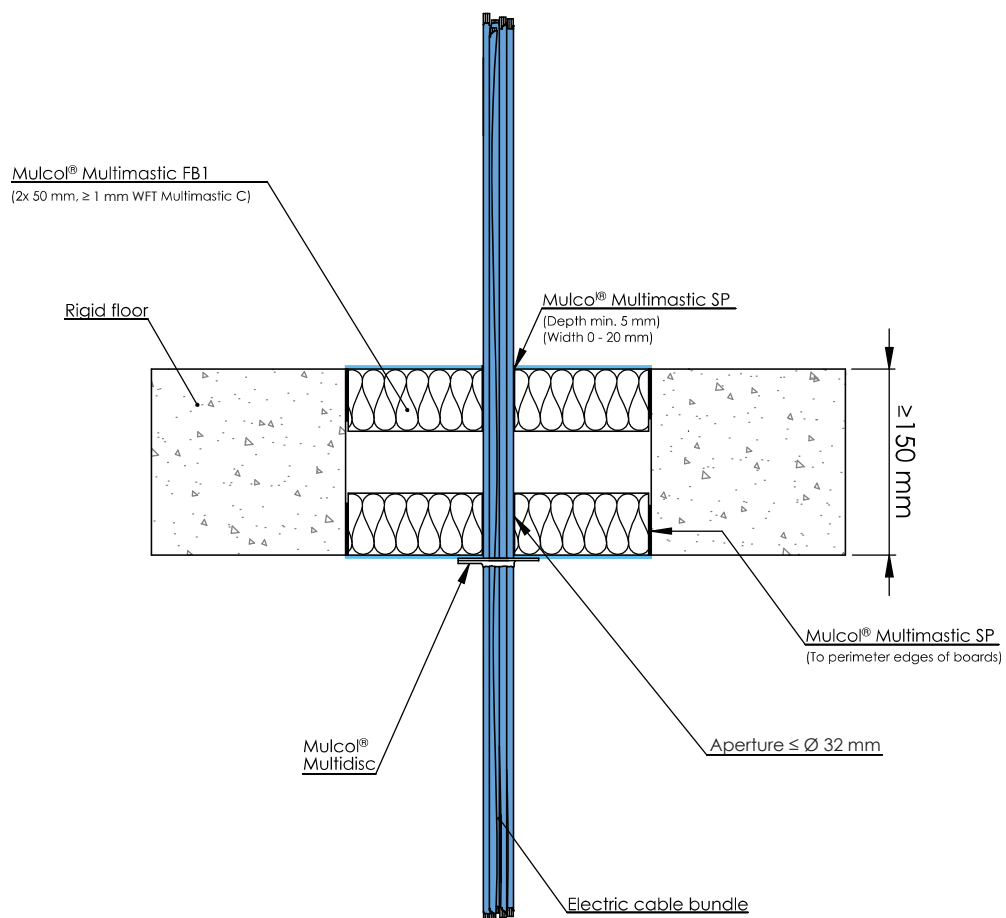
## B.1.2 Multimastic FB1 - 2x 50 mm cavity 50 mm - Cables, trays and conduits

### B.1.2.7 Multiple cables - Multidisc

Bottom view



Position seal:  
top bottom or anywhere  
in between

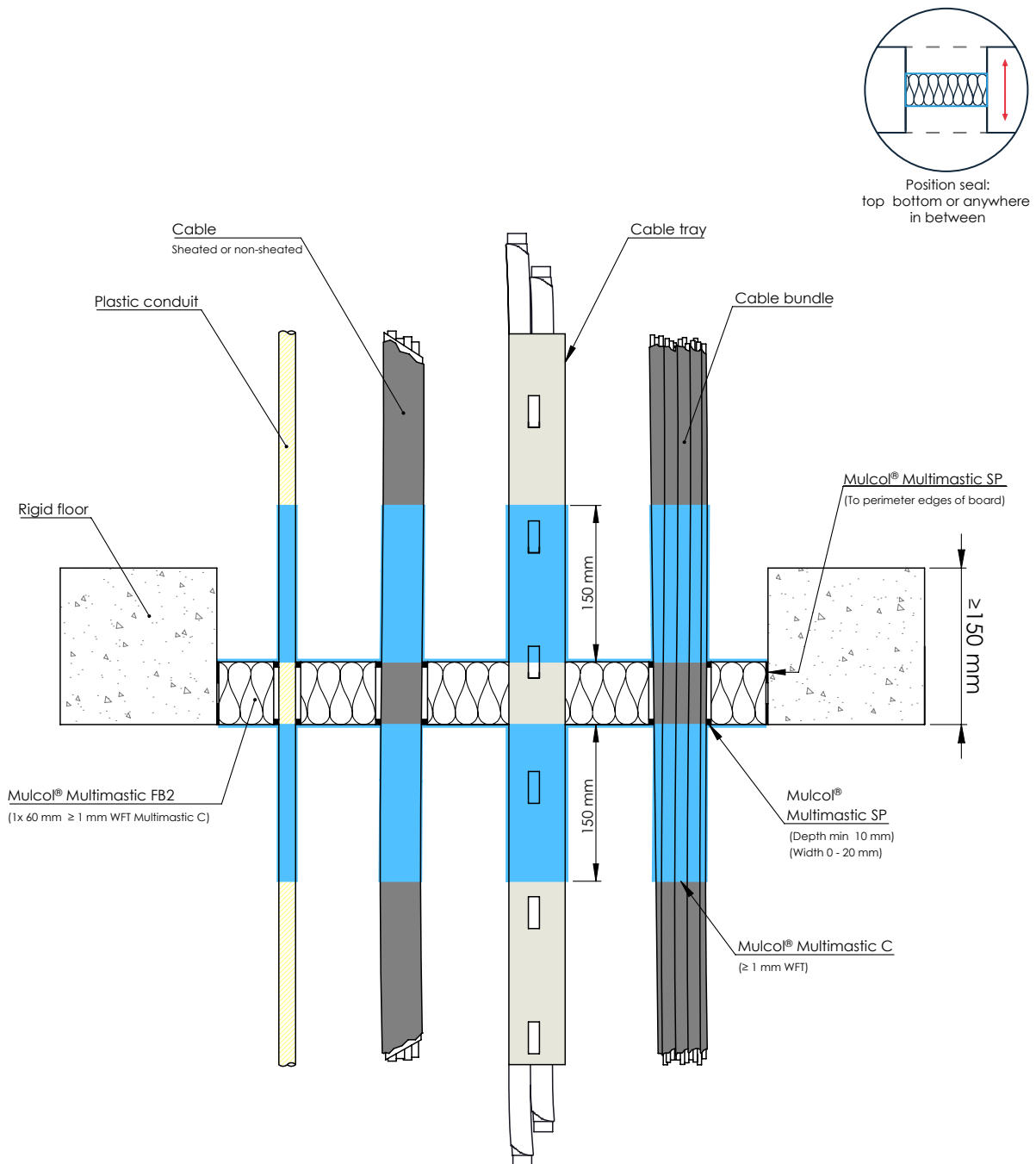


Drawing: PBrf.E-MFB1-ECB-M2.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Telecommunication cables $\le \text{Ø } 15$ max 15 pcs	Multidisc bottom of floor	$\le \text{Ø } 32$	Multimastic SP $\ge 0-20 \times 5$ (wxd) top of floor	EI 60, E 120

## B.1.3 Multimastic FB2 - 1x 60 mm - Cables, trays and conduits

### B.1.3.1 Cables, trays and conduits - Multimastic C



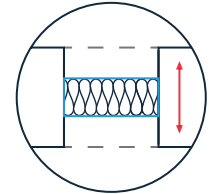
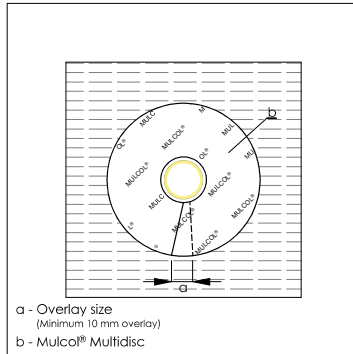
Drawing: PBrf.E-CT-4-MFB2.1.10

Services	Coating	Classification
Metal cable ladders	Coat back 150 mm ≥ 1 mm WFT Multimastic C	EI 90, E 120
Metal (non-)perforated cable trays		EI 60, E 120
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 50 mm		EI 90, E 120
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		
Plastic conduits ≤ Ø 16 mm		
Non sheathed cables ≤ Ø 24 mm		EI 45, E 120

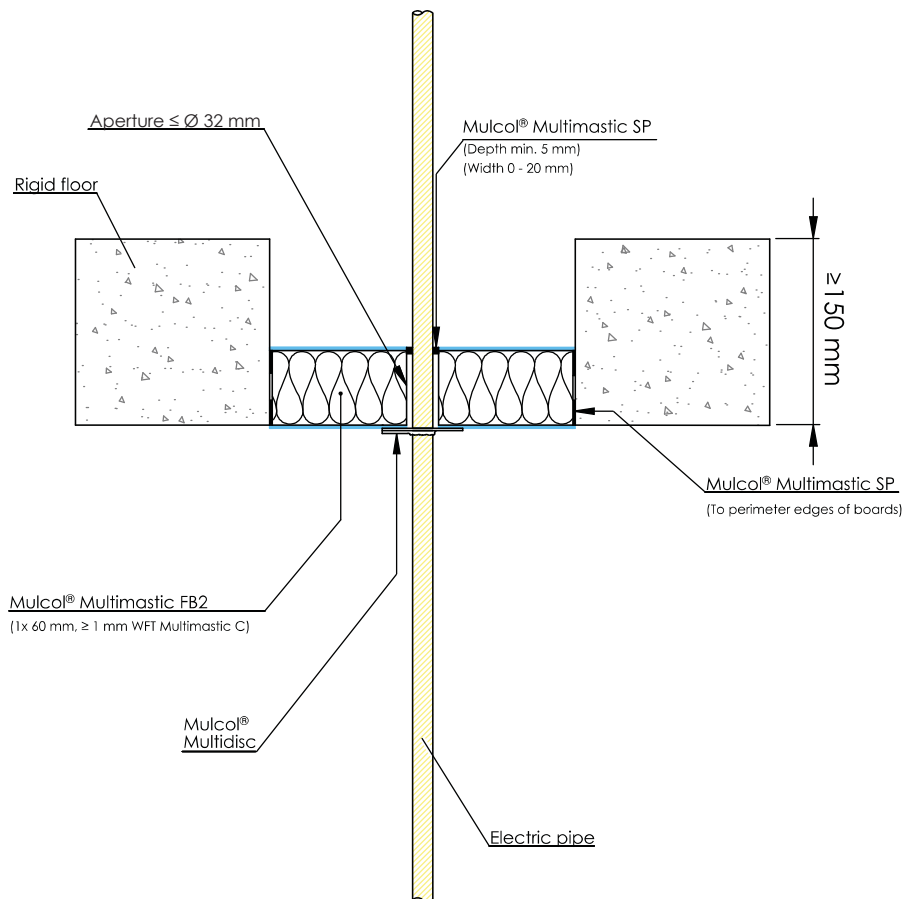
## B.1.3 Multimastic FB2 - 1x 60 mm - Cables, trays and conduits

### B.1.3.2 Single plastic conduits - Multidisc

Bottom view



Position seal:  
top bottom or anywhere  
in between



Drawing: PBrf.E-MFB2-EP19-M2.0.1

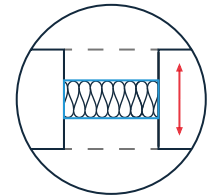
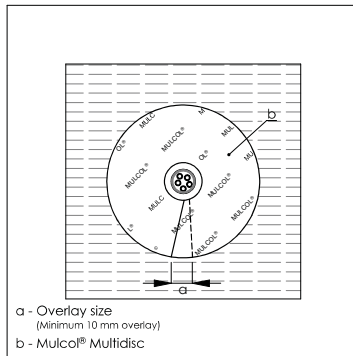
Services	Product	Aperture (mm)	Sealing (mm)	Classification
Plastic conduits $\leq \text{Ø } 25 \text{ mm}$ with or without cables	Multidisc bottom of floor	$\leq \text{Ø } 32$	Multimastic SP 0-20 x $\geq 5$ (wxd) top of floor	EI 60 U/C, E 90 U/C



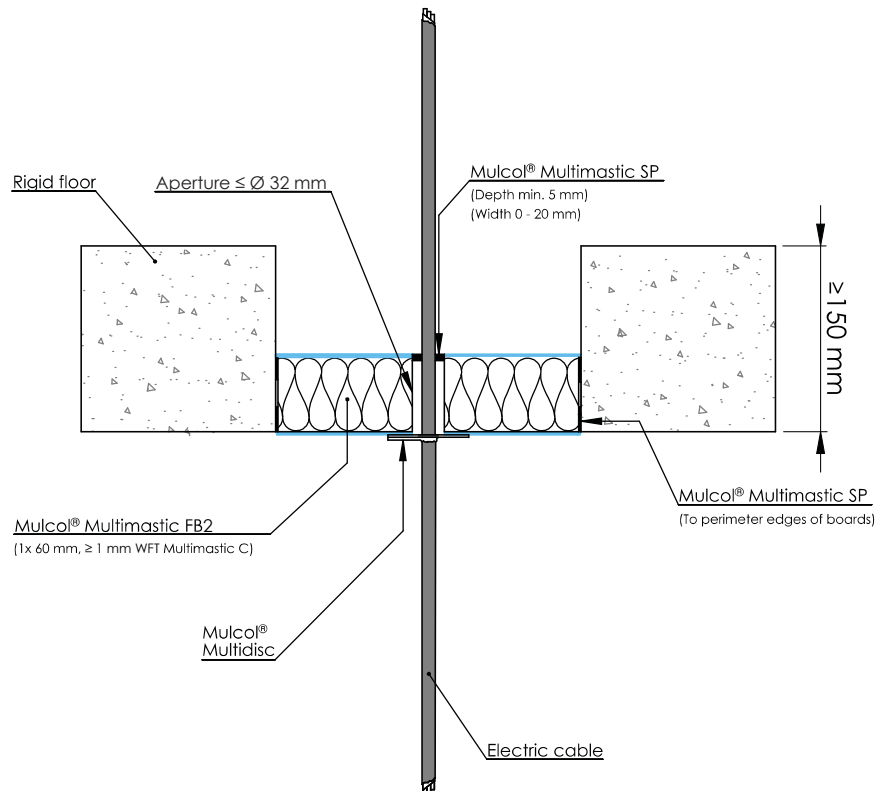
## B.1.3 Multimastic FB2 - 1x 60 mm - Cables, trays and conduits

### B.1.3.3 Single cables - Multidisc

Bottom view



Position seal:  
top bottom or anywhere  
in between

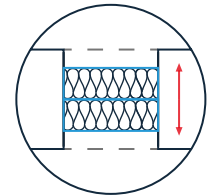
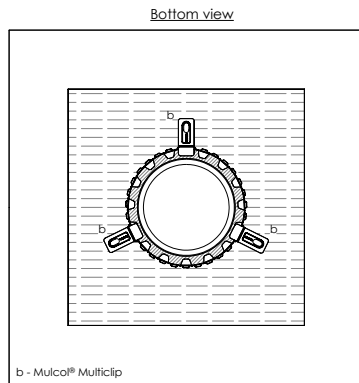


Drawing: PBrf.E-MFB2-EC-M2.0.1

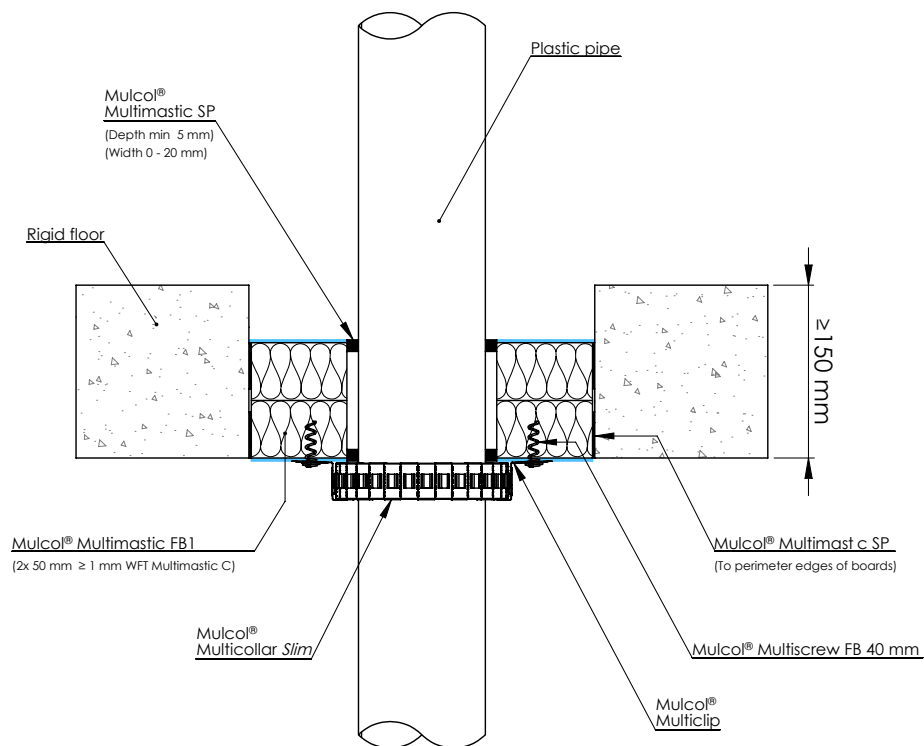
Services	Product	Aperture (mm)	Sealing (mm)	Classification
Cables $\leq \text{Ø } 12 \text{ mm}$ (e.g. YMKV 5x2.5 mm <sup>2</sup> )	Multidisc bottom of floor	$\leq \text{Ø } 32$	Multimastic SP $\geq 0-20 \times 5$ (wxd) top of floor	EI 60, E 90

## B.1.4 Multimastic FB1 - 2x 50 mm no cavity - Combustible pipes

### B.1.4.1 Plastic pipes - Multicollar *Slim*



Position seal:  
top bottom or anywhere  
in between



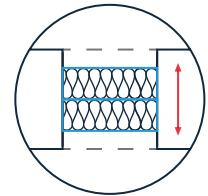
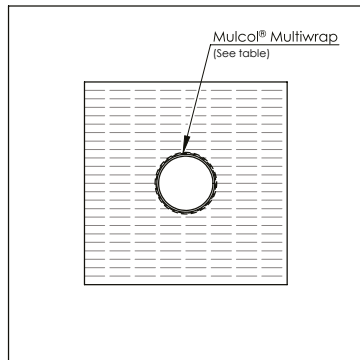
Drawing: PBrf.E-PP-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/U
		2.7 - 6.6			EI 60 U/U
2.7		EI 90 U/U			
2.7 - 6.3		EI 60 U/U			
2.7		EI 90 U/U			
PP		2.7 - 6.3		EI 60 U/U	
PVC(-U/-C)		2.7		EI 90 U/U	
		2.7 - 6.3		EI 60 U/U	

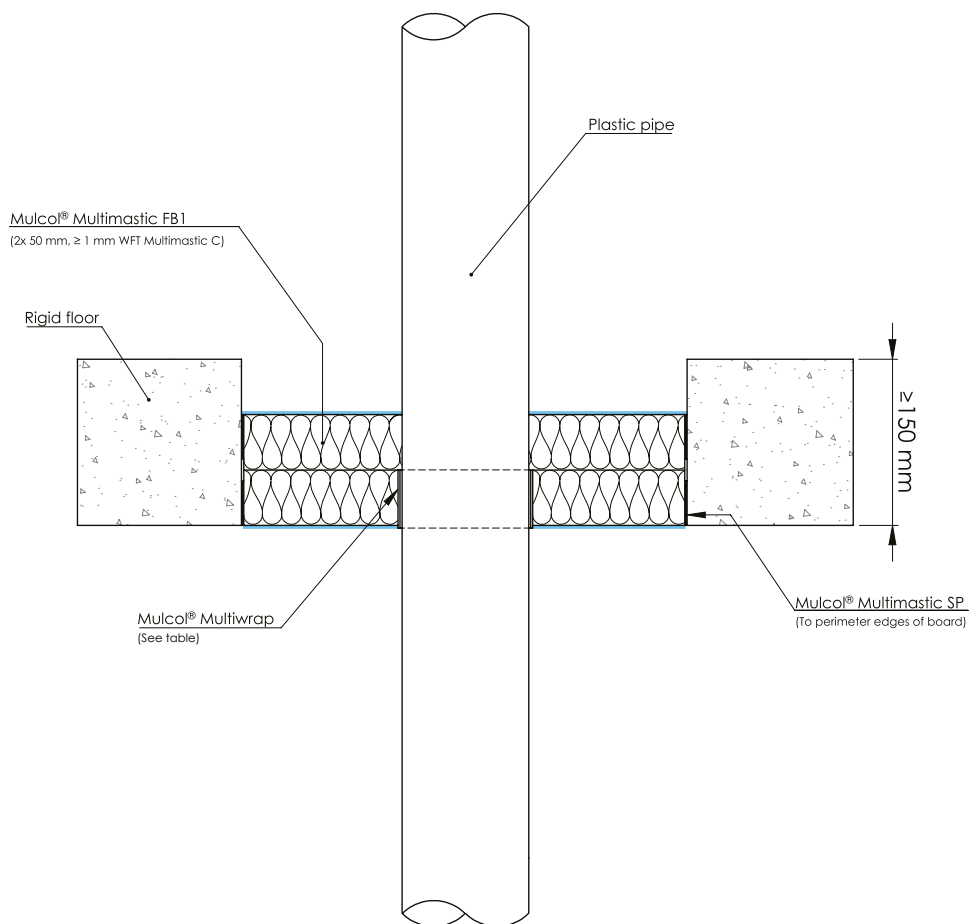
**B.1.4 Multimastic FB1 - 2x 50 mm no cavity - Combustible pipes**

**B.1.4.2 Plastic pipes - Multiwrap**

Bottom view



Position seal:  
top bottom or anywhere  
in between

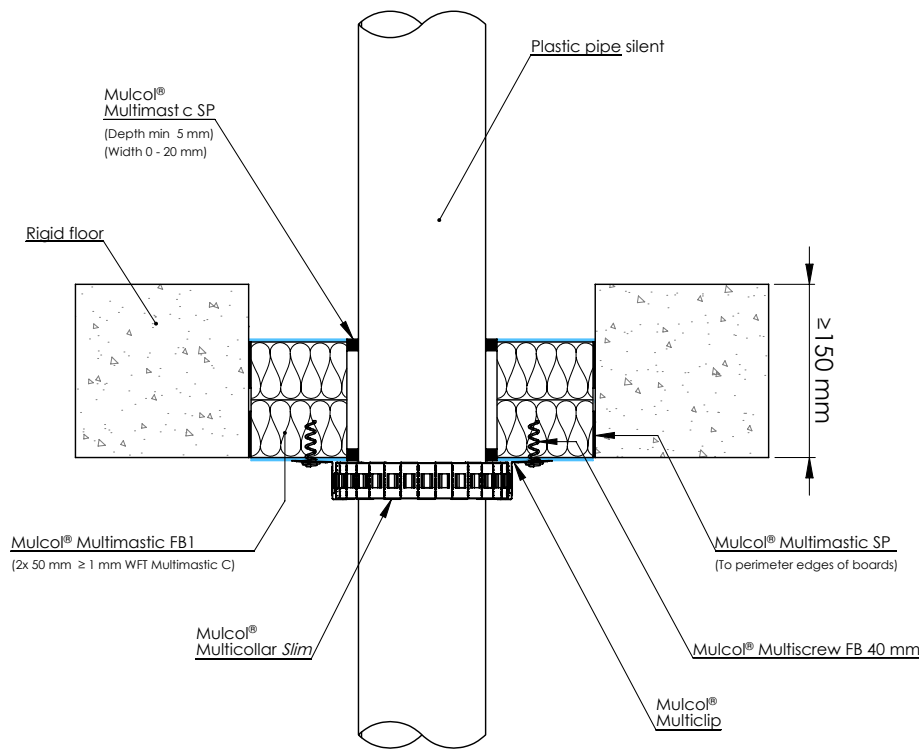
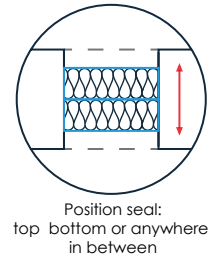
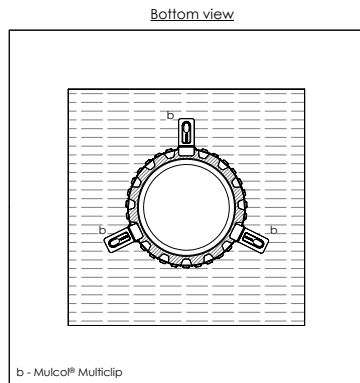


Drawing: PBrf.E-PP-MW2-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PVC(-U/-C)	≤ Ø 110	3.2	Multiwrap (2 layers)	EI 120 U/C

**B.1.4 Multimastic FB1 - 2x 50 mm no cavity - Combustible pipes**

**B.1.4.3 Plastic pipes (Silent) - Multicollar *Slim***



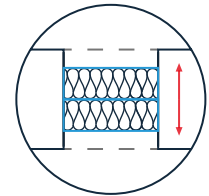
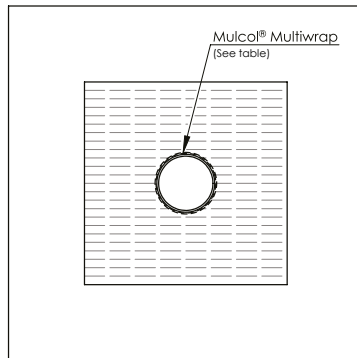
Drawing: PBrf.E-PPS-MFB1.2.10

Services	Pipe dimensions (mm)		System	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB20	≤ Ø 110	6.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/U

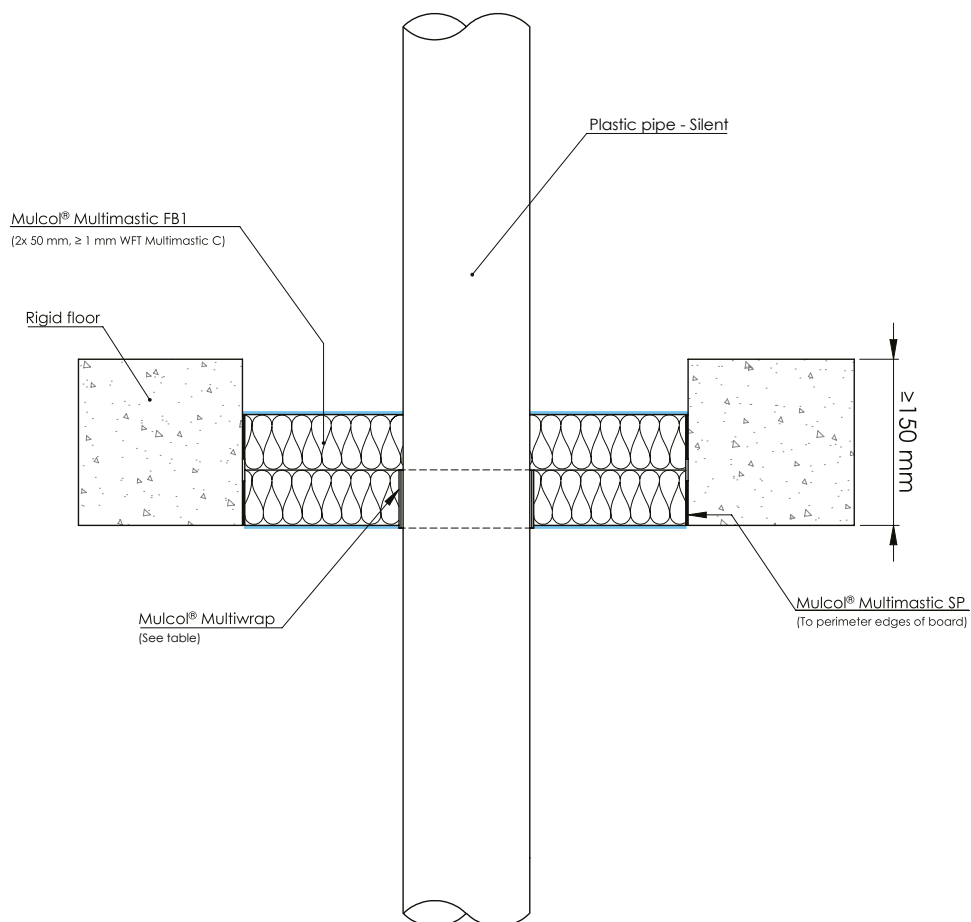
## B.1.4 Multimastic FB1 - 2x 50 mm no cavity - Combustible pipes

### B.1.4.4 Plastic pipes (Silent) - Multiwrap

Bottom view



Position seal:  
top bottom or anywhere  
in between

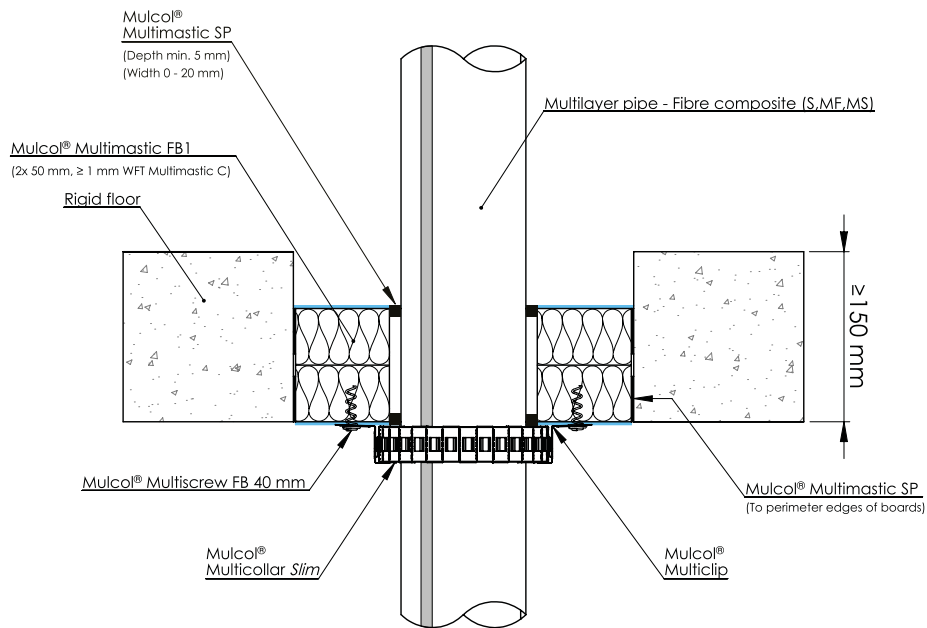
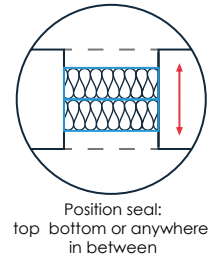
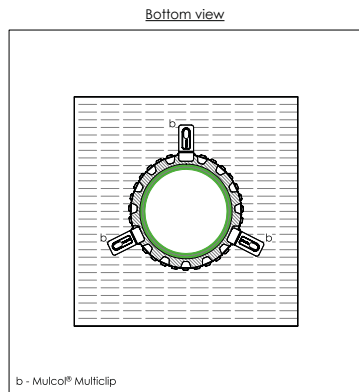


Drawing: PBrf E-PPS-MW2-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Poloplast PoloKal NG	≤ Ø 50	2.0	Multiwrap (2 layers)	EI 240 U/U
	≤ Ø 110	3.4		
Geberit Silent dB20	≤ Ø 56	3.2		EI 240 U/C
	≤ Ø 110	6.0		
Poloplast PoloKal NG	≤ Ø 125	3.9	Multiwrap (4 layers)	

**B.1.4 Multimastic FB1 - 2x 50 mm no cavity - Combustible pipes**

**B.1.4.5 PP-R Multilayer pipes - Multicollar *Slim***

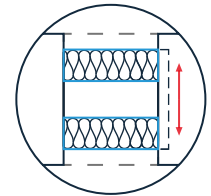
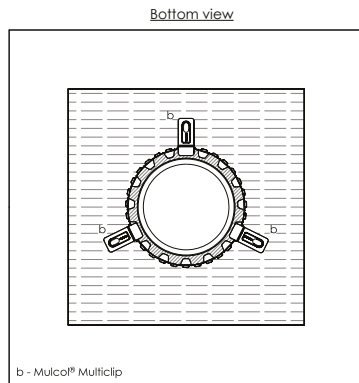


Drawing: PBrf.E-MLF-11.0.10

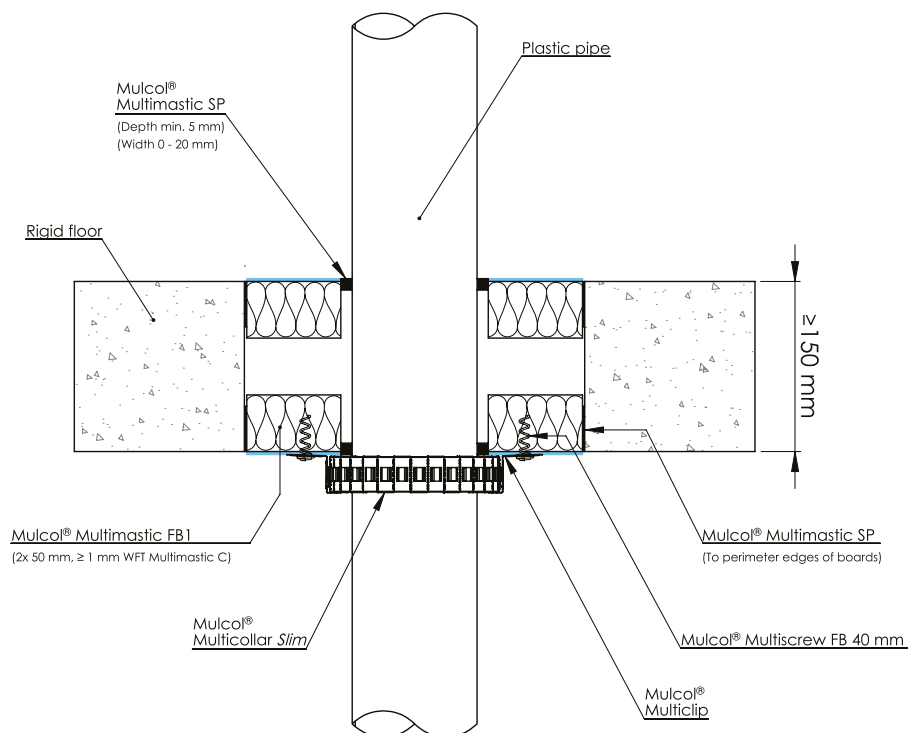
Services	Pipe dimensions (mm)		System	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Aquatherm Green-MF	≤ Ø 50	6.9	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/C
	≤ Ø 110	10.0			EI 60 U/C

## B.1.5 Multimastic FB1 - 2x 50 mm cavity 50 mm - Combustible pipes

### B.1.5.1 Plastic pipes - Multicollar *Slim*



Position seal:  
top bottom or anywhere  
in between



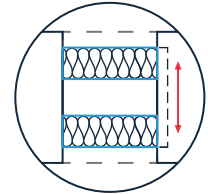
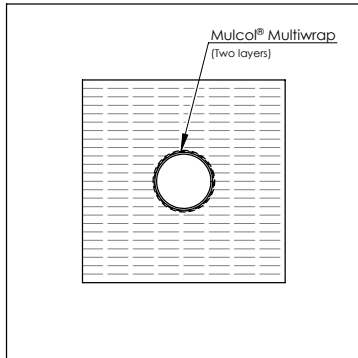
Drawing: PBrf.E-PP-MFB1.2.10.C

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/U
		2.7 - 6.6			EI 60 U/U
		2.7 - 3.1			EI 120 U/C
≤ Ø 125	3.1	EI 90 U/U			
PP	≤ Ø 110	2.7			EI 60 U/U
		2.7 - 6.3			EI 90 U/U
PVC(-U/-C)	≤ Ø 110	2.7	EI 60 U/U		
		2.7 - 6.3	EI 90 U/U		

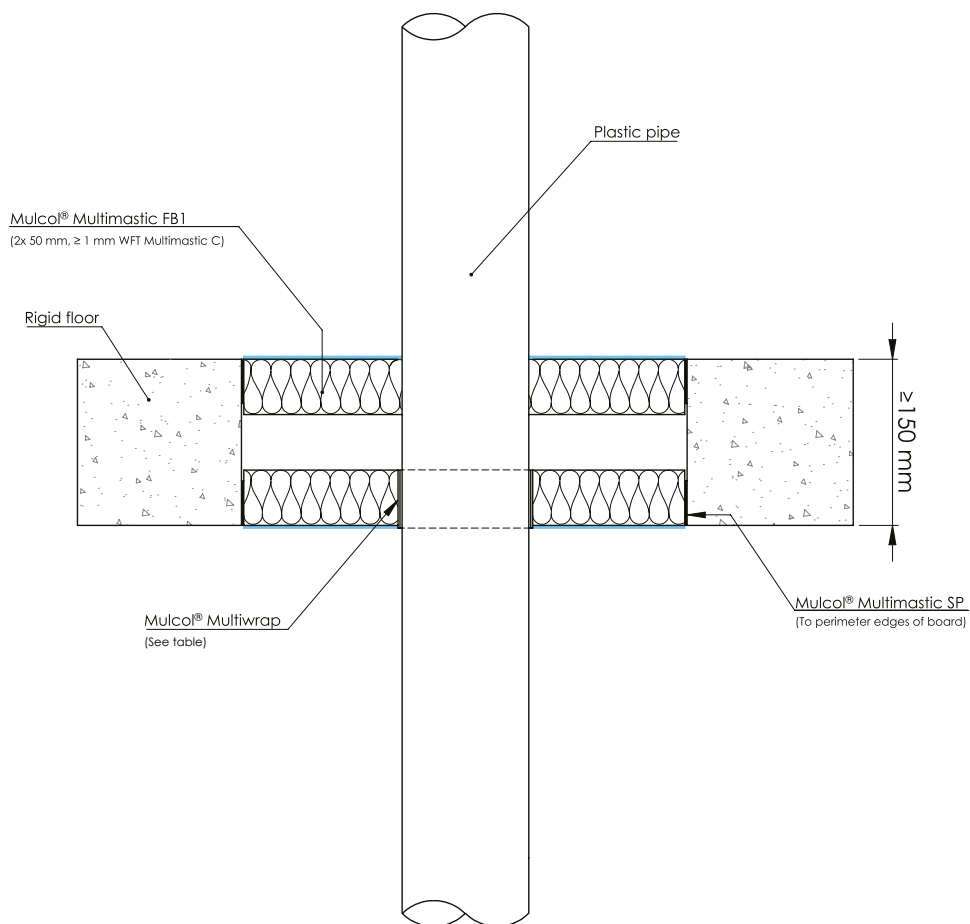
**B.1.5 Multimastic FB1 - 2x 50 mm cavity 50 mm - Combustible pipes**

**B.1.5.2 Plastic pipes - Multiwrap**

Bottom view



Position seal:  
top bottom or anywhere  
in between



Drawing: PBrf.E-PP-MW2-MFB1.2.10.C

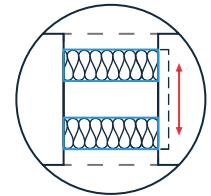
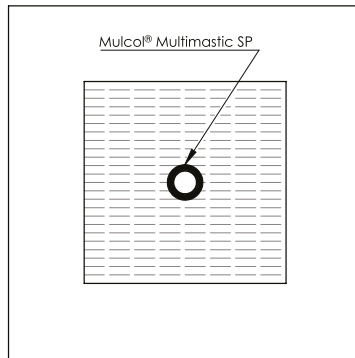
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PVC(-U/-C)	≤ Ø 110	3.2	Multiwrap (2 layers)	EI 120 U/C



