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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)

European Technical Assessment

ETA 23/0057
of 13/10/2023

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® Multimortar

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

272 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® Multimortar is a gypsum based mortar material, 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) Mulcol® Multimortar is supplied as a dry material and is mixed with water to the required ratio prior to installation.
- 3) Mulcol® Multimortar when mixed is self-supporting in a wall and floor orientation and may be used with or without a permanent mineral fibre backing material, depending up the required application and classification (see Annex A/B/C). The products below can be used in conjunction with Mulcol® Multimortar. These products are subject to separate ETAs.
 - Mulcol® Multimastic SP, firestop mastic
 - Mulcol® Multimastic FB, firestop board
 - 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
- 4) The applicant has submitted a written declaration that Mulcol® Multimortar does 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® Multimortar 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® Multimortar 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.
 - 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/m³.
 - 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/m³.

* 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® Multimortar 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® Multimortar 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.
- 5) 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.
- 6) Type Z₂: Intended for uses in internal conditions with humidity lower than 85 % RH excluding temperatures below 0°C, without exposure to rain or UV.
- 7) Mutual distances between services and minimum support distances are given in Annex C.
- 8) 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.

- 9) 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 $\leq$ B-s1, d0 – e.g. ArmaFlex Ultima, Kaiflex KK Plus S1
 - Reaction to fire class $\leq$ B-s2, d0 – e.g. ArmaFlex AF EVO, Kaiflex KK Plus S2 / ST, K-Flex ST
 - Reaction to fire class $\leq$ B-s3, d0 – e.g. ArmaFlex AF / XG / SH, K-Flex H
 - Reaction to fire class $\leq$ C-s2, d0 – e.g. Kaiflex HT S2
 - Reaction to fire class $\leq$ 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).
- 10) 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 Climatic 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: Mortar		Intended use: Penetration Seal
Assesment method	Essential characteristic	Product Performance
<u>BWR 2 Safety in case of fire</u>		
EN 13501-1	Reaction to fire	A1
EN 13501-2	Resistance to fire	Annex A, B & C
<u>BWR 3 Hygiene, health and enviroment</u>		
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
<u>BWR 4 Safety in use</u>		
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 ₂
<u>BWR 5 Protection against noise</u>		
EN 10140-1,2,4,5 / EN ISO 7171-1	Airborne sound insulation	R _w (C;C _{tr}) = 37 (-4;-10) dB
<u>BWR 6 Energy economy and theat retention</u>		
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 Commission¹, 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).

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

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 23/0057 issued on 13/10/2023 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:

13 October 2023

Report by:



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

Annex - Resistance to Fire Classification - Mulcol® Multimortar

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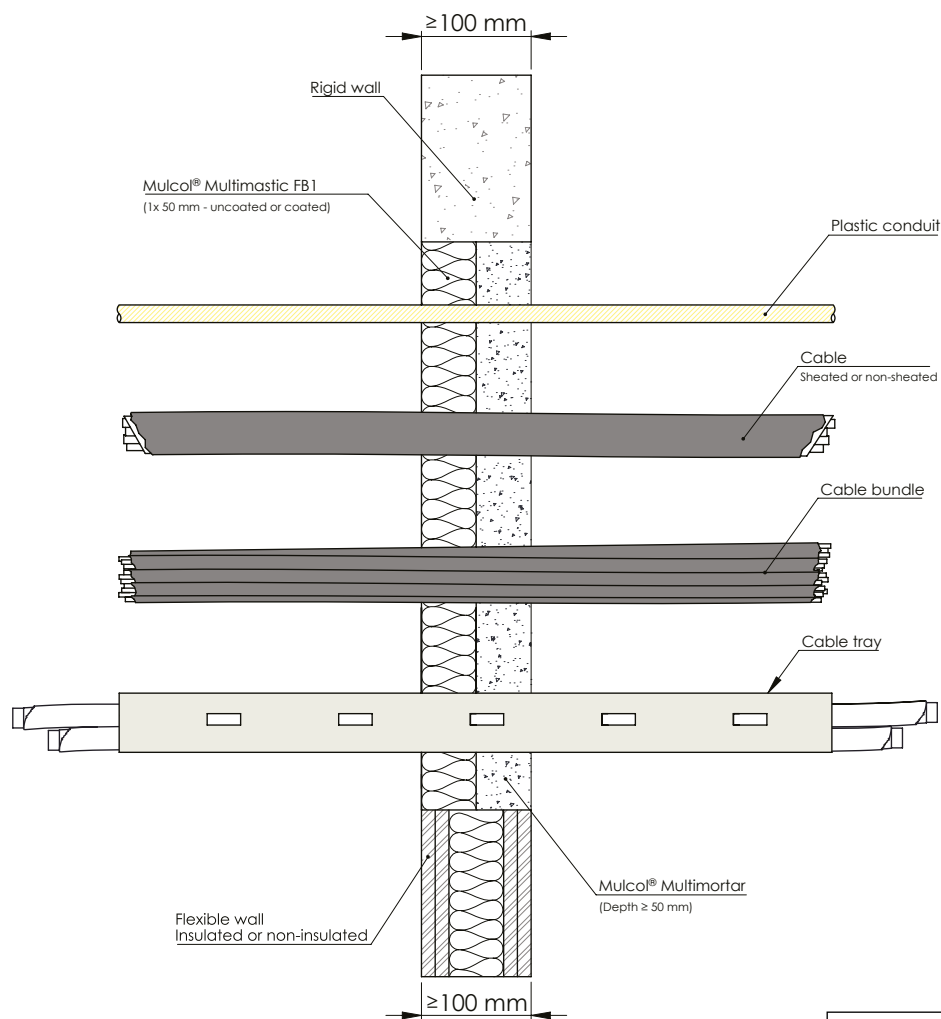
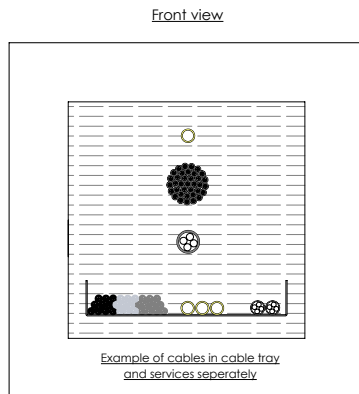
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A.1.1 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

A.1.1.1 Cables, trays and conduits

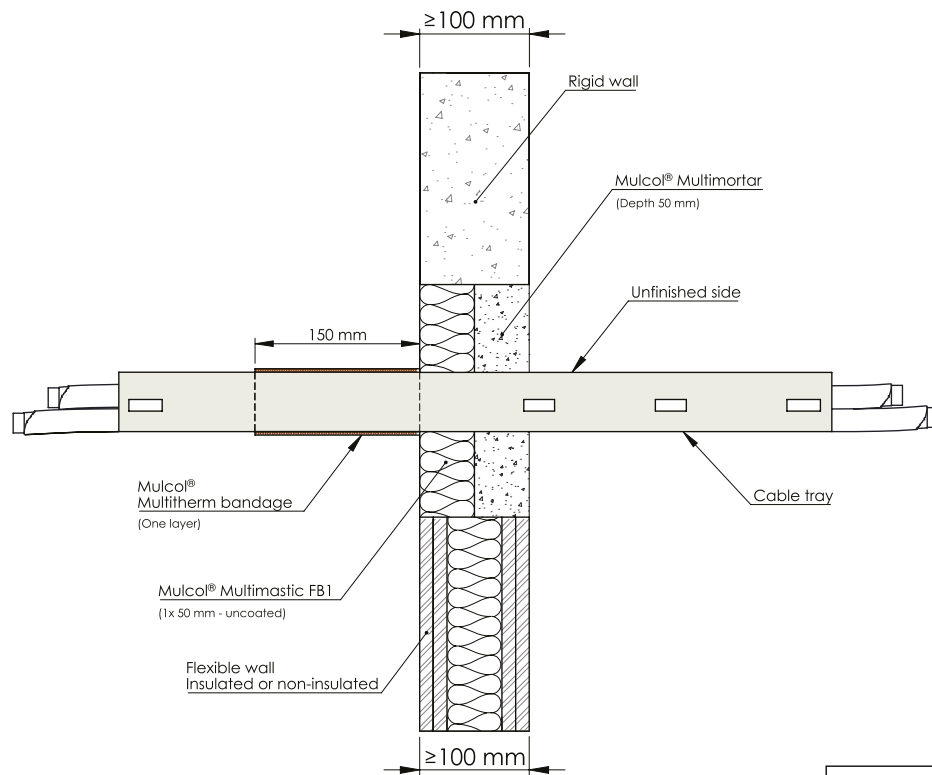
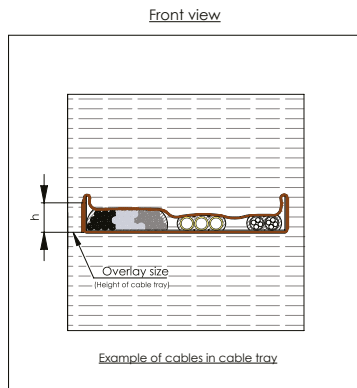


Drawing: FW.E-CT-4-MM2.5.10

Services	Classification
Metal cable ladders	EI 60, E 90
Metal (non-)perforated cable trays	EI 90, E 120
Steel wire mesh cable trays (baskets)	EI 60, E 90
Cables $\leq \varnothing 80$ mm (single or bundled)	EI 60, E 90
Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	EI 60, E 120
Cables $\leq \varnothing 21$ mm	EI 60 U/C, E 90 U/C
Plastic conduits $\leq \varnothing 16$ mm	EI 30 C/U, E 120 C/U
Copper conduits $\leq \varnothing 16$ mm	EI 120 C/U
Steel conduits $\leq \varnothing 16$ mm	

A.1.1 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

A.1.1.2 Cables and trays - Multitherm Bandage

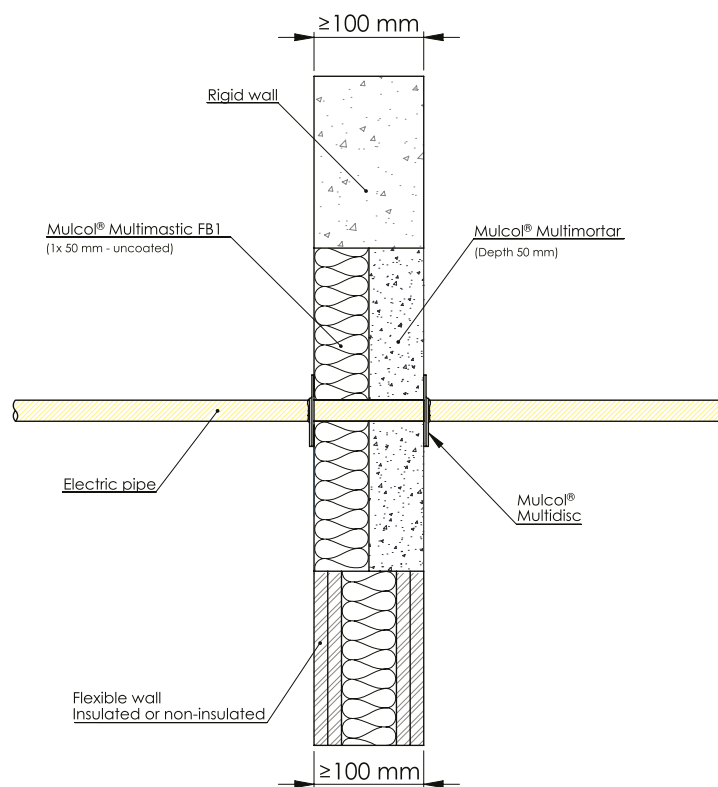
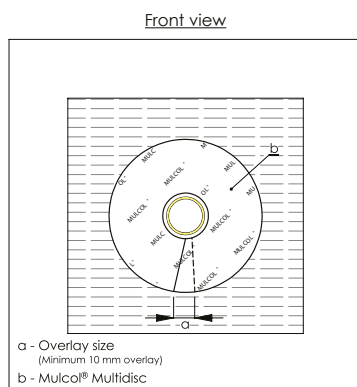


Drawing: FW.E-CT-MM2.5.10-B1.1.10

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 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

A.1.1.3 Single PVC conduits - Multidisc

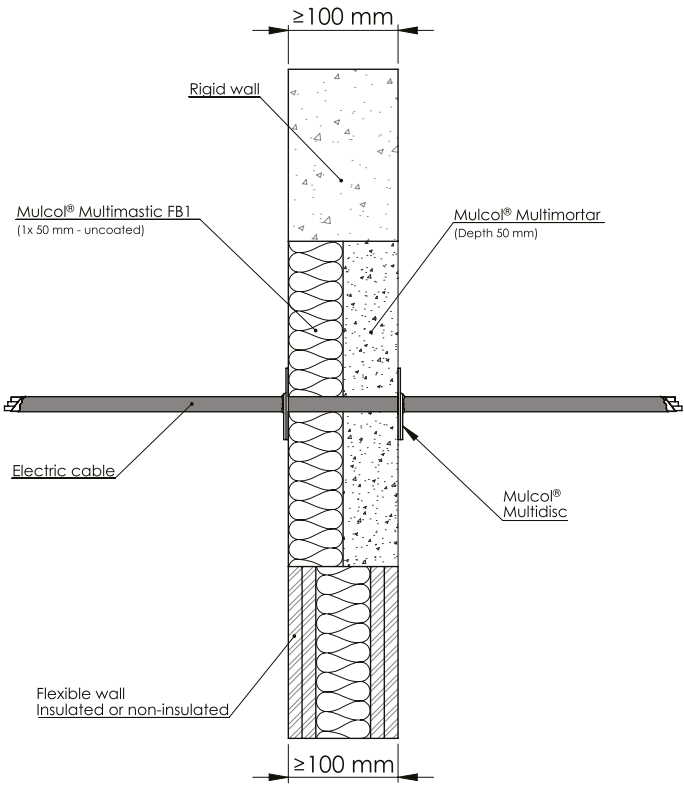
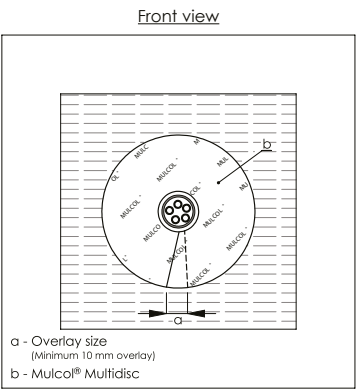


Drawing: FW.E-EP-M2-MM2.5.10

Services	Product	Allowed cables	Classification
Plastic conduits $\leq \varnothing 19$ mm with or without cables	Multidisc	UTP / F-UTP / F-STP / YMK	EI 120 U/U
Plastic conduits $\leq \varnothing 25$ mm with or without cables			EI 90 U/U, E 120 U/U

A.1.1 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

A.1.1.4 Single cables - Multidisc

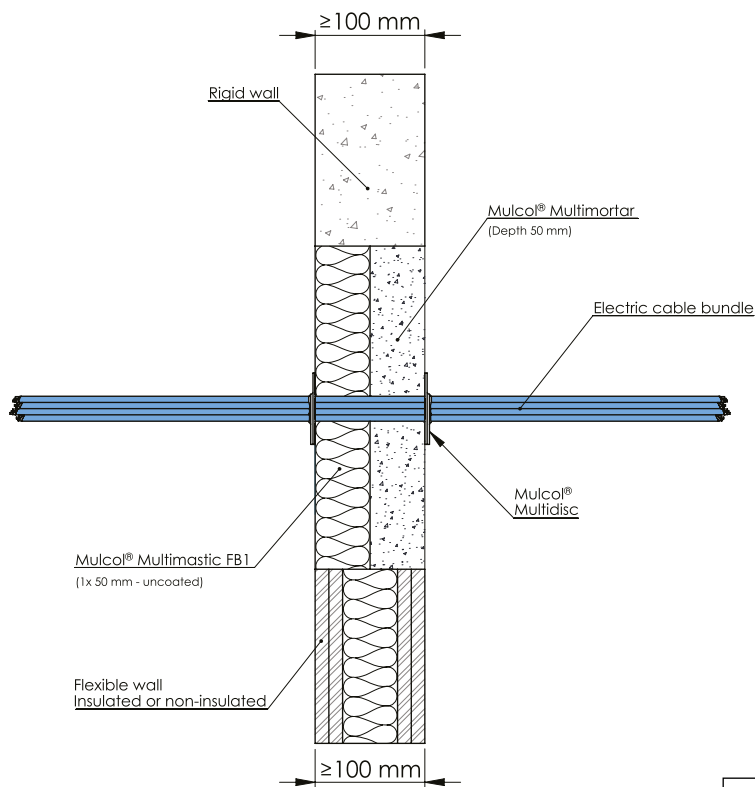
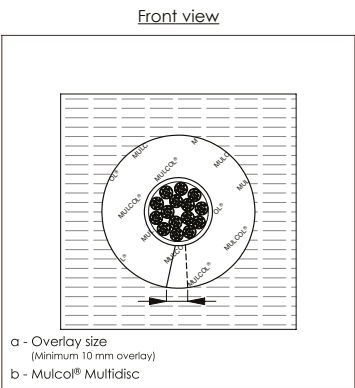


Drawing: FW.E-EC-M2-MM2.5.10

Services	Product	Classification
Single electrical cables $\leq \varnothing 21$ mm, YMKV 5 x 2.5 mm ²	Multidisc	EI 60, E 90

A.1.1 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

A.1.1.5 Multiple cables - Multidisc

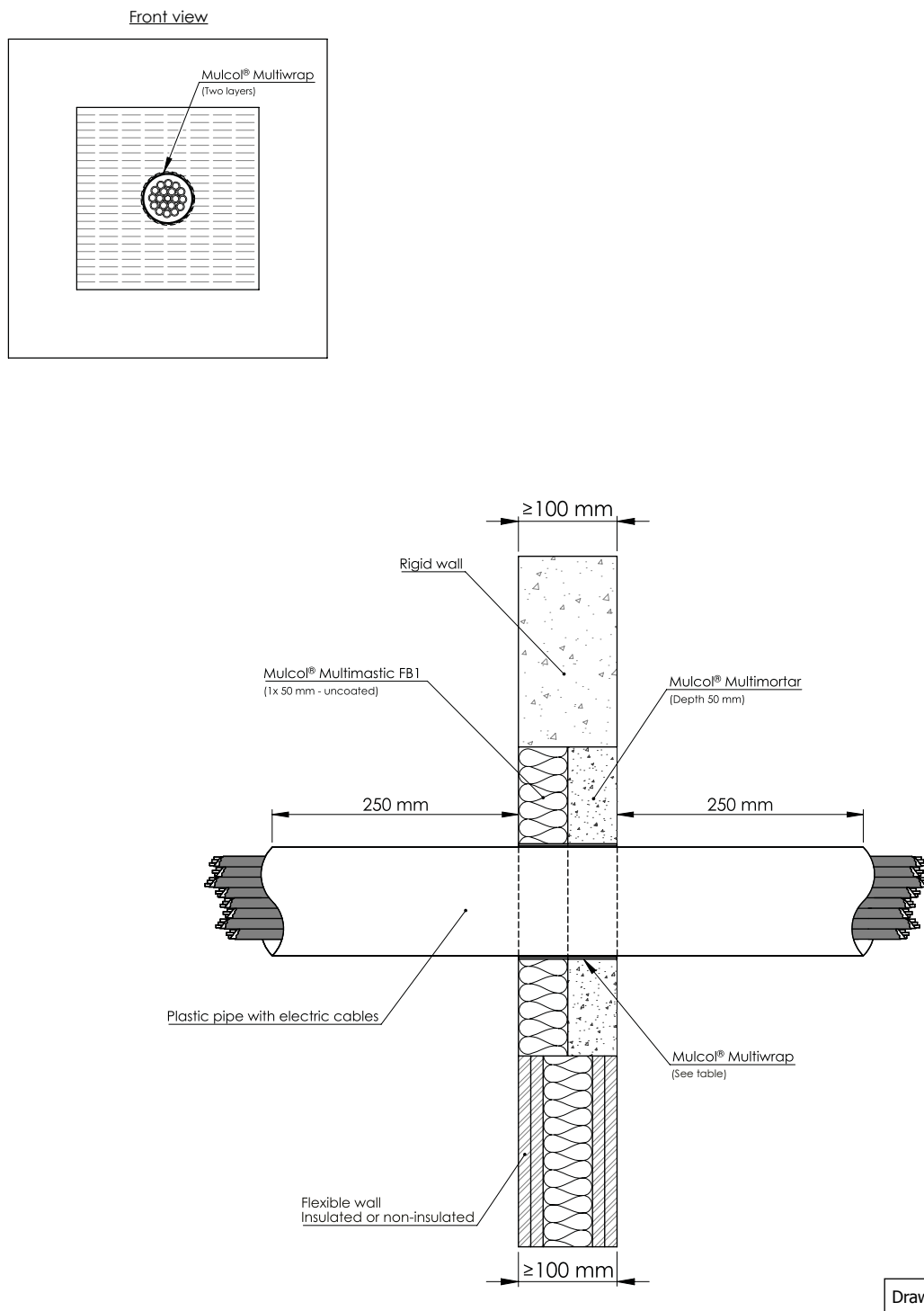


Drawing: FW.E-ECB-MM2.5.10

Services	Product	Classification
Telecommunication cables, max. 15 pcs., max. $\leq \varnothing 25$ mm	Multidisc	EI 60, E 120

A.1.1 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

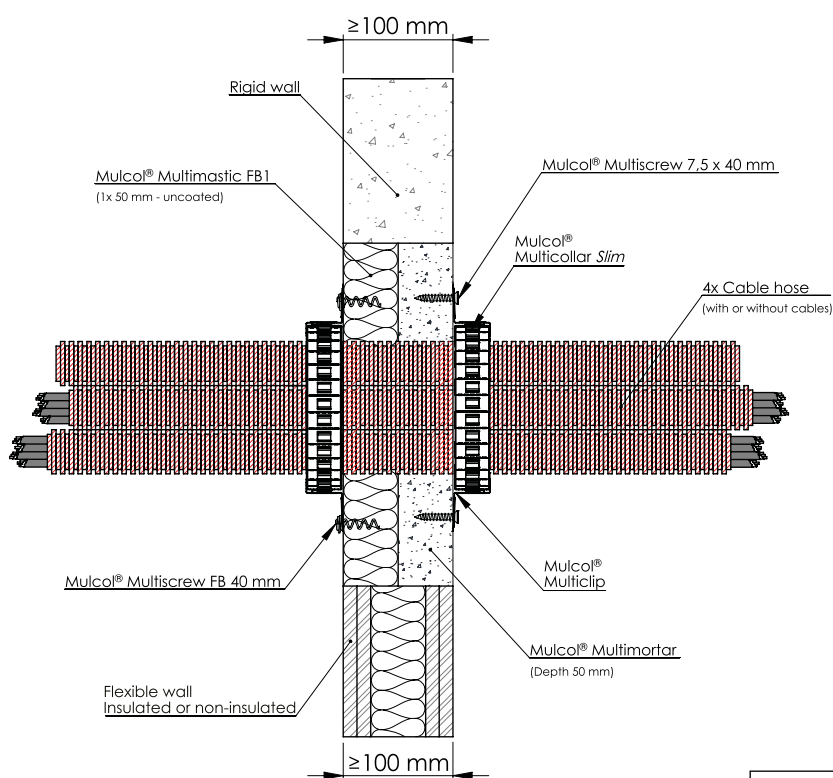
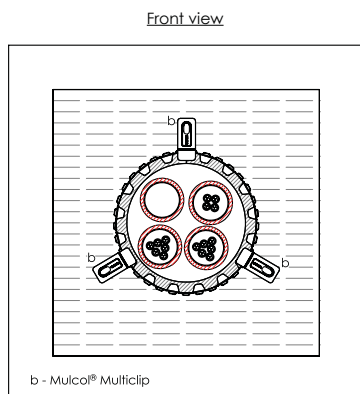
A.1.1.6 Plastic pipes with cables - Multiwrap



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

A.1.1 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

A.1.1.7 Flexible hoses with cables - Multicollar *Slim*



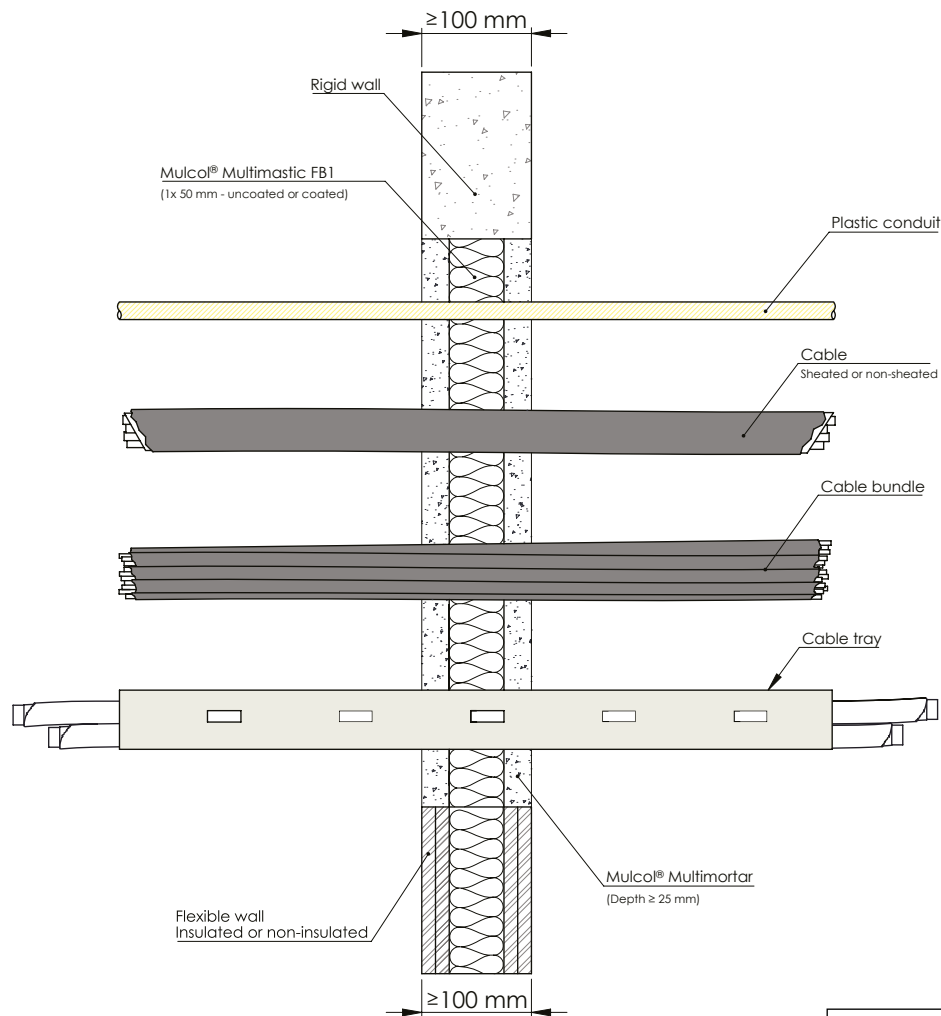
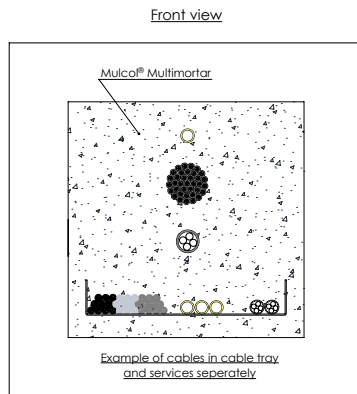
Drawing: FW.E-MC30-ECH4-MM2.5.30

Services	Number of sleeves	Product	Allowed cables	Classification
Ribbed PE-sleeve conduit $\leq \varnothing 63$ mm, with or without cables	≤ 4	Multicollar <i>Slim</i>	Sheathed cables $\leq \varnothing 21$ mm (single or bundled) Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	EI 90 U/C, E 120 U/C

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -

A.1.2.1

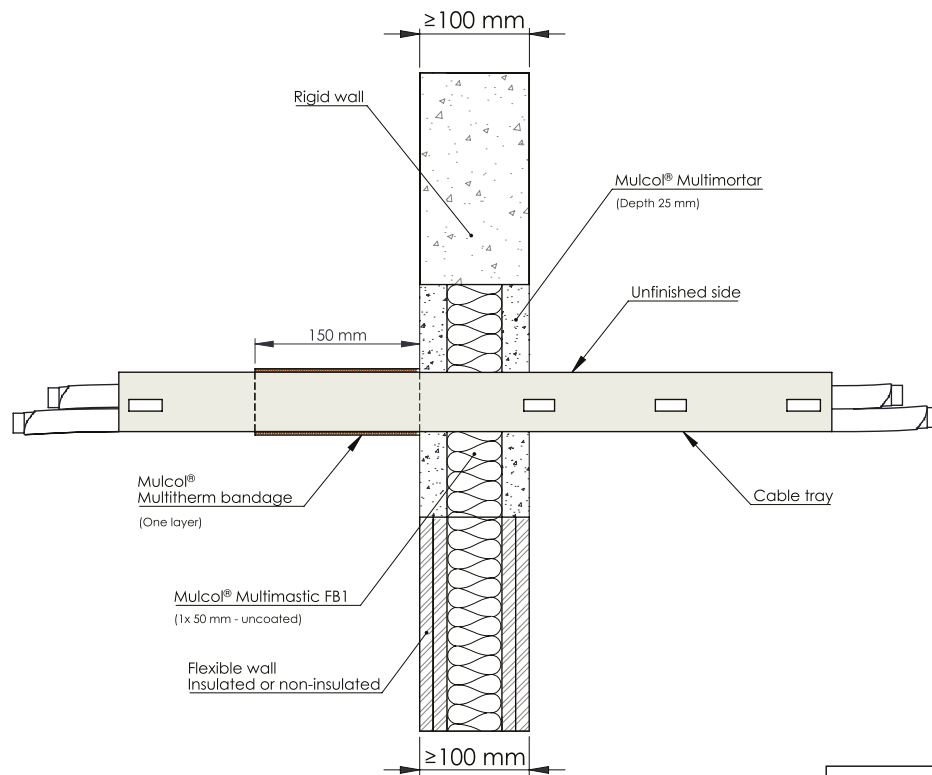
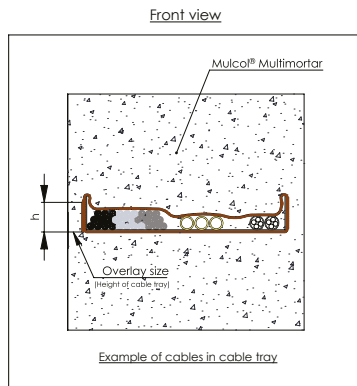
Cables, trays and conduits



Drawing: FW.E-CT-4-MM3.4.10

Services	Classification
Metal cable ladders	EI 90, E 120
Metal (non-)perforated cable trays	EI 120
Steel wire mesh cable trays (baskets)	
Cables $\leq \varnothing$ 80 mm (single or bundled)	EI 90, E 120
Cables $\leq \varnothing$ 21 mm in a tied bundle $\leq \varnothing$ 100 mm	EI 60, E 120
Non sheathed cables $\leq \varnothing$ 24 mm	
Plastic conduits $\leq \varnothing$ 16 mm	EI 120 U/C
Copper conduits $\leq \varnothing$ 16 mm	EI 45 C/U, E 90 C/U
Steel conduits $\leq \varnothing$ 16 mm	EI 90 C/U

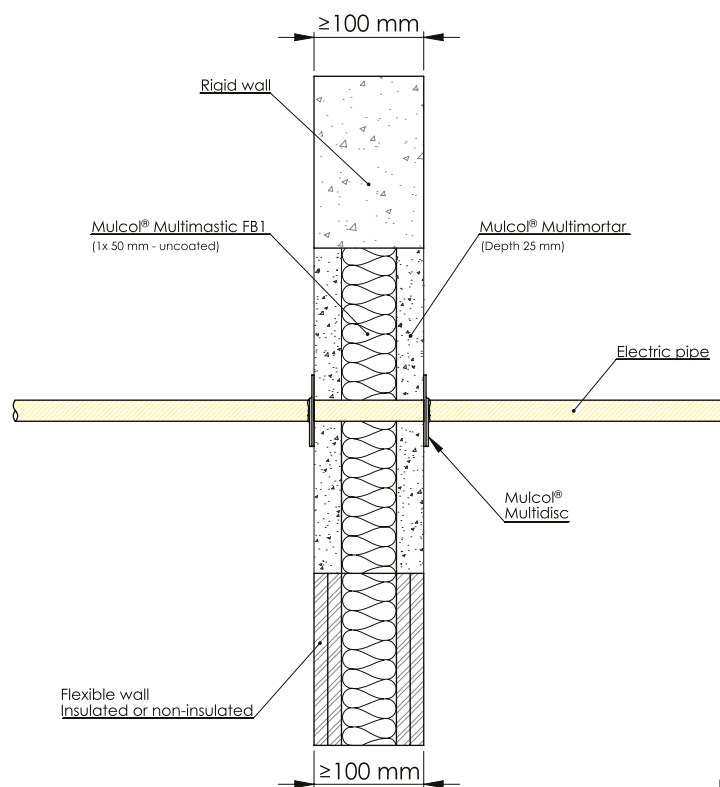
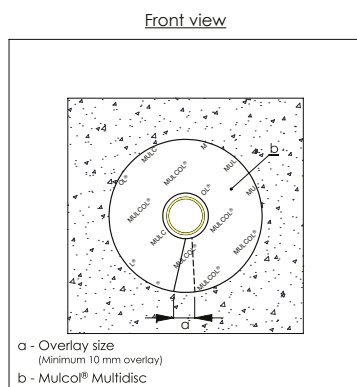
A.1.2 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -
Cables, trays and conduits
A.1.2.2 Cables and trays - Multitherm Bandage



Drawing: FW.E-CT-MM3.4.10-B1.1.10

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		

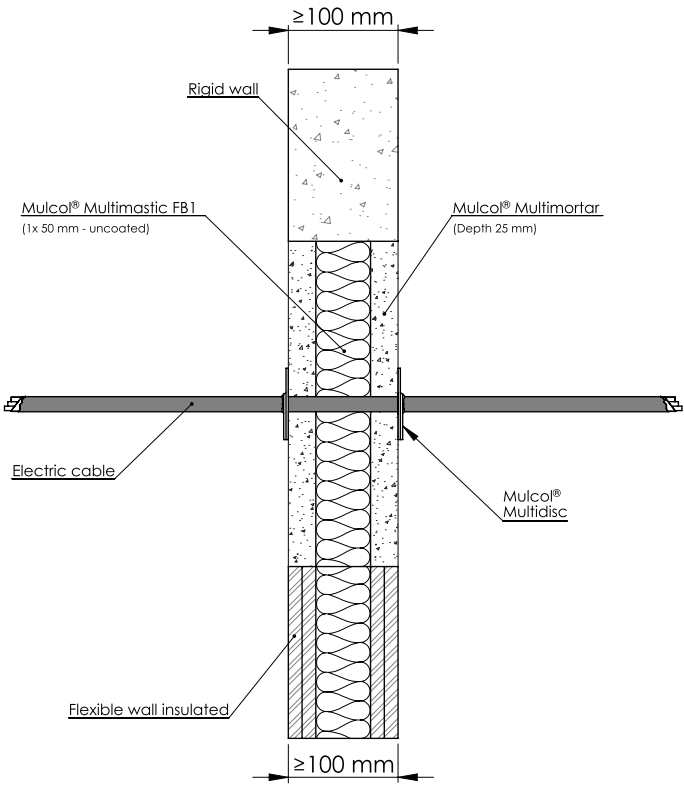
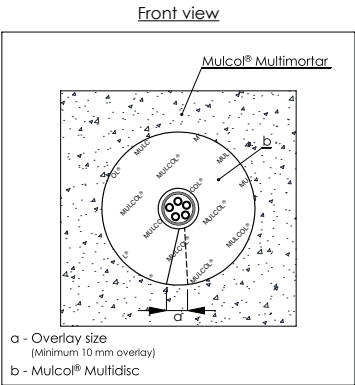
A.1.2 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -
A.1.2.3 Cables, trays and conduits
Single PVC conduits - Multidisc



Drawing: FW.E-EP-M2-MM3.4.10

Services	Product	Allowed cables	Classification
Plastic conduits $\leq \varnothing 19$ mm with or without cables	Multidisc	UTP / F-UTP / F-STP / YMVK	EI 120 U/U
Plastic conduits $\leq \varnothing 25$ mm with or without cables			EI 90 U/U, E 120 U/U

A.1.2
Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -
Cables, trays and conduits
A.1.2.4
Single cables - Multidisc

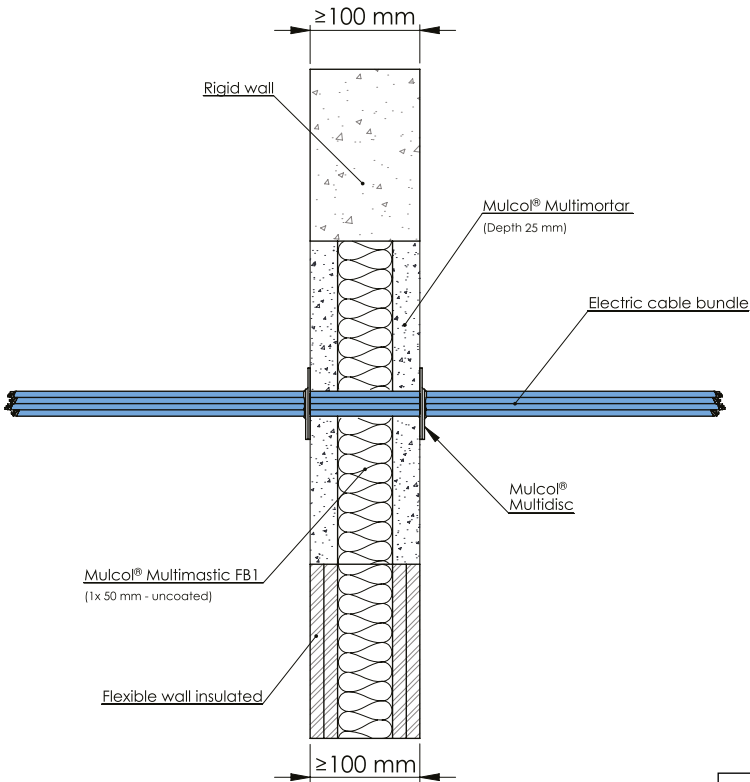
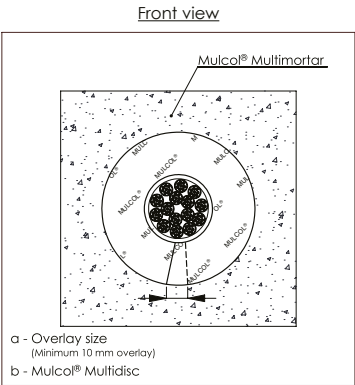


Drawing: FW.E-EC-M2-MM3.4.10

Services	Product	Classification
Single electrical cables ≤ Ø 21 mm, YMKV 5 x 2.5 mm ²	Multidisc	EI 60, E 90

A.1.2
A.1.2.5

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -
Cables, trays and conduits
Multiple cables - Multidisc



Drawing: FW.E-CB-MM3.4.10

Services	Product	Classification
Telecommunication cables, max. 15 pcs., max. ≤ Ø 25 mm	Multidisc	EI 60, E 120

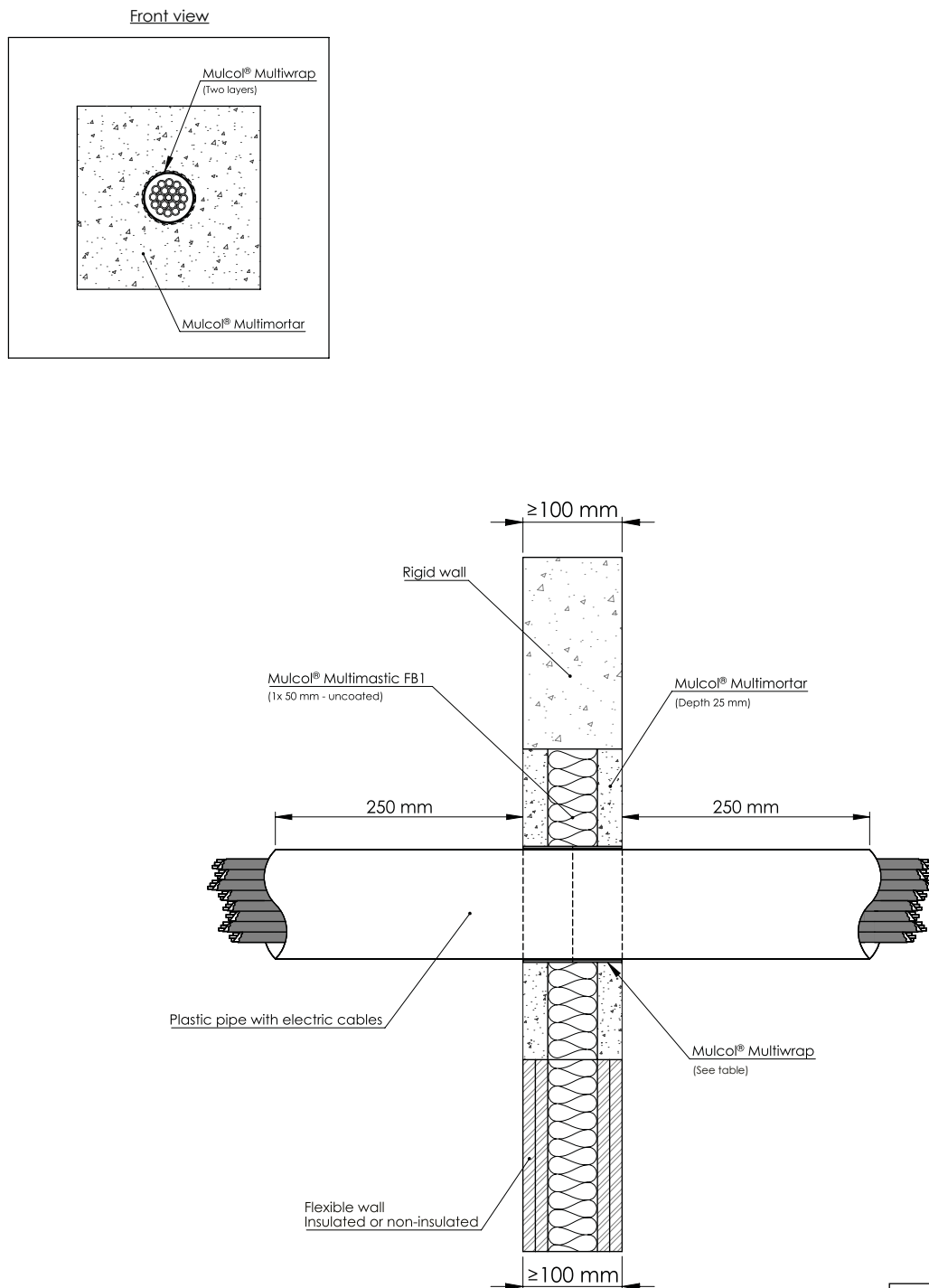
A.1.2

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -

Cables, trays and conduits

A.1.2.6

Plastic pipes with cables - Multiwrap



Drawing: FW.E-PPEC-MW2-MM3.4.10

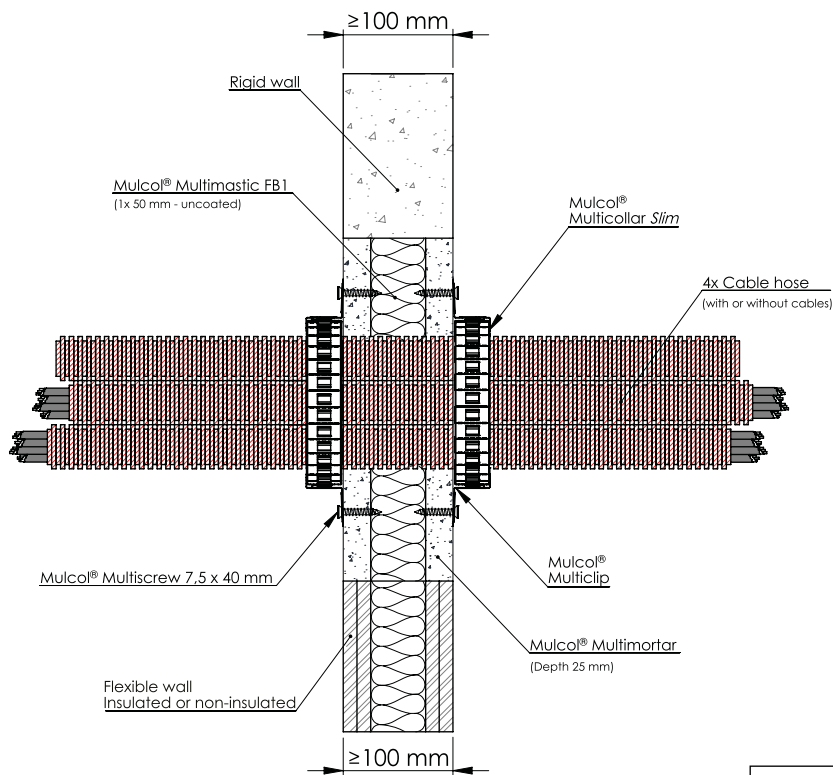
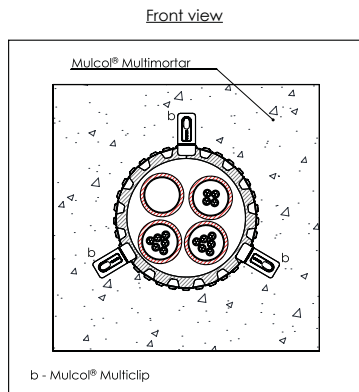
Services	Pipe dimensions (mm)		Product	Allowed Cables	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7 - 10	Multiwrap (2 layers)	Sheathed cables $\leq \varnothing 80$ mm (single or bundled) Cables $\leq \varnothing 21$ mm in a tied bundle $\leq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

A.1.2

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Cables, trays and conduits

A.1.2.7

Flexible hoses with cables - Multicollar *Slim*

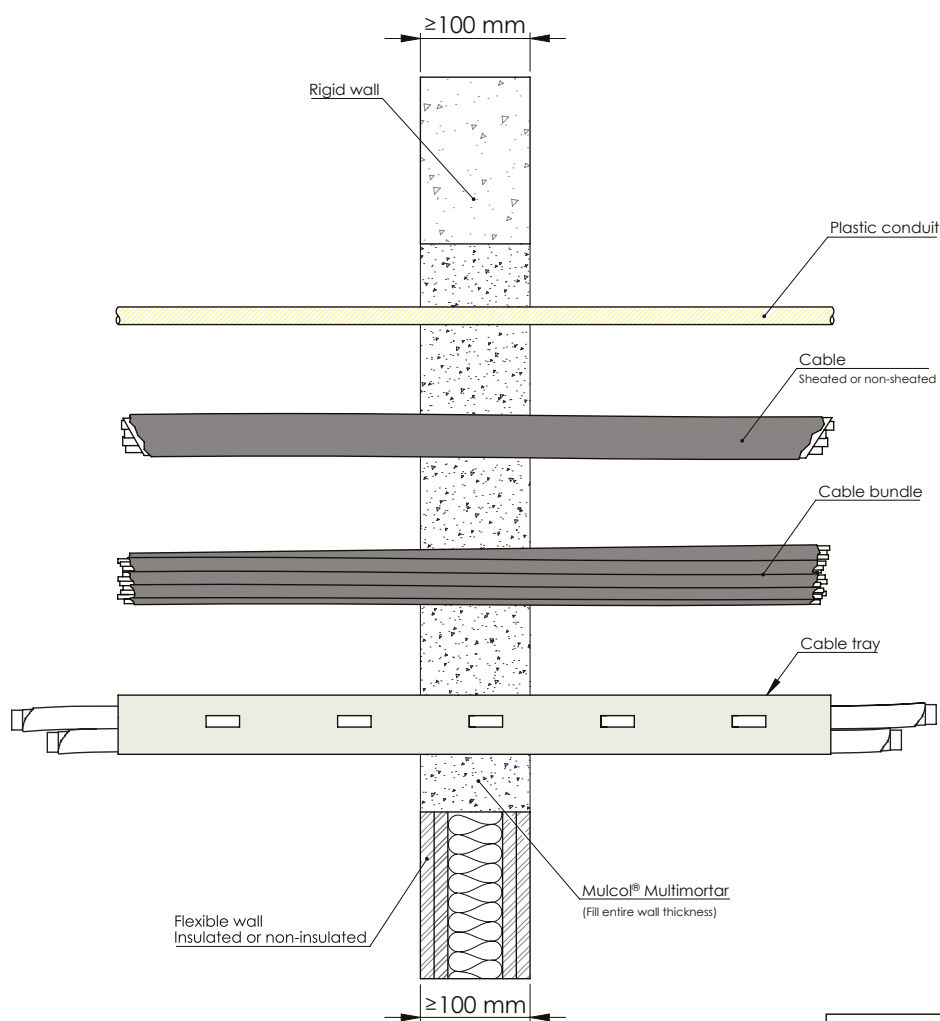
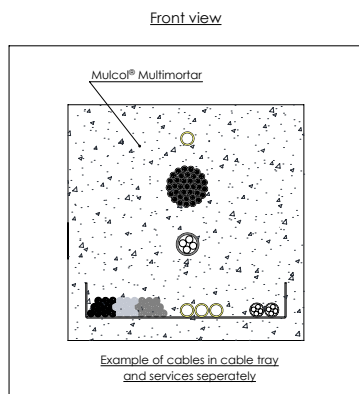


Drawing: FW.E-MC30-ECH4-MM3.4.30

Services	Number of sleeves	Product	Allowed cables	Classification
Ribbed PE-sleeve conduit $\leq \varnothing 63$ mm, with or without cables	≤ 4	Multicollar <i>Slim</i>	Sheathed cables $\leq \varnothing 21$ mm (single or bundled) Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	EI 90 U/C, E 120 U/C

A.1.3 Multimortar - ≥ 100 mm - Cables, trays and conduits

A.1.3.1 Cables, trays and conduits

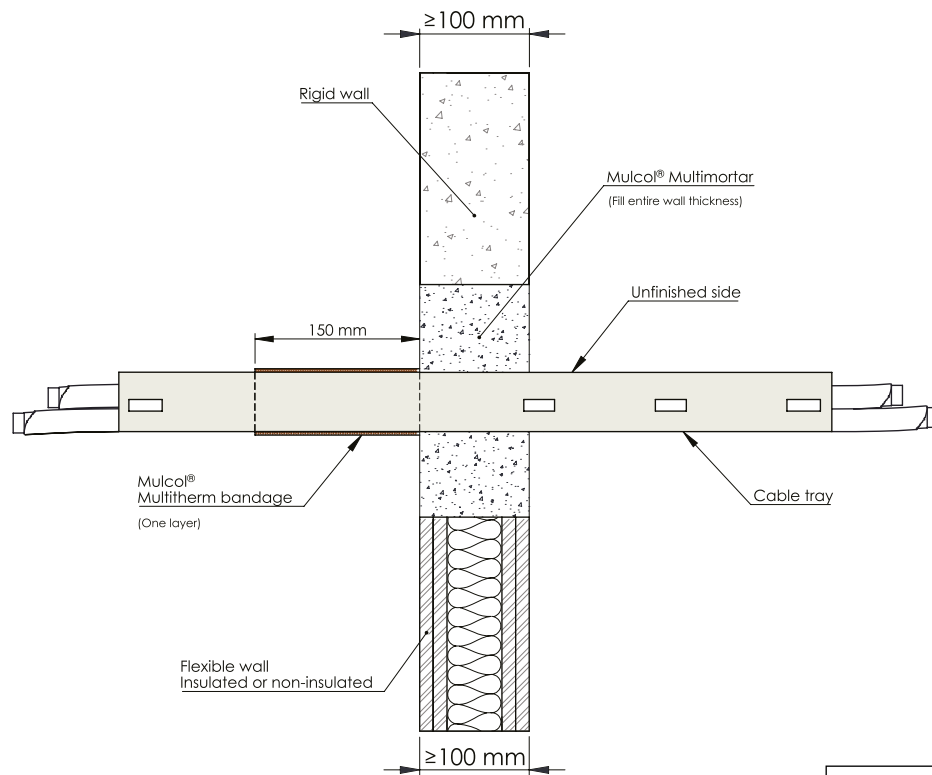
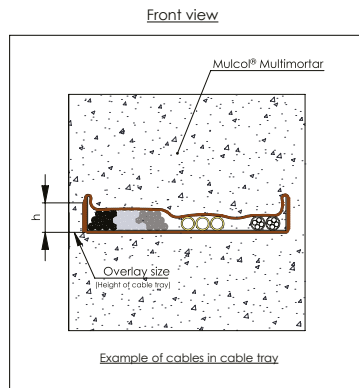


Drawing: FW.E-CT-4-MM1.2.10

Services	Classification
Metal cable ladders	EI 90, E 120
Metal (non-)perforated cable trays	EI 120
Steel wire mesh cable trays (baskets)	EI 120
Cables $\leq \varnothing 80$ mm (single or bundled)	EI 90, E 120
Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	EI 60, E 120
Non sheathed cables $\leq \varnothing 24$ mm	EI 120 U/C
Plastic conduits $\leq \varnothing 16$ mm	EI 45 C/U, E 90 C/U
Copper conduits $\leq \varnothing 16$ mm	EI 90 C/U
Steel conduits $\leq \varnothing 16$ mm	EI 90 C/U

A.1.3 Multimortar - ≥ 100 mm - Cables, trays and conduits

A.1.3.2 Cables and trays - Multitherm Bandage

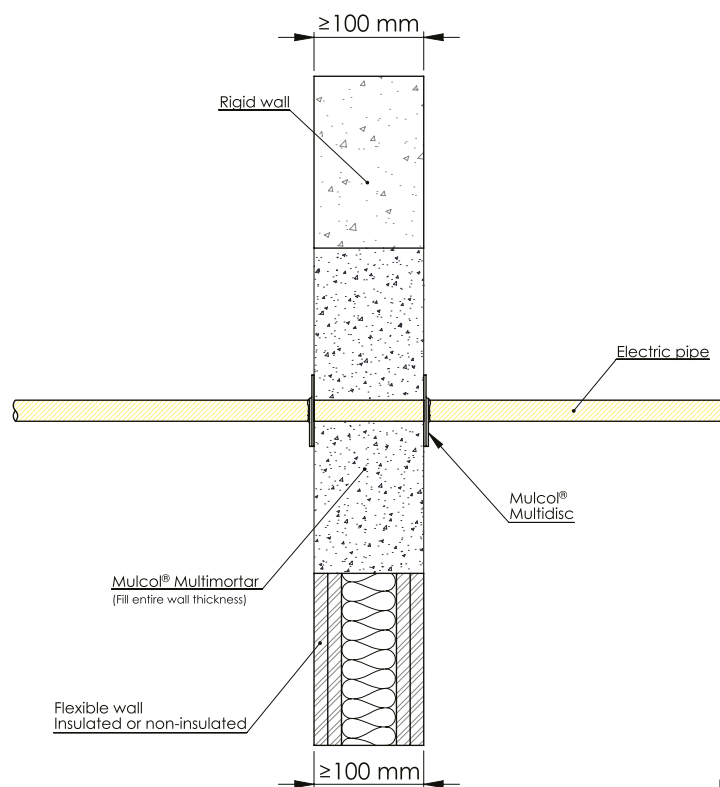
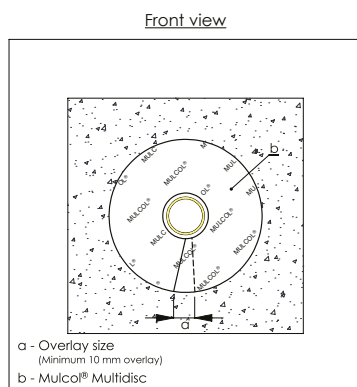


Drawing: FW.E-CT-MM1.2.10-B1.1.10

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.1.3 Multimortar - ≥ 100 mm - Cables, trays and conduits

A.1.3.3 Single PVC conduits - Multidisc

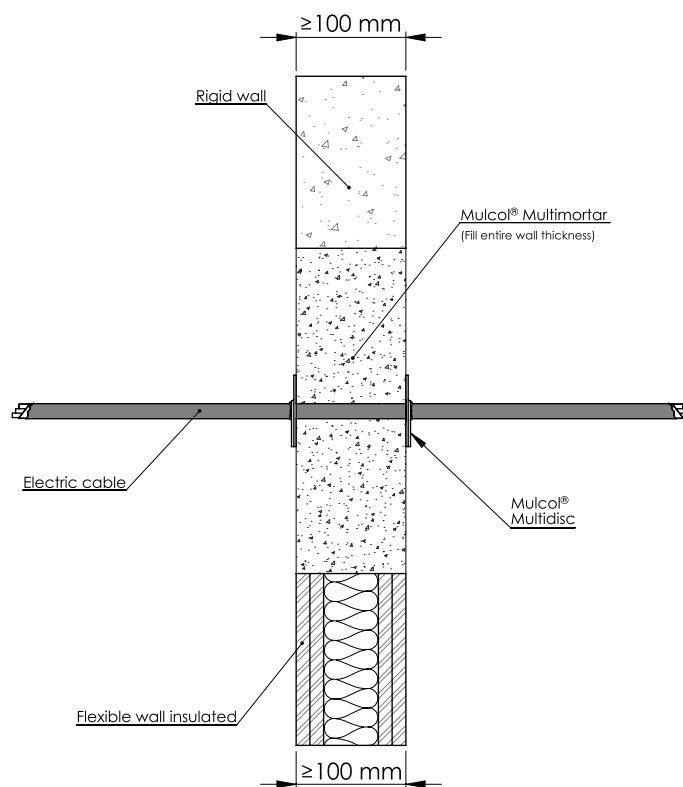
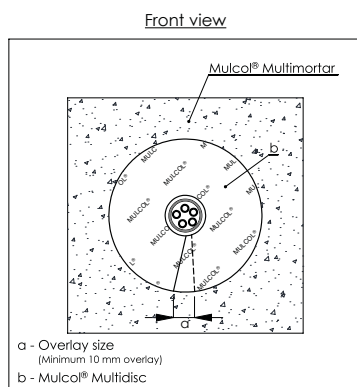


Drawing: FW.E-EP-M2-MM1.2.10

Services	Product	Allowed cables	Classification
Plastic conduits $\leq \varnothing 19$ mm with or without cables	Multidisc	UTP / F-UTP / F-STP / YMVK	EI 120 U/U
Plastic conduits $\leq \varnothing 25$ mm with or without cables			EI 90 U/U, E 120 U/U

A.1.3 Multimortar - ≥ 100 mm - Cables, trays and conduits

A.1.3.4 Single cables - Multidisc

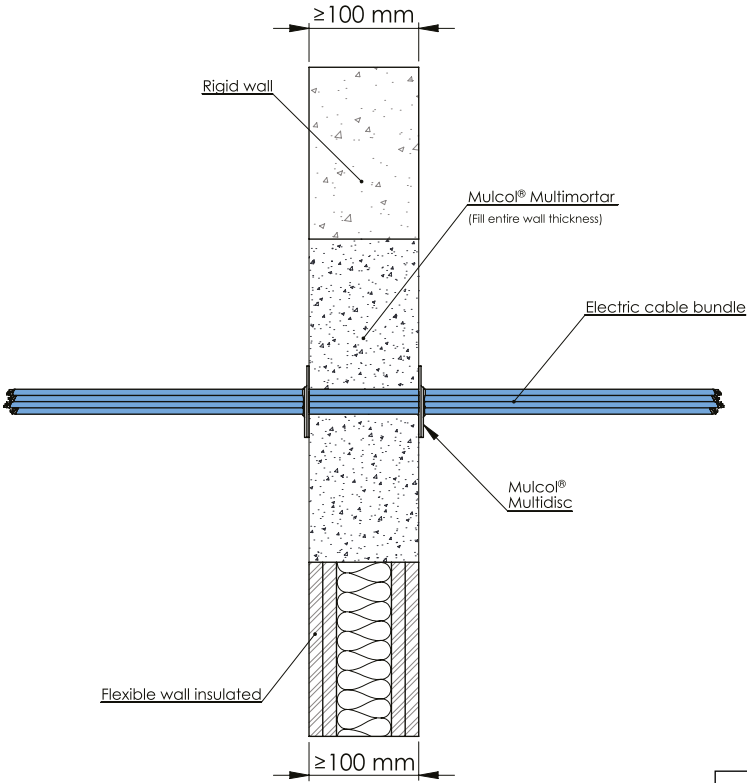
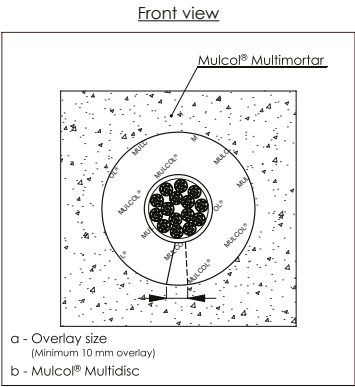


Drawing: FW.E-EC-M2-MM1.2.10

Services	Product	Classification
Single electrical cables $\leq \varnothing 21$ mm, YMKV 5 x 2.5 mm ²	Multidisc	EI 60, E 90

A.1.3 Multimortar - ≥ 100 mm - Cables, trays and conduits

A.1.3.5 Multiple cables - Multidisc

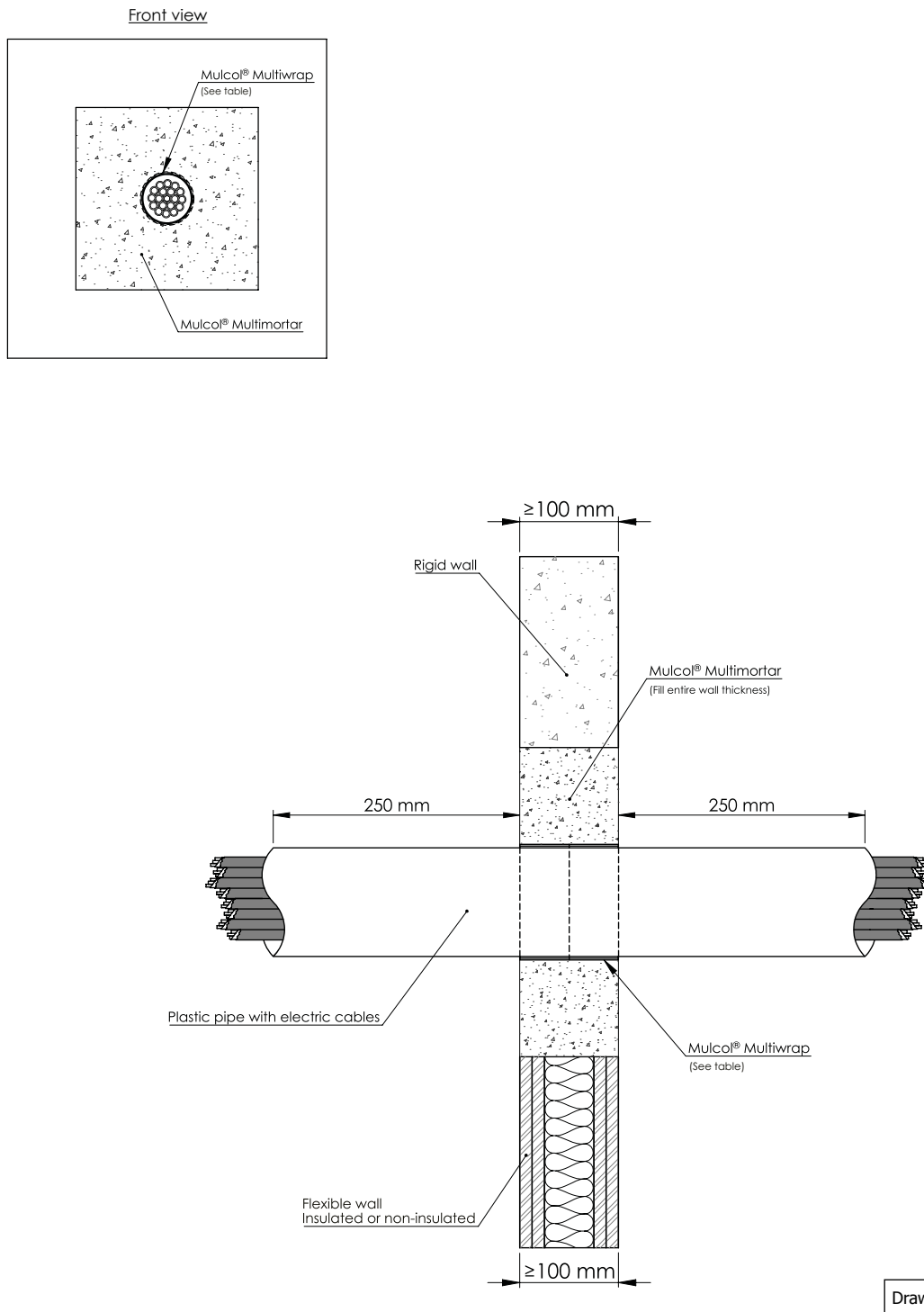


Drawing: FW.E-ECB-MM1.2.10

Services	Product	Classification
Telecommunication cables, max. 15 pcs., max. $\leq \varnothing 25$ mm	Multidisc	EI 60, E 120