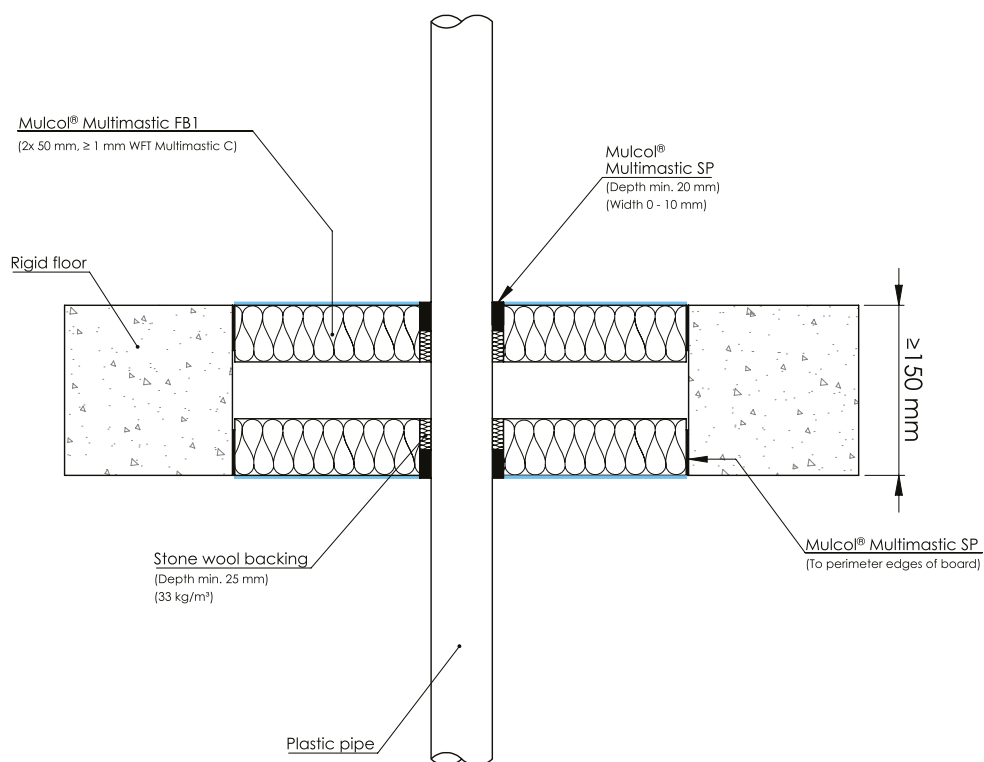
## B.1.5 Multimastic FB1 - 2x 50 mm cavity 50 mm - Combustible pipes

### B.1.5.3 Plastic pipes - Multimastic SP

Bottom view



Position seal:  
top bottom or anywhere  
in between



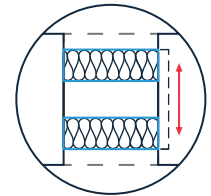
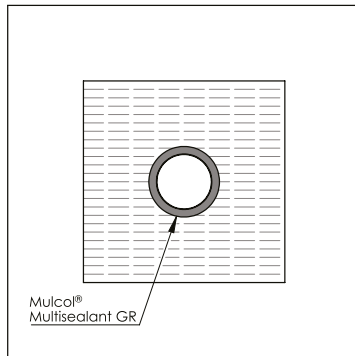
Drawing: PBrf.E-CU-MFB1.2.20.C

Services	Pipe dimensions (mm)		Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 40	3.7	Multimastic SP 0-10 x ≥ 20 (wxd)	Stone wool (≥ 33 kg/m <sup>3</sup> )	<b>EI 120 U/C</b>
PP	≤ Ø 40	3.7			
PVC(-U/-C)	≤ Ø 40	1.8 - 3.7			
	≤ Ø 50	2.0			

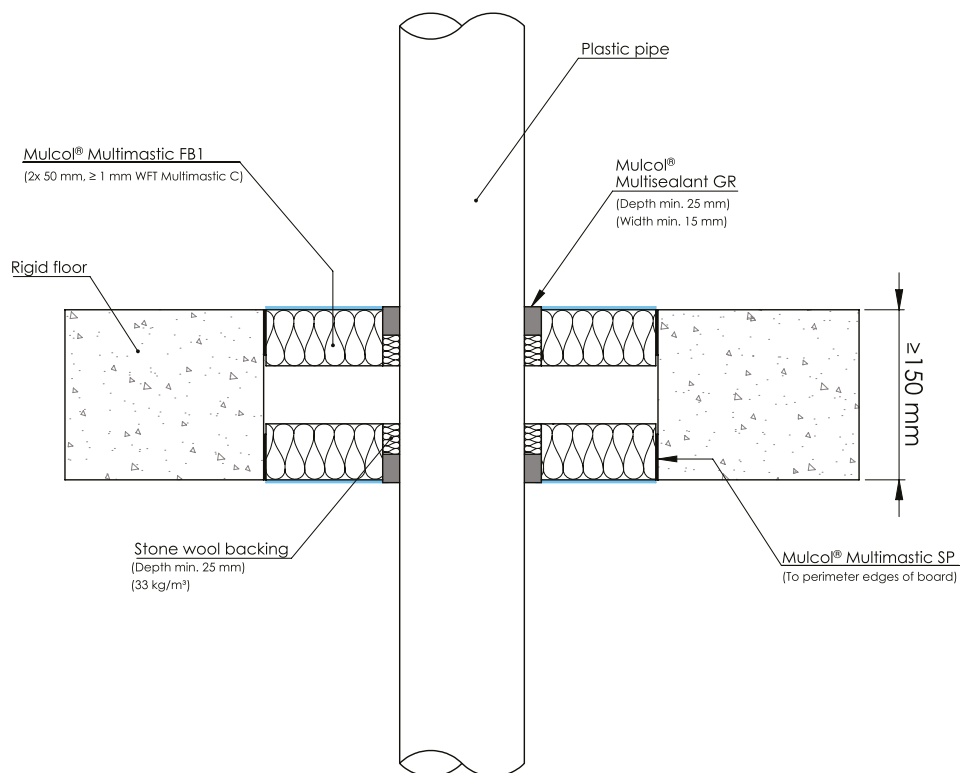
## B.1.5 Multimastic FB1 - 2x 50 mm cavity 50 mm - Combustible pipes

### B.1.5.4 Plastic pipes - Multisealant GR

Bottom view



Position seal:  
top  
bottom or anywhere  
in between

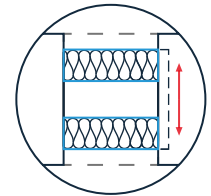
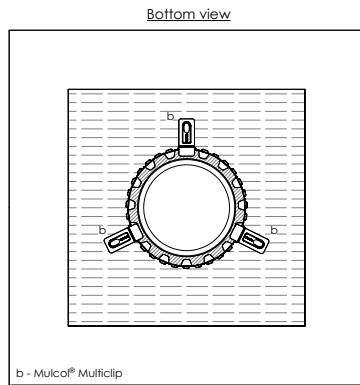


Drawing: PBrf.E-PP-MFB1-G2.5.10.C

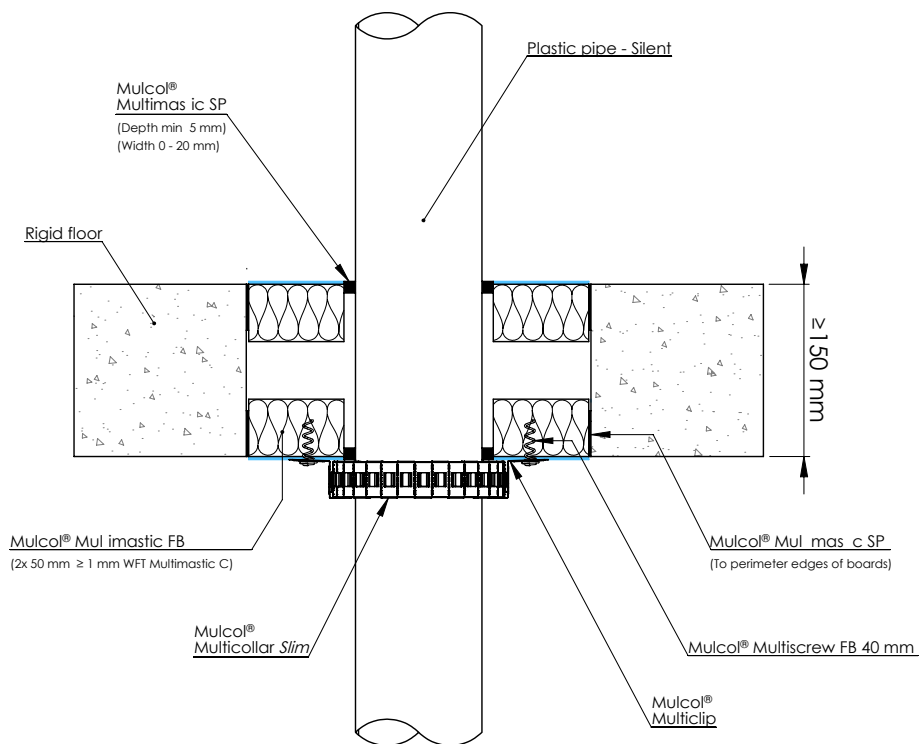
Services	Pipe dimensions (mm)		Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 40	2.4 - 10	Multisealant GR ≥ 15 x 25 (wxd)	Stone wool (≥ 33 kg/m <sup>3</sup> )	EI 120 U/U
	≤ Ø 110	2.7 - 10			
PP	≤ Ø 40	2.3 - 10			
	≤ Ø 110	2.7 - 10			
PVC(-U/-C)	≤ Ø 40	2.4 - 10			
	≤ Ø 110	2.7 - 10			

**B.1.5 Multimastic FB1 - 2x 50 mm cavity 50 mm - Combustible pipes**

**B.1.5.5 Plastic pipes (Silent) - Multicollar *Slim***



Position seal:  
top bottom or anywhere  
in between



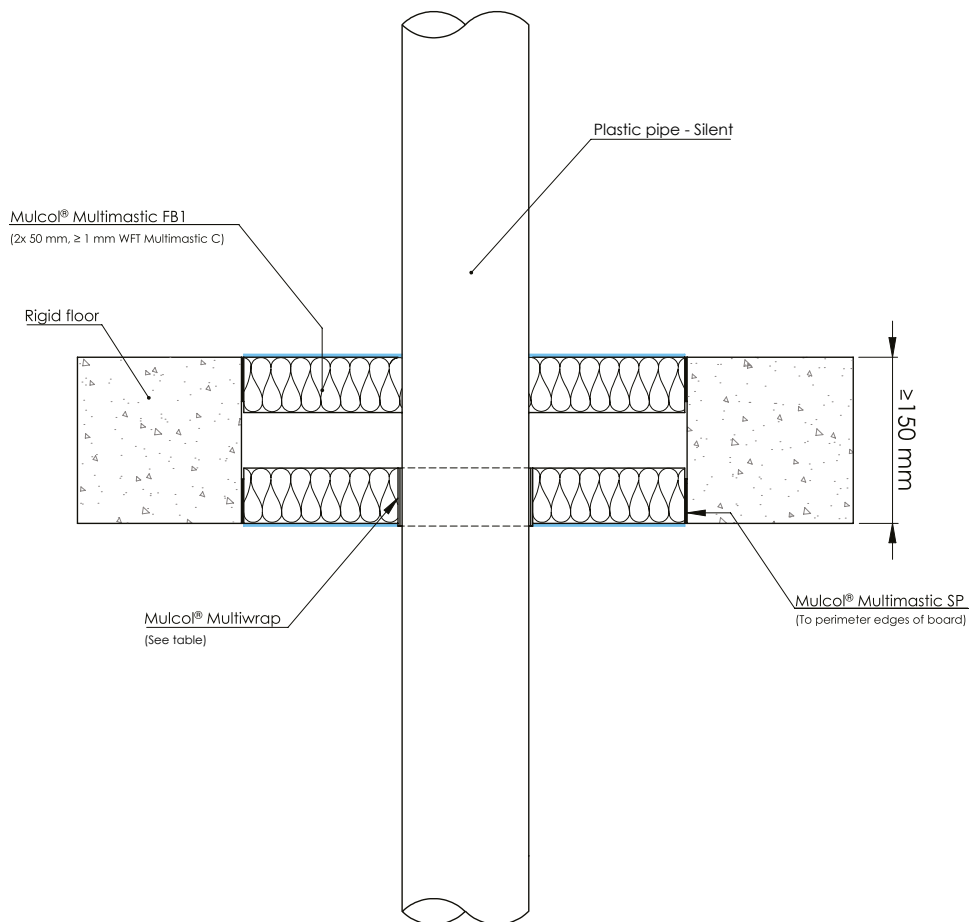
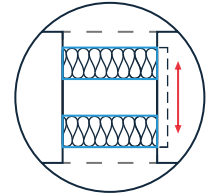
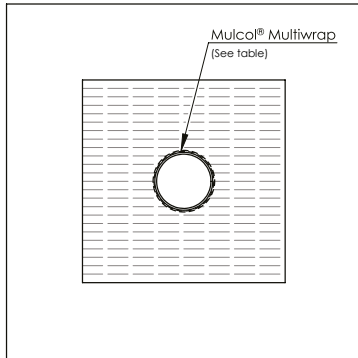
Drawing: PBrf-PPS-MFB1.2.10.C

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimensions	Wall thickness			
Geberit Silent dB20	$\leq \text{Ø } 110$	6.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 5$ (wxd)	EI 90 U/U

**B.1.5 Multimastic FB1 - 2x 50 mm cavity 50 mm - Combustible pipes**

**B.1.5.6 Plastic pipes (Silent) - Multiwrap**

Bottom view

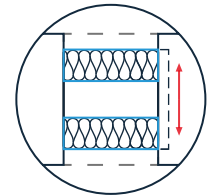
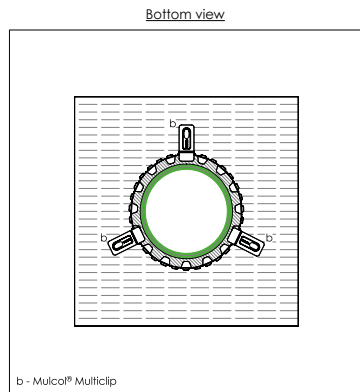


Drawing: PBf E-PPS-MW2-MFB1.2.10.C

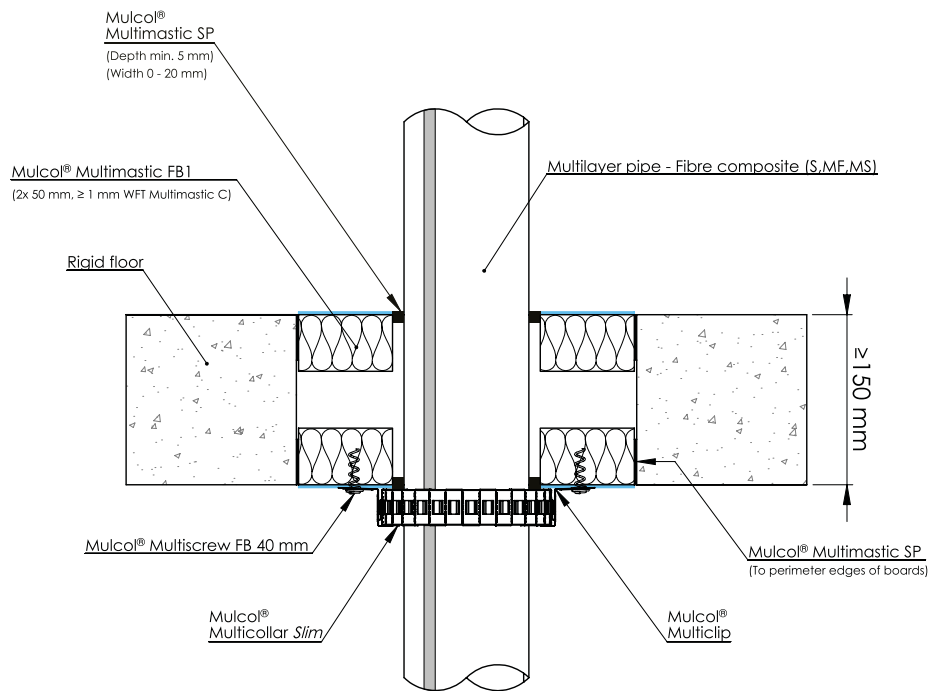
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Poloplast PoloKal NG	≤ Ø 50	2.0	Multiwrap (2 layers)	EI 240 U/U
	≤ Ø 110	3.4		
Geberit Silent dB20	≤ Ø 56	3.2		EI 240 U/C
	≤ Ø 110	6.0		
Poloplast PoloKal NG	≤ Ø 125	3.9	Multiwrap (4 layers)	

**B.1.5 Multimastic FB1 - 2x 50 mm cavity 50 mm - Combustible pipes**

**B.1.5.7 PP-R Multilayer pipes - Multicollar *Slim***



Position seal:  
top bottom or anywhere  
in between

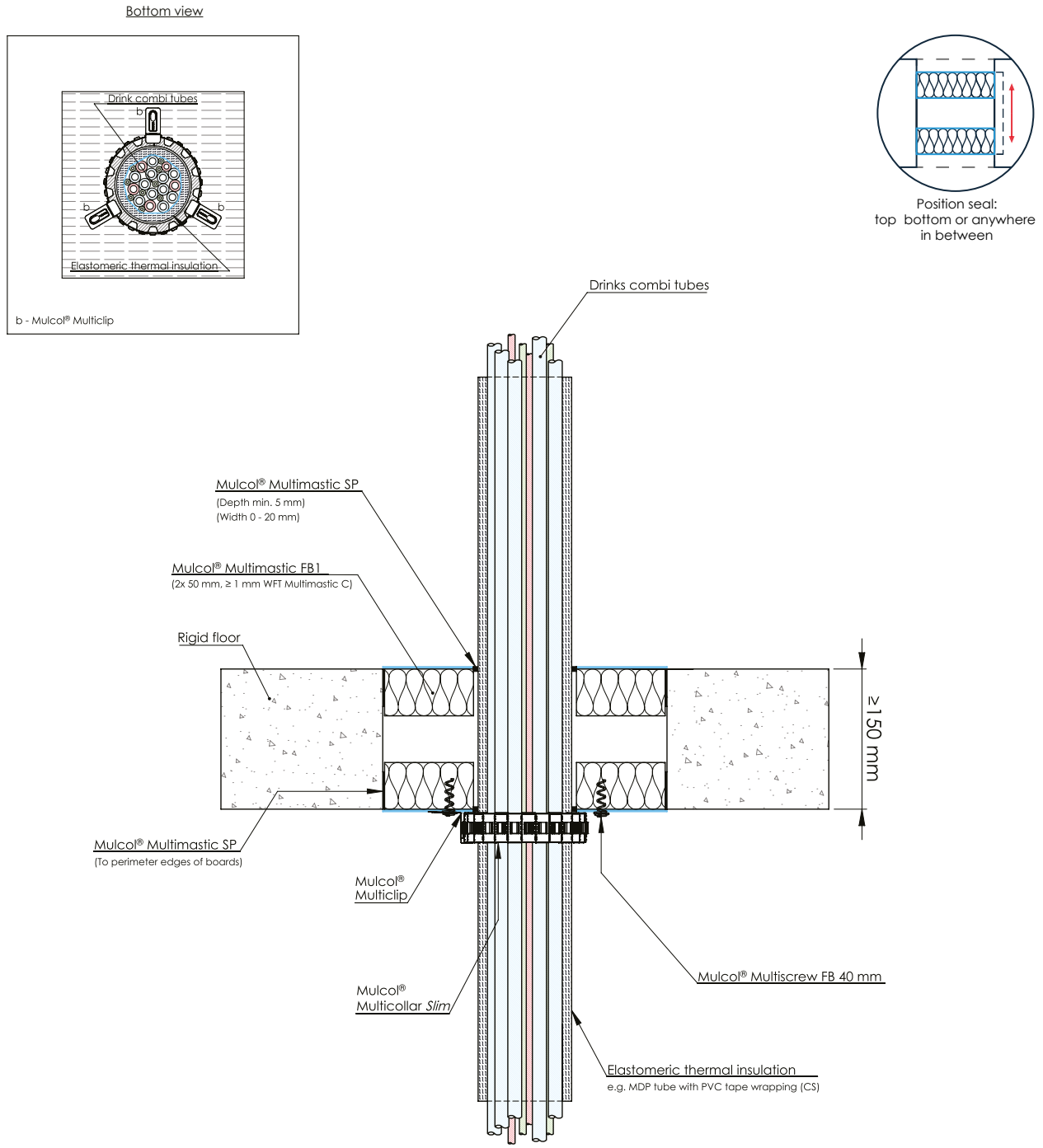


Drawing: PBrf.E-MLF-11.0.10.C

Services	Pipe dimensions (mm)		System	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Aquatherm Green-MF	≤ Ø 50	6.9	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/C
	≤ Ø 110	10.0			EI 120 U/C

**B.1.5 Multimastic FB1 - 2x 50 mm cavity 50 mm - Combustible pipes**

**B.1.5.8 Drinks tubing system - Multicollar *Slim***

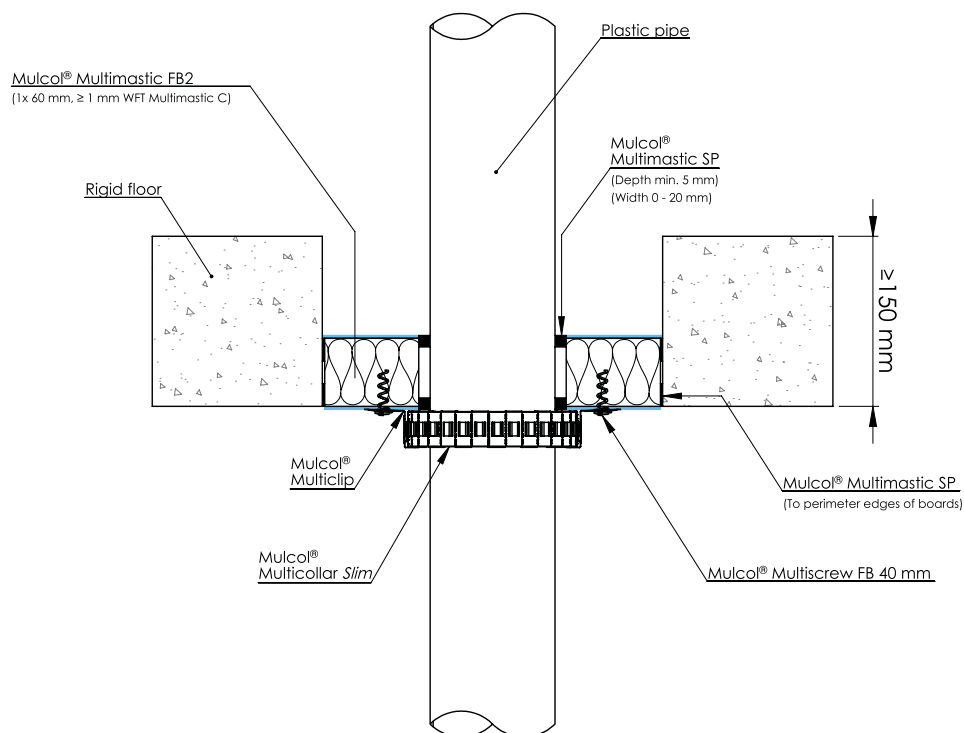
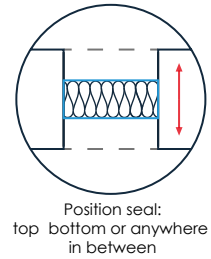
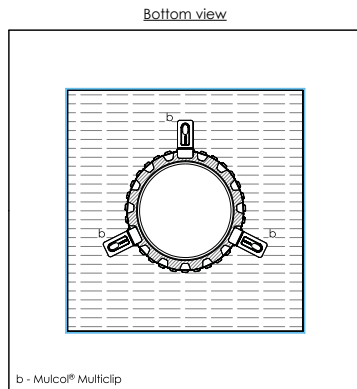


Drawing: PBrf E-MC30-DCT25-11.0.22.C

Services	Dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	No. of Hoses	Type	Thickness (mm)	Configuration			
Drinks tubing system	≤ Ø 47	≤ 3	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 U/C
	≤ Ø 90	≤ 3						
	≤ Ø 100	≤ 25						
	≤ Ø 145	≤ 52						

## B.1.6 Multimastic FB2 - 1x 60 mm - Combustible pipes

### B.1.6.1 Plastic pipes - Multicollar *Slim*



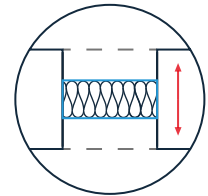
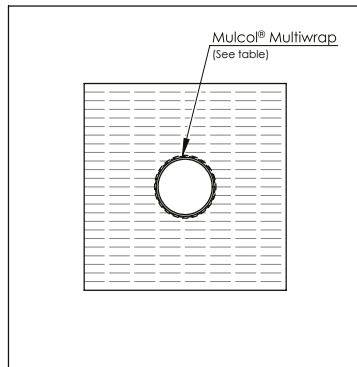
Drawing: PBrf.E-PP-MFB2.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 U/U

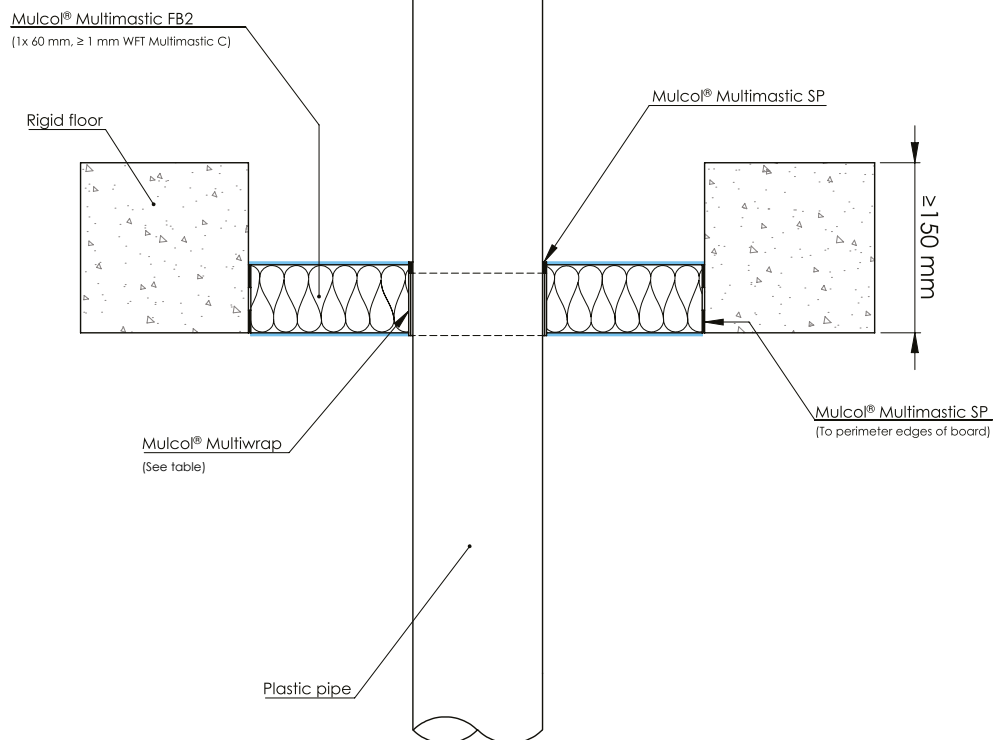
## B.1.6 Multimastic FB2 - 1x 60 mm - Combustible pipes

### B.1.6.2 Plastic pipes - Multiwrap

Bottom view



Position seal:  
top bottom or anywhere  
in between



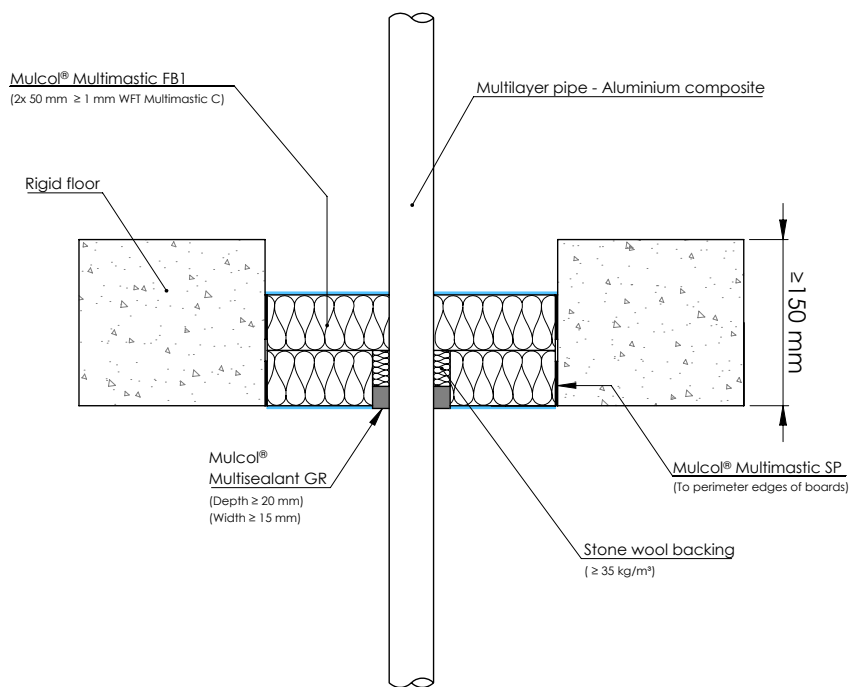
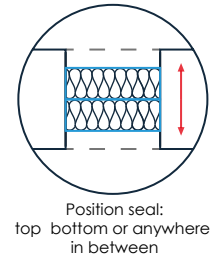
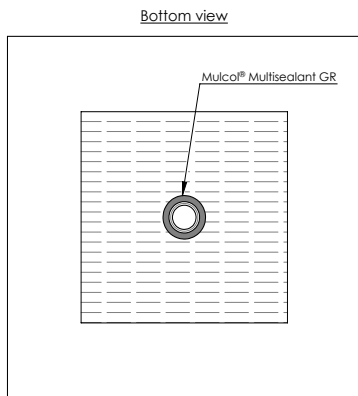
Drawing: PBrf.E-PP-MW2-MFB2.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PVC(-U/-C)	≤ Ø 110	3.2	Multiwrap (2 layers)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 120 U/C



**B.1.7 Multimastic FB1 - 2x 50 mm no cavity - Multilayer pipes (MLC)**

**B.1.7.1 Multilayer pipes (MLC) - Multisealant GR**

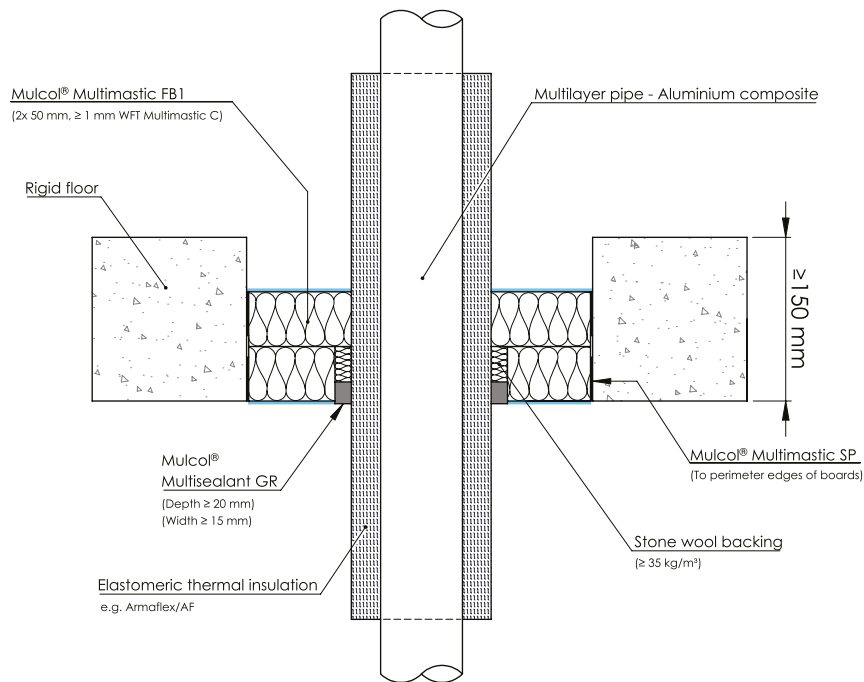
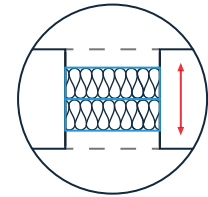
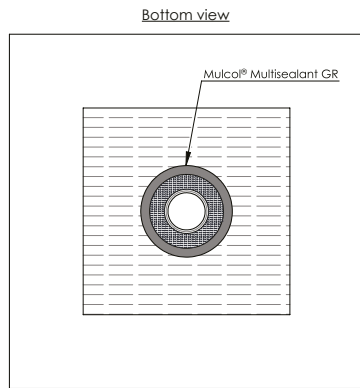


Drawing: PBrf.E-MLA-G1.4.10

Services	Pipe dimensions (mm)		Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 20	2.0	Multisealant GR ≥ 15 x 25 (wxd)	Stone wool (≥ 33 kg/m <sup>3</sup> )	EI 120 U/C
	≤ Ø 25	3.5			
	≤ Ø 32	3.0			EI 90 U/C E 120 U/C
	≤ Ø 40	3.5 - 4.0			

**B.1.7 Multimastic FB1 - 2x 50 mm no cavity - Multilayer pipes (MLC)**

**B.1.7.2 Multilayer pipes (MLC) - Elastomer LS 300 / CS - Multisealant GR**



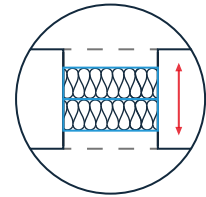
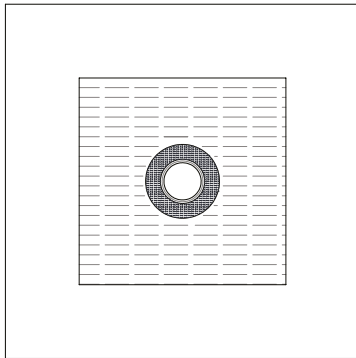
Drawing: PBrf.E-MLA-G1.4.22

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipe (MLC)	≤ Ø 20	2.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LS 300 / CS	Multisealant GR ≥ 15 x 20 (wxd)	Stone wool (≥ 35 kg/m <sup>3</sup> )	EI 120 U/C
	≤ Ø 32	3.0						EI 90 U/C
	≤ Ø 40	3.5						E 120 U/C
	≤ Ø 50	4.0						EI 90 U/C
	≤ Ø 63	4.5						EI 90 U/C
	≤ Ø 75	6.0						

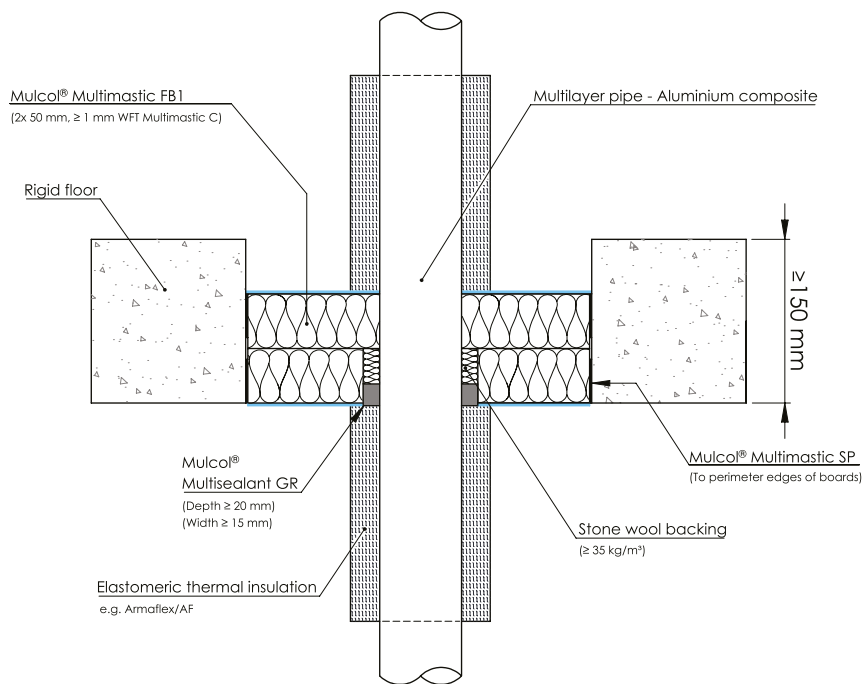
**B.1.7 Multimastic FB1 - 2x 50 mm no cavity - Multilayer pipes (MLC)**

**B.1.7.3 Multilayer pipes (MLC) - Elastomer LI 300 / CI - Multisealant GR**

Bottom view



Position seal:  
top bottom or anywhere  
in between

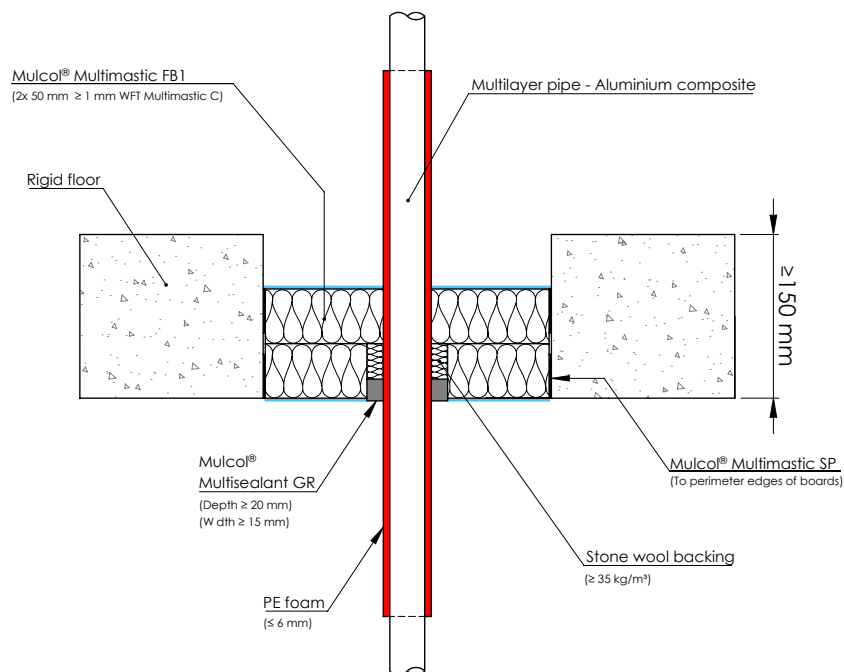
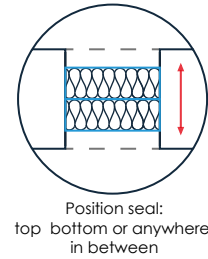
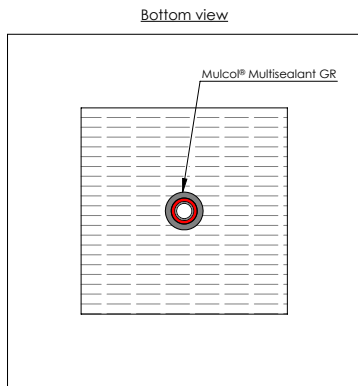


Drawing: PBrf.E-MLA-G1.4.22.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipe (MLC)	≤ Ø 20	2.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LI 300 / CI	Multisealant GR ≥ 15 x 20 (wxd)	Stone wool (≥ 35 kg/m <sup>3</sup> )	EI 120 U/C
	≤ Ø 32	3.0						EI 90 U/C
	≤ Ø 40	3.5						E 120 U/C
	≤ Ø 50	4.0						
	≤ Ø 63	4.5						
	≤ Ø 75	6.0					EI 90 U/C	

**B.1.7 Multimastic FB1 - 2x 50 mm no cavity - Multilayer pipes (MLC)**

**B.1.7.4 Multilayer pipes (MLC) - PE foam LS 300 / CS - Multisealant GR**

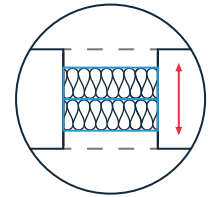
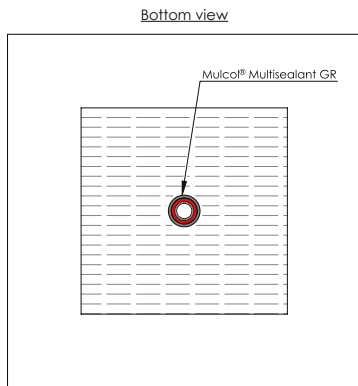


Drawing: PBrf.E-MLA\_pr-G1.4.23

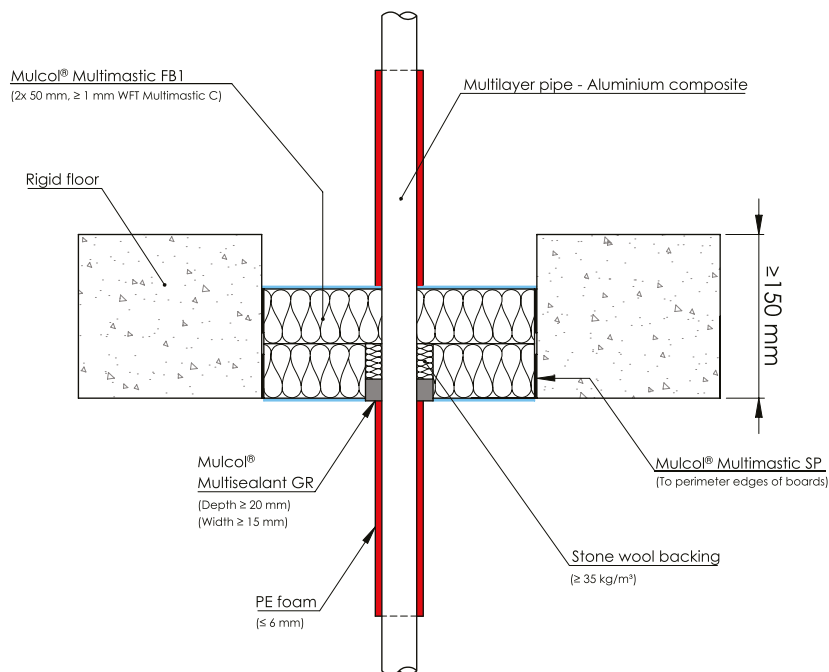
Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipe (MLC)	≤ Ø 20	2.0	Henco PE foam	≤ 6	LS 300 / CS	Multisealant GR ≥ 15 x 20 (wxd)	Stone wool (≥ 35 kg/m <sup>3</sup> )	EI 120 U/C
	≤ Ø 25	3.5						
	≤ Ø 32	3.0						

**B.1.7 Multimastic FB1 - 2x 50 mm no cavity - Multilayer pipes (MLC)**

**B.1.7.4 Multilayer pipes (MLC) - PE foam LI 300 / CI - Multisealant GR**



Position seal:  
top bottom or anywhere  
in between



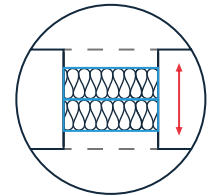
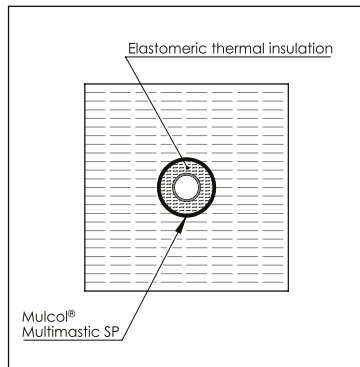
Drawing: PBrf.E-MLA\_pr-G1.4.23.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipe (MLC)	≤ Ø 20	2.0	Henco PE foam	≤ 6	LI 300 / CI	Multisealant GR ≥ 15 x 20 (wxd)	Stone wool (≥ 35 kg/m <sup>3</sup> )	EI 120 U/C
	≤ Ø 25	3.5						
	≤ Ø 32	3.0						

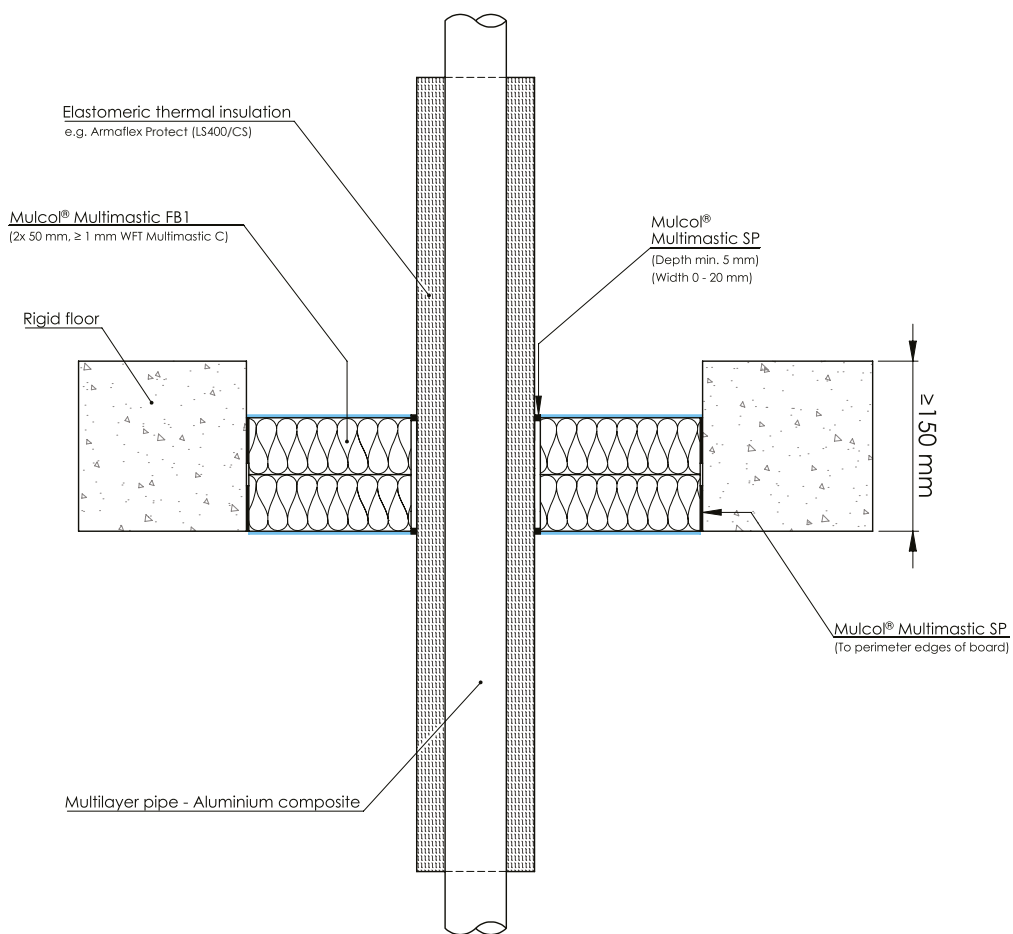
**B.1.7 Multimastic FB1 - 2x 50 mm no cavity - Multilayer pipes (MLC)**

**B.1.7.5 Multilayer pipes (MLC) - Multimastic SP**

Bottom view



Position seal:  
top bottom or anywhere  
in between



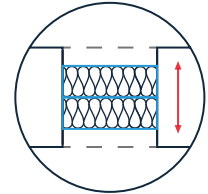
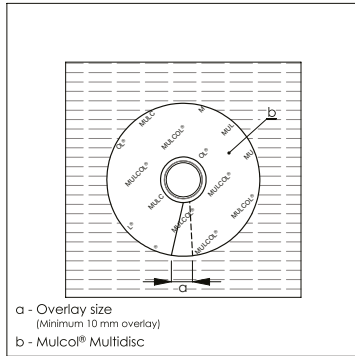
Drawing: PBrf.E-MLA-MFB1.2.22

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 26	3.0	ArmaFlex Protect	20	LS 400 / CS	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 U/C
	≤ Ø 75	5.0		25			

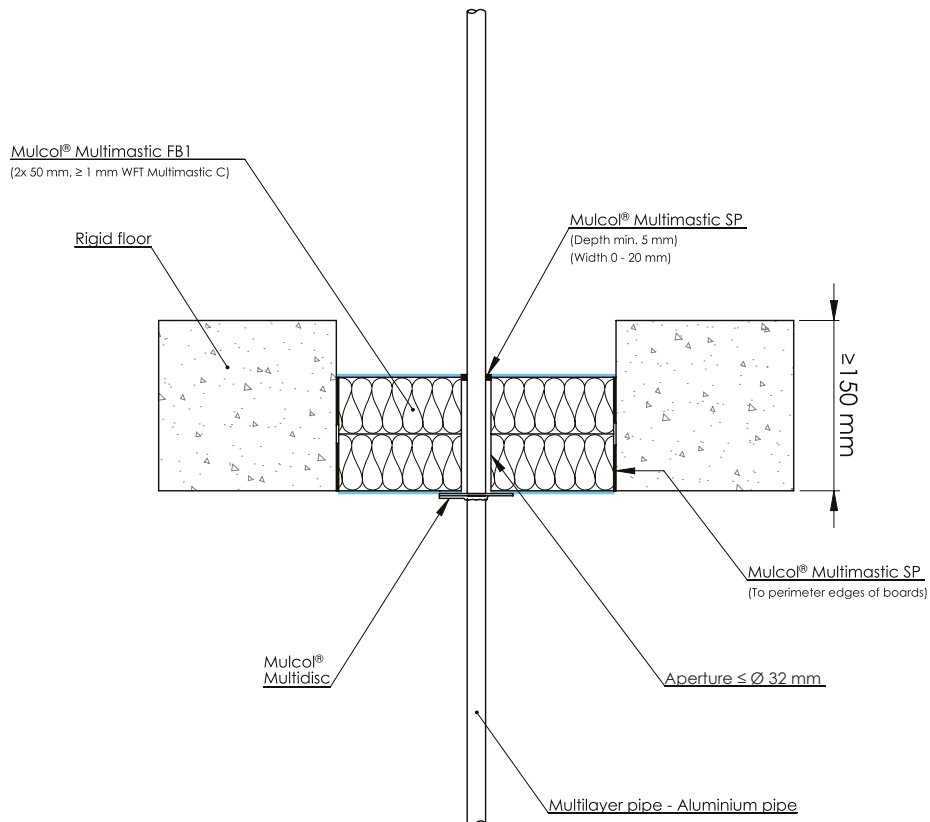
**B.1.7 Multimastic FB1 - 2x 50 mm no cavity - Multilayer pipes (MLC)**

**B.1.7.6 Multilayer pipes (MLC) - Multidisc**

Bottom view



Position seal:  
top bottom or anywhere  
in between

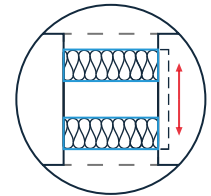
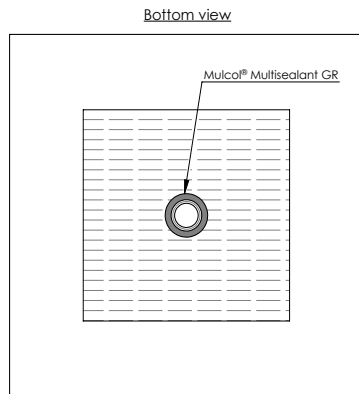


Drawing: PBrf.E-MFB1-MLA-M2.0.10

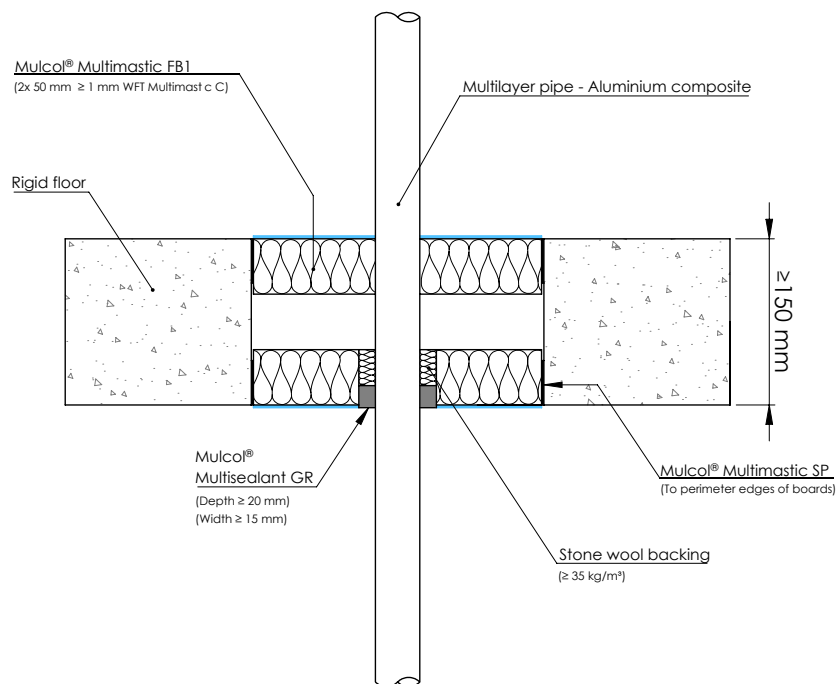
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 16	2.0	Multidisc	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 90 U/C E 120 U/C

## B.1.8 Multimastic FB1 - 2x 50 mm cavity 50 mm - Multilayer pipes (MLC)

### B.1.8.1 Multilayer pipes (MLC) - Multisealant GR



Position seal:  
top bottom or anywhere  
in between



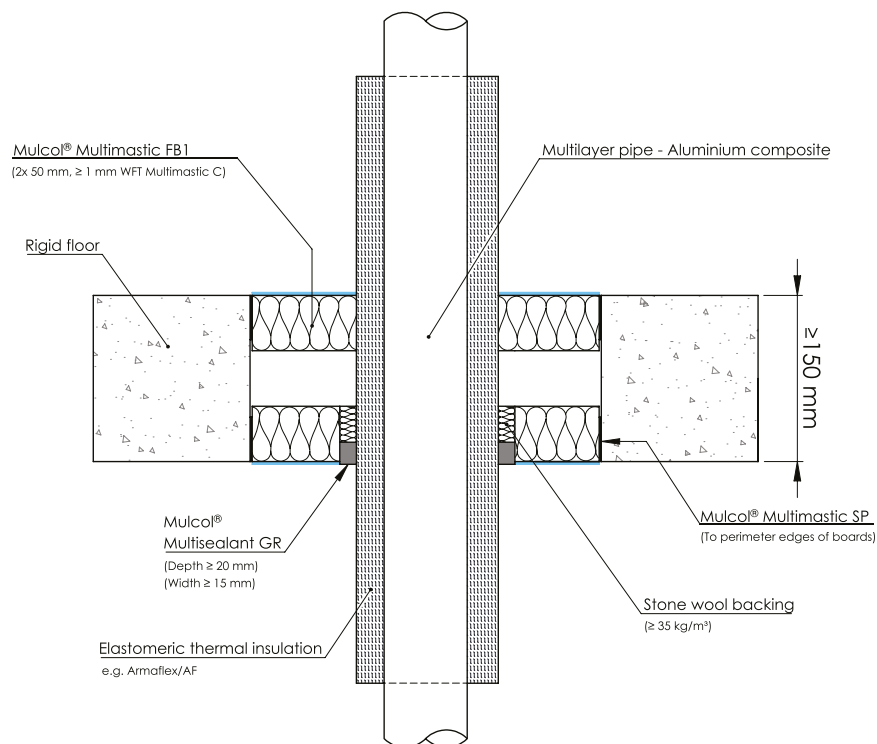
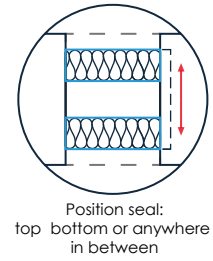
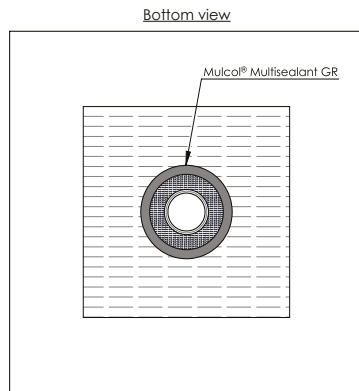
Drawing: PBrf.E-MLA-G1.4.10.C

Services	Pipe dimensions (mm)		Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 20	2.0	Multisealant GR ≥ 15 x 25 (wxd)	Stone wool (≥ 33 kg/m <sup>3</sup> )	EI 120 U/C
	≤ Ø 25	3.5			
	≤ Ø 32	3.0			EI 90 U/C E 120 U/C
	≤ Ø 40	3.5 - 4.0			



## B.1.8 Multimastic FB1 - 2x 50 mm cavity 50 mm - Multilayer pipes (MLC)

### B.1.8.2 Multilayer pipes (MLC) - Elastomer LS 300 / CS - Multisealant GR

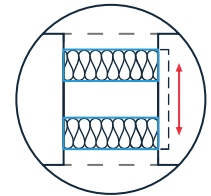
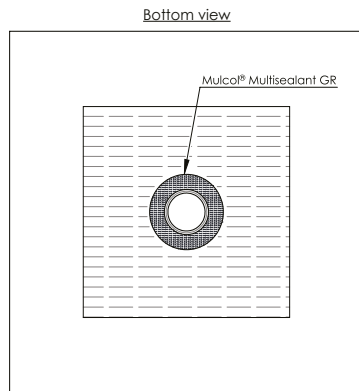


Drawing: PBrf.E-MLA-G1.4.22.C

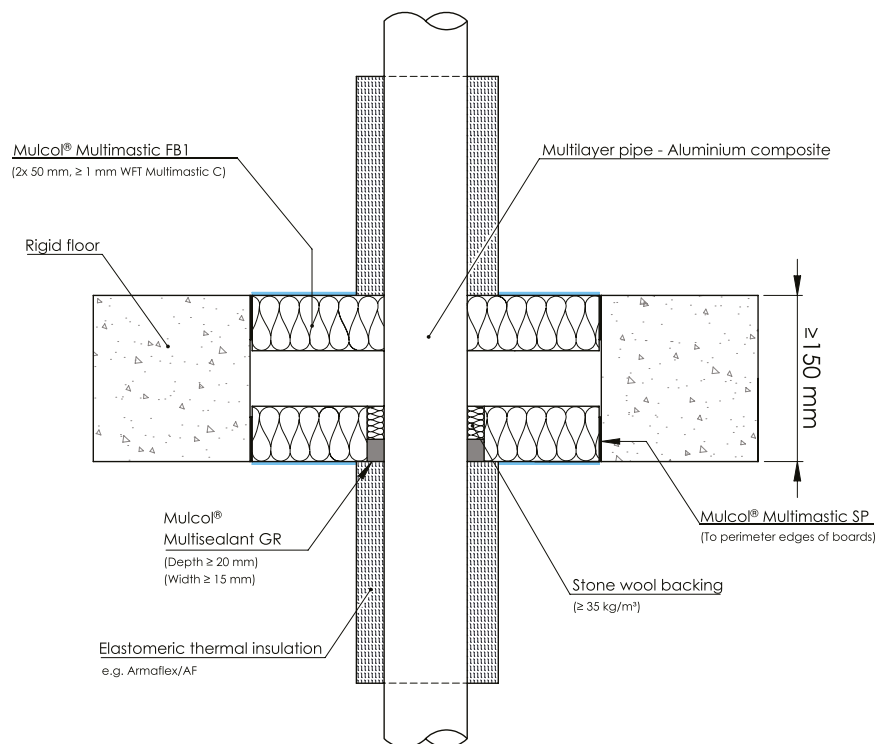
Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipe (MLC)	≤ Ø 20	2.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LS 300 / CS	Multisealant GR ≥ 15 x 20 (wxd)	Stone wool (≥ 35 kg/m <sup>3</sup> )	EI 120 U/C
	≤ Ø 32	3.0						EI 90 U/C
	≤ Ø 40	3.5						E 120 U/C
	≤ Ø 50	4.0						EI 90 U/C
	≤ Ø 63	4.5						EI 90 U/C
	≤ Ø 75	6.0						

## B.1.8 Multimastic FB1 - 2x 50 mm cavity 50 mm - Multilayer pipes (MLC)

### B.1.8.2 Multilayer pipes (MLC) - Elastomer LI 300 / CI - Multisealant GR



Position seal:  
top bottom or anywhere  
in between

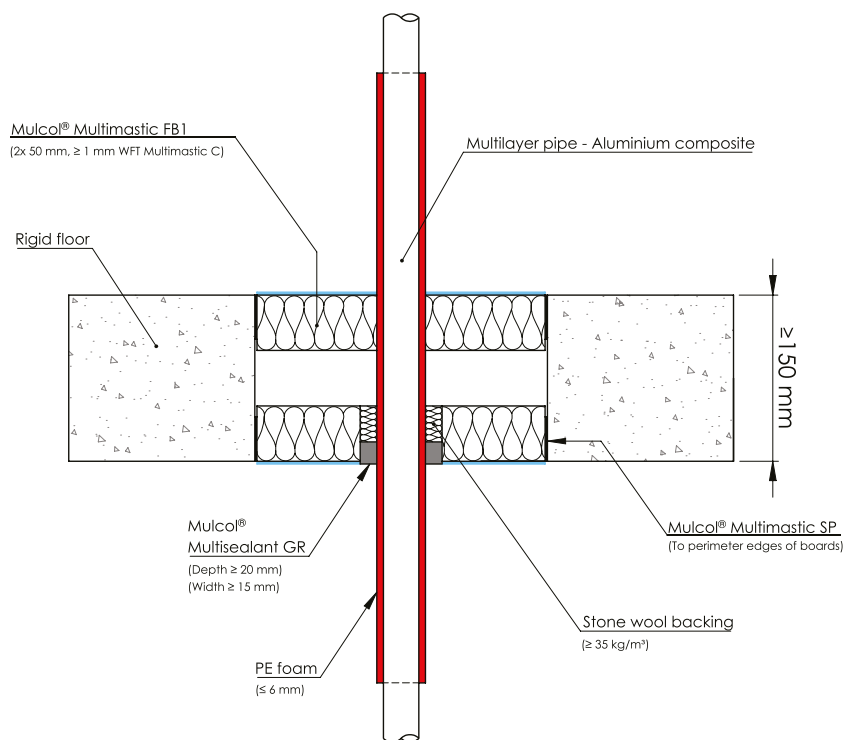
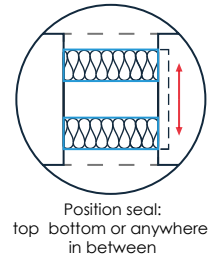
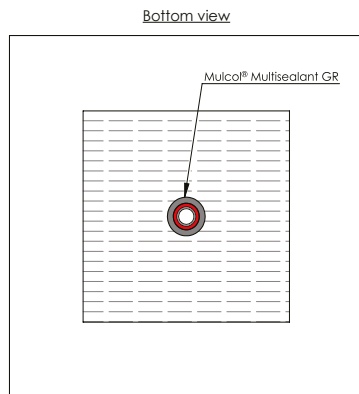


Drawing: PBrf.E-MLA-G1.4.22.C.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipe (MLC)	≤ Ø 20	2.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LI 300 / CI	Multisealant GR ≥ 15 x 20 (wxd)	Stone wool (≥ 35 kg/m <sup>3</sup> )	EI 120 U/C
	≤ Ø 32	3.0						EI 90 U/C
	≤ Ø 40	3.5						E 120 U/C
	≤ Ø 50	4.0						EI 90 U/C
	≤ Ø 63	4.5						EI 90 U/C
	≤ Ø 75	6.0						

## B.1.8 Multimastic FB1 - 2x 50 mm cavity 50 mm - Multilayer pipes (MLC)

### B.1.8.3 Multilayer pipes (MLC) - PE foam - Multisealant GR

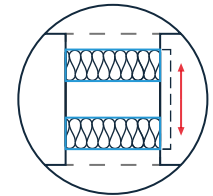
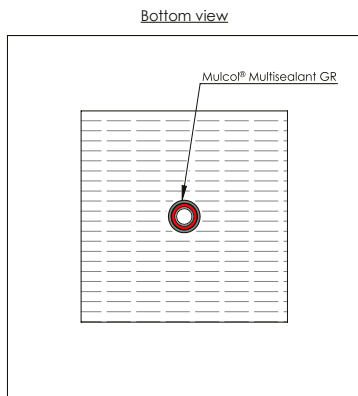


Drawing: PBrf.E-MLA\_pr-G1.4.23.C

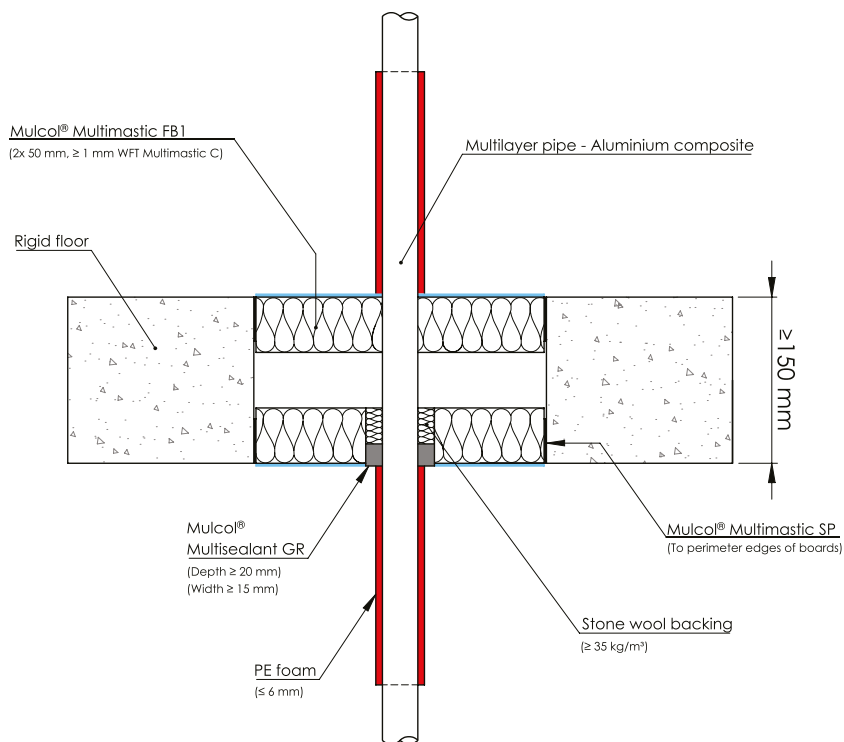
Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 20	2.0	Henco PE Foam	6	LS 300 / CS LI 300 / CI	Multisealant GR ≥ 15 x 20 (wxd)	EI 120 U/C
	≤ Ø 25	3.5					
	≤ Ø 32	3.0					

## B.1.8 Multimastic FB1 - 2x 50 mm cavity 50 mm - Multilayer pipes (MLC)

### B.1.8.3 Multilayer pipes (MLC) - PE foam - Multisealant GR



Position seal:  
top bottom or anywhere  
in between



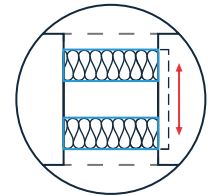
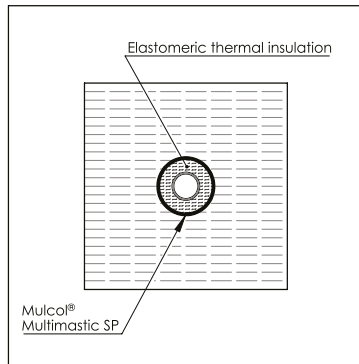
Drawing: PBrf.E-MLA\_pr-G1.4.23.C.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 20	2.0	Henco PE Foam	6	LS 300 / CS LI 300 / CI	Multisealant GR ≥ 15 x 20 (wxd)	EI 120 U/C
	≤ Ø 25	3.5					
	≤ Ø 32	3.0					

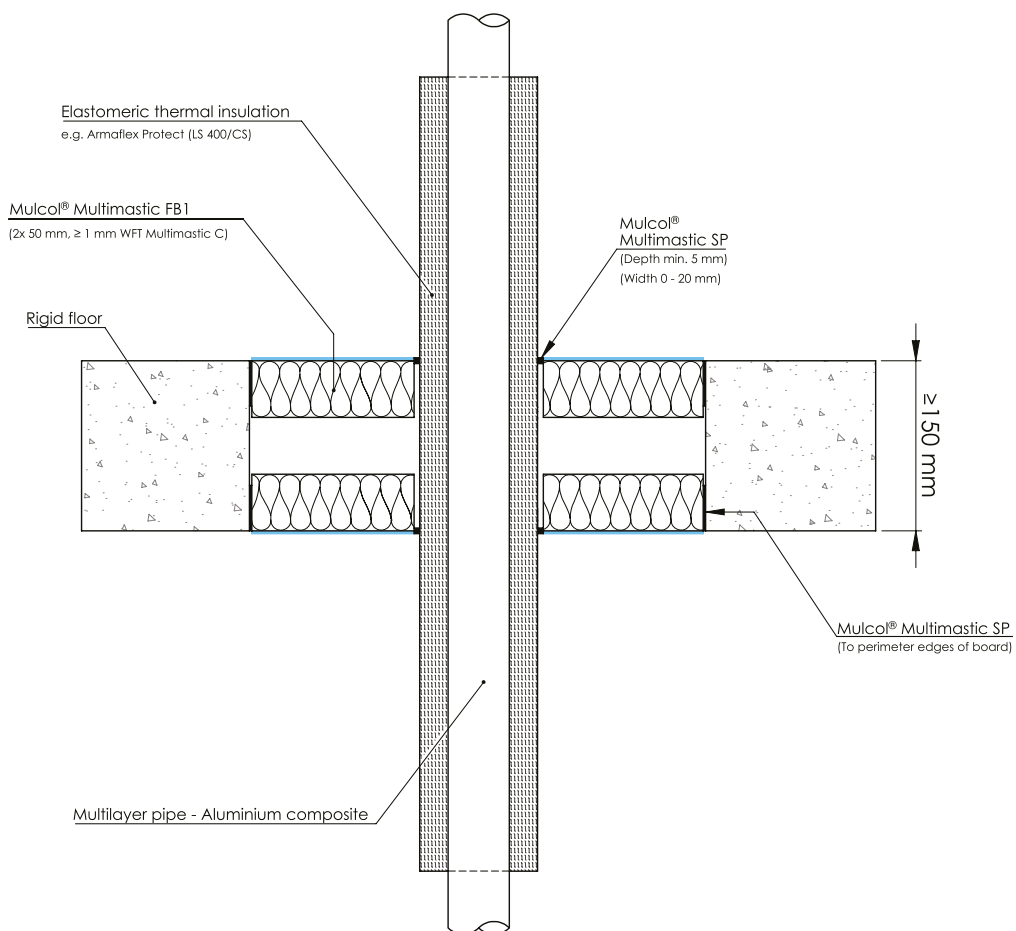
## B.1.8 Multimastic FB1 - 2x 50 mm cavity 50 mm - Multilayer pipes (MLC)

### B.1.8.4 Multilayer pipes (MLC) - Multimastic SP

Bottom view



Position seal:  
top bottom or anywhere  
in between



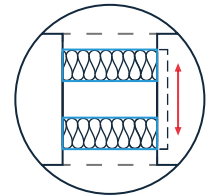
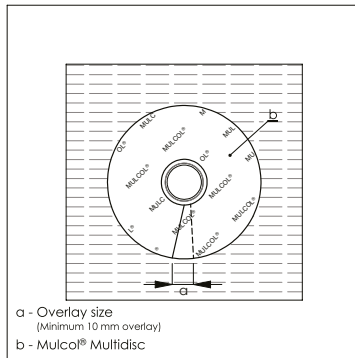
Drawing: PBrf.E-MLA-MFB1.2.22

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 26	3.0	ArmaFlex Protect	20	LS 400 / CS	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 U/C
	≤ Ø 75	5.0		25			

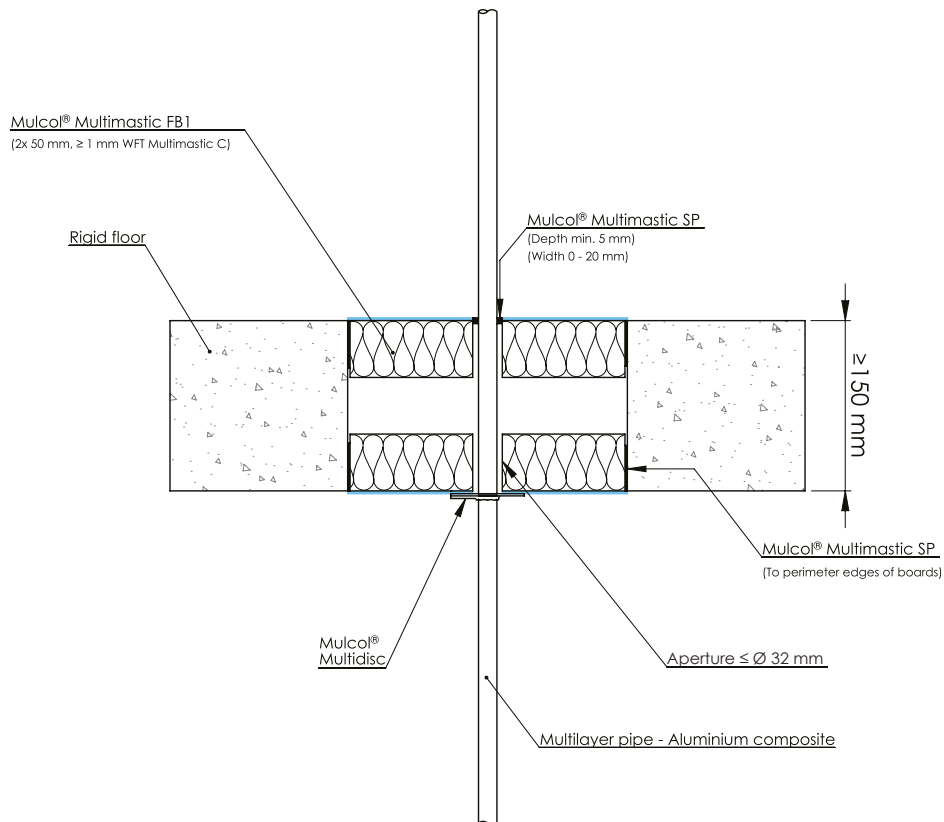
## B.1.8 Multimastic FB1 - 2x 50 mm cavity 50 mm - Multilayer pipes (MLC)

### B.1.8.5 Multilayer pipes (MLC) - Multidisc

Bottom view



Position seal:  
top bottom or anywhere  
in between



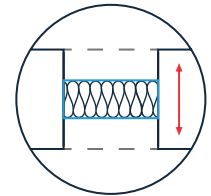
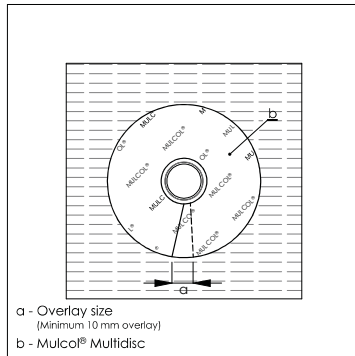
Drawing: PBrf.E-MFB1-MLA-M2 0.10.C

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 16	2.0	Multidisc	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 90 U/C, E 120 U/C

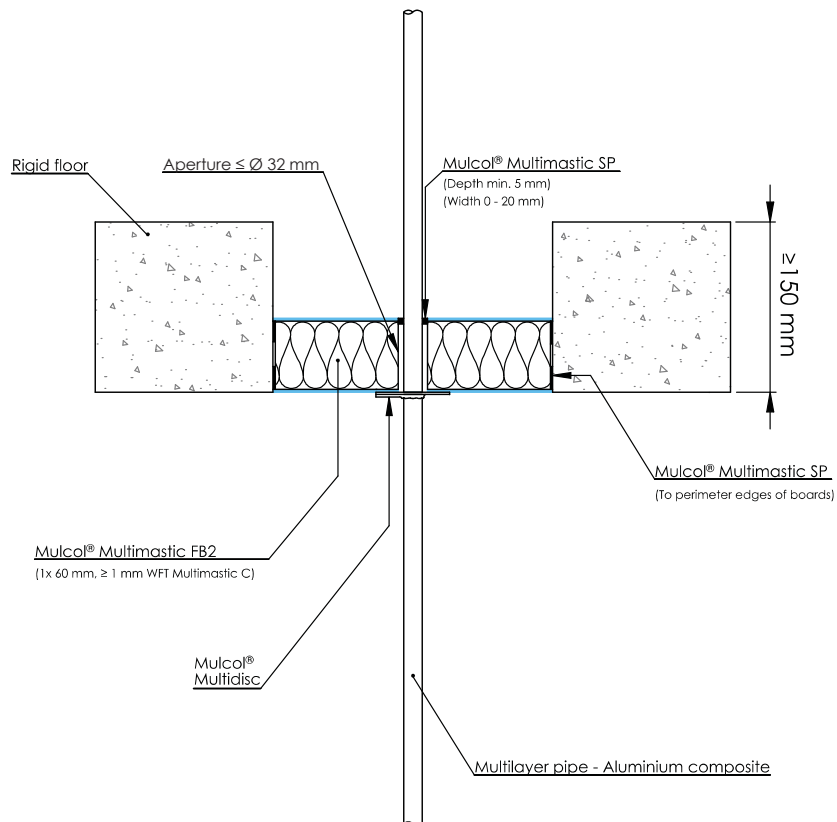
## B.1.9 Multimastic FB2 - 1x 60 mm - Multilayer pipes (MLC)

### B.1.9.1 Multilayer pipes (MLC) - Multidisc

Bottom view



Position seal:  
top bottom or anywhere  
in between



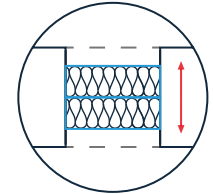
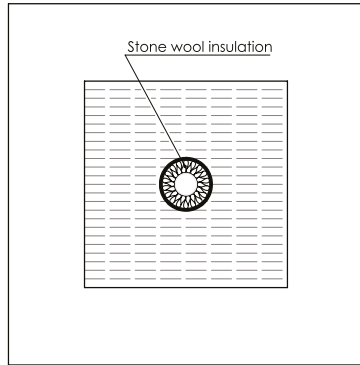
Drawing: PBrf.E-MFB2-MLA-M2.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	$\leq \text{Ø } 16$	2.0	Multidisc	Multimastic SP 0-20 x $\geq 5$ (wxd)	EI 60 U/C, E 90 U/C