A.1.3 Multimortar - ≥ 100 mm - Cables, trays and conduits

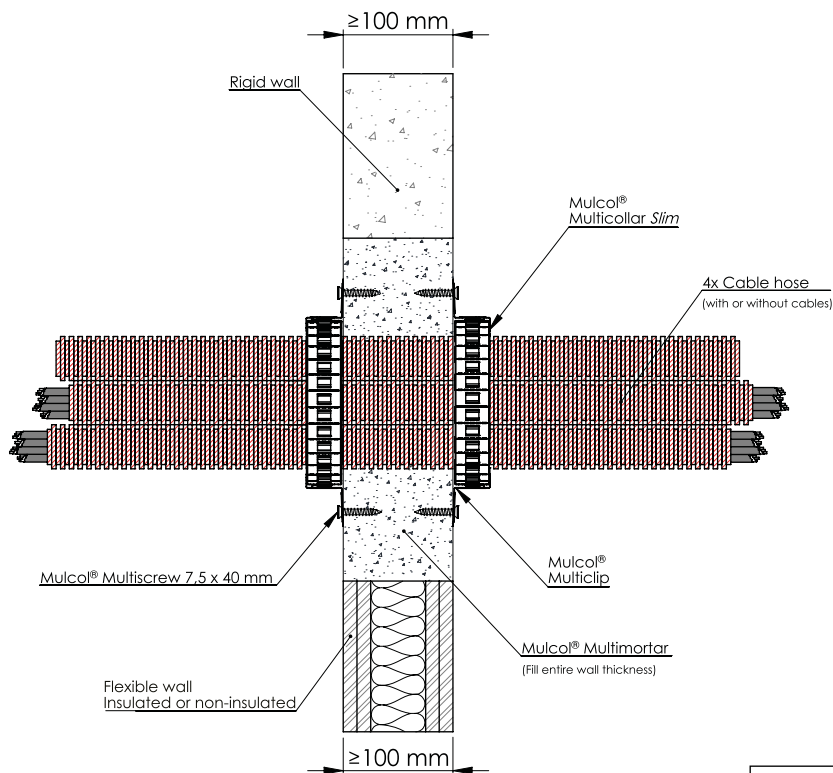
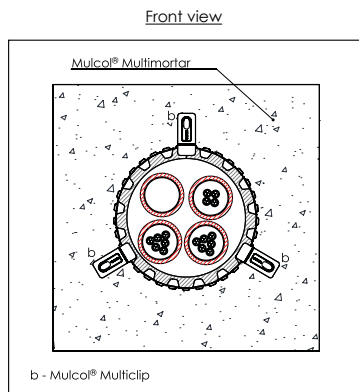
A.1.3.6 Plastic pipes with cables - Multiwrap



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

A.1.3 Multimortar - ≥ 100 mm - Cables, trays and conduits

A.1.3.7 Flexible hoses with cables - Multicollar *Slim*



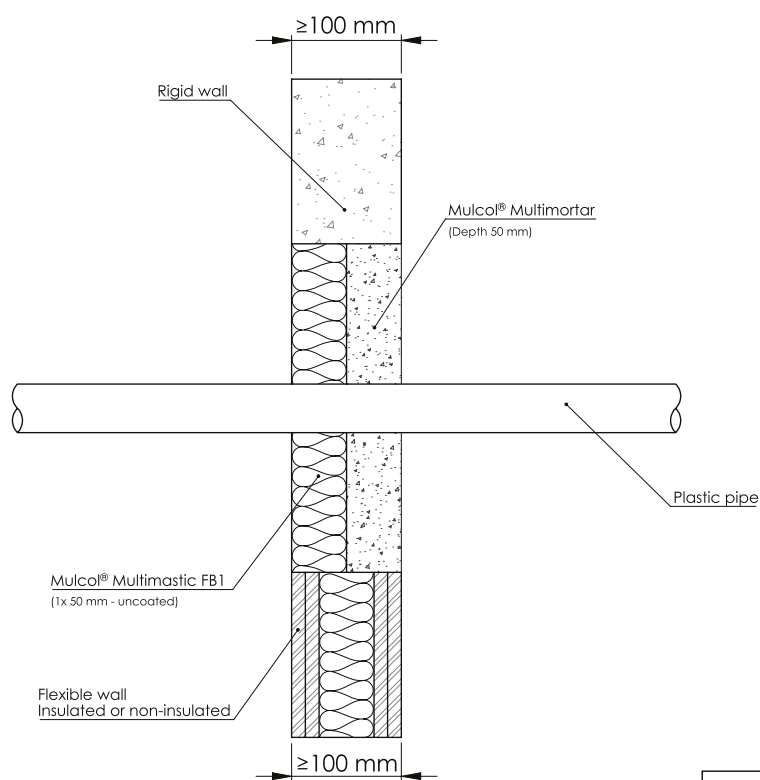
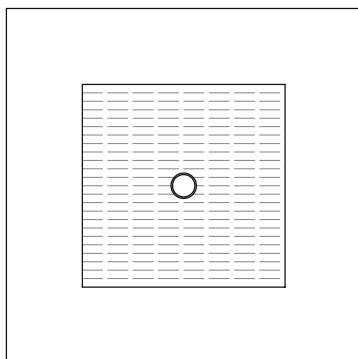
Drawing: FW.E-MC30-ECH4-MM1.2.30

Services	Number of sleeves	Product	Allowed cables	Classification
Ribbed PE-sleeve conduit $\leq \varnothing 63$ mm with or without cables	≤ 4	Multicollar <i>Slim</i>	Sheathed cables $\leq \varnothing 21$ mm (single or bundled) Cables $\leq \varnothing 21$ mm in a tied bundle	EI 90 U/C, E 120 U/C

A.1.4 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

A.1.4.1 Plastic pipes

Front view

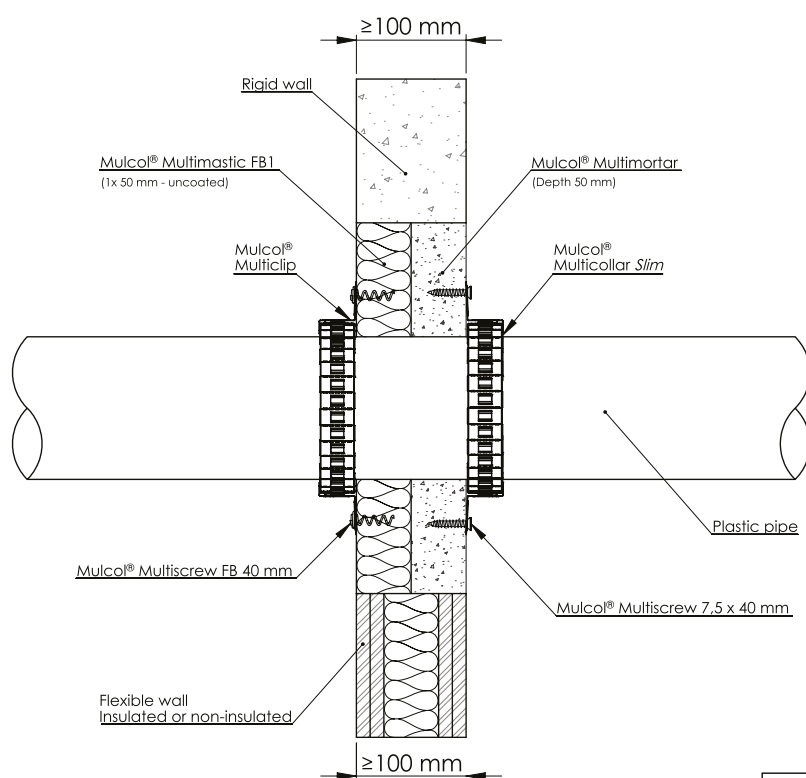
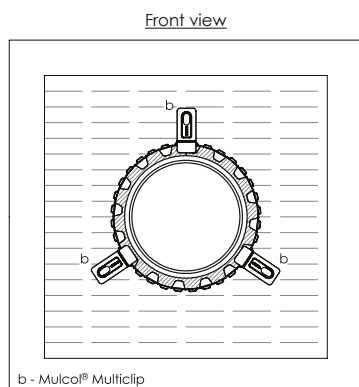


Drawing: FW.E-PP-MM2.5.10-G2.0.10

Services	Pipe dimensions (mm)		Classification
	Outer dimension	Wall thickness	
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 32$	3.0	EI 90 U/C

A.1.4 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

A.1.4.2 Plastic pipes - Multicollar *Slim*



Drawing: FW.E-MC30-PP-MM2.5.10

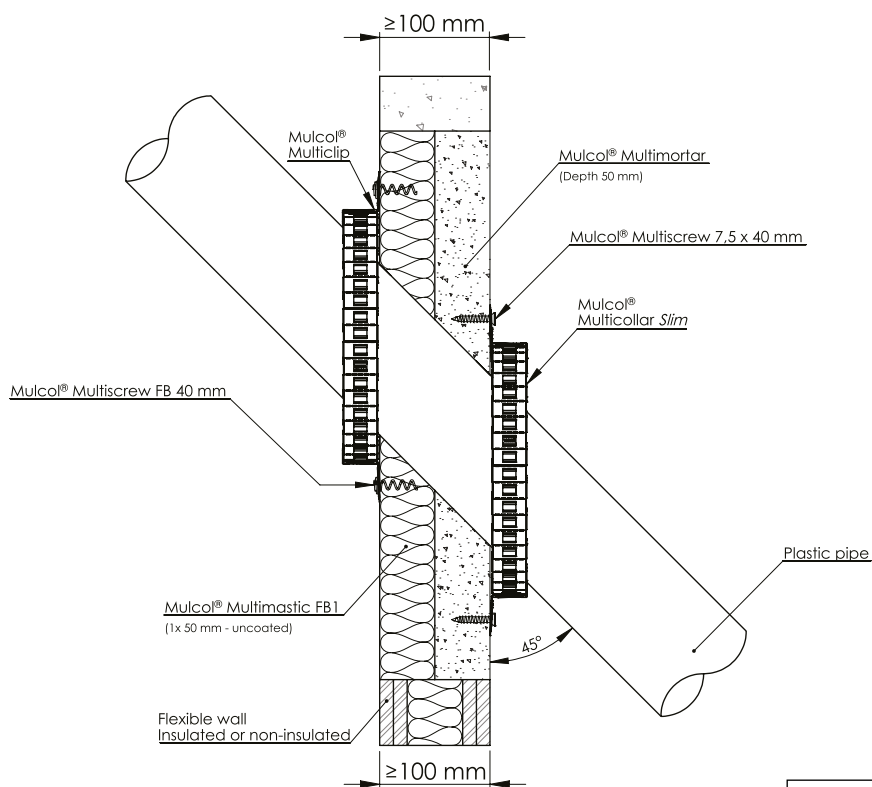
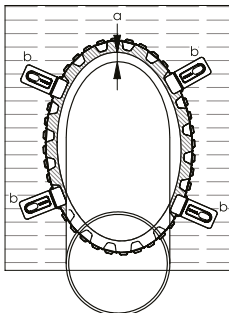
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7 - 6.6	Multicollar <i>Slim</i>	EI 120 U/U
PP		2.7		
PVC(-U/-C)				

A.1.4 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

A.1.4.3 Plastic pipes at 45° - Multicollar *Slim*

Front view

- a - Annular space
(Maximum 15 mm between pipe and Mulcol® Multicollar Slim)
b - Mulcol® Multiclip

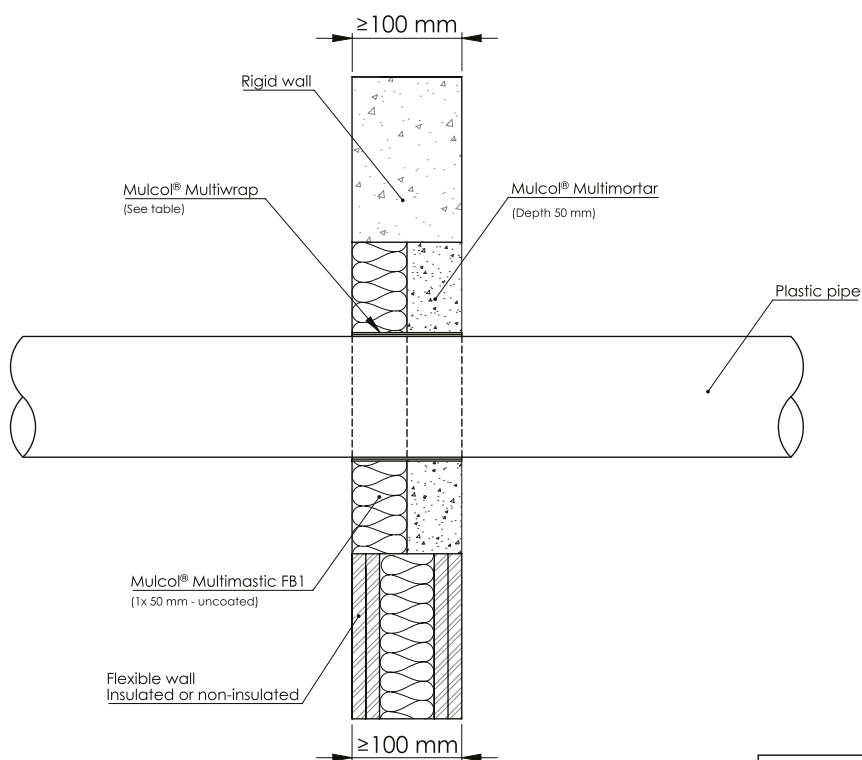
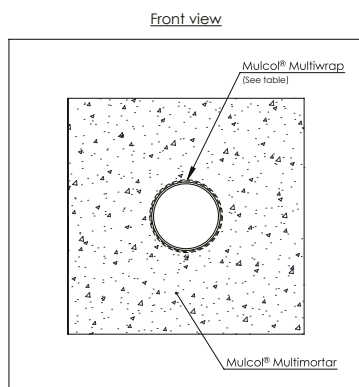


Drawing: FW.E-PP-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	Multicollar <i>Slim</i>	EI 60 U/U, E 90 U/U
PP				
PVC(-U/-C)				

A.1.4 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

A.1.4.4 Plastic pipes - Multiwrap

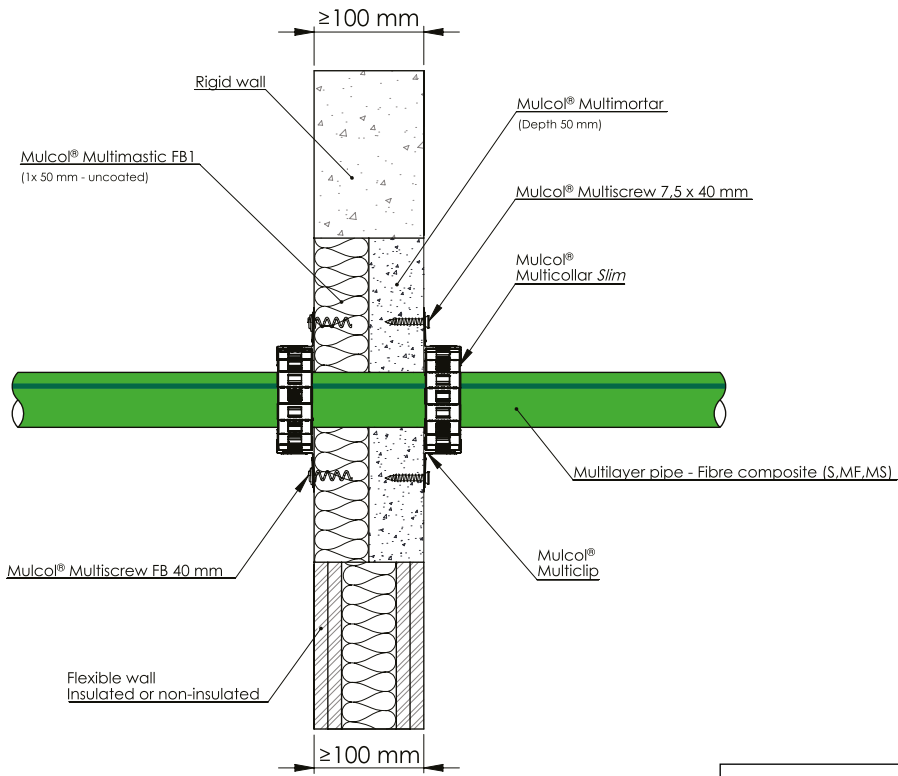
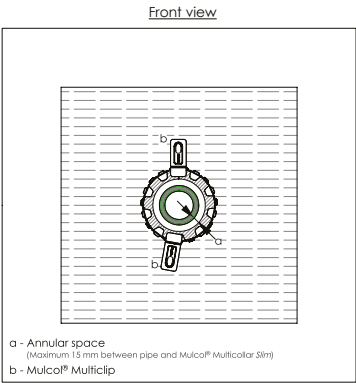


Drawing: FW.E-PP-MW2-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP	$\leq \varnothing 110$	10.0	Multiwrap (2 layers)	EI 120 U/C
			Multiwrap (4 layers)	EI 120 U/U

A.1.4 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

A.1.4.5 PP-R multilayer pipes - Multicollar *Slim*

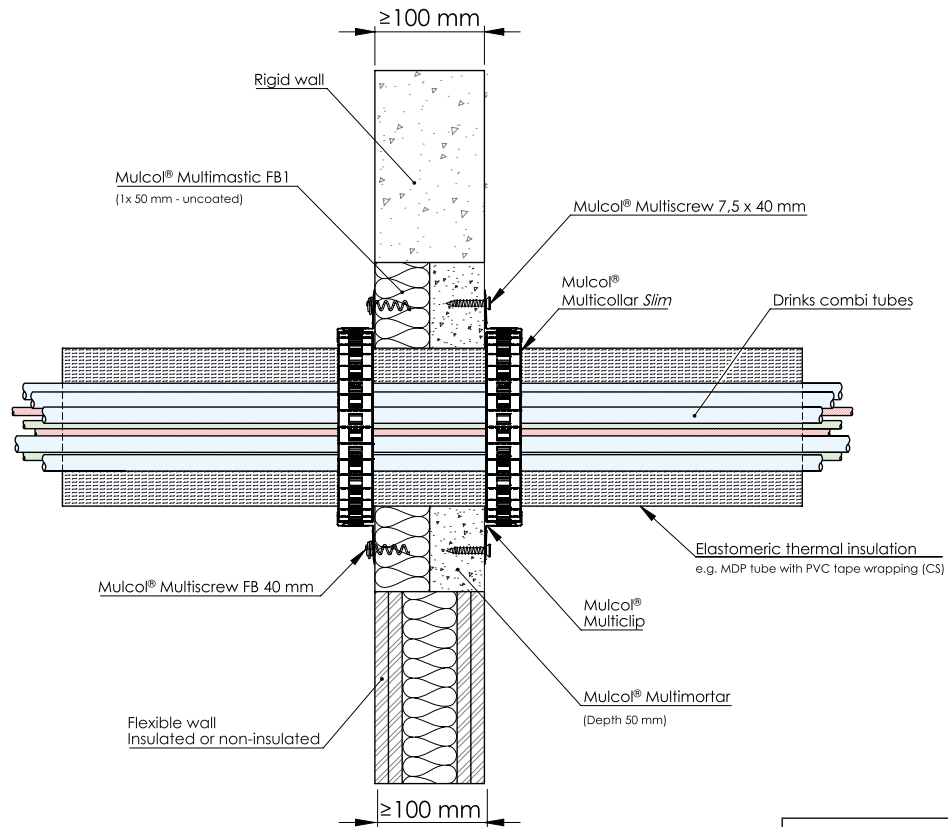
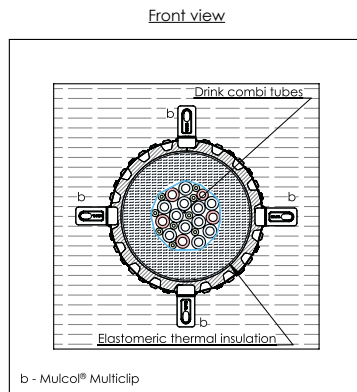


Drawing: FW.E-MC30-MLF-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	≤ Ø 50	6.9	Multicollar <i>Slim</i>	EI 120 U/C

A.1.4 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

A.1.4.6 Beverage dispense tubing - Multicollar *Slim*

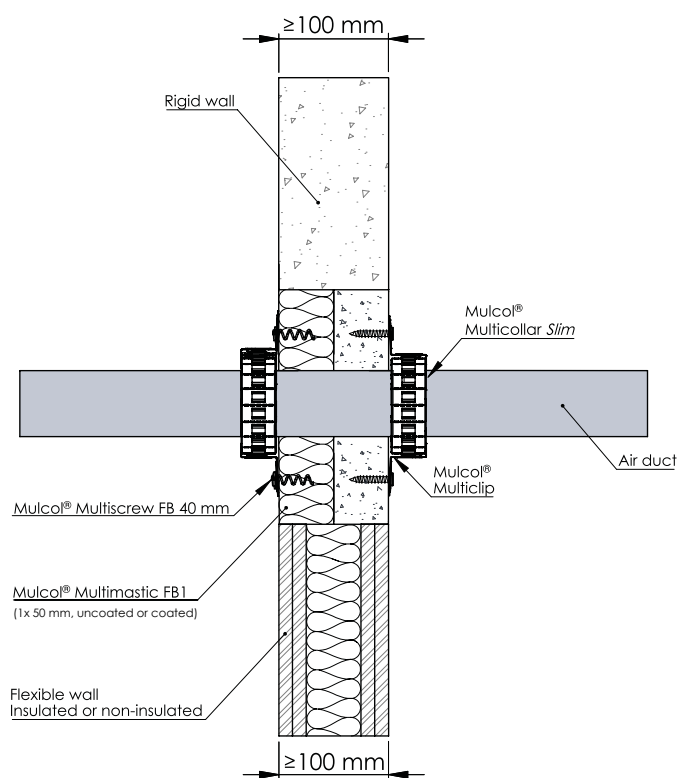
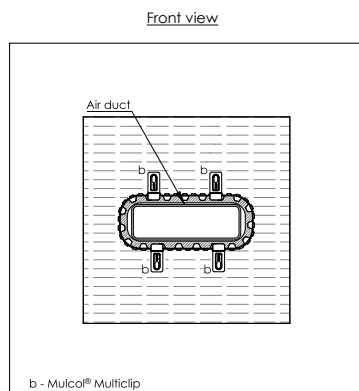


Drawing: FW.E-MC30-DCT52-MM2.5.10

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Hoses no.	Type	Thickness (mm)	Configuration		
Drinks tubing system	$\leq \varnothing 145$	≤ 52	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	EI 60 U/C

A.1.4 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

A.1.4.7 Rectangular duct - Multicollar *Slim*

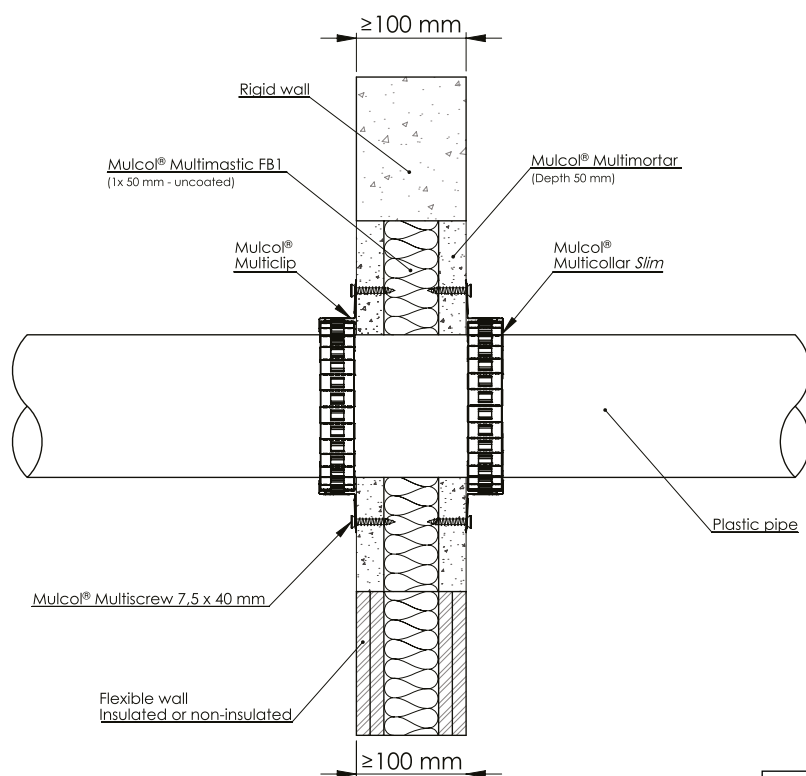
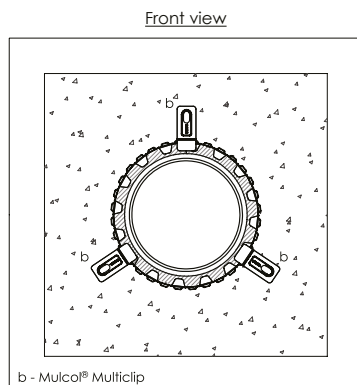


Drawing: FW.E-MC30-AD-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rectangular plastic duct	$\leq 220 \times 90$	1.0	Multicollar <i>Slim</i>	EI 45 U/C
		2.0		EI 120 U/C

A.1.5 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Combustible pipes

A.1.5.1 Plastic pipes - Multicollar *Slim*

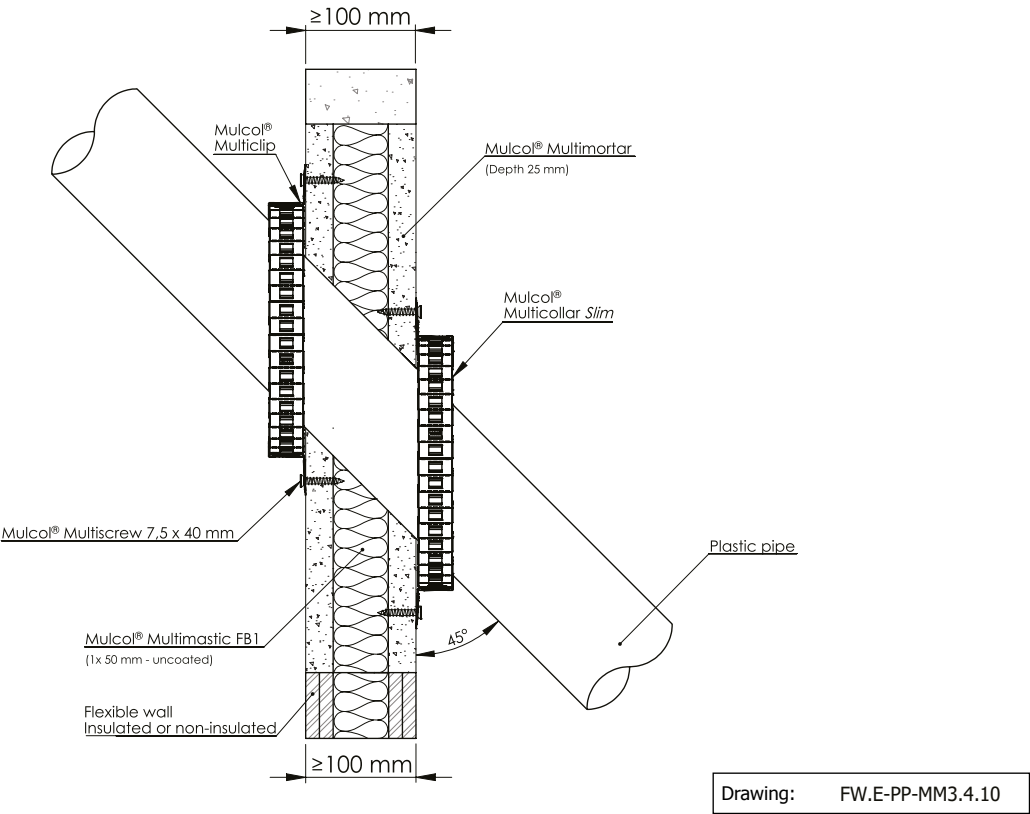
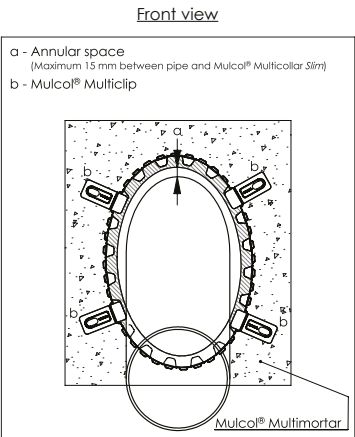


Drawing: FW.E-MC30-PP-MM3.4.10

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

A.1.5
Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Combustible pipes

A.1.5.2
Plastic pipes at 45° - Multicollar *Slim*



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

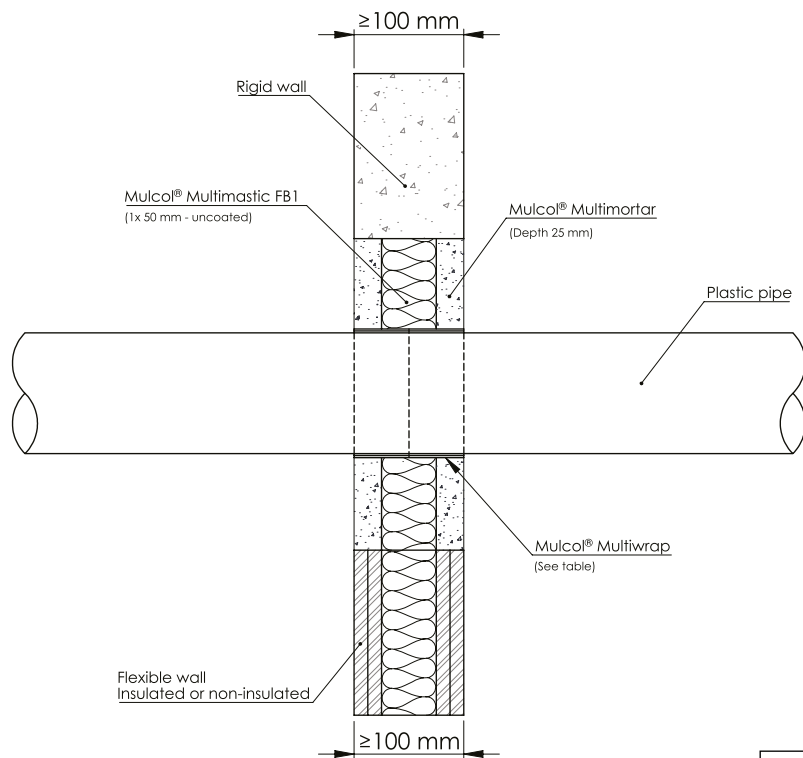
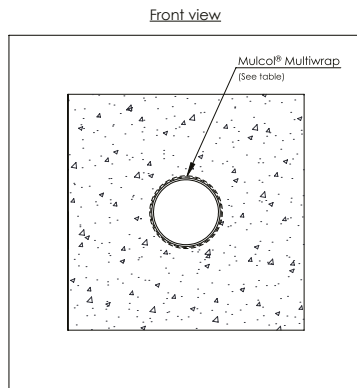
A.1.5

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -

Combustible pipes

A.1.5.3

Plastic pipes - Multiwrap

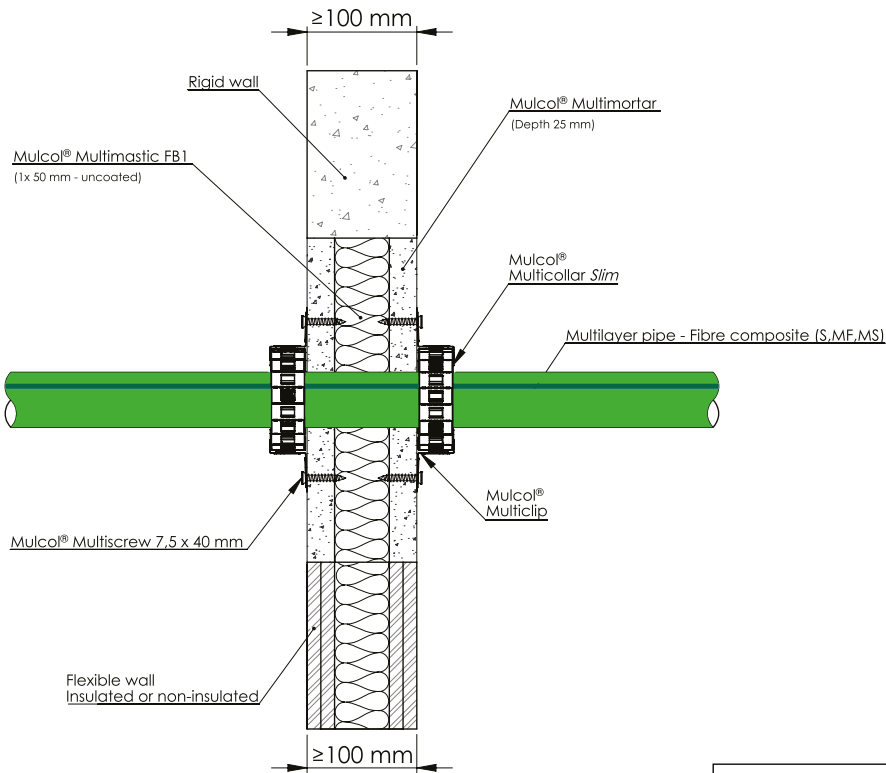
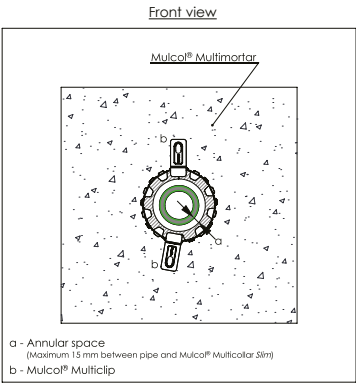


Drawing: FW.E-PP-MW2-MM3.4.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP	$\leq \varnothing 110$	10.0	Multiwrap (2 layers)	EI 120 U/C
			Multiwrap (4 layers)	EI 120 U/U

A.1.5
Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Combustible pipes

A.1.5.4
PP-R multilayer pipes - Multicollar *Slim*



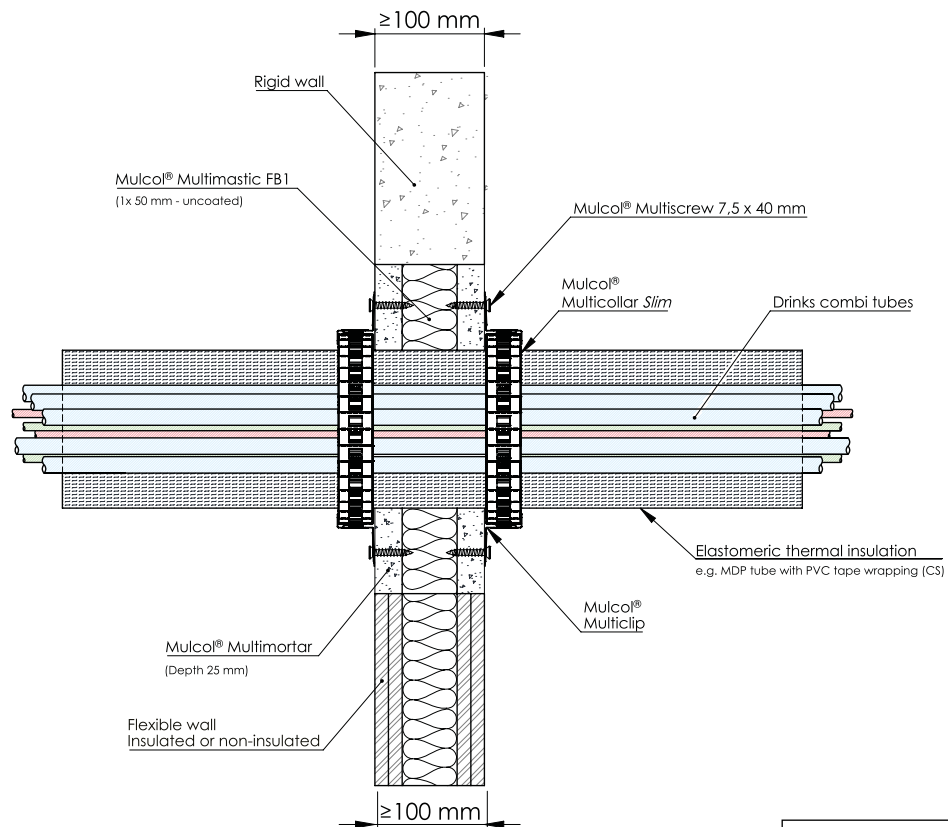
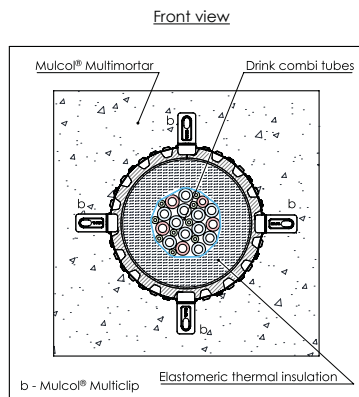
Drawing: FW.E-MLF-MM3.4.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	≤ Ø 50	6.9	Multicollar <i>Slim</i>	EI 120 U/C

A.1.5 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -

Combustible pipes

A.1.5.5 Beverage dispense tubing - Multicollar *Slim*

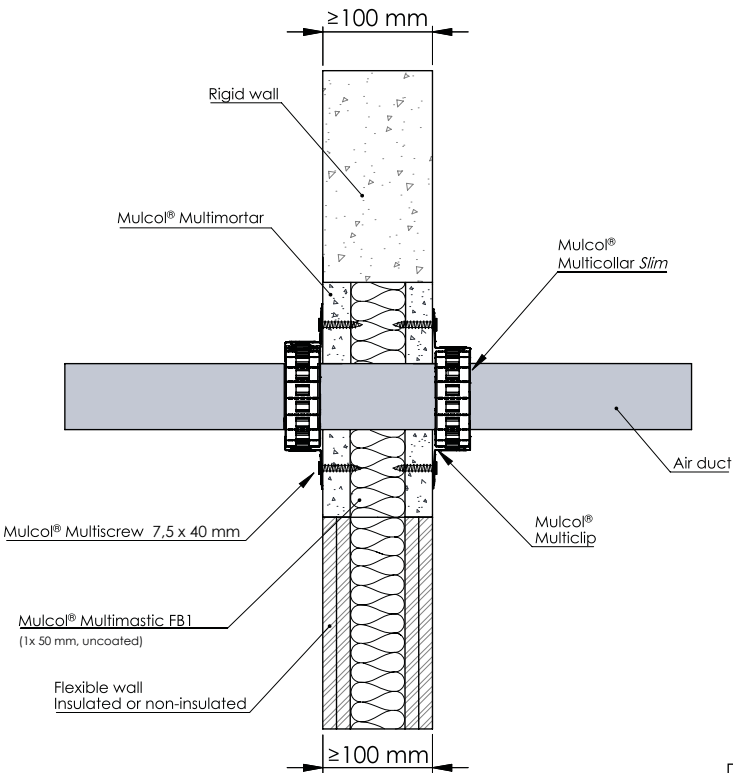
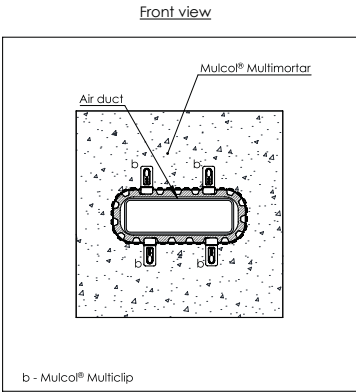


Drawing: FW.E-MC30-DCT52-MM3.4.10

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Hoses no.	Type	Thickness (mm)	Configuration		
Drinks tubing system	$\leq \varnothing 145$	≤ 52	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	EI 60 U/C

A.1.5
Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Combustible pipes

A.1.5.6
Rectangular duct - Multicollar *Slim*

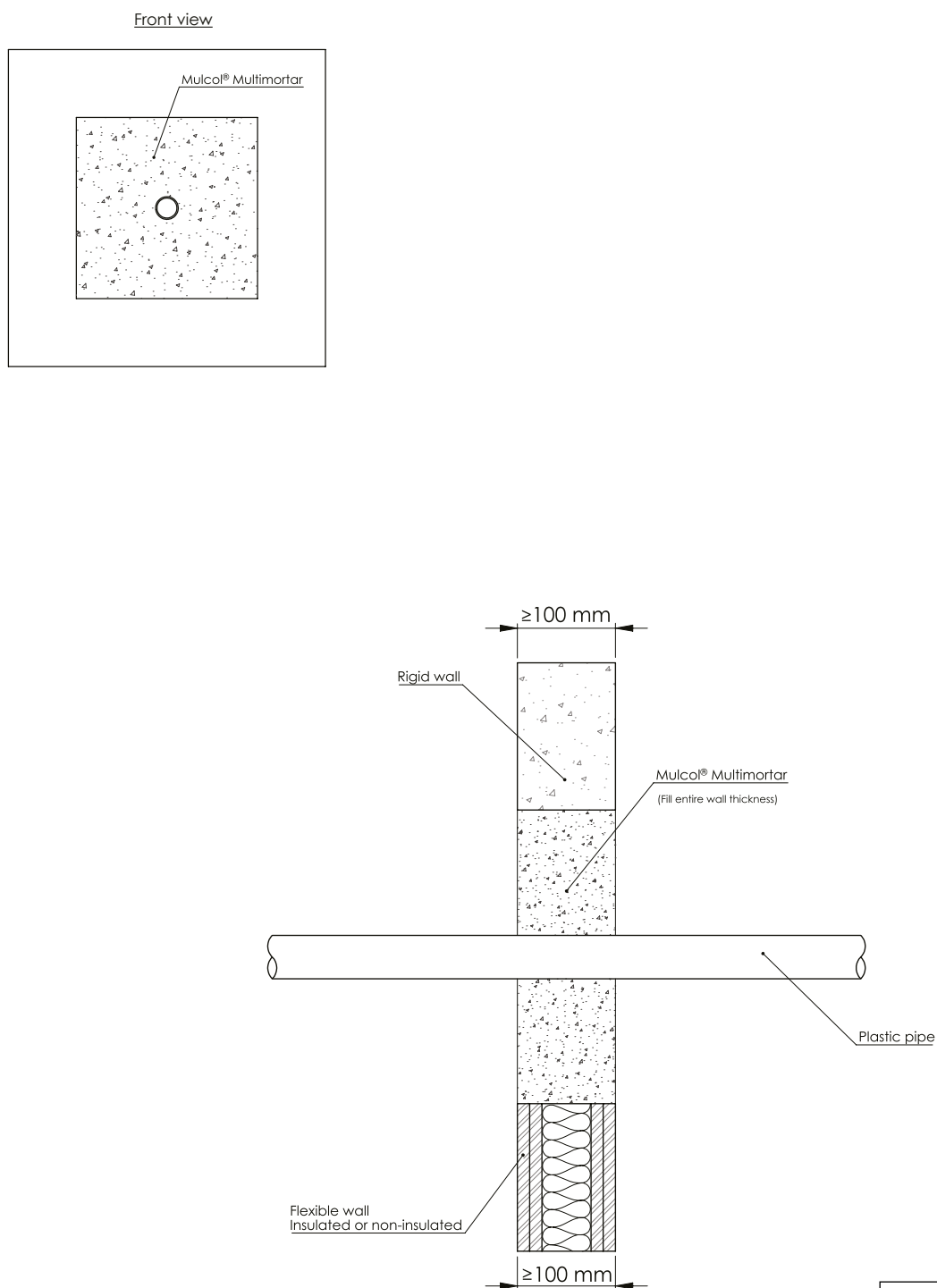


Drawing: FW.E-MC30-AD-MM3.4.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rectangular plastic duct	≤ 220 x 90	1.0	Multicollar <i>Slim</i>	EI 45 U/C
		2.0		EI 120 U/C

A.1.6 Multimortar - ≥ 100 mm - Combustible pipes

A.1.6.1 Plastic pipes

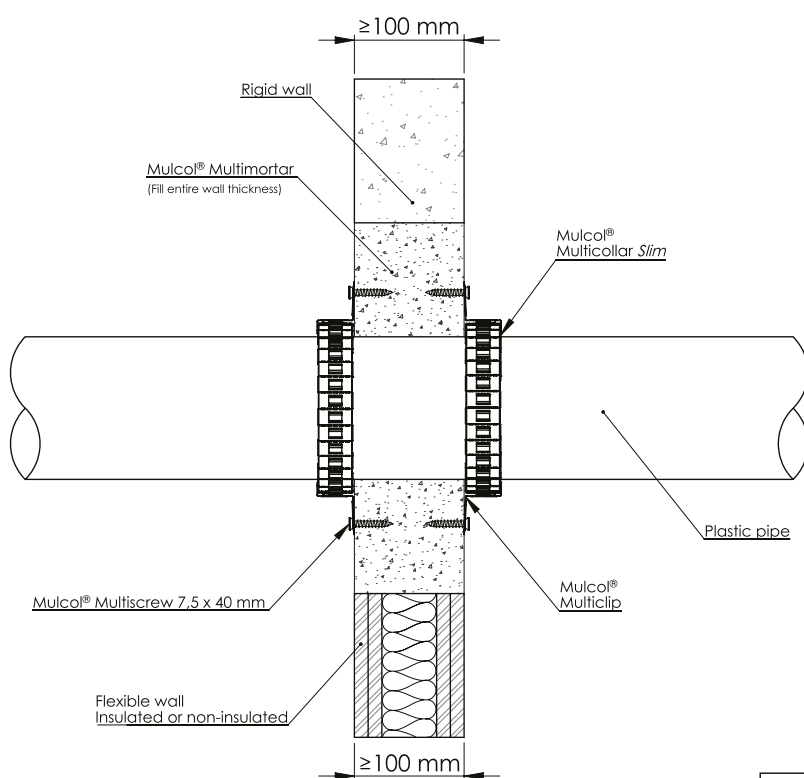
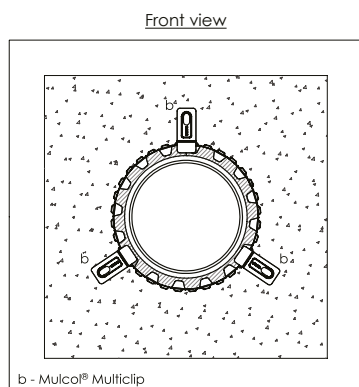


Drawing: FW.E-PP-MM3.4.10

Services	Pipe dimensions (mm)		Classification
	Outer dimension	Wall thickness	
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 32$	2.0 - 3.0	EI 180 U/C
PP		4.4	

A.1.6 Multimortar - ≥ 100 mm - Combustible pipes

A.1.6.2 Plastic pipes - Multicollar *Slim*

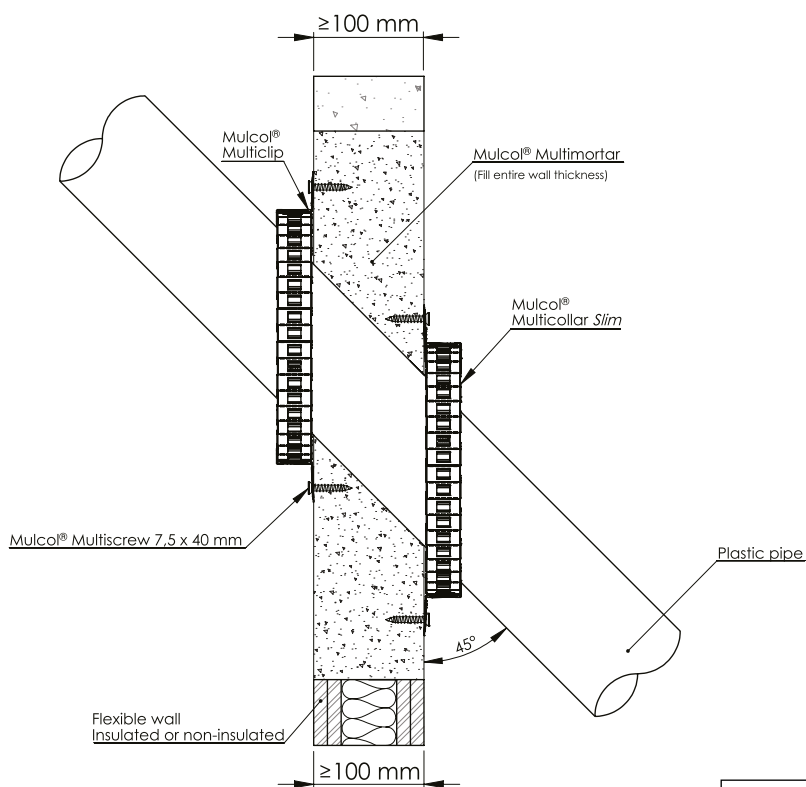
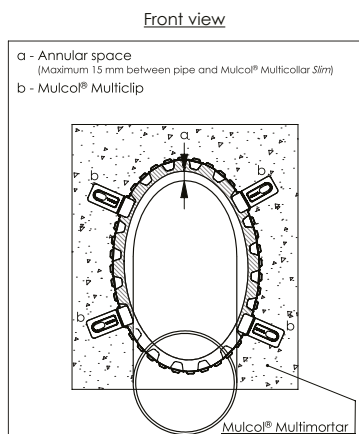


Drawing: FW.E-MC30-PP-MM1.2.10

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

A.1.6 Multimortar - ≥ 100 mm - Combustible pipes

A.1.6.3 Plastic pipes at 45° - Multicollar *Slim*

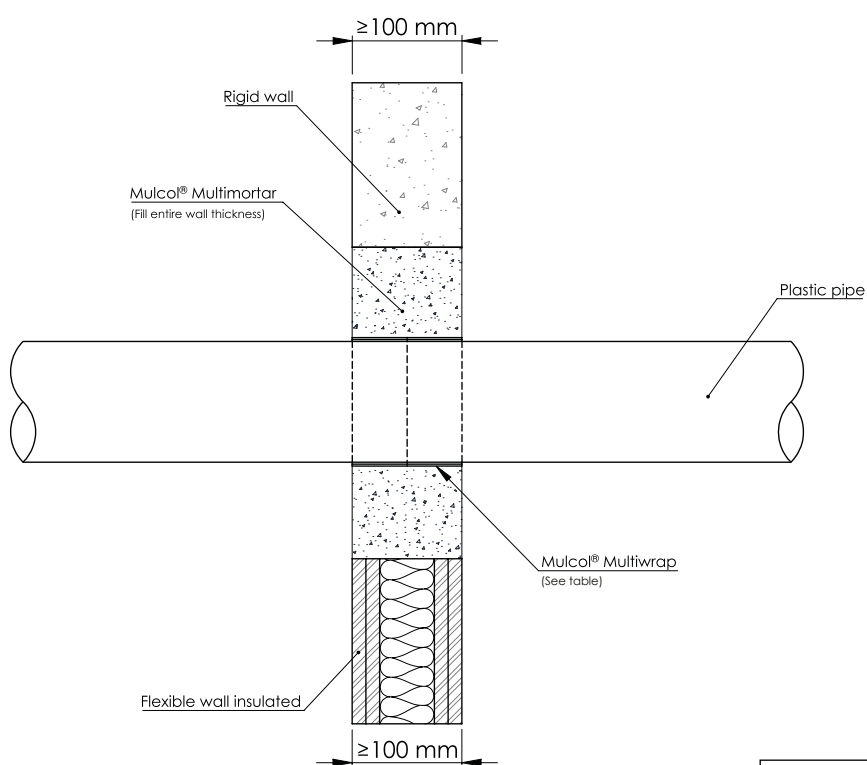
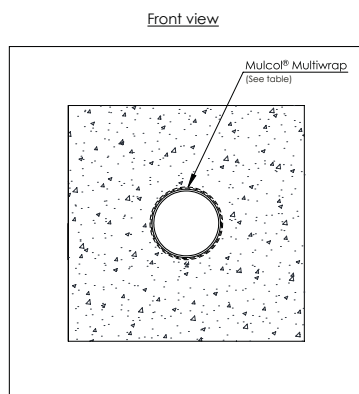


Drawing: FW.E-PP-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	Multicollar <i>Slim</i>	EI 60 U/U, E 90 U/U
PP				
PVC(-U/-C)				

A.1.6 Multimortar - ≥ 100 mm - Combustible pipes

A.1.6.4 Plastic pipes - Multiwrap

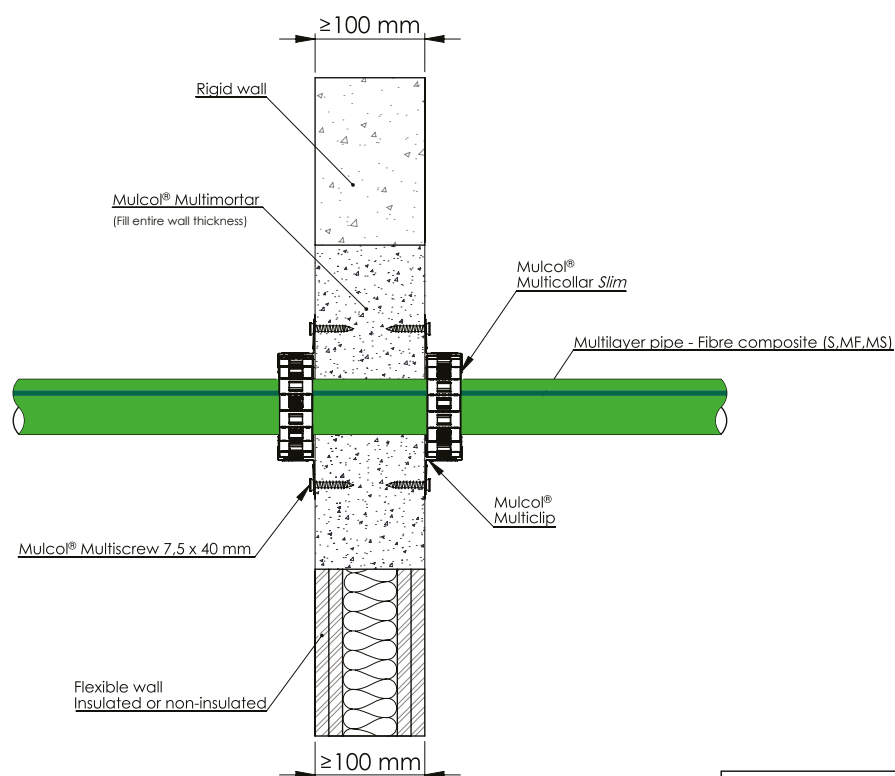
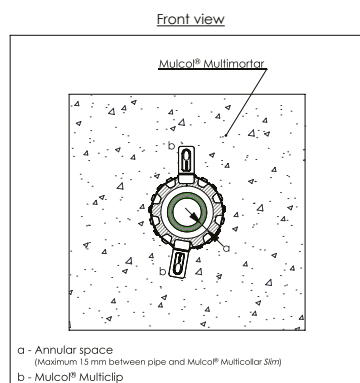


Drawing: FW.E-PP-MW2-MM1.2.10-T

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP	$\leq \varnothing 110$	10.0	Multiwrap (2 layers)	EI 120 U/C
			Multiwrap (4 layers)	EI 120 U/U

A.1.6 Multimortar - ≥ 100 mm - Combustible pipes

A.1.6.5 PP-R multilayer pipes - Multicollar *Slim*

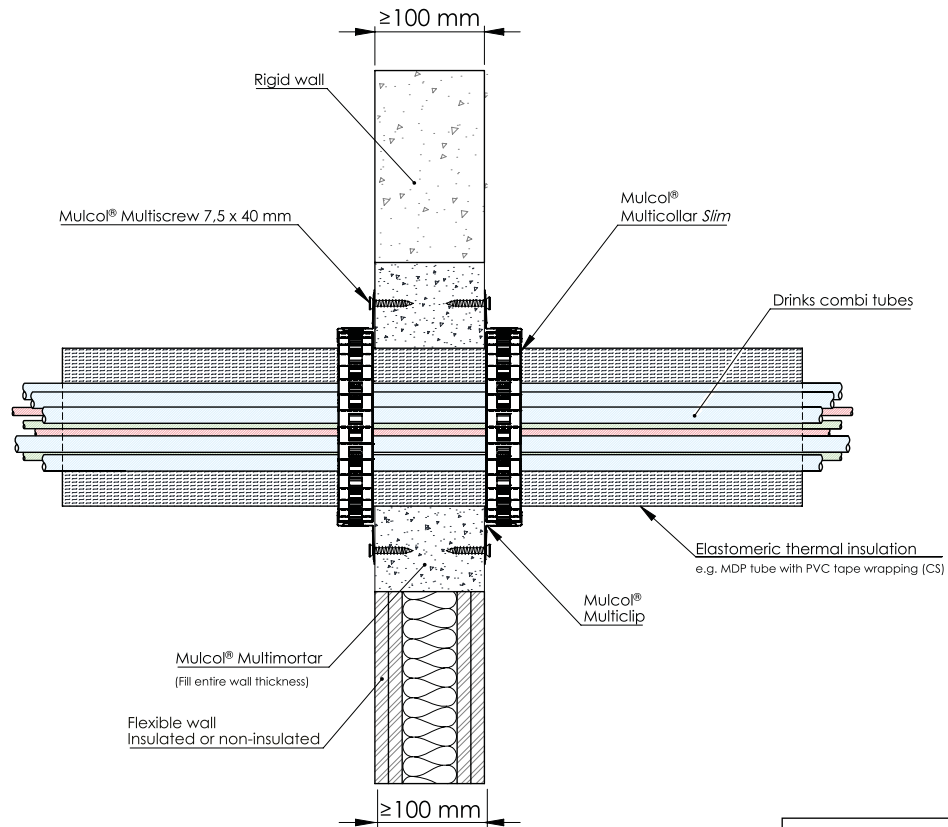
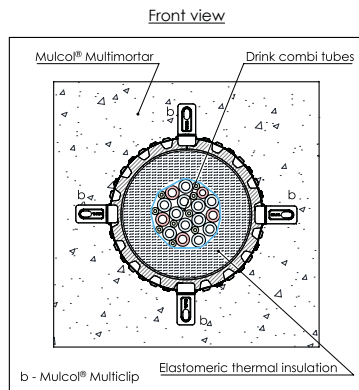


Drawing: FW.E-MLF-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	$\leq \varnothing 50$	6.9	Multicollar <i>Slim</i>	EI 120 U/C

A.1.6 Multimortar - ≥ 100 mm - Combustible pipes

A.1.6.6 Beverage dispense tubing - Multicollar *Slim*

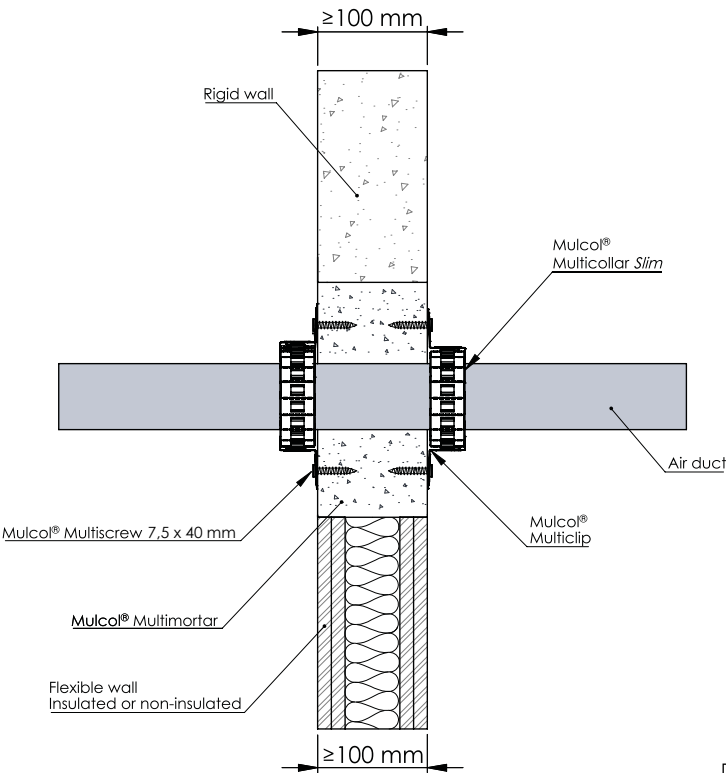
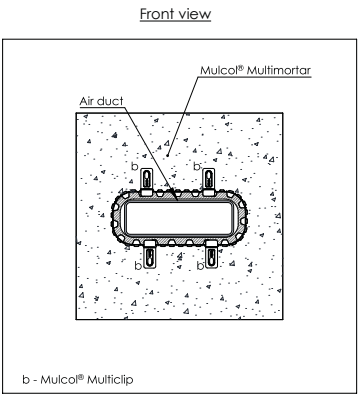


Drawing: FW.E-MC30-DCT52-MM1.2.10

Services	Dimensions (mm)		Type	Insulation		Product	Classification
	Outer dimension	Hoses no.		Thickness (mm)	Configuration		
Drinks tubing system	$\leq \text{Ø } 47$	≤ 3	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	EI 60 U/C
	$\leq \text{Ø } 145$	≤ 52					

A.1.6 Multimortar - ≥ 100 mm - Combustible pipes

A.1.6.7 Rectangular duct - Multicollar *Slim*

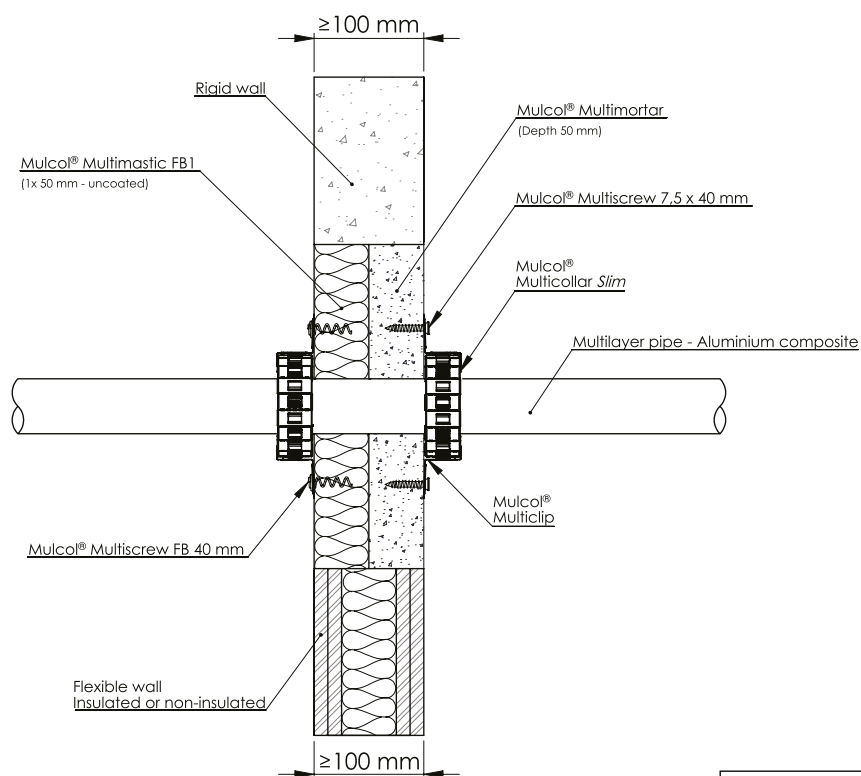
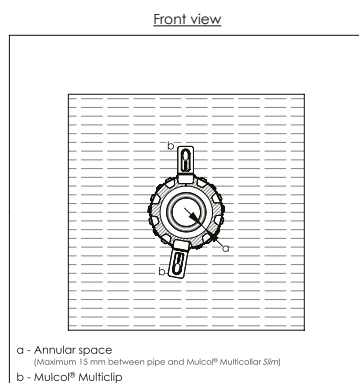