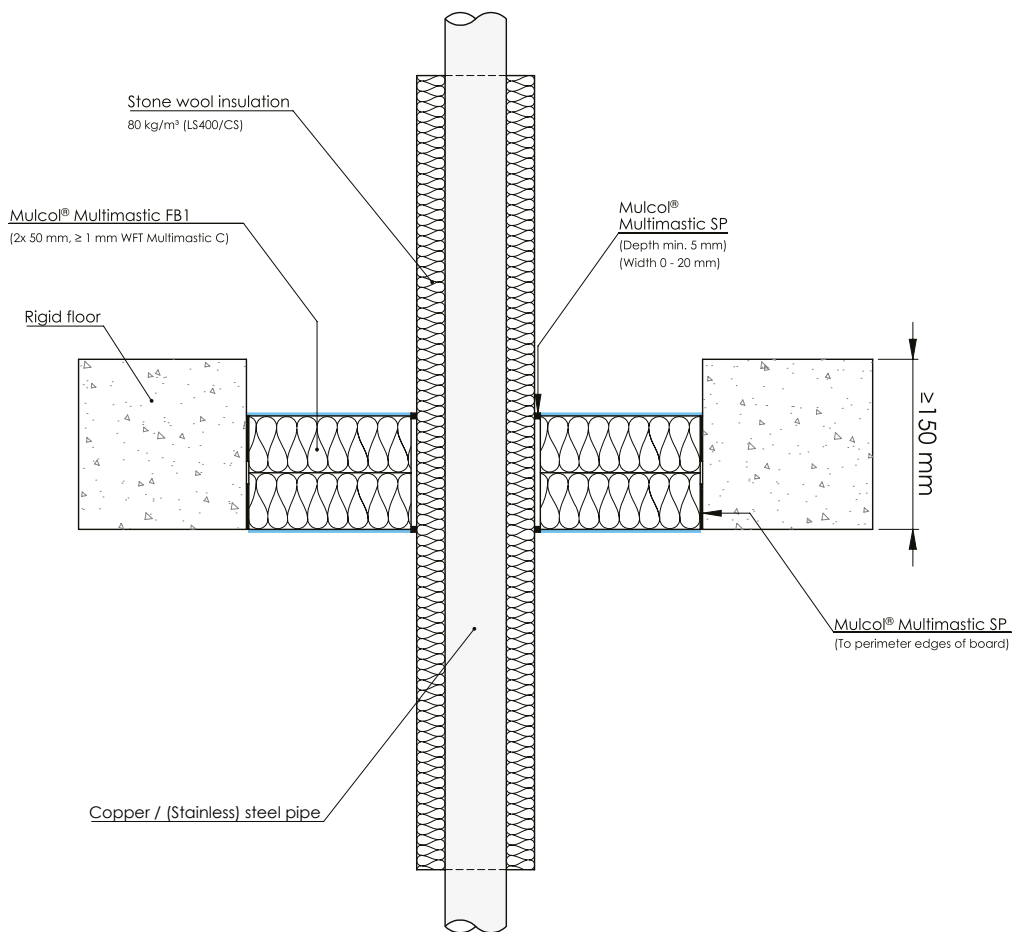
**B.1.10 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes insulated mineral wool**

**B.1.10.1 Copper and steel pipes - Stone wool LS 400 / CS**

Bottom view



Position seal:  
top bottom or anywhere  
in between



Drawing: PBrf.E-CU-MFB1.2.20.LS

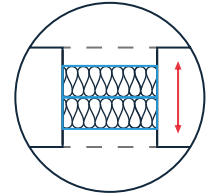
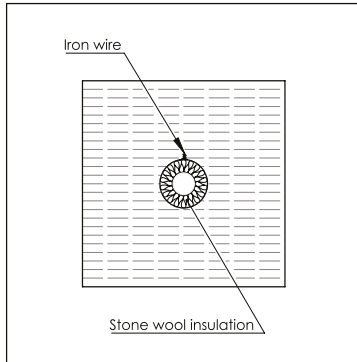
Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	25	LS 400 / CS	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5					
(Stainless)	≤ Ø 114.3	≥ 3.6		30			
Steel / cast iron	≤ Ø 324	≥ 3.7					



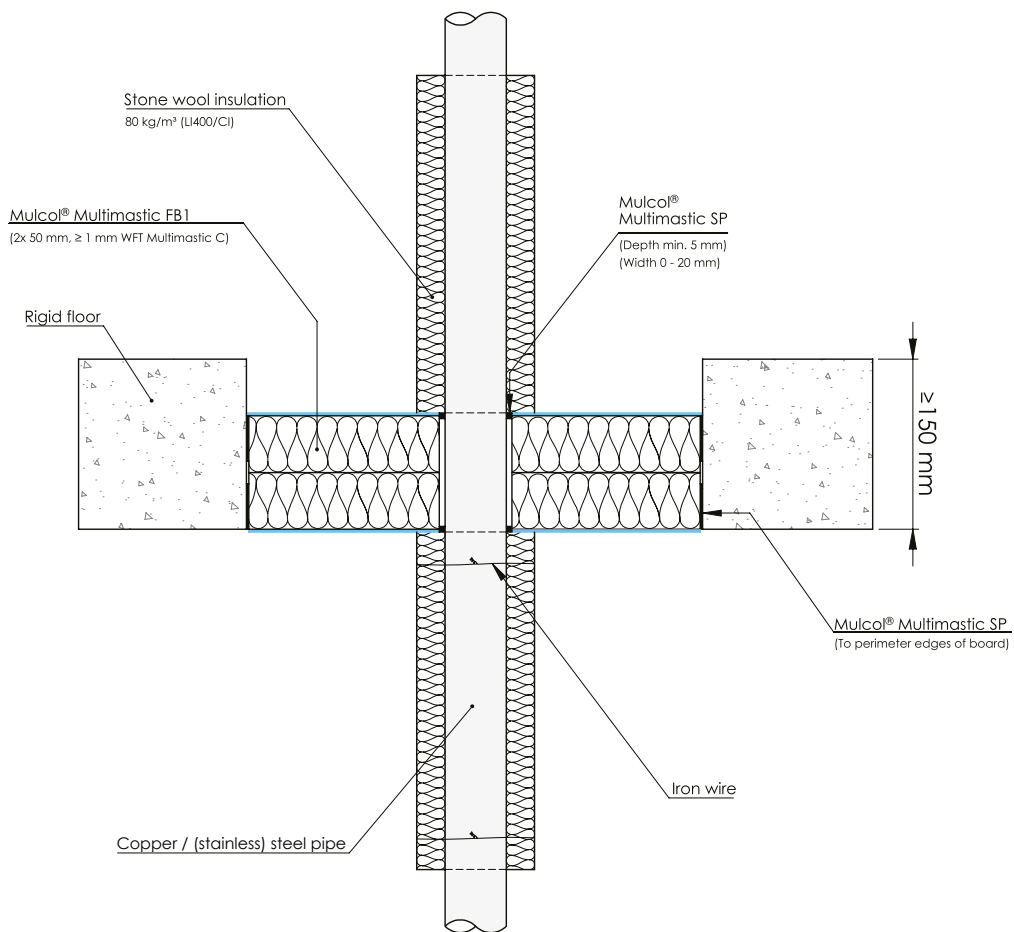
**B.1.10 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes insulated mineral wool**

**B.1.10.2 Copper and steel pipes - Stone wool LI 400 / CI**

Bottom view



Position seal:  
top bottom or anywhere  
in between



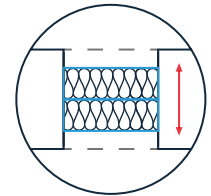
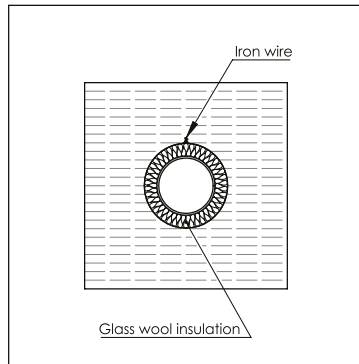
Drawing: PBrf.E-CU-MFB1.2.20.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	≥ 25	LI 400 / CI	Multimastic SP 0 - 20 x ≥ 5 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5					
(Stainless)	≤ Ø 114.3	≥ 3.6		≥ 30			
Steel / cast iron	≤ Ø 219	≥ 4.0					

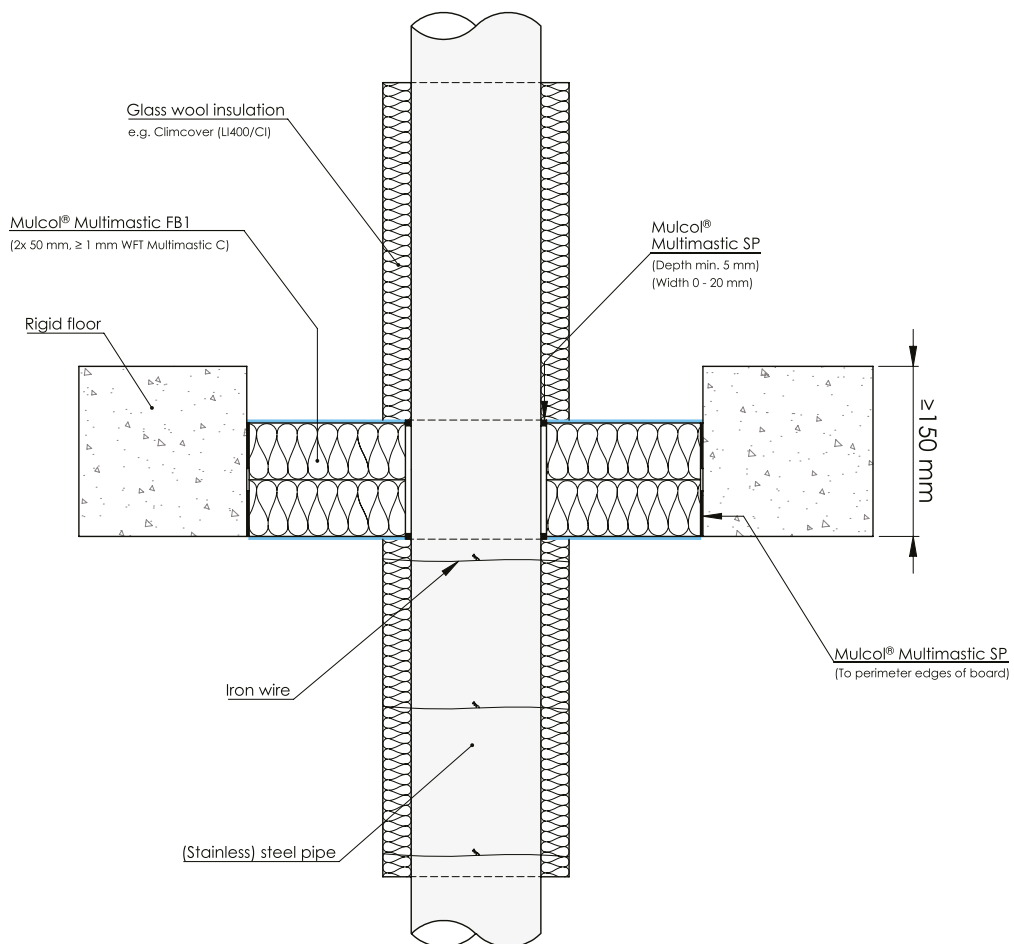
**B.1.10 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes insulated mineral wool**

**B.1.10.3 Copper and steel pipes - Glass wool LI 400 / CI**

Bottom view



Position seal:  
top  
bottom or anywhere  
in between



Drawing: PBrf.E-ST-MFB1.2.20.G.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	≤ Ø 40	≥ 2.0	Glass wool (≥ 33 kg/m <sup>3</sup> )	≥ 25	LI 400 / CI	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 C/U
	≤ Ø 114.3	≥ 3.6		≥ 30			EI 90 C/U, E 120 C/U
	≤ Ø 219	≥ 4.0		EI 60 C/U, E 120 C/U			

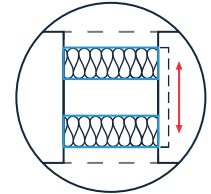
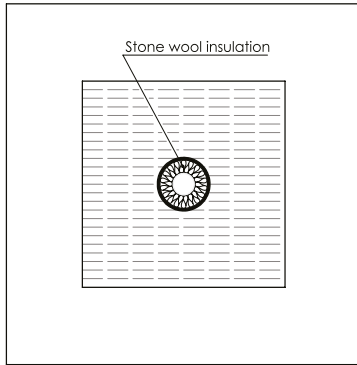
**B.1.11**

**Multimastic FB1 - 2x 50 mm cavity 50 mm - Metal pipes insulated mineral wool**

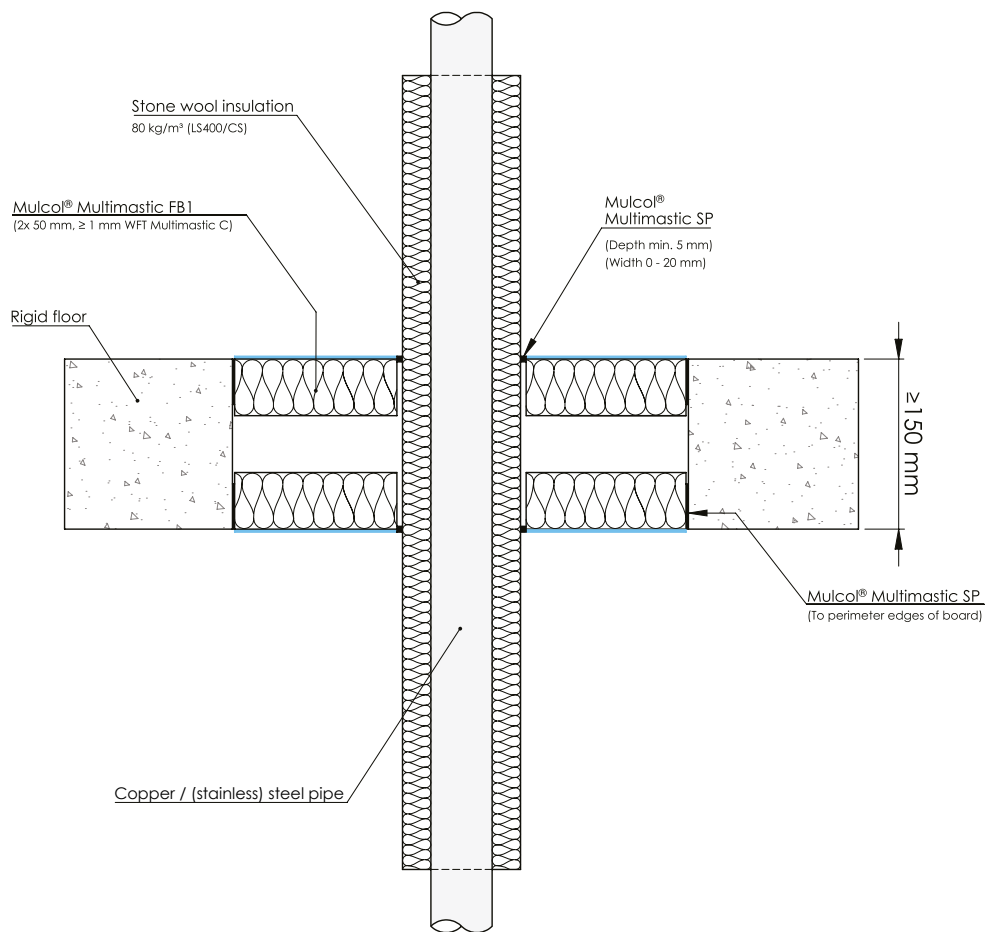
**B.1.11.1**

**Copper and steel pipes - Stone wool LS 400 / CS**

Bottom view



Position seal:  
top  
bottom or anywhere  
in between



Drawing: PBrf.E-CU-MFB1.2.20.LS.C

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	25	LS 400 / CS	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5					
(Stainless)	≤ Ø 114.3	≥ 3.6					
Steel / cast iron	≤ Ø 324	≥ 3.7		30			

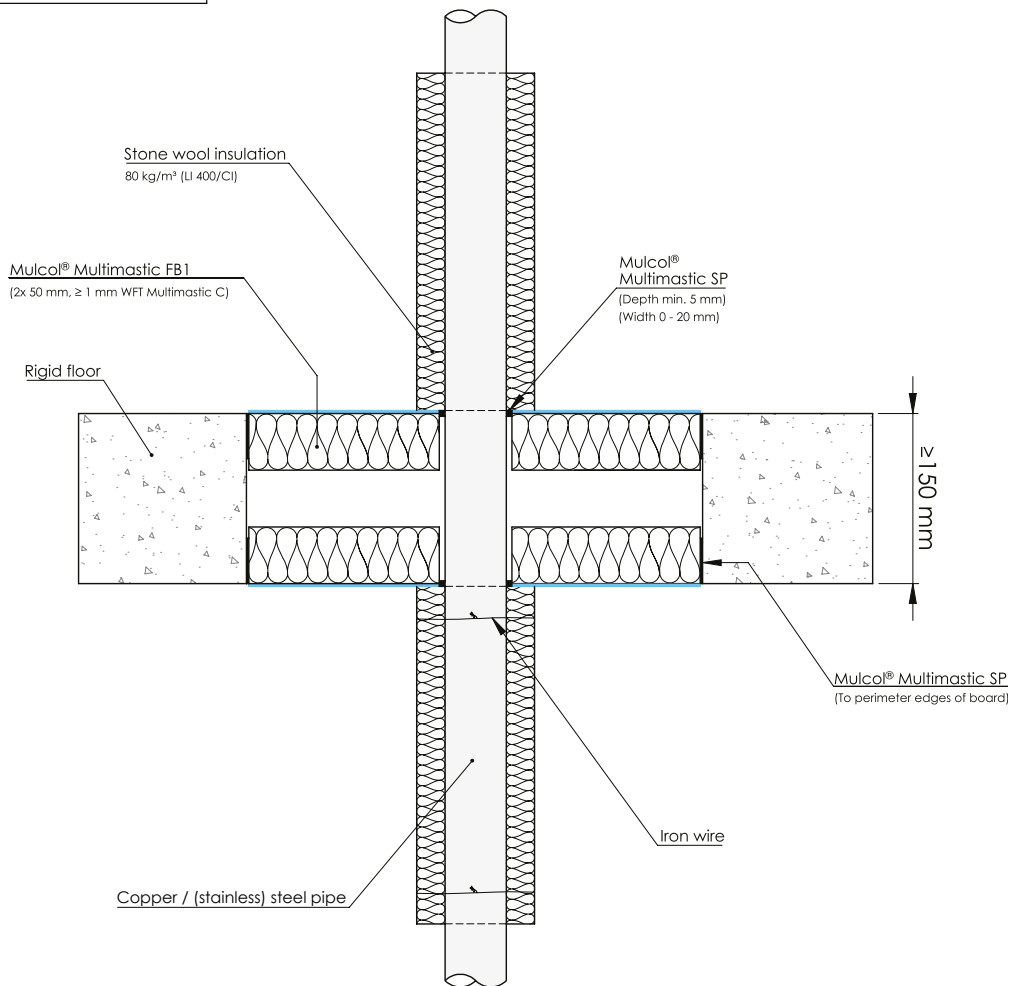
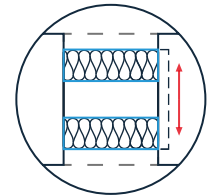
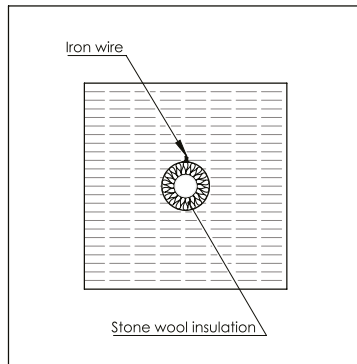
**B.1.11**

**Multimastic FB1 - 2x 50 mm cavity 50 mm - Metal pipes insulated mineral wool**

**B.1.11.2**

**Copper and steel pipes - Stone wool LI 400 / CI**

Bottom view



Drawing: PBrf.E-CU-MFB1.2.20.LI.C

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	25	LI 400 / CI	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5					
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6		30			
	≤ Ø 324	≥ 3.7					

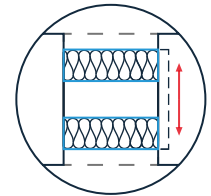
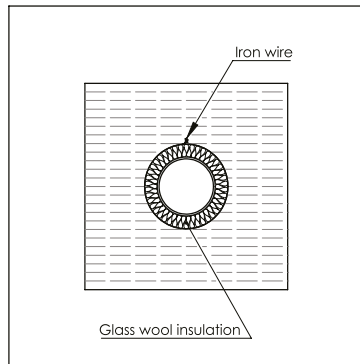
**B.1.11**

**Multimastic FB1 - 2x 50 mm cavity 50 mm - Metal pipes insulated mineral wool**

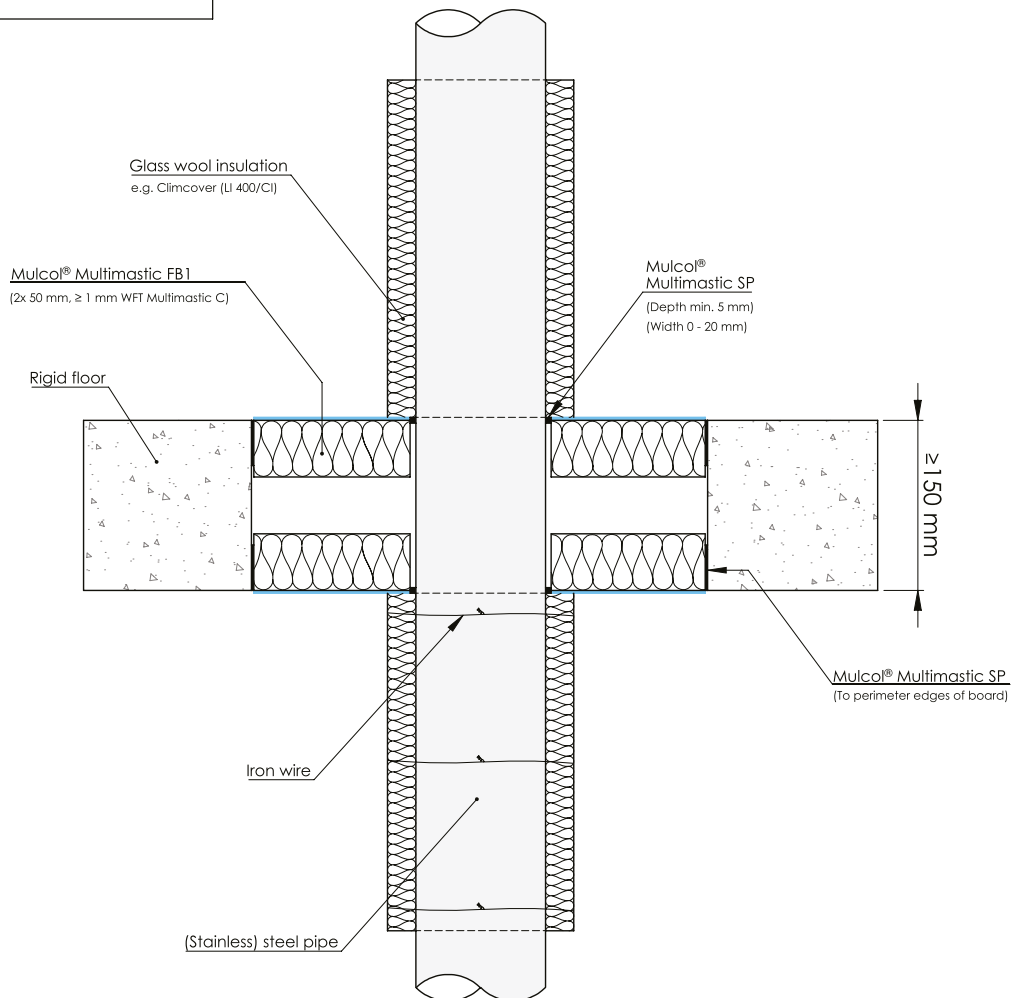
**B.1.11.3**

**Copper and steel pipes - Glass wool LI 400 / CI**

Bottom view



Position seal:  
top bottom or anywhere  
in between



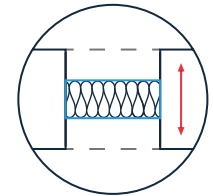
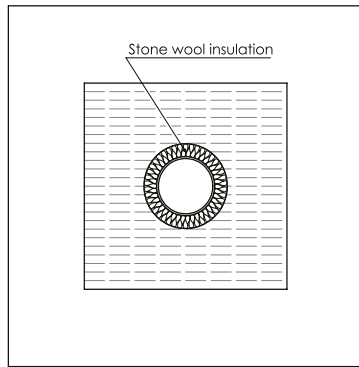
Drawing: PBrf.E-ST-MFB1.2.20.G.II.C

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	≤ Ø 40	≥ 2.0	Isover Climclover Glass wool (≥ 33 kg/m³)	≥ 25	LI 400 / CI	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 C/U
	≤ Ø 114.3	≥ 3.6					EI 90 C/U, E 120 C/U
	≤ Ø 219	≥ 4.0	≥ 30	EI 60 C/U, E 120 C/U			

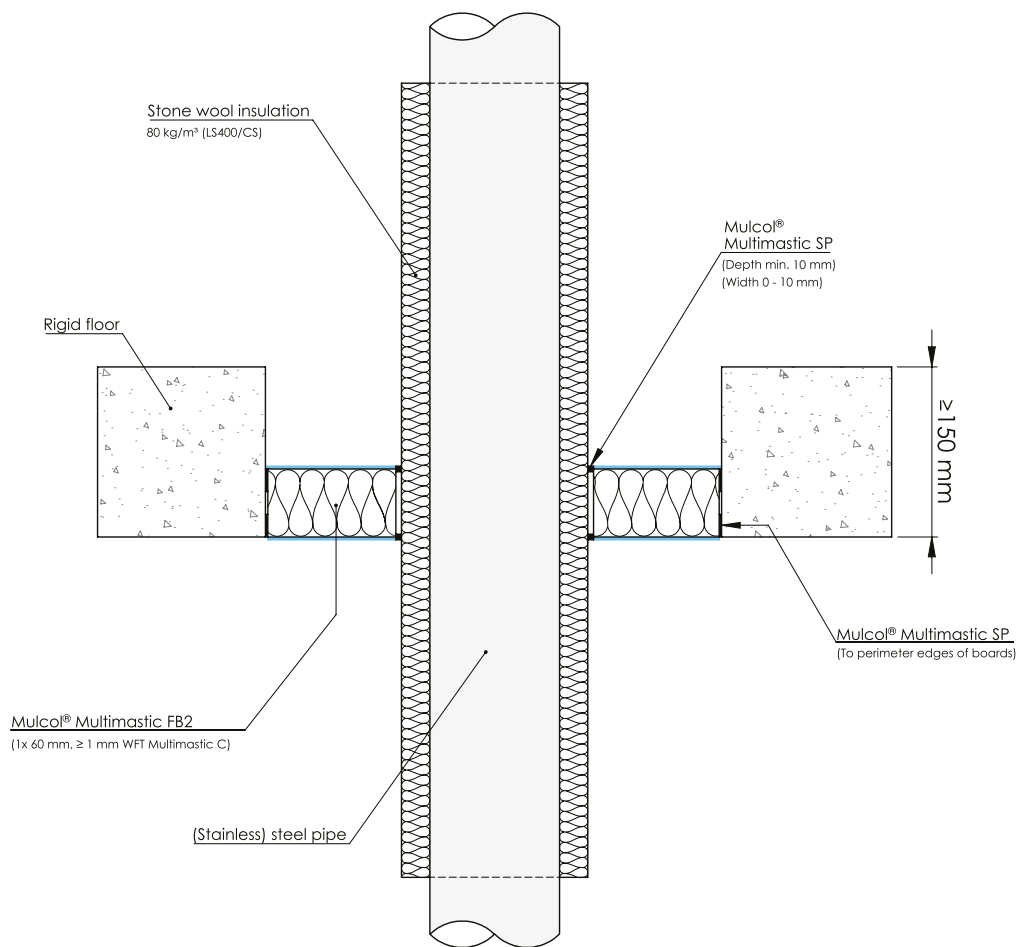
**B.1.12 Multimastic FB2 - 1x 60 mm - Metal pipes insulated mineral wool**

**B.1.12.1 Copper and steel pipes - Stone wool LS 400 / CS**

Bottom view



Position seal:  
top bottom or anywhere  
in between



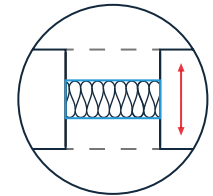
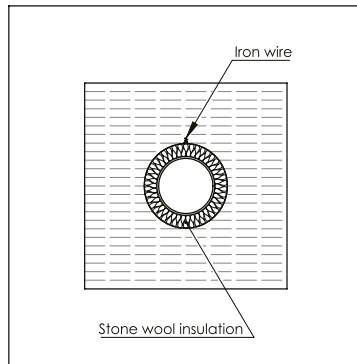
Drawing: PBrf.E-ST-MFB2.1.20

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	25	LS 400 / CS	Multimastic SP 0-10 x ≥ 10 (wxd)	EI 90 C/U
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6					E 120 C/U
	≤ Ø 219	≥ 4.0					EI 60 C/U
							E 120 C/U

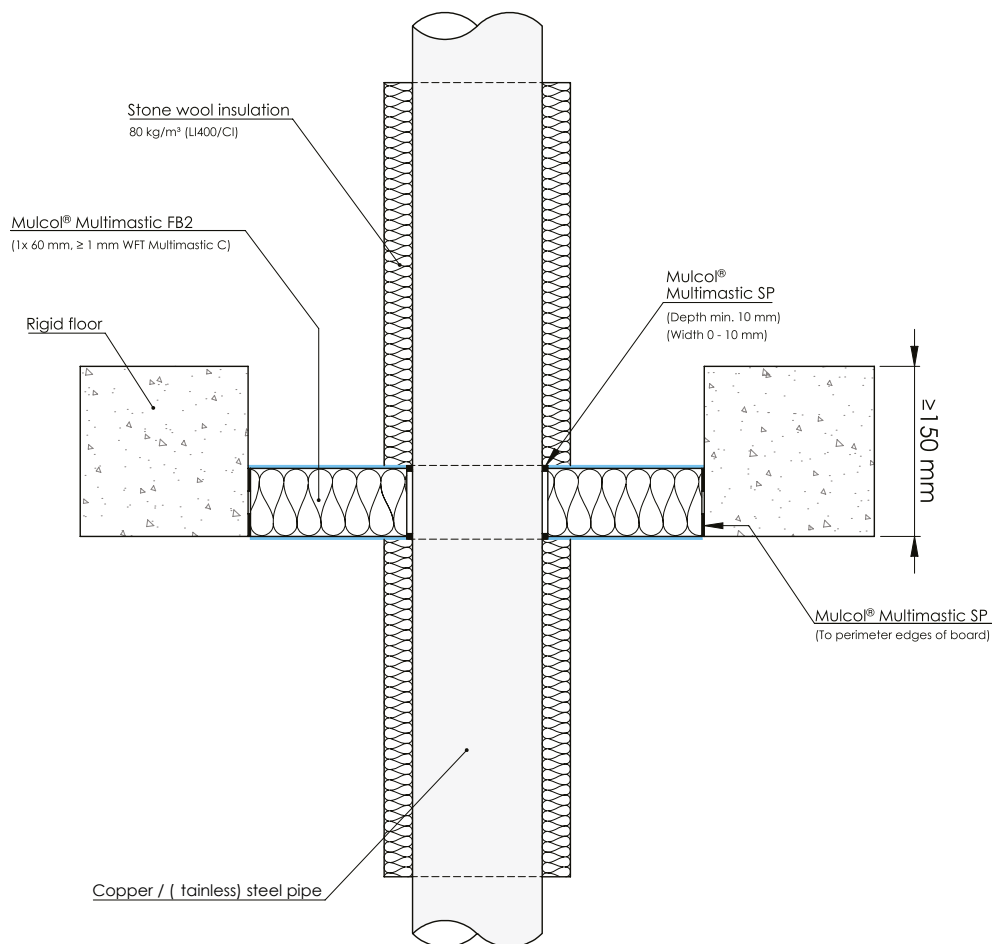
**B.1.12 Multimastic FB2 - 1x 60 mm - Metal pipes insulated mineral wool**

**B.1.12.2 Copper and steel pipes - Stone wool LI 400 / CI**

Bottom view



Position seal:  
top bottom or anywhere  
in between



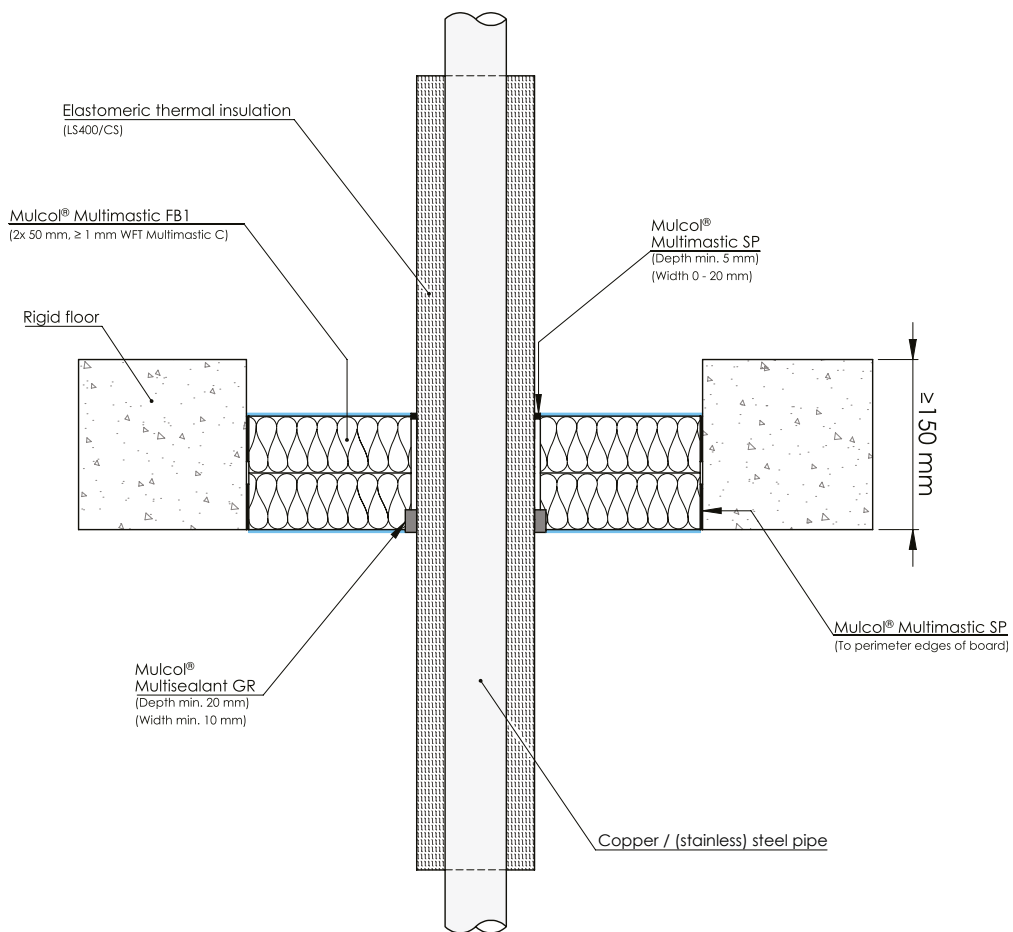
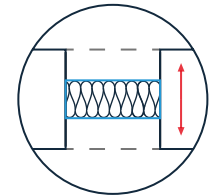
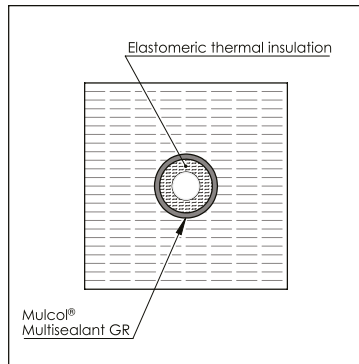
Drawing: PBrf.E-ST-MFB2.1.20.LI

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m <sup>3</sup> )	≥ 25	LI 400 / CI	Multimastic SP 0-10 x ≥ 10 (wxd)	<b>EI 90 C/U</b> <b>E 120 C/U</b>
(Stainless)	≤ Ø 114.3	≥ 3.6		≥ 30			
Steel / cast iron	≤ Ø 219	≥ 4.0					

**B.1.13 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes insulated elastomer**

**B.1.13.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

Bottom view



Drawing: PBrf.E-CU-MFB1-G2.4.22

Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 60 C/U, E 120 C/U
				8.5 - 33.5				EI 60 C/U, E 90 C/U
13.5	CS	EI 120 C/U						
13.5 - 38	LS 400 / CS	EI 90 C/U, E 120 C/U						
8.5 - 35	CS	EI 120 C/U						
15	LS 400 / CS	EI 90 C/U, E 120 C/U						
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3	15	CS				
	≤ Ø 114.3	≥ 3.6	15 - 43	LS 400 / CS				



**B.1.13 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes insulated elastomer**

**B.1.13.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

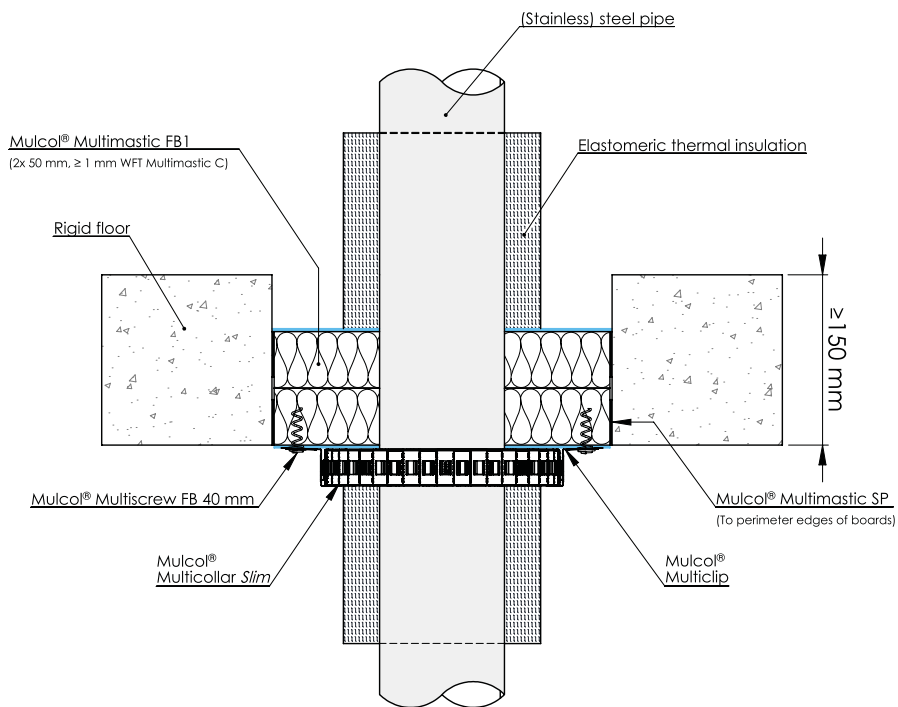
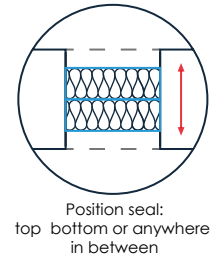
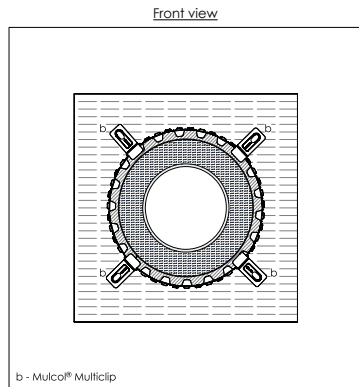
Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3	Kaiflex KK Plus (min. class B-s2, d0 B <sub>L</sub> -s2, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 60 C/U E 120 C/U

Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex NH (min. class D-s3, d0 D <sub>L</sub> -S3, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 120 C/U
	≤ Ø 54	≥ 1.5		13	LS 400 / CS			EI 90 C/U
				13 - 25	LS 400 / CS			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		9 - 25	LS 400 / CS			
	≤ Ø 114.3	≥ 3.6		19 - 25	LS 400 / CS			EI 120 C/U

Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Ultima (min. class B-s1, d0 B <sub>L</sub> -S1, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 60 C/U E 120 C/U
				25 - 32				EI 90 C/U E 120 C/U
	≤ Ø 54	≥ 1.5		13 - 32				EI 60 C/U E 120 C/U
				13 - 32	CS			EI 90 C/U E 120 C/U
				32	EI 90 C/U			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		9 - 25	LS 400 / CS			EI 60 C/U E 90 C/U
				25				EI 90 C/U E 120 C/U
	≤ Ø 114.3	≥ 3.6		13				
				13 - 32				EI 60 C/U E 120 C/U

**B.1.13 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes insulated elastomer**

**B.1.13.2 Steel pipes - Elastomer LI 300 / CI - Multicollar *Slim***

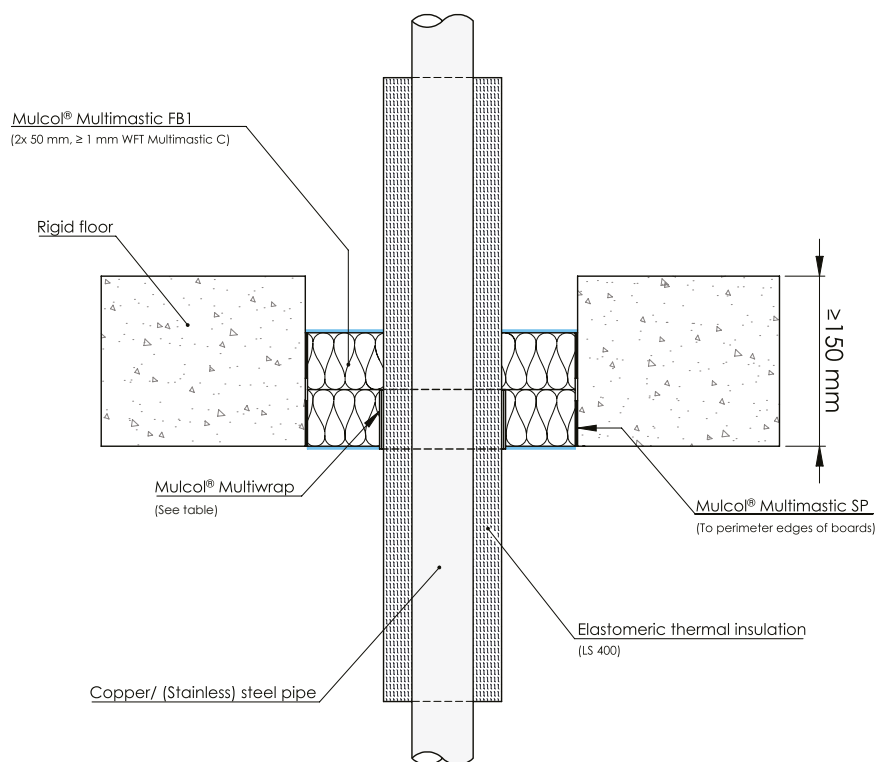
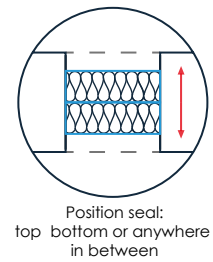
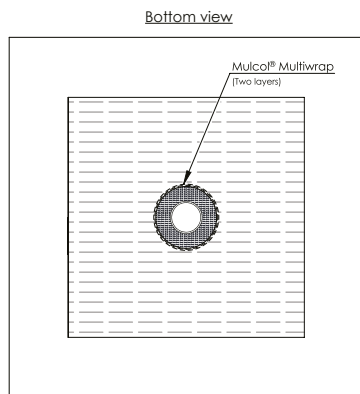


Drawing: PBrf.E-ST-11.0.22.LI

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configura-tion				
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LI 300 / CI	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	25 mm stone wool (33 kg/m <sup>3</sup> )	EI 60 C/U E 90 C/U
				32					EI 90 C/U

**B.1.13 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes insulated elastomer**

**B.1.13.3 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap**

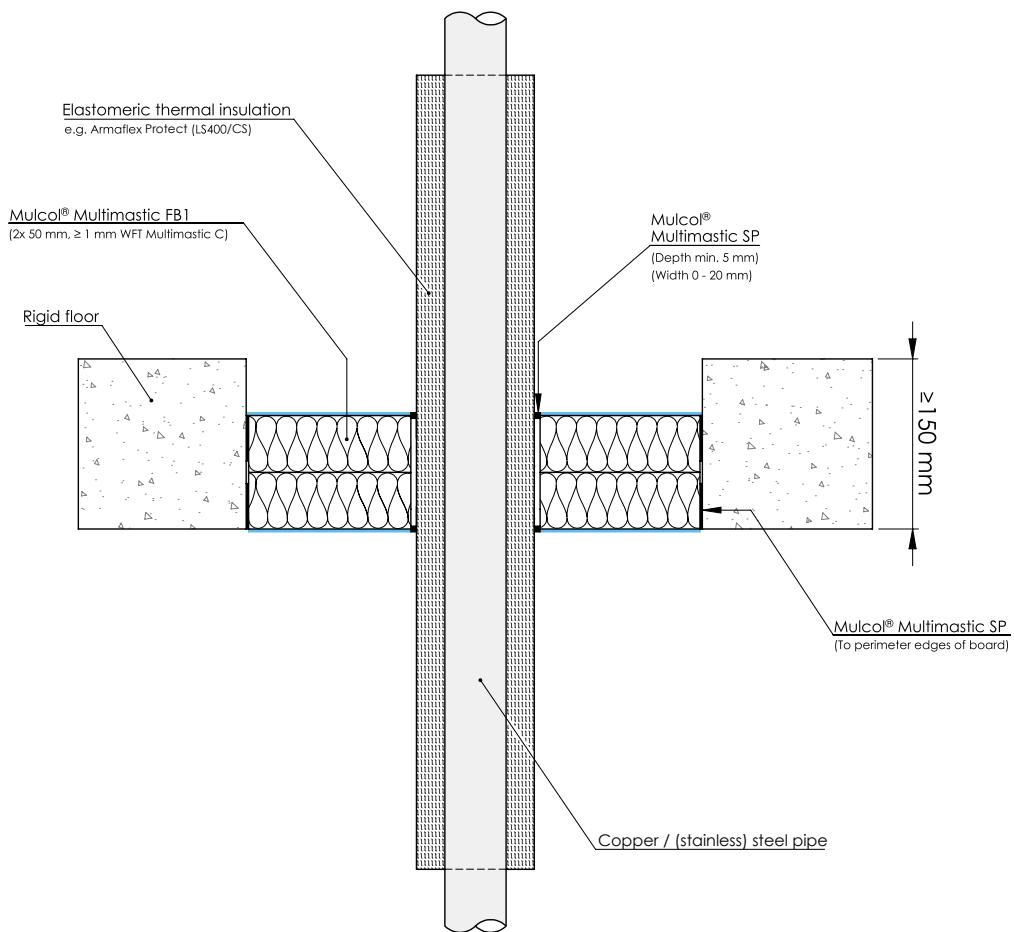
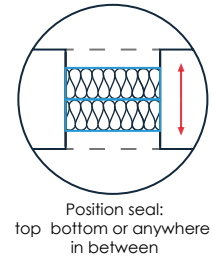
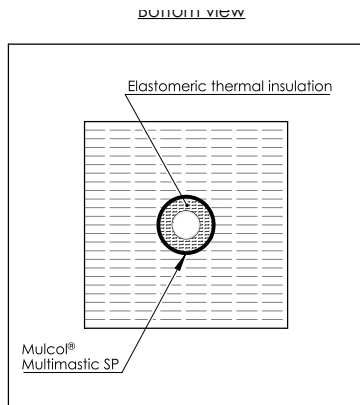


Drawing: PBrf.E-CU-MW2-MFB1.2.22

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 12	≥ 1	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	11	LS 400 / CS	Multiwrap (2 layers)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 120 C/U
				E 240 C/U				
Copper / (stainless) steel / cast iron	≤ Ø 54	≥ 1.5		11 - 28.5				EI 90 C/U
				13.5 - 28.5				EI 45 C/U
(Stainless) Steel / cast iron	≤ Ø 168.3	≥ 4.5	28.5	E 90 C/U				
			13 - 19	EI 45 C/U				
							E 120 C/U	

**B.1.13 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes insulated elastomer**

**B.1.13.4 Copper and steel pipes - ArmaFlex Protect LS 400 / CS**



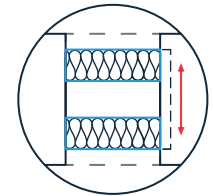
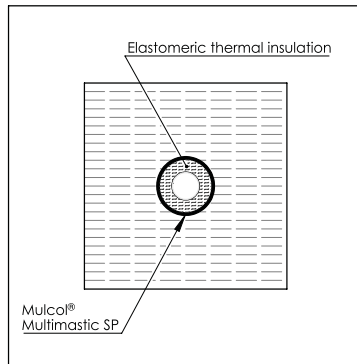
Drawing: PBrf.E-CU-MFB1.2.22.LS

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Protect	20 - 25	LS 400 / CS	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5		25			

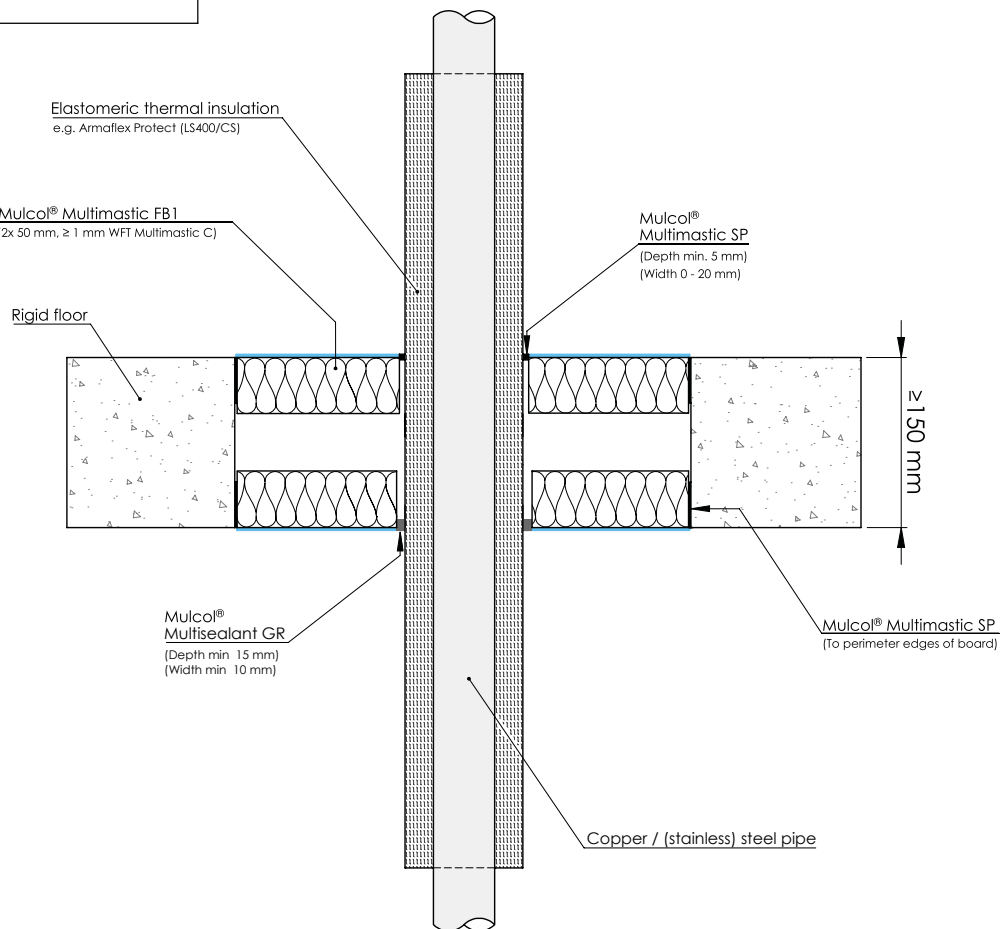
**B.1.14 Multimastic FB1 - 2x 50 mm cavity 50 mm - Metal pipes insulated elastomer**

**B.1.14.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

Bottom view



Position seal:  
top bottom or anywhere  
in between



Drawing: PBrf.E-CU-MFB1-G2.2.22.LS.C

Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex AF (min. class B-s3, d0) B <sub>L</sub> -s3, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 60 C/U
				8.5 - 33.5				E 120 C/U
	≤ Ø 54	≥ 1.5		13.5	CS			EI 60 C/U
				13.5 - 38	LS 400 / CS			E 90 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3	8.5 - 35	CS	EI 120 C/U			
	≤ Ø 114.3	≥ 3.6	15		EI 90 C/U			
			15 - 43		LS 400 / CS			E 120 C/U

**B.1.14 Multimastic FB1 - 2x 50 mm cavity 50 mm- Metal pipes insulated elastomer**

**B.1.14.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

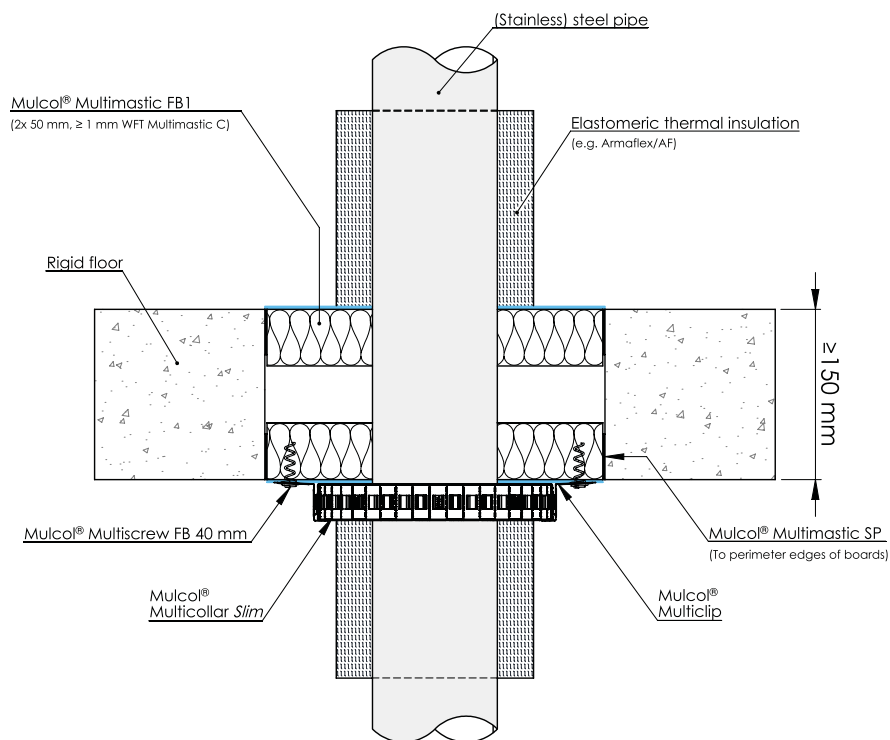
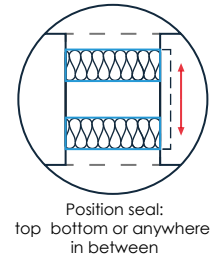
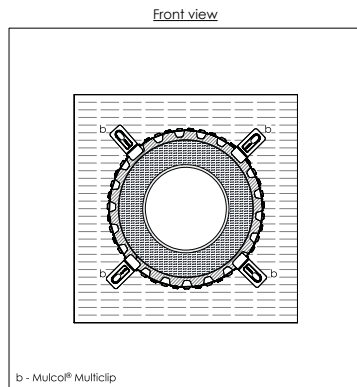
Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3	Kaiflex KK Plus (min. class B-s2, d0 B <sub>L</sub> -s2, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 60 C/U E 120 C/U

Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex NH (min. class D-s3, d0 D <sub>L</sub> -S3, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 120 C/U
	≤ Ø 54	≥ 1.5		13	LS 400 / CS			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		9 - 25	LS 400 / CS			EI 120 C/U
	≤ Ø 114.3	≥ 3.6		19 - 25	LS 400 / CS			

Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Ultima (min. class B-s1, d0 B <sub>L</sub> -S1, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 60 C/U E 120 C/U
				25 - 32				EI 90 C/U E 120 C/U
	13 - 32	EI 60 C/U E 120 C/U						
	13 - 32			CS	EI 90 C/U E 120 C/U			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		32				LS 400 / CS
				9 - 25	EI 60 C/U E 90 C/U			
	25	EI 90 C/U E 120 C/U						
	13							
≤ Ø 114.3	≥ 3.6	13 - 32	EI 60 C/U E 120 C/U					

**B.1.14 Multimastic FB1 - 2x 50 mm cavity 50 mm- Metal pipes insulated elastomer**

**B.1.14.2 Steel pipes - Elastomer LI 300 / CI - Multicollar *Slim***

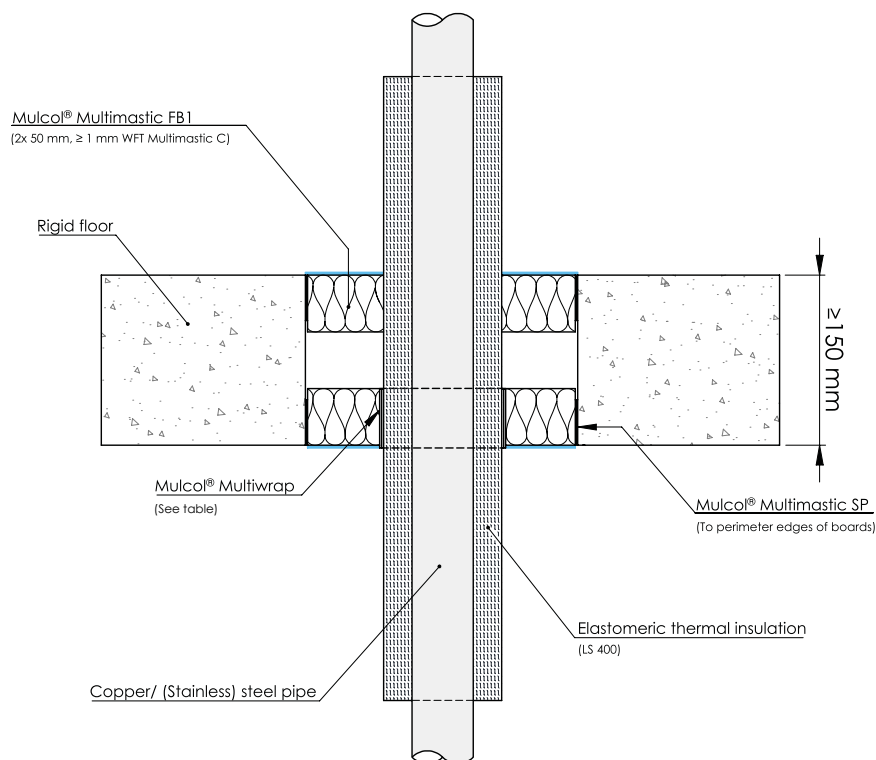
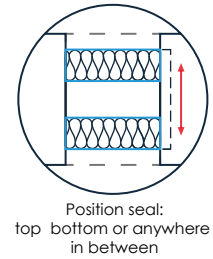
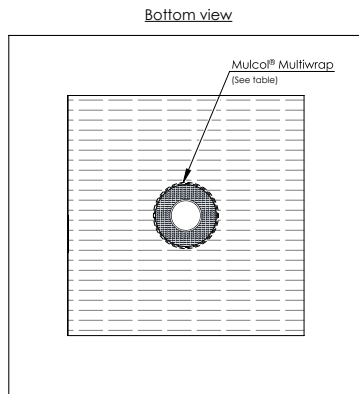


Drawing: PBrf.E-ST-11.0.22.LI.C

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration				
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6	ArmaFlex AF	9 - 32	LI 300 / CI	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	25 mm stone wool (≥ 33kg/m <sup>3</sup> )	EI 60 C/U E 90 C/U
			(min. class B-s3, d0 B <sub>L</sub> -s3, d0)	32					EI 90 C/U

**B.1.14 Multimastic FB1 - 2x 50 mm cavity 50 mm- Metal pipes insulated elastomer**

**B.1.14.3 Steel pipes - Elastomer LS 400 / CS - Multiwrap**



Drawing: PBrf E-CU-MW2-MFB1 2 22.LS.C

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 12	≥ 1	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	11	LS 400 / CS	Multiwrap (2 layers)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 120 C/U E 240 C/U
				11 - 28.5				EI 90 C/U
Copper / (stainless) steel / cast iron	≤ Ø 54	≥ 1.5		13.5 - 28.5				EI 45 C/U E 90 C/U
	≤ Ø 54	≥ 1.5		28.5				EI 90 C/U
(Stainless) Steel / cast iron	≤ Ø 168.3	≥ 4.5	13 - 19				EI 45 C/U E 120 C/U	



**B.1.14 Multimastic FB1 - 2x 50 mm cavity  $\geq$  50 mm- Metal pipes insulated elastomer**

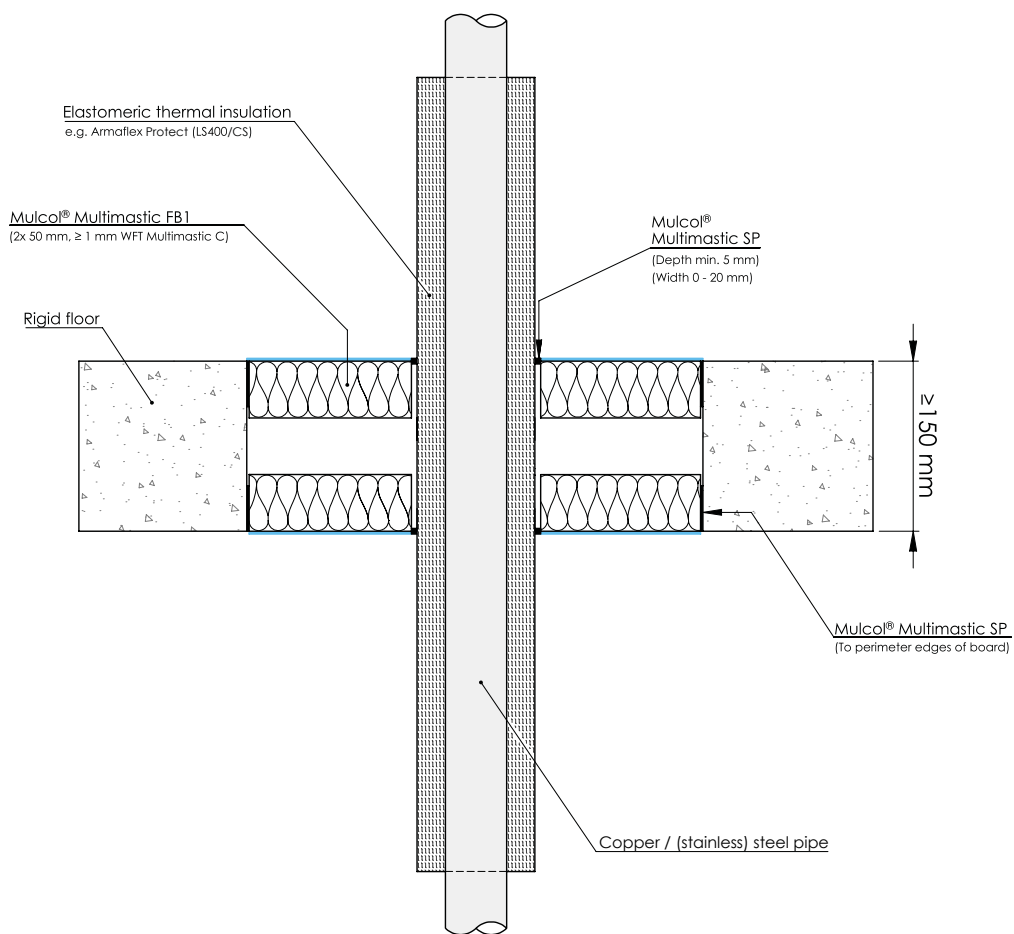
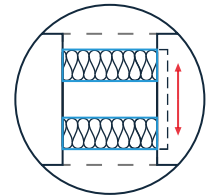
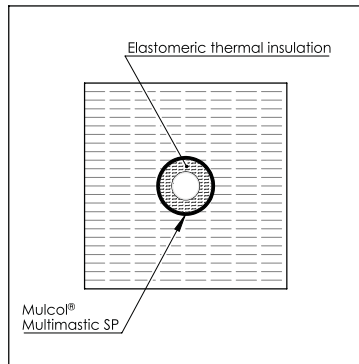
**B.1.14.3 Steel pipes - Elastomer LS 400 / CS - Multiwrap**

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
(Stainless) Steel / cast iron	$\leq \varnothing 40$	$\geq 2.0$	Kaiflex KK Plus (min. class B-s2, d0 B <sub>L</sub> -s2, d0)	19	LS 400 / CS	Multiwrap (2 layers)	Multimastic SP 0-20 x $\geq$ 5 (wxd) top of floor	<b>EI 45 C/U</b> <b>E 120 C/U</b>

**B.1.14 Multimastic FB1 - 2x 50 mm cavity 50 mm- Metal pipes insulated elastomer**

**B.1.14.4 Copper and steel pipes - ArmaFlex Protect LS 400 / CS**

Bottom view



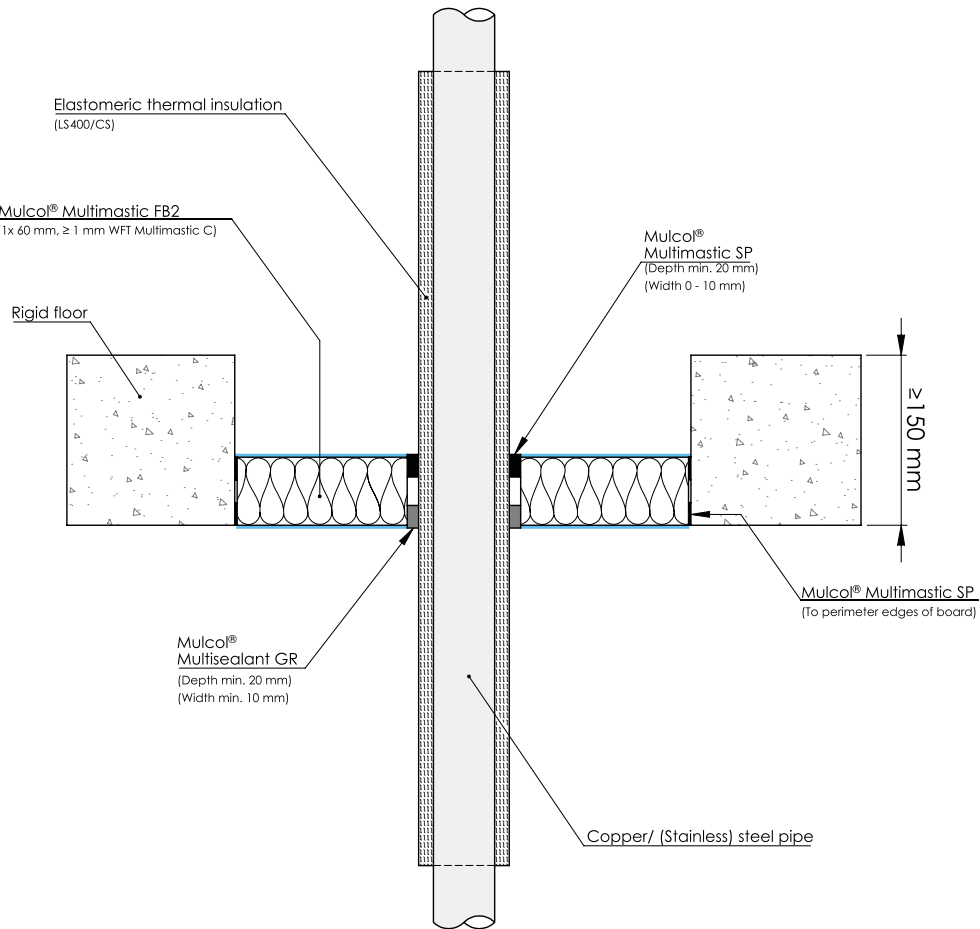
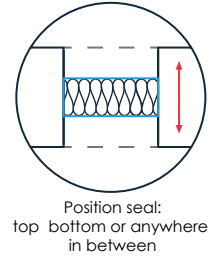
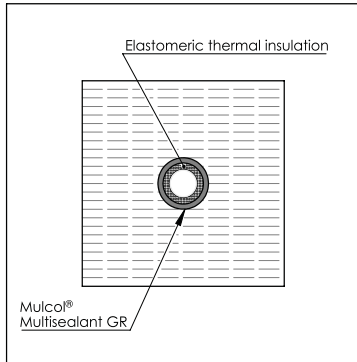
Drawing: PBrf.E-CU-MFB1.2.22.LS.C

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Protect	20 - 25	LS 400 / CS	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5		25			

**B.1.15 Multimastic FB2 - 1x 60 mm - Metal pipes insulated elastomer**

**B.1.15.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

Bottom view



Drawing: PBrf.E-CU-MFB2-G2.4.22.LS

Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	8.5 - 35	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd) bottom of floor	Multimastic SP 0-10 x ≥ 20 (wxd) top of floor	EI 60 C/U
				35				EI 120 C/U
	13.5	EI 60 C/U						
≤ Ø 54	≥ 1.5	13.5 - 38		EI 45 C/U				
		8.5 - 35		EI 120 C/U				
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		35				EI 60 C/U
			13.5	EI 90 C/U				
	≤ Ø 114.3	≥ 3.6	15 - 43	EI 120 C/U				
								EI 60 C/U
								EI 120 C/U

**B.1.15 Multimastic FB2 - 1x 60 mm - Metal pipes insulated elastomer**

**B.1.15.1 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3	Kaiflex KK Plus (min. class B-s2, d0 B <sub>L</sub> -s2, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 10 (wxd) top of floor	EI 45 C/U

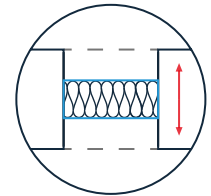
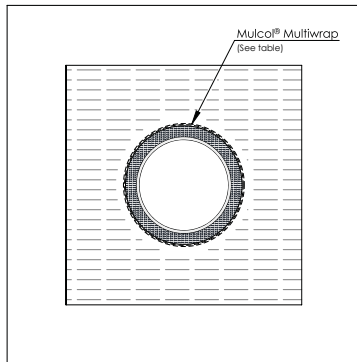
Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex NH (min. class D-s3, d0 D <sub>L</sub> -S3, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 10 (wxd) top of floor	EI 60 C/U E 90 C/U
	≤ Ø 54	≥ 1.5		13 - 25				EI 60 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		9 - 25				EI 30 C/U
	≤ Ø 26.9	≥ 2.3		25				EI 60 C/U E 120 C/U
	≤ Ø 114.3	≥ 3.6		19				EI 30 C/U E 120 C/U
				19 - 25				EI 45 C/U E 120 C/U

Services	Pipe dimensions (mm)		Insulation			Product (mm)	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	ArmaFlex Ultima (min. class B-s1, d0 B <sub>L</sub> -S1, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	Multimastic SP 0-20 x ≥ 10 (wxd) top of floor	EI 30 C/U E 120 C/U
				25				EI 60 C/U E 120 C/U
	≤ Ø 54	≥ 1.5		13 - 32				EI 45 C/U E 120 C/U
				32				EI 90 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		9 - 25				EI 60 C/U E 120 C/U
				25				EI 90 C/U E 120 C/U
	≤ Ø 114.3	≥ 3.6		13				EI 120 C/U
				13 - 32				EI 60 C/U E 120 C/U

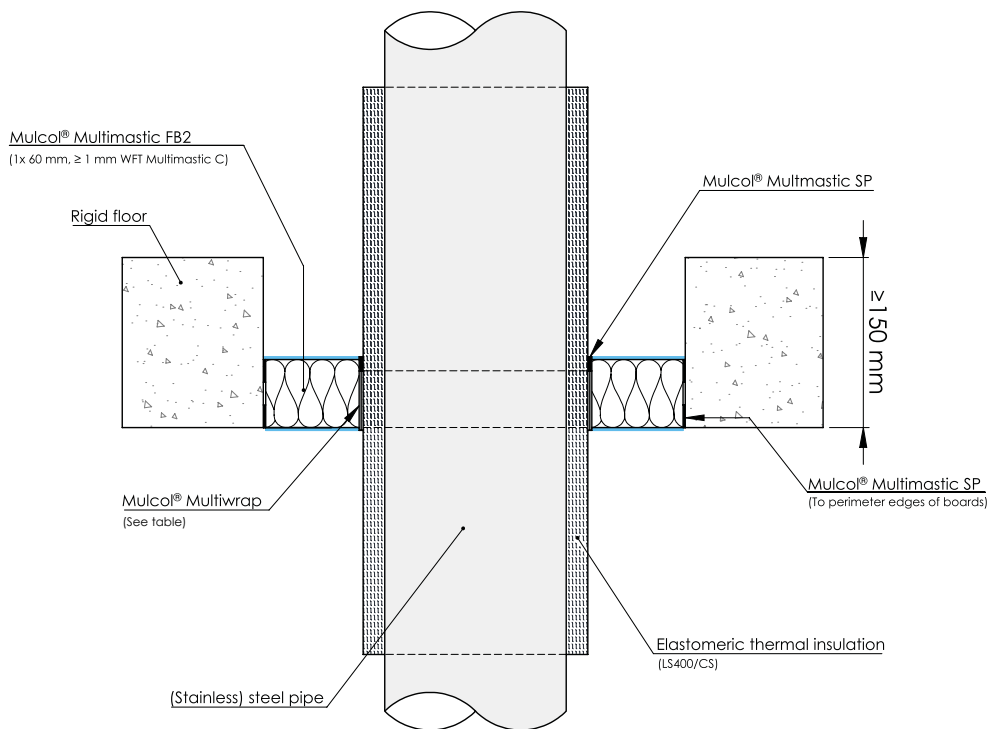
**B.1.15 Multimastic FB2 - 1x 60 mm - Metal pipes insulated elastomer**

**B.1.15.2 Steel pipes - Elastomer LS 400 / CS - Multiwrap**

Bottom view



Position seal:  
top bottom or anywhere  
in between



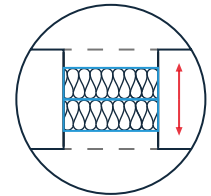
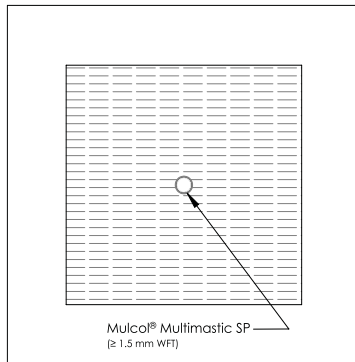
Drawing: PBrf.E-ST-MW2-MFB2.1.22.LS

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
(Stainless) Steel / cast iron	≤ Ø 168.3	≥ 4.5	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	13 - 19	LS 400 / CS	Multiwrap (2 layers)	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 45 C/U E 120 C/U

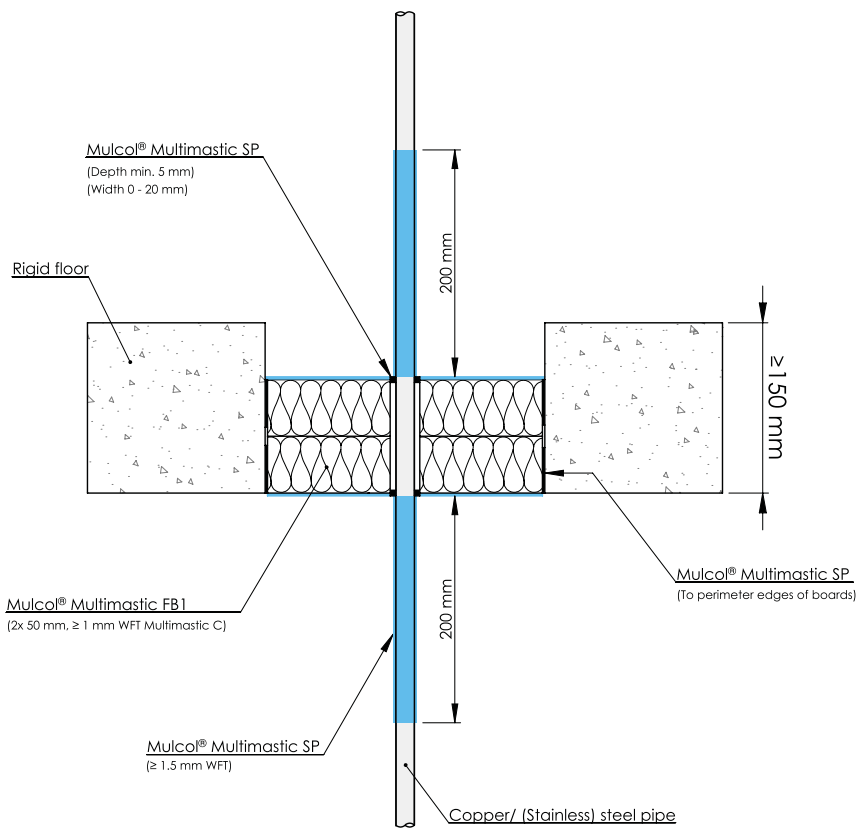
**B.1.16 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes uninsulated**

**B.1.16.1 Copper and steel pipes - Multimastic SP**

Bottom view



Position seal:  
top bottom or anywhere  
in between

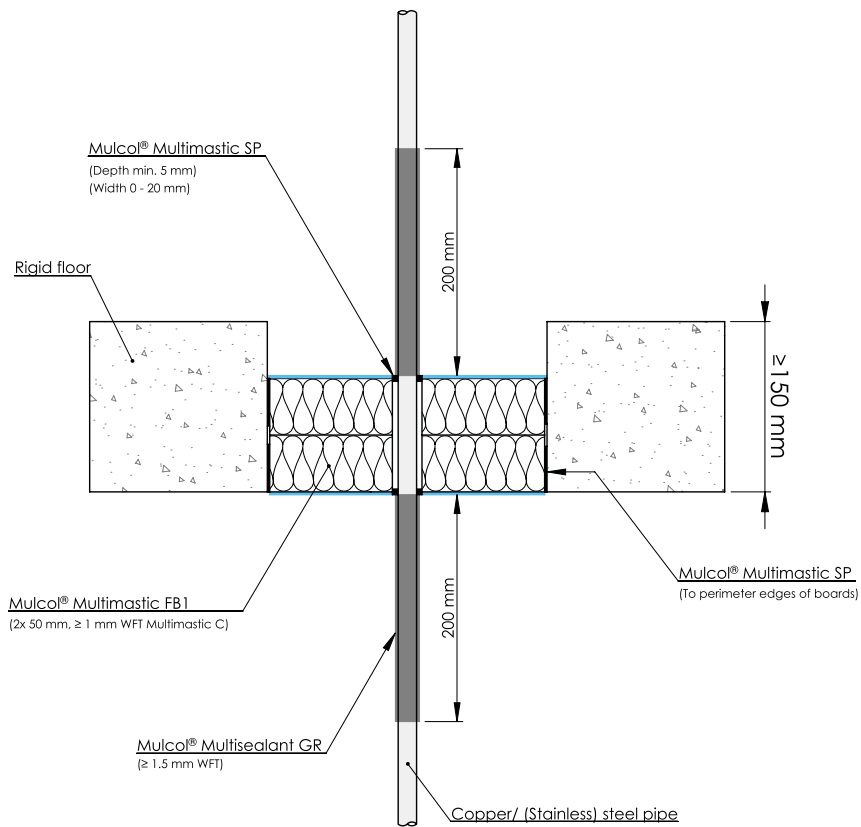
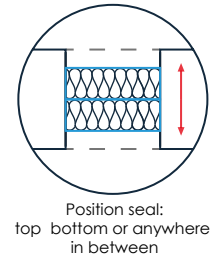
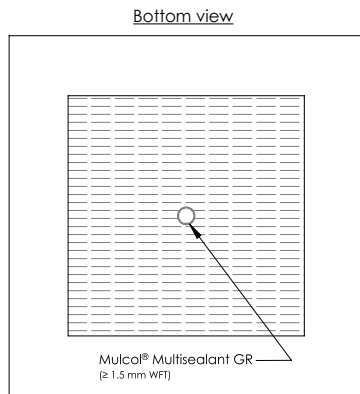


Drawing: PBrf.E-CU-MFB1-SPC.1.10

Services	Pipe dimensions (mm)		Coating	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Copper	≤ Ø 22	≥ 1.0	Coat back 200 mm ≥ 1.5 mm WFT Multimastic SP	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 20 C/U, E 90 C/U
(Stainless) Steel / cast iron					≤ Ø 42.4

**B.1.16 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes uninsulated**

**B.1.16.2 Copper and steel pipes - Multisealant GR**

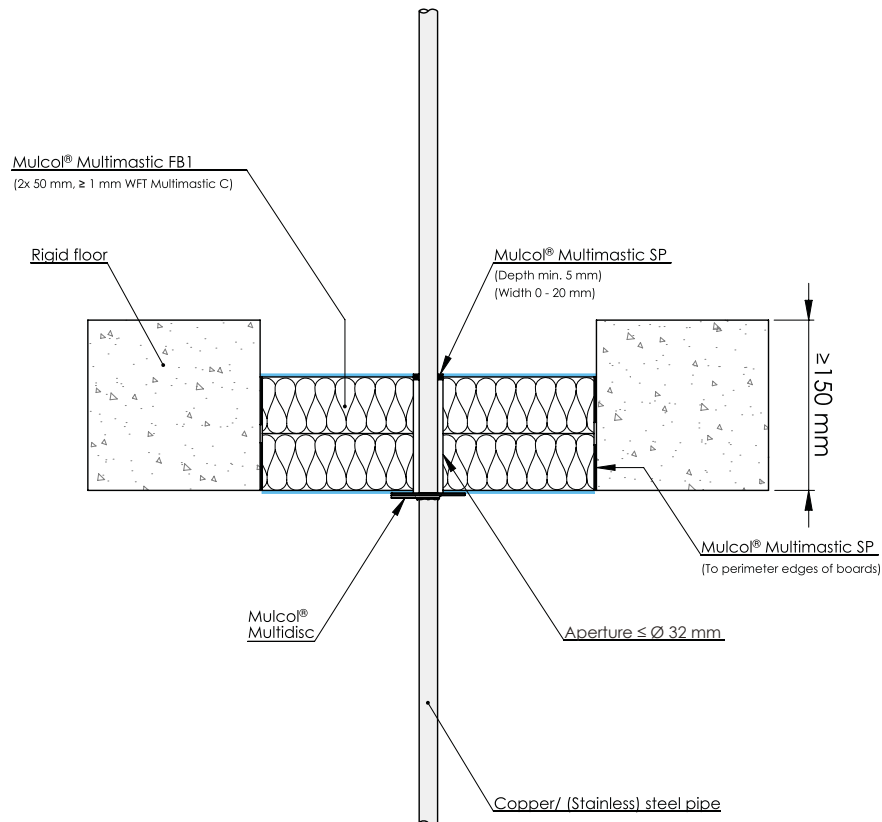
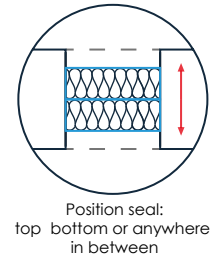
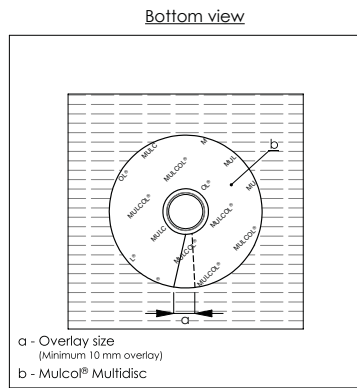


Drawing: PBrf.E-CU-MFB1-GRC.1.10

Services	Pipe dimensions (mm)		Coating	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Coat back 200 mm ≥ 1.5 mm WFT Multisealant GR	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 60 C/U, E 90 C/U
(Stainless) Steel / cast iron	≤ Ø 42.4	≥ 3.2			

**B.1.16 Multimastic FB1 - 2x 50 mm no cavity - Metal pipes uninsulated**

**B.1.16.3 Copper and steel pipes - Multidisc**



Drawing: PBrf.E-CU-M2.0.10

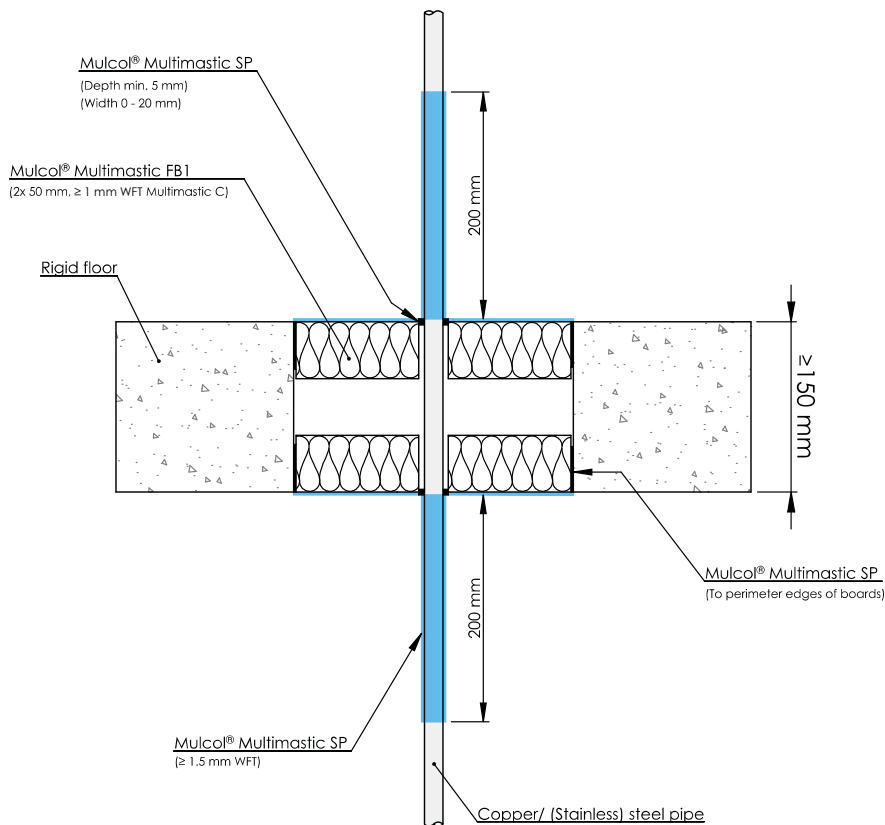
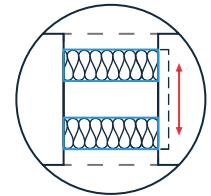
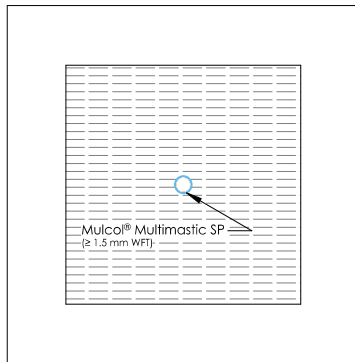
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Multidisc bottom of floor	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 60 C/U



**B.1.17 Multimastic FB1 - 2x 50 mm cavity 50 mm - Metal pipes uninsulated**

**B.1.17.1 Copper and steel pipes - Multimastic SP**

Bottom view



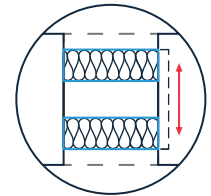
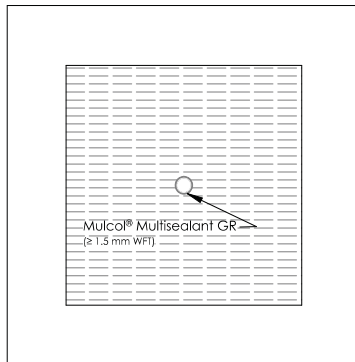
Drawing: PBrf.E-CU-MFB1-SPC.1.10.C

Services	Pipe dimensions (mm)		Coating	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Coat back 200 mm ≥ 1.5 mm WFT Multimastic SP	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 C/U, E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3			EI 120 C/U
	≤ Ø 42.4	≥ 3.2			EI 90 C/U, E 120 C/U

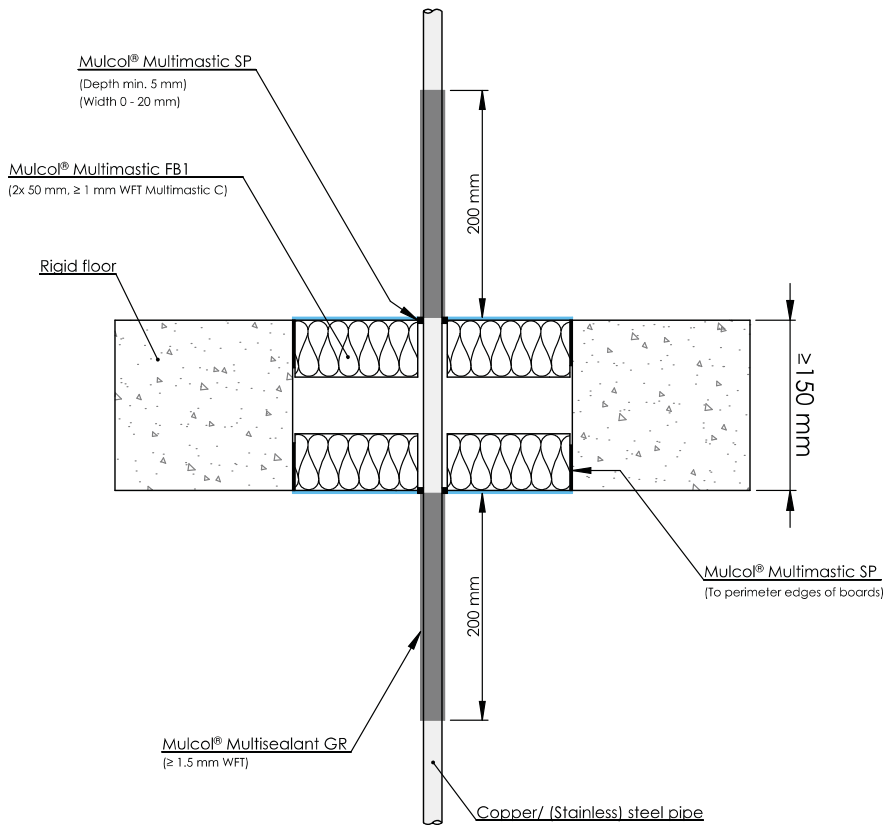
**B.1.17 Multimastic FB1 - 2x 50 mm cavity 50 mm - Metal pipes uninsulated**

**B.1.17.2 Copper and steel pipes - Multisealant GR**

Bottom view



Position seal:  
top bottom or anywhere  
in between



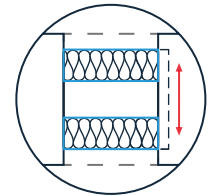
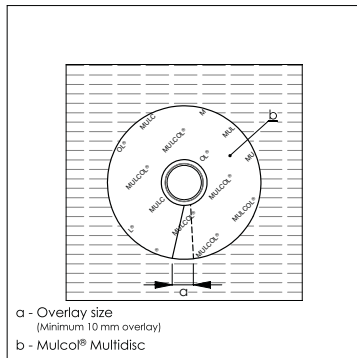
Drawing: PBrf.E-CU-MFB1-GRC.1.10.C

Services	Pipe dimensions (mm)		Coating	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Coat back 200 mm ≥ 1.5 mm WFT Multisealant GR	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 60 C/U, E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 15	≥ 1.0			EI 120 C/U
	≤ Ø 42.4	≥ 3.2			

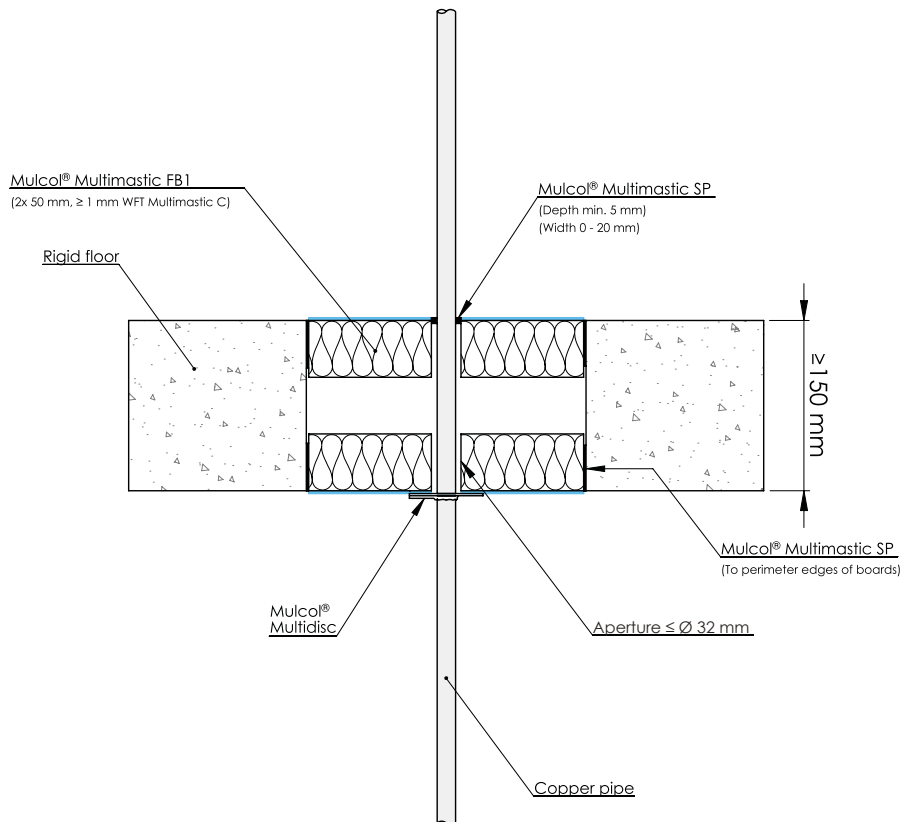
**B.1.17 Multimastic FB1 - 2x 50 mm cavity 50 mm - Metal pipes uninsulated**

**B.1.17.3 Copper and steel pipes - Multidisc**

Bottom view



Position seal:  
top bottom or anywhere  
in between



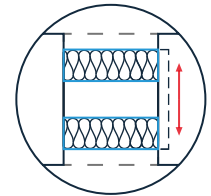
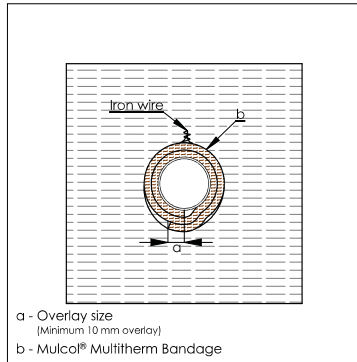
Drawing: PBrf.E-CU-M2.0.10.C

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Multidisc bottom of floor	Multimastic SP 0-20 x ≥ 5 (wxd) top of floor	EI 60 C/U

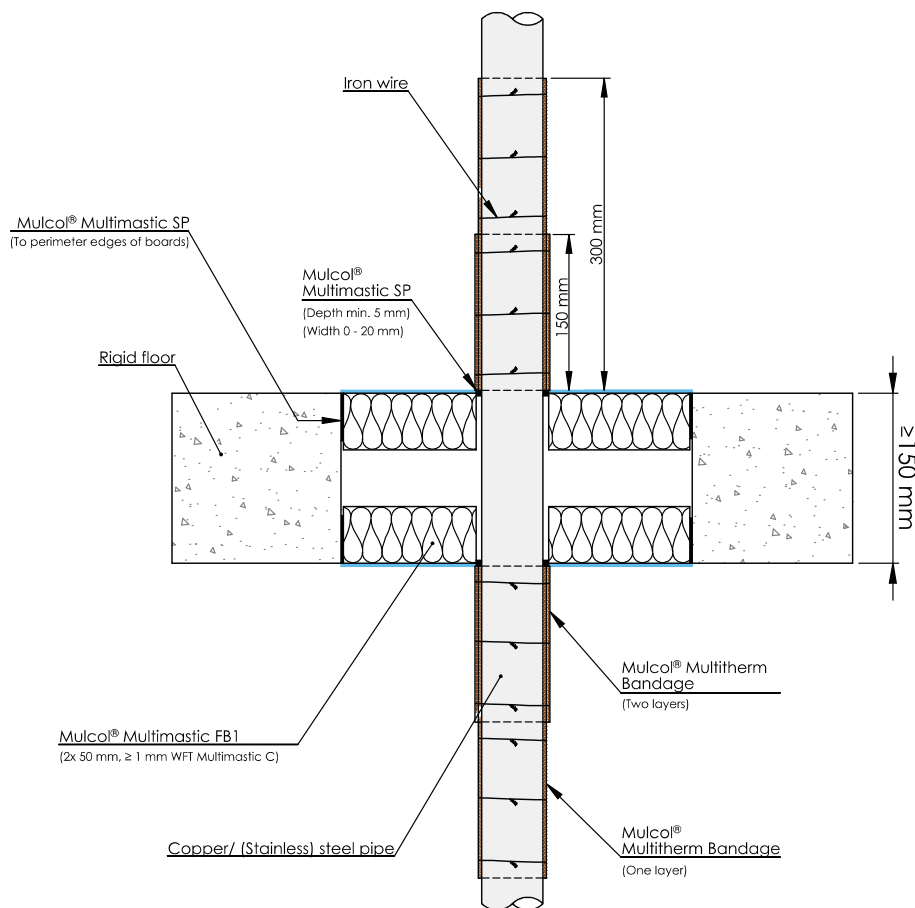
**B.1.17 Multimastic FB1 - 2x 50 mm cavity 50 mm - Metal pipes uninsulated**

**B.1.17.4 Copper and steel pipes - Multitherm Bandage**

Top view



Position seal:  
top bottom or anywhere  
in between



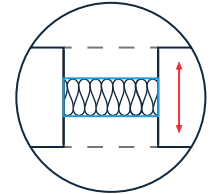
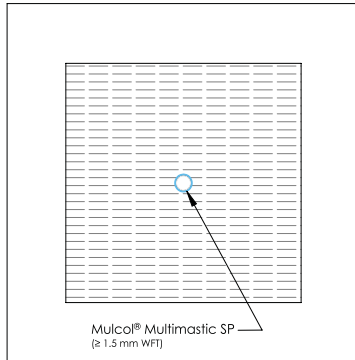
Drawing: PBrf.E-CU-MFB1-B2.3.21.C

Services	Pipe dimensions (mm)		Sealing (mm)	Multitherm Bandage	Classification
	Outer dimension	Wall thickness			
Copper / (stainless) steel / cast iron	≤ Ø 54	≥ 1.5	Multimastic SP 0-20 x ≥ 5 (wxd)	LI 150 two layers (two wires) + LI 300 one layer (two wires)	EI 90 C/U E 120 C/U

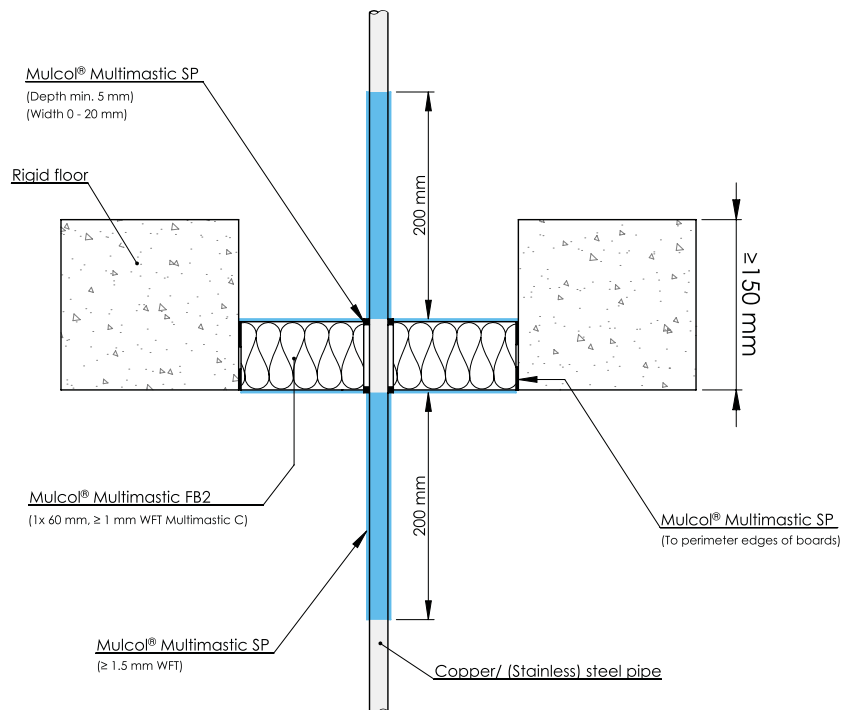
**B.1.18 Multimastic FB2 - 1x 60 mm - Metal pipes uninsulated**

**B.1.18.1 Copper and steel pipes - Multimastic SP**

Bottom view



Position seal:  
top bottom or anywhere  
in between



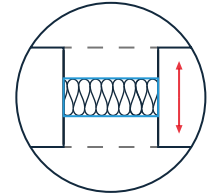
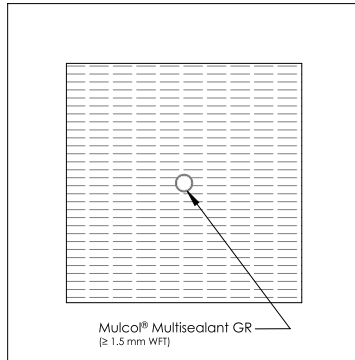
Drawing: PBrf.E-CU-MFB2-SPC.1.10

Services	Pipe dimensions (mm)		Coating	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Copper	≤ Ø 15	≥ 1.0	Coat back 200 mm ≥ 1.5 mm WFT Multimastic SP	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 20 C/U, E 90 C/U
(Stainless) steel / cast iron	≤ Ø 42.4	≥ 3.2			EI 30 C/U, E 90 C/U

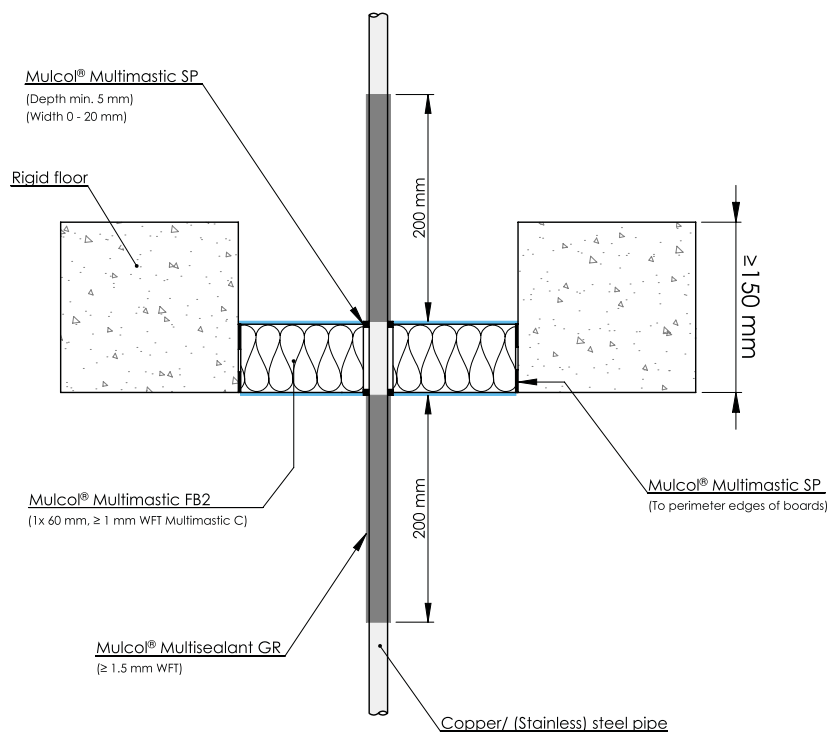
**B.1.18 Multimastic FB2- 1x 60 mm - Metal pipes uninsulated**

**B.1.18.2 Copper and steel pipes - Multisealant GR**

Bottom view



Position seal:  
top bottom or anywhere  
in between

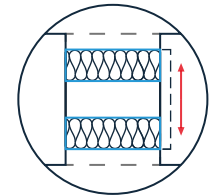
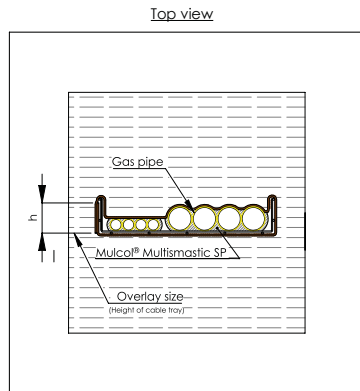


Drawing: PBrf.E-CU-MFB2-GRC.1.10

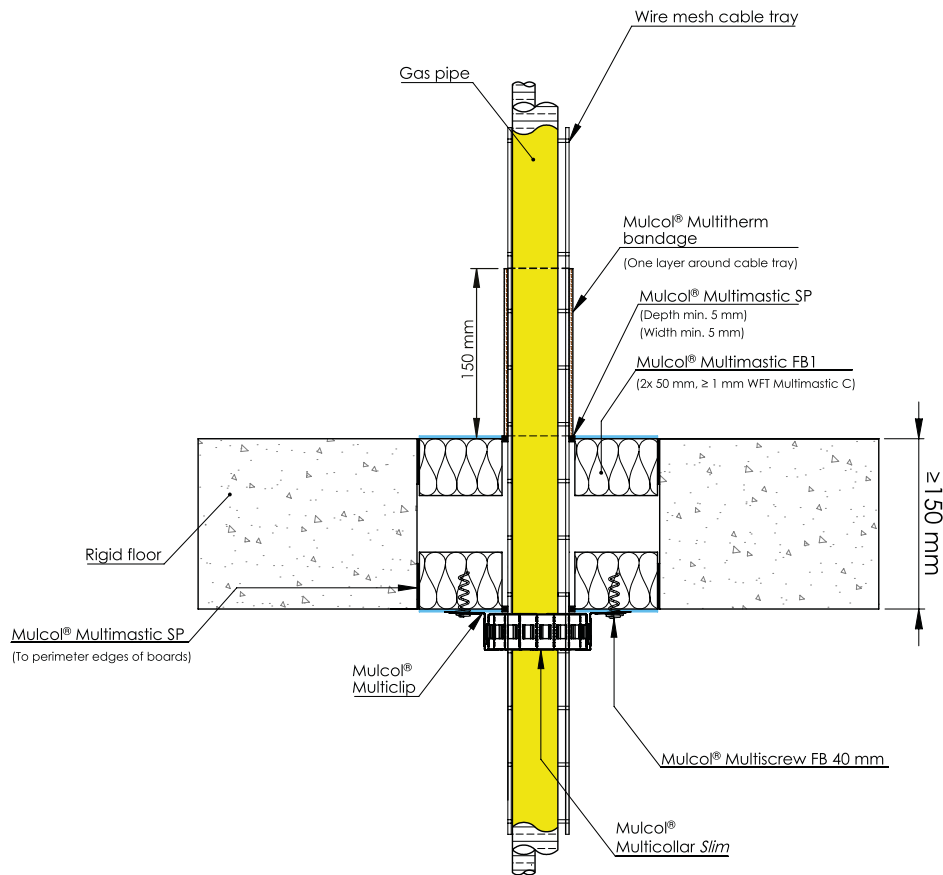
Services	Pipe dimensions (mm)		Coating	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Copper	≤ Ø 15	≥ 1.0	Coat back 200 mm ≥ 1.5 mm WFT Multisealant GR	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 60 C/U, E 90 C/U
(Stainless) steel / cast iron	≤ Ø 42.4	≥ 3.2			

**B.1.19 Multimastic FB1 - 2x 50 mm cavity 50 mm - Gas pipes**

**B.1.19.1 Corrugated stainless steel tube gas (CSST) pipes - Multicollar - Multitherm Bandage**



Position seal:  
top bottom or anywhere  
in between



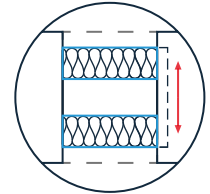
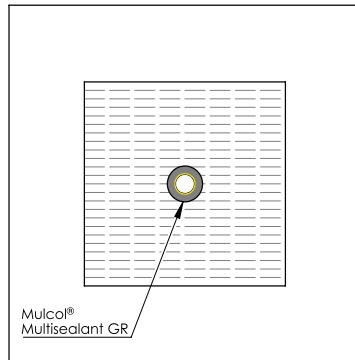
Drawing: PBrf.E-CT-MFB1-B3.1.10.C

Services	Number of pipes	Product	Sealing (mm)	Classification
CFS CSST gas pipe DN 15	≤ 4	Multicollar (bottom of floor) & Multitherm Bandage	Multimastic SP ≥ 5 x 5 (wxd)	EI 120 U/C
CFS CSST gas pipe DN 32	≤ 2			

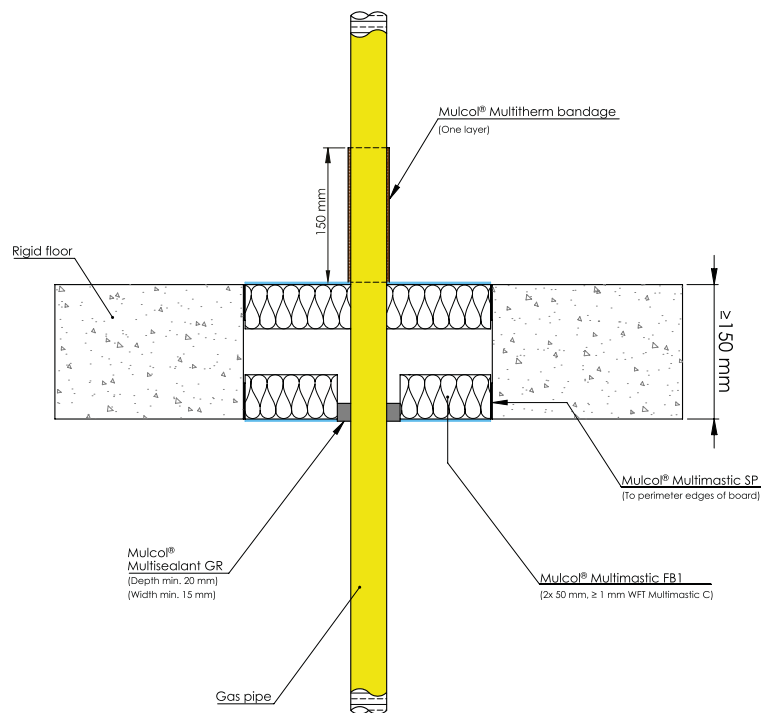
## B.1.19 Multimastic FB1 - 2x 50 mm cavity 50 mm - Gas pipes

### B.1.19.2 Corrugated stainless steel tube gas (CSST) pipes - Multisealant GR - Multitherm Bandage

Bottom view



Position seal:  
top bottom or anywhere  
in between



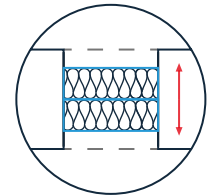
Drawing: PBrf.E-GFS-MFB1-B3.1.10.C

Services	Number of pipes	Product	Sealing (mm)	Classification
CFS CSST gas pipe DN 15	≤ 2	Multisealant GR (bottom of floor) & Multitherm Bandage (top of floor)	Multisealant GR ≥ 15 x 20 (wxd) bottom of floor	EI 120 U/C
CFS CSST gas pipe DN 32	1			



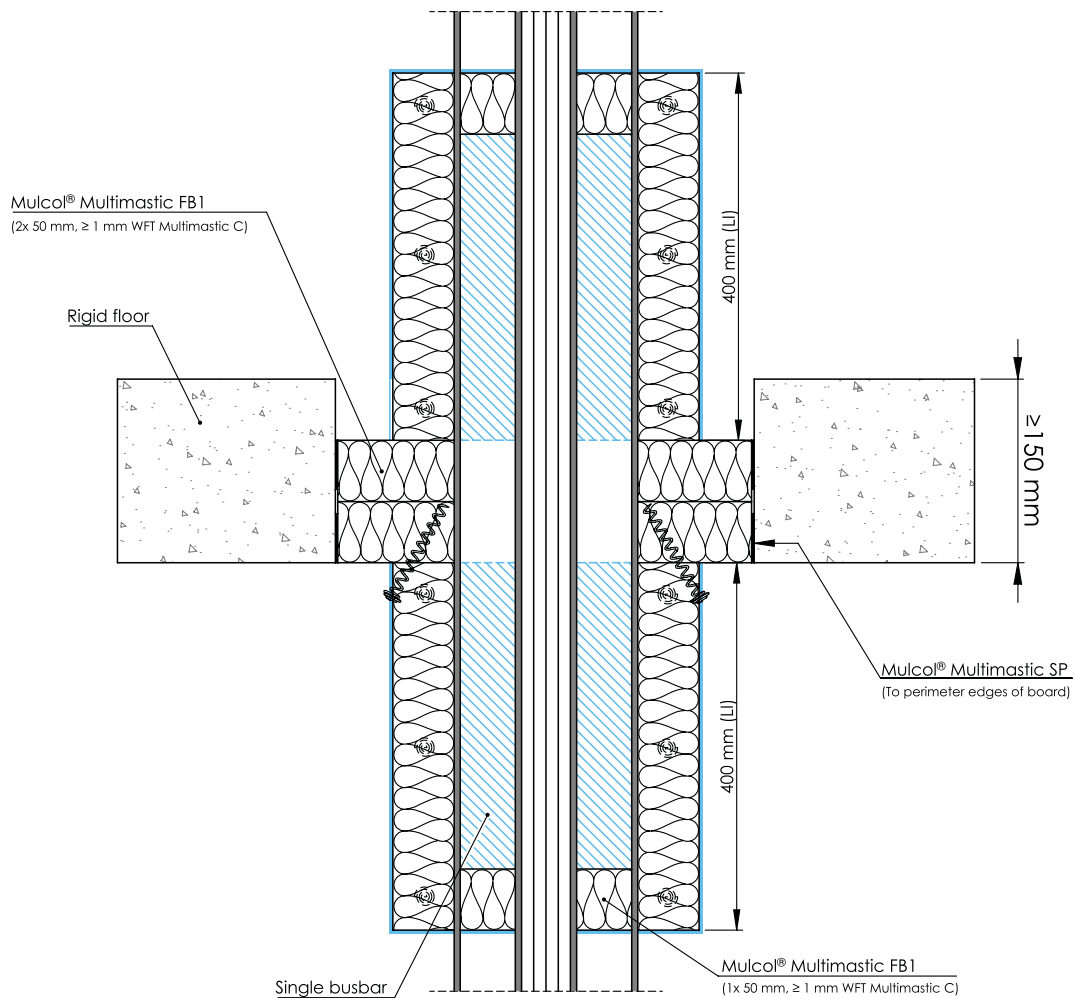
**B.1.20 Multimastic FB1 - 2x 50 mm no cavity - Busbars**

**B.1.20.1 Single busbar**



Position seal:  
top bottom or anywhere  
in between

Side view

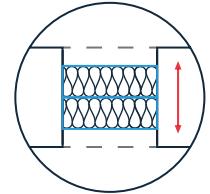


Drawing: PBrf.E-1BB-MFB1.2.10

Services	Service dimensions		Type	Insulation		Classification
	Outside dimension	Conductors		Thickness (mm)	Configuration	
Single busbar	≤ 150 x 250 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	<b>EI 120</b>

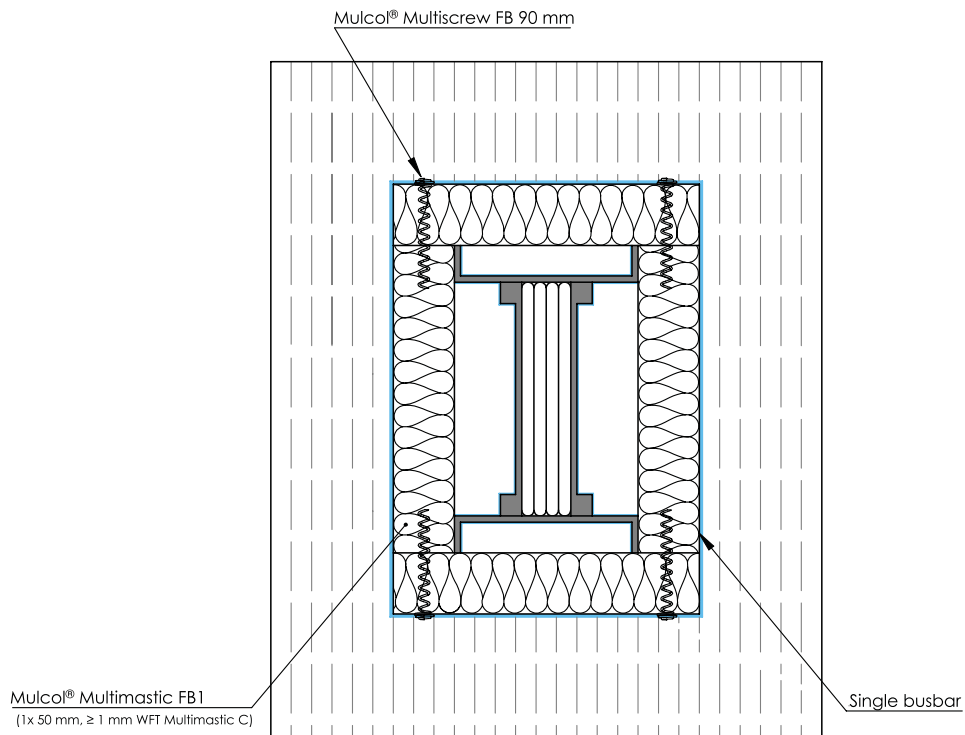
**B.1.20 Multimastic FB1 - 2x 50 mm no cavity - Busbars**