Drawing: FW.E-MC30-AD-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rectangular plastic duct	$\leq 220 \times 90$	1.0	Multicollar <i>Slim</i>	EI 45 U/C
		2.0		EI 120 U/C

A.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Multilayer pipes (MLC)

A.1.7.1 Multilayer pipes (MLC) - Multicollar *Slim*

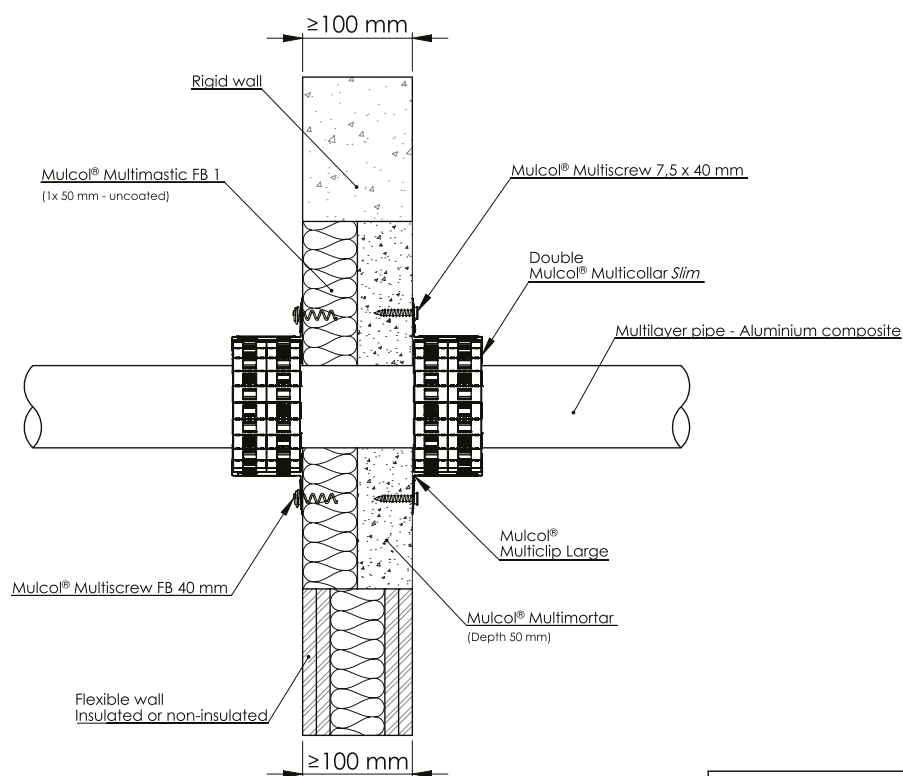
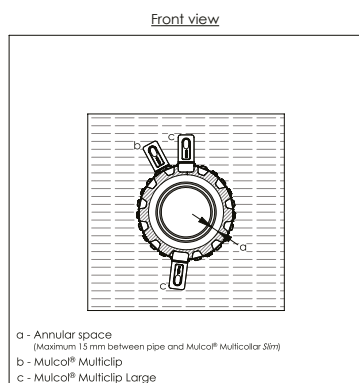


Drawing: FW.E-MLA-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \varnothing 32$	3.2	Multicollar <i>Slim</i>	EI 45 C/U, E 90 C/U
		3.2 - 4.0		EI 45 U/C, E 90 U/C
	$\leq \varnothing 50$	4.0		EI 60 U/C, E 120 U/C

A.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Multilayer pipes (MLC)

A.1.7.2 Multilayer pipes (MLC) - Multicollar *Slim* double

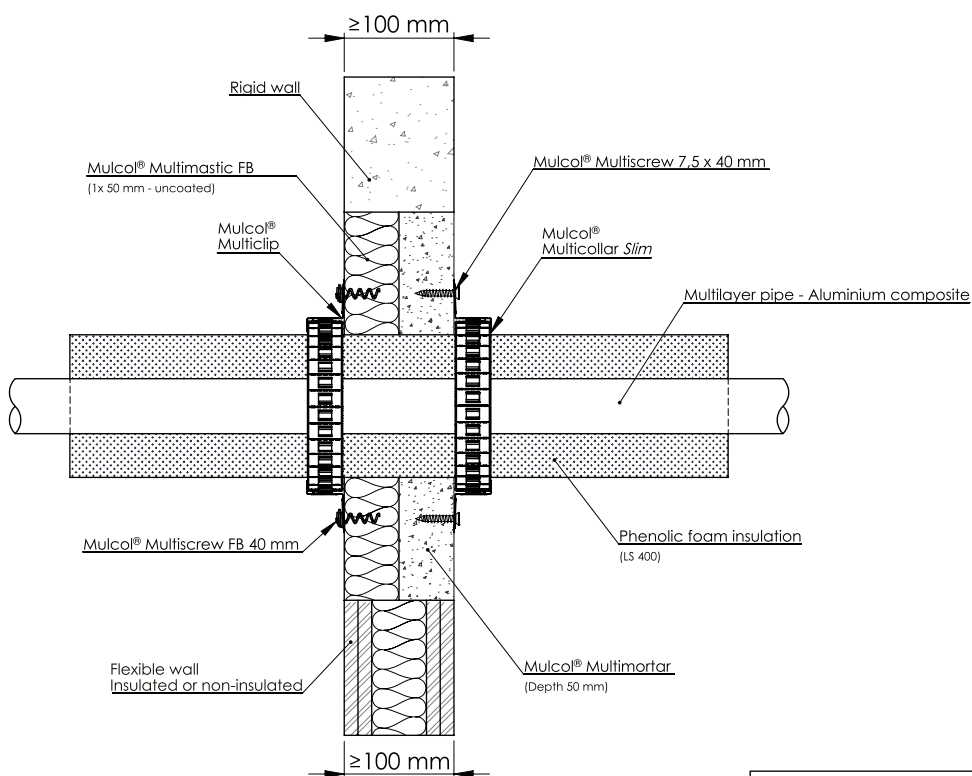
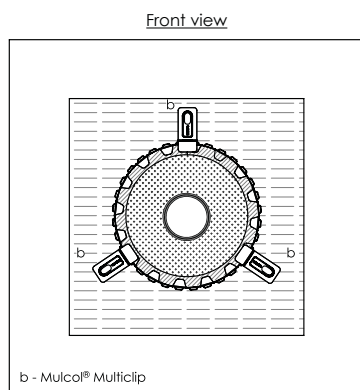


Drawing: FW.E-MLA-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \varnothing 75$	6.0	Multicollar <i>Slim</i> double	EI 90 U/C, E 120 U/C

A.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Multilayer pipes (MLC)

A.1.7.3 Multilayer pipes (MLC) - Phenolic foam - Multicollar *Slim*

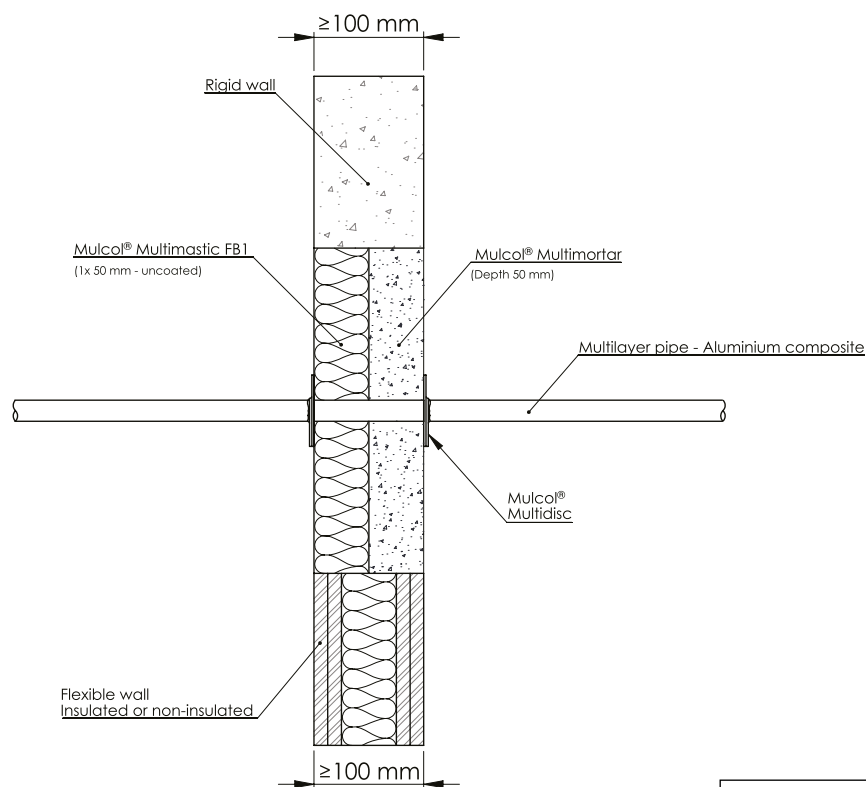
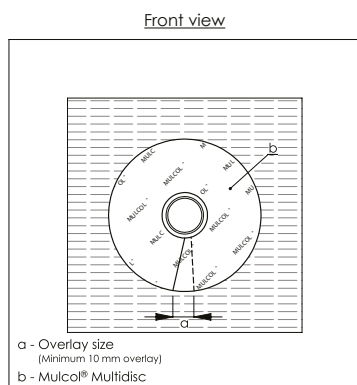


Drawing: FW.E-MLA-MM2.5.10

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \varnothing 20$	2.0	Kingspan Kooltherm	15 - 40	LS 400 / CS	Multicollar <i>Slim</i>	EI 60 U/C
	$\leq \varnothing 40$	3.5		20 - 40			
	$\leq \varnothing 63$	4.5					

A.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Multilayer pipes (MLC)

A.1.7.4 Multilayer pipes (MLC) - Multidisc



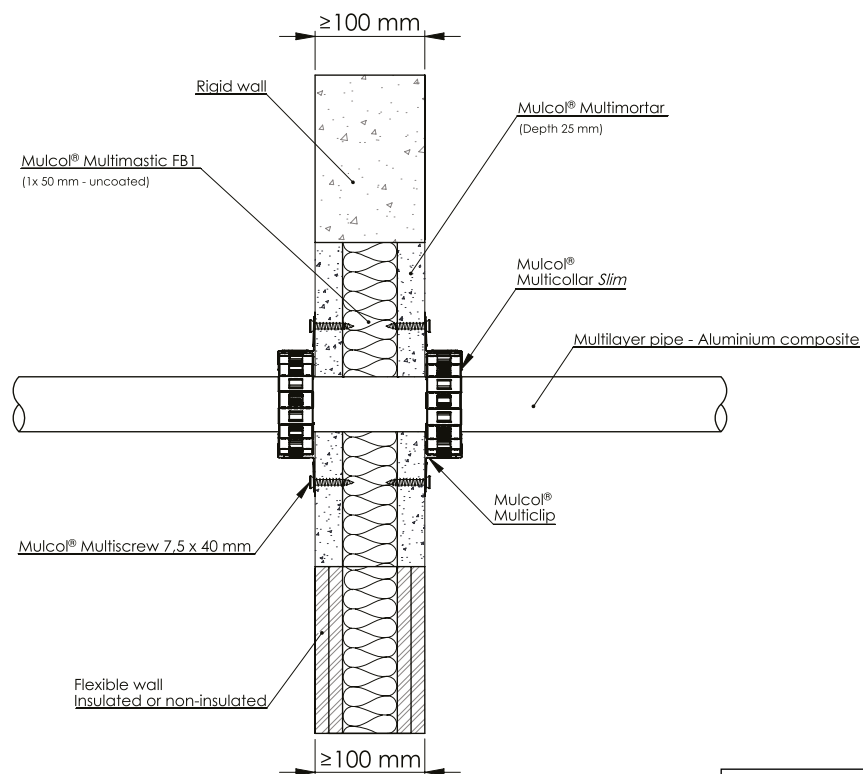
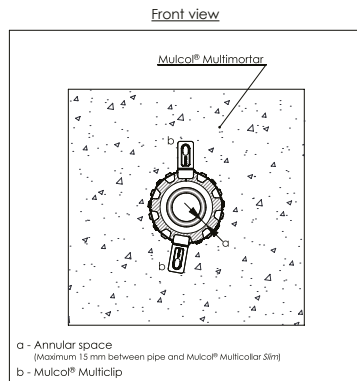
Drawing: FW.E-MLA-M2-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \varnothing 16$	2.0	Multidisc	EI 60 U/C, E 120 U/C

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Multilayer pipes (MLC)

A.1.8.1

Multilayer pipes (MLC) - Multicollar *Slim*



Drawing: FW-MLA-MM3.4.10

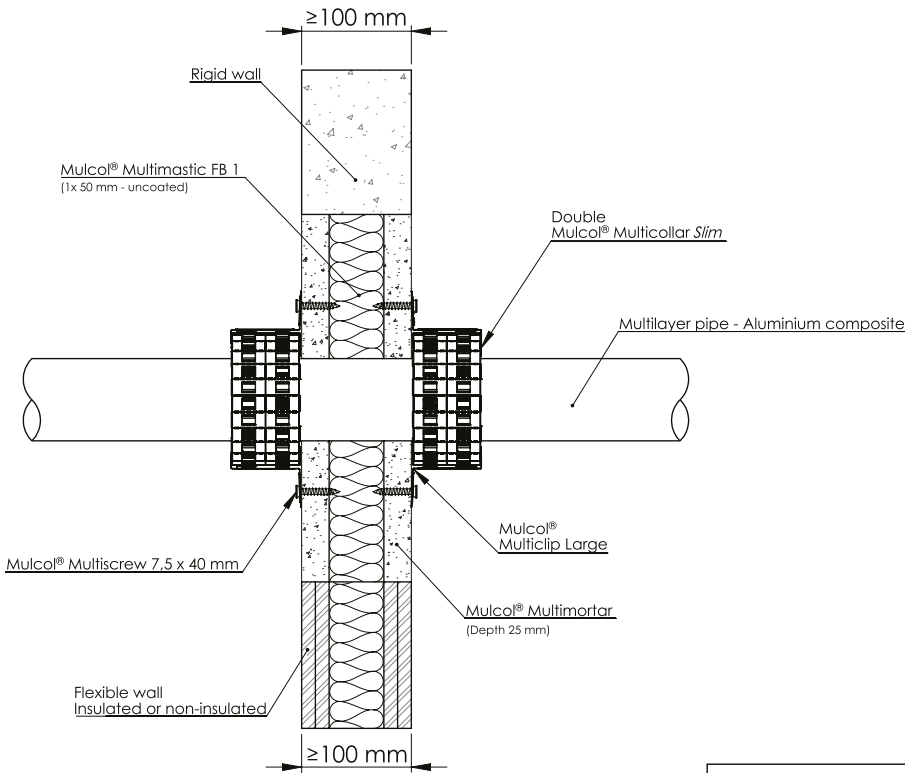
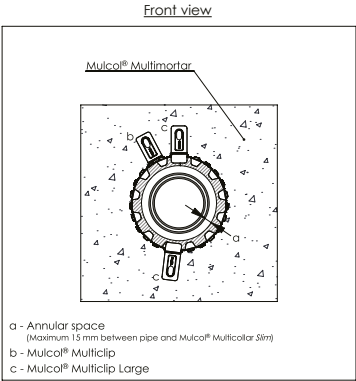
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	≤ Ø 32	3.2	Multicollar <i>Slim</i>	EI 45 C/U, E 90 C/U
		3.2 - 4.0		EI 45 U/C, E 90 U/C
	≤ Ø 50	4.0		EI 60 U/C, E 120 U/C

A.1.8

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -
Multilayer pipes (MLC)

A.1.8.2

Multilayer pipes (MLC) - Multicollar *Slim* double

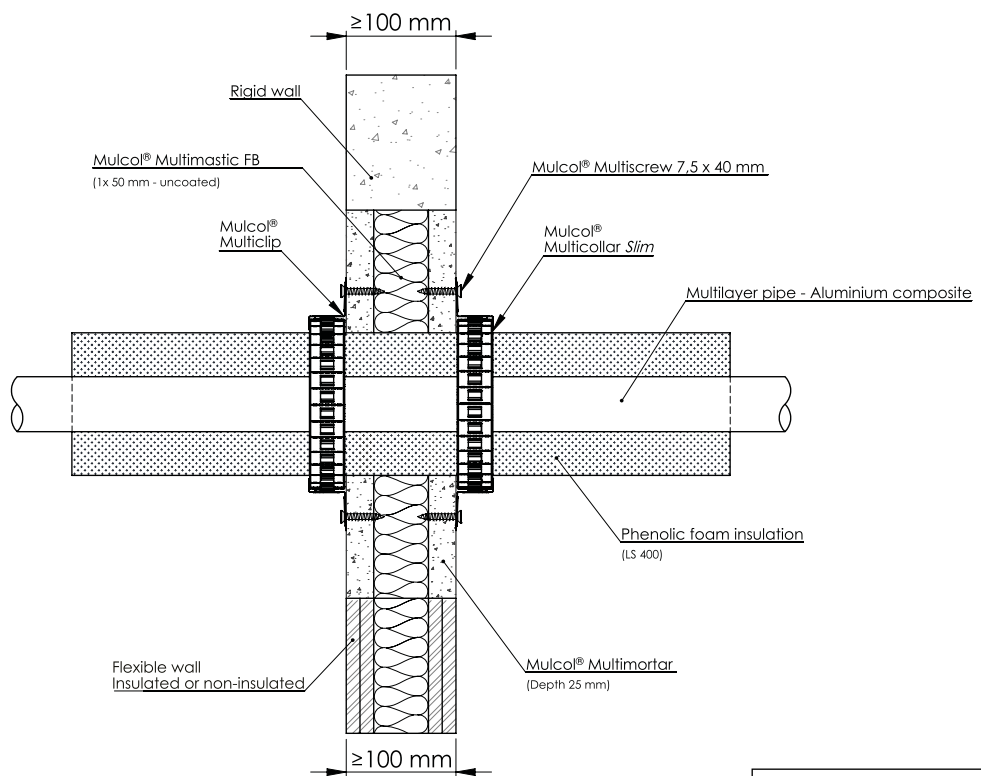
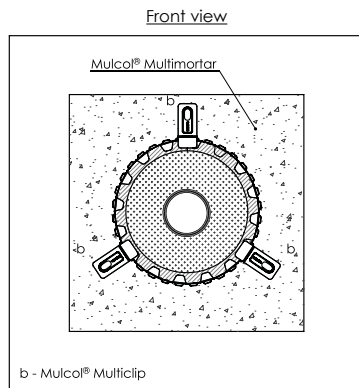


Drawing: FW-MLA-MM3.4.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	≤ Ø 75	6.0	Multicollar <i>Slim</i> double	EI 90 U/C, E 120 U/C

A.1.8 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Multilayer pipes (MLC)

A.1.8.3 Multilayer pipes (MLC) - Phenolic foam - Multicollar *Slim*

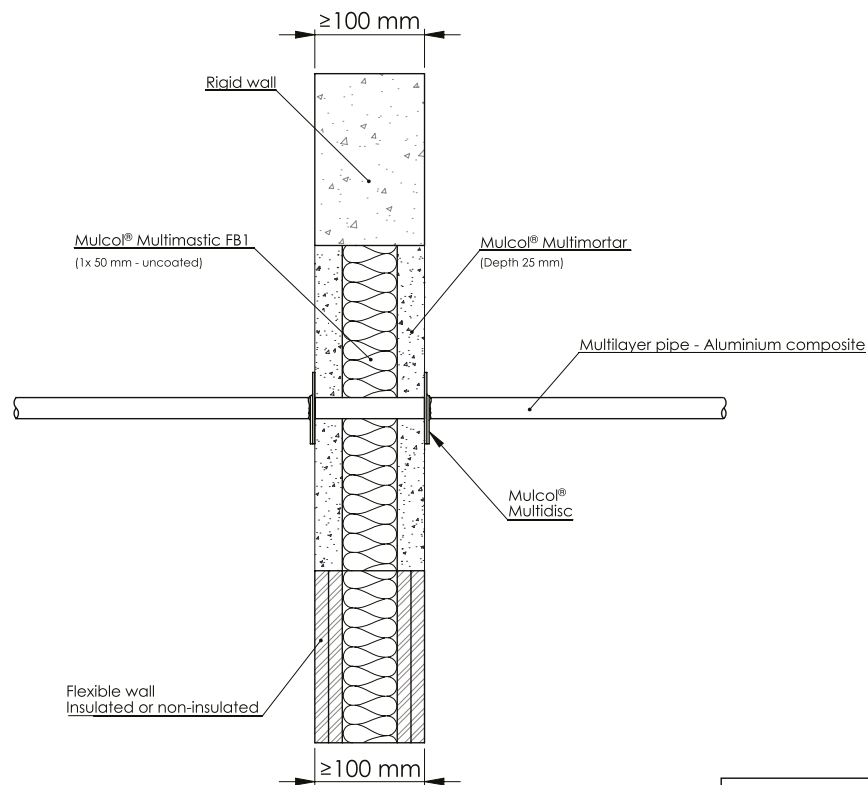
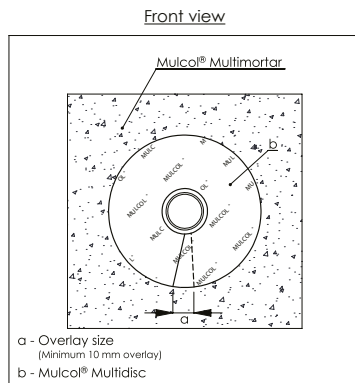


Drawing: FW.E-MLA-MM2.5.10

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \varnothing 20$	2.0	Kingspan Kooltherm	15 - 40	LS 400 / CS	Multicollar <i>Slim</i>	EI 60 U/C
	$\leq \varnothing 40$	3.5		20 - 40			
	$\leq \varnothing 63$	4.5					

**A.1.8 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -
Multilayer pipes (MLC)**

A.1.8.4 Multilayer pipes (MLC) - Multidisc

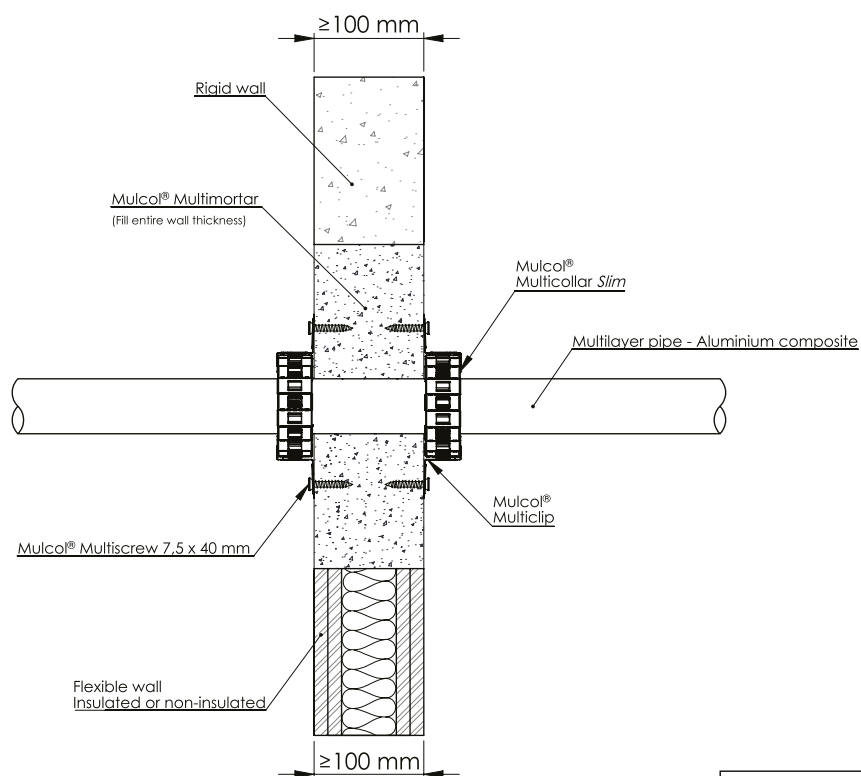
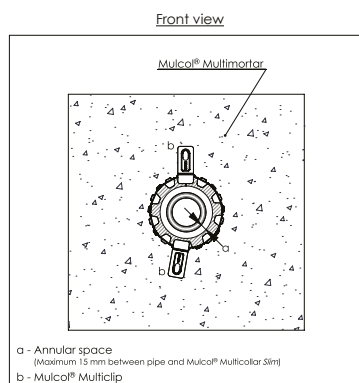


Drawing: FW.E-MLA-M2-MM3.4.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \varnothing 16$	2.0	Multidisc	EI 60 U/C, E 120 U/C

A.1.9 Multimortar - ≥ 100 mm - Multilayer pipes (MLC)

A.1.9.1 Multilayer pipes (MLC) - Multicollar *Slim*

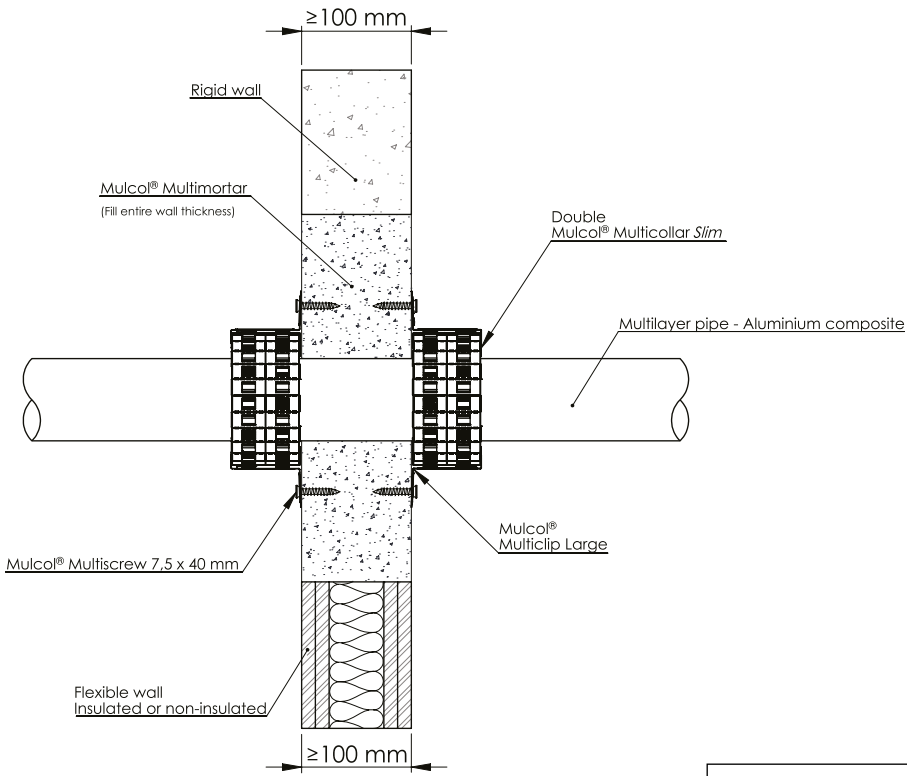
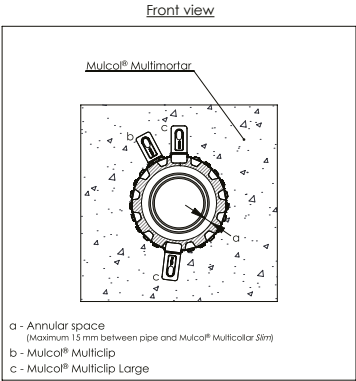


Drawing: FW.E-MLA-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \varnothing 32$	3.2	Multicollar <i>Slim</i>	EI 45 C/U, E 90 C/U
		3.2 - 4.0		EI 45 U/C, E 90 U/C
	$\leq \varnothing 50$	4.0		EI 60 U/C, E 120 U/C

A.1.9 Multimortar - ≥ 100 mm - Multilayer pipes (MLC)

A.1.9.2 Multilayer pipes (MLC) - Multicollar *Slim* double

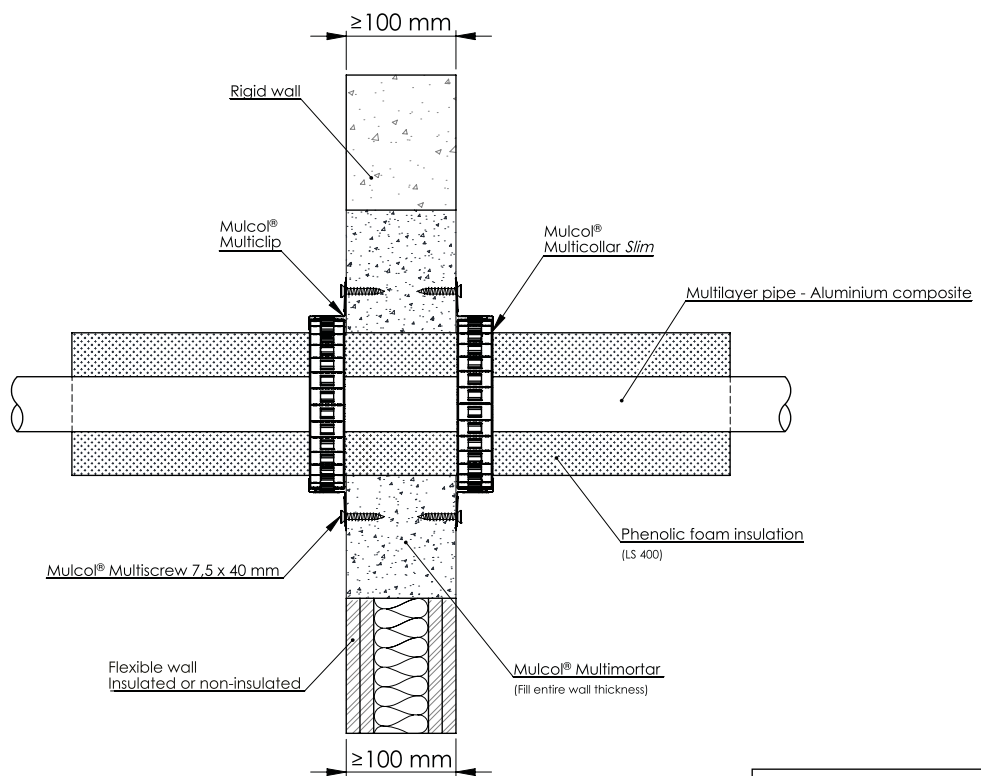
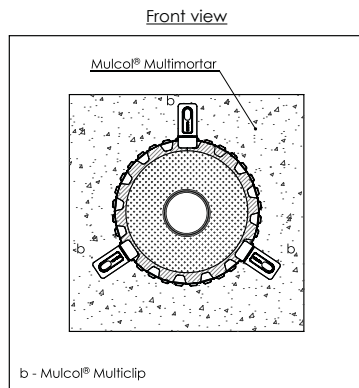


Drawing: FW.E-MLA-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \varnothing 75$	6.0	Multicollar <i>Slim</i> double	EI 90 U/C, E 120 U/C

A.1.9 Multimortar - ≥ 100 mm - Multilayer pipes (MLC)

A.1.9.3 Multilayer pipes (MLC) - Phenolic foam - Multicollar *Slim*

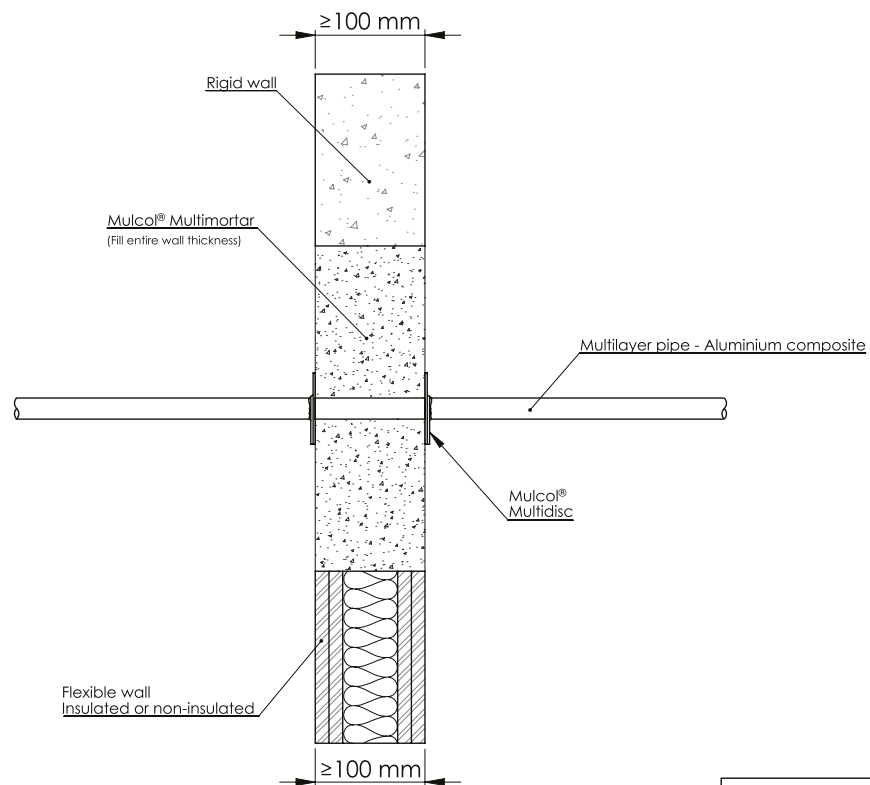
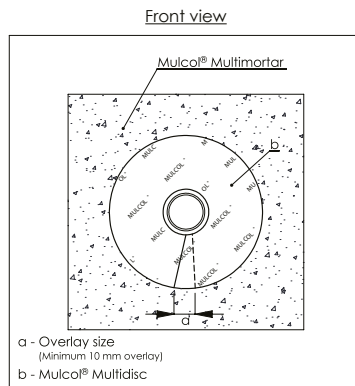


Drawing: FW-MC30-MLA-MM1.2.22

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \varnothing 20$	2.0	Kingspan Kooltherm	15 - 40	LS 400 / CS	Multicollar <i>Slim</i>	EI 60 U/C
	$\leq \varnothing 40$	3.5		20 - 40			
	$\leq \varnothing 63$	4.5					

A.1.9 Multimortar - ≥ 100 mm - Multilayer pipes (MLC)

A.1.9.4 Multilayer pipes (MLC) - Multidisc

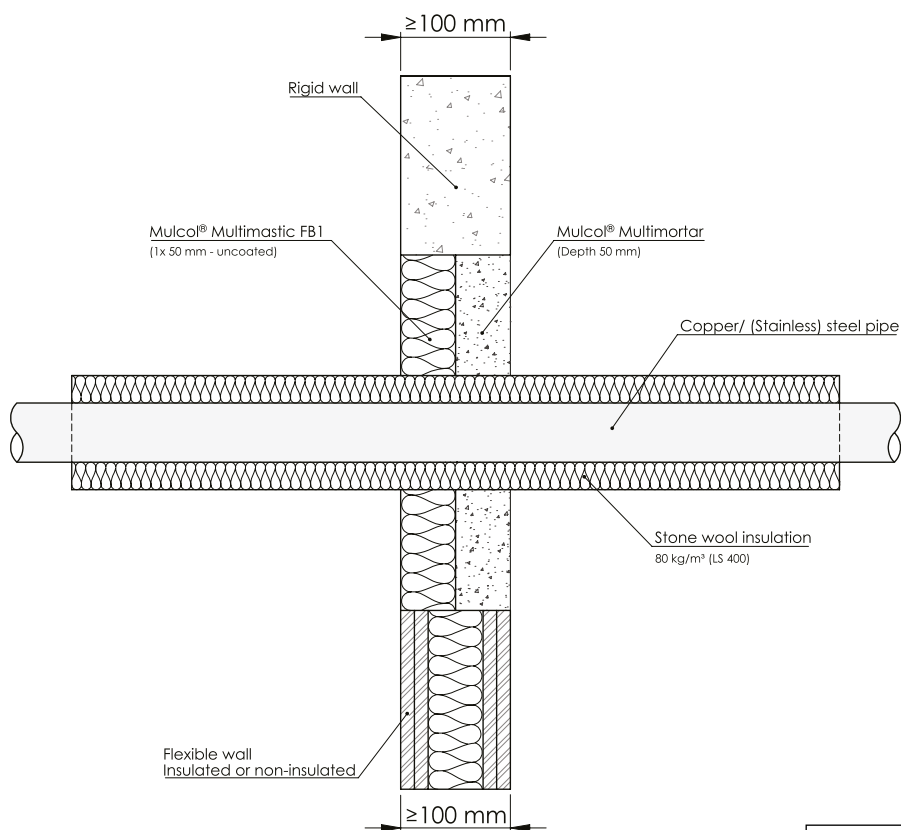
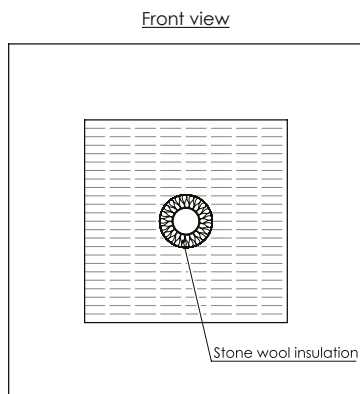


Drawing: FW.E-MLA-M2-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \varnothing 16$	2.0	Multidisc	EI 60 U/C, E 120 U/C

A.1.10 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated mineral wool

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

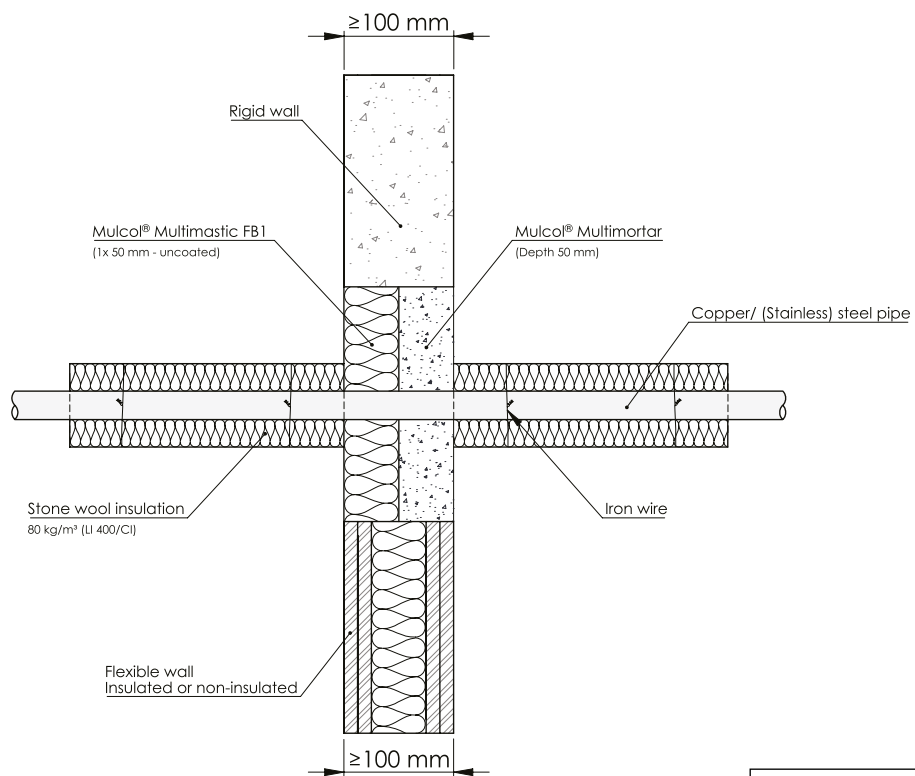
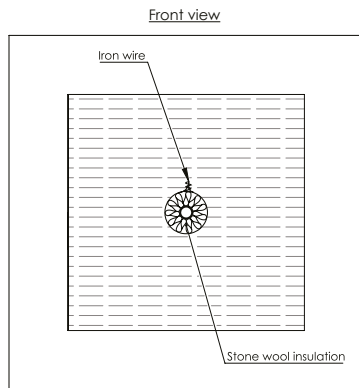


Drawing: FW.E-CU-MM2.5.20

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless-) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	Stone wool ($\geq 80 \text{ kg/m}^3$)	25	LS 400 / CS	EI 90 C/U, E 120 C/U
	$\leq \varnothing 54$	≥ 1.5				
	$\leq \varnothing 12$	≥ 1.5				
	$\leq \varnothing 114.3$	≥ 3.6				
	$\leq \varnothing 219.1$	≥ 4.0		30	CS	EI 60 C/U, E 120 C/U
(Stainless) Steel / cast iron	$\leq \varnothing 324$	≥ 3.7				
						EI 90 C/U, E 120 C/U

A.1.10 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated mineral wool

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



Drawing: FW.E-CU-MM2.5.20.LI

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 120 C/U
	≤ Ø 54	≥ 1.5				EI 90 C/U, E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6				EI 120 C/U
	≤ Ø 324	≥ 3.7				

A.1.11

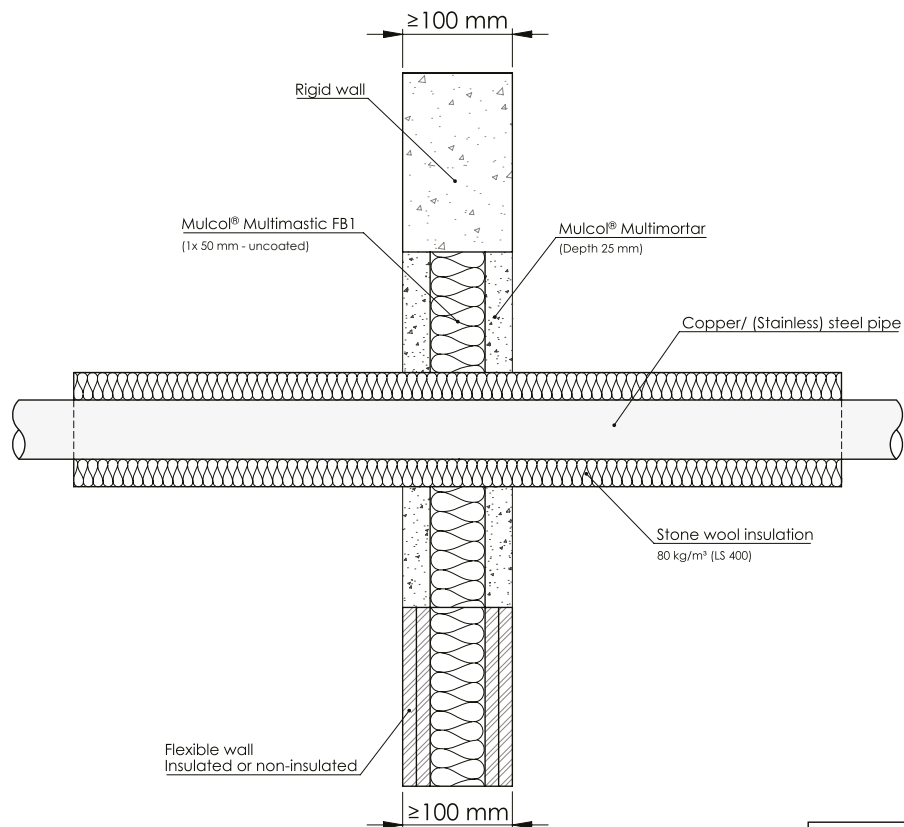
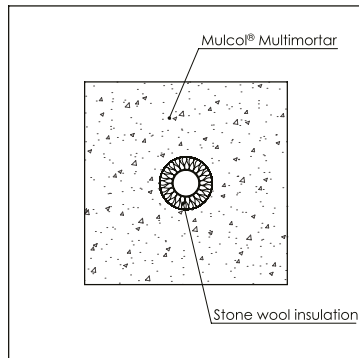
Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -

Metal pipes insulated mineral wool

A.1.11.1

Copper and steel pipes - Stone wool LS 400 / CS

Front view



Drawing: FW.E-CU-MM3.4.20

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	LS 400 / CS	EI 120 C/U
	≤ Ø 54	≥ 1.5				
	≤ Ø 12	≥ 1.5				
	≤ Ø 114.3	≥ 3.6				
	≤ Ø 219.1	≥ 4.0		30	CS	EI 60 C/U, E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 324	≥ 3.7				EI 90 C/U, E 120 C/U

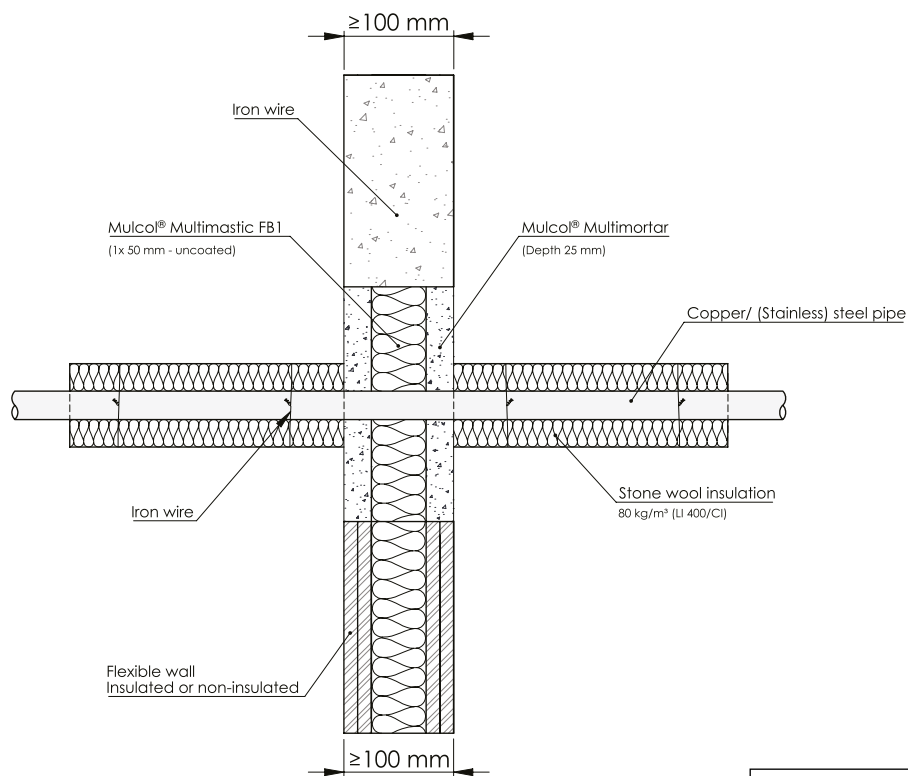
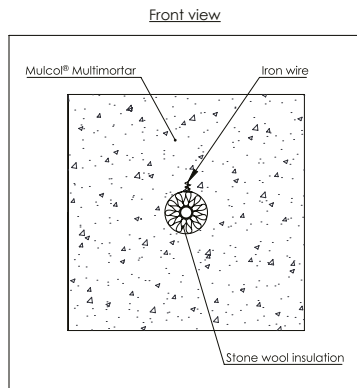
A.1.11

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -

Metal pipes insulated mineral wool

A.1.11.2

Copper and steel pipes - Stone wool LI 400 / CI

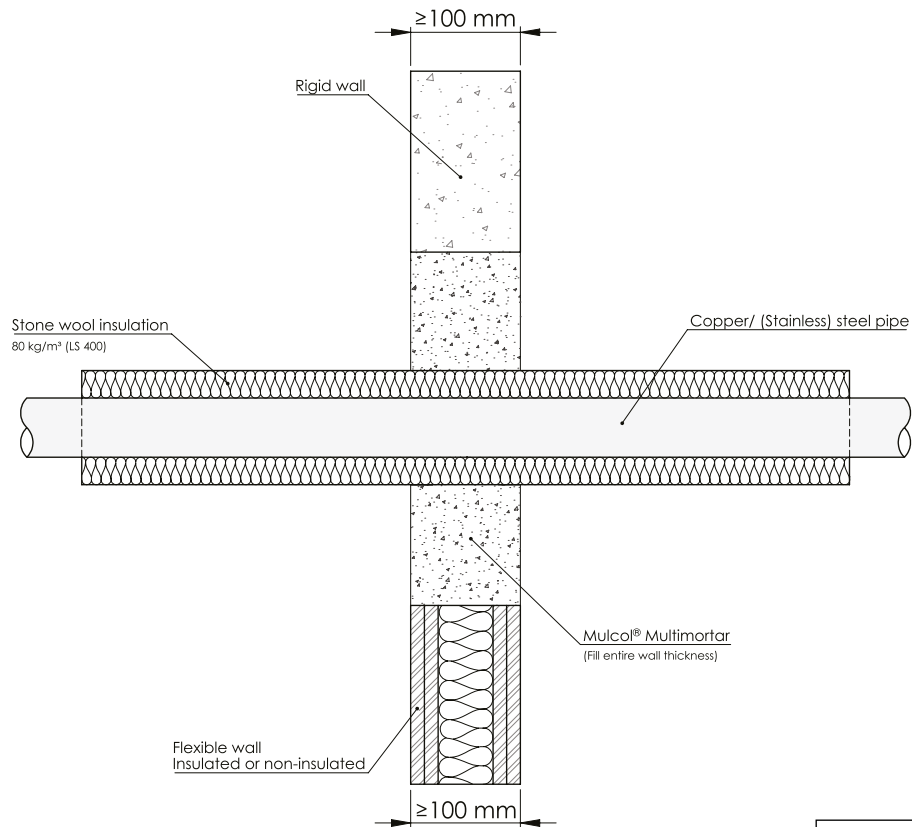
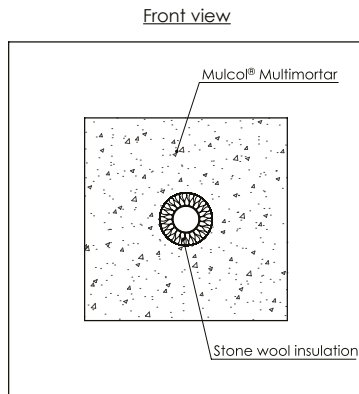


Drawing: FW.E-CU-MM3.4.20.LI

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 120 C/U
	≤ Ø 54	≥ 1.5				
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6				
	≤ Ø 324	≥ 3.7				

A.1.12 Multimortar - ≥ 100 mm - Metal pipes insulated mineral wool

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

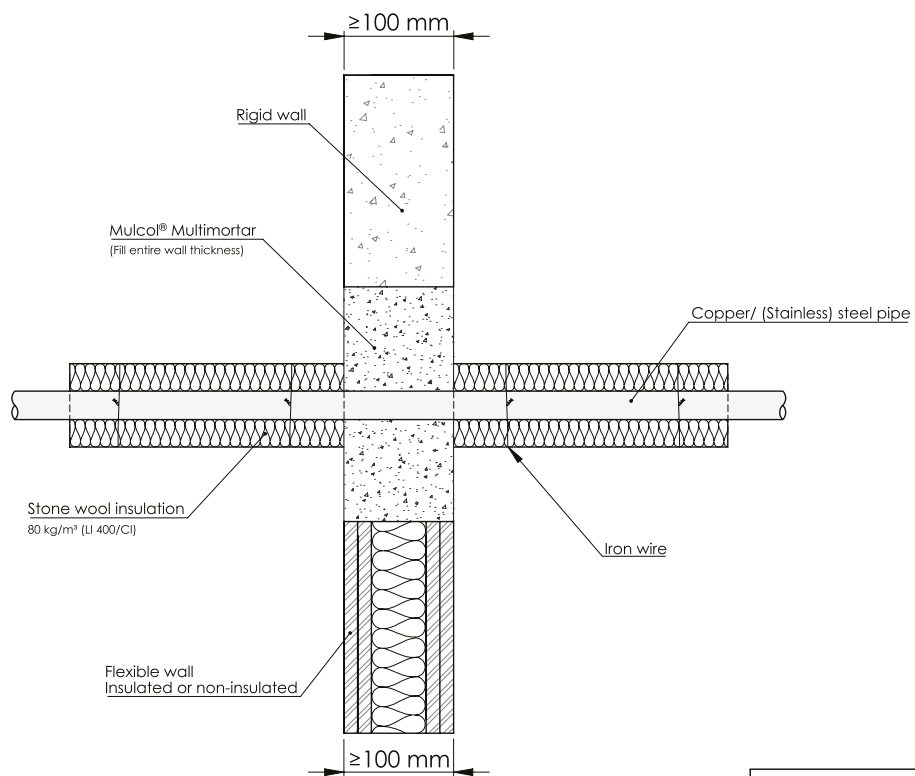
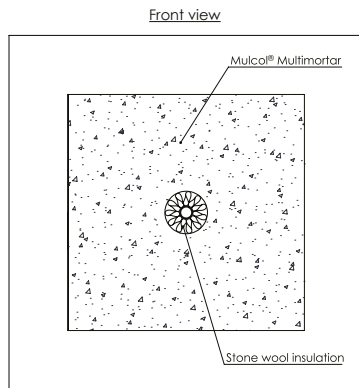


Drawing: FW.E-CU-MM1.2.20.LS

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless-) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	Stone wool ($\geq 80 \text{ kg/m}^3$)	25	LS 400 / CS	EI 120 C/U
	$\leq \varnothing 54$	≥ 1.5				
(Stainless) Steel / cast iron	$\leq \varnothing 12$	≥ 1.5				EI 60 C/U
	$\leq \varnothing 114.3$	≥ 3.6				EI 60 C/U, E 120 C/U
	$\leq \varnothing 219.1$	≥ 4.0		30	CS	EI 90 C/U, E 120 C/U
	$\leq \varnothing 324$	≥ 3.7				

A.1.12 Multimortar - ≥ 100 mm - Metal pipes insulated mineral wool

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

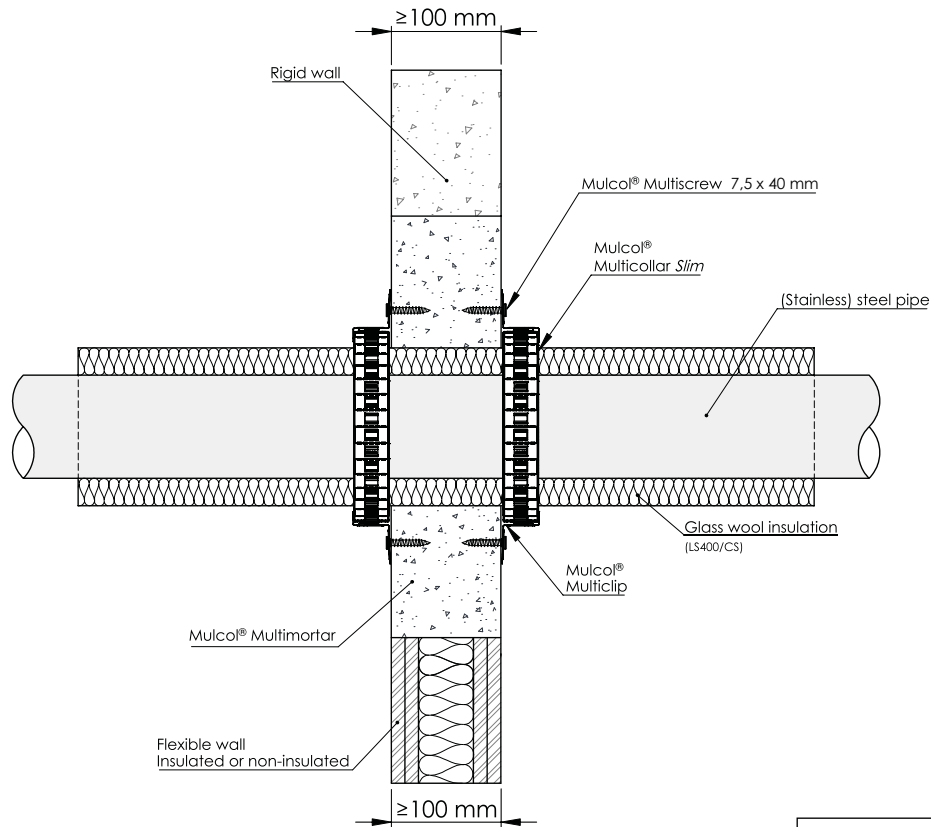
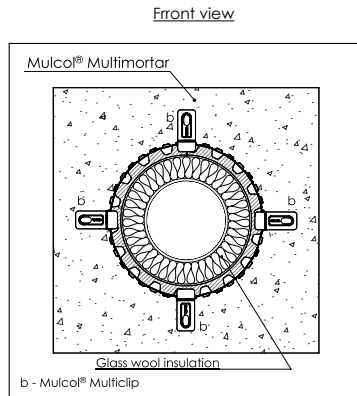


Drawing: FW.E-CU-MM1.2.20

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless-) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	Stone wool ($\geq 80 \text{ kg/m}^3$)	≥ 25	LI 400 / CI	EI 120 C/U
	$\leq \varnothing 54$	≥ 1.5				
(Stainless) Steel / cast iron	$\leq \varnothing 114.3$	≥ 3.6				
	$\leq \varnothing 324$	≥ 3.7				

A.1.12 Multimortar - ≥ 100 mm - Metal pipes insulated mineral wool

A.1.12.3 Steel pipes - Glass wool LS 400 / CS - Multicollar *Slim*

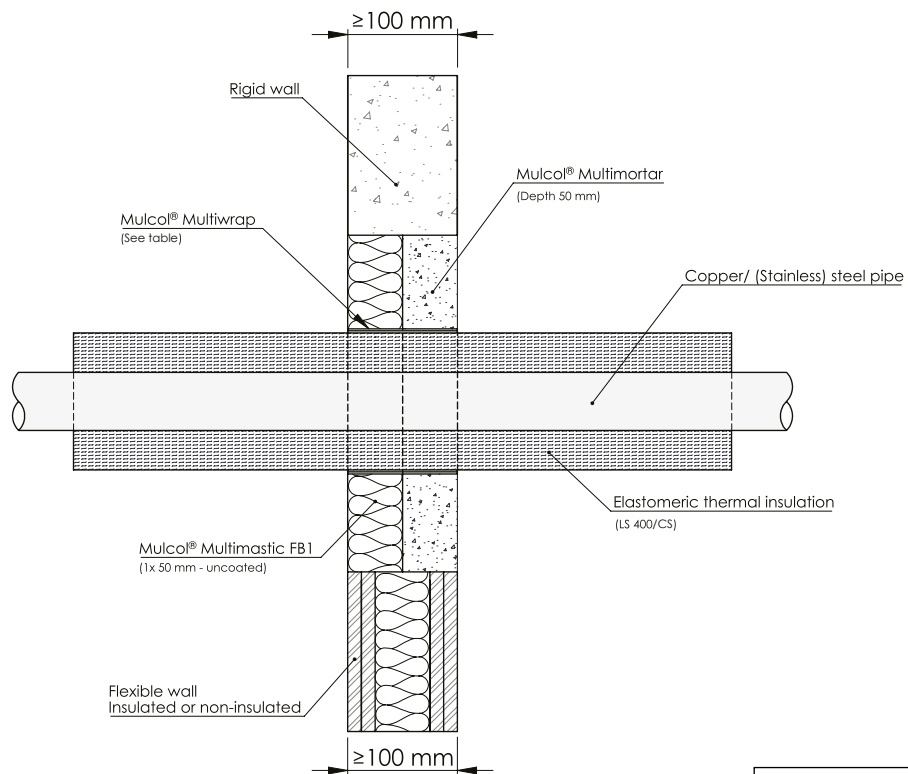
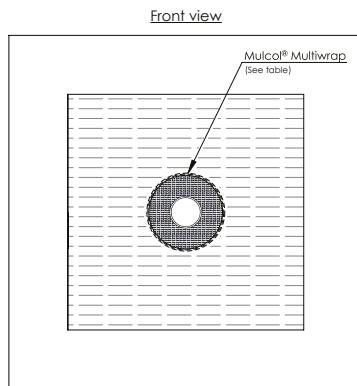


Drawing: FW.E-MC30-ST-MM1.2.21

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	$\leq \varnothing 76.2$	≥ 3.3	Isover	≥ 30	LS 400 / CS	Multicollar <i>Slim</i>	EI 90 C/U, E 120 C/U
	$\leq \varnothing 139.7$	≥ 4.0	Climclover Glass wool ($\geq 33 \text{ kg/m}^3$)	≥ 50			EI 60 C/U, E 90 C/U

A.1.13 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated elastomer

A.1.13.1 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap



Drawing: FW.E-CU-MW2-MM2.5.22

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 _L -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		
				60			EI 120 C/U		
	≤ Ø 54	≥ 1.5		38			EI 60 C/U, E 120 C/U		
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6		15	32		CS	Multiwrap (3 layers)	EI 60 C/U, E 120 C/U
	≤ Ø 219.1	≥ 4.0		50					LS 400 / CS
					CS		EI 120 C/U		
	≤ Ø 324	≥ 3.7		50	CS		EI 60 C/U, E 120 C/U		
			CS			EI 45 C/U, E 180 C/U			
					CS	EI 90 C/U, E 180 C/U			

A.1.13 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated elastomer

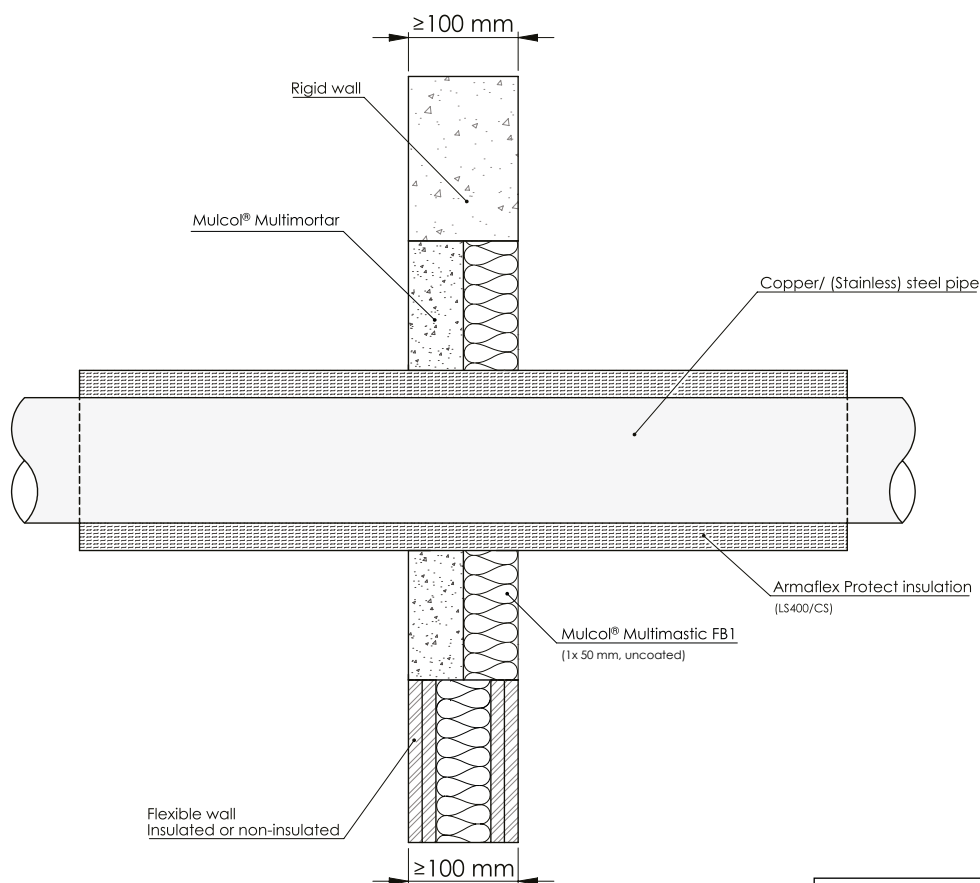
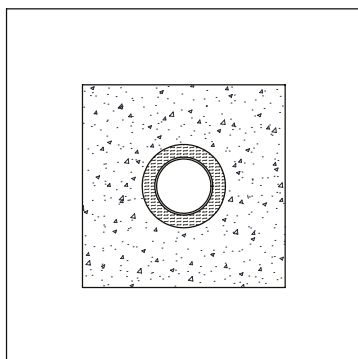
A.1.13.1 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap

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 _L -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 45 C/U, E 120 C/U
	≤ Ø 168.3	≥ 4.5		13 - 32			EI 60 C/U, E 120 C/U
				32			EI 60 C/U, E 120 C/U

A.1.13 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated elastomer

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

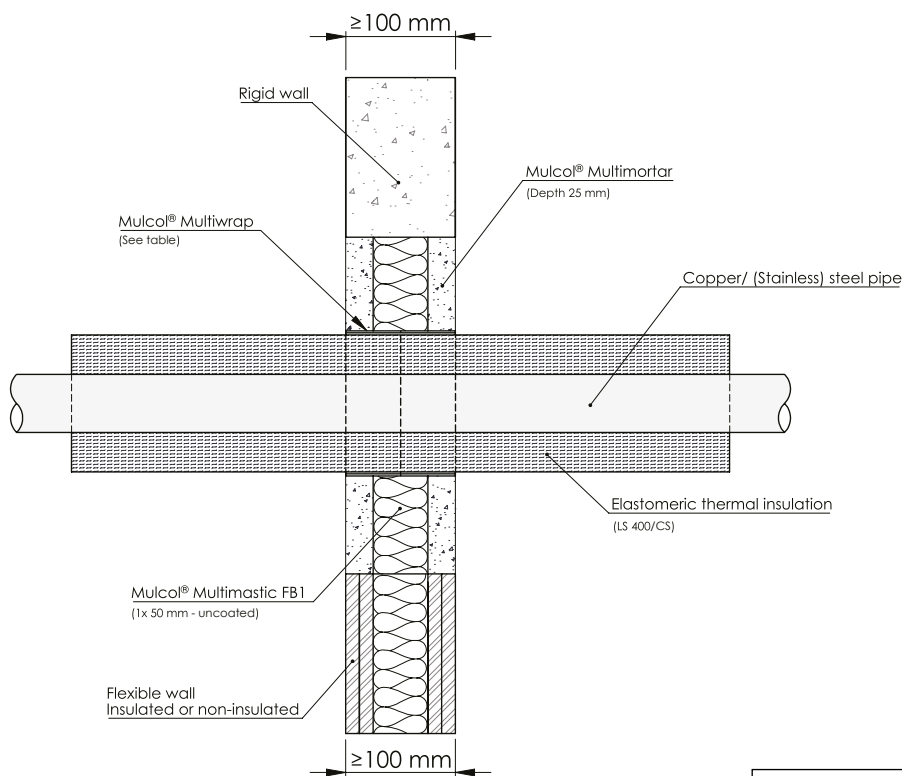
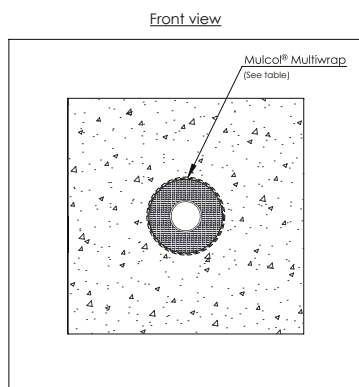
Front view



Services	Pipe dimensions (mm)		Insulation			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	EI 120 U/C
	≤ Ø 54	≥ 1.5		25		EI 90 C/U, E 120 C/U

A.1.14 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Metal pipes insulated elastomer

A.1.14.1 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap



Drawing: FW.E-CU-MW2-MM3.4.22

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 (min. class B-s3, d0 B _L -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
				60			EI 120 C/U
				38			EI 60 C/U, E 120 C/U
≤ Ø 54	≥ 1.5	15		CS	EI 60 C/U, E 120 C/U		
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6			32		EI 45 C/U, E 120 C/U
						EI 120 C/U	
						EI 60 C/U, E 120 C/U	
≤ Ø 219.1	≥ 4.0	50	LS 400 / CS	Multiwrap (3 layers)	EI 45 C/U, E 180 C/U		
					CS	EI 90 C/U, E 180 C/U	
			≤ Ø 324	≥ 3.7			

A.1.14 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Metal pipes insulated elastomer

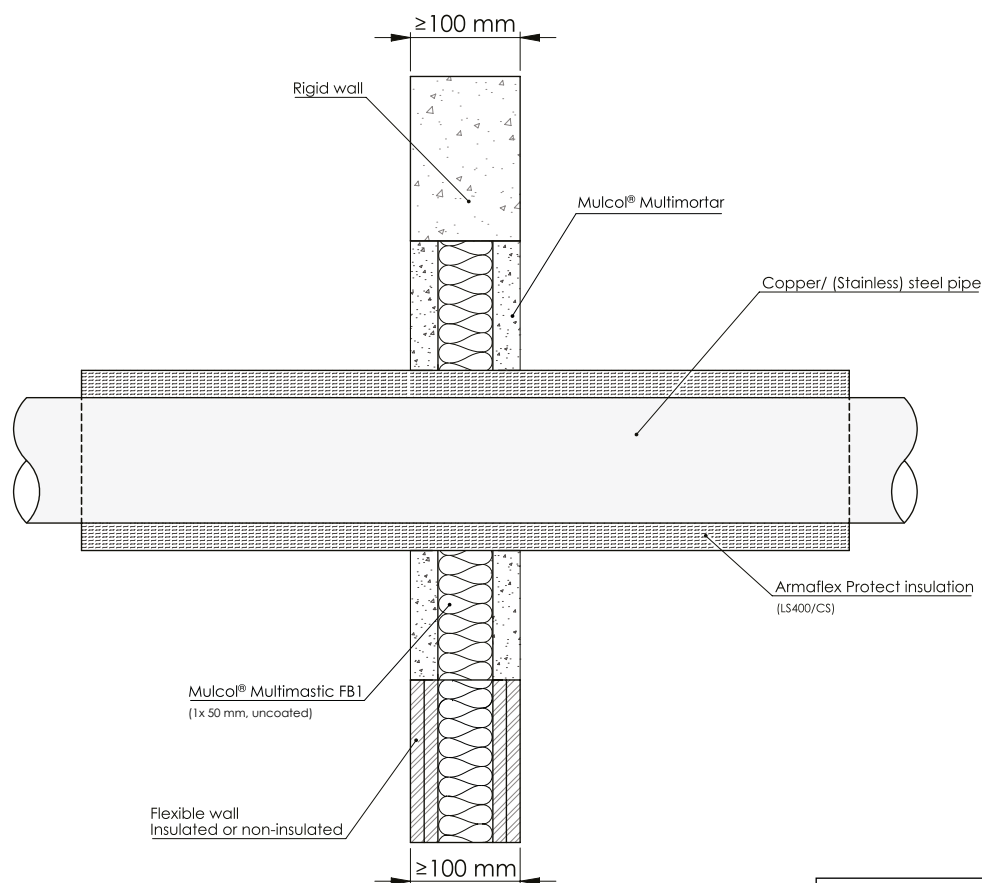
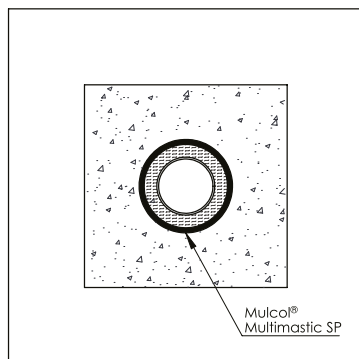
A.1.14.1 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap

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 _L -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 45 C/U, E 120 C/U
	≤ Ø 168.3	≥ 4.5		13 - 32			EI 60 C/U, E 120 C/U
				32			EI 60 C/U, E 120 C/U

A.1.14 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Metal pipes insulated elastomer

A.1.14.2 Copper and steel pipes - ArmaFlex Protect LS 400 / CS

Front view

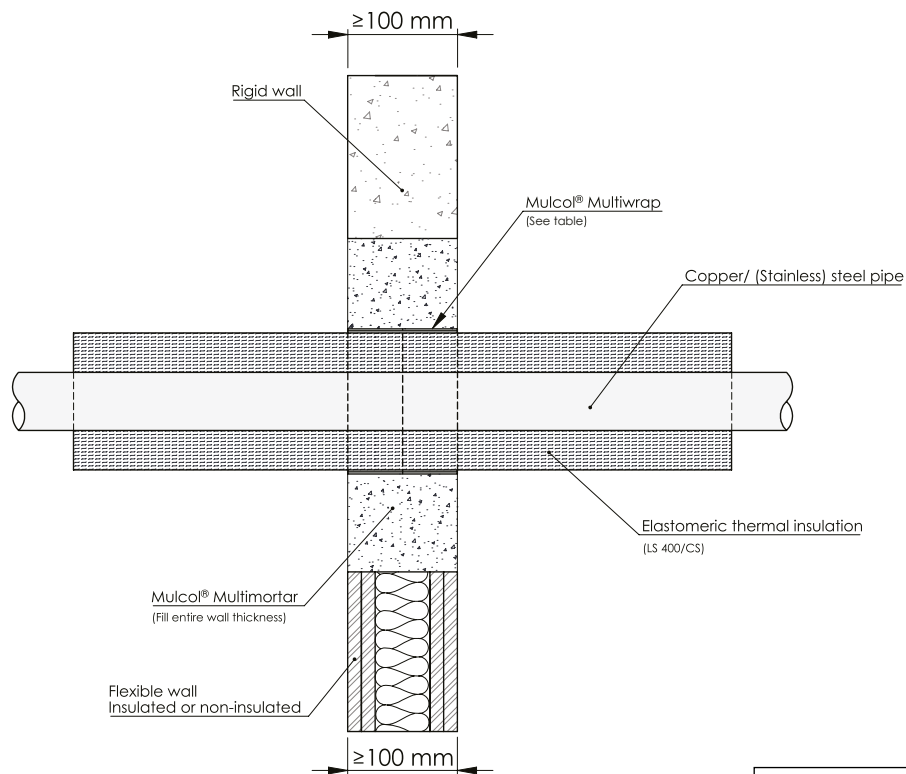
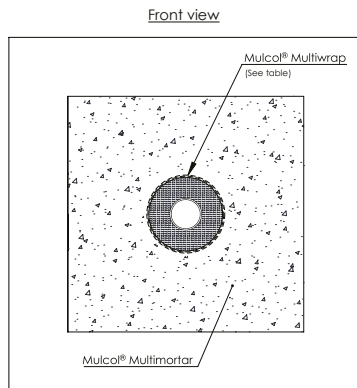


Drawing: FW.E-CU-MM3.4.25

Services	Pipe dimensions (mm)		Insulation			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	EI 120 U/C
	≤ Ø 54	≥ 1.5		25		EI 90 C/U, E 120 C/U

A.1.15 Multimortar - ≥ 100 mm - Metal pipes insulated elastomer

A.1.15.1 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap



Drawing: FW.E-CU-MW2-MM1.2.22

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 _L -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	
				60			EI 120 C/U	
	≤ Ø 54	≥ 1.5		38			EI 60 C/U, E 120 C/U	
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6		15	CS		Multiwrap (3 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		50	LS 400 / CS	EI 120 C/U		
					CS	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.1.15 Multimortar - ≥ 100 mm - Metal pipes insulated elastomer

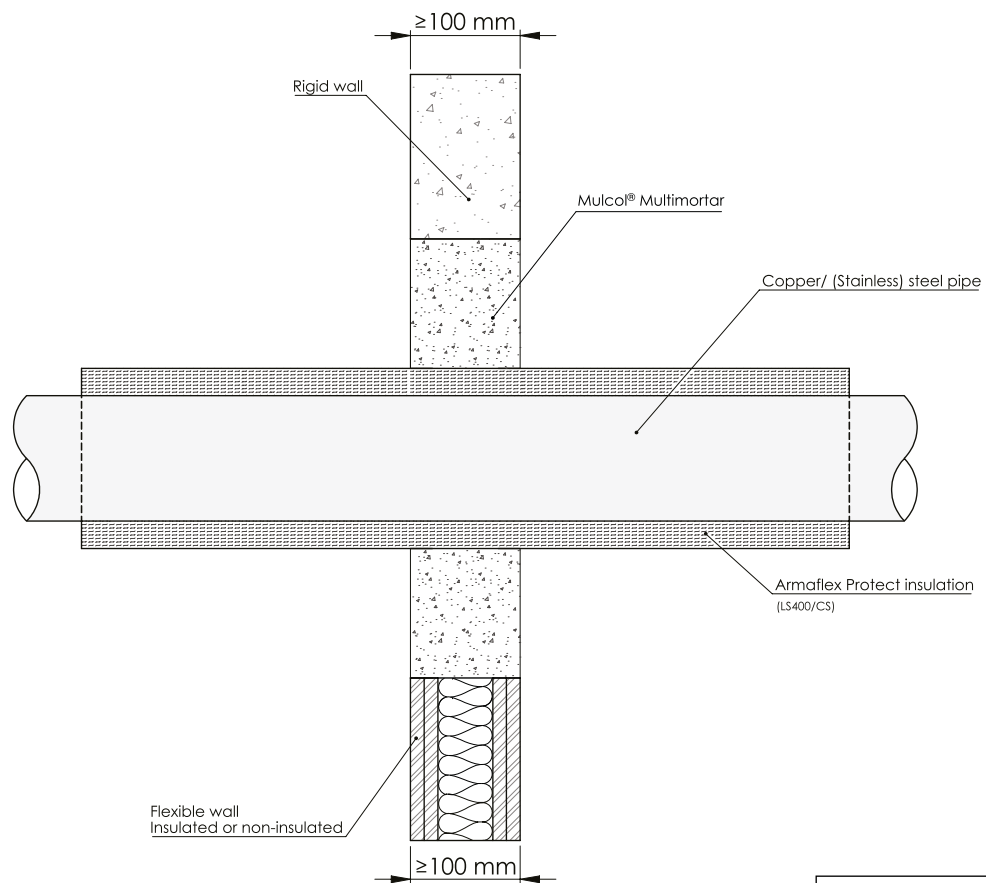
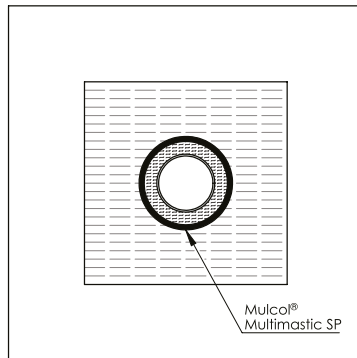
A.1.15.1 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless-) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	Kaiflex ST (min. class B-s3, d0 B _L -s3, d0)	9 - 32	LS 400 / CS	Multiwrap (2 layers)	EI 90 C/U, E 120 C/U
				32			EI 120 C/U
	$\leq \varnothing 54$	≥ 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	$\leq \varnothing 114.3$	≥ 3.6		13			EI 45 C/U, E 120 C/U
	$\leq \varnothing 168.3$	≥ 4.5		13 - 32			EI 60 C/U, E 120 C/U
				32			EI 60 C/U, E 120 C/U

A.1.15 Multimortar - ≥ 100 mm - Metal pipes insulated elastomer

A.1.15.2 Copper and steel pipes - ArmaFlex Protect LS 400 / CS

Front view

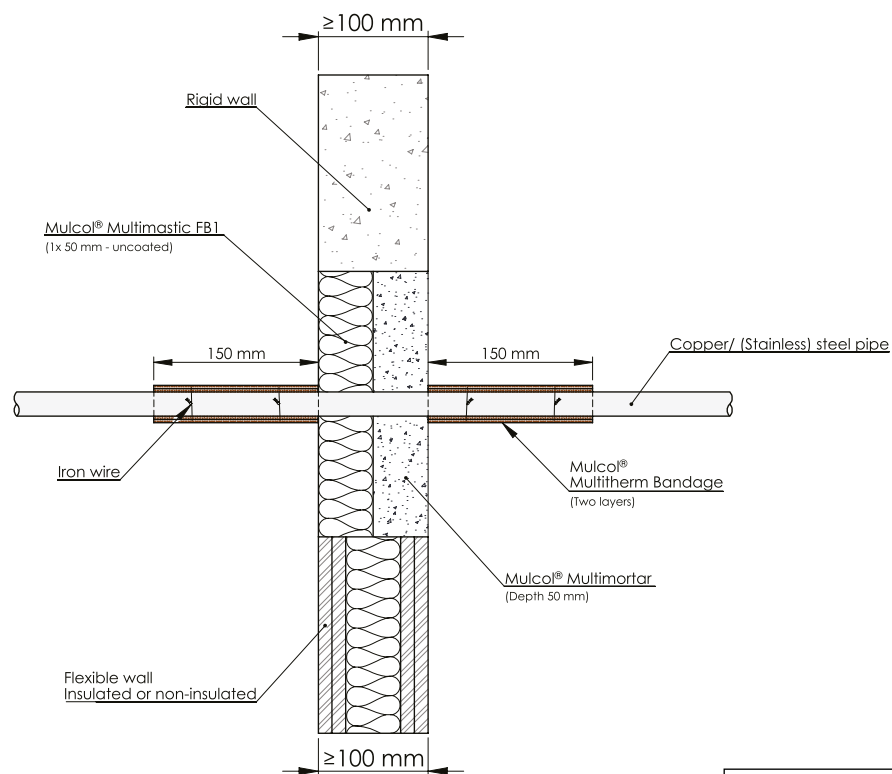
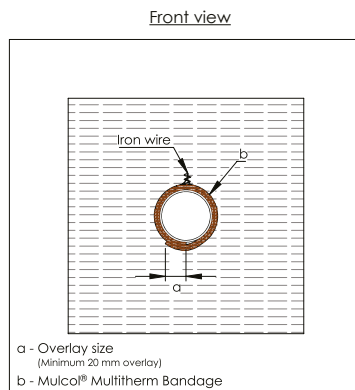


Drawing: FW.E-CU-MM1.2.25

Services	Pipe dimensions (mm)		Insulation			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	EI 120 U/C
	≤ Ø 54	≥ 1.5		25		EI 90 C/U, E 120 C/U

A.1.16 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes uninsulated

A.1.16.1 Copper and steel pipes - Multitherm Bandage

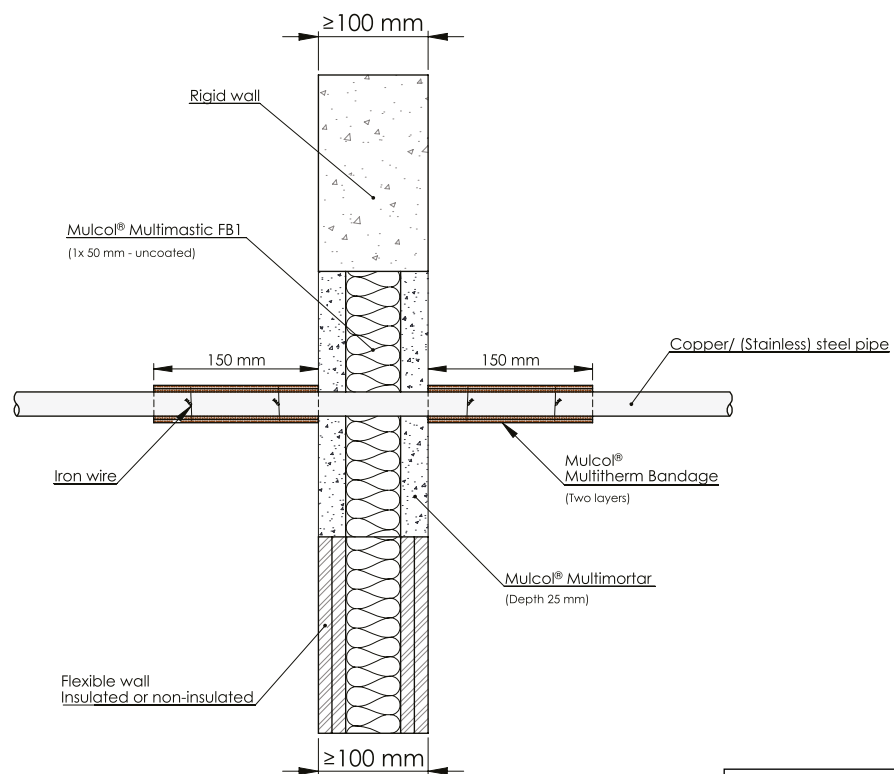
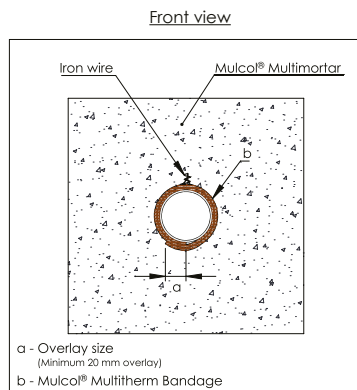


Drawing: FW.E-CU-MM2.5.10-B2.1.20

Services	Pipe dimensions (mm)		Multitherm Bandage	Classification
	Outer dimension	Wall thickness		
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	LI 150 two layers (two wires)	EI 60 C/U, E 120 C/U

A.1.17 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Metal pipes uninsulated

A.1.17.1 Copper and steel pipes - Multitherm Bandage

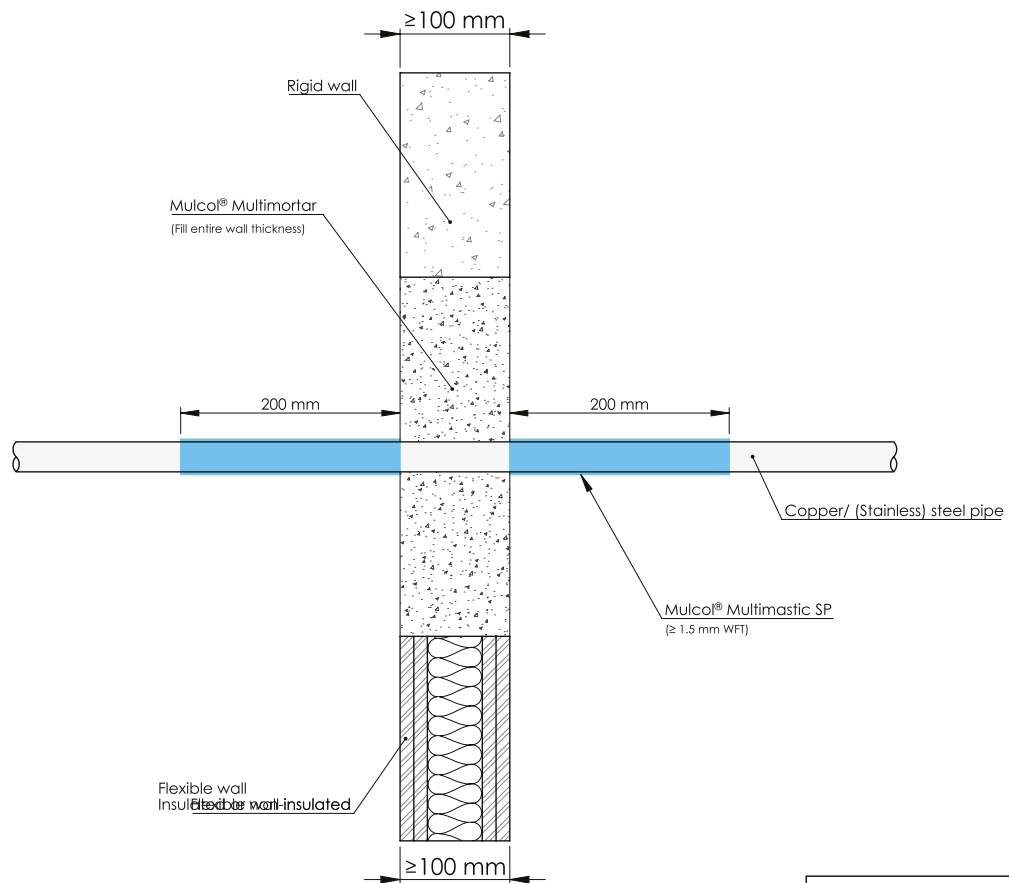
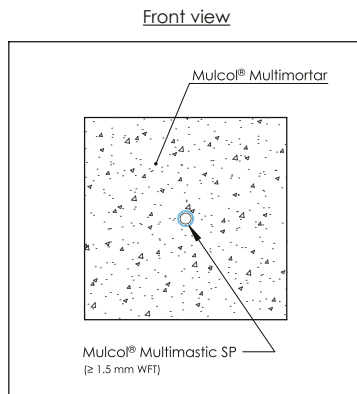


Drawing: FW.E-CU-MM3.4.10-B2.1.20

Services	Pipe dimensions (mm)		Multitherm Bandage	Classification
	Outer dimension	Wall thickness		
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	LI 150 two layers (two wires)	EI 60 C/U, E 120 C/U

A.1.18 Multimortar - ≥ 100 mm - Metal pipes uninsulated

A.1.18.1 Copper and steel pipes - Multimastic SP

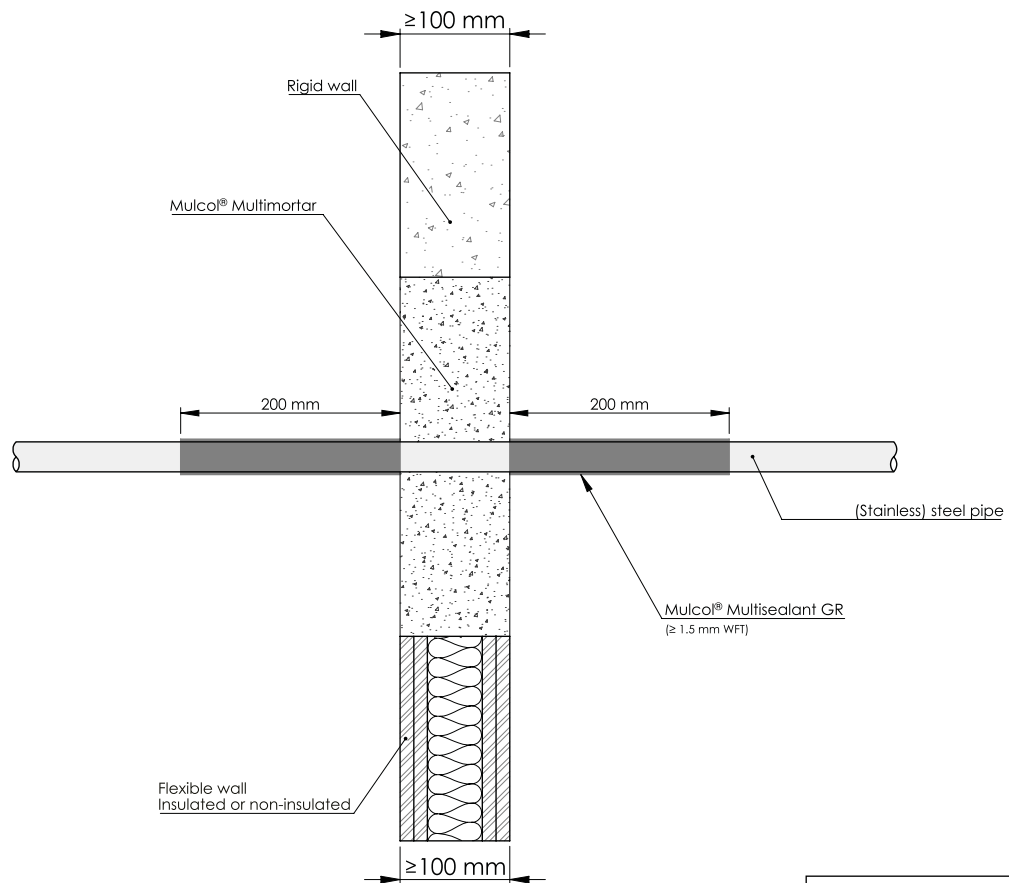
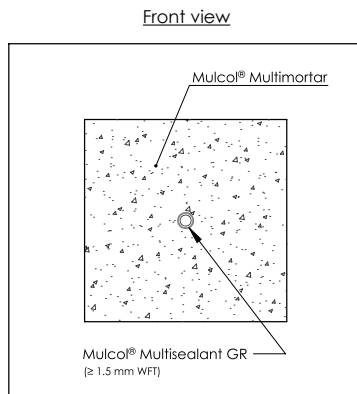


Drawing: FW.E-ST-SPC-MM1.2.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 15$	≥ 1.0	Multimastic SP	1.5 WFT	LI 200	EI 60 C/U, E 120 C/U
(Stainless) Steel / cast iron	$\leq \varnothing 16$	≥ 1.0				EI 90 C/U
	$\leq \varnothing 26.9$	≥ 2.6				EI 90 C/U, E 120 C/U
	$\leq \varnothing 42.4$	≥ 3.2				EI 60 C/U, E 120 C/U
	$\leq \varnothing 60.3$	≥ 3.6				

A.1.18 Multimortar - ≥ 100 mm - Metal pipes uninsulated

A.1.18.2 Copper and steel pipes - Multisealant GR

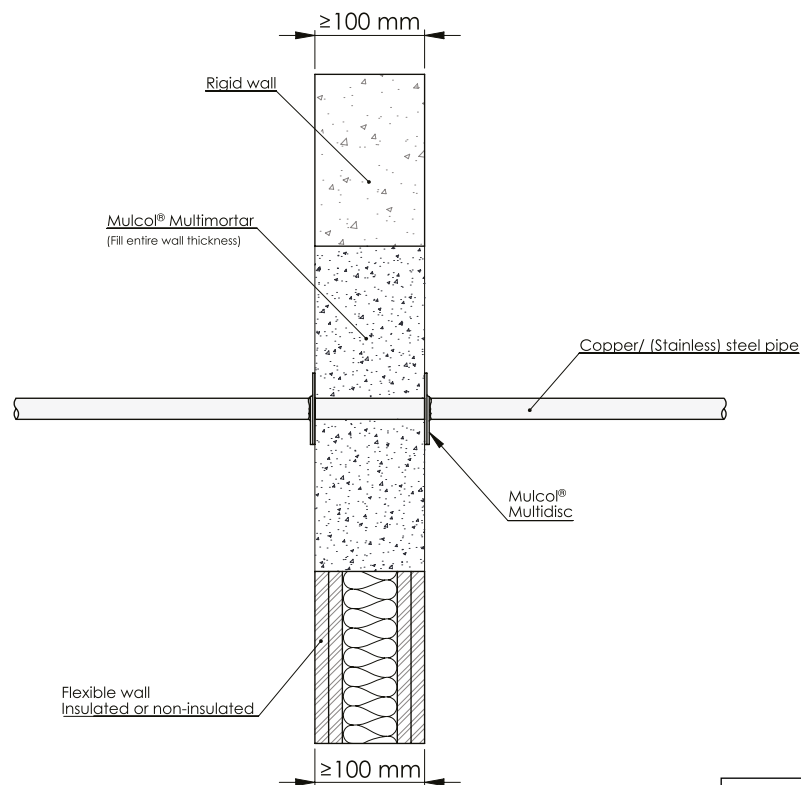
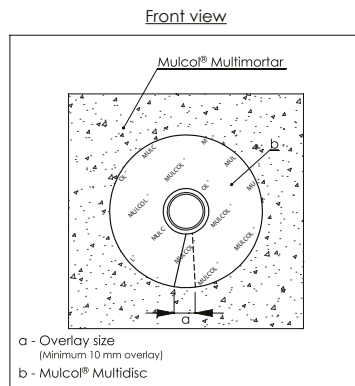


Drawing: FW.E-ST-GRC-MM1.2.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
(Stainless) Steel / cast iron	$\leq \varnothing 26.9$	≥ 2.6	Multisealant GR	1.5 WFT	LI 200	EI 90 C/U, E 120 C/U
	$\leq \varnothing 60.3$	≥ 3.6				

A.1.18 Multimortar - ≥ 100 mm - Metal pipes uninsulated

A.1.18.3 Copper and steel pipes - Multidisc

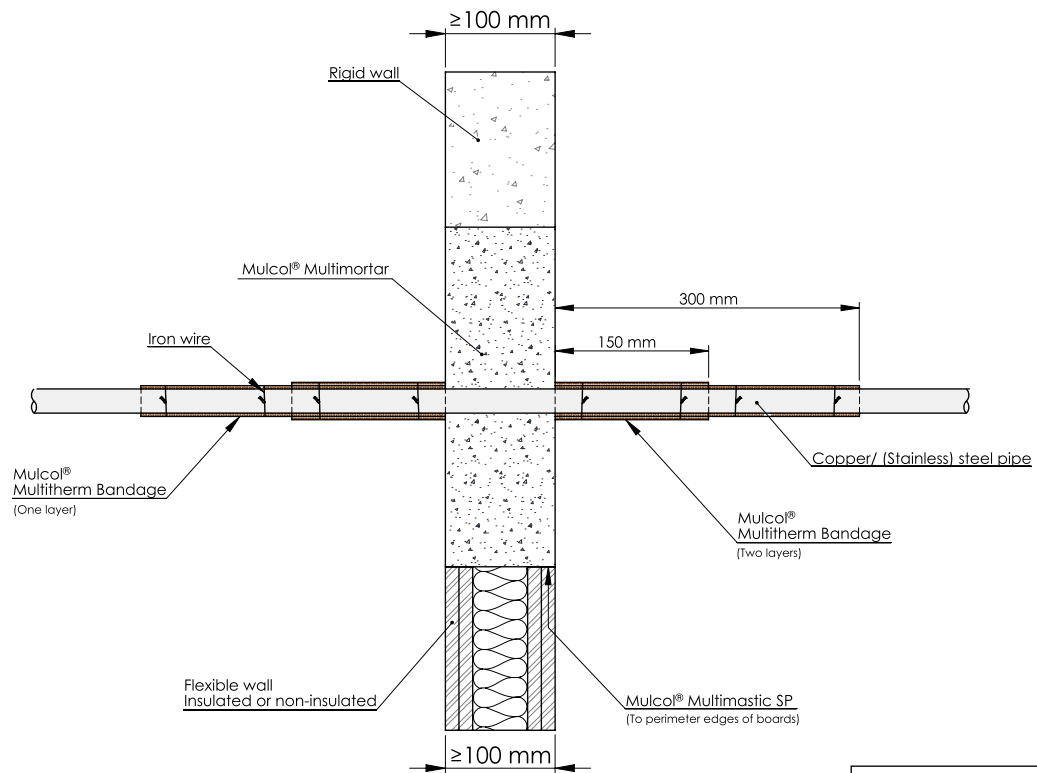
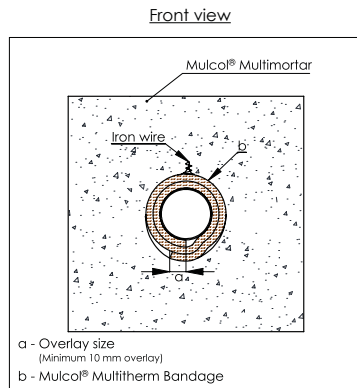


Drawing: FW.E-CU-M2-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Copper / (stainless) steel / cast iron	$\leq \varnothing 15$	≥ 1.0	Multidisc	EI 45 C/U, E 120 C/U
(Stainless) Steel / cast iron	$\leq \varnothing 17.2$			EI 90 C/U

A.1.18 Multimortar - ≥ 100 mm - Metal pipes uninsulated

A.1.18.4 Copper and steel pipes - Multitherm Bandage

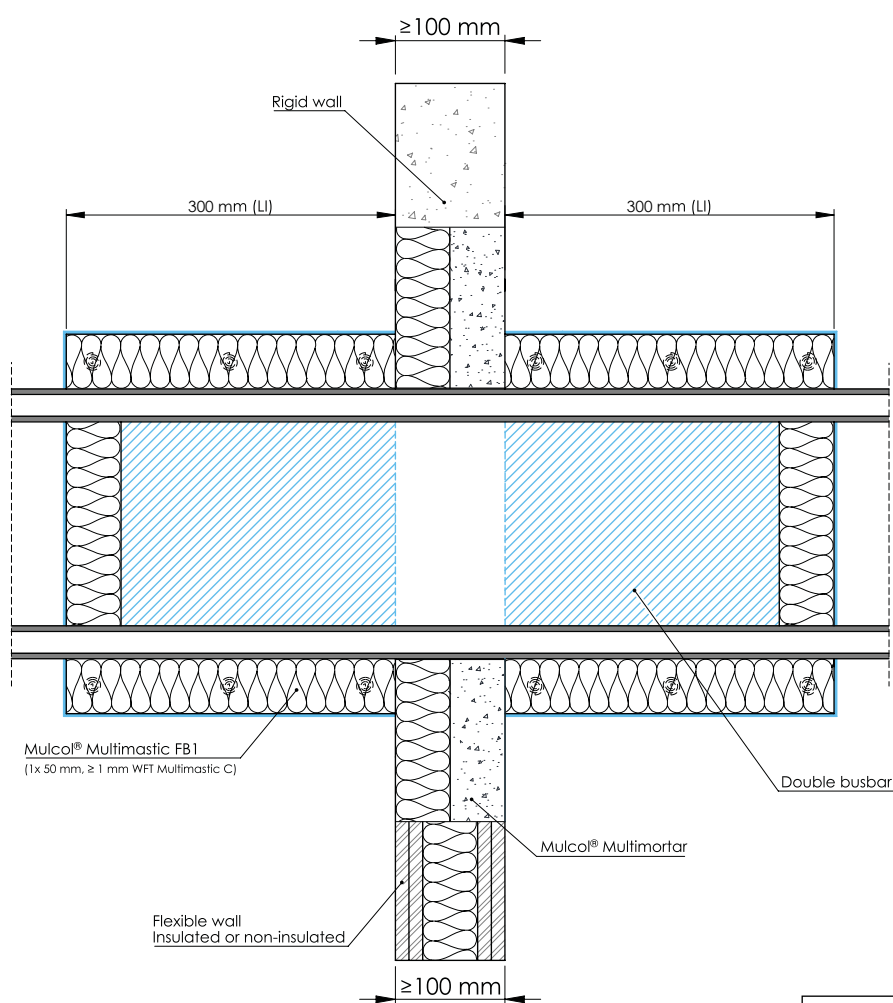


Drawing: FW.E-ST-MM1-B2.3.21

Services	Pipe dimensions (mm)		Multitherm Bandage	Classification
	Outer dimension	Wall thickness		
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	LI 150 two layers (two wires)	EI 120 C/U
	$\leq \varnothing 54$	≥ 1.5	LI 150 two layers (two wires) + LI 300 one layer (two wires)	EI 45 C/U, E 120 C/U
	$\leq \varnothing 88.9$	≥ 2.0		EI 30 C/U, E 120 C/U

A.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

A.1.19.1 Single busbar - LI 300

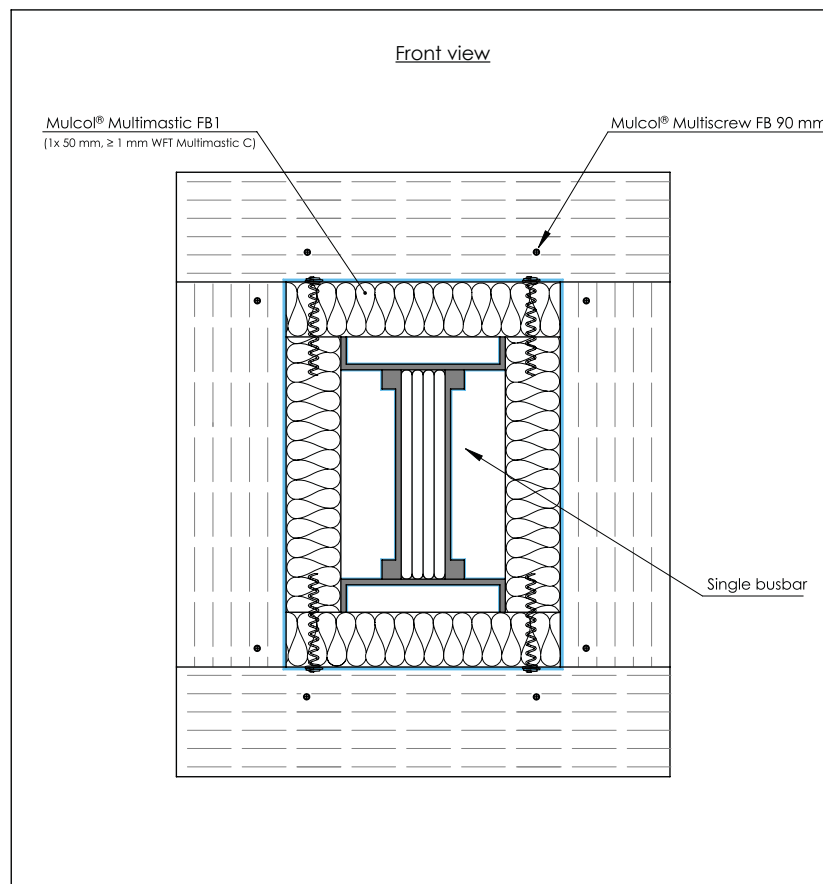


Drawing: FW.E-1BB-MM2.5.20.LI300

Services	Service dimensions		Insulation			Classification
	Outside	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	$\leq 150 \times 250$ mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB	50	LI 300 / CI	EI 60

A.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

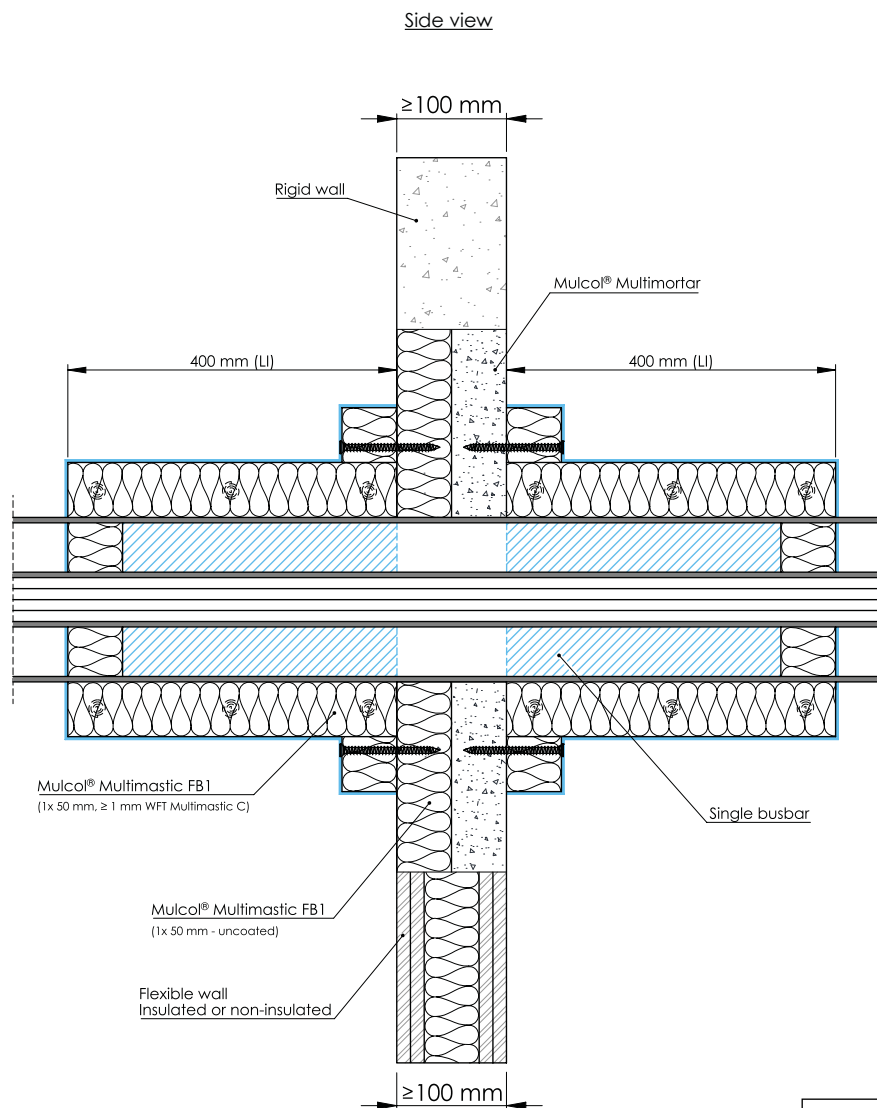
A.1.19.1 Single busbar - LI 300



Drawing: FW.E-1BB-MM2.5.20.LI300

A.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

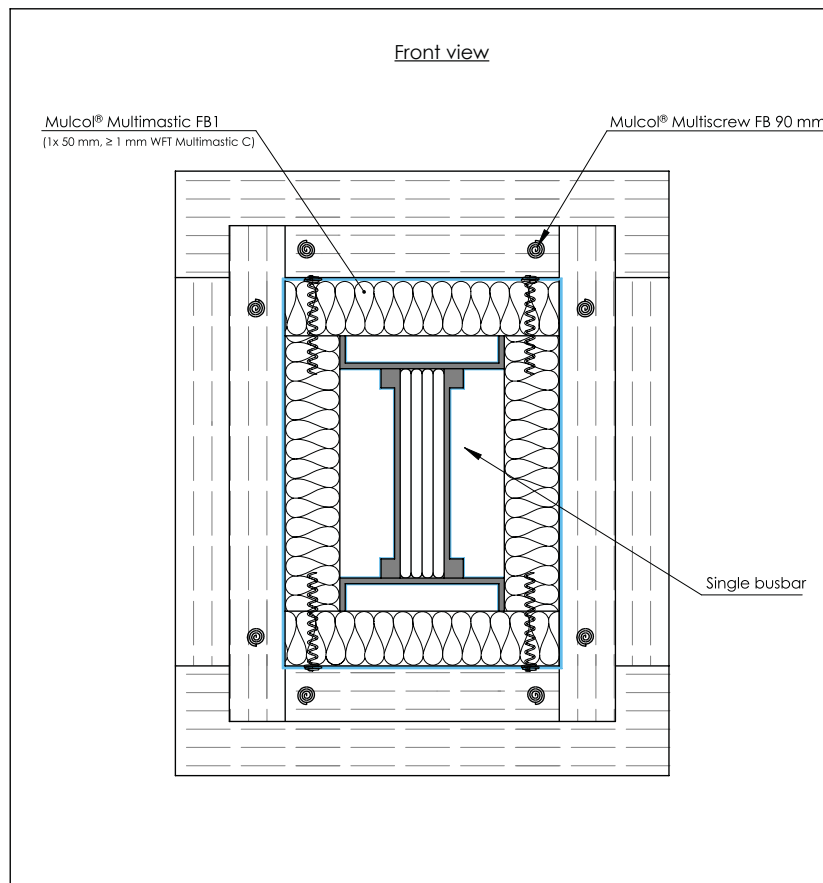
A.1.19.2 Single busbar - LI 400



Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	$\leq 150 \times 250$ mm	max. $6 \times \leq 200$ mm width (per busbar)	Multimastic FB	50	LI 400 / CI	EI 120

A.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

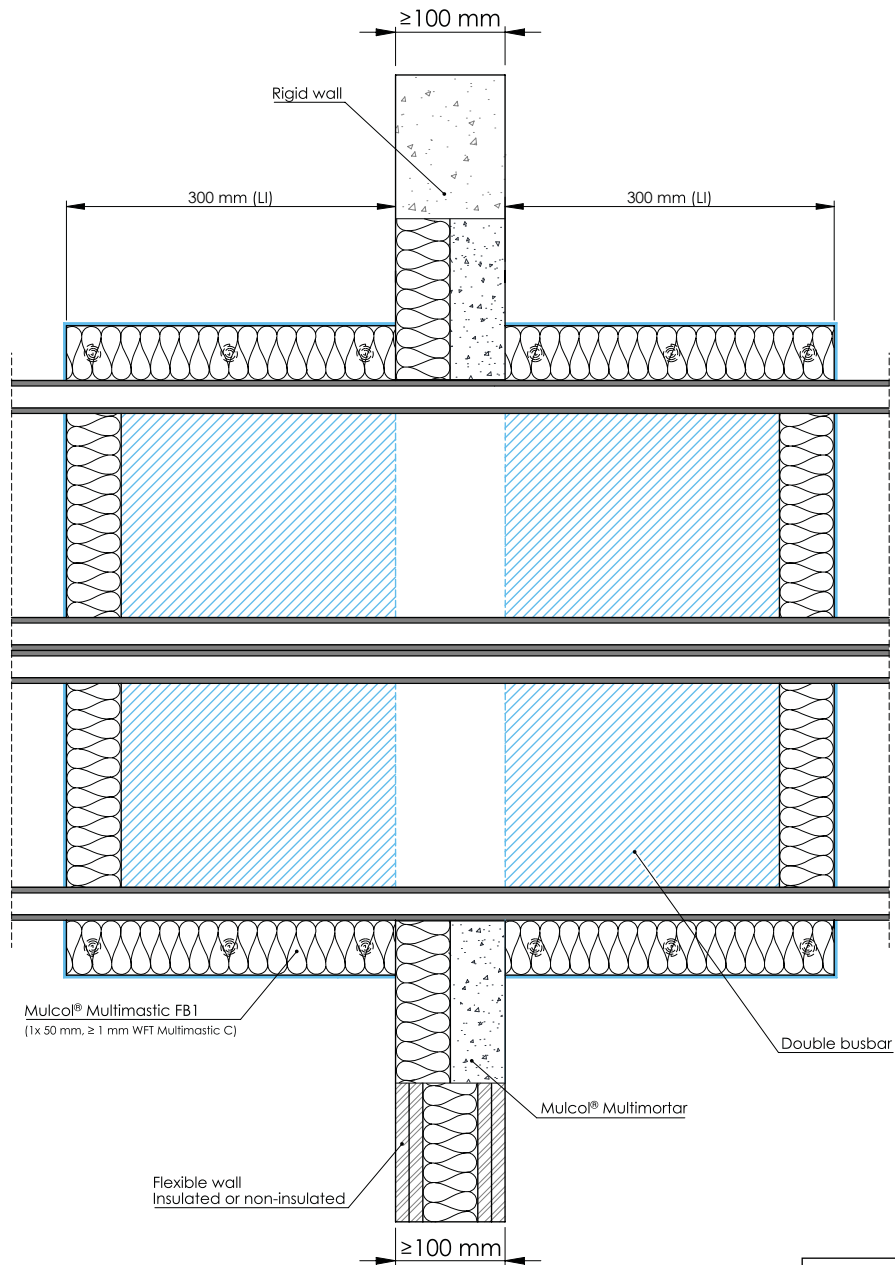
A.1.19.2 Single busbar - LI 400



Drawing: FW.E-1BB-MM2.5.20.LI300

A.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

A.1.19.3 Multiple busbars - LI 300



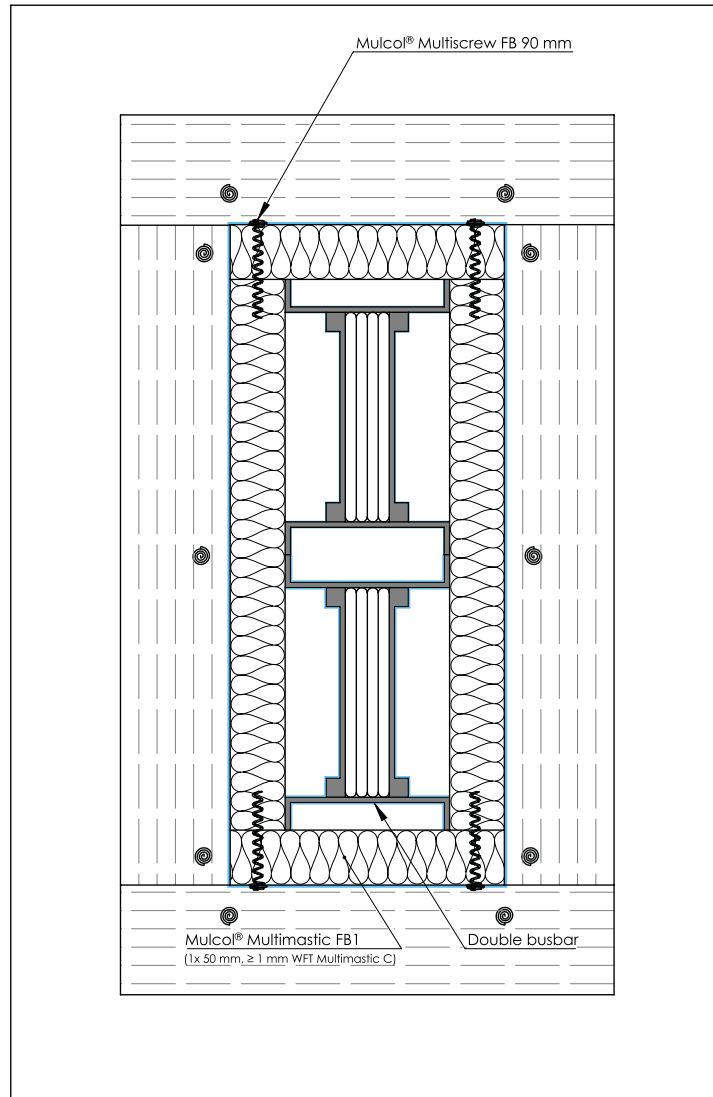
Drawing: FW.E-2BB-MM2.2.20.LI300

Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Double busbar	$\leq 150 \times 500$ mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB	50	LI 300 / CI	EI 60

A.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

A.1.19.3 Multiple busbars - LI 300

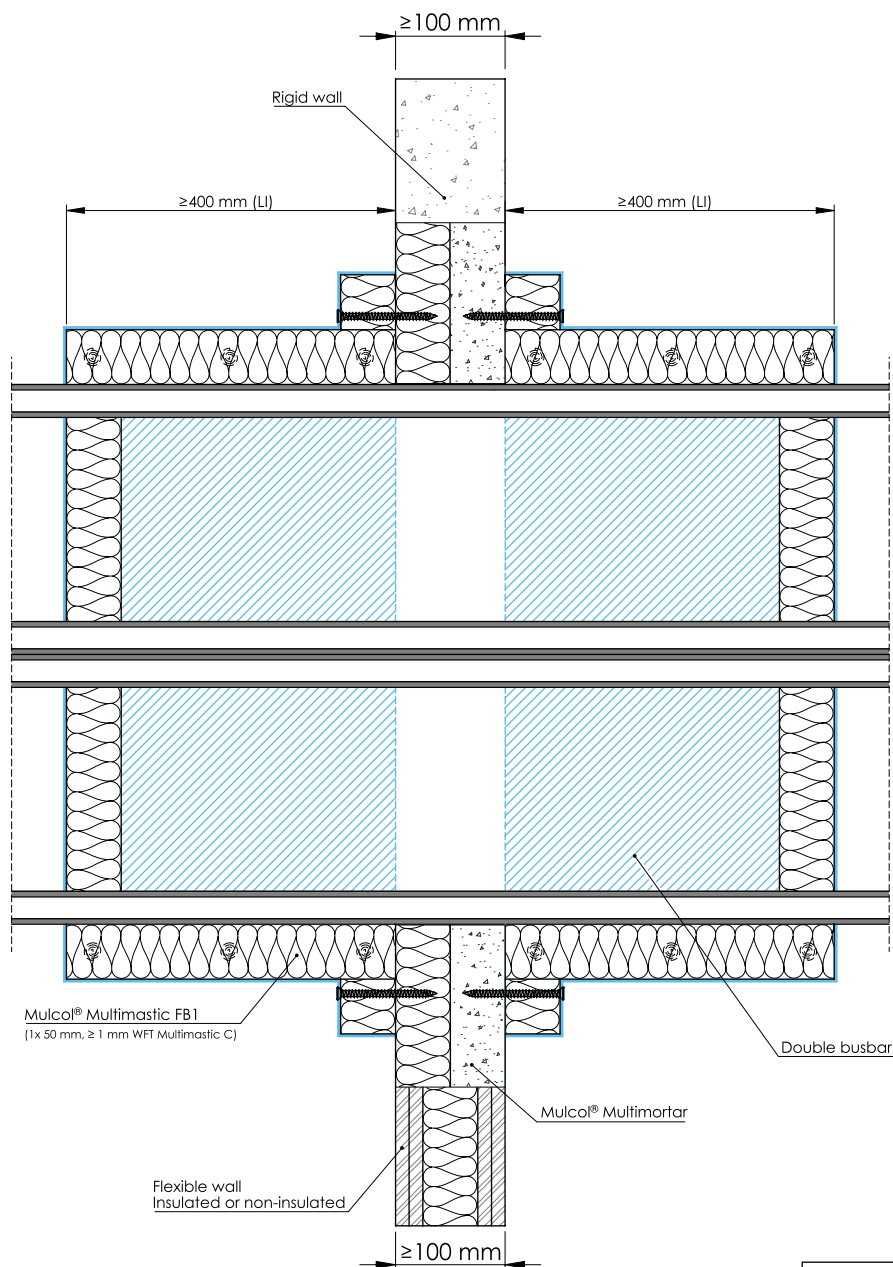
Front view



Drawing: FW.E-2BB-MM2.2.20.LI300

A.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

A.1.19.4 Multiple busbars - LI 400



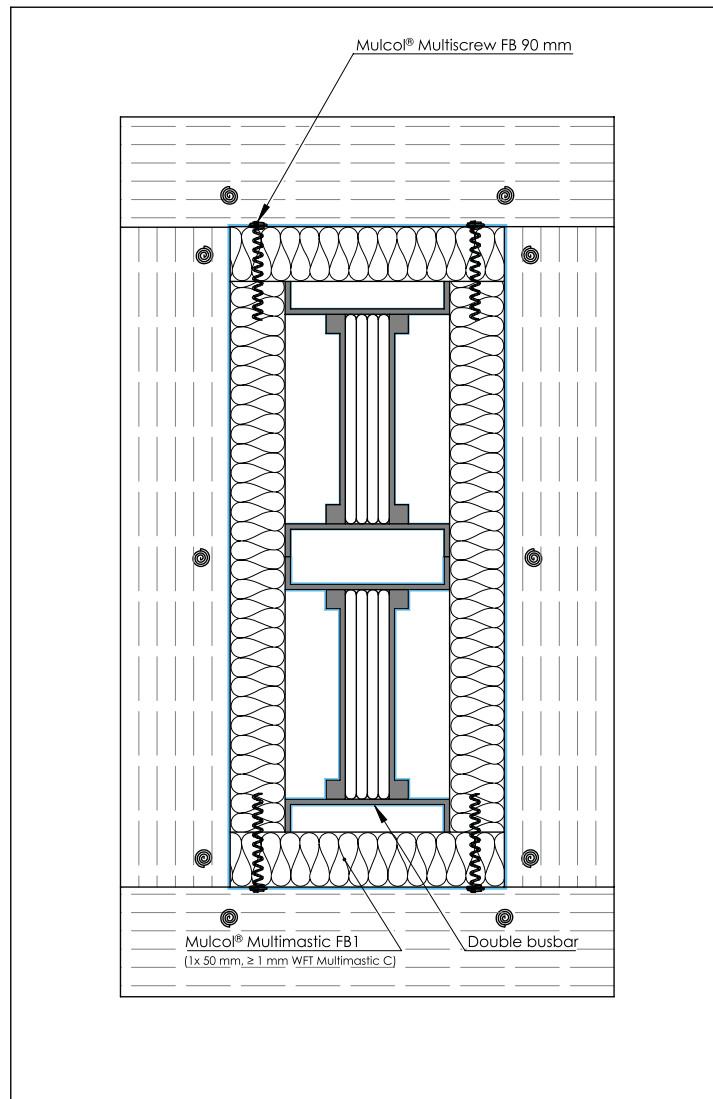
Drawing: FW.E-2BB-MM2.5.20

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

A.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

A.1.19.4 Multiple busbars - LI 400

Front view



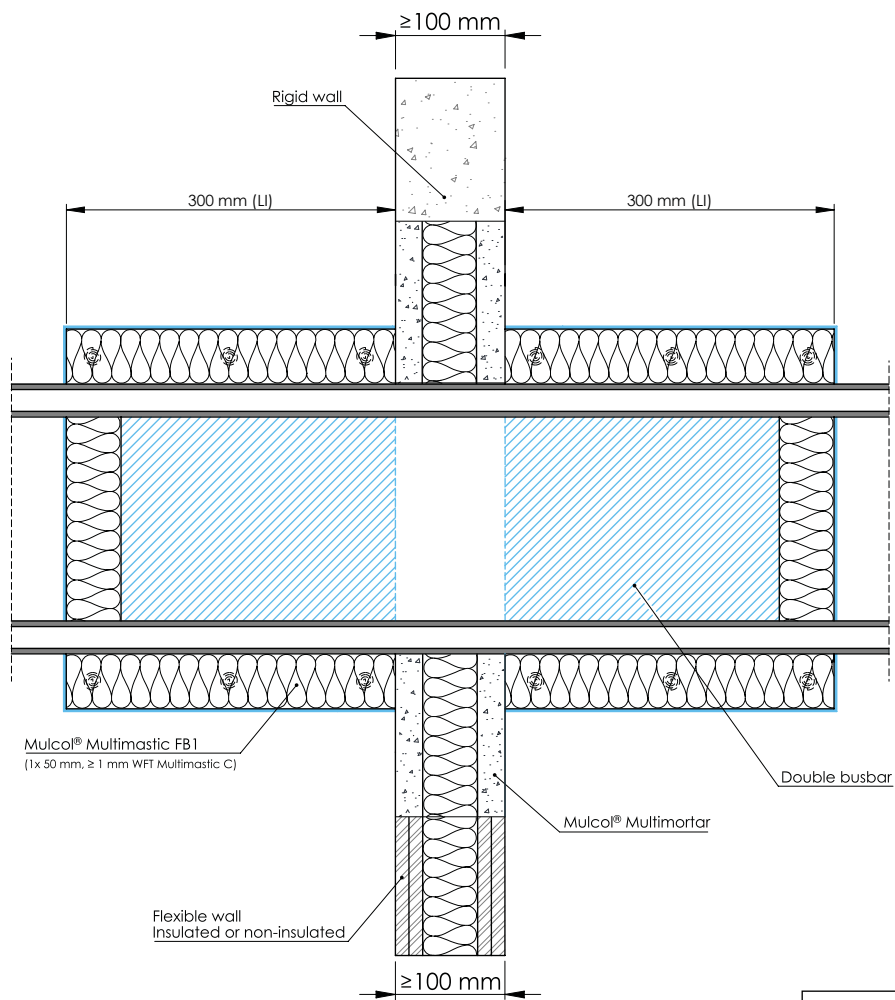
Drawing: FW.E-2BB-MM2.5.20

A.1.20

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Busbars

A.1.20.1

Single busbar - LI 300



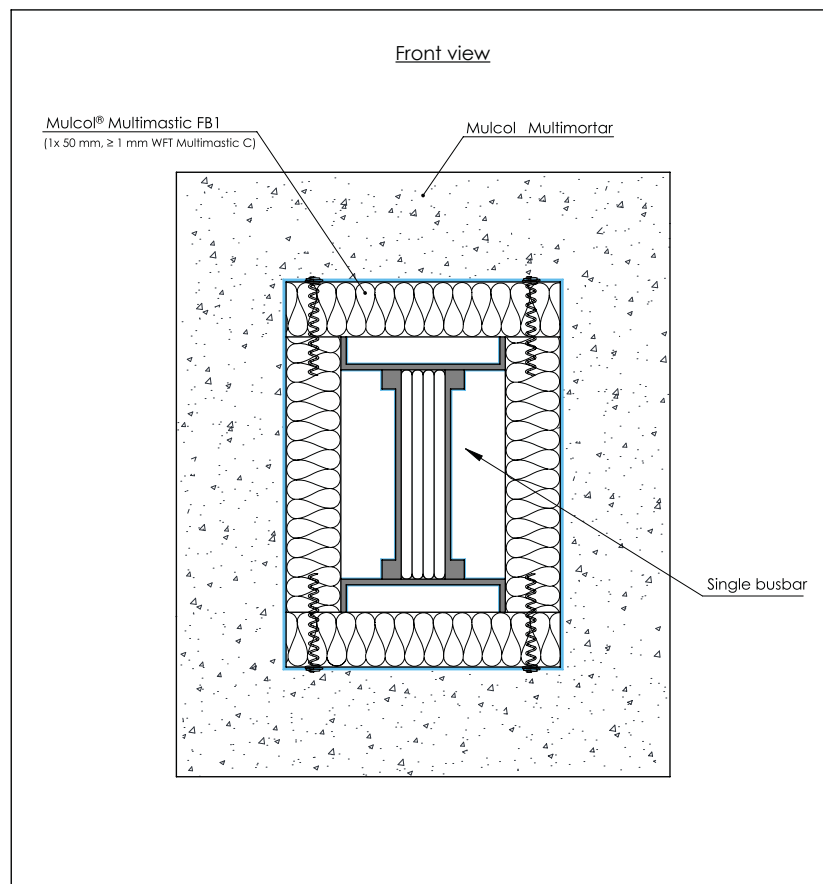
Services	Service dimensions		Insulation			Classification
	Outside	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	$\leq 150 \times 250$ mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB	50	LI 300 / CI	EI 60

A.1.20

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Busbars

A.1.20.1

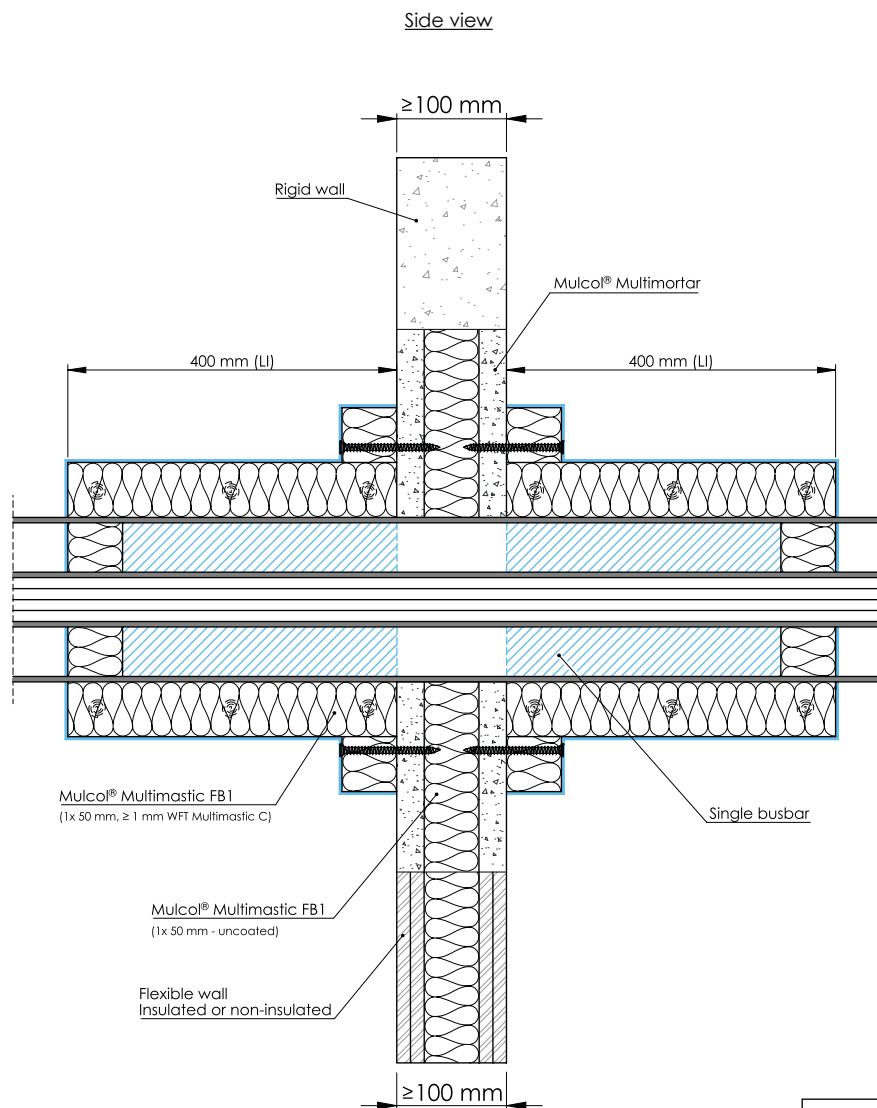
Single busbar - LI 300



Drawing: FW.E-1BB-MM3.4.20.LI300

A.1.20 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Busbars

A.1.20.2 Single busbar - LI 400



Drawing: FW.E-1BB-MM3.4.10

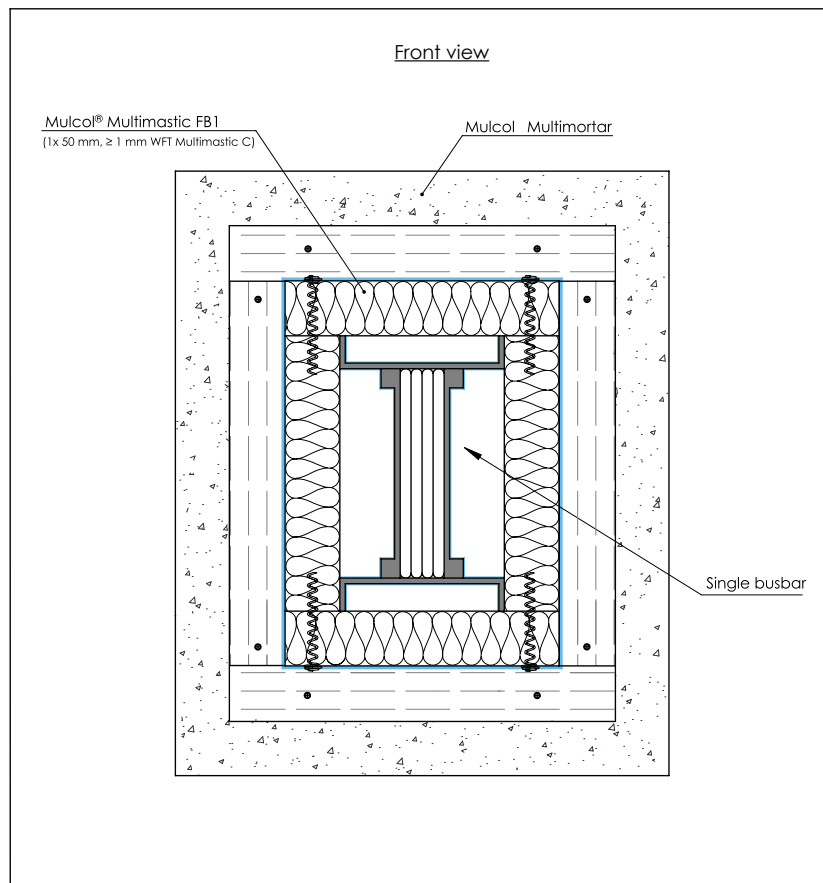
Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	$\leq 150 \times 250$ mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB	50	LI 400 / CI	EI 120

A.1.20

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Busbars

A.1.20.2

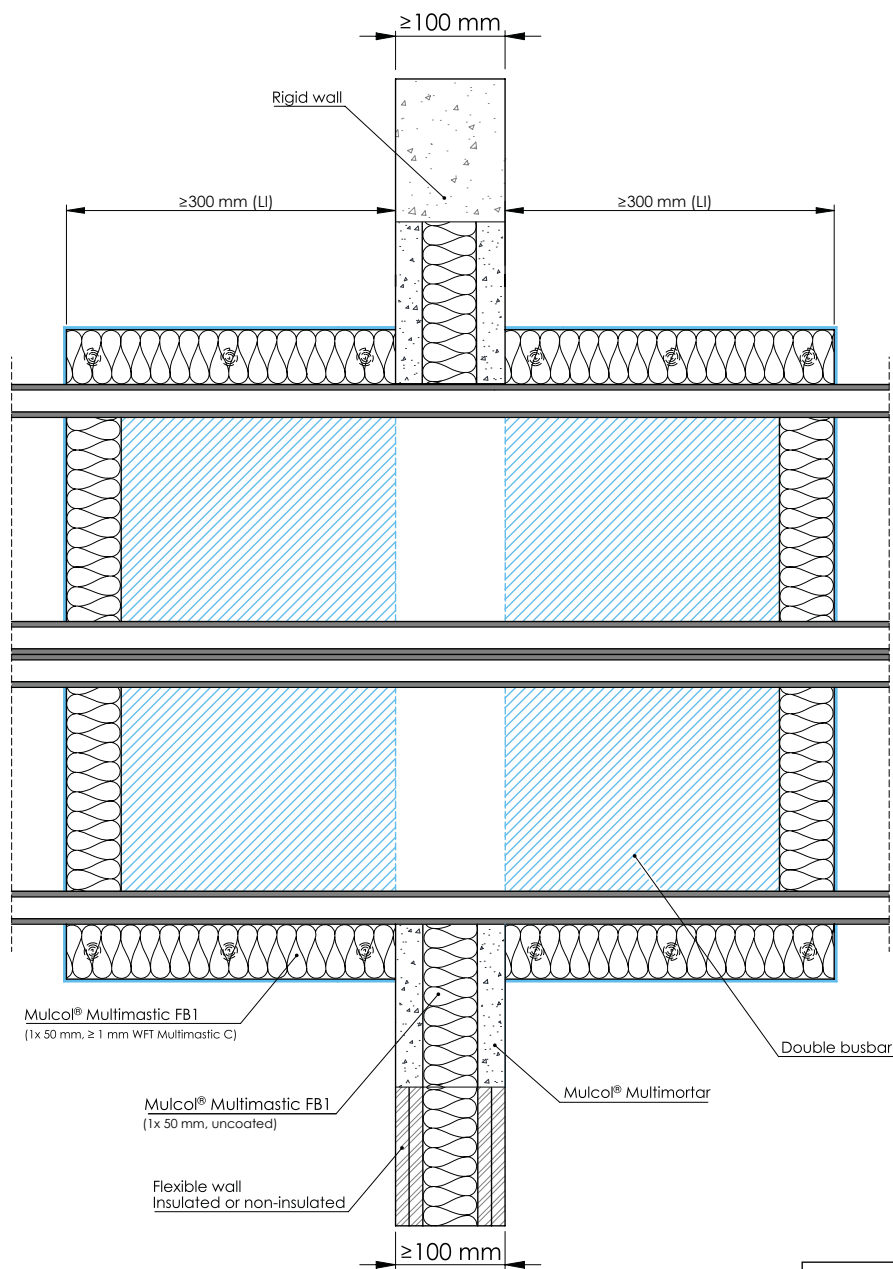
Single busbar - LI 400



Drawing: FW.E-1BB-MM3.4.10

A.1.20 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Busbars

A.1.20.3 Multiple busbars - LI 300



Drawing: FW.E-2BB-MM3.4.20.LI300

Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Double busbar	$\leq 150 \times 500$ mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB	50	LI 300 / CI	EI 60

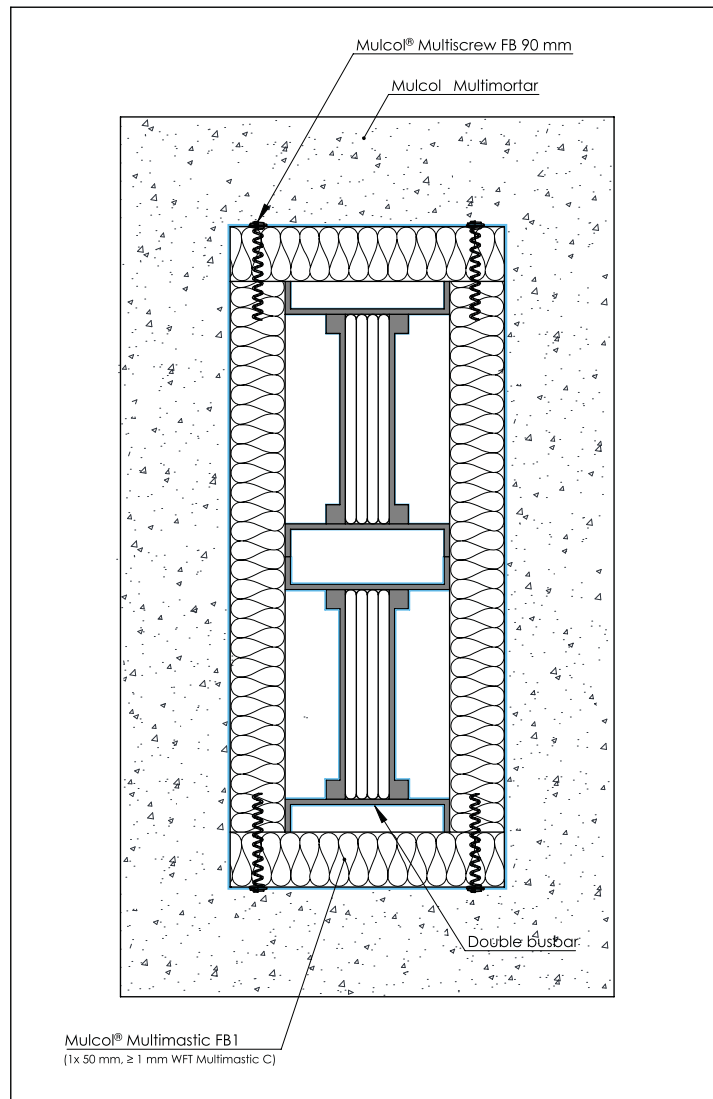
A.1.20

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Busbars

A.1.20.3

Multiple busbars - LI 300

Front view



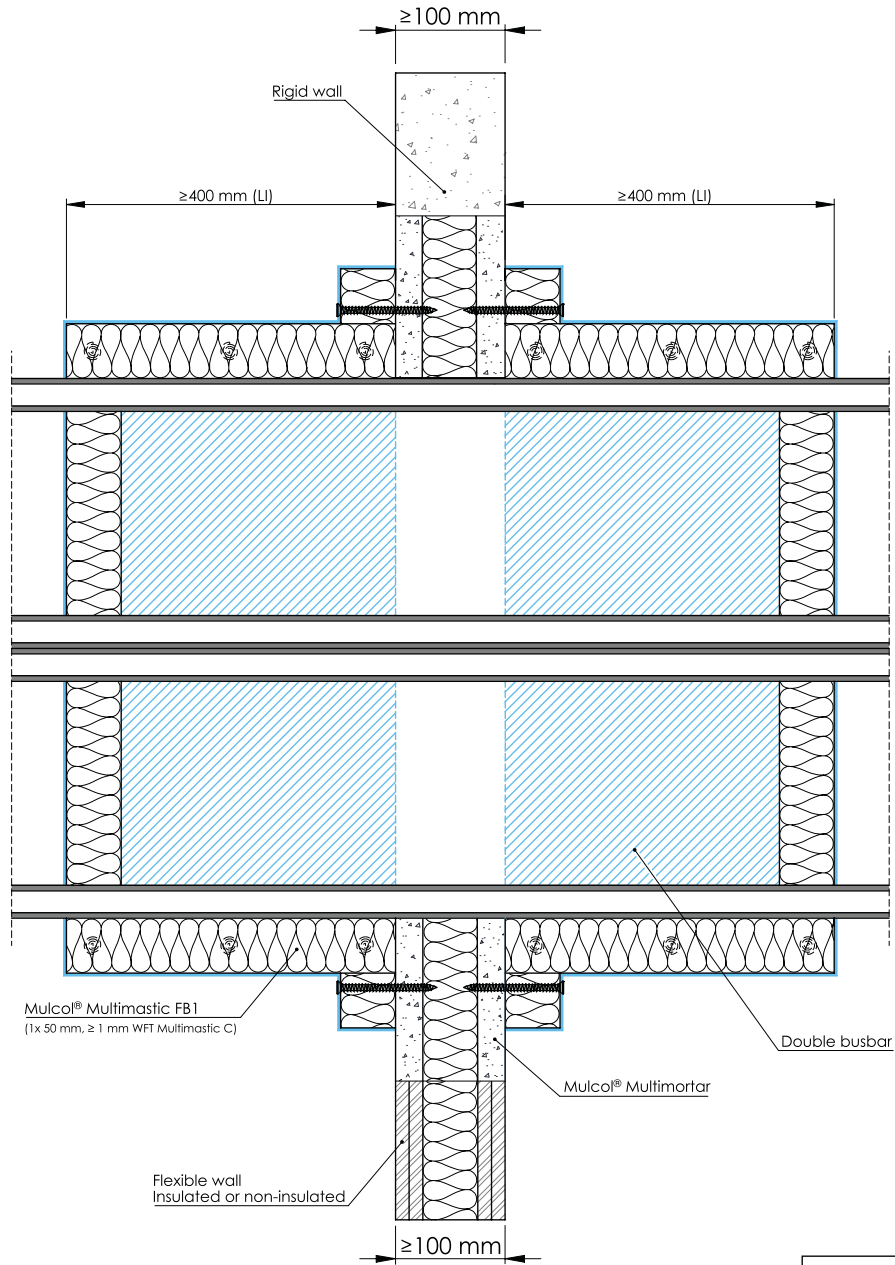
Drawing: FW.E-2BB-MM3.4.20.LI300

A.1.20

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Busbars

A.1.20.4

Multiple busbars - LI 400



Drawing: FW.E-2BB-MM3.4.20

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

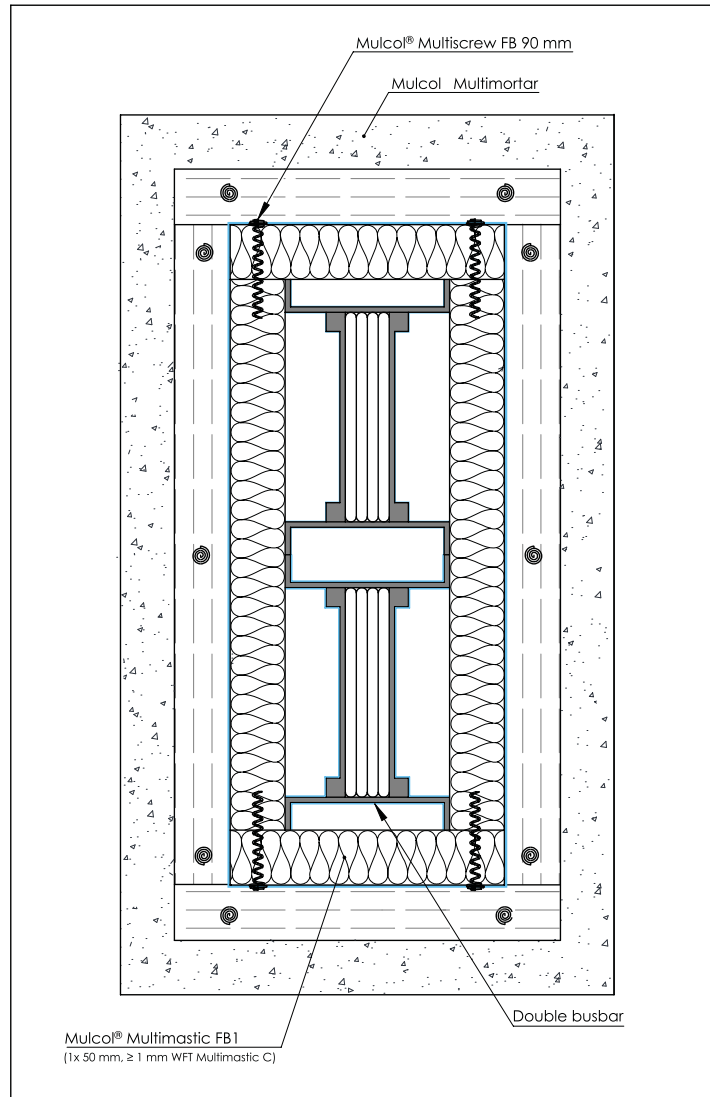
A.1.20

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Busbars

A.1.20.4

Multiple busbars - LI 400

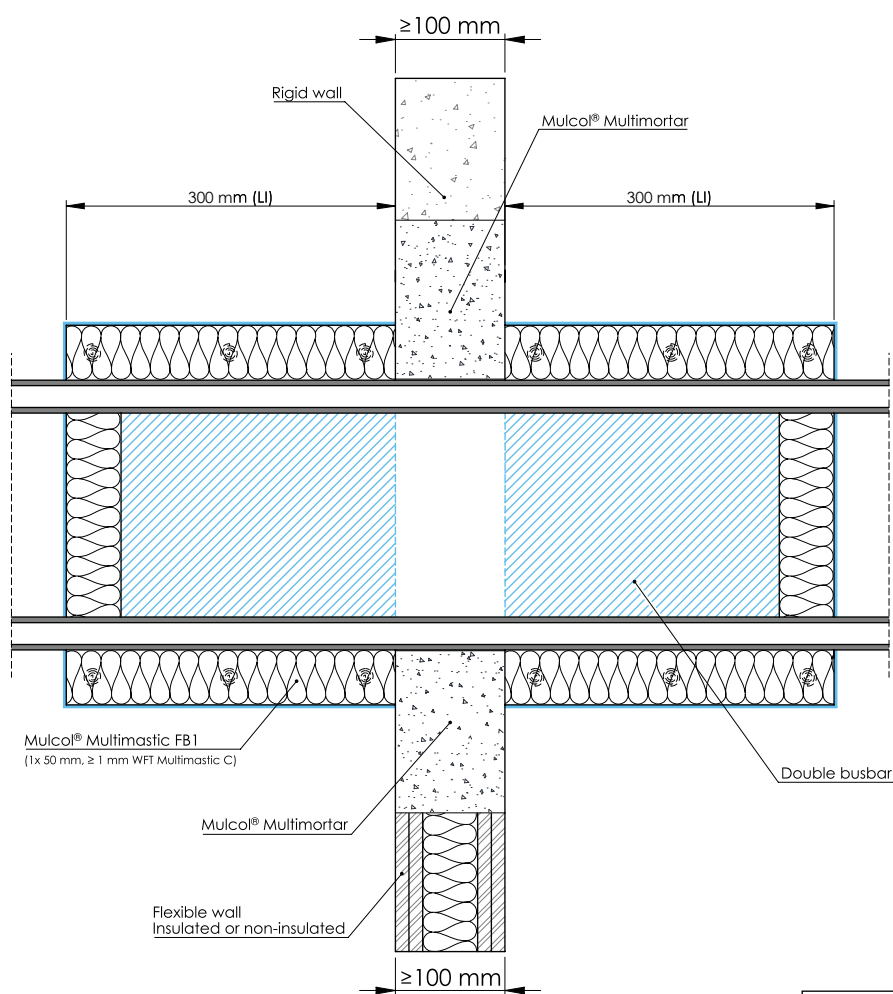
Front view



Drawing: FW.E-2BB-MM3.4.20

A.1.21 Multimortar - ≥ 100 mm - Busbars

A.1.21.1 Single busbar - LI 300

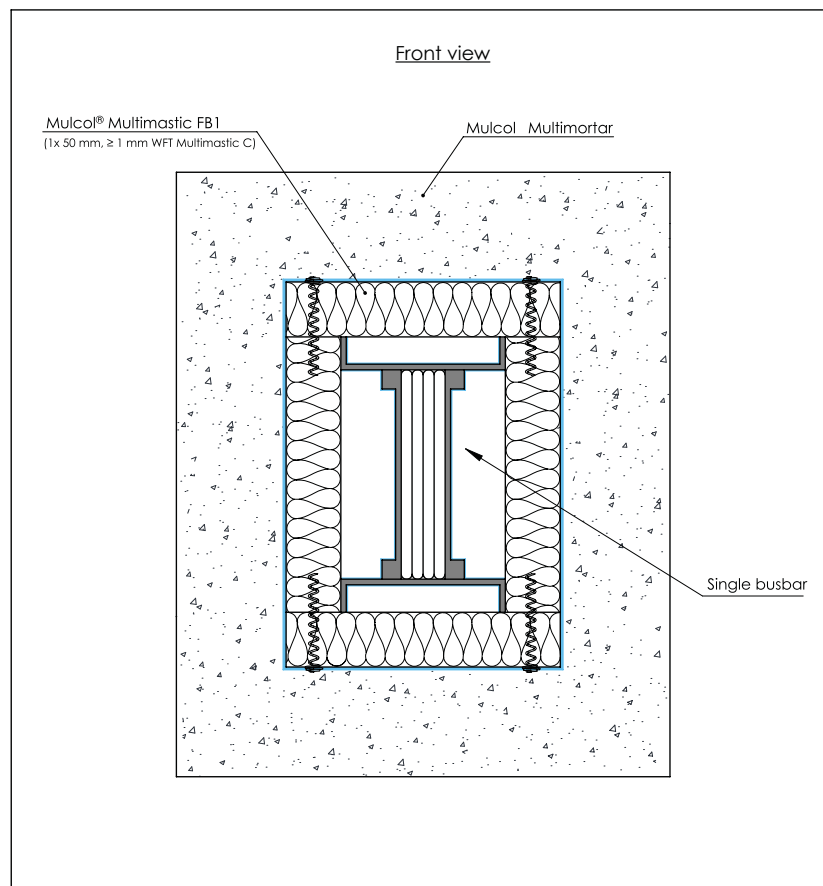


Drawing: FW.E-1BB-MM1.2.20.LI300

Services	Service dimensions		Insulation			Classification
	Outside	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	$\leq 150 \times 250$ mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB	50	LI 300 / CI	EI 60

A.1.21 Multimortar - ≥ 100 mm - Busbars

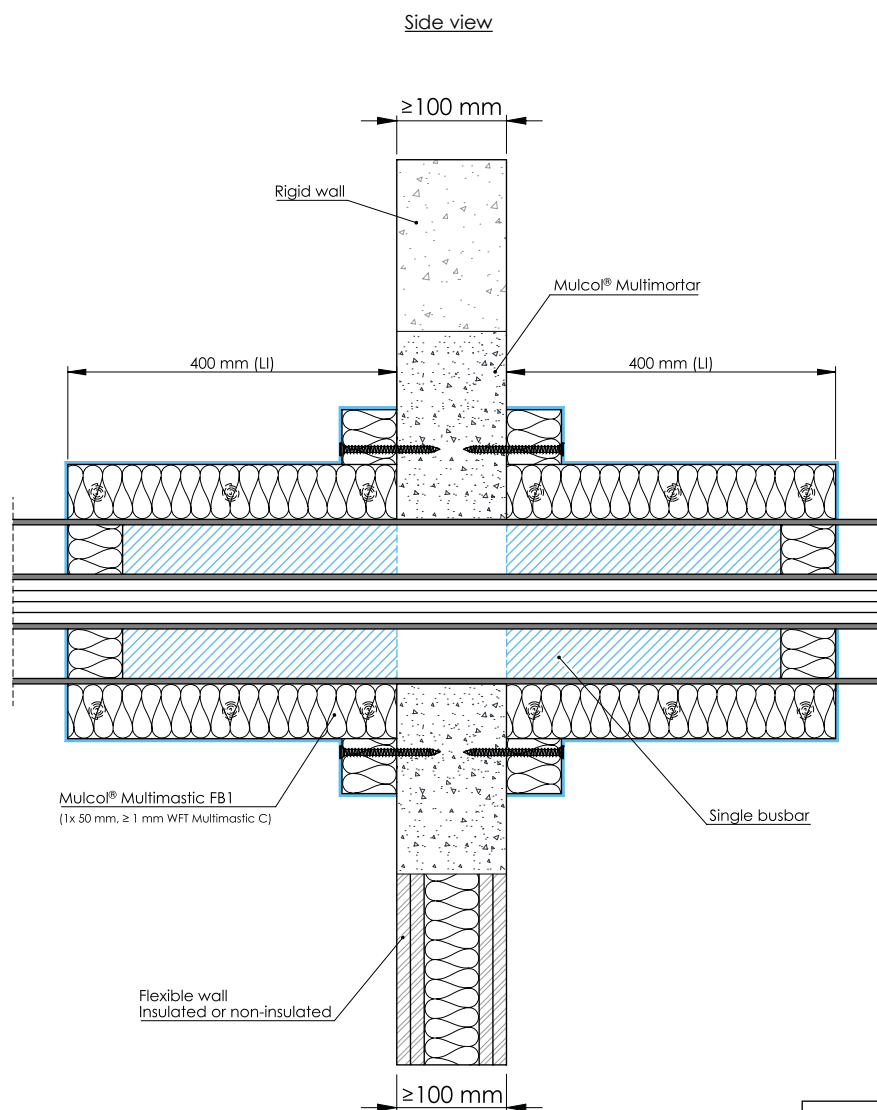
A.1.21.1 Single busbar - LI 300



Drawing: FW.E-1BB-MM1.2.20.LI300

A.1.21 Multimortar - ≥ 100 mm - Busbars

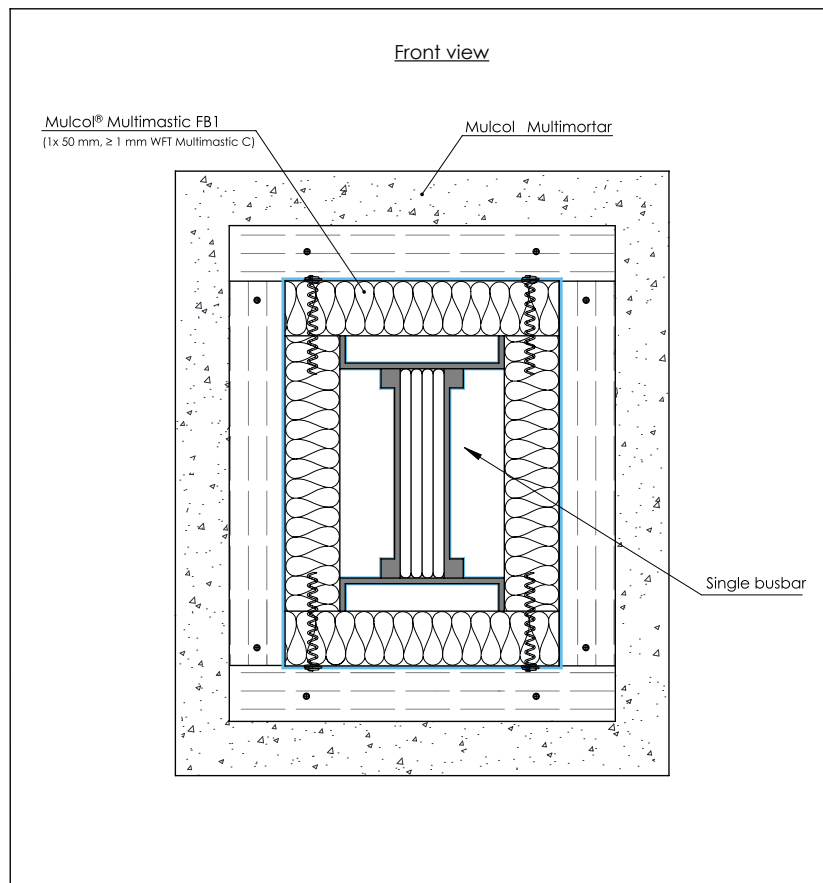
A.1.21.2 Single busbar - LI 400



Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Single busbar	$\leq 150 \times 250$ mm	max. $6 \times \leq 200$ mm width (per busbar)	Multimastic FB	50	LI 400 / CI	EI 120

A.1.21 Multimortar - ≥ 100 mm - Busbars

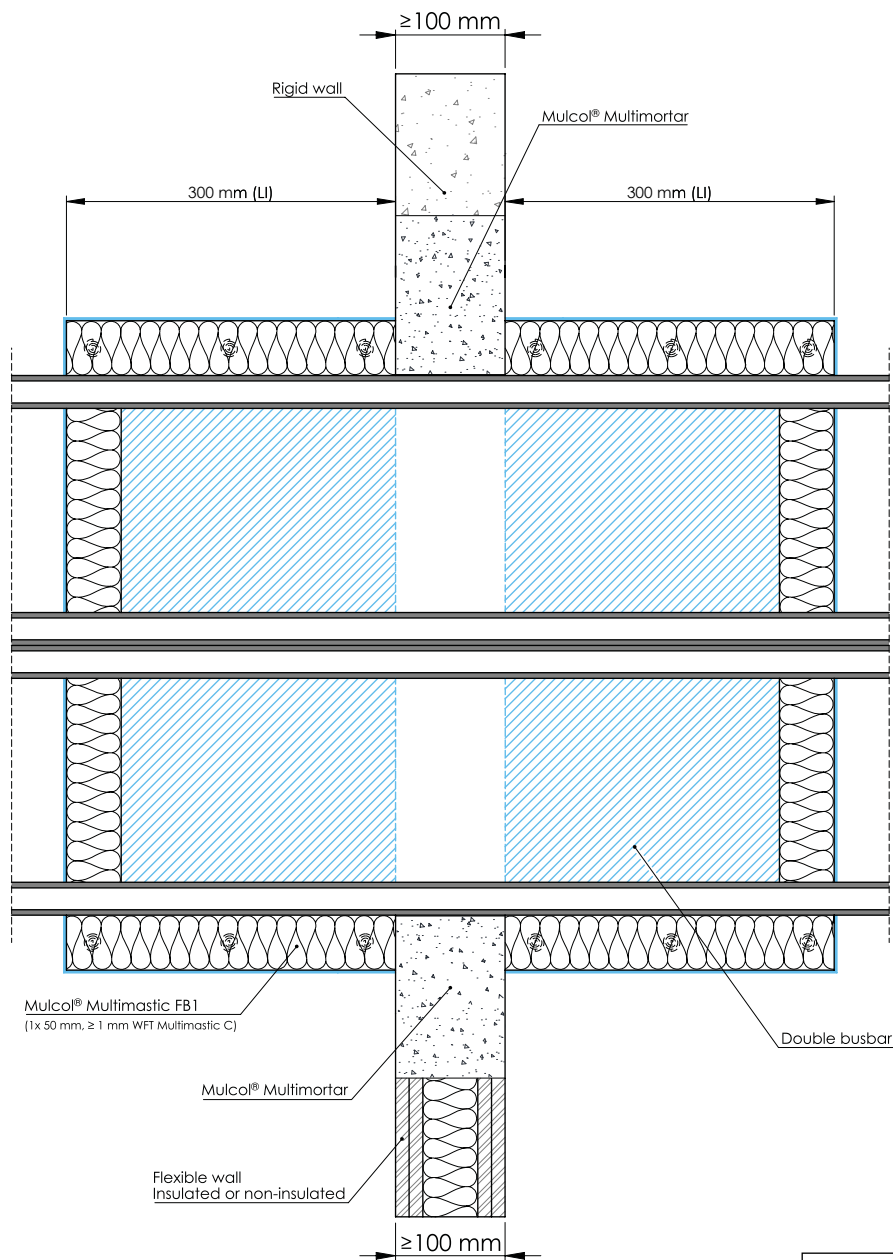
A.1.21.2 Single busbar - LI 400



Drawing: FW.E-1BB-MM1.2.20

A.1.21 Multimortar - ≥ 100 mm - Busbars

A.1.21.3 Multiple busbars - LI 300



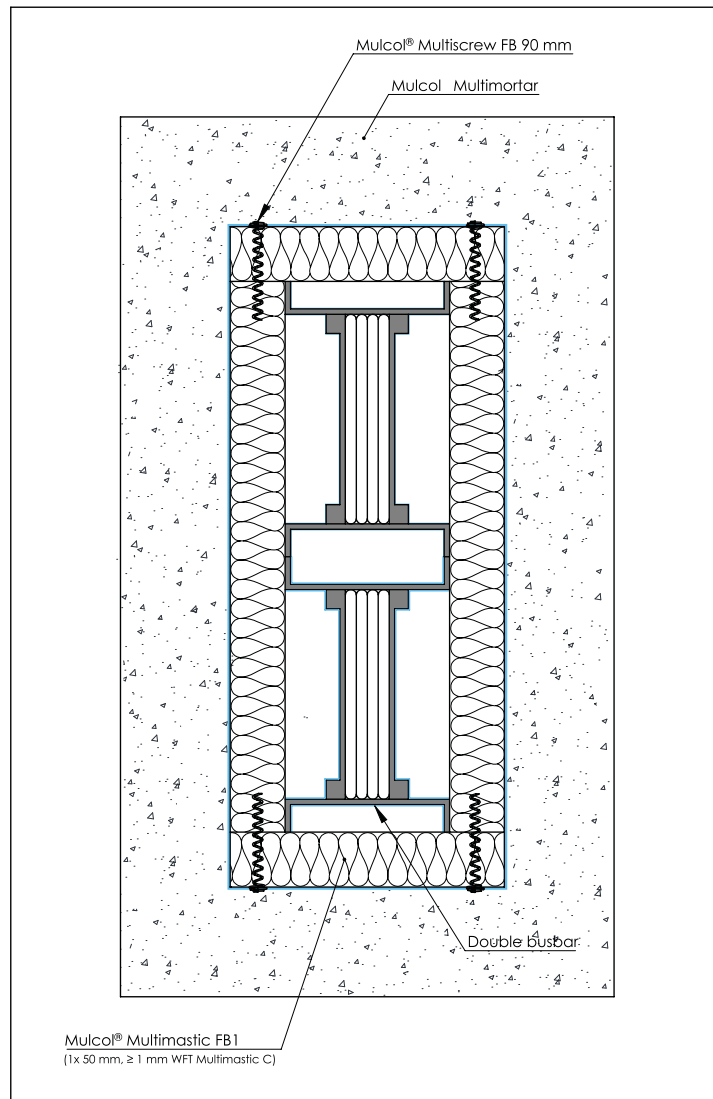
Drawing: FW.E-2BB-MM1.2.20.LI300

Services	Service dimensions		Insulation			Classification
	Outside dimension	Conductor	Type	Thickness (mm)	Configuration	
Double busbar	$\leq 150 \times 500$ mm	max. 6 x ≤ 200 mm width (per busbar)	Multimastic FB	50	LI 300 / CI	EI 60

A.1.21 Multimortar - ≥ 100 mm - Busbars

A.1.21.3 Multiple busbars - LI 300

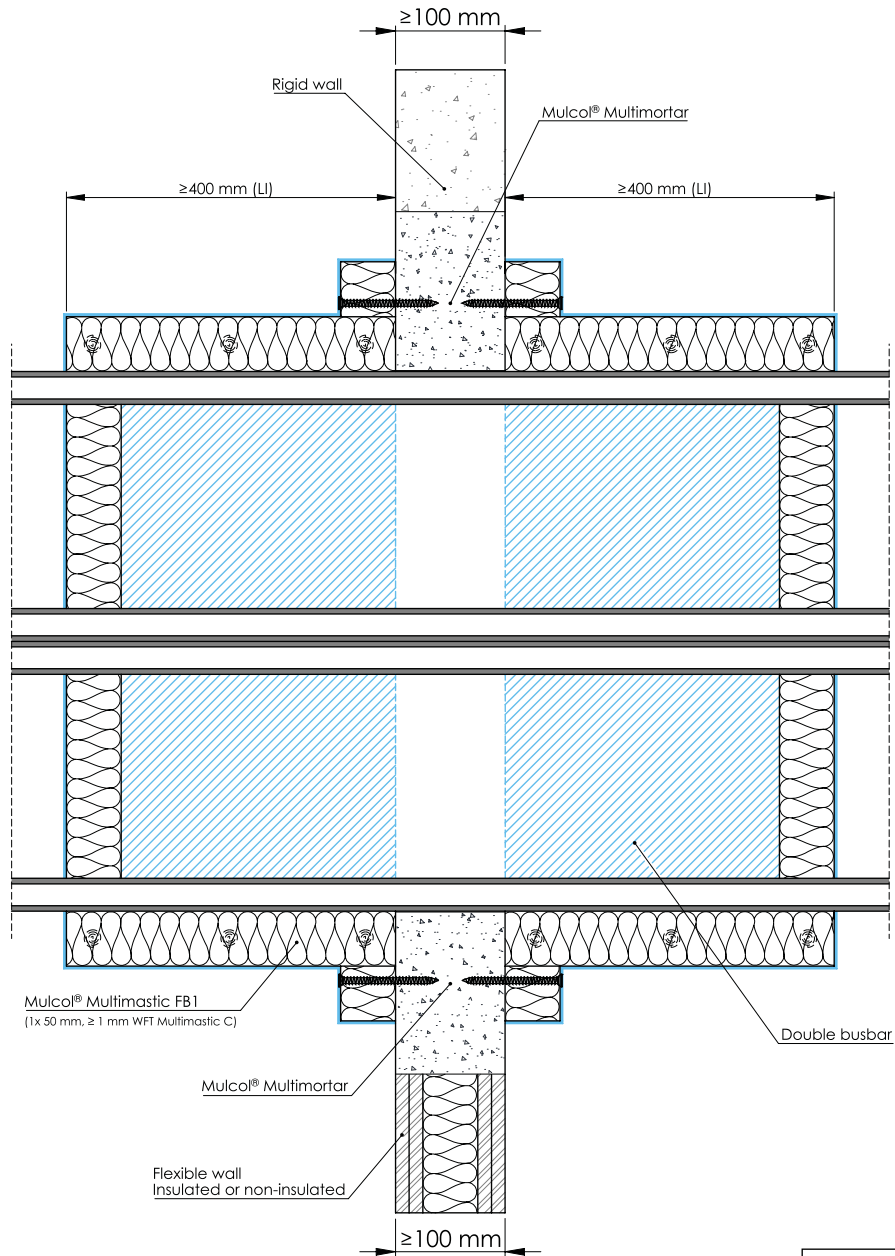
Front view



Drawing: FW.E-2BB-MM1.2.20.LI300

A.1.21 Multimortar - ≥ 100 mm - Busbars

A.1.21.4 Multiple busbars - LI 400



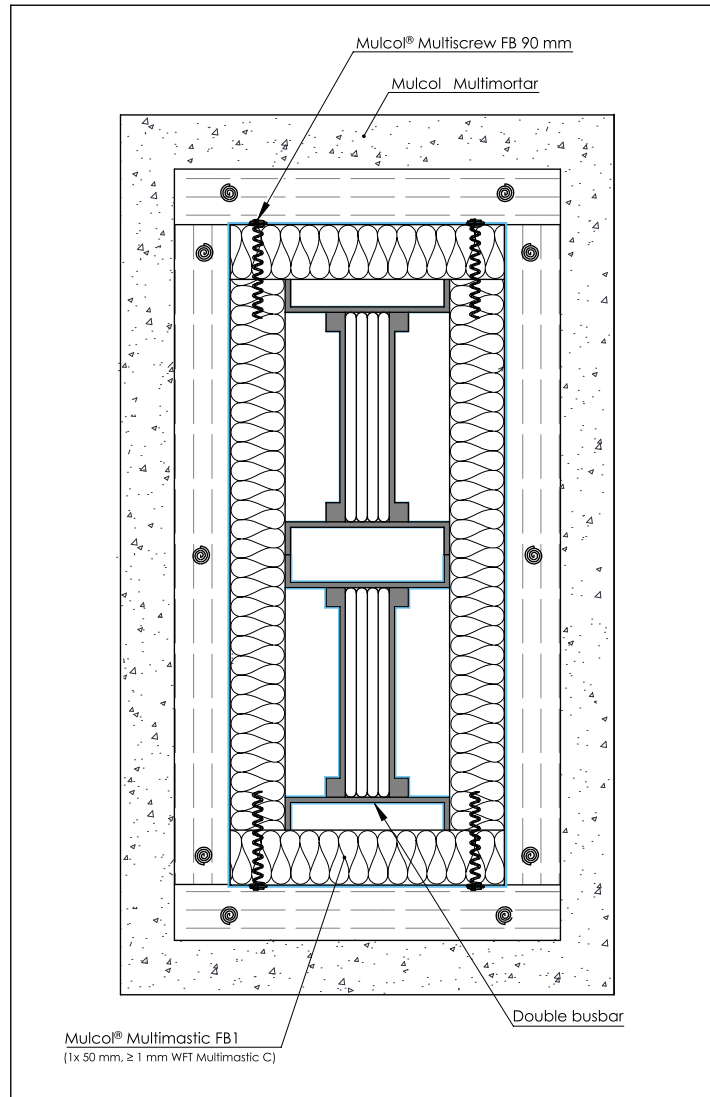
Drawing: FW.E-2BB-MM1.2.20

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

A.1.21 Multimortar - ≥ 100 mm - Busbars

A.1.21.4 Multiple busbars - LI 400

Front view

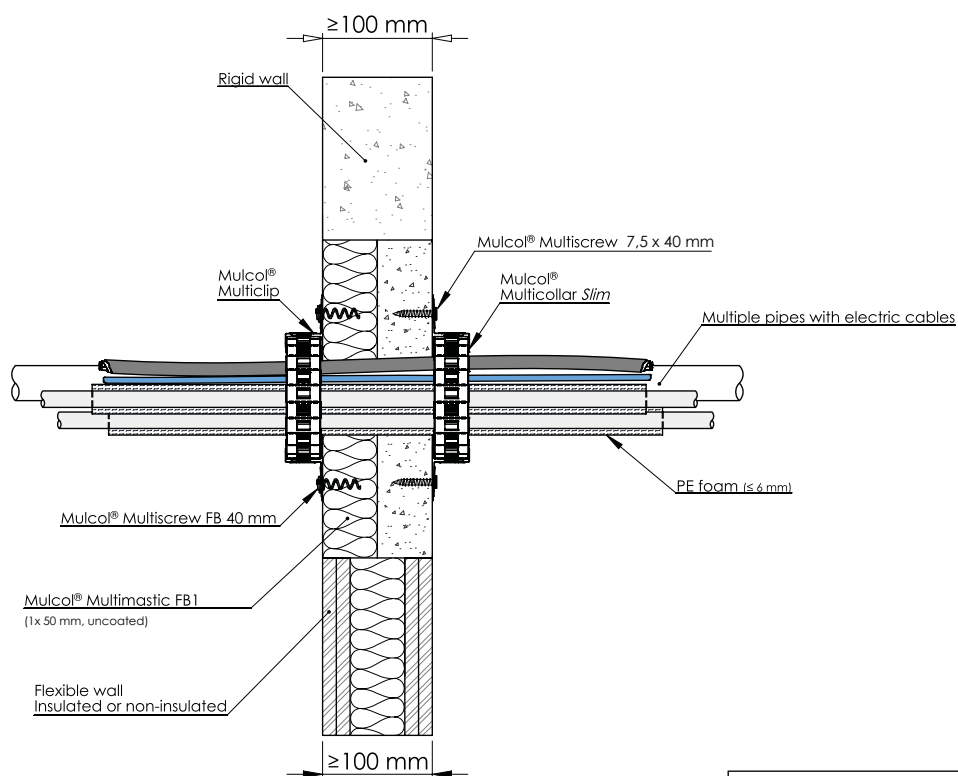
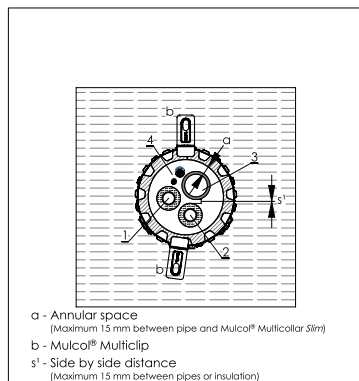


Drawing: FW.E-2BB-MM1.2.20

A.1.22 Multimortar + Multimastic FB - ≥ 100 mm - Multiple services

A.1.22.1 Airconditioning set - Multicollar *Slim*

Front view

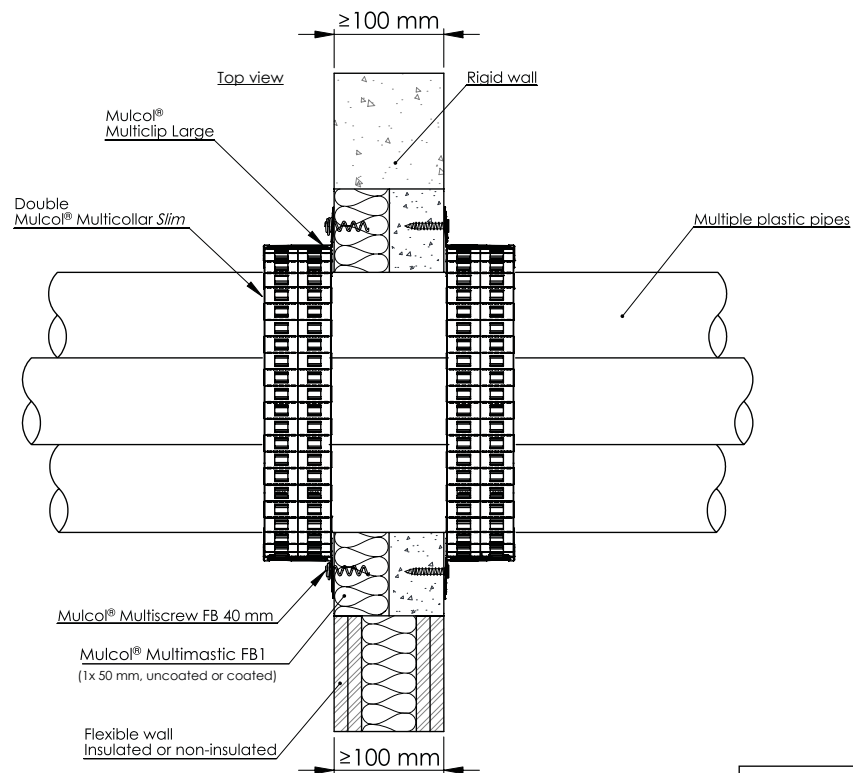
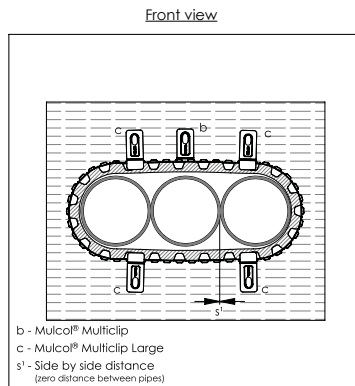


Drawing: FW.E-MC30-MLP5-MM2.5.40

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	≥ 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	$\leq$ YMKV 5 x 2.5 mm ²	-	-	-	-		

A.1.22 Multimortar + Multimastic FB - ≥ 100 mm - Multiple services

A.1.22.2 Multiple plastic pipes - Multicollar *Slim* double

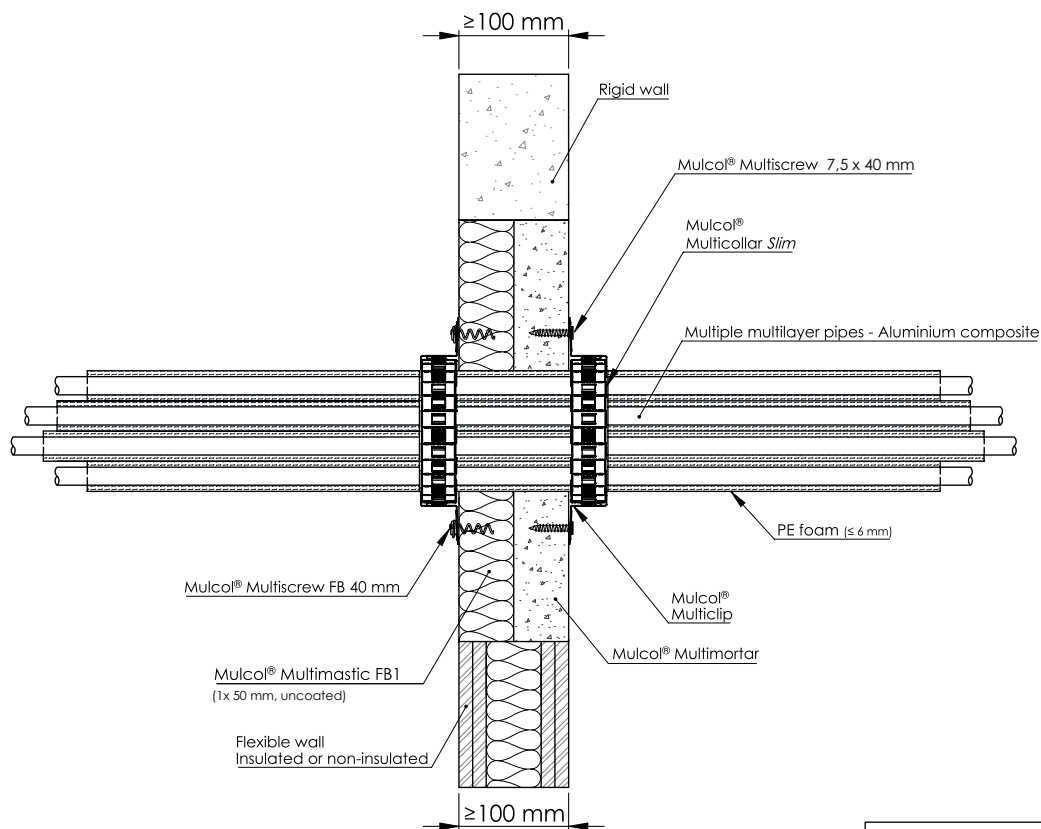
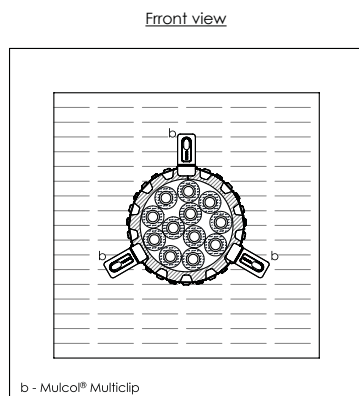


Drawing: FW.E-MC60-MLP3-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	$3x \leq \varnothing 110$	2.7	Multicollar <i>Slim</i> double	EI 90 U/C, E 120 U/C

A.1.22 Multimortar + Multimastic FB - ≥ 100 mm - Multiple services

A.1.22.3 Multiple Multilayer pipes (MLC) - Multicollar *Slim*



Drawing: FW.E-MC30-MLA_pr-MM2.5.40-T

Services	Pipe dimensions (mm)		No. of pipes	Insulation			Product	Classification
	Outer diameter	Wall thickness		Type	Thickness (mm)	Configuration		
Multilayer pipe (MLC)	$\leq \varnothing 15$	2.0	≤ 12	PE foam	≤ 6	LS 400 / CS	Multicollar <i>Slim</i>	EI 30 U/C
						LI 400 / CI		E 120 U/C

A.1.23

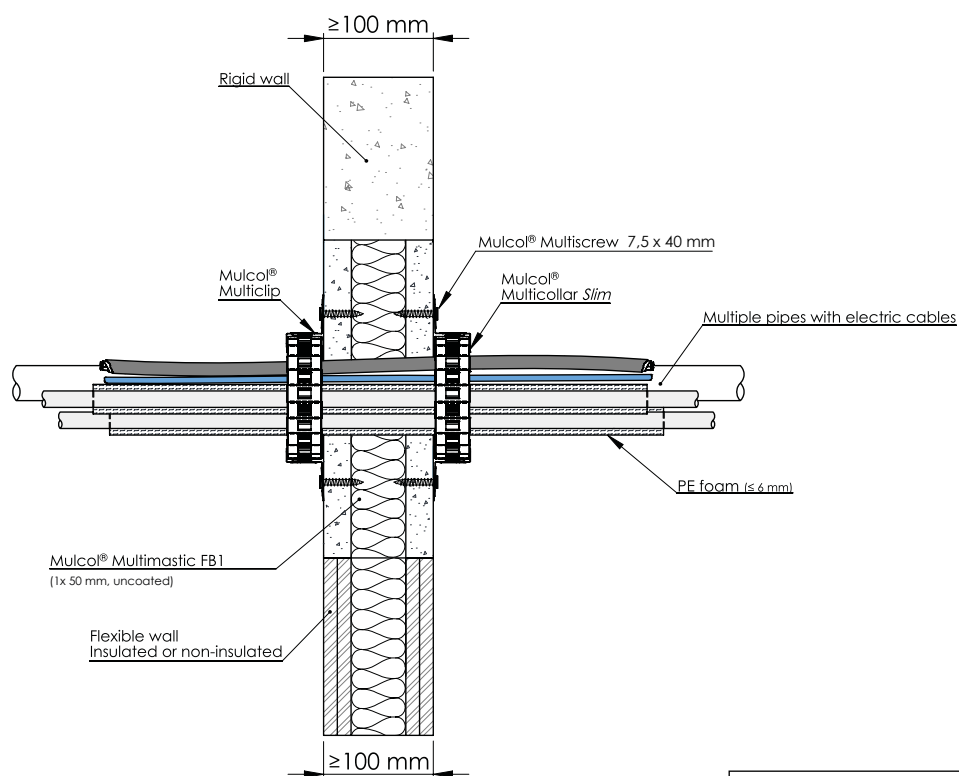
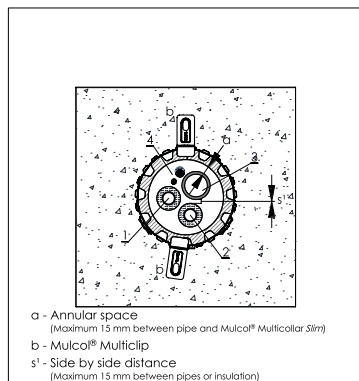
Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm -

Multiple services

A.1.23.1

Airconditioning set - Multicollar *Slim*

Front view

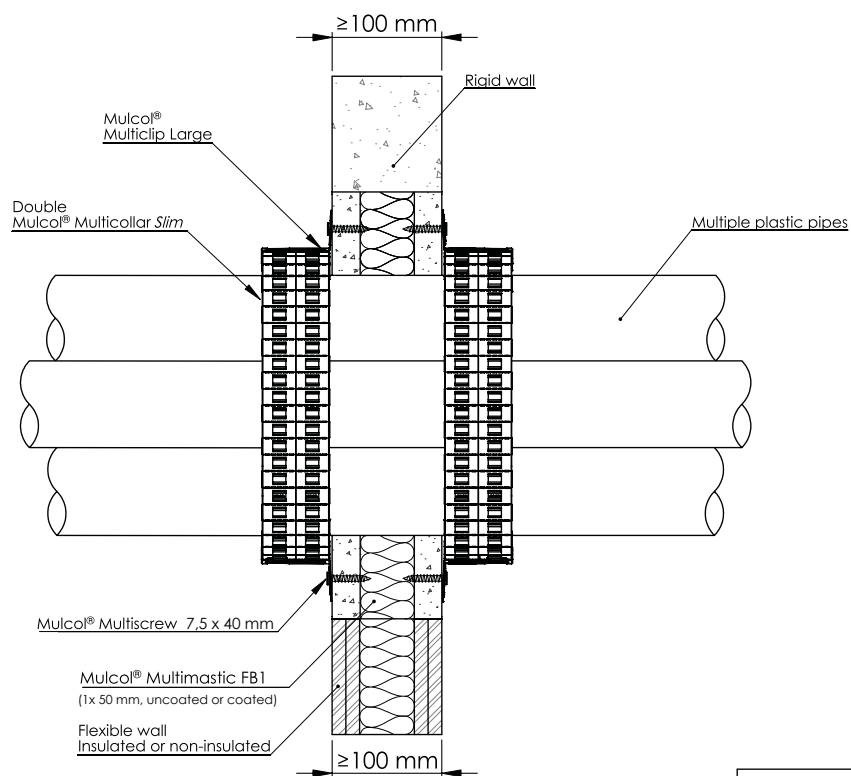
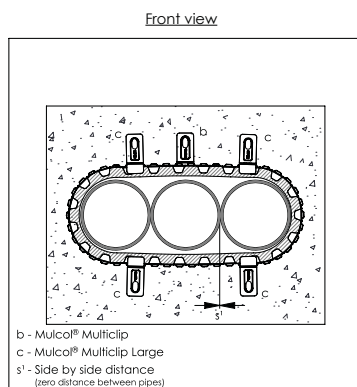


Drawing: FW-MC30-MLP5-MM3.4.40

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	≥ 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	$\leq \text{YMKV } 5 \times 2.5 \text{ mm}^2$	-	-	-	-		

A.1.23 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Multiple services

A.1.23.2 Multiple plastic pipes - Multicollar *Slim* double

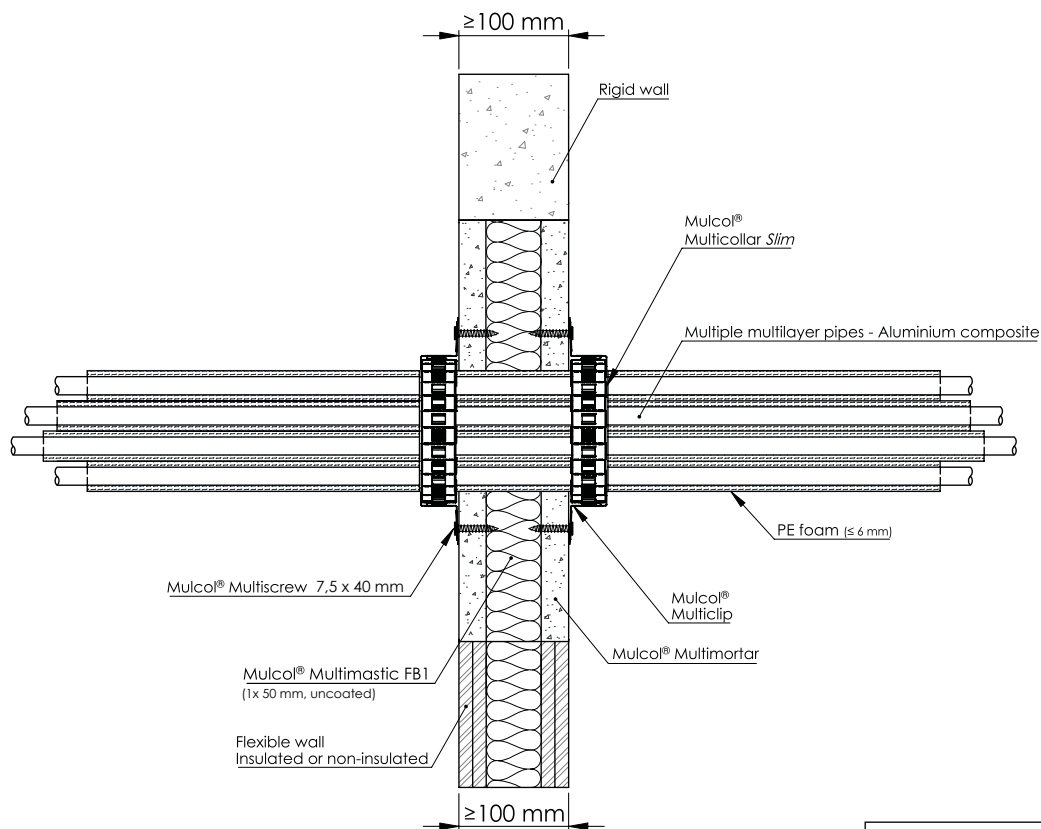
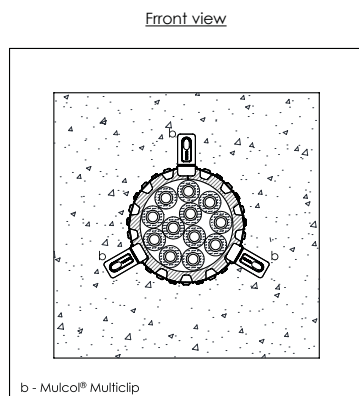


Drawing: FW.E-MC60-MLP3-MM3.4.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	$3x \leq \varnothing 110$	2.7	Multicollar <i>Slim</i> double	EI 90 U/C, E 120 U/C

A.1.23 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Multiple services

A.1.23.3 Multiple Multilayer pipes (MLC) - Multicollar *Slim*



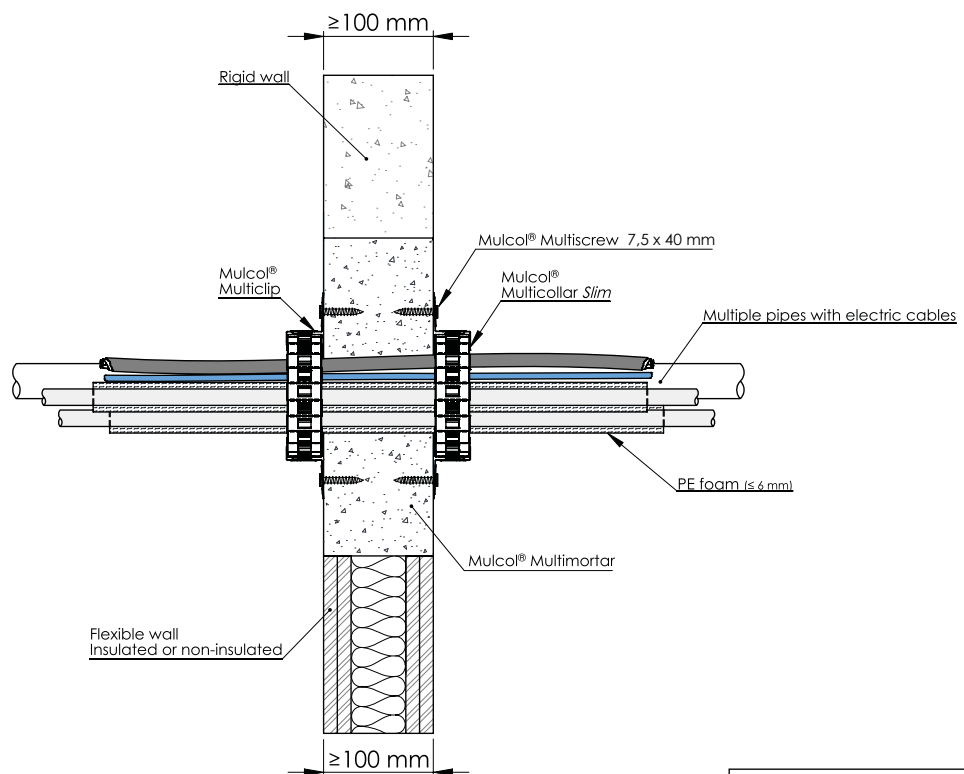
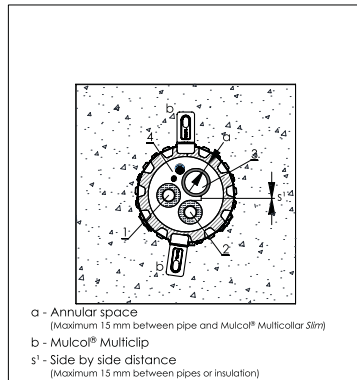
Drawing: FW-E-MC30-MLA_pr-MM3.4.40-T

Services	Pipe dimensions (mm)		No. of pipes	Insulation			Product	Classification
	Outer diameter	Wall thickness		Type	Thickness (mm)	Configuration		
Multilayer pipe (MLC)	$\leq \varnothing 15$	2.0	≤ 12	PE foam	≤ 6	LS 400 / CS LI 400 / CI	Multicollar <i>Slim</i>	EI 30 U/C E 120 U/C

A.1.24 Multimortar - ≥ 100 mm - Multiple services

A.1.24.1 Airconditioning set - Multicollar *Slim*

Front view

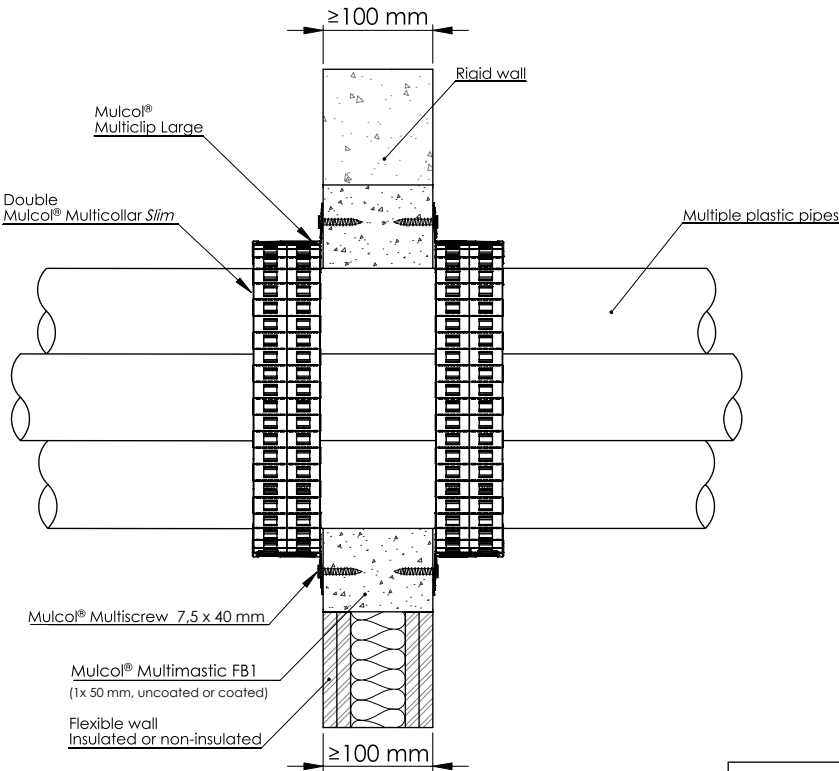
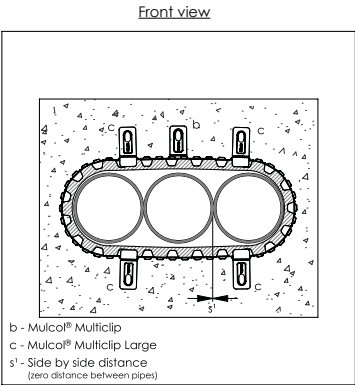


Drawing: FW.E-MC30-MLP5-MM1.2.40

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	≥ 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	-	-	-	-		
Sheathed cable	$\leq \text{YMKV } 5 \times 2.5 \text{ mm}^2$	-	-	-	-		EI 60 E 120

A.1.24Multimortar - ≥ 100 mm - Multiple services

A.1.24.2Multiple plastic pipes - Multicollar *Slim* double

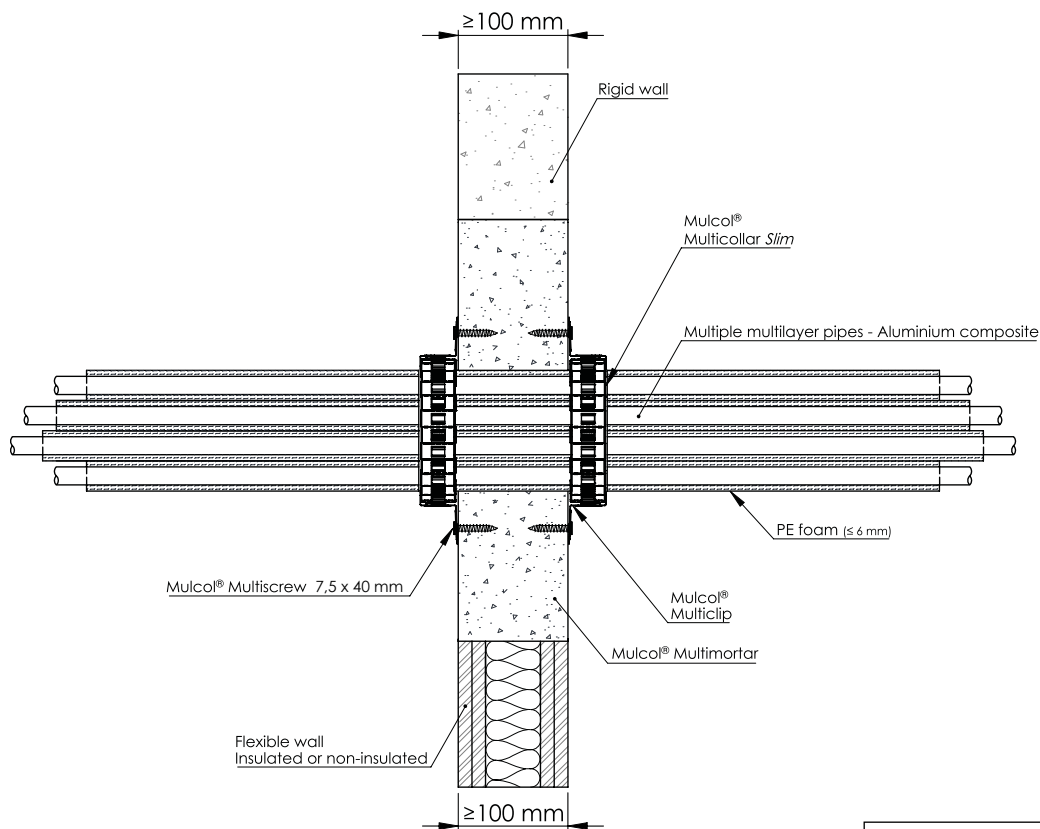
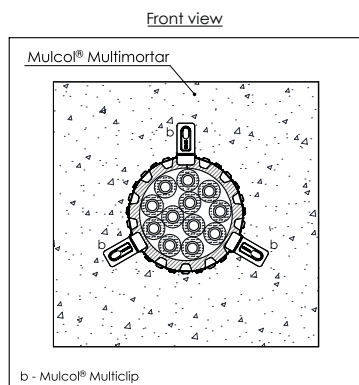


Drawing: FW.E-MC60-MLP3-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	3x ≤ Ø 110	2.7	Multicollar <i>Slim</i> double	EI 90 U/C, E 120 U/C

A.1.24 Multimortar - ≥ 100 mm - Multiple services

A.1.24.3 Multiple Multilayer pipes (MLC) - Multicollar *Slim*

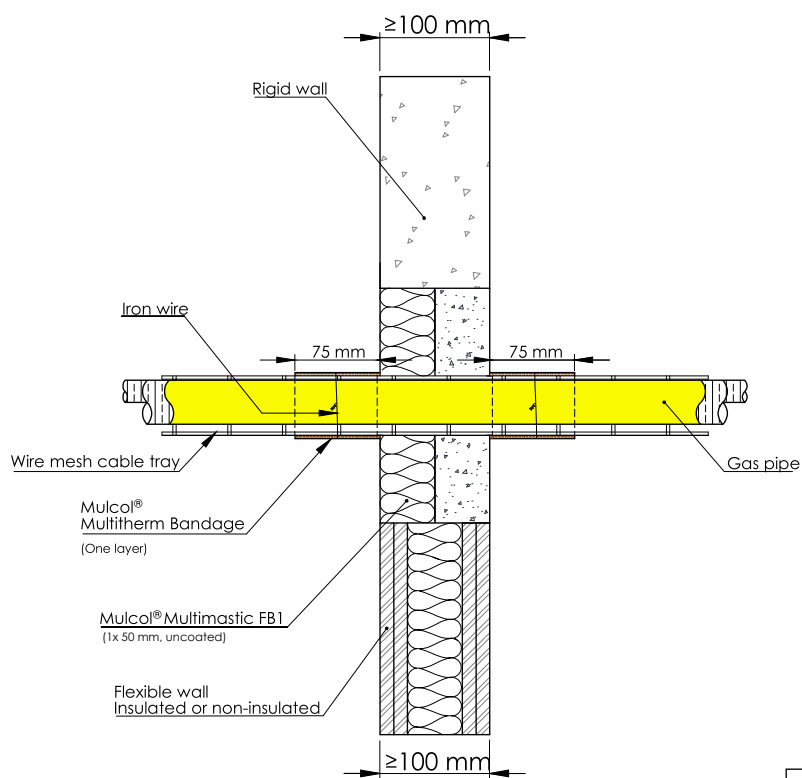
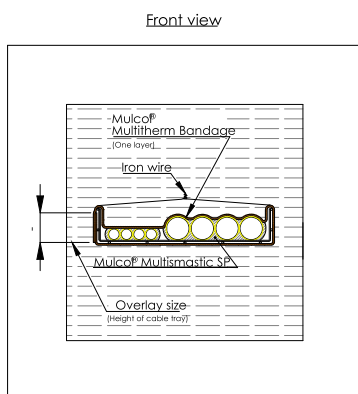


Drawing: FW-MC30-MLA_pr-MM1.2.40-T

Services	Pipe dimensions (mm)		No. of pipes	Insulation			Product	Classification
	Outer diameter	Wall thickness		Type	Thickness (mm)	Configuration		
Multilayer pipe (MLC)	$\leq \varnothing 15$	2.0	≤ 12	PE foam	≤ 6	LS 400 / CS LI 400 / CI	Multicollar <i>Slim</i>	EI 30 U/C E 120 U/C

A.1.25 Multimortar + Multimastic FB - ≥ 100 mm - Gas pipes

A.1.25.1 Multiple Corrugated Stainless Steel Tube (CSST) gas pipes - Multitherm Bandage

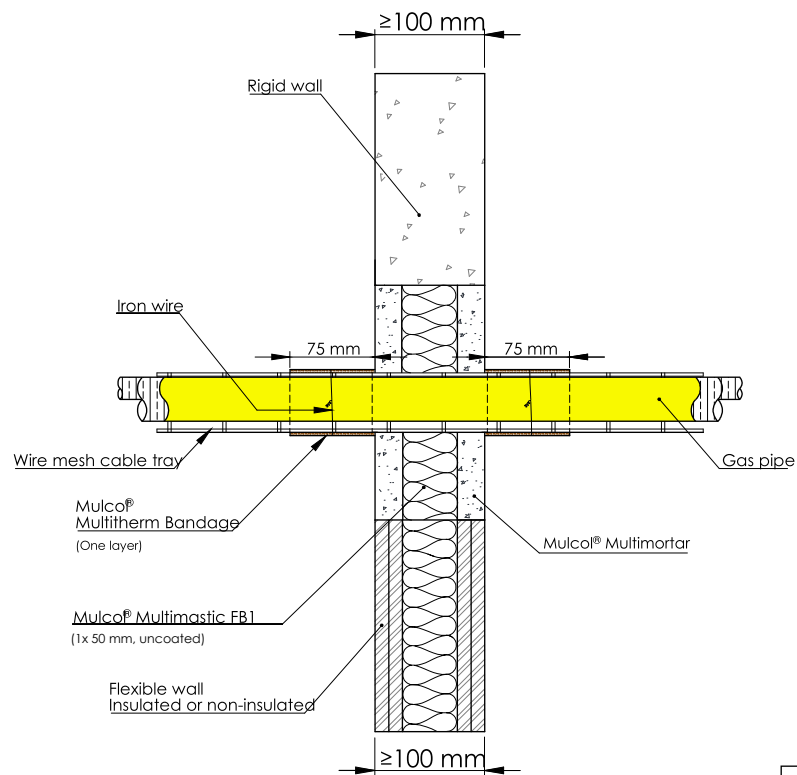
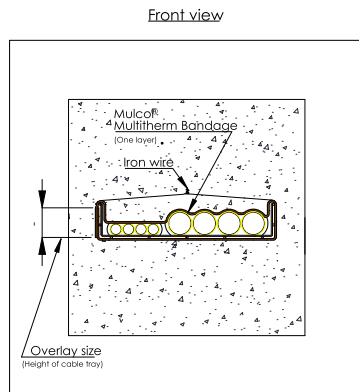


Drawing: FW.E-CT-B2-MM2.5.10

Services	Pipe dimensions (mm)		Multitherm Bandage	Classification
	Outer dimension	Wall thickness		
Corrugated stainless steel tube (CSST) gas pipes in wire mesh cable tray	$\leq \varnothing 19.9$	≤ 3	LI 75 one layer (one wire)	EI 60 U/C
	$\leq \varnothing 40.8$	≤ 3		
	$\leq \varnothing 60.3$	≤ 1		

A.1.26 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Gas pipes

A.1.26.1 Multiple Corrugated Stainless Steel Tube (CSST) gas pipes - Multitherm Bandage

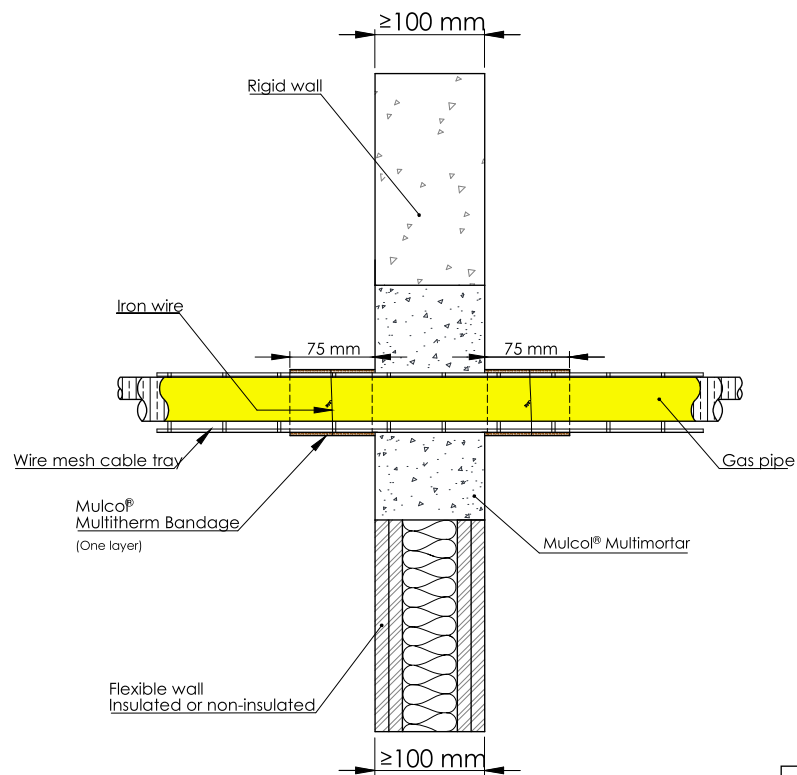
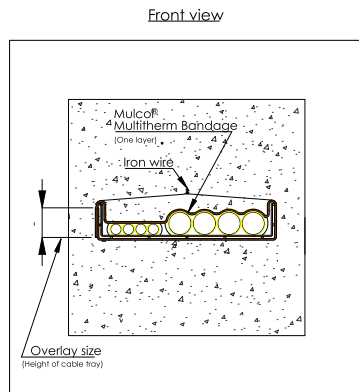


Drawing: FW.E-CT-B2-MM3.4.10

Services	Pipe dimensions (mm)		Multitherm Bandage	Classification
	Outer dimension	Wall thickness		
Corrugated stainless steel tube (CSST) gas pipes in wire mesh cable tray	$\leq \varnothing 19.9$	≤ 3	LI 75 one layer (one wire)	EI 60 U/C
	$\leq \varnothing 40.8$	≤ 3		
	$\leq \varnothing 60.3$	≤ 1		

A.1.27 Multimortar ≥ 100 mm - Gas pipes

A.1.27.1 Multiple Corrugated Stainless Steel Tube (CSST) gas pipes - Multitherm Bandage

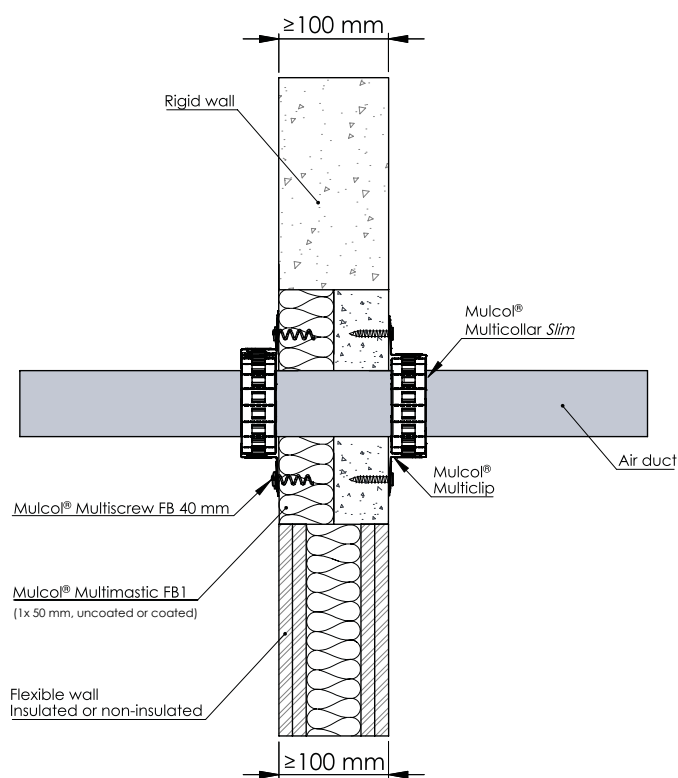
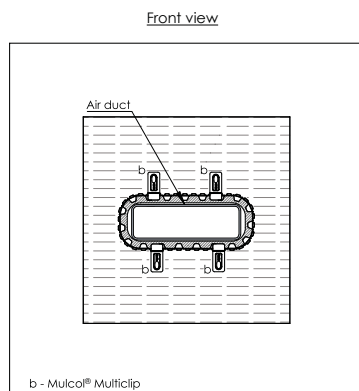


Drawing: FW.E-CT-B2-MM1.2.10

Services	Pipe dimensions (mm)		Multitherm Bandage	Classification
	Outer dimension	Wall thickness		
Corrugated stainless steel tube (CSST) gas pipes in wire mesh cable tray	$\leq \varnothing 19.9$	≤ 3	LI 75 one layer (one wire)	EI 60 U/C
	$\leq \varnothing 40.8$	≤ 3		
	$\leq \varnothing 60.3$	≤ 1		

A.1.28 Multimortar + Multimastic FB - ≥ 100 mm - Ducting

A.1.28.1 Rectangular duct - Multicollar *Slim*

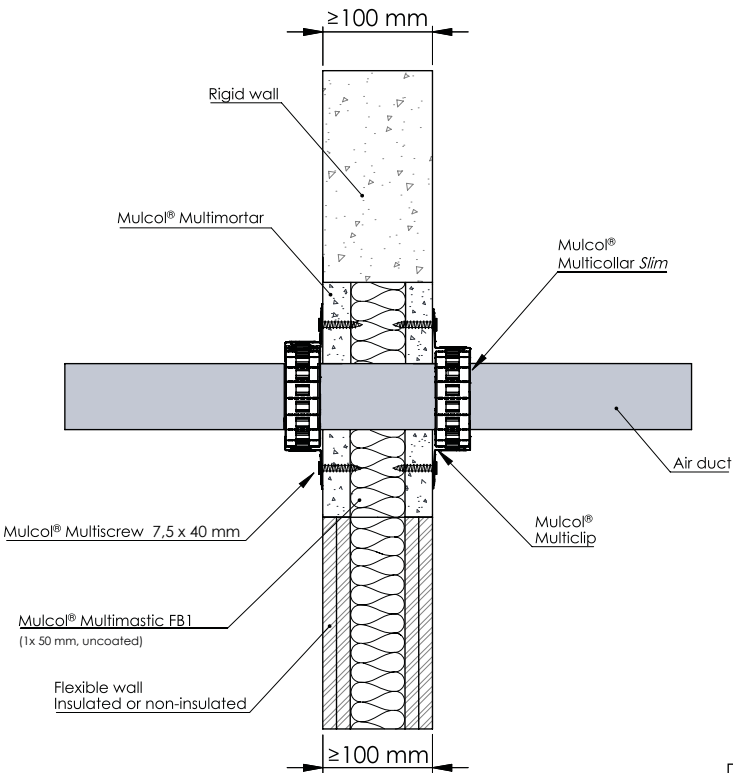
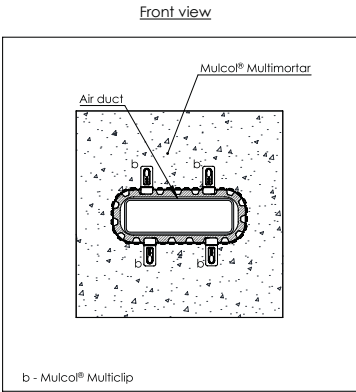


Drawing: FW.E-MC30-AD-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rectangular plastic duct	$\leq 220 \times 90$	1.0	Multicollar <i>Slim</i>	EI 45 U/C
		2.0		EI 120 U/C

A.1.29
A.1.29.1

Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm - Ducting
Rectangular duct - Multicollar *Slim*

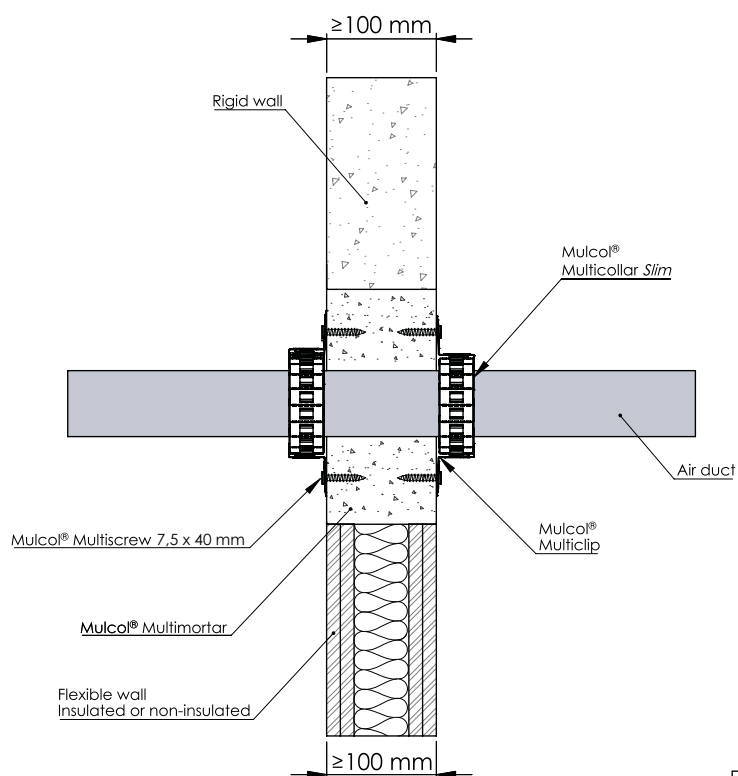
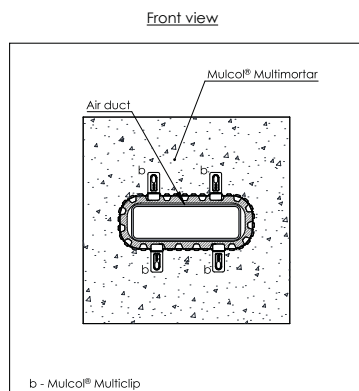


Drawing: FW.E-MC30-AD-MM3.4.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rectangular plastic duct	≤ 220 x 90	1.0	Multicollar <i>Slim</i>	EI 45 U/C
		2.0		EI 120 U/C

A.1.30 Multimortar - ≥ 100 mm - Ducting

A.1.30.1 Rectangular duct - Multicollar *Slim*

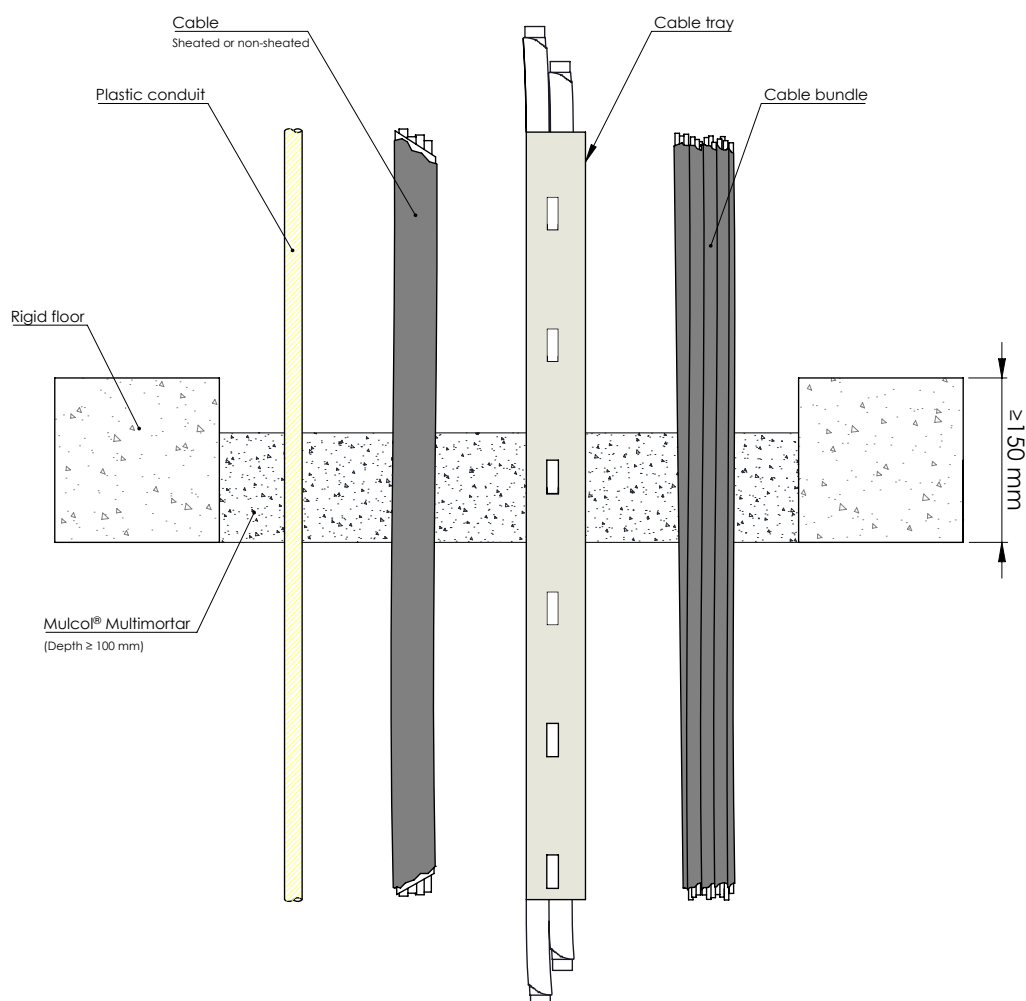


Drawing: FW.E-MC30-AD-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rectangular plastic duct	$\leq 220 \times 90$	1.0	Multicollar <i>Slim</i>	EI 45 U/C
		2.0		EI 120 U/C

B.1.1 Multimortar - ≥ 100 mm - Cables, trays and conduits

B.1.1.1 Cables, trays and conduits

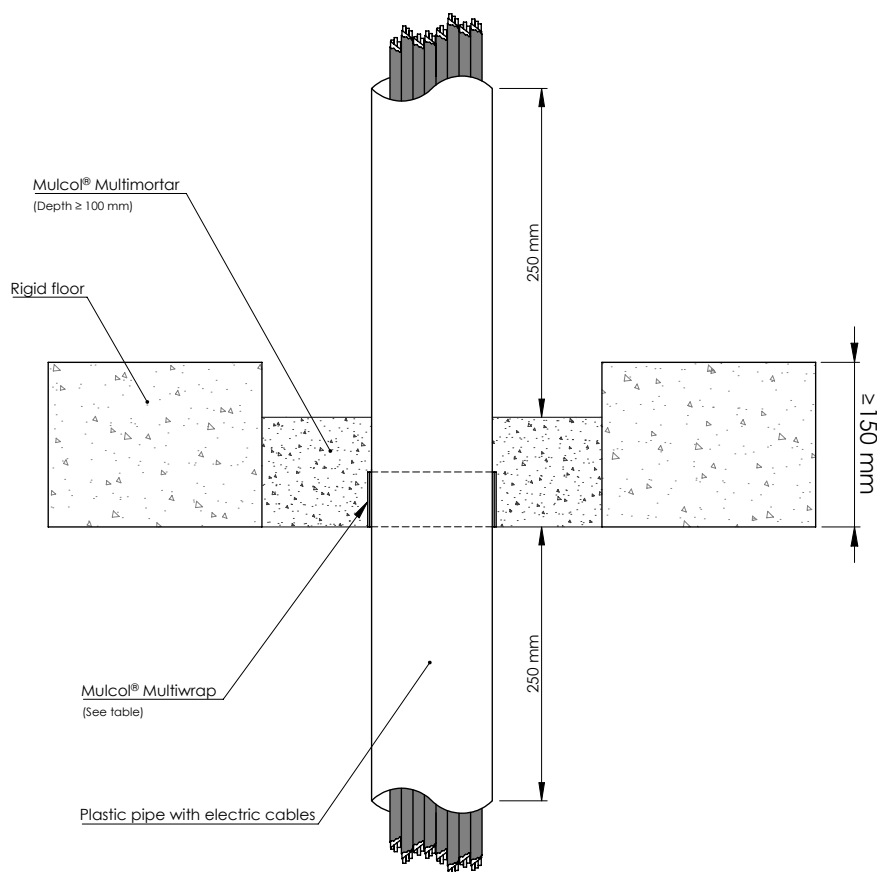
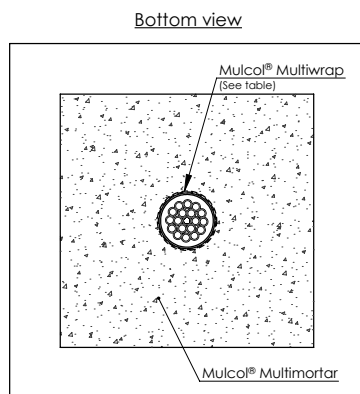


Drawing: RF-E-CT-EC-ECB-PC-MM1.2.10

Services	Classification
Metal cable ladders	EI 120, E 180
Metal (non-)perforated cable trays	
Steel wire mesh cable trays (baskets)	
Cables $\leq \varnothing 21$ mm (single or bundled)	EI 120, E 180
Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	EI 120, E 240
Cables $\leq \varnothing 50$ mm	EI 60, E 120
Plastic conduits $\leq \varnothing 16$ mm	EI 180 U/C, E 240 U/C
Non sheathed cables $\leq \varnothing 24$ mm	EI 45, E 120

B.1.1 Multimortar - ≥ 100 mm - Cables, trays and conduits

B.1.1.2 Plastic pipes with cables - Multiwrap

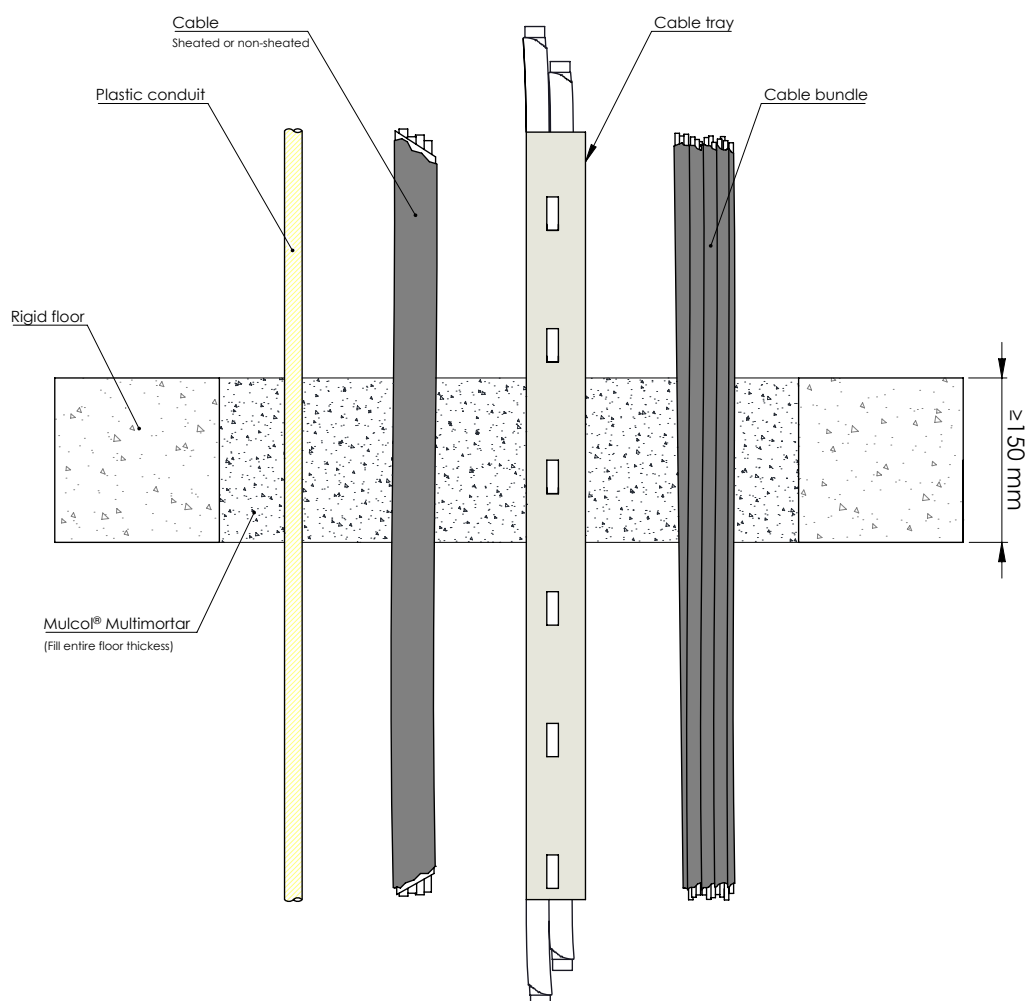


Drawing: RF.E-PPEC-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7 - 10	Multiwrap (2 layers)	EI 180 U/C
PP				
PVC(-U/-C)				
Cables $\leq \varnothing 21$ mm (single or bundled)	-	-	-	EI 180
Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	-	-	-	EI 180
Cables $\leq \varnothing 50$ mm	-	-	-	EI 60, E 120

B.1.2 Multimortar - ≥ 150 mm - Cables, trays and conduits

B.1.2.1 Cables, trays and conduits

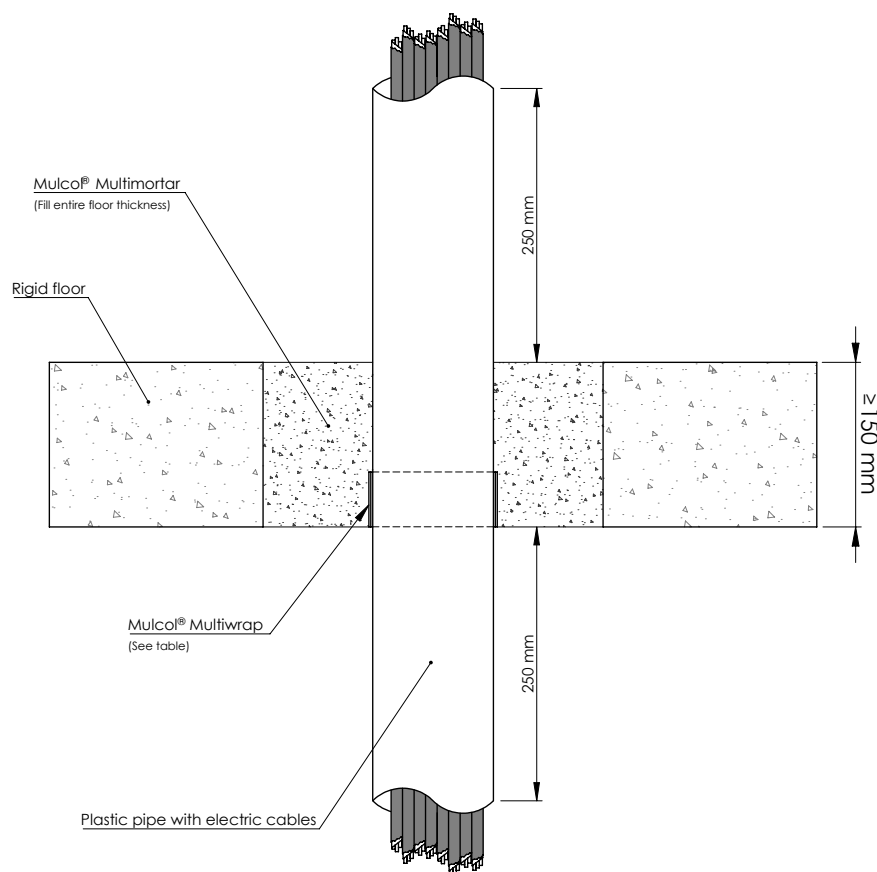
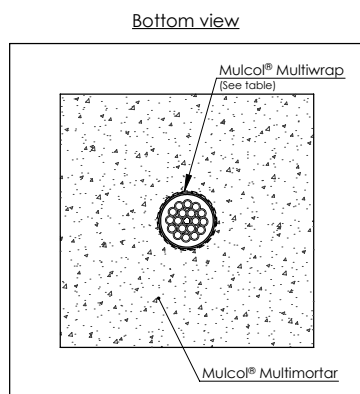


Drawing: RF-E-CT-EC-ECB-PC-MM1.3.10

Services	Classification
Metal cable ladders	EI 120, E 180
Metal (non-)perforated cable trays	
Steel wire mesh cable trays (baskets)	
Cables $\leq \varnothing 21$ mm (single or bundled)	EI 120, E 180
Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	EI 120, E 240
Cables $\leq \varnothing 50$ mm	EI 60, E 120
Plastic conduits $\leq \varnothing 16$ mm	EI 180 U/C, E 240 U/C
Non sheathed cables $\leq \varnothing 24$ mm	EI 45, E 120

B.1.2 Multimortar - ≥ 150 mm - Cables, trays and conduits

B.1.2.2 Plastic pipes with cables - Multiwrap

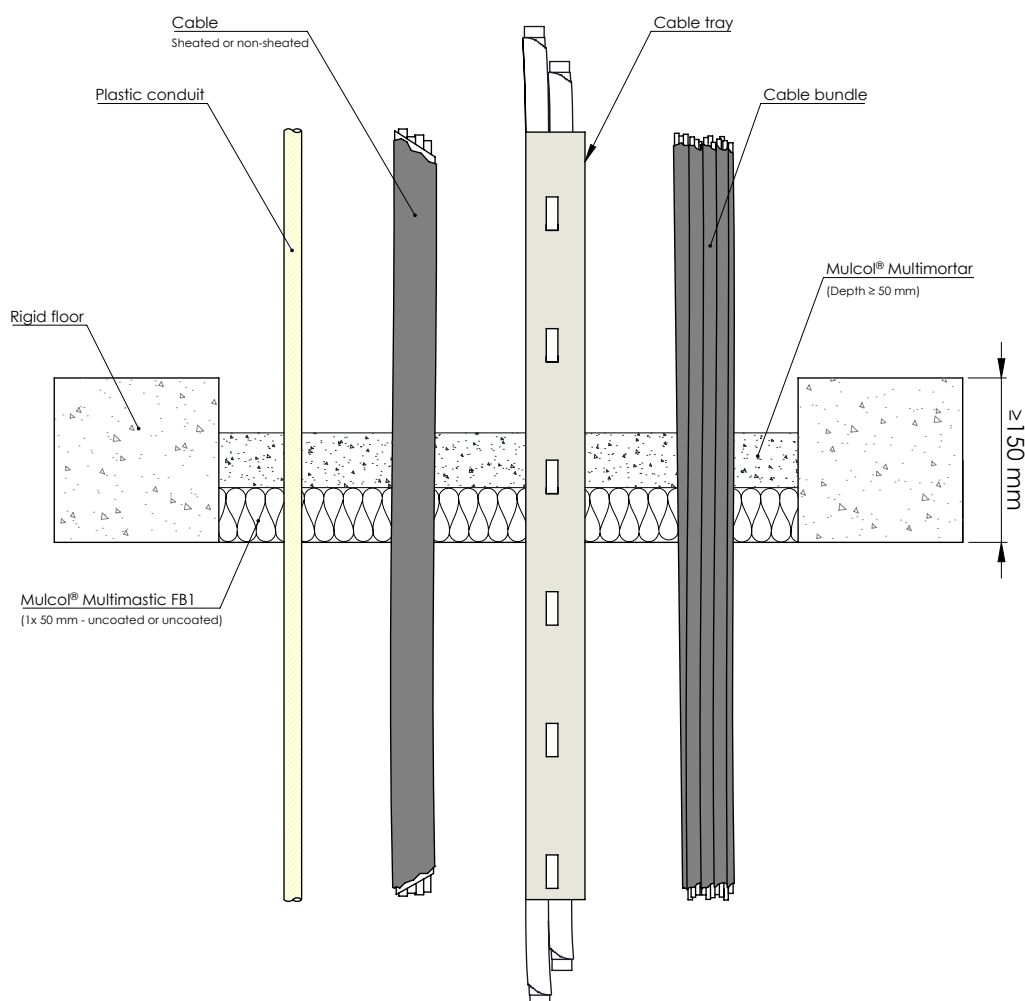


Drawing: RF.E-PPEC-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7 - 10	Multiwrap (2 layers)	EI 180 U/C
PP				
PVC(-U/-C)				
Cables $\leq \varnothing 21$ mm (single or bundled)	-	-	-	EI 180
Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	-	-	-	EI 180
Cables $\leq \varnothing 50$ mm	-	-	-	EI 60, E 120

B.1.3 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

B.1.3.1 Cables, trays and conduits - Multimastic FB

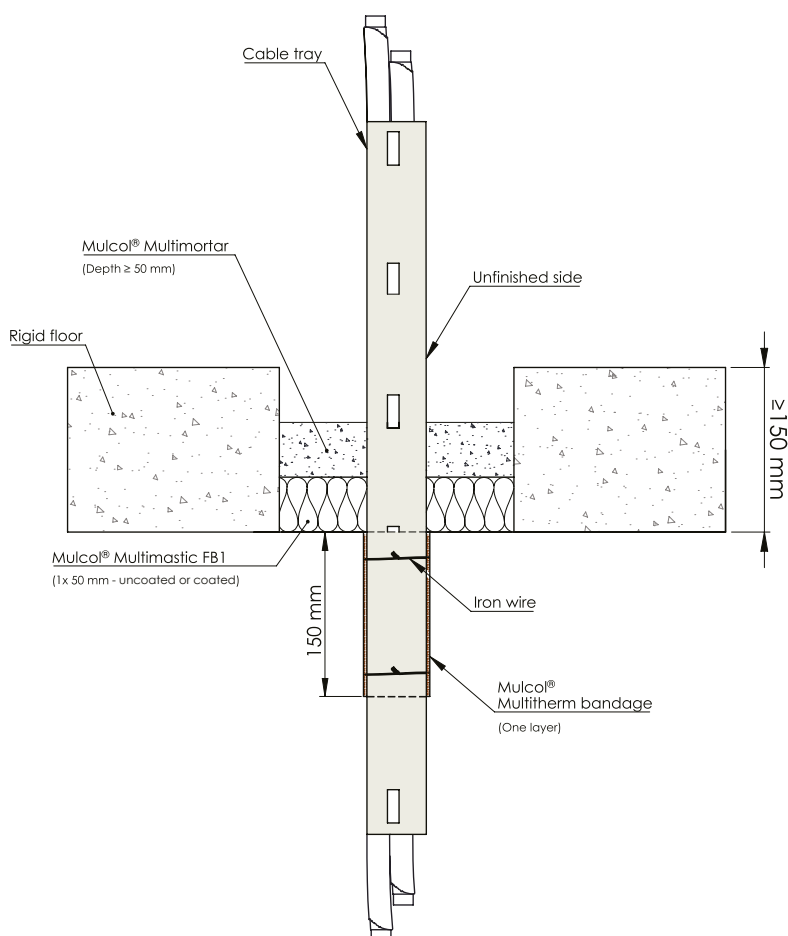
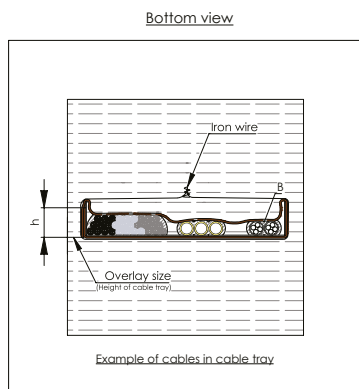


Drawing: RF-E-CT-EC-ECB-PC-MM2.5.10

Services	Classification
Metal cable ladders	EI 90, E 180
Metal (non-)perforated cable trays	
Steel wire mesh cable trays (baskets)	
Cables $\leq \varnothing 21$ mm (single or bundled)	EI 60, E 180
Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	EI 120, E 180
Cables $\leq \varnothing 50$ mm	EI 60, E 120
Plastic conduits $\leq \varnothing 16$ mm	EI 180 U/C
Non sheathed cables $\leq \varnothing 24$ mm	EI 45, E 120

B.1.3 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

B.1.3.2 Cables, trays and conduits - Multitherm Bandage - Bottom of floor

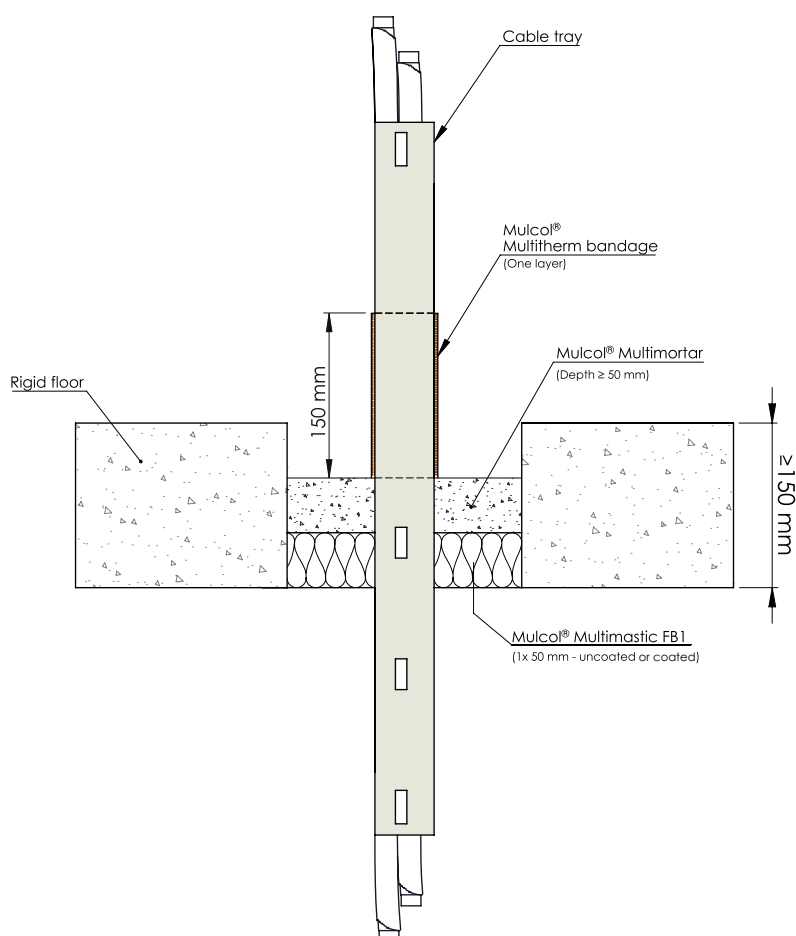
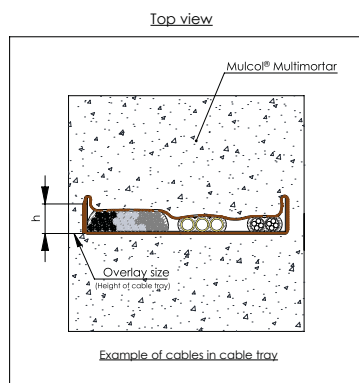


Drawing: RF.E-CT-MM2.5.10-B1.1.10

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 $\leq \varnothing 21$ mm (single or bundled)		
Plastic conduit $\leq \varnothing 16$ mm		EI 60 U/C, E 120 U/C

B.1.3 Multimortar + Multimastic FB - ≥ 100 mm - Cables, trays and conduits

B.1.3.3 Cables, trays and conduits - Multitherm Bandage - Top of floor

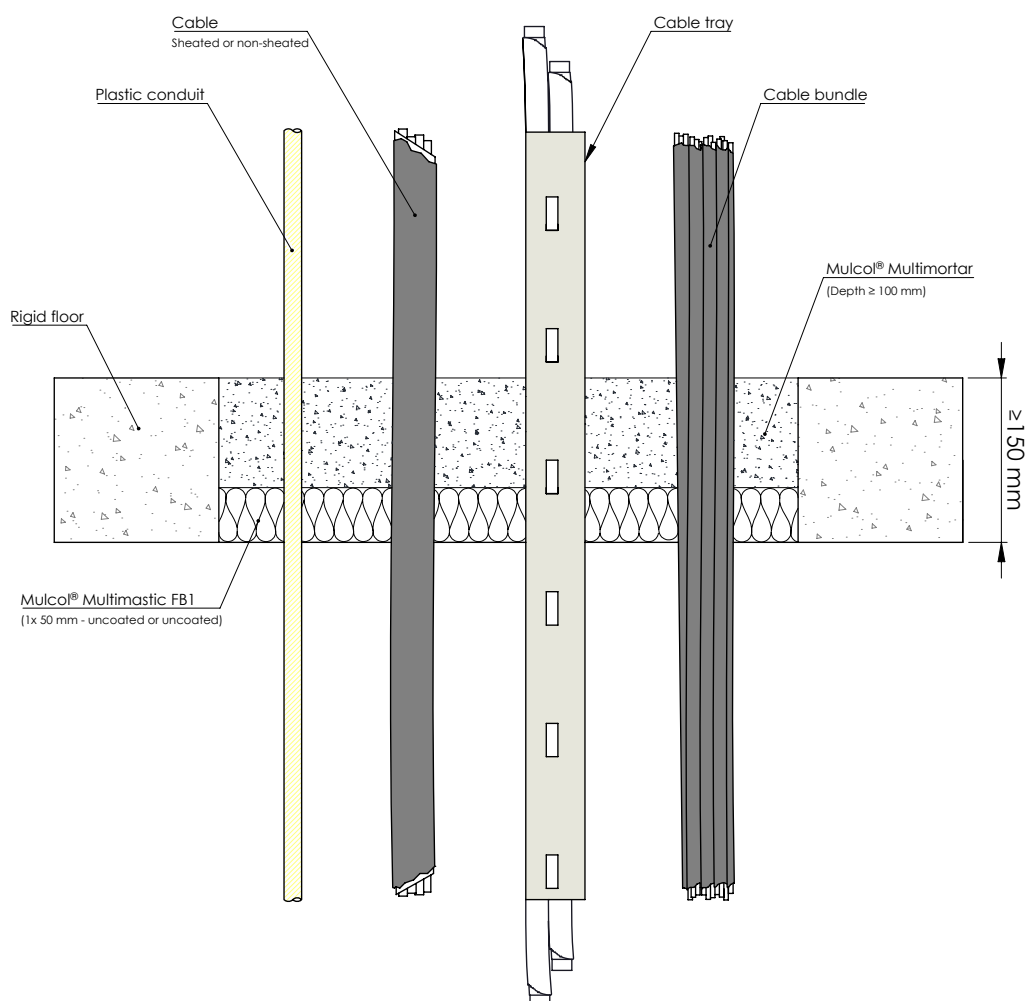


Drawing: RF.E-CT-MM2.5.10-B3.1.10

Services	Insulation (mm)	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 $\leq \varnothing 21$ mm (single or bundled)		
Plastic conduit $\leq \varnothing 16$ mm		EI 90 U/C, E 120 U/C

B.1.4 Multimortar + Multimastic FB - ≥ 150 mm - Cables, trays and conduits

B.1.4.1 Cables, trays and conduits - Multimastic FB

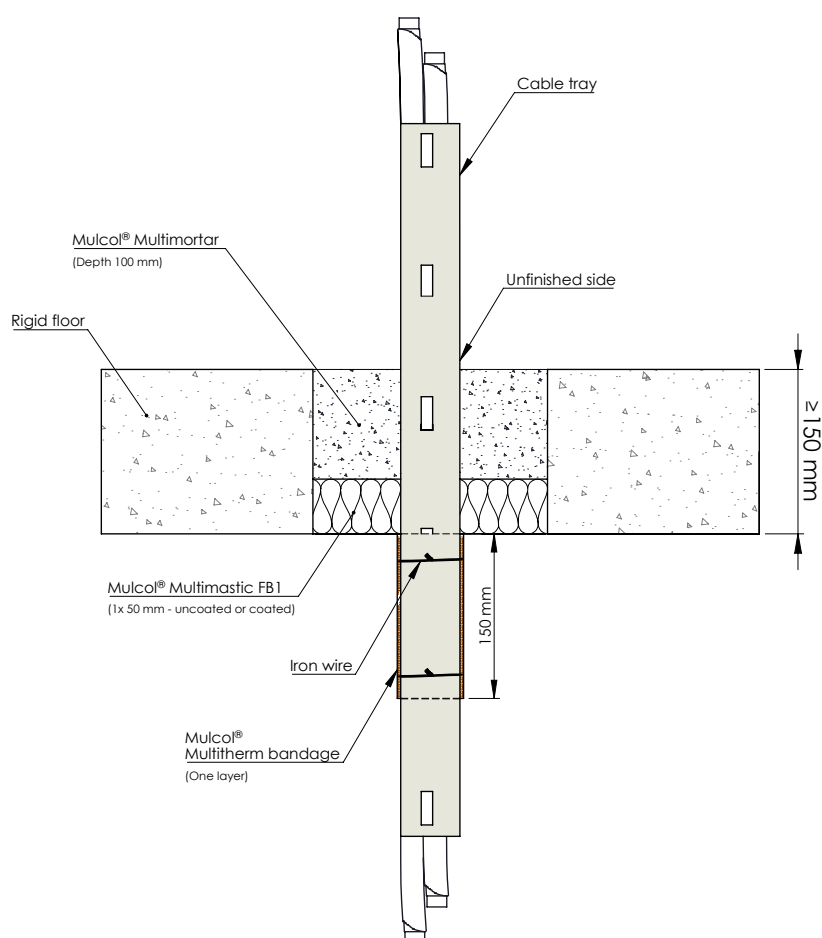
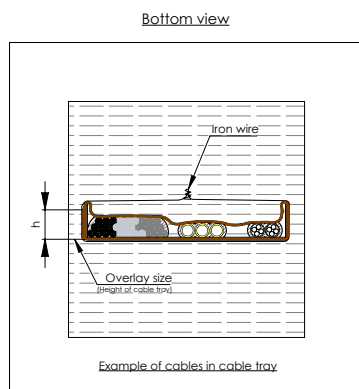


Drawing: RF.E-CT-EC-ECB-PC-MM2.7.10

Services	Classification
Metal cable ladders	EI 120
Metal (non-)perforated cable trays	
Steel wire mesh cable trays (baskets)	
Cables $\leq \varnothing 21$ mm (single or bundled)	EI 120
Cables $\leq \varnothing 21$ mm in a tied bundle $\leq \varnothing 100$ mm	EI 120, E 240
Cables $\leq \varnothing 80$ mm	EI 90, E 120
Plastic conduits $\leq \varnothing 16$ mm	EI 180 U/C, E 240 U/C
Non sheathed cables $\leq \varnothing 24$ mm	EI 90, E 120
Non sheathed cables $\leq \varnothing 17$ mm	EI 120

B.1.4 Multimortar + Multimastic FB - ≥ 150 mm - Cables, trays and conduits

B.1.4.2 Cables, trays and conduits - Multitherm Bandage - Bottom of floor

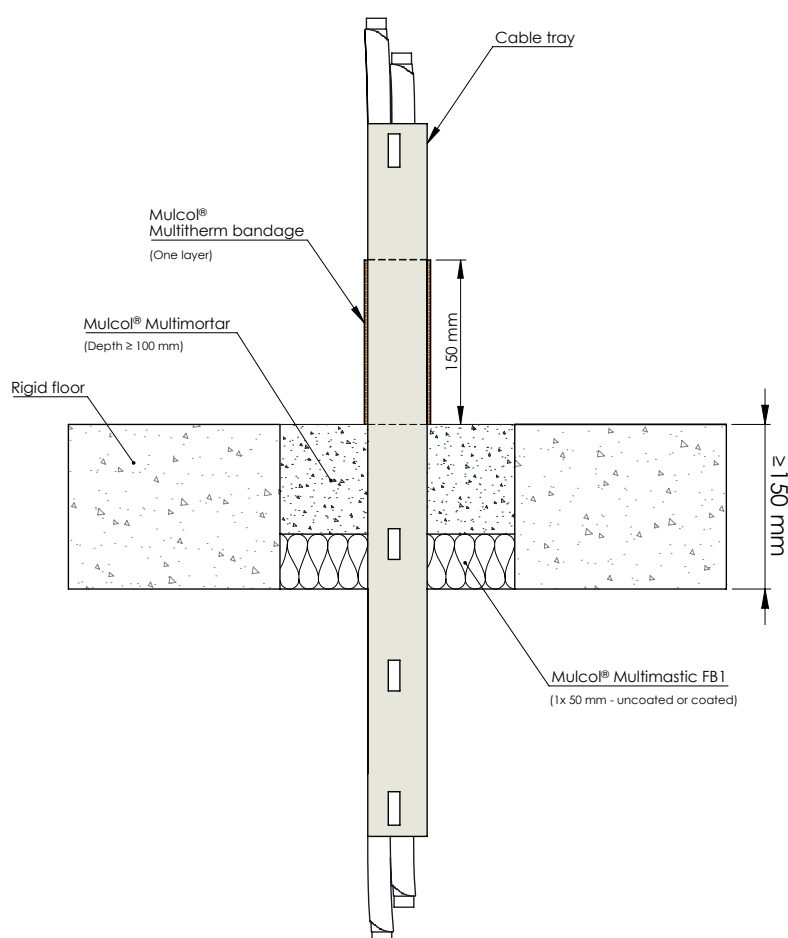
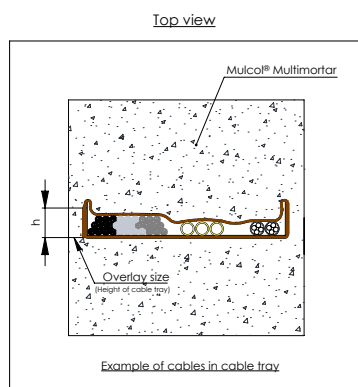


Drawing: RF.E-CT-MM2.7.10-B1.1.10

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 $\leq \varnothing 21$ mm (single or bundled)		
Plastic conduit $\leq \varnothing 16$ mm		EI 60 U/C, E 120 U/C

B.1.4 Multimortar + Multimastic FB - ≥ 150 mm - Cables, trays and conduits

B.1.4.3 Cables, trays and conduits - Multitherm Bandage - Top of floor

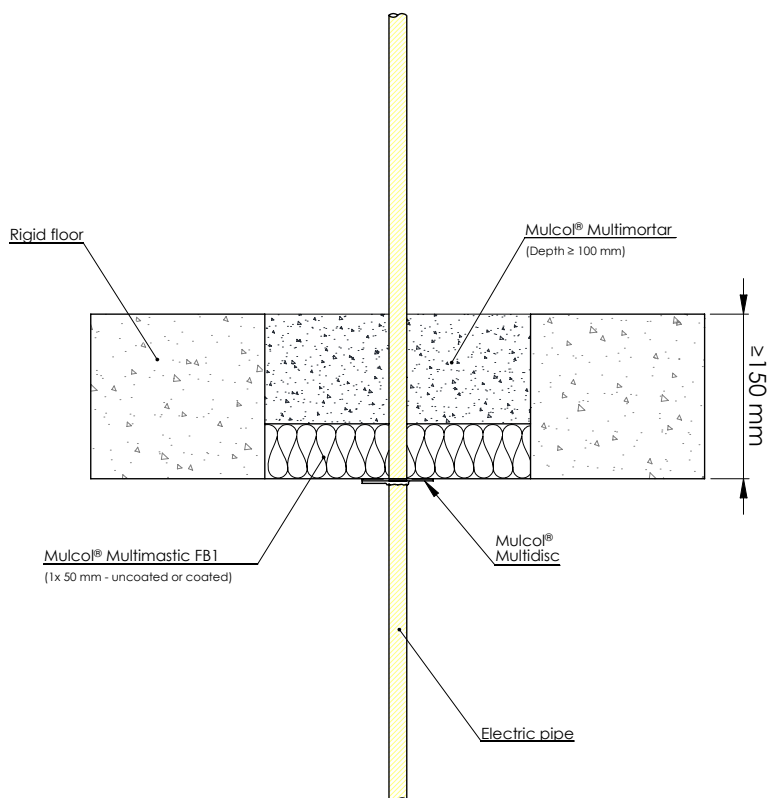
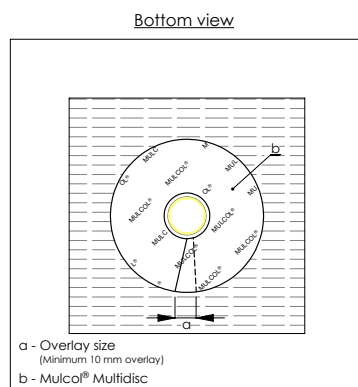


Drawing: RF.E-CT-MM3.5.10-B3.1.10

Services	Insulation (mm)	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 $\leq \varnothing 21$ mm (single or bundled)		
Plastic conduit $\leq \varnothing 16$ mm		EI 90 U/C, E 120 U/C

B.1.4 Multimortar + Multimastic FB - ≥ 150 mm - Cables, trays and conduits

B.1.4.4 Single PVC conduits - Multidisc



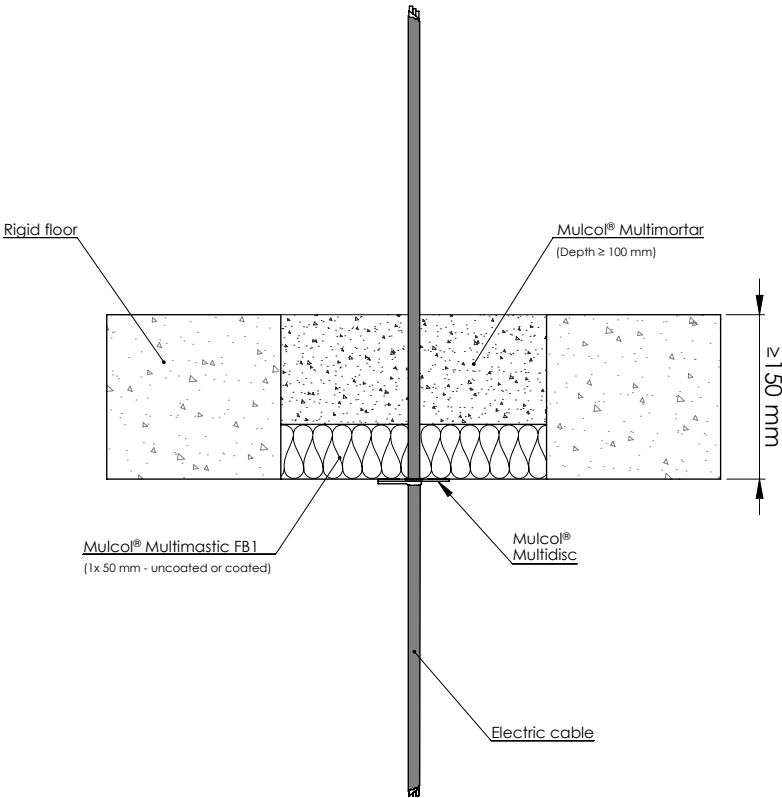
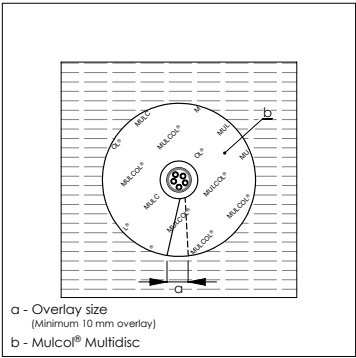
Drawing: RF.E-EP19-MM2.7.10

Services	Product	Allowed cables	Classification
Plastic conduits $\leq \varnothing 19$ mm with or without cables	Multidisc	UTP / F-UTP / F-STP / YMK	EI 120 U/C

B.1.4 Multimortar + Multimastic FB - ≥ 150 mm - Cables, trays and conduits

B.1.4.5 Single cables - Multidisc

Bottom view

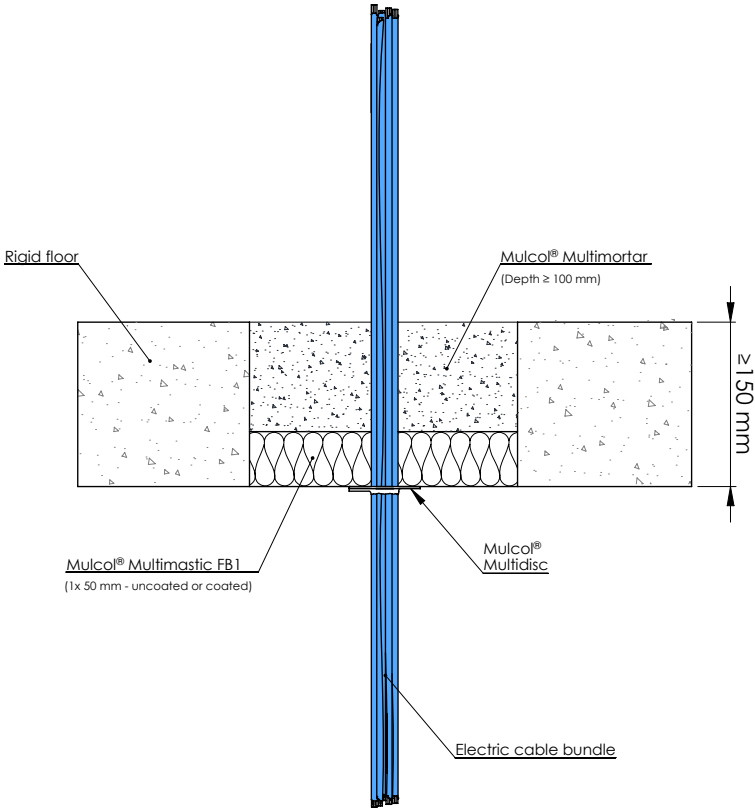
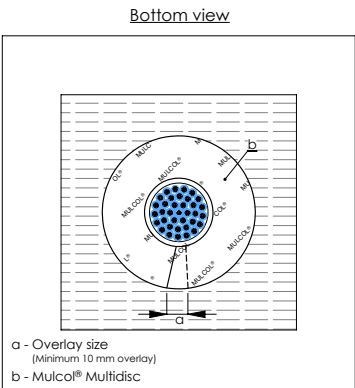


Drawing: RF.E-EC-MM2.7.10

Services	Product	Classification
Single electrical cables ≤ Ø 21 mm	Multidisc	EI 90, E 120

B.1.4 Multimortar + Multimastic FB - ≥ 150 mm - Cables, trays and conduits

B.1.4.6 Multiple cables - Multidisc

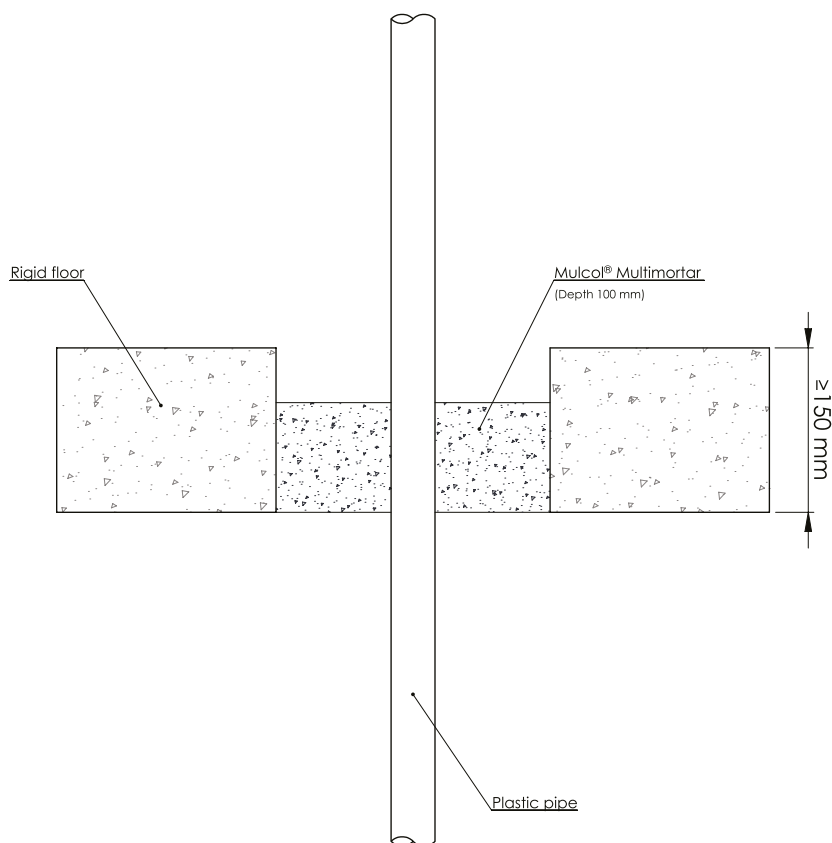
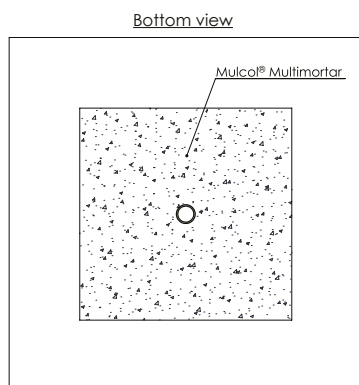


Drawing: RF.E-ECB-MM2.7.10

Services	Product	Classification
Multiple electrical / telecommunication cables max. 15 pcs., max. $\leq \varnothing 25$ mm	Multidisc	EI 120 U/C

B.1.5 Multimortar - ≥ 100 mm - Combustible pipes

B.1.5.1 Plastic pipes

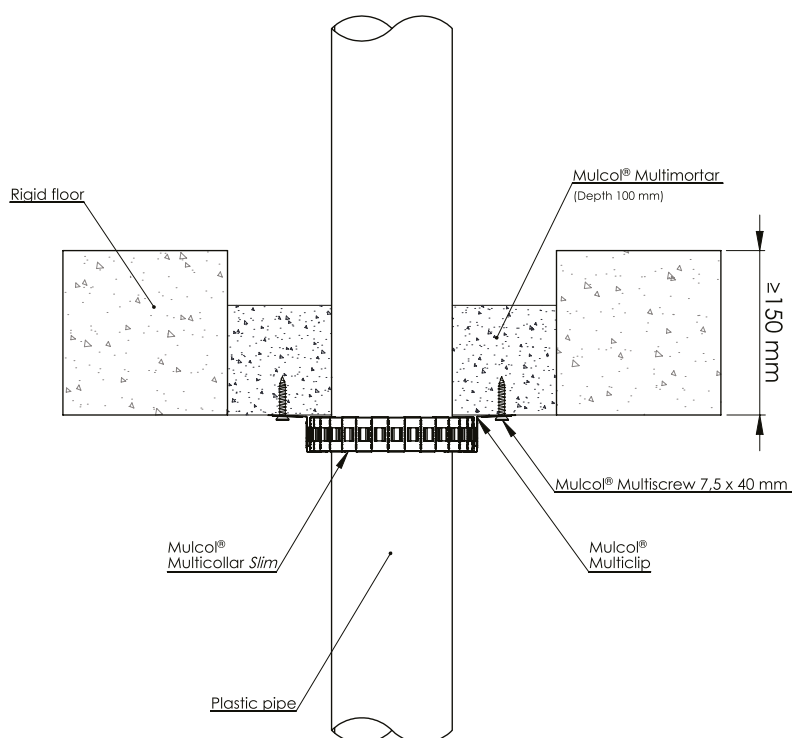
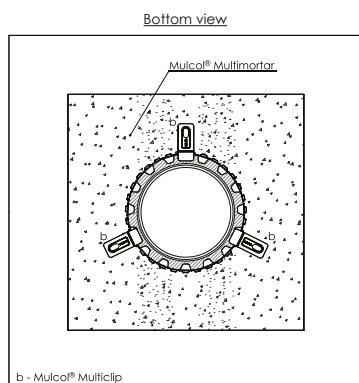


Drawing: RF.E-PP-MM1.2.10

Services	Pipe dimensions (mm)		Classification
	Outer dimension	Wall thickness	
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 40$	1.8 - 2.0	EI 90 U/C
		2.0	EI 120 U/C
		4.3	EI 240 U/C
PP		1.8 - 5.5	
PVC(-U/-C)		1.8 - 3.0	

B.1.5 Multimortar - ≥ 100 mm - Combustible pipes

B.1.5.2 Plastic pipes - Multicollar *Slim*

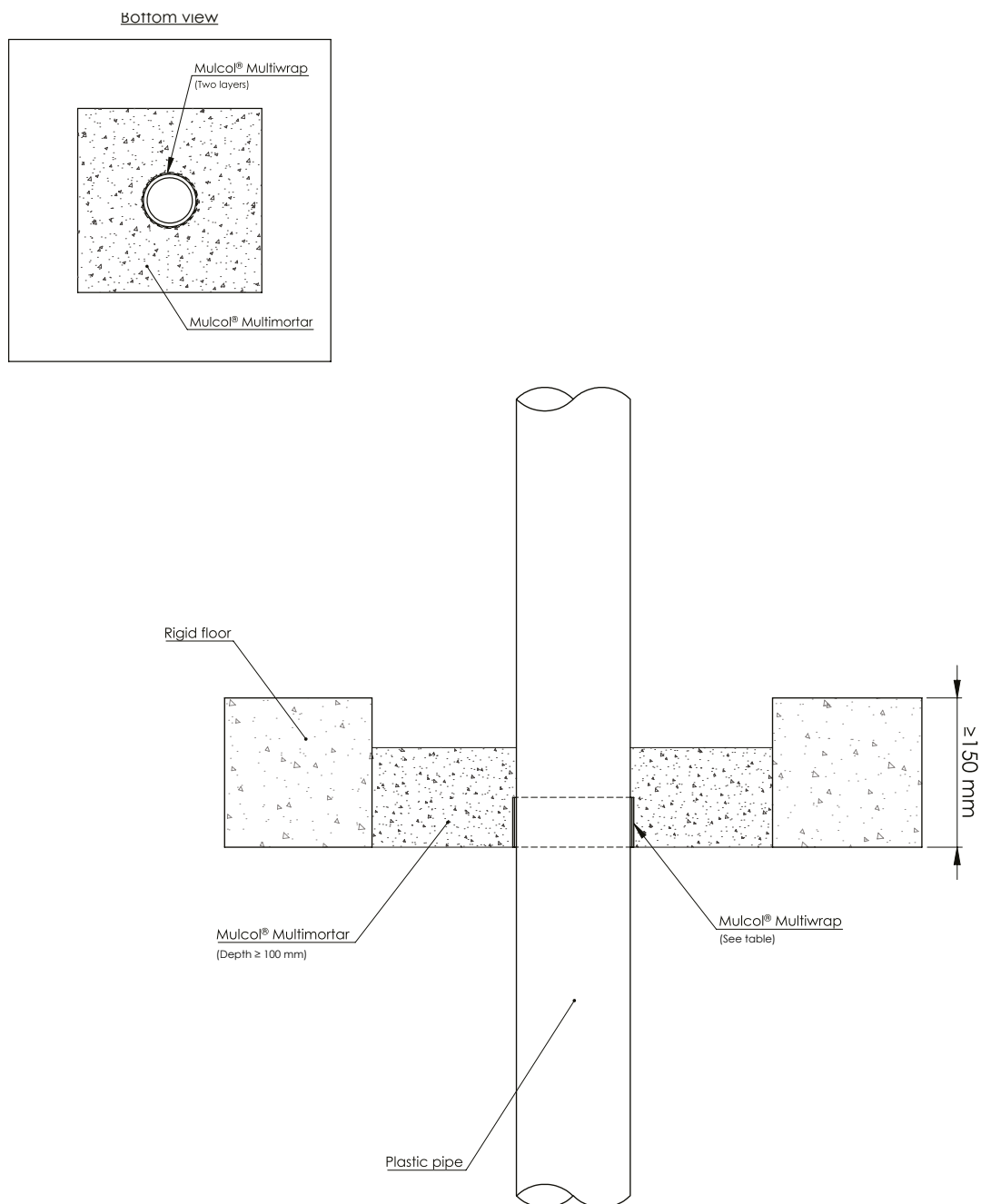


Drawing: RF.E-MC30-PP-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	Multicollar <i>Slim</i>	EI 120 U/U
		2.7 - 6.6		EI 60 U/U, E 90 U/U
PP		2.7		EI 90 U/U
		2.4 - 6.3		EI 60 U/U
PVC(-U/-C)		2.7		EI 90 U/U
		2.4 - 6.3		EI 45 U/U, E 60 U/U

B.1.5 Multimortar - ≥ 100 mm - Combustible pipes

B.1.5.3 Plastic pipes - Multiwrap



Drawing: RF.E-PP-MW2-MM1.2.10

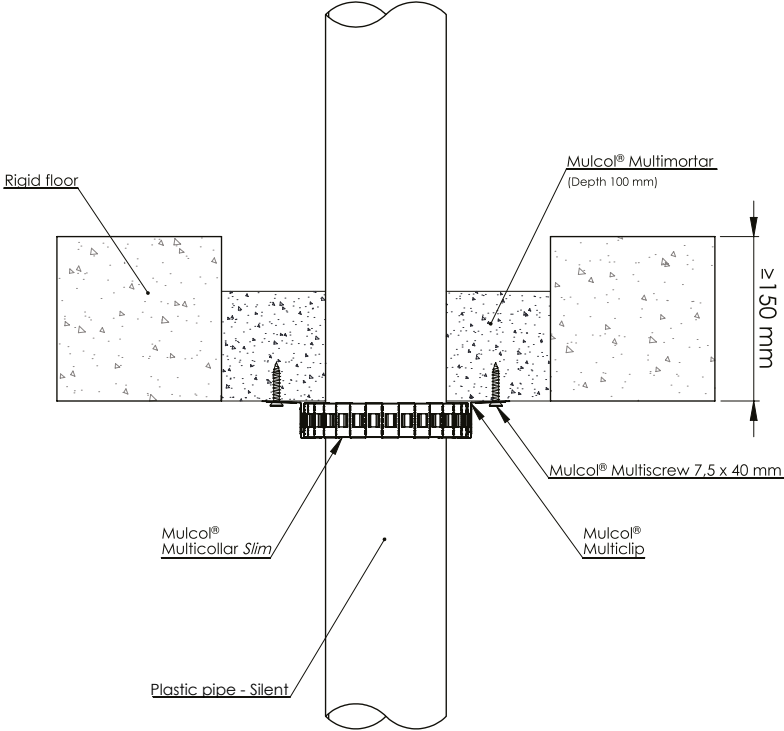
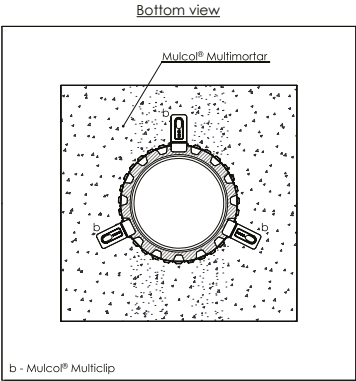
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 40$	2.0 - 3.7	Multiwrap (1 layer)	EI 240 U/U
PP		1.8 - 5.5		
PVC(-U/-C)		2.0 - 3.7		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 50$	3.0 - 4.6	Multiwrap (1 layer)	EI 180 U/C
PP		2.9 - 4.6		
PVC(-U/-C)		3.0 - 4.6		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	3.4 - 10.0	Multiwrap (2 layers)	EI 240 U/C
PP		2.7 - 6.3		
PVC(-U/-C)		3.4 - 6.3		

B.1.5 Multimortar - ≥ 100 mm - Combustible pipes**B.1.5.3 Plastic pipes - Multiwrap**

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 125$	3.9 - 11.4	Multiwrap (3 layers)	EI 180 U/C
PP		4.8		EI 120 U/C
PVC(-U/-C)		4.8 - 11.4		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	Multiwrap (4 layers)	EI 120 U/U
	$\leq \varnothing 125$	3.9		EI 240 U/U
	$\leq \varnothing 160$	4.9		EI 180 U/C
		4.9 - 14.6		EI 120 U/C
PP	$\leq \varnothing 110$	10.0		EI 240 U/U
	$\leq \varnothing 125$	3.1 - 11.4		EI 240 U/C
		11.4		EI 240 U/U
	$\leq \varnothing 160$	6.2		EI 180 U/C
		6.2 - 14.6		EI 90 U/C
PVC(-U/-C)	$\leq \varnothing 160$	6.2		EI 120 U/C
		6.2 - 14.6		EI 90 U/C
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 160$	9.5	Multiwrap (4 layers) (both sides)	EI 240 U/U
PP	$\leq \varnothing 160$	14.6	Multiwrap (6 layers)	EI 120 U/C

B.1.5 Multimortar - ≥ 100 mm - Combustible pipes

B.1.5.4 Plastic pipes (Silent) - Multicollar *Slim*

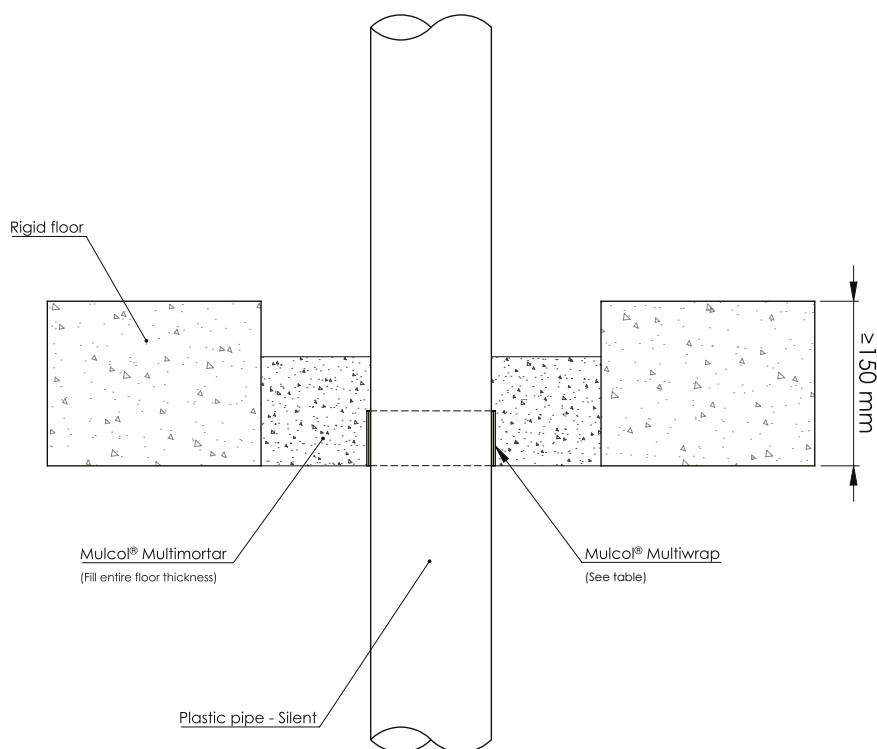
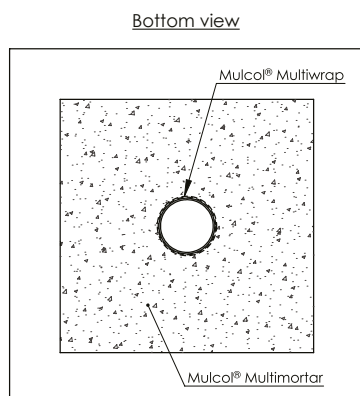


Drawing: RF.E-MC30-PPS-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	≤ Ø 110	6.0	Multicollar <i>Slim</i>	EI 90 U/U

B.1.5 Multimortar - ≥ 100 mm - Combustible pipes

B.1.5.5 Plastic pipes (Silent) - Multiwrap



Drawing: RF.E-PPS-MM1.2.10

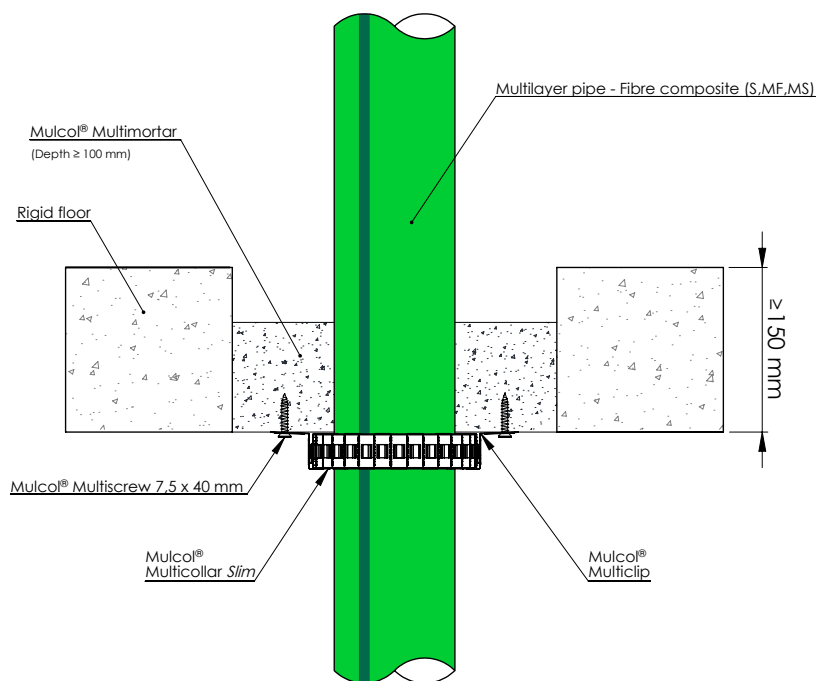
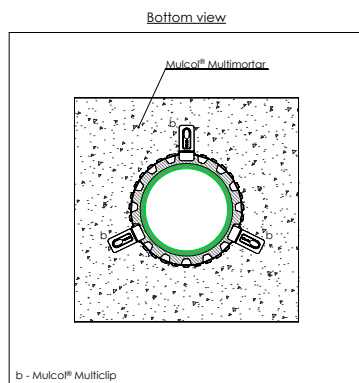
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rehau Raupiano Plus	$\leq \varnothing 50$	1.8	Multiwrap (1 layer)	EI 180 U/C
Wavin SiTech+				EI 240 U/U
Rehau Raupiano Plus				EI 180 U/U
Wavin SiTech+				EI 240 U/U
Poloplast PoloKal NG	$\leq \varnothing 56$	2.0	Multiwrap (2 layers)	EI 240 U/U
Geberit Silent dB 20		3.2		EI 180 U/C
Rehau Raupiano Plus		2.7		EI 180 U/C
Wavin SiTech+		3.4		EI 240 U/C
Poloplast PoloKal NG		6.0		EI 240 U/C
Geberit Silent dB 20	$\leq \varnothing 110$			

B.1.5 Multimortar - ≥ 100 mm - Combustible pipes**B.1.5.5 Plastic pipes (Silent) - Multiwrap**

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Poloplast PoloKal NG	≤ Ø 125	3.9	Multiwrap (4 layers)	EI 240 U/C
Rehau Raupiano Plus	≤ Ø 160			EI 180 U/C
Wavin SiTech+		4.9	Multiwrap (6 layers)	EI 240 U/C
Rehau Raupiano Plus				

B.1.5 Multimortar - ≥ 100 mm - Combustible pipes

B.1.5.6 PP-R multiplayer pipes - Multicollar *Slim*

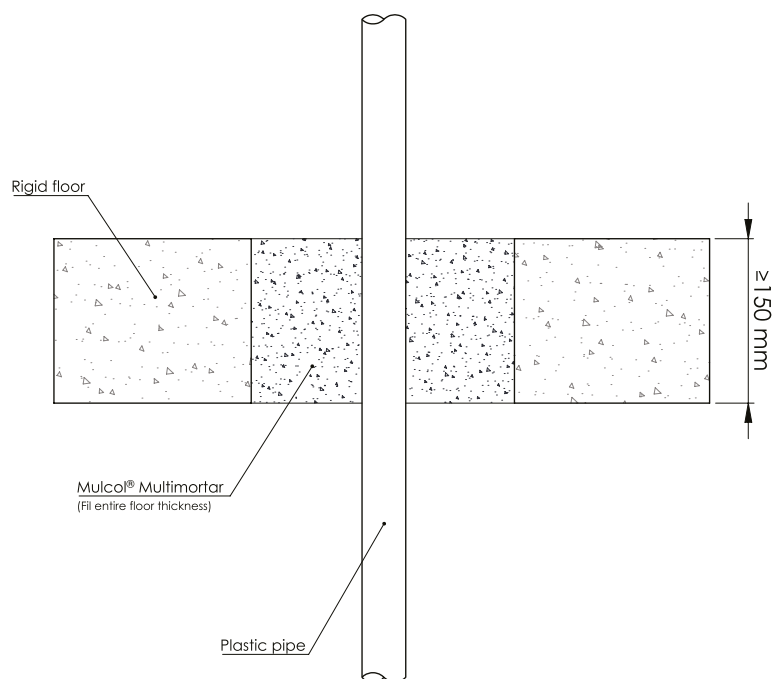
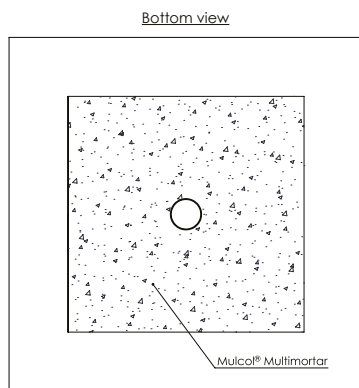


Drawing: RF.E-MC30-MLF-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	$\leq \varnothing 50$	6.9	Multicollar <i>Slim</i>	EI 90 U/C
Aquatherm Blue	$\leq \varnothing 110$	10.0		EI 60 U/C

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes

B.1.6.1 Plastic pipes

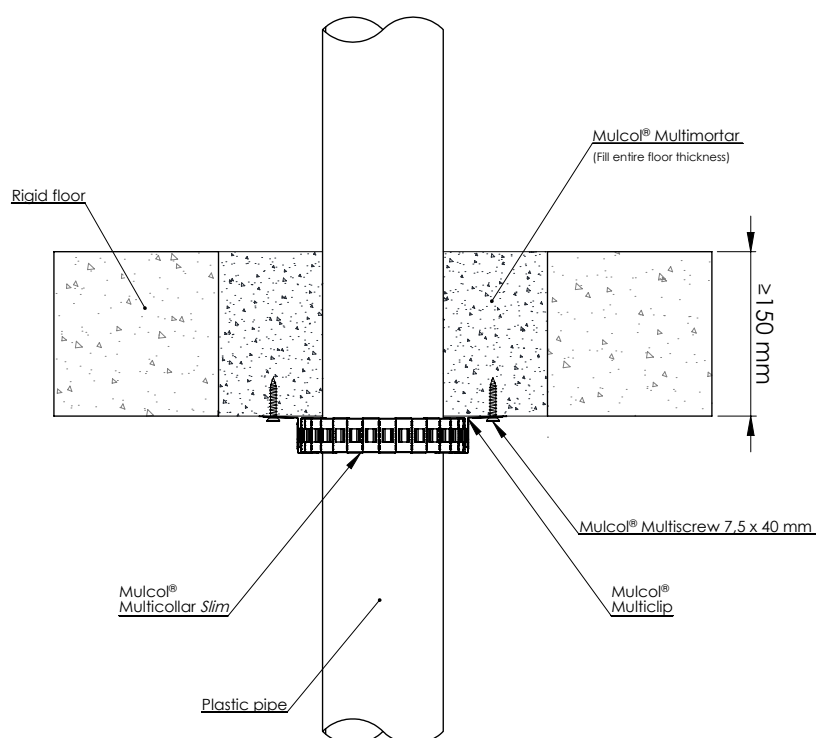
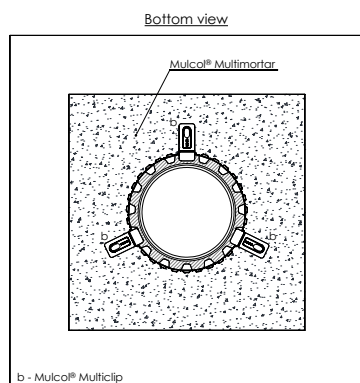


Drawing: RF.E-PP-MM1.3.10

Services	Pipe dimensions (mm)		Classification
	Outer dimension	Wall thickness	
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 40$	1.8 - 2.0	EI 90 U/C
		2.0	EI 120 U/C
		4.3	EI 240 U/C
PP		1.8 - 5.5	
PVC(-U/-C)		1.8 - 3.0	

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes

B.1.6.2 Plastic pipes - Multicollar *Slim*

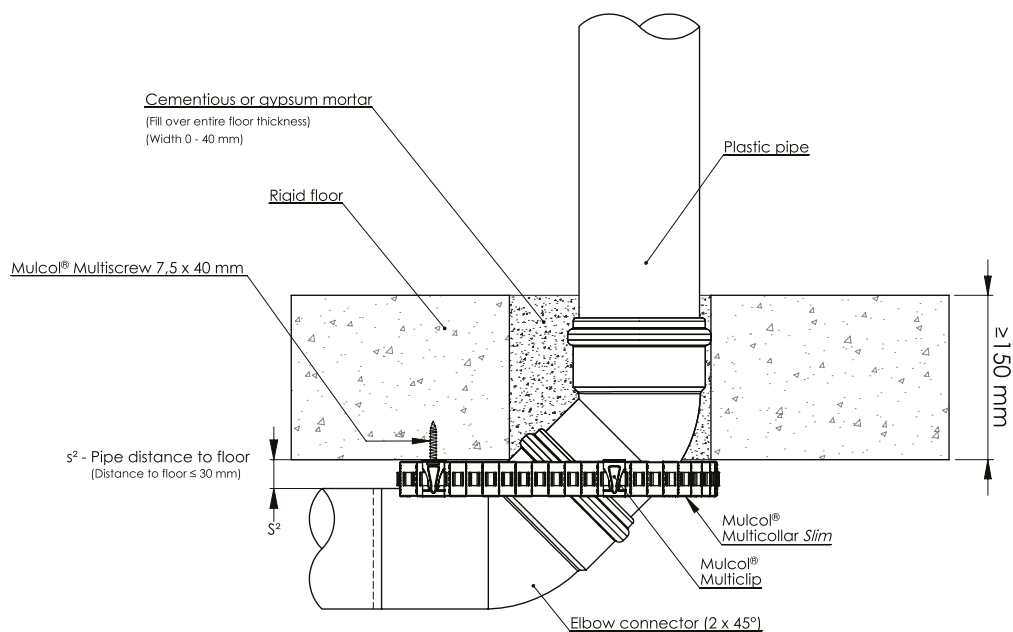
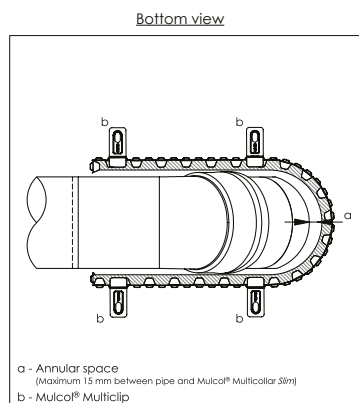


Drawing: RF.E-MC30-PP-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	Multicollar <i>Slim</i>	EI 120 U/U
		2.7 - 3.1		EI 90 U/U
		3.1 - 6.6		EI 60 U/U, E 90 U/U
PP	$\leq \varnothing 125$	3.1		EI 120 U/C
		2.7		EI 90 U/U
		2.7 - 6.3		EI 60 U/U
PVC(-U/-C)	$\leq \varnothing 110$	2.7		EI 90 U/U
		2.7 - 6.3		EI 60 U/U

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes

B.1.6.3 Plastic pipes with elbow and U-shape collar - Multicollar *Slim*

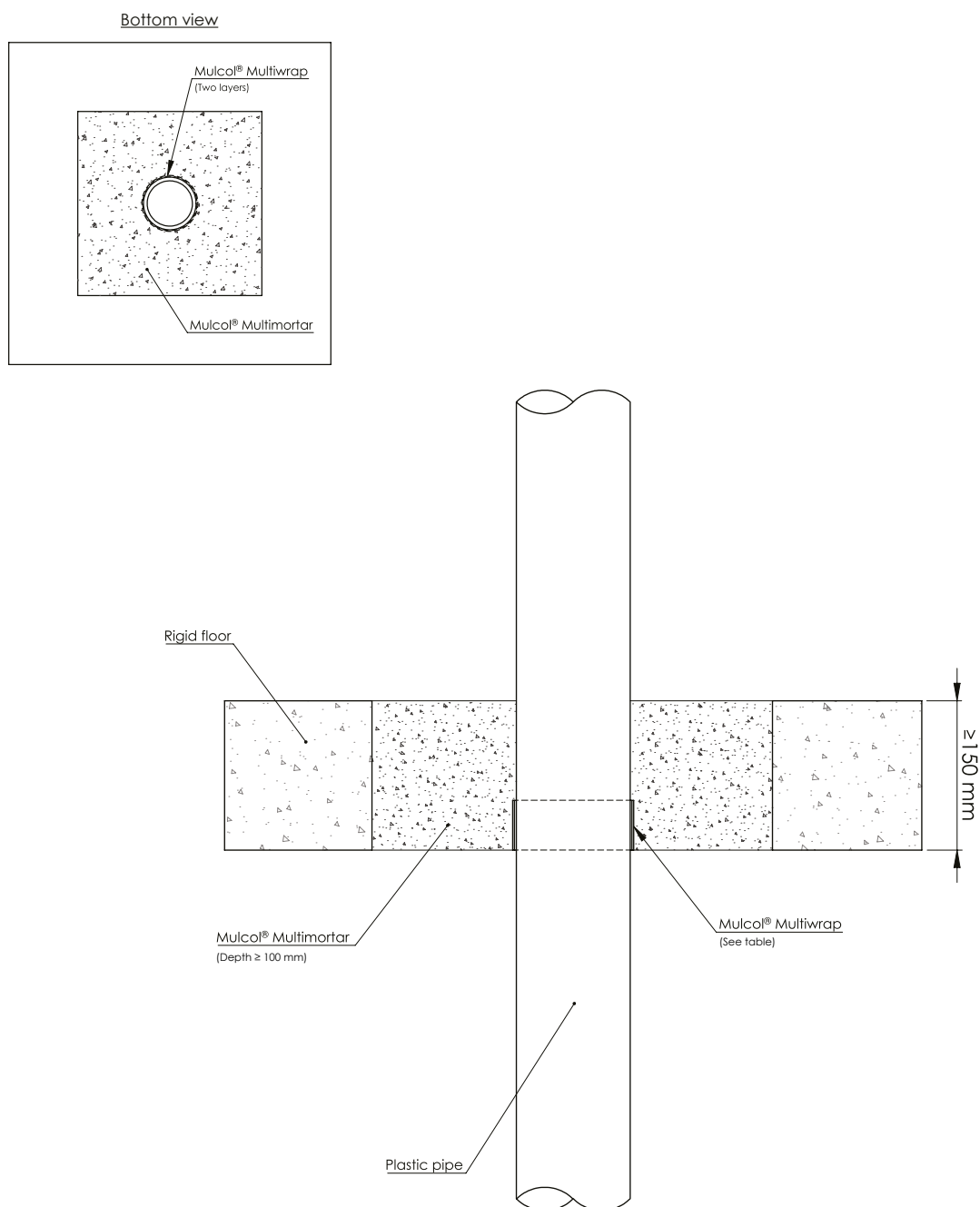


Drawing: RF.E-MC30u-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PVC(-U/-C)	$\leq \varnothing 110$	2.7	Multicollar <i>Slim</i>	EI 120 U/U
PE-HD / PE-X / ABS / SAN+PVC		2.7 - 6.6	Multicollar <i>Slim</i> double	EI 60 U/U, E 120 U/U

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes

B.1.6.4 Plastic pipes - Multiwrap



Drawing: RF.E-PP-MW2-MM1.3.10

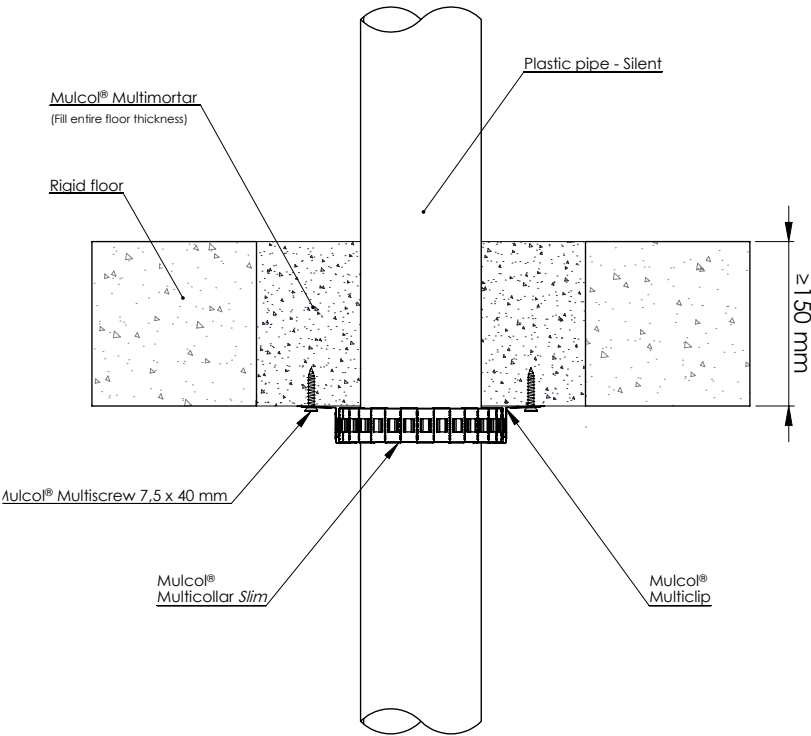
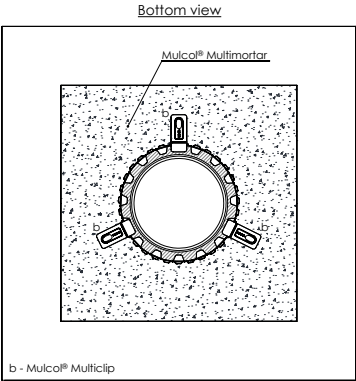
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 40$	2.0 - 3.7	Multiwrap (1 layer)	EI 240 U/U
PP		1.8 - 5.5		
PVC(-U/-C)		2.0 - 3.7		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 50$	3.0 - 4.6		EI 180 U/U
PP		2.9 - 4.6		
PVC(-U/-C)		3.0 - 4.6		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	3.4 - 10.0	Multiwrap (2 layers)	EI 240 U/C
PP		2.7 - 6.3		
PVC(-U/-C)		3.4 - 6.3		

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes**B.1.6.4 Plastic pipes - Multiwrap**

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 125$	3.9 - 11.4	Multiwrap (3 layers)	EI 180 U/C
PP		4.8		EI 120 U/C
PVC(-U/-C)		4.8 - 11.4		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	Multiwrap (4 layers)	EI 120 U/U
	$\leq \varnothing 125$	3.9		EI 240 U/U
	$\leq \varnothing 160$	4.9		EI 180 U/C
		4.9 - 14.6		EI 120 U/C
PP	$\leq \varnothing 110$	10.0		EI 240 U/U
	$\leq \varnothing 125$	3.1 - 11.4		EI 240 U/C
		11.4		EI 240 U/U
	$\leq \varnothing 160$	6.2		EI 180 U/C
		6.2 - 14.6		EI 90 U/C
PVC(-U/-C)	$\leq \varnothing 160$	6.2		EI 120 U/C
		6.2 - 14.6		EI 90 U/C
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 160$	9.5	Multiwrap (4 layers) (both sides)	EI 240 U/U
PP	$\leq \varnothing 160$	14.6	Multiwrap (6 layers)	EI 120 U/C

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes

B.1.6.5 Plastic pipes (Silent) - Multicollar *Slim*

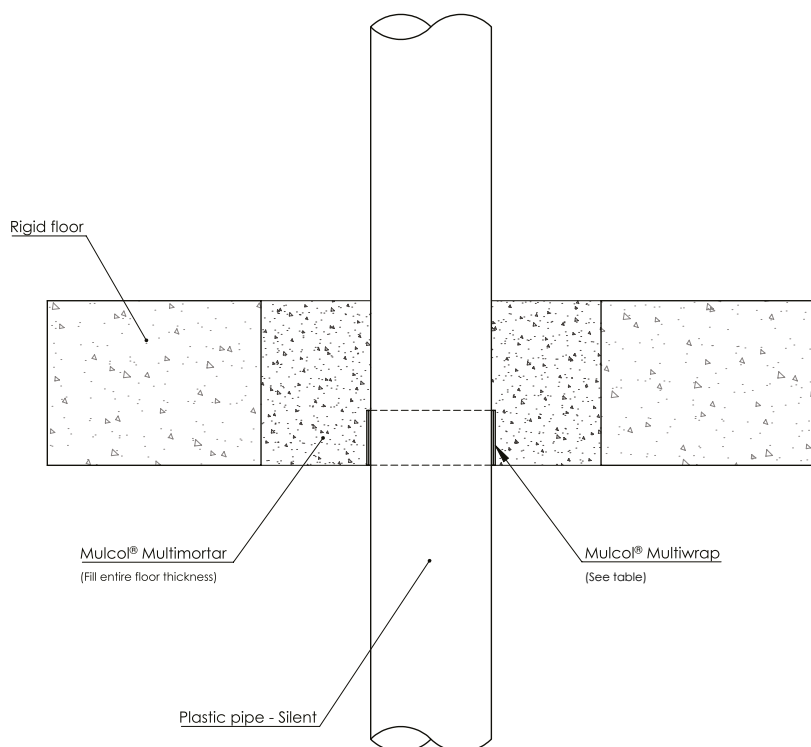
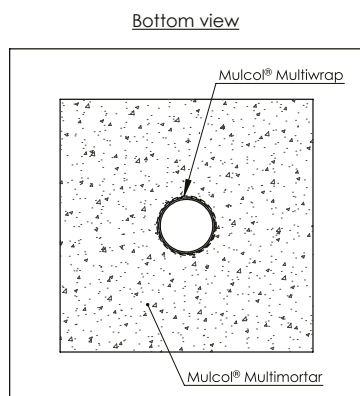


Drawing: RF.E-MC30-PPS-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	≤ Ø 110	6.0	Multicollar <i>Slim</i>	EI 90 U/U

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes

B.1.6.6 Plastic pipes (Silent) - Multiwrap



Drawing: RF.E-PPS-MM1.3.10

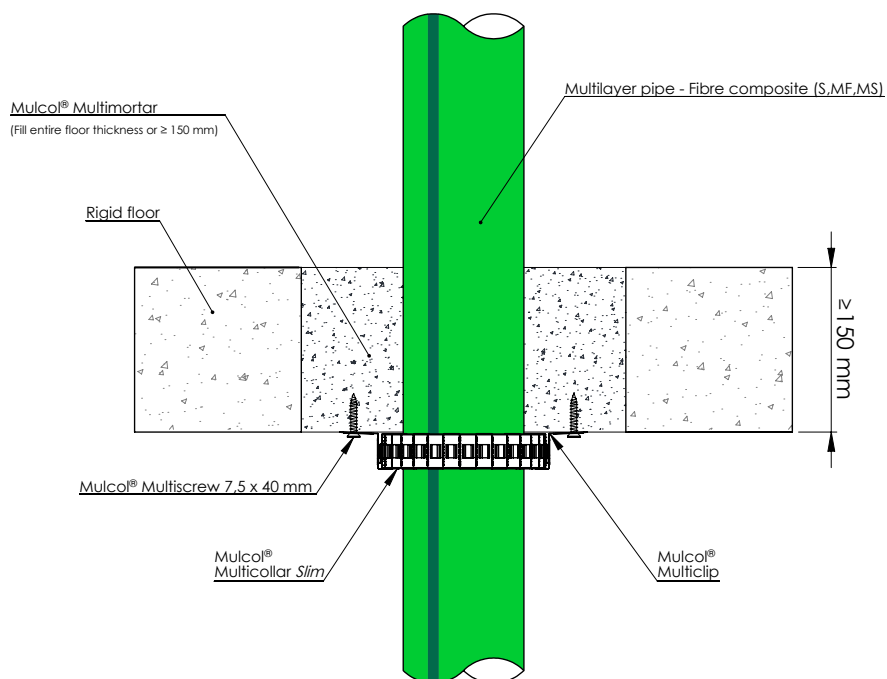
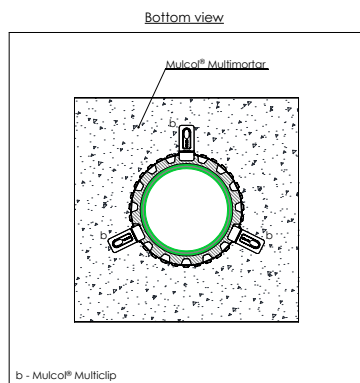
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rehau Raupiano Plus	≤ Ø 50	1.8	Multiwrap (1 layer)	EI 180 U/C
Wavin SiTech+				
Rehau Raupiano Plus		2.0	Multiwrap (2 layers)	EI 240 U/U
Wavin SiTech+				EI 180 U/U
Poloplast PoloKal NG	≤ Ø 56	EI 240 U/U		
Geberit Silent dB 20		3.2		
Rehau Raupiano Plus		2.7		EI 180 U/C
Wavin SiTech+		3.4		EI 180 U/C
Poloplast PoloKal NG				
Geberit Silent dB 20		6.0		EI 240 U/C

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes**B.1.6.6 Plastic pipes (Silent) - Multiwrap**

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Poloplast PoloKal NG	≤ Ø 125	3.9	Multiwrap (4 layers)	EI 240 U/C
Rehau Raupiano Plus	≤ Ø 160			EI 180 U/C
Wavin SiTech+		4.9	Multiwrap (6 layers)	EI 240 U/C
Rehau Raupiano Plus				

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes

B.1.6.7 PP-R multiplayer pipes - Multicollar *Slim*

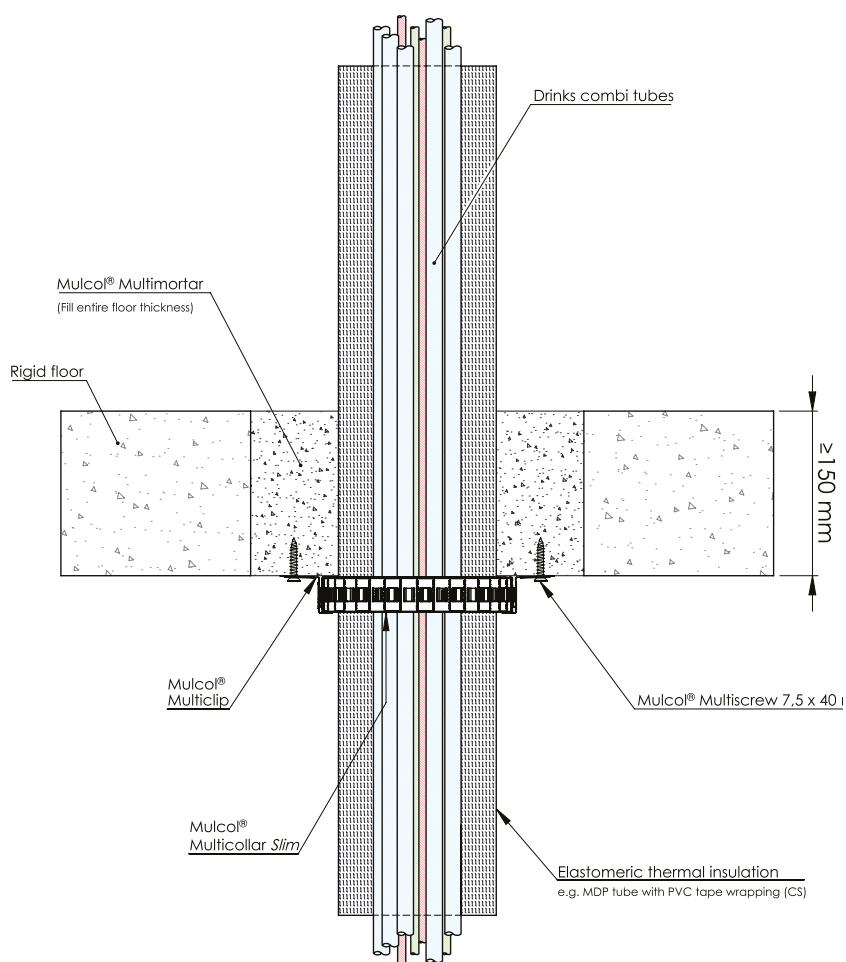
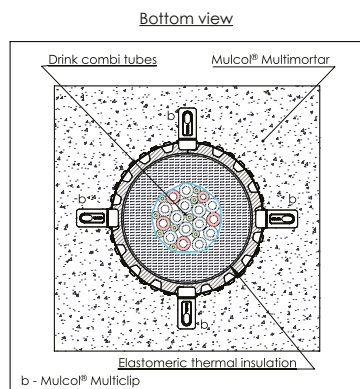


Drawing: RF.E-MC30-MLF-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	$\leq \varnothing 50$	6.9	Multicollar <i>Slim</i>	EI 90 U/C
Aquatherm Blue	$\leq \varnothing 110$	10.0		EI 60 U/C

B.1.6 Multimortar - ≥ 150 mm - Combustible pipes

B.1.6.8 Beverage dispense tubing - Multicollar *Slim*



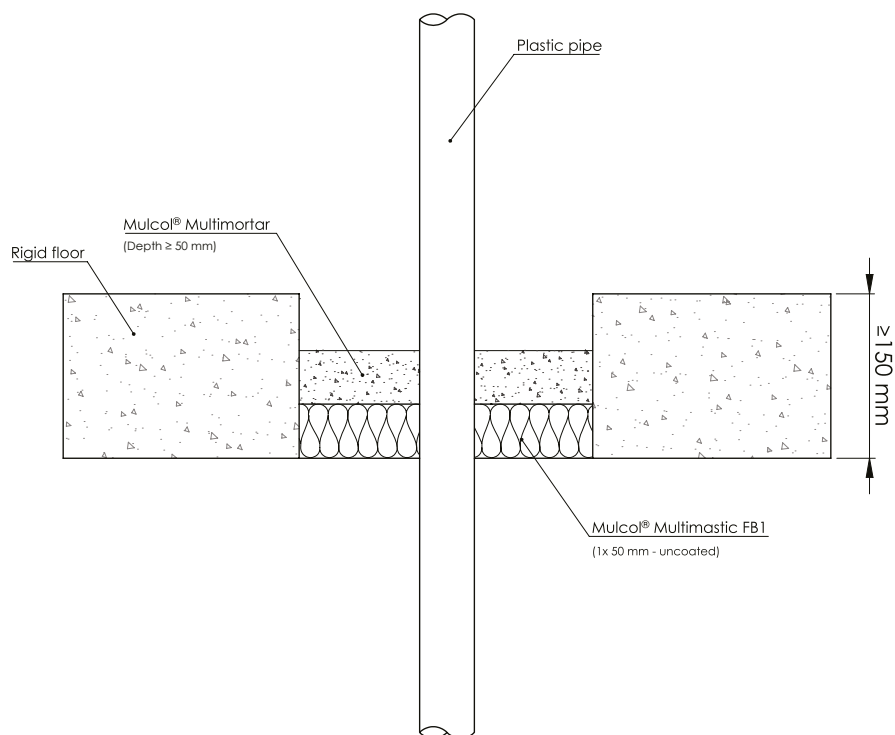
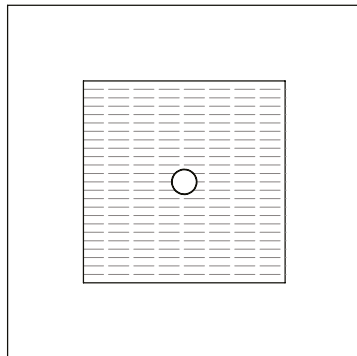
Drawing: RF.E-MC30-DCP52-MM1.3.10

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Hoses no.	Type	Thickness (mm)	Configuration		
Drinks tubing system	$\leq \varnothing 145$	≤ 52	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	EI 120 U/C

B.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

B.1.7.1 Plastic pipes

Bottom view

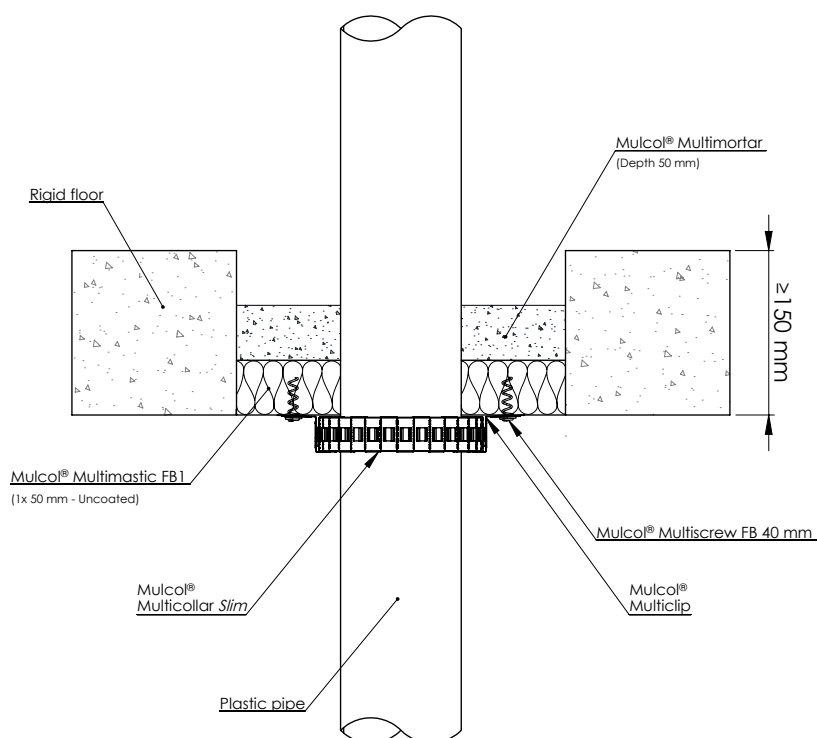
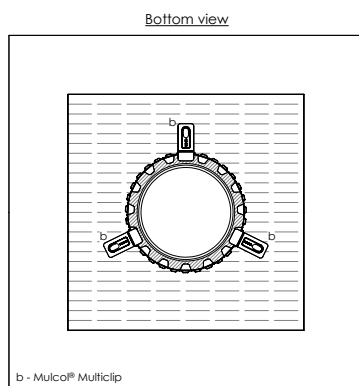


Drawing: RF.E-PP50-MM2.5.10

Services	Pipe dimensions (mm)		Classification
	Outer dimension	Wall thickness	
PVC(-U/-C)	$\leq \varnothing 40$	1.8 - 3.0	EI 180 U/C

B.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

B.1.7.2 Plastic pipes - Multicollar *Slim*



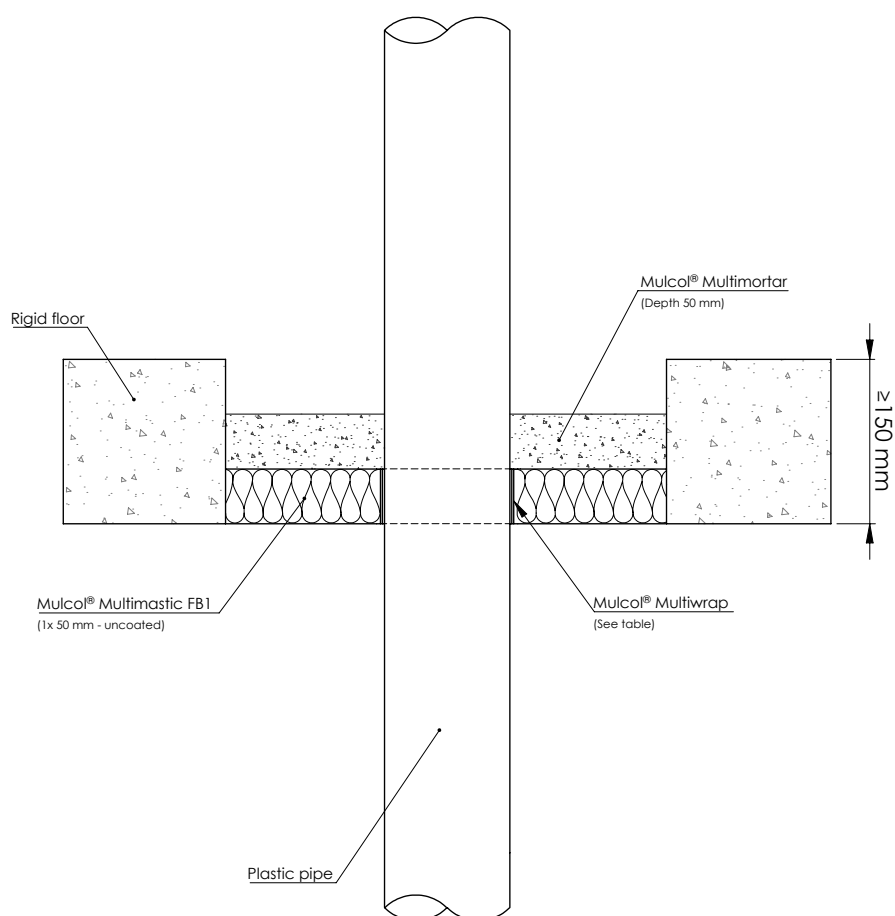
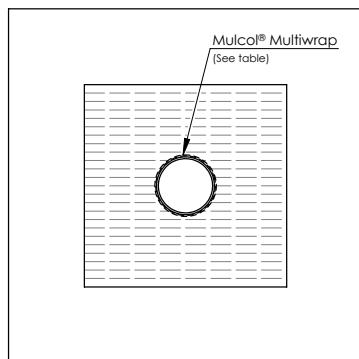
Drawing: RF.E-MC30-PP-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	Multicollar <i>Slim</i>	EI 120 U/U
PP		2.7 - 6.6		EI 60 U/U
PVC(-U/-C)		2.7 - 6.3		

B.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

B.1.7.3 Plastic pipes - Multiwrap

Bottom view

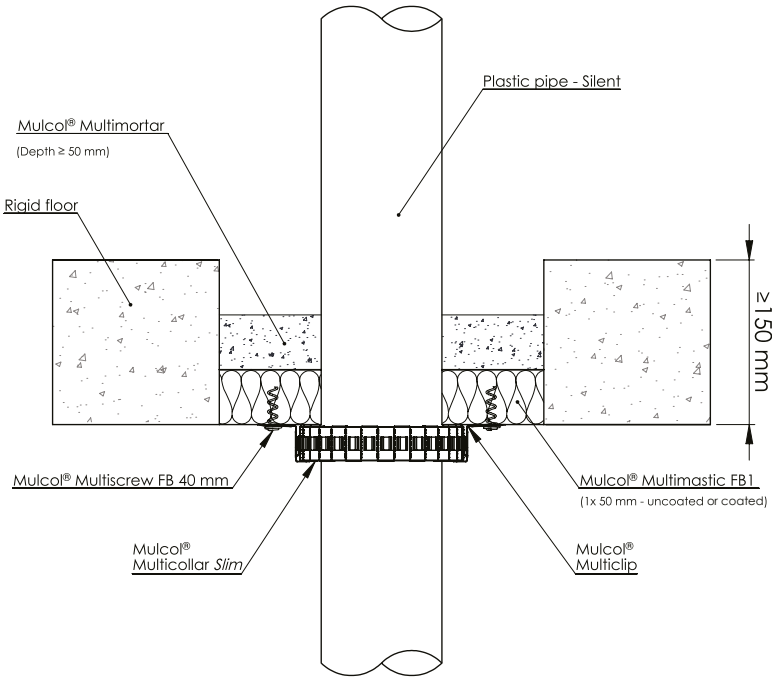
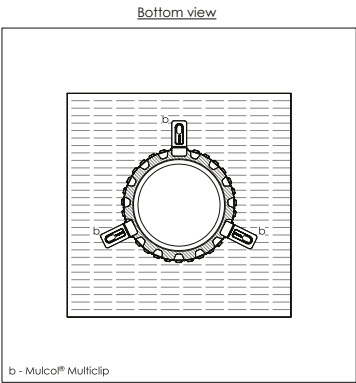


Drawing: RF.E-PP-MW-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PVC(-U/-C)	$\leq \text{Ø } 110$	3.2	Multiwrap (2 layers)	EI 240 U/U
PP		10.0	Multiwrap (4 layers)	EI 180 U/U

B.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

B.1.7.4 Plastic pipes (Silent) - Multicollar *Slim*

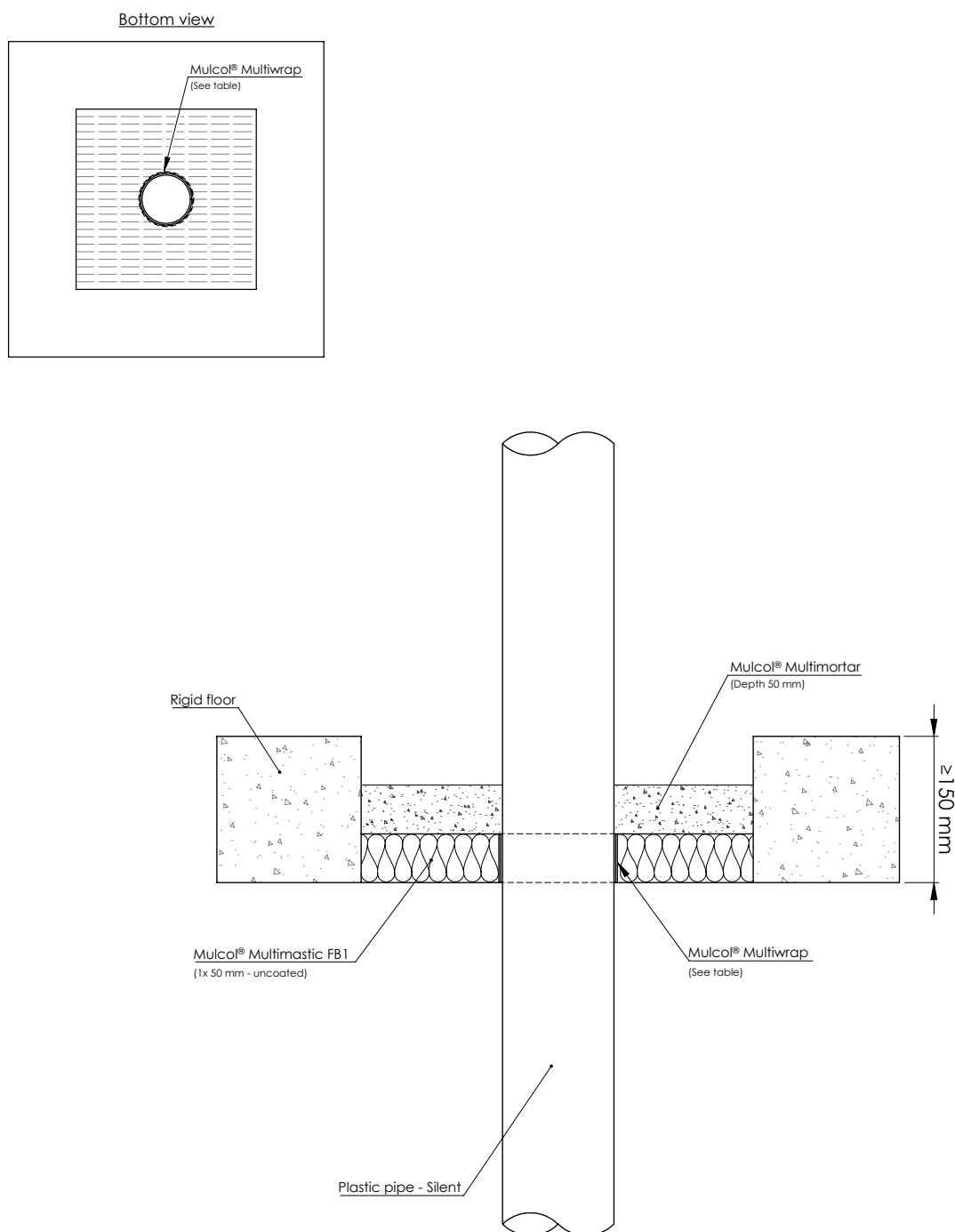


Drawing: RF.E-PPS-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	≤ Ø 110	6.0	Multicollar <i>Slim</i>	EI 60 U/U

B.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

B.1.7.5 Plastic pipes (Silent) - Multiwrap

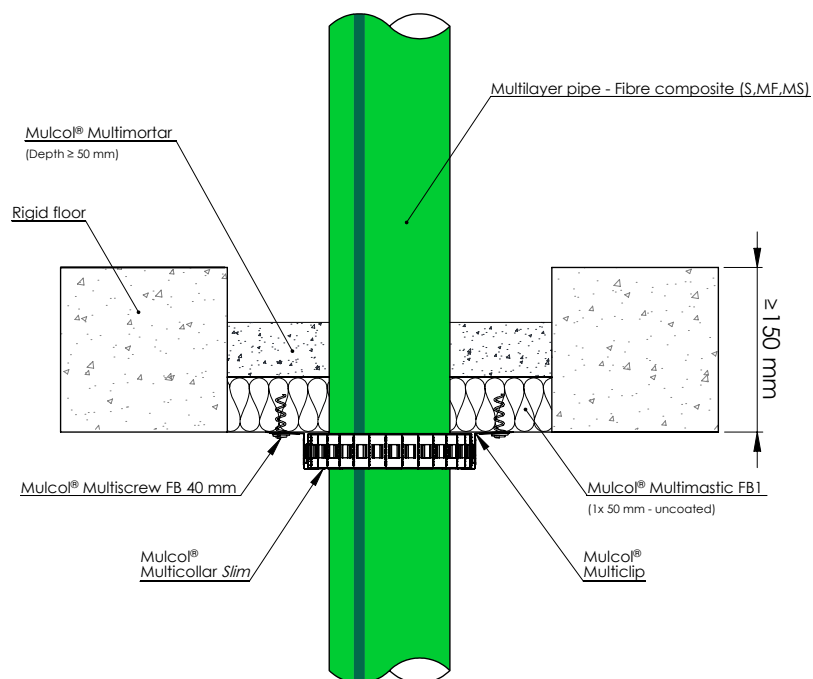
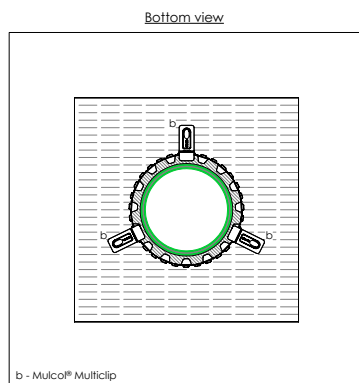


Drawing: RF,E-PPS-MW-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Poloplast PoloKal NG	$\leq \varnothing 50$	2.0	Multiwrap (2 layers)	EI 180 U/U
Geberit Silent dB 20	$\leq \varnothing 56$	3.2		
Poloplast PoloKal NG	$\leq \varnothing 110$	3.4		
Geberit Silent dB 20		6.0	Multiwrap (4 layers)	EI 180 U/C
Poloplast PoloKal NG	$\leq \varnothing 125$	3.9		

B.1.7 Multimortar + Multimastic FB - ≥ 100 mm - Combustible pipes

B.1.7.6 PP-R multiplayer pipes - Multicollar *Slim*



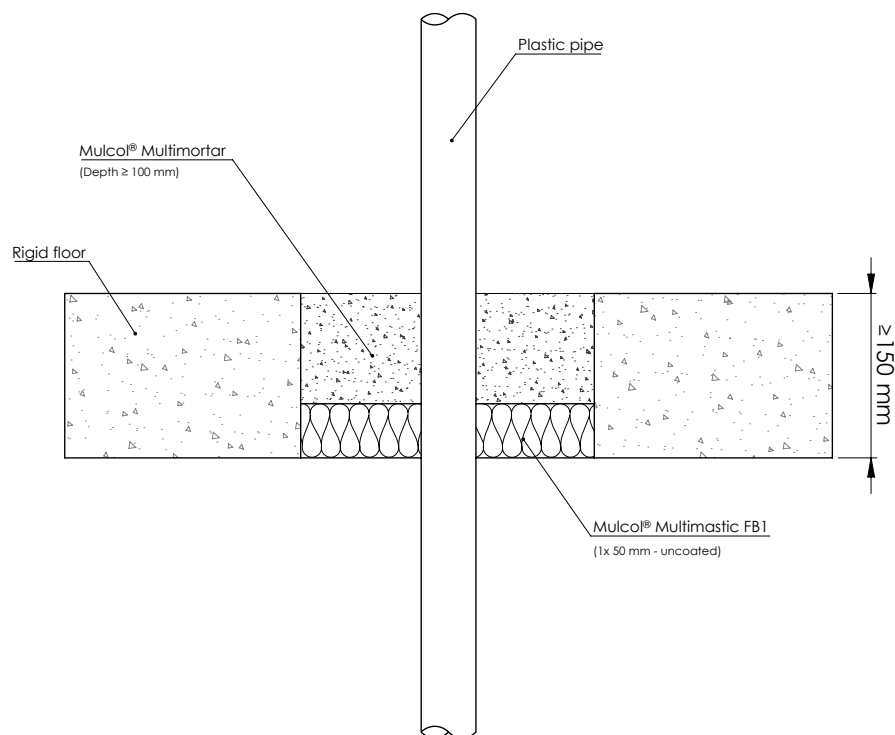
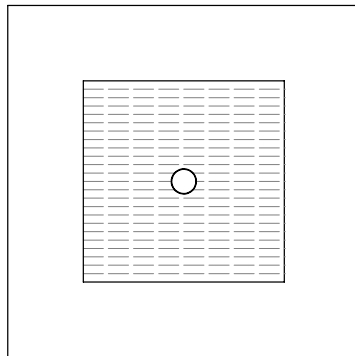
Drawing: RF.E-MC30-MLF-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	$\leq \varnothing 50$	6.9	Multicollar <i>Slim</i>	EI 60 U/C
Aquatherm Blue	$\leq \varnothing 110$	10.0		

B.1.8 Multimortar + Multimastic FB - ≥ 150 mm - Combustible pipes

B.1.8.1 Plastic pipes

Bottom view

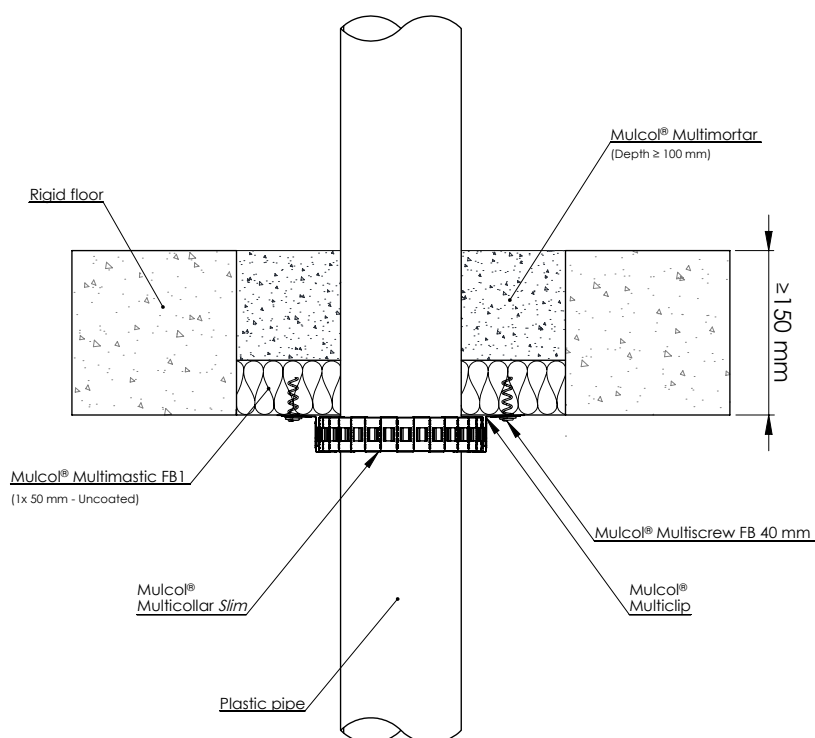
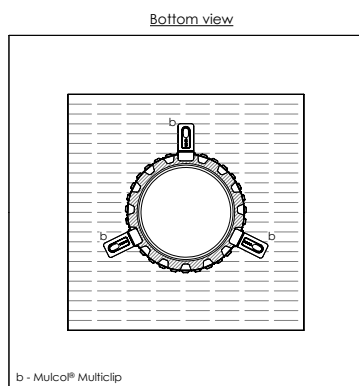


Drawing: RF.E-PP50-MM2.7.10

Services	Pipe dimensions (mm)		Classification
	Outer dimension	Wall thickness	
PVC(-U/-C)	$\leq \varnothing 40$	1.8 - 3.0	EI 240 U/C

B.1.8 Multimortar + Multimastic FB - ≥ 150 mm - Combustible pipes

B.1.8.2 Plastic pipes - Multicollar *Slim*



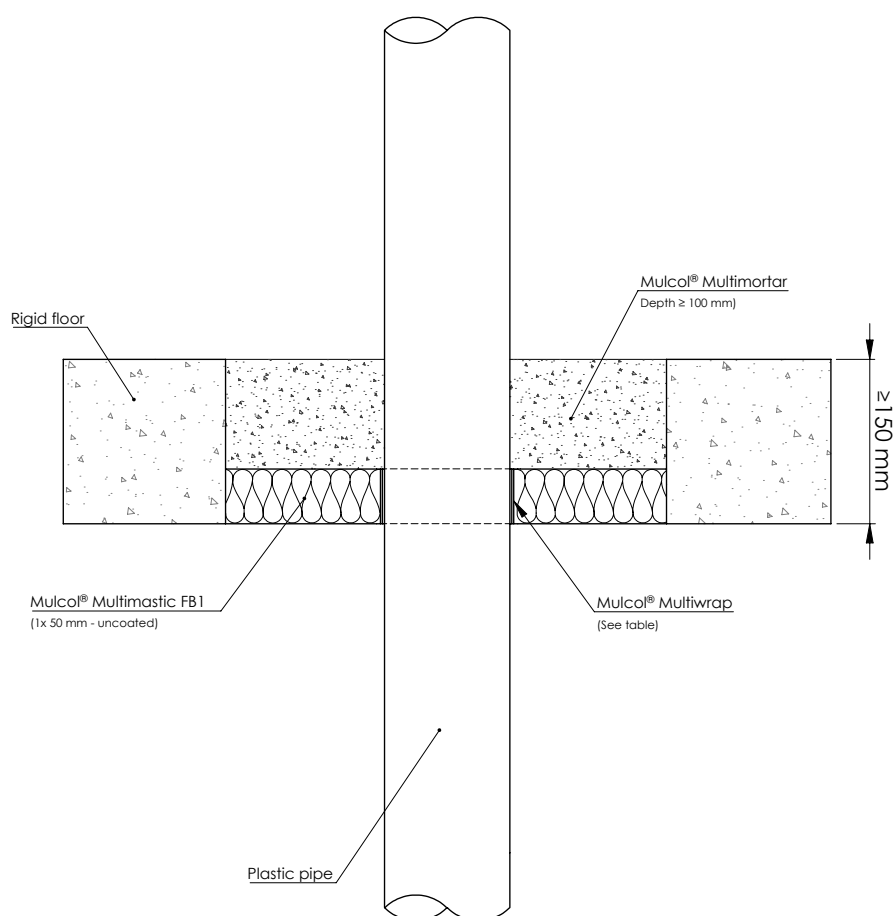
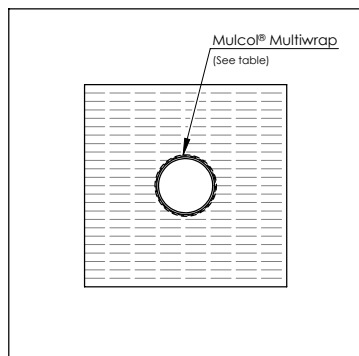
Drawing: RF.E-MC30-PP-MM2.7.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	Multicollar <i>Slim</i>	EI 120 U/U
		2.7 - 3.1		EI 120 U/C
	$\leq \varnothing 125$	3.1		
PP	$\leq \varnothing 110$	2.7 - 6.6		EI 60 U/U
PVC(-U/-C)		2.7 - 6.3		

B.1.8 Multimortar + Multimastic FB - ≥ 150 mm - Combustible pipes

B.1.8.3 Plastic pipes - Multiwrap

Bottom view



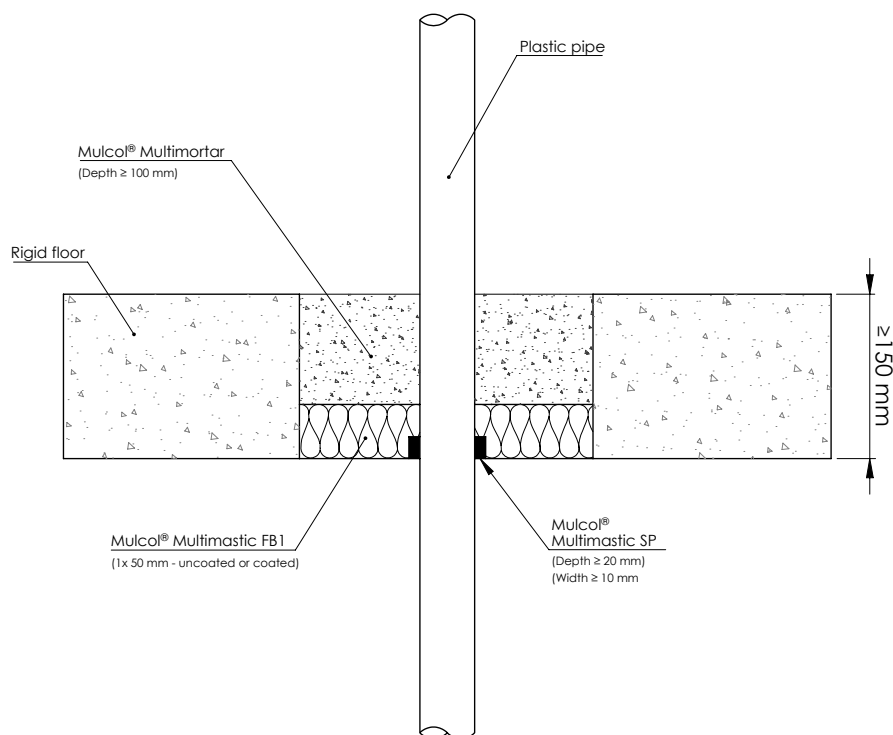
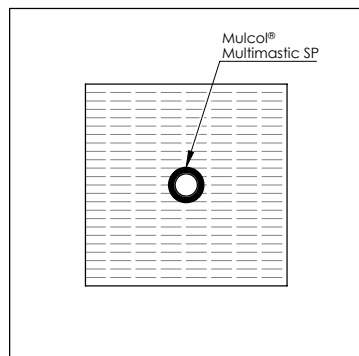
Drawing: RF.E-PP-MW-MM2.7.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PVC(-U/-C)	$\leq \varnothing 110$	3.2	Multiwrap (2 layers)	EI 120 U/C
PE-HD / PE-X / ABS / SAN+PVC		2.7	Multiwrap (4 layers)	EI 120 U/U
PP		10.0		EI 240 U/U

B.1.8 Multimortar + Multimastic FB - ≥ 150 mm - Combustible pipes

B.1.8.4 Plastic pipes - Multimastic SP

Bottom view



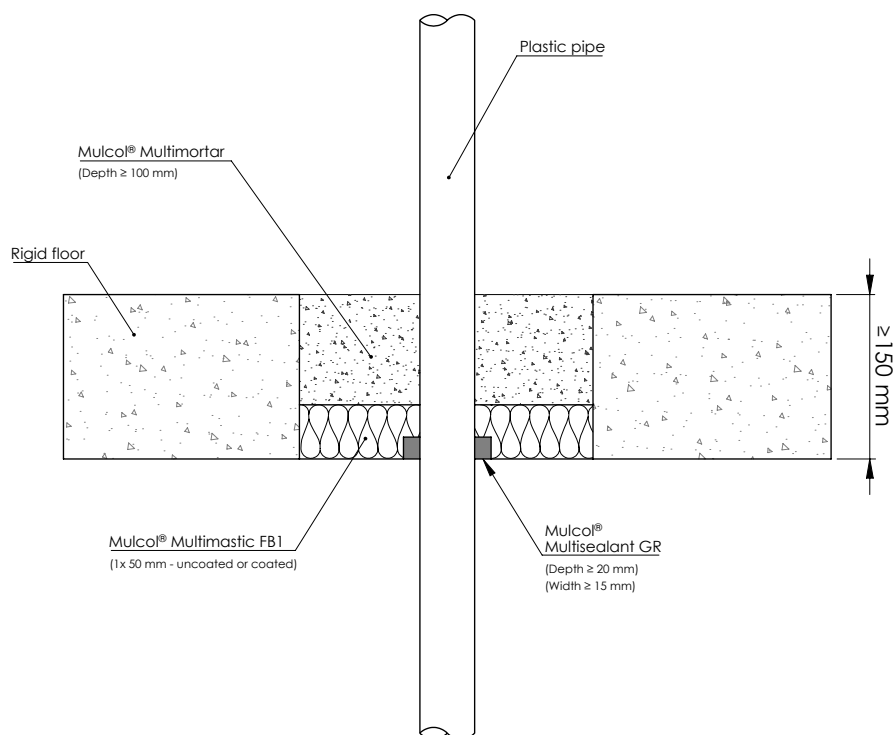
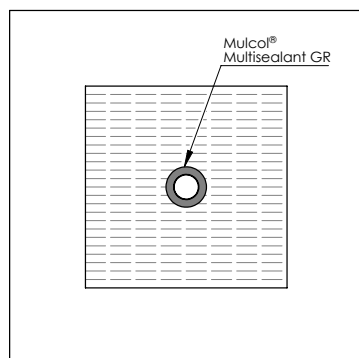
Drawing: RF.E-PP50-MSP1-MM2.7.10

Services	Pipe dimensions (mm)		Sealing (mm)	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 40$	3.7	Multimastic SP $\geq 10 \times 20$ (wxd)	EI 120 U/C
PP		1.8 - 3.7		
PVC(-U/-C)	$\leq \varnothing 50$	2.0		

B.1.8 Multimortar + Multimastic FB - ≥ 150 mm - Combustible pipes

B.1.8.5 Plastic pipes - Multisealant GR

Bottom view

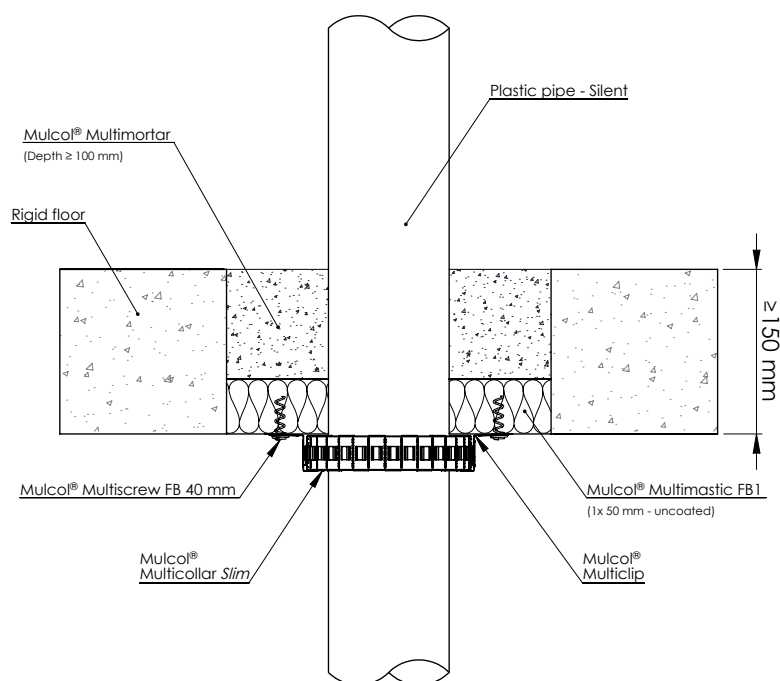
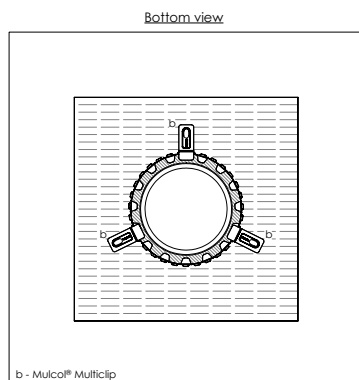


Drawing: RF.E-PP50-G1-MM2.7.10

Services	Pipe dimensions (mm)		Sealing (mm)	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	≤ Ø 40	2.4 - 10	Multisealant GR ≥ 15 x 20 (wxd)	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.1.8 Multimortar + Multimastic FB - ≥ 150 mm - Combustible pipes

B.1.8.6 Plastic pipes (Silent) - Multicollar *Slim*



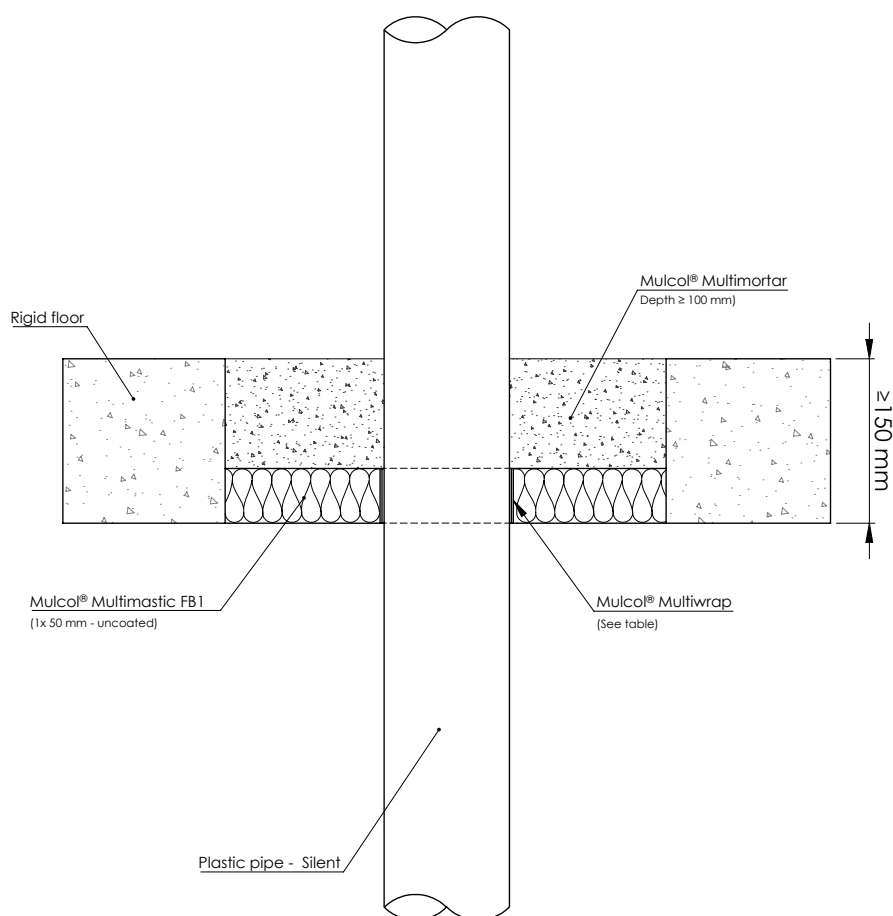
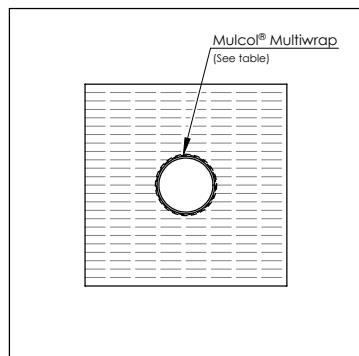
Drawing: RF.E-MC30-PPS-MM2.7.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	$\leq \varnothing 110$	6.0	Multicollar <i>Slim</i>	EI 60 U/U

B.1.8 Multimortar + Multimastic FB - ≥ 150 mm - Combustible pipes

B.1.8.7 Plastic pipes (Silent) - Multiwrap

Bottom view

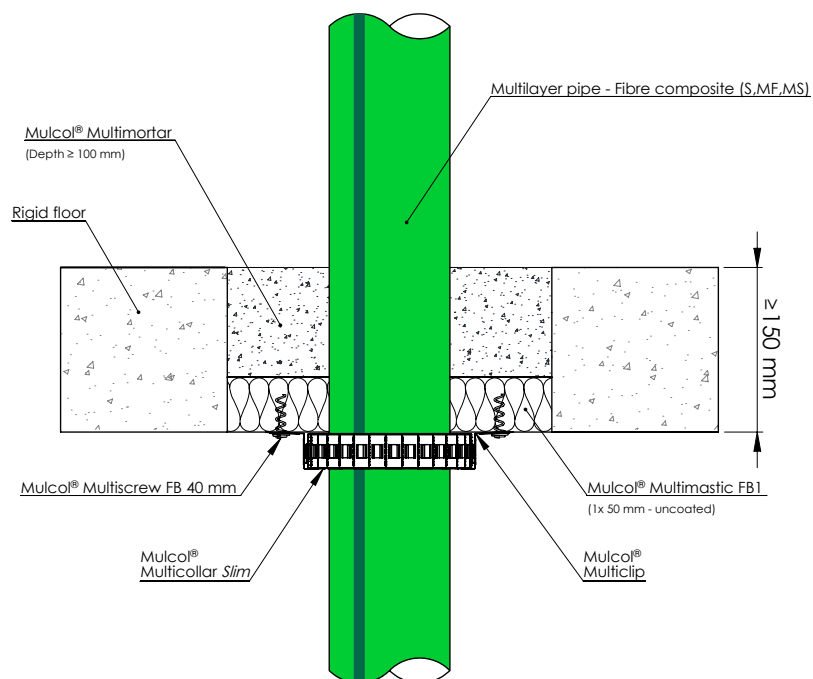
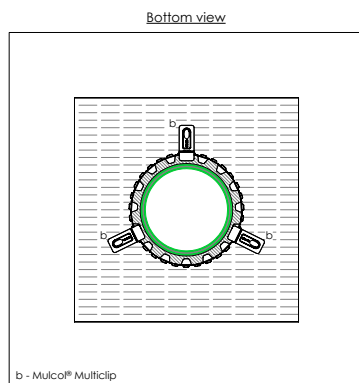


Drawing: RF,E-PPS-MW-MM2.7.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Poloplast PoloKal NG	$\leq \varnothing 50$	2.0	Multiwrap (2 layers)	EI 180 U/U
Geberit Silent dB 20	$\leq \varnothing 56$	3.2		
Poloplast PoloKal NG	$\leq \varnothing 110$	3.4		
Geberit Silent dB 20		6.0		EI 180 U/C
Poloplast PoloKal NG	$\leq \varnothing 125$	3.9	Multiwrap (4 layers)	

B.1.8 Multimortar + Multimastic FB - ≥ 150 mm - Combustible pipes

B.1.8.8 PP-R multiplayer pipes - Multicollar *Slim*

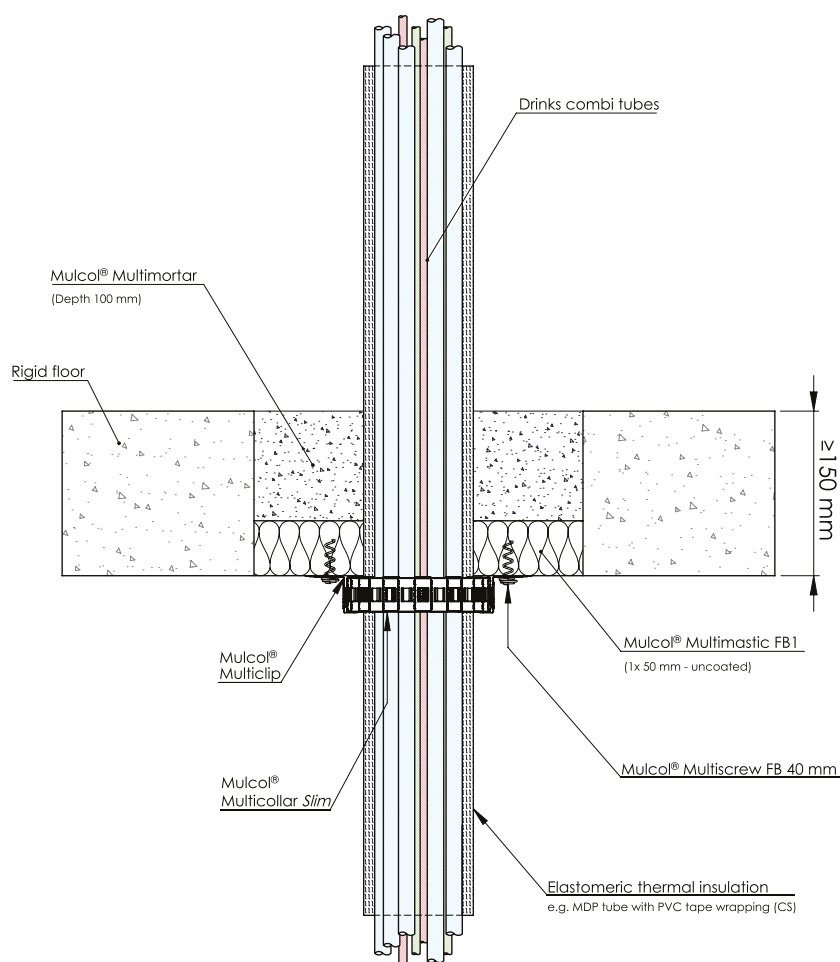
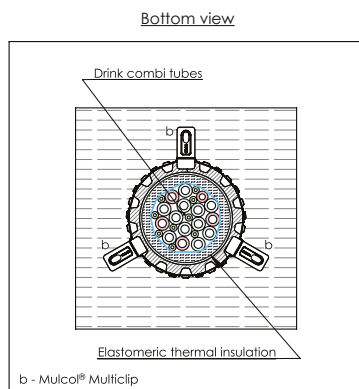


Drawing: RF.E-MC30-MLF-MM2.7.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	$\leq \varnothing 50$	6.9	Multicollar <i>Slim</i>	EI 60 U/C
Aquatherm Blue	$\leq \varnothing 110$	10.0		

B.1.8 Multimortar + Multimastic FB - ≥ 150 mm - Combustible pipes

B.1.8.9 Beverage dispense tubing - Multicollar *Slim*

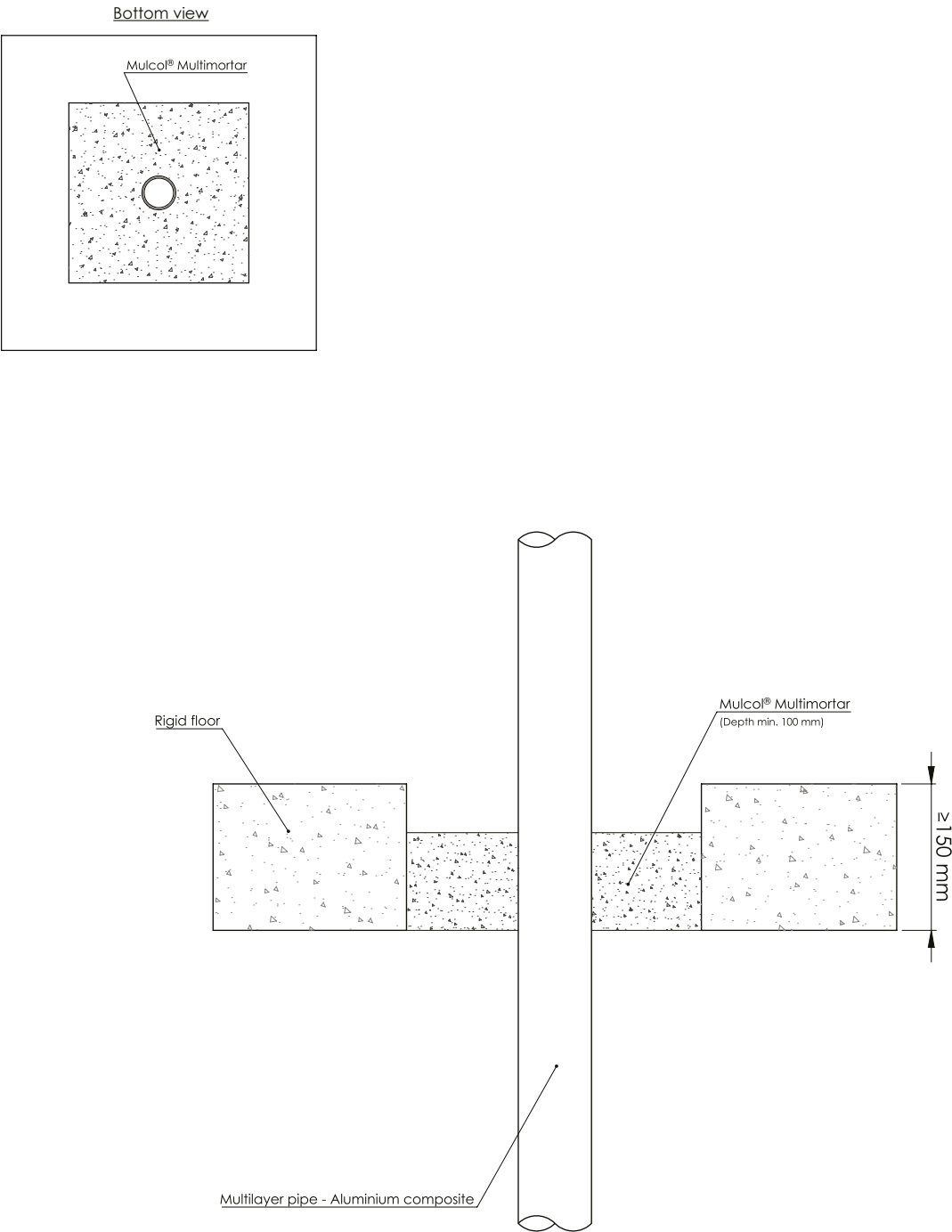


Drawing: RF.E-DCP25-MM2.2.10

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Hoses no.	Type	Thickness (mm)	Configuration		
Drinks tubing system	$\leq \varnothing 145$	≤ 52	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	EI 120 U/C

B.1.9 Multimortar - ≥ 100 mm - Multilayer pipes (MLC)

B.1.9.1 Multilayer pipes (MLC)



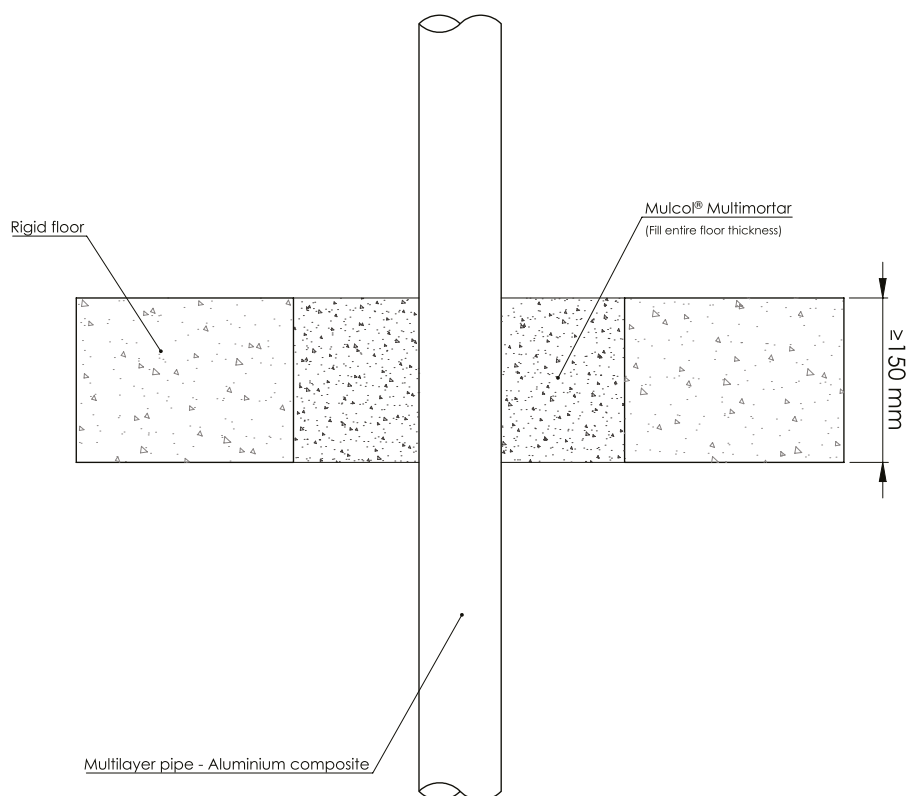
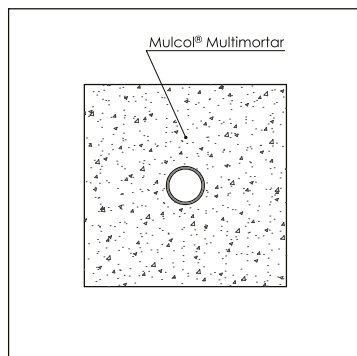
Drawing: RF.E-MLA-MM1.2.10

Services	Pipe dimensions (mm)		Classification
	Outer dimension	Wall thickness	
Multilayer pipes (MLC)	≤ Ø 75	6.0	EI 180 U/C, E 240 U/C

B.1.10 Multimortar - ≥ 150 mm - Multilayer pipes (MLC)

B.1.10.1 Multilayer pipes (MLC)

Bottom view

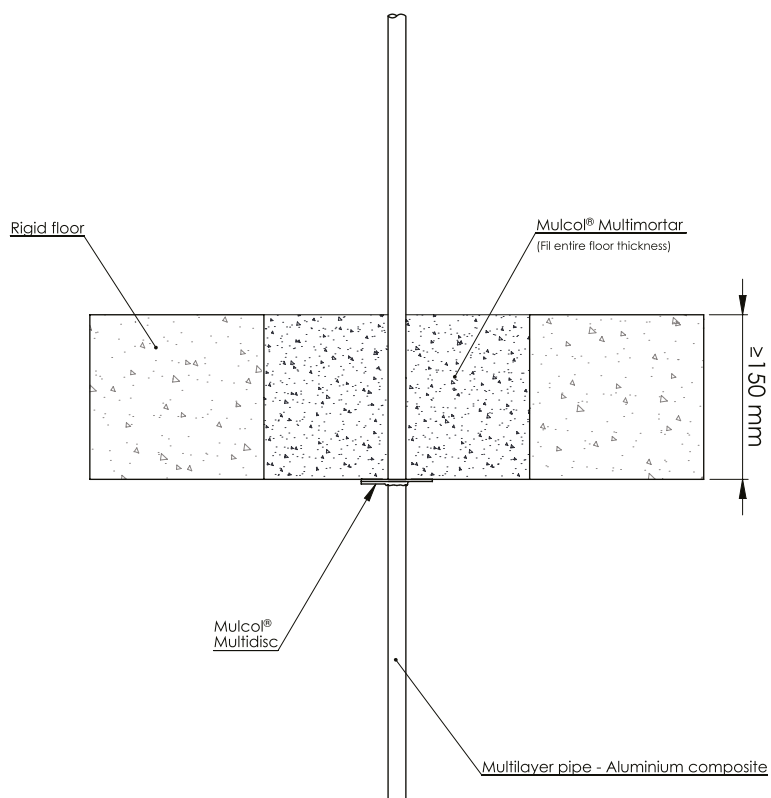
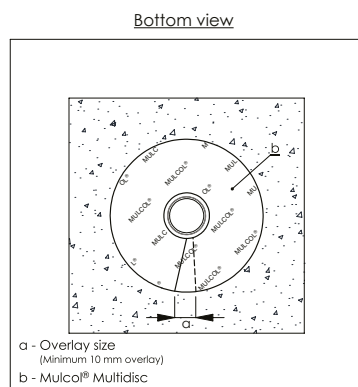


Drawing: RF.E-MLA-MM1.3.10

Services	Pipe dimensions (mm)		Classification
	Outer dimension	Wall thickness	
Multilayer pipes (MLC)	$\leq \text{Ø } 75$	6.0	EI 180 U/C, E 240 U/C

B.1.10 Multimortar - ≥ 150 mm - Multilayer pipes (MLC)

B.1.10.2 Multilayer pipes (MLC) - Multidisc

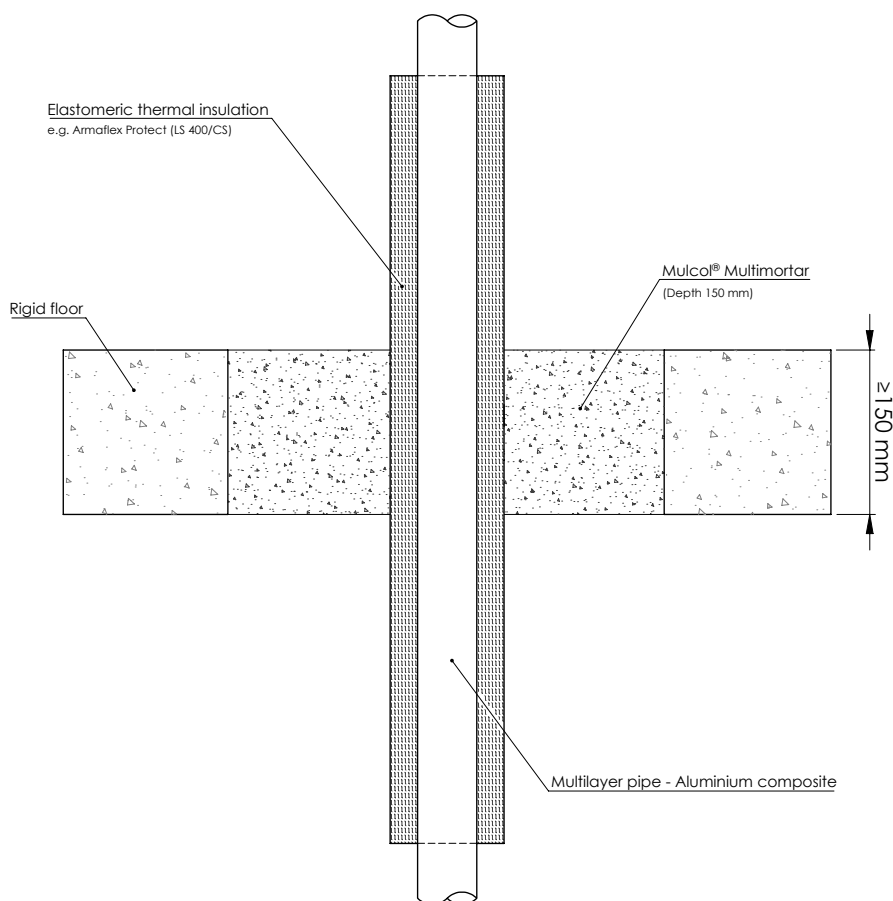
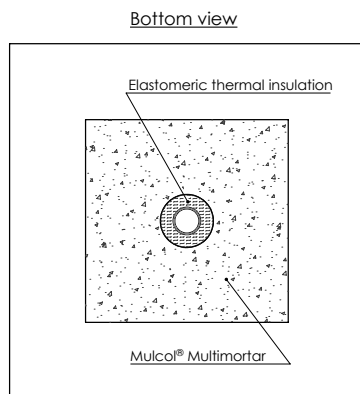


Drawing: RF.E-MLA-M1-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \varnothing 16$	2.0	Multidisc bottom of floor	EI 120 U/C

B.1.10 Multimortar - ≥ 150 mm - Multilayer pipes (MLC)

B.1.10.3 Multilayer pipes (MLC) - ArmaFlex Protect LS 400 / CS

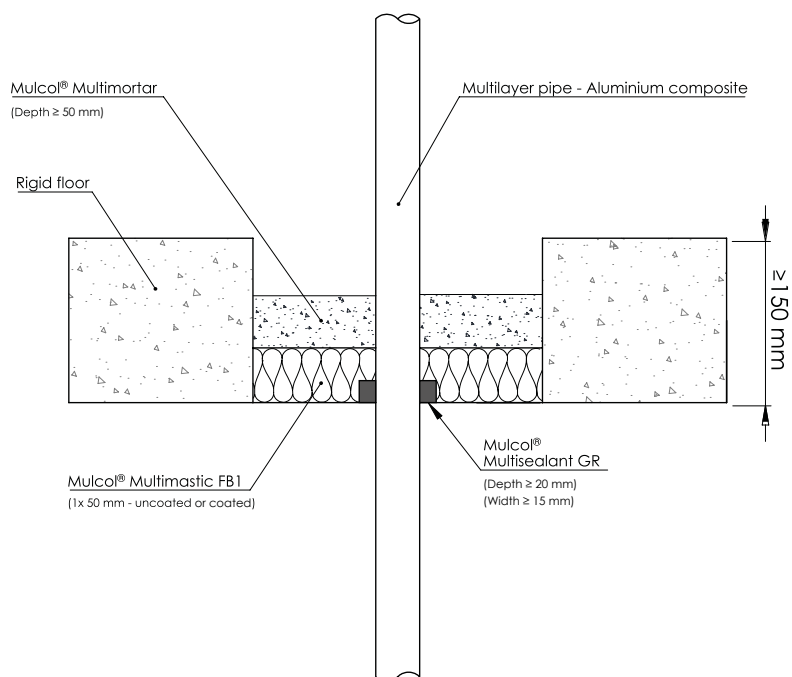
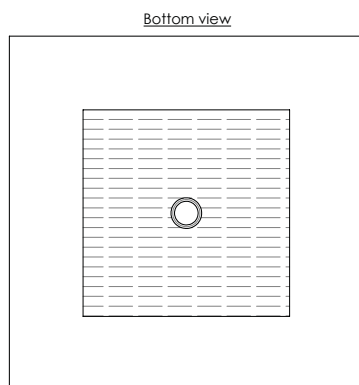


Drawing: RF.E-MLA-MM1.3.22

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Multilayer pipes (MLC)	$\leq \varnothing 26$	3.0	ArmaFlex Protect	20 - 25	LS 400 / CS	EI 120 U/C
	$\leq \varnothing 75$	6.0				

B.1.11 Multimortar + Multimastic FB - ≥ 100 mm - Multilayer pipes (MLC)

B.1.11.1 Multilayer pipes (MLC) - Multisealant GR

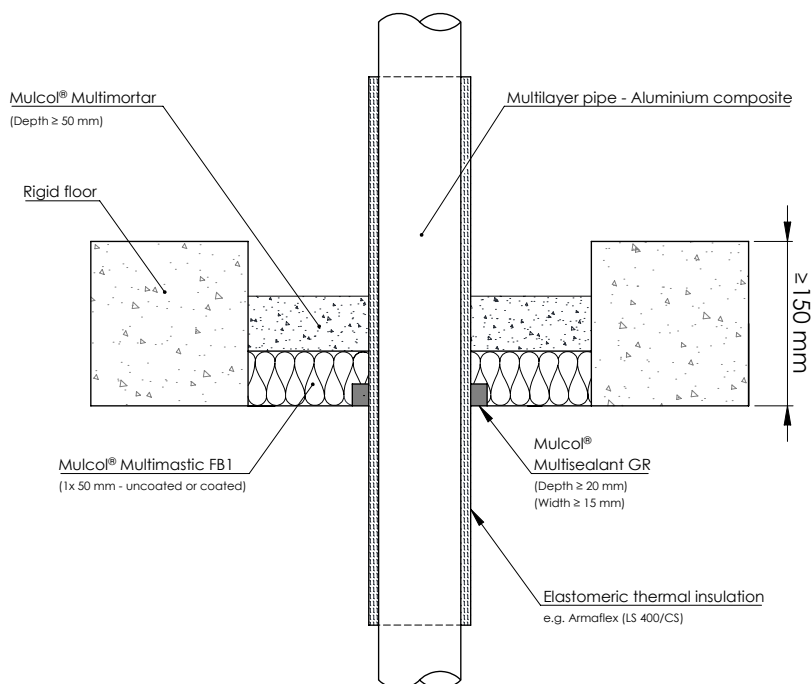
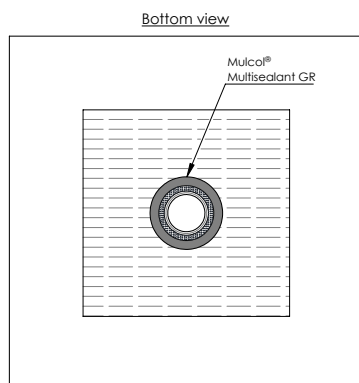


Drawing: RF.E-MLA-G1-MM2.5.10

Services	Pipe dimensions (mm)		Sealing (mm)	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \text{Ø } 32$	3.0	Multisealant GR $\geq 15 \times 20$ (wxd)	EI 30 U/C, E 90 U/C

B.1.11 Multimortar + Multimastic FB - ≥ 100 mm - Multilayer pipes (MLC)

B.1.11.2 Multilayer pipes (MLC) - Elastomer LS 400 / CS - Multisealant GR

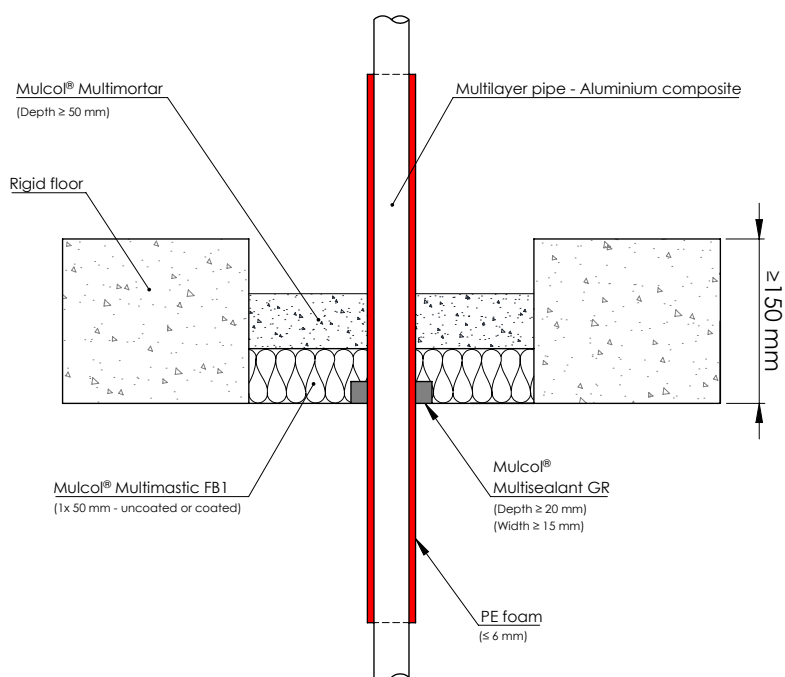
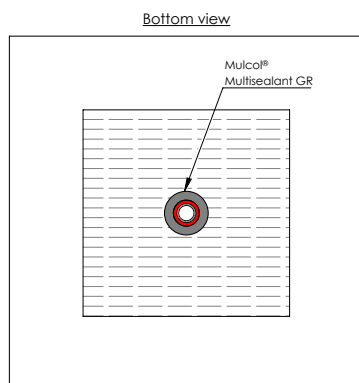


Drawing: RF.E-MLA-G1-MM2.5.22

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \varnothing 75$	6.0	ArmaFlex AF (min. class B-s3, d0 B _L -s3, d0)	9 - 32	LS 400 / CS	Multisealant GR $\geq 15 \times 20$ (wxd)	EI 90 U/C

B.1.11 Multimortar + Multimastic FB - ≥ 100 mm - Multilayer pipes (MLC)

B.1.11.3 Multilayer pipes (MLC) - PE foam - Multisealant GR

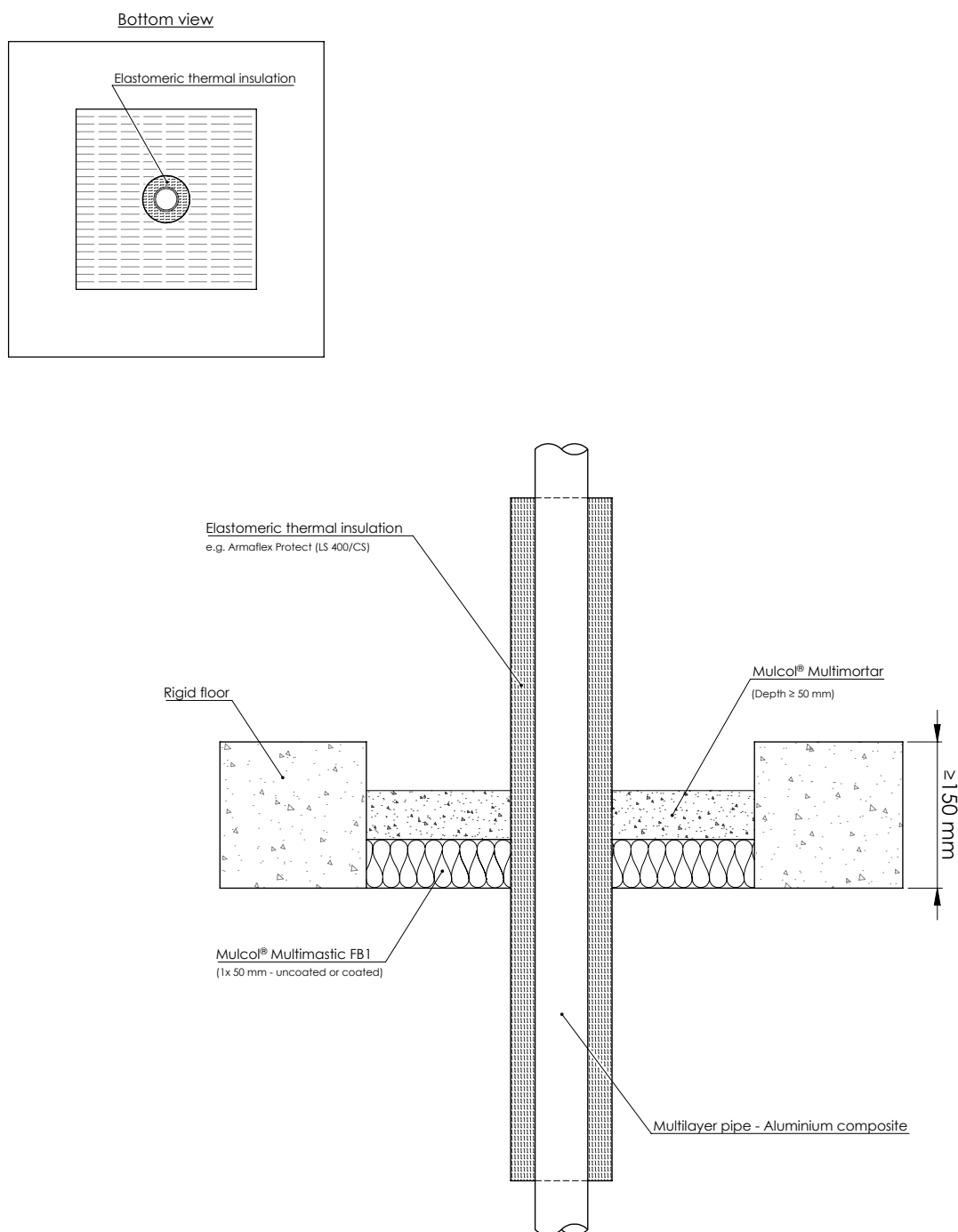


Drawing: RF.E-MLA_pr-G1-MM2.5.23

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \varnothing 32$	3.0	Henco PE foam	≤ 6	LS 300 / CS LI 300 / CI	Multisealant GR $\geq 15 \times 20$ (wxd)	EI 30 U/C, E 90 U/C

B.1.11 Multimortar + Multimastic FB - ≥ 100 mm - Multilayer pipes (MLC)

B.1.11.4 Multilayer pipes (MLC) - ArmaFlex Protect LS 400 / CS

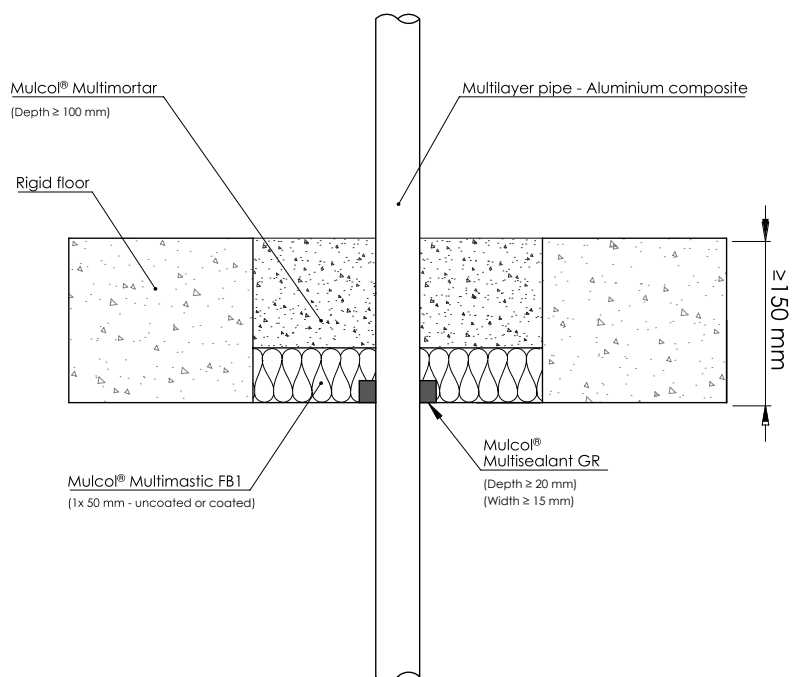
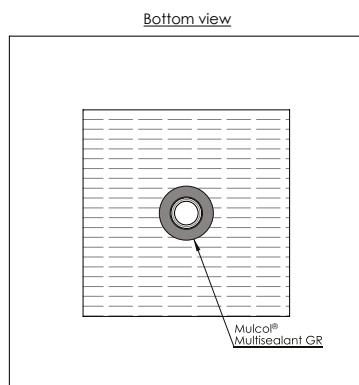


Drawing: RF.E-MLA-MM2.5.22

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Multilayer pipes (MLC)	$\leq \varnothing 26$	3.0	ArmaFlex Protect	20	LS 400 / CS	EI 120 U/C
	$\leq \varnothing 75$	6.0		25		

B.1.12 Multimortar + Multimastic FB - ≥ 150 mm - Multilayer pipes (MLC)

B.1.12.1 Multilayer pipes (MLC) - Multisealant GR

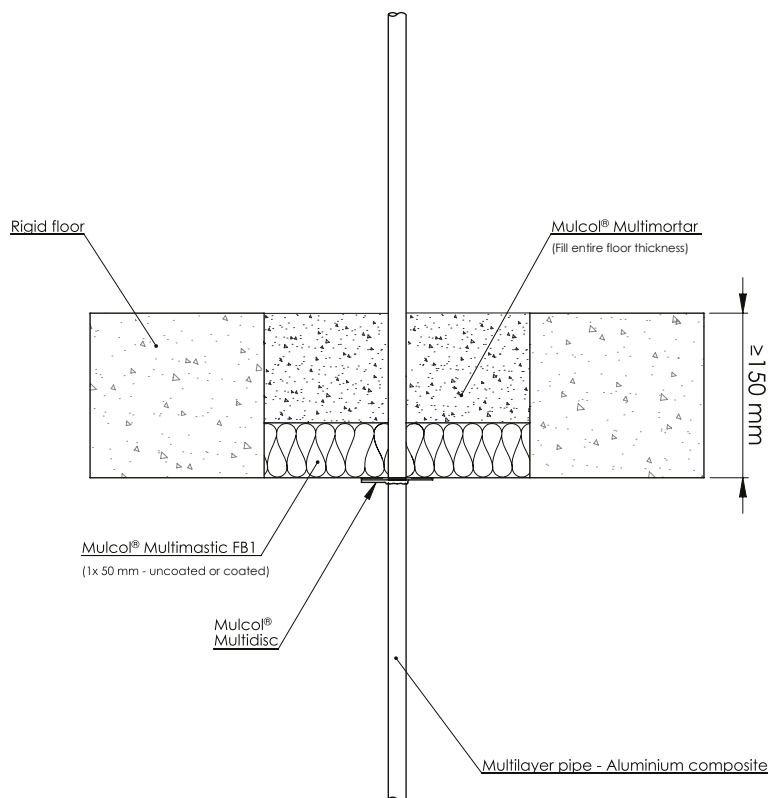