**B.1.20.1 Single busbar**



Position seal:  
top bottom or anywhere  
in between

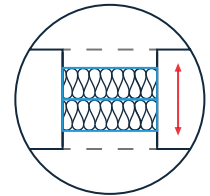
Bottom view



Drawing: PBrf.E-1BB-MFB1.2.10

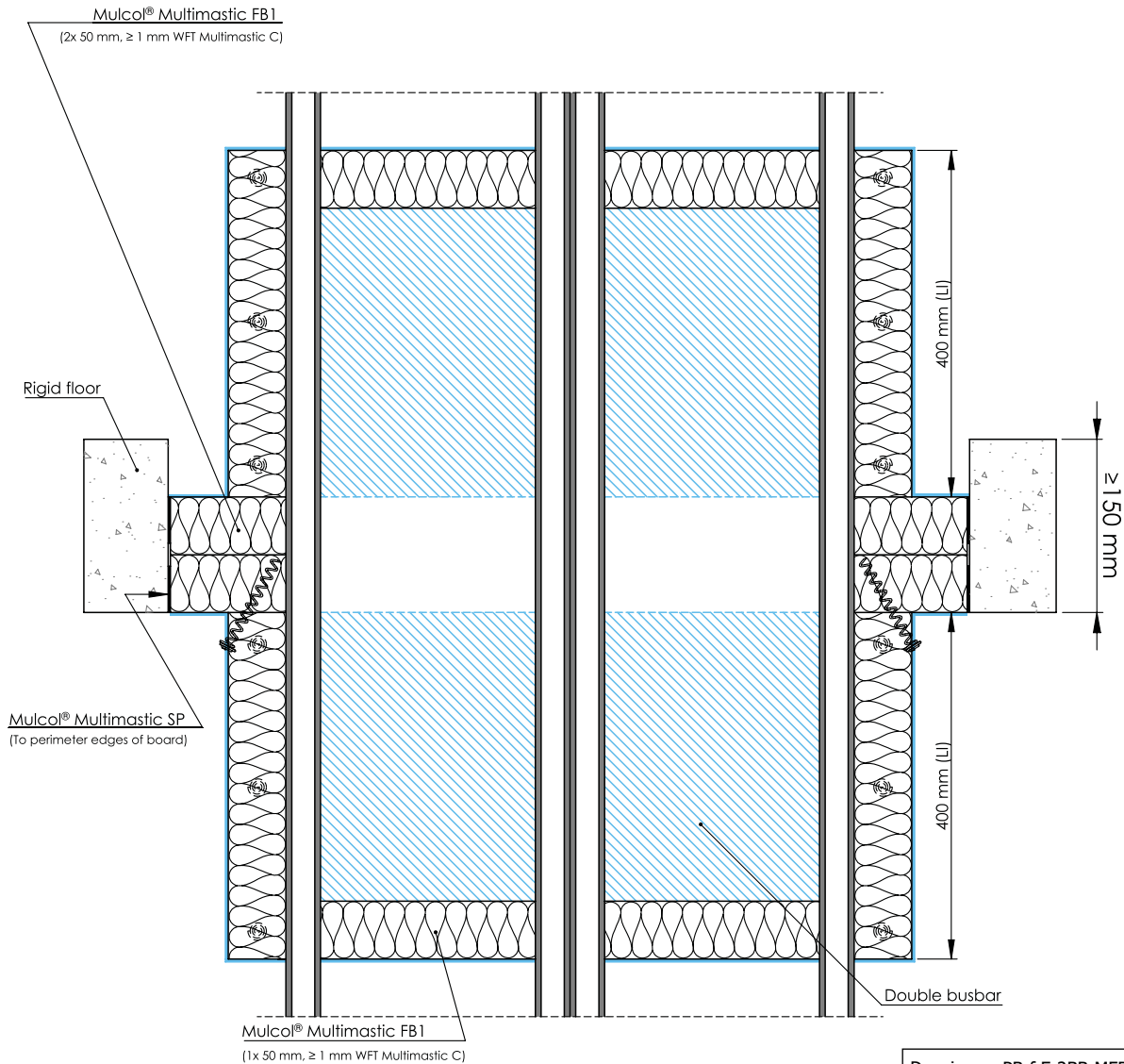
**B.1.20 Multimastic FB1 - 2x 50 mm no cavity - Busbars**

**B.1.20.2 Multiple busbars**



Position seal:  
top bottom or anywhere  
in between

Side view

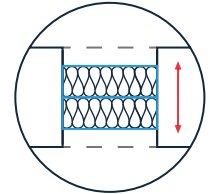


Drawing: PBrf.E-2BB-MFB1.2.10

Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductors	Type	Thickness (mm)	Configuration	
Double busbar	≤ 150 x 500 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	<b>EI 120</b>

**B.1.20 Multimastic FB1 - 2x 50 mm no cavity - Busbars**

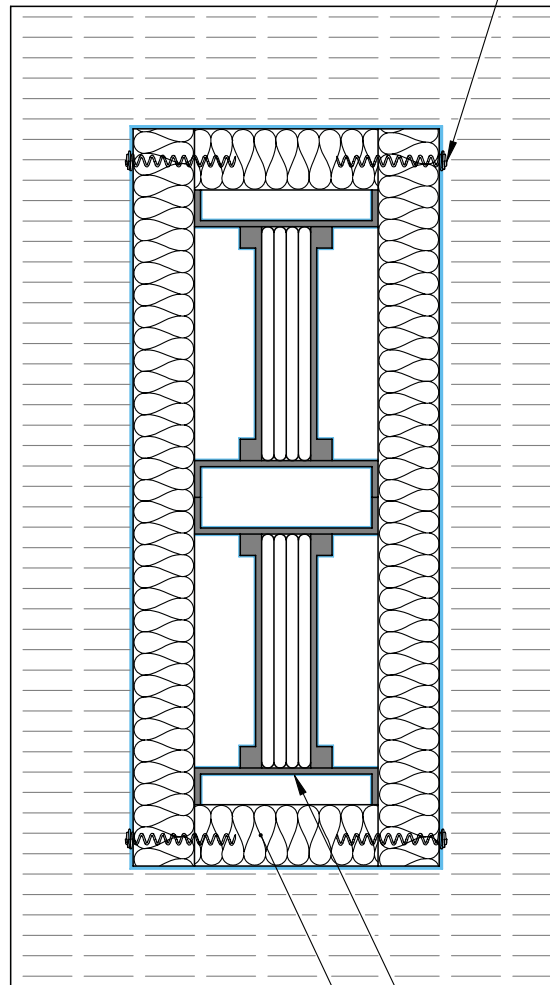
**B.1.20.2 Multiple busbars**



Position seal:  
top bottom or anywhere  
in between

Bottom view

Mulcol® Multiscrew FB 90 mm



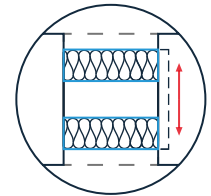
Mulcol® Multimastic FB1  
(1x 50 mm, ≥ 1 mm WFT Multimastic C)

Double busbar

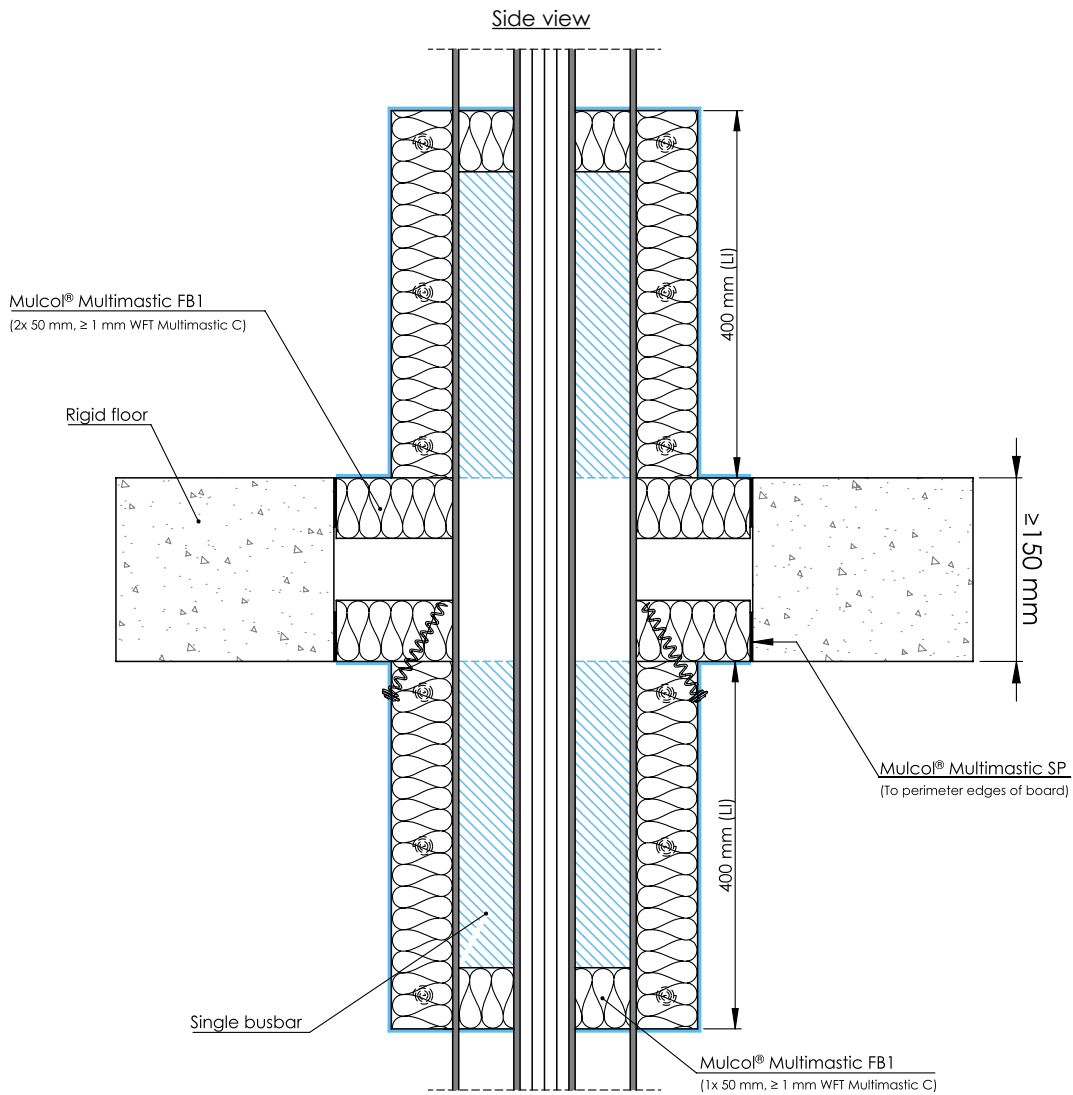
Drawing: PBrf-2BB-MFB1.2.10

**B.1.21 Multimastic FB1 - 2x 50 mm cavity 50 mm - Busbars**

**B.1.21.1 Single busbar**



Position seal:  
top bottom or anywhere  
in between

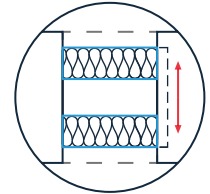


Drawing: PBrf.E-1BB-MFB1.2.10.C

Services	Service dimensions		Type	Insulation		Classification
	Outside dimension	Conductors		Thickness (mm)	Configuration	
Single busbar	≤ 150 x 250 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	EI 120

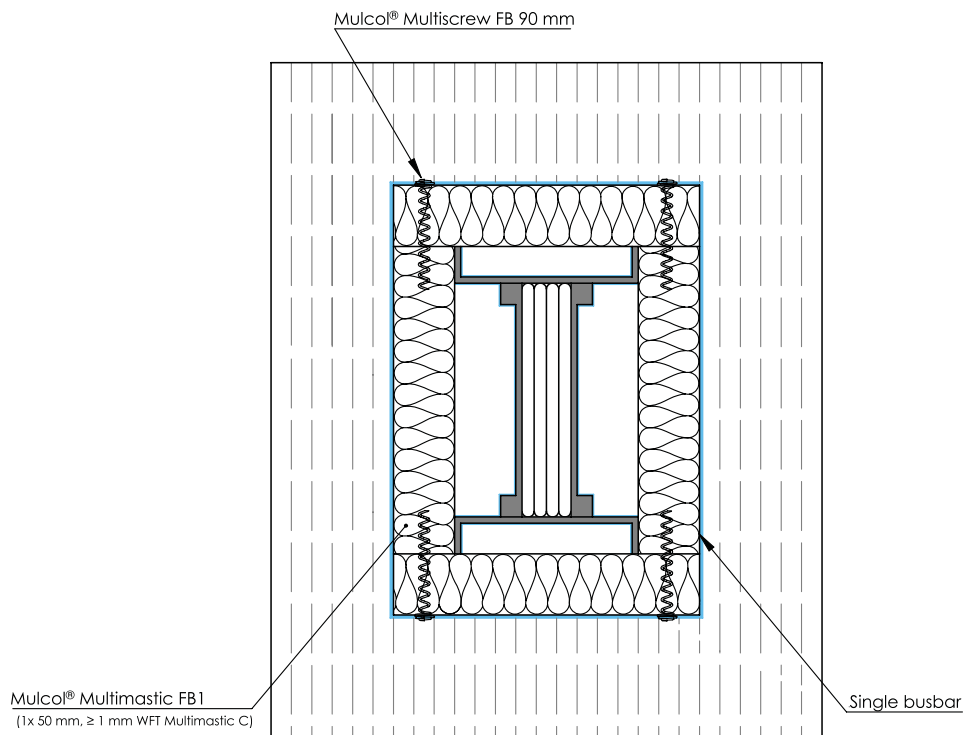
**B.1.21 Multimastic FB1 - 2x 50 mm cavity 50 mm - Busbars**

**B.1.21.1 Single busbar**



Position seal:  
top bottom or anywhere  
in between

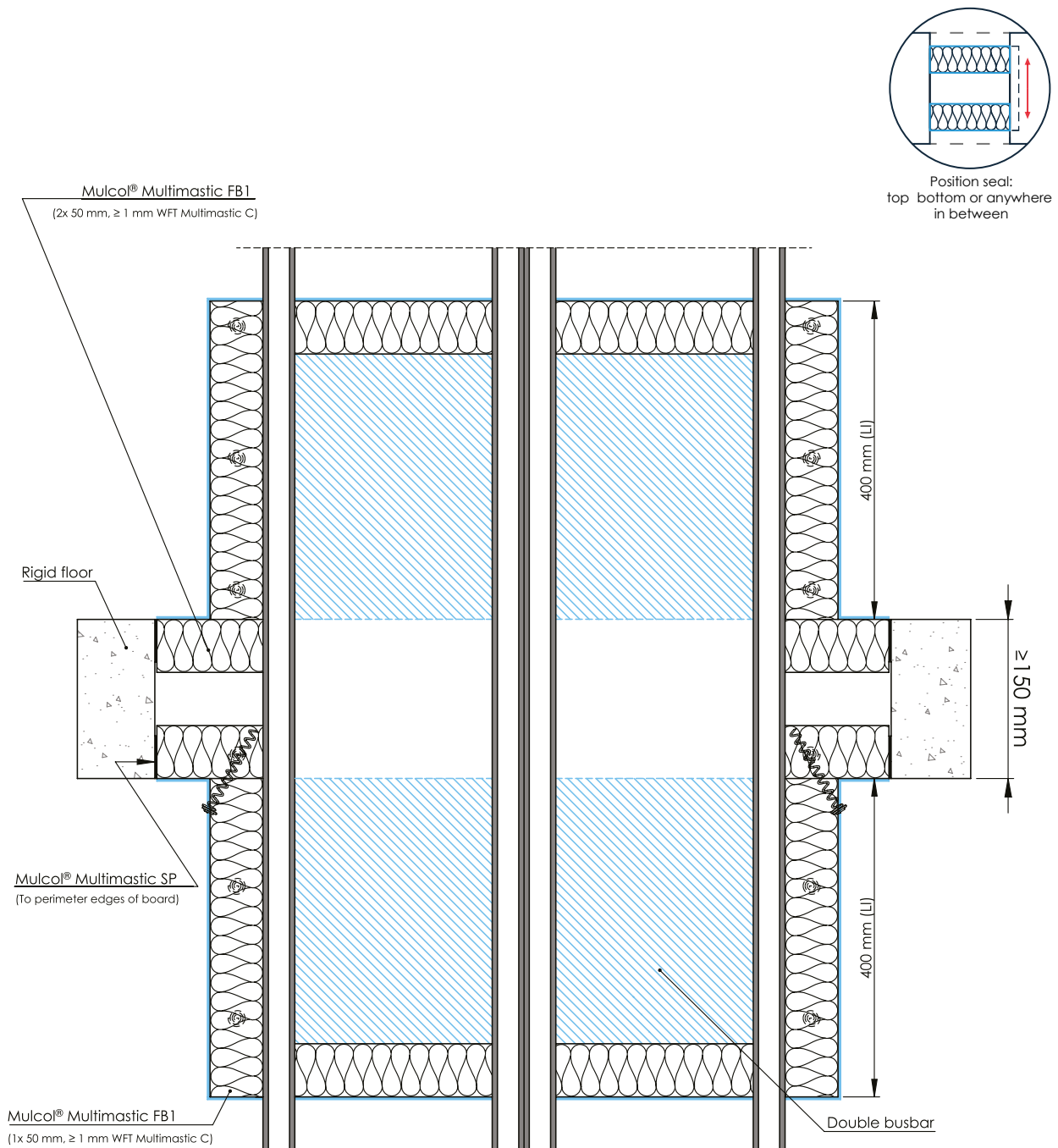
Bottom view



Drawing: PBrf.E-1BB-MFB1.2.10.C

**B.1.21 Multimastic FB1 - 2x 50 mm cavity 50 mm - Busbars**

**B.1.21.2 Multiple busbars**

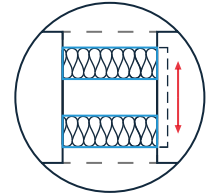


Drawing: PBrf.E-2BB-MFB1.2.10.C

Services	Service dimensions		Type	Insulation		Classification
	Outside dimension	Conductors		Thickness (mm)	Configuration	
Double busbar	≤ 150 x 500 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	EI 120

**B.1.21 Multimastic FB1 - 2x 50 mm cavity 50 mm - Busbars**

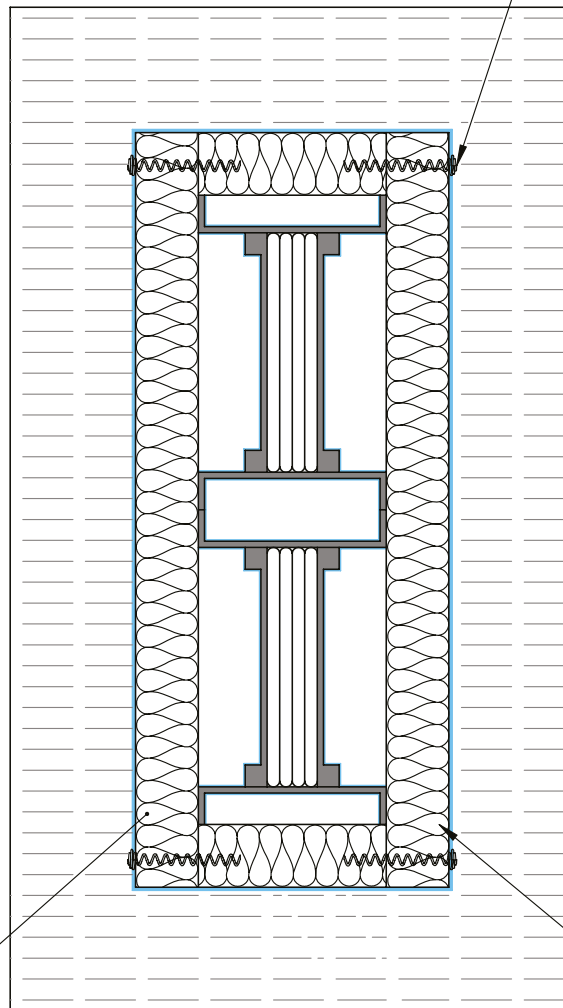
**B.1.21.2 Multiple busbars**



Position seal:  
top bottom or anywhere  
in between

Bottom view

Mulcol® Multiscrew FB 90 mm



Mulcol® Multimastic FB1  
(1x 50 mm, ≥ 1 mm WFT Multimastic C)

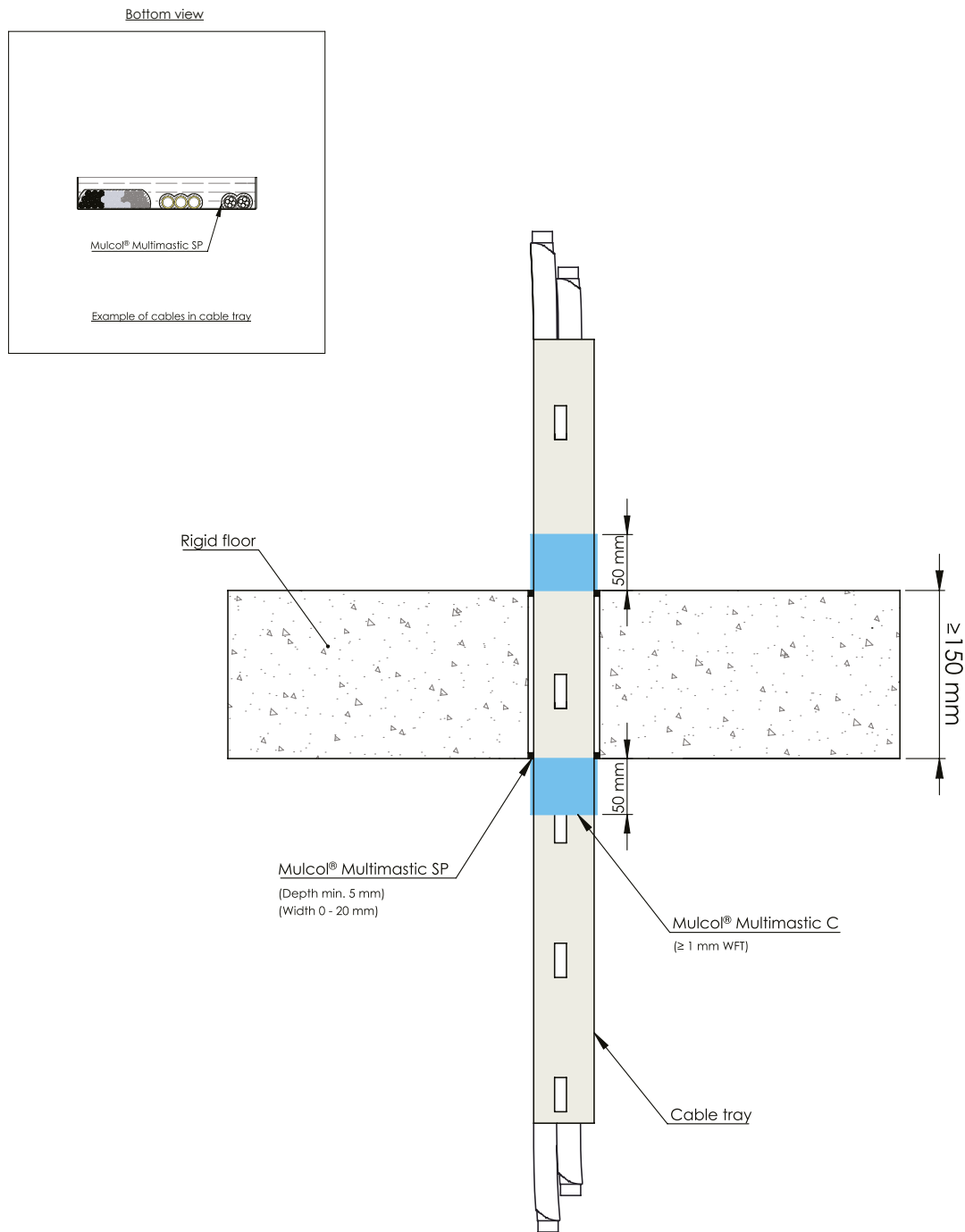
Double busbar

Drawing: PBrf.E-2BB-MFB1.2.10.C



## B.1.22 Directly through floor - Cables, trays and conduits

### B.1.22.1 Cables, trays and conduits - Multimastic C - 50 mm

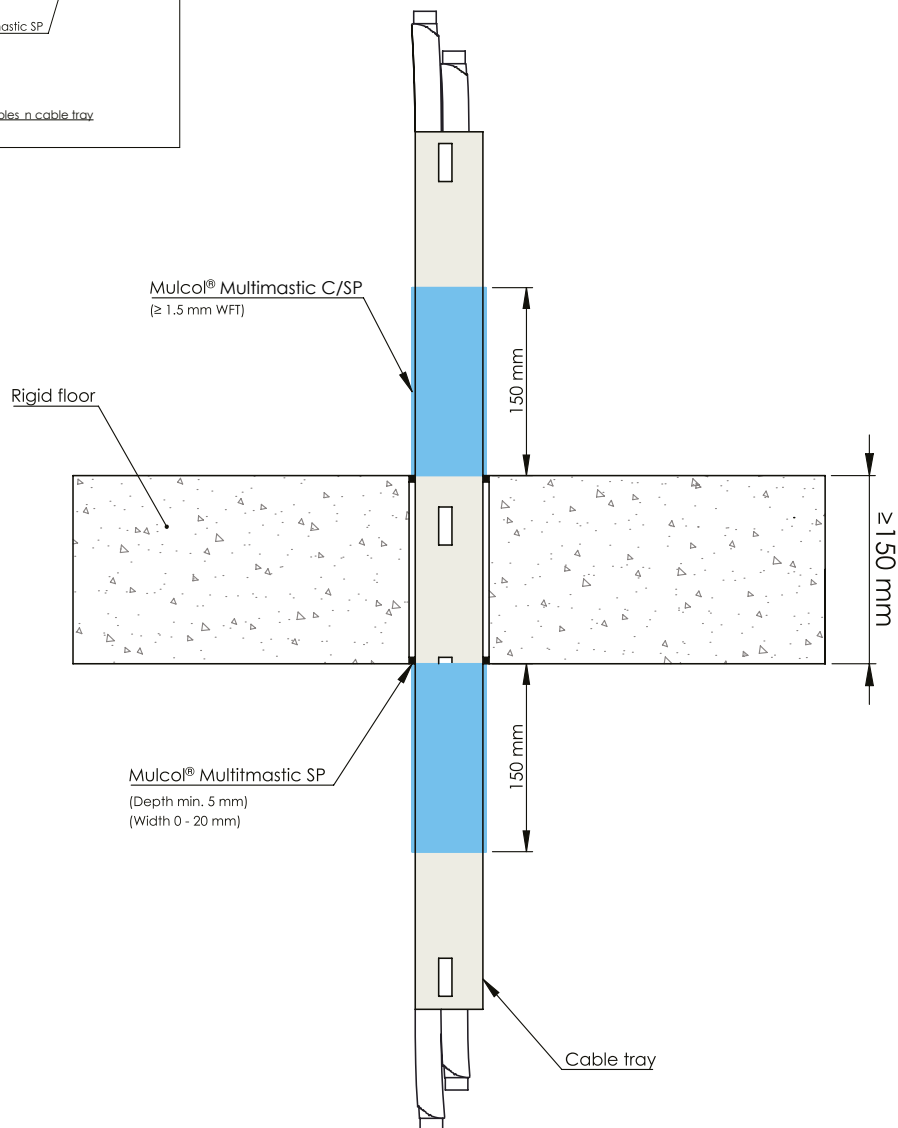
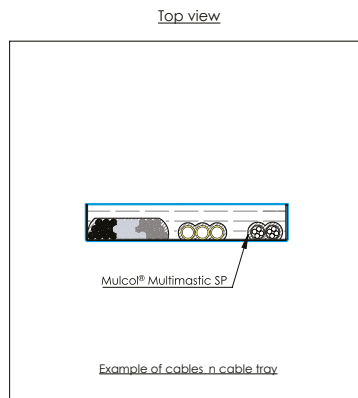


Drawing: RF.E-PB-CT-0.10

Services	Coating	Classification
Metal cable ladders	Coat back 50 mm ≥ 1 mm WFT Multimastic C	EI 90, E 120
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		EI 60, E 120
Cables ≤ Ø 50 mm		EI 90 U/C, E 120 U/C
Plastic conduits ≤ Ø 16 mm		EI 45, E 120
Non sheathed cables ≤ Ø 24 mm		

## B.1.22 Directly through floor - Cables, trays and conduits

### B.1.22.2 Cables, trays and conduits - Multimastic C - 150 mm



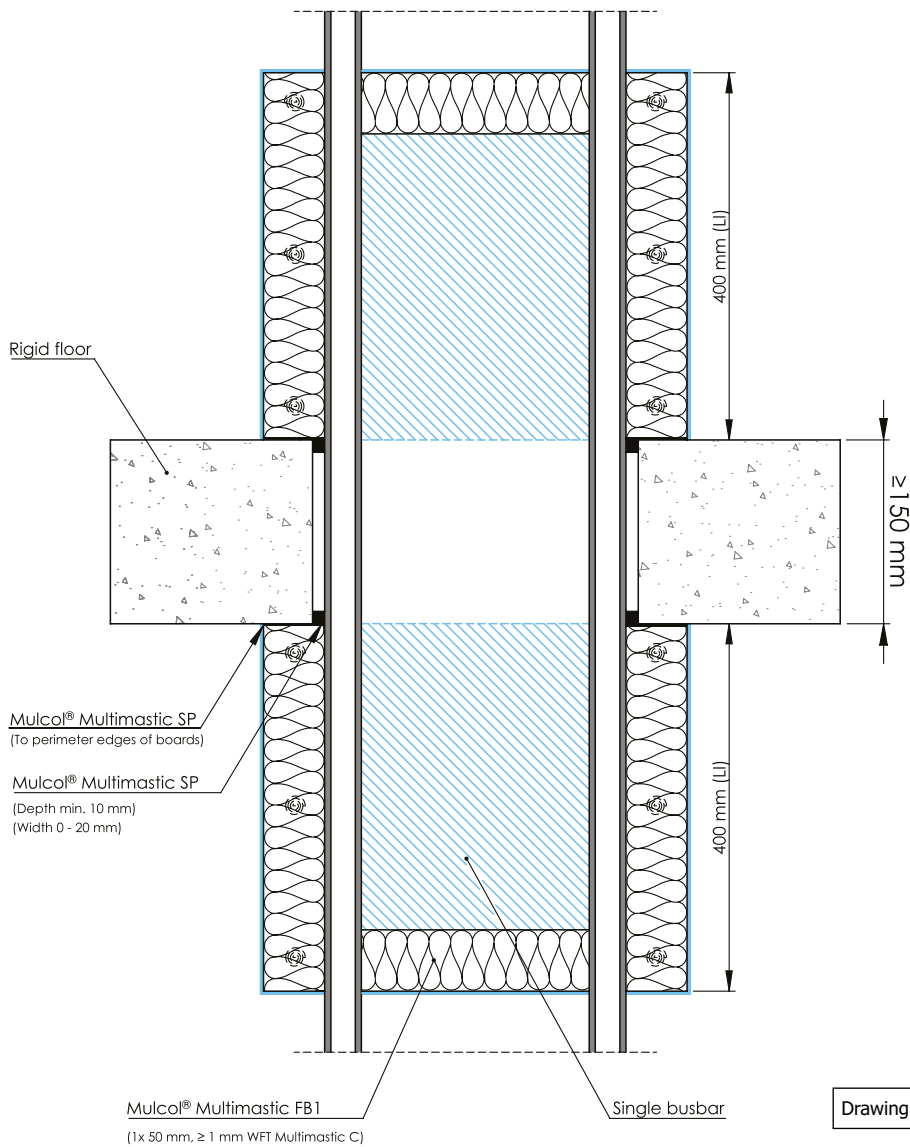
Drawing: RF.E-PB-CT-0.12

Services	Coating	Classification
Metal cable ladders	Coat back 150 mm ≥ 1.5 mm WFT Multimastic SP/C	<b>EI 120</b>
Metal (non-)perforated cable trays		
Steel wire mesh cable trays (baskets)		
Non sheathed cables ≤ Ø 17 mm		
Cables ≤ Ø 21 mm in a tied bundle ≤ Ø 100 mm		
Plastic conduits ≤ Ø 16 mm		<b>EI 120 U/C</b>
Cables ≤ Ø 80 mm		<b>EI 90, E 120</b>

**B.1.23 Directly through floor - Busbars**

**B.1.23.1 Single busbar**

Side view



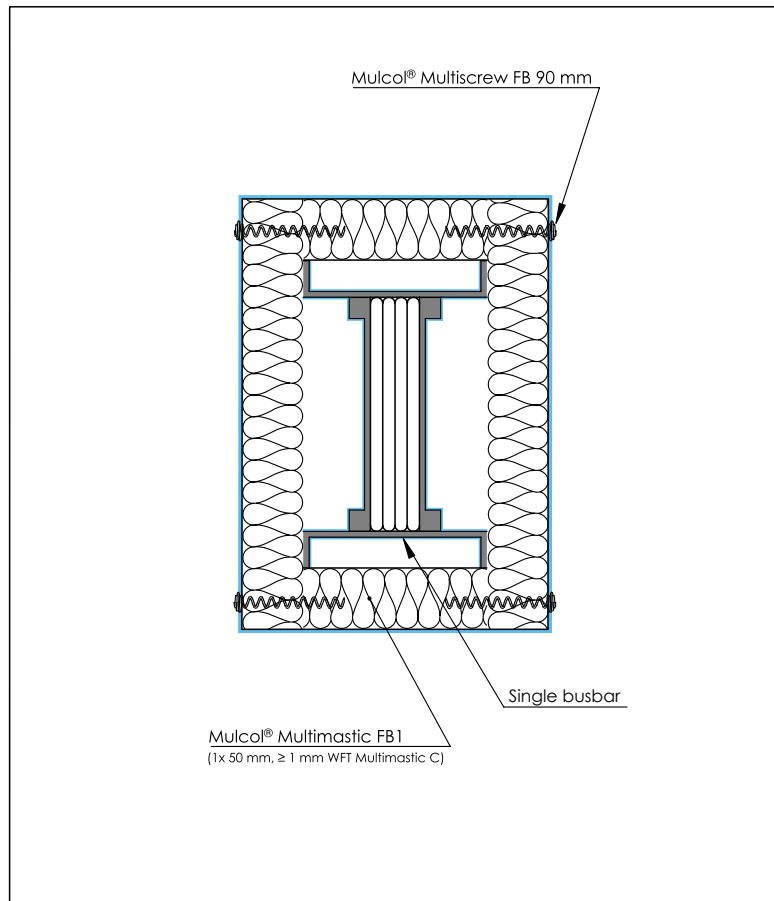
Drawing: RF.E-1BB-0.10

Services	Service dimensions		Type	Insulation		Classification
	Outside dimension	Conductors		Thickness (mm)	Configuration	
Single busbar	≤ 150 x 250 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	<b>EI 120</b>

**B.1.23** Directly through floor - Busbars

**B.1.23.1** Single busbar

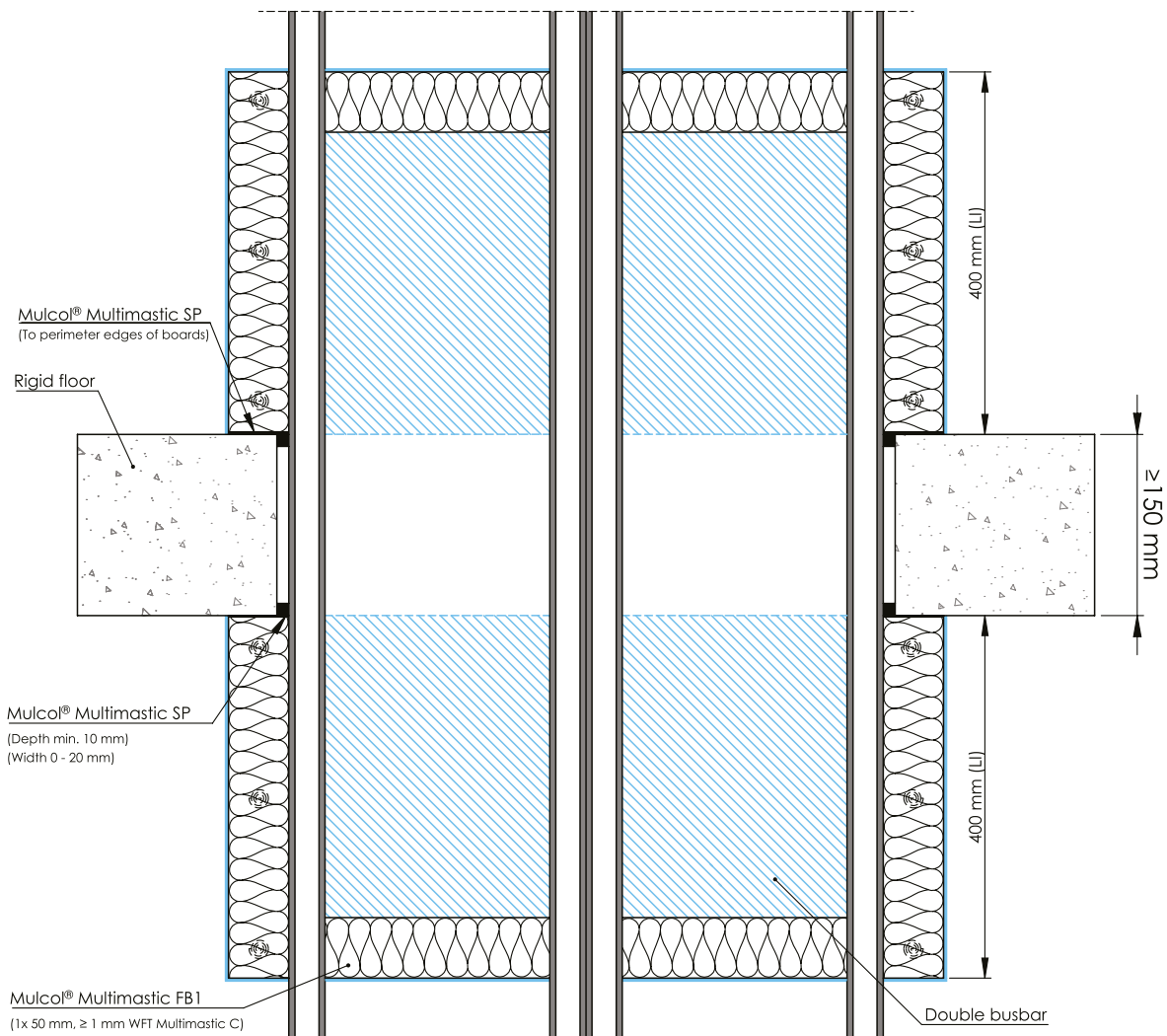
Bottom view



Drawing: RF.E-1BB-0.10

## B.1.23 Directly through floor - Busbars

### B.1.23.2 Multiple busbars



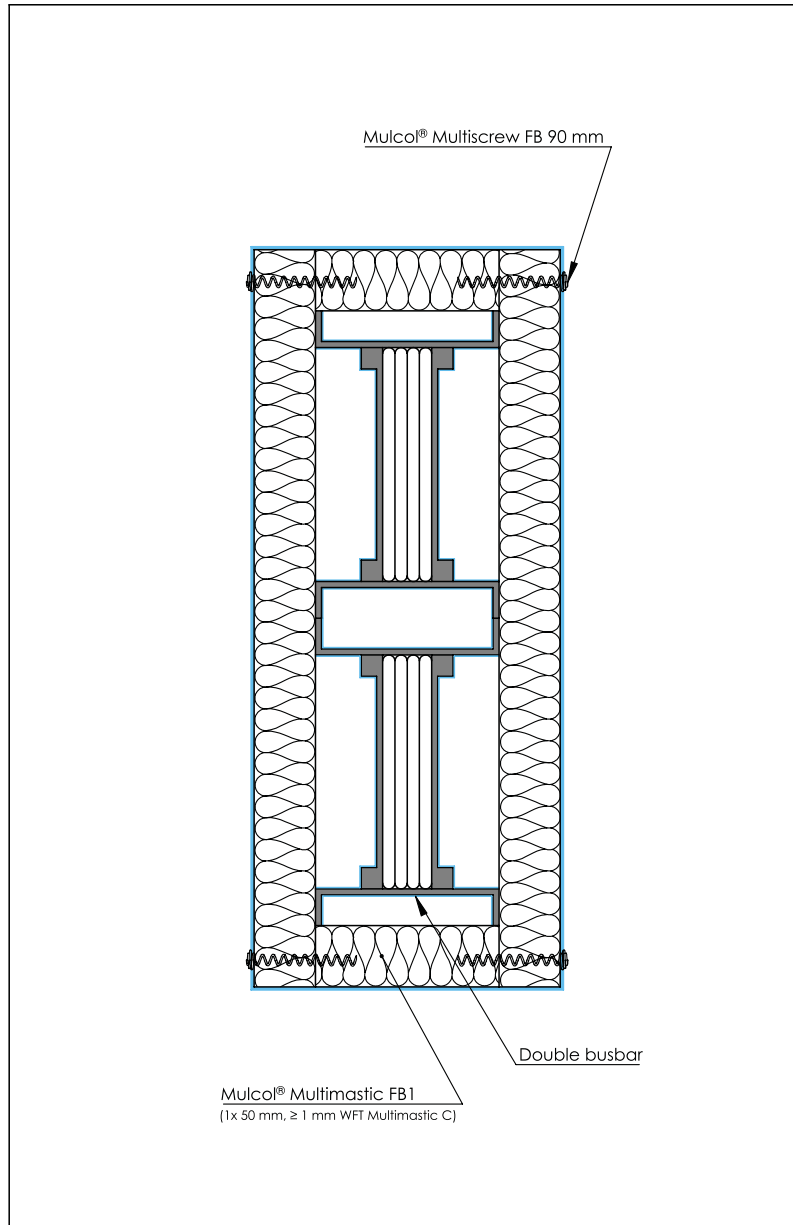
Drawing: RF.E-2BB-0.10

Services	Service dimensions		Type	Insulation		Classification
	Outside dimension	Conductors		Thickness (mm)	Configuration	
Double busbar	≤ 150 x 500 mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB1	50	LI 400 / CI	EI 120

**B.1.23 Directly through floor - Busbars**

**B.1.23.2 Multiple busbars**

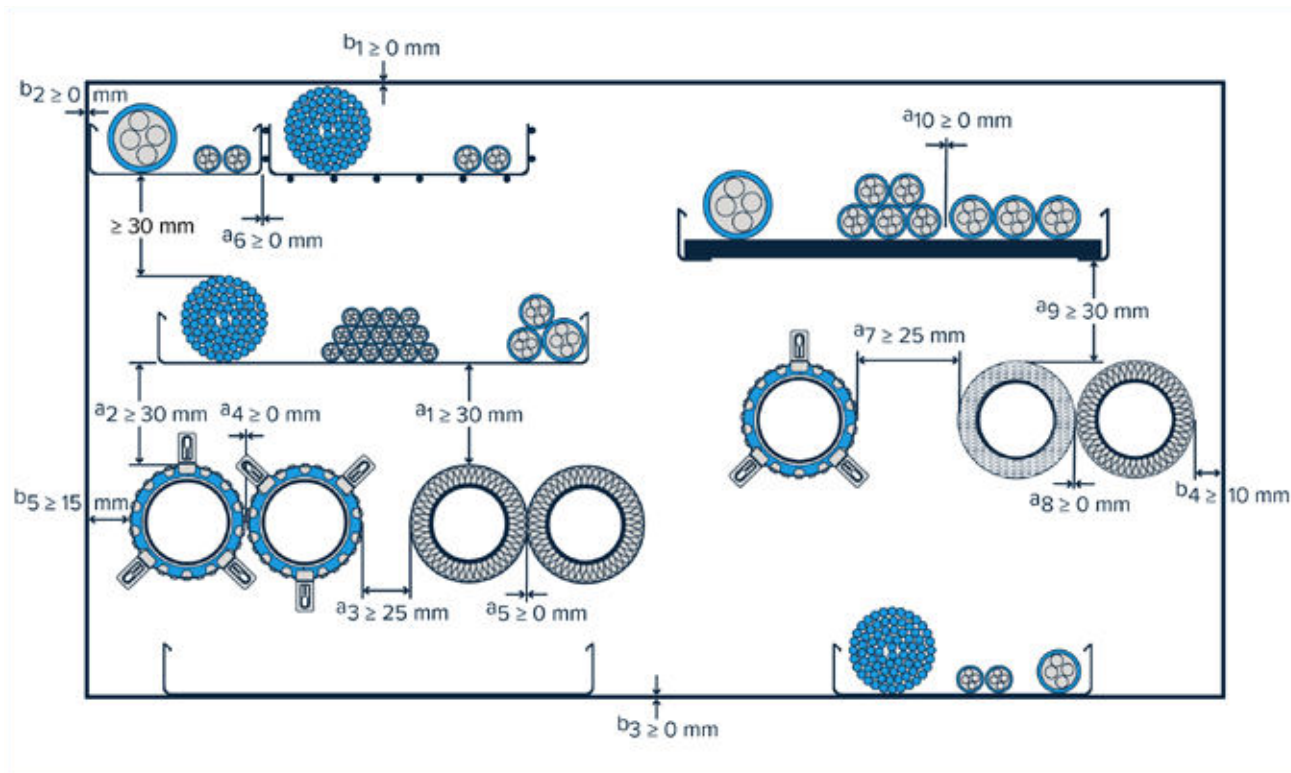
Bottom view



Drawing: RF.E-2BB-0.10

## C.1 Flexible and rigid wall - General

### C.1.1 Mutual distances & distance to first support



#### Mutual distances Mixed Penetration Seal – Mulcol® Multimastic C System

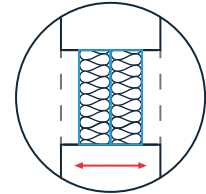
- $a_1$  Distance between cables/cable trays and metal pipes
- $a_2$  Distance between cables/cable trays and plastic pipes
- $a_3$  Distance between metal pipes and plastic pipes
- $a_4$  Distance between plastic pipes
- $a_5$  Distance between metal pipes with non-combustible insulation
- $a_6$  Distance between cable trays
- $a_7$  Distance between plastic pipes and pipes with combustible insulation
- $a_8$  Distance between pipes with non-combustible insulation and pipes with combustible insulation
- $a_9$  Distance between cables/cable trays and pipes with combustible insulation
- $a_{10}$  Distance between cables stacked together or in a row
- $b_1$  Distance between cables/cable trays and the upper seal edge
- $b_2$  Distance between cables/cable trays and the side seal edge
- $b_3$  Distance between cables/cable tray and the lower seal edge
- $b_4$  Distance between metal pipes and all seal edges
- $b_5$  Distance between plastic pipes and all seal edges

#### Service support construction

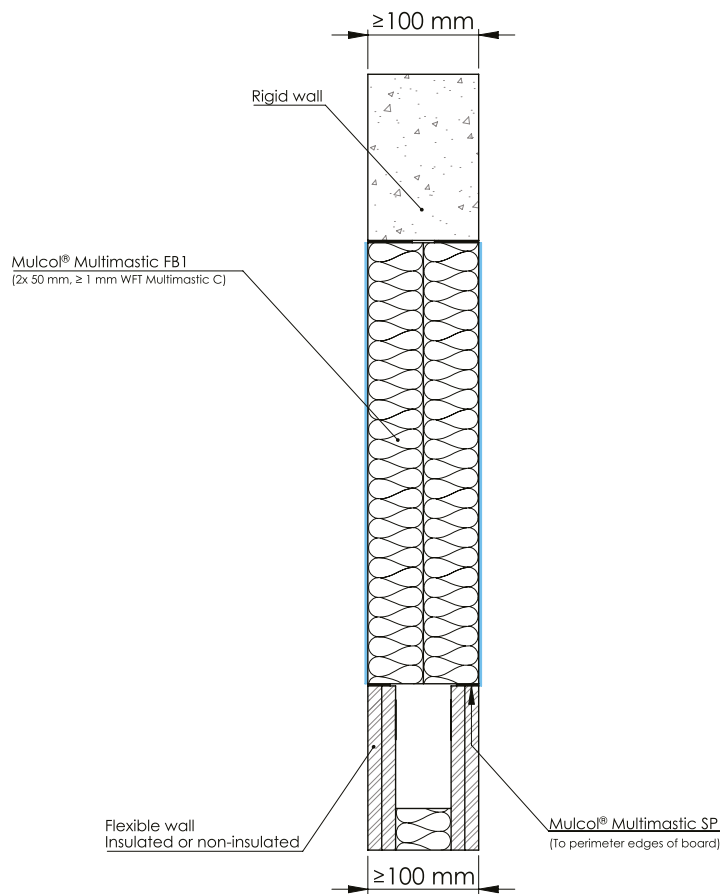
First support for all services at 450 mm, except cable trays at 250 mm.

**C.1.2 Flexible and rigid wall - Maximum seal dimensions**

**C.1.2.1 Multimastic FB1 - 2x 50 mm no aperture framing**



Position seal:  
right left or anywhere  
in between



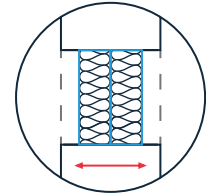
Drawing: PBfw.E-BS-MFB1.2.10

Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3 m <sup>2</sup>	<b>EI 60</b>
Maximum circular seal size Ø 1954 mm	
Maximum seal size 1200 x 1200 mm With a maximum surface of 1.44 m <sup>2</sup>	<b>EI 60, E 90</b>
Maximum circular seal size Ø 1354 mm	
Maximum seal size 625 x 475 mm (w x h) With a maximum surface of 0.24 m <sup>2</sup>	<b>EI 120</b>
Maximum circular seal size Ø 550 mm	

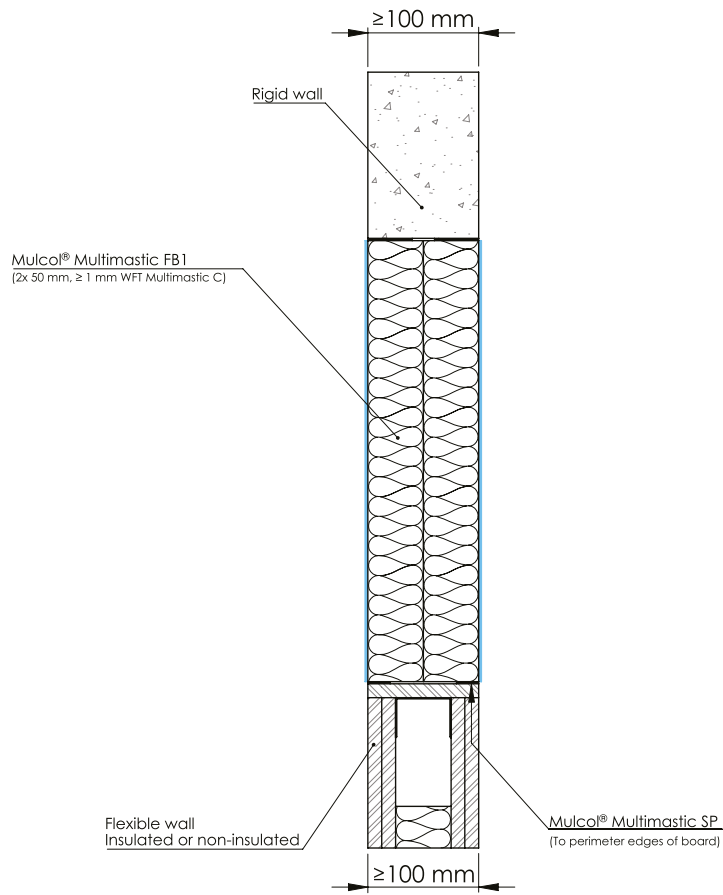


**C.1.2 Flexible and rigid wall - General - Maximum seal dimensions**

**C.1.2.2 Multimastic FB1 - 2x 50 mm with aperture framing**



Position seal:  
right left or anywhere  
in between

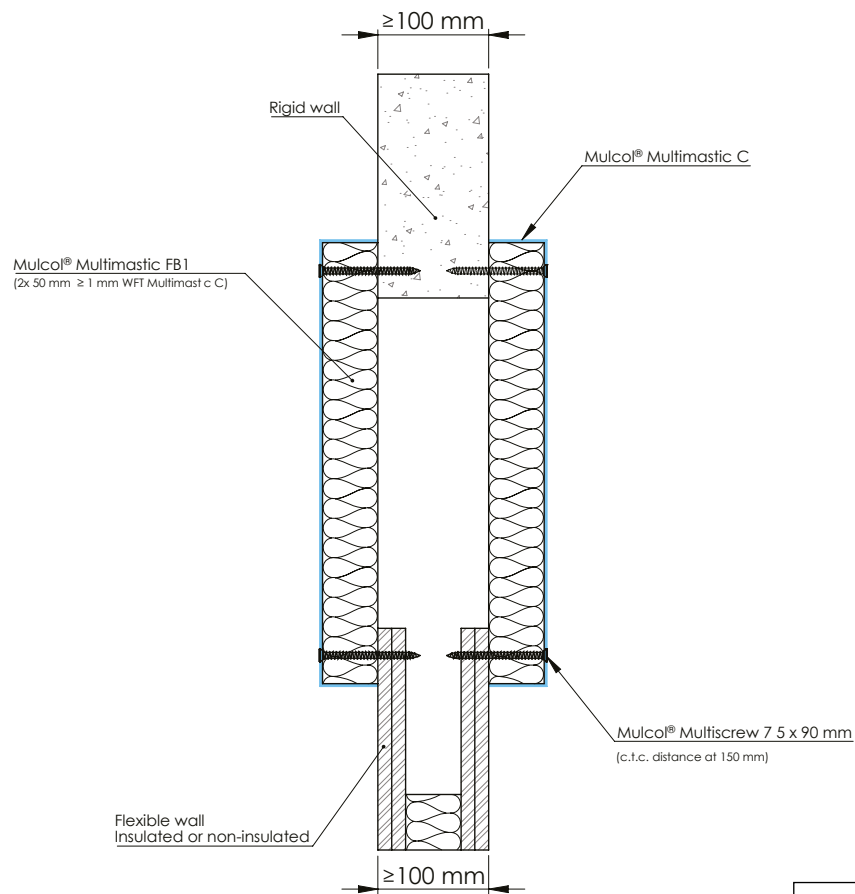


Drawing: PBfw.E-BS-A-MFB1.2.10

Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3 m <sup>2</sup>	EI 120
Maximum circular seal size Ø 1954 mm	
Maximum seal size 1200 x 2000 mm (width x height or height x width) With a maximum surface of 2.44 m <sup>2</sup>	EI 180
Maximum circular seal size Ø 1748 mm	

**C.1.2 Flexible and rigid wall - General - Maximum seal dimensions**

**C.1.2.3 Maximum seal dimensions - Multimastic FB1 - 2x 50 mm - Pattress**

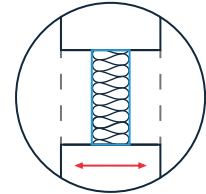


Drawing: PBPfw-BS-MFB1.2.10

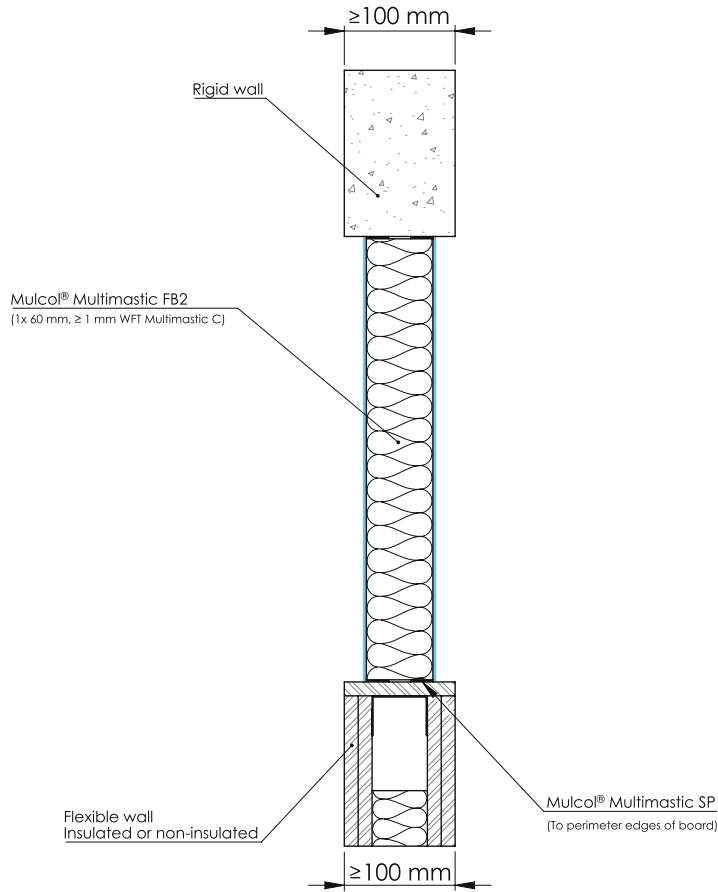
Services	Classification
Maximum seal size 750 x 1250 mm (width x height or height x width) With a maximum surface of 0.75 m <sup>2</sup>	<b>EI 120</b>
Maximum circular seal size $\varnothing$ 1093 mm	

**C.1.2 Flexible and rigid wall - General - Maximum seal dimensions**

**C.1.2.4 Maximum seal dimensions - Multimastic FB2 - 1x 60 mm with aperture framing**



Position seal:  
right left or anywhere  
in between

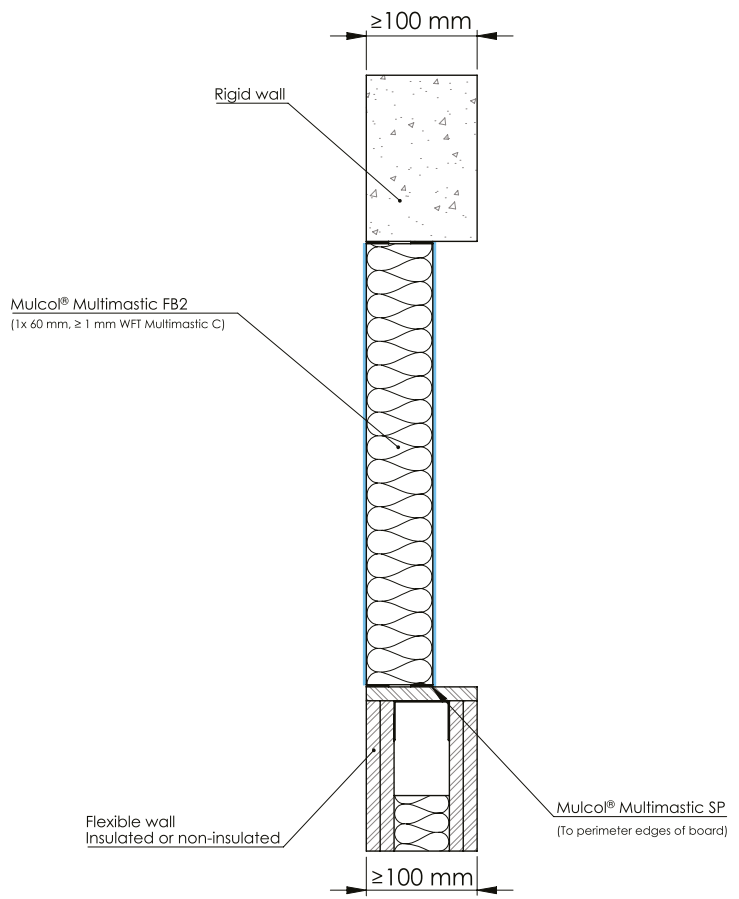


Drawing: PBfw.E-BS-MFB2.1.10

Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3.0 m <sup>2</sup>	EI 60
Maximum circular seal size Ø 1954 mm	
Maximum seal size 1200 x 1200 mm With a maximum surface of 1.44 m <sup>2</sup>	EI 60, E 90
Maximum circular seal size Ø 1354 mm	
Maximum seal size 563 x 525 mm (width x height or height x width) With a maximum surface of 0.24 m <sup>2</sup>	EI 90
Maximum circular seal size Ø 548 mm	
Maximum seal size 450 x 420 mm (width x height or height x width) With a maximum surface of 0.19 m <sup>2</sup>	EI 120
Maximum circular seal size Ø 491 mm	

**C.1.2 Flexible and rigid wall - General - Maximum seal dimensions**

**C.1.2.5 Maximum seal dimensions - Multimastic FB2 - 1x 60 mm with aperture framing**

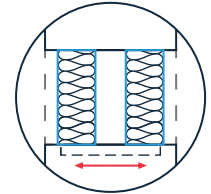


Drawing: PBfw.E-BS-fs-MFB2.1.10

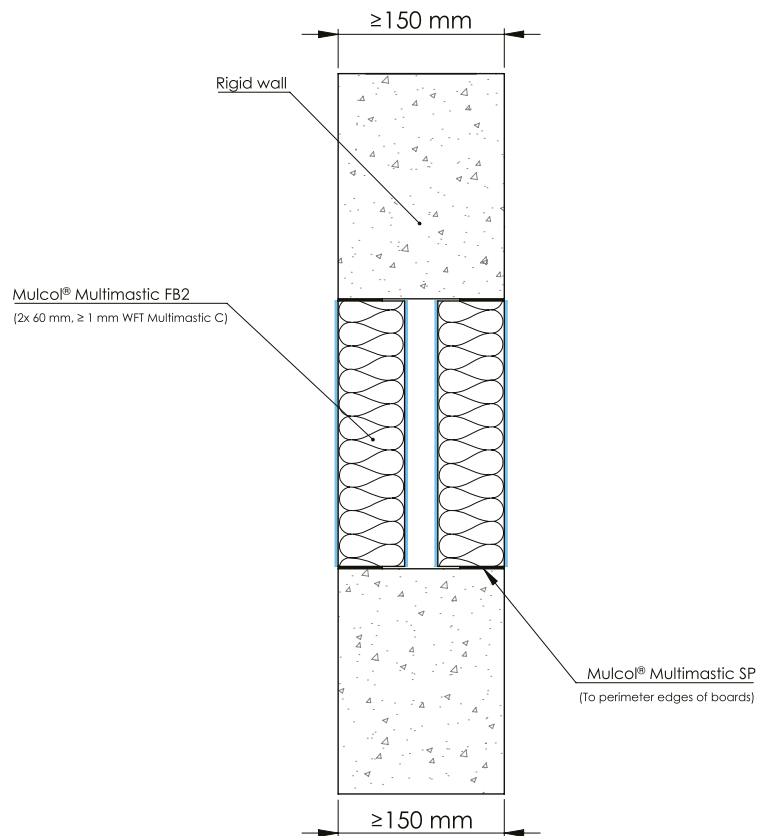
Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3.0 m <sup>2</sup>	EI 60
Maximum circular seal size Ø 1954 mm	
Maximum seal size 1200 x 1200 mm With a maximum surface of 1.44 m <sup>2</sup>	EI 60, E 90
Maximum circular seal size Ø 1354 mm	
Maximum seal size 563 x 525 mm (width x height or height x width) With a maximum surface of 0.24 m <sup>2</sup>	EI 90
Maximum circular seal size Ø 548 mm	
Maximum seal size 450 x 420 mm (width x height or height x width) With a maximum surface of 0.19 m <sup>2</sup>	EI 120
Maximum circular seal size Ø 491 mm	

**C.1.2 Rigid wall - General - Maximum seal dimensions**

**C.1.2.6 Maximum seal dimensions - Multimastic FB2 - 2x 60 mm with cavity 30 mm**



Position seal:  
right left or any in between



Drawing: RW150.E-BS-MFB2.2.10

**Services**

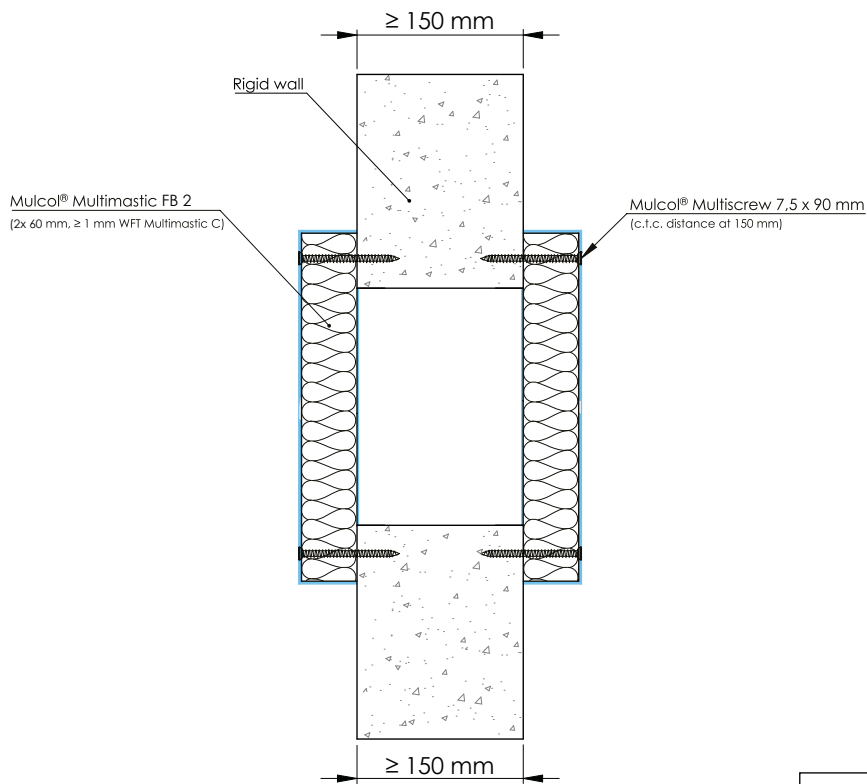
Maximum seal size 1200 x 1200 mm  
With a maximum surface of 1.44 m<sup>2</sup>  
Maximum circular seal size Ø 1354 mm

**Classification**

**EI 240**

**C.1.2 Rigid wall - General - Maximum seal dimensions**

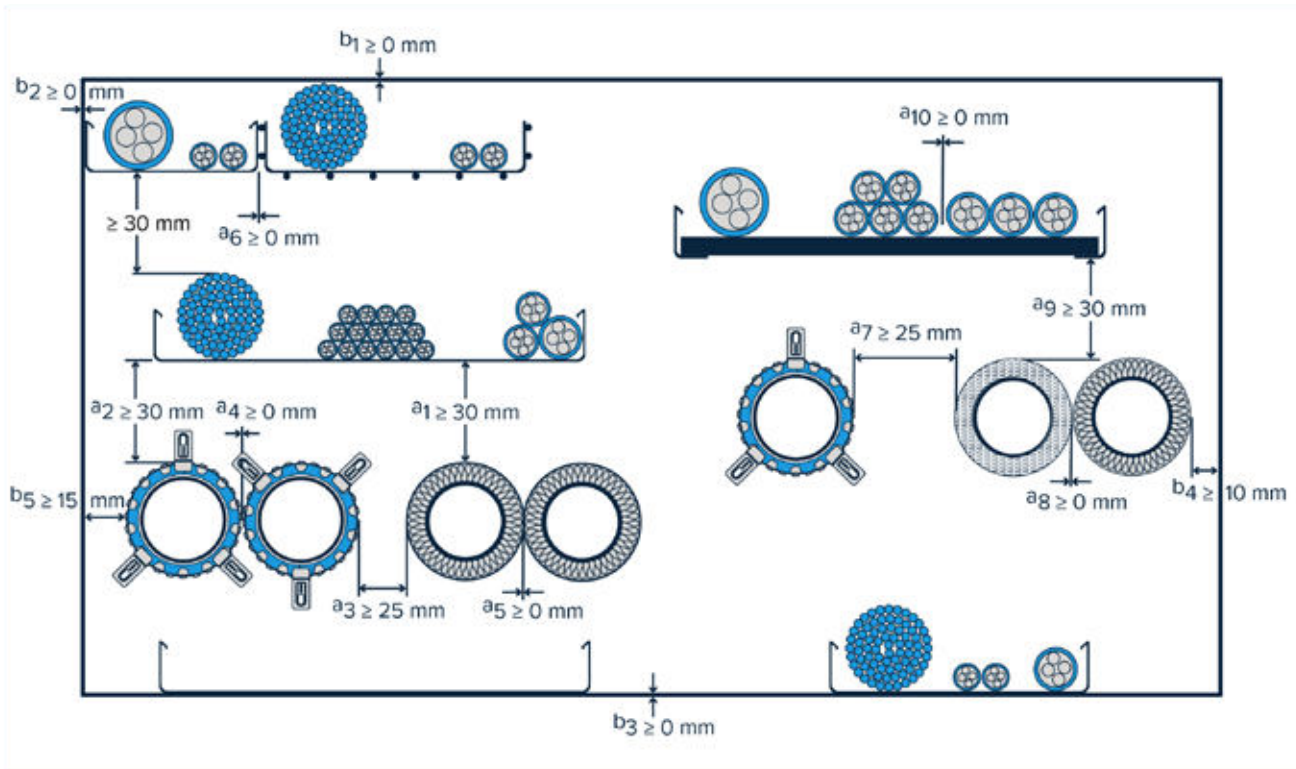
**C.1.2.7 Maximum seal dimensions - Multimastic FB1 - 2x 50 mm - Pattress fixed to wall**



Services	Classification
Maximum seal size 750 x 600 mm (width x height or height x width) With a maximum surface of 0.45 m <sup>2</sup>	<b>EI 240</b>
Maximum circular seal size Ø 757 mm	

## C.2 Rigid floor - General

### C.2.1 Mutual distances & distance to first support



#### Mutual distances Mixed Penetration Seal – Mulcol® Multimastic C System

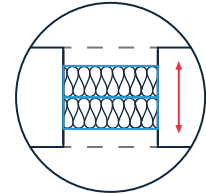
- $a_1$  Distance between cables/cable trays and metal pipes
- $a_2$  Distance between cables/cable trays and plastic pipes
- $a_3$  Distance between metal pipes and plastic pipes
- $a_4$  Distance between plastic pipes
- $a_5$  Distance between metal pipes with non-combustible insulation
- $a_6$  Distance between cable trays
- $a_7$  Distance between plastic pipes and pipes with combustible insulation
- $a_8$  Distance between pipes with non-combustible insulation and pipes with combustible insulation
- $a_9$  Distance between cables/cable trays and pipes with combustible insulation
- $a_{10}$  Distance between cables stacked together or in a row
- $b_1$  Distance between cables/cable trays and the upper seal edge
- $b_2$  Distance between cables/cable trays and the side seal edge
- $b_3$  Distance between cables/cable tray and the lower seal edge
- $b_4$  Distance between metal pipes and all seal edges
- $b_5$  Distance between plastic pipes and all seal edges

#### Service support construction

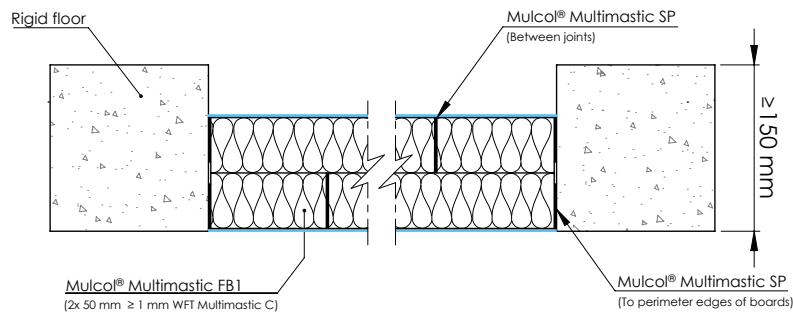
First support for all services at 450 mm, except cable trays at 250 mm.

**C.2.2 Rigid floor - General - Maximum seal dimensions**

**C.2.2.1 Maximum seal dimensions - Multimastic FB1 - 2x 50 mm no cavity**



Position seal:  
top bottom or anywhere  
in between



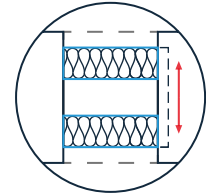
Drawing: PBrf.E-BS-MFB1.2.10

Services	Classification
Maximum seal size 1200 x 1200 mm	<b>EI 90, E 120</b>
Maximum seal size 9000 x 900 mm	
Maximum circular seal size Ø 1354 mm	
Maximum seal size 600 x 400 mm	<b>EI 120</b>
Maximum circular seal size Ø 553 mm	
Maximum seal size 450 x 450 mm	<b>EI 240</b>
Maximum circular seal size Ø 508 mm	

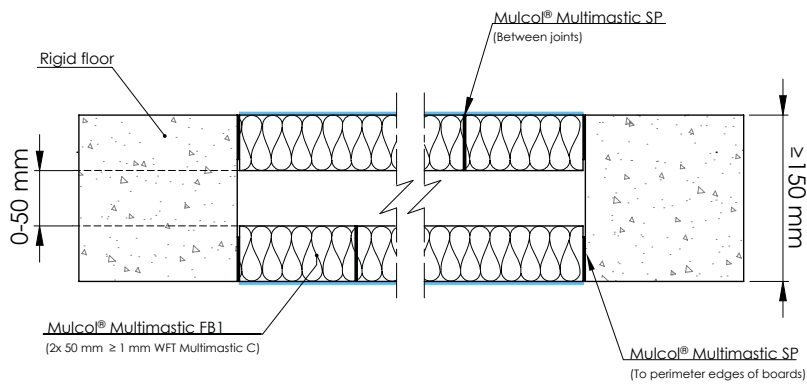


**C.2.2 Rigid floor - General - Maximum seal dimensions**

**C.2.2.2 Maximum seal dimensions - Multimastic FB1 - 2x 50 mm cavity 50 mm**



Position seal:  
top bottom or anywhere  
in between

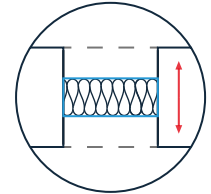


Drawing: PBrf.E-BS-MFB1.2.10.C

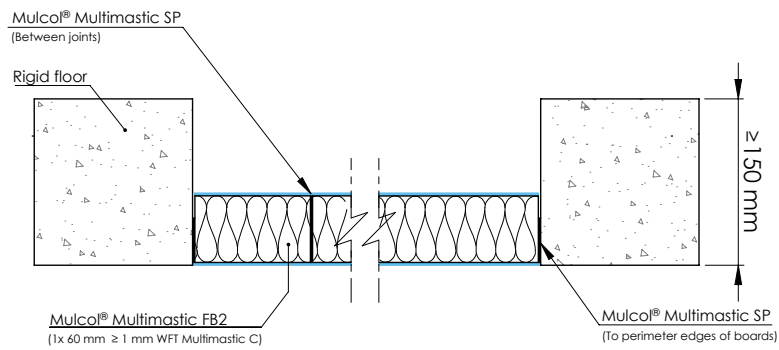
Services	Classification
Maximum seal size 1200 x 1200 mm Maximum seal size 9000 x 900 mm	<b>EI 90, E 120</b>
Maximum circular seal size Ø 1354 mm	
Maximum seal size 1200 x 600 mm Maximum seal size 9000 x 600 mm	<b>EI 120</b>
Maximum circular seal size Ø 957 mm	
Maximum seal size 450 x 450 mm Maximum circular seal size Ø 508 mm	<b>EI 240</b>

**C.2.2 Rigid floor - General - Maximum seal dimensions**

**C.2.2.3 Maximum seal dimensions - Multimastic FB2 - 1x 60 mm**



Position seal:  
top bottom or anywhere  
in between



Drawing: PBrf.E-BS-MFB2.1.10

Services	Classification
Maximum seal size 1200 x 1200 mm Maximum seal size 9000 x 900 mm	<b>EI 90, E 120</b>
Maximum circular seal size Ø 1354 mm	

## C.3 Wall configurations

### C.3.1 Allowed wall configurations

The use of Mulcol® Multimastic C is allowed in all double sided flexible wall constructions (with or without insulation) of the same or higher fire resistance classification in accordance with EN 13501-2, with a lining made of gypsum boards (EN 520) or Calcium Silicate boards which are CE marked for the application as lining of flexible wall, if their construction is in accordance with the rules given below.

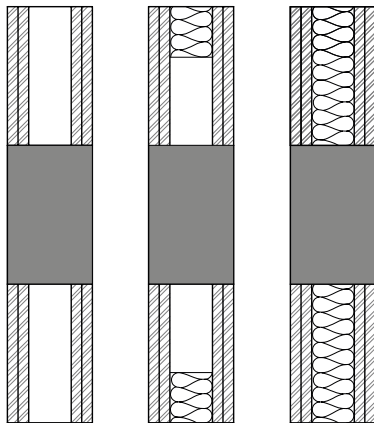
Field of direct application rules for double-sided flexible wall constructions:

- flexible wall constructions as shown in solutions given in Annex A of this document;
- flexible wall constructions with the same or higher number of board layers of the same or higher board thickness on each side of the wall, with insulation of any type or without insulation;
- flexible wall constructions with a reduced number of board layers but the same or higher board thickness on each side of the wall as tested, with insulation of any type or without insulation;
- flexible wall constructions with timber studs, no part of the penetration seal closer than 100 mm to any stud or nogging piece, the cavity closed between the penetration seal and the stud/nogging piece with minimum 100 mm of insulation of class A1 or A2 in accordance with EN 13501-1;
- rigid constructions of an overall thickness equal to or greater than that given in the solutions in Annex A and a minimum density of 350 kg/m<sup>3</sup>. In case of hollow brick wall the same rules regarding aperture framing apply as for double-sided flexible walls.

Allowed constructions (not limited by):

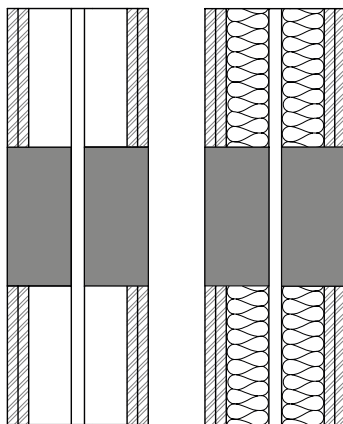
Flexible walls, not insulated, partially removed insulation or fully insulated with any type of insulation.

e.g.:



Double stud walls, separated by  $\geq 0$  mm, not insulated, partially insulated or fully insulated with any type of insulation.

e.g.:



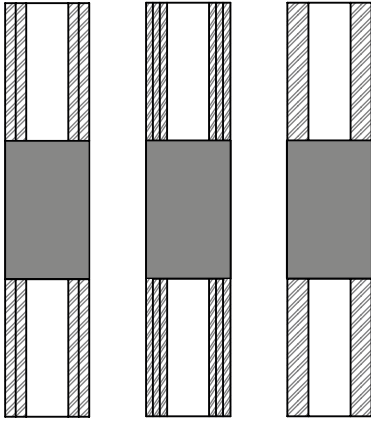
### C.3 Wall configurations

#### C.3.1 Allowed wall configurations

Walls with a reduced number of board layers but the same or higher overall lining thickness on each side of the wall as shown in the solutions in Annex A.

Walls with a higher number of board layers, where individual boards are thinner yet the overall lining thickness is at least that of shown in the solutions in Annex A.

e.g.:



Rigid walls with a density of  $\geq 350 \text{ kg/m}^3$

e.g.:

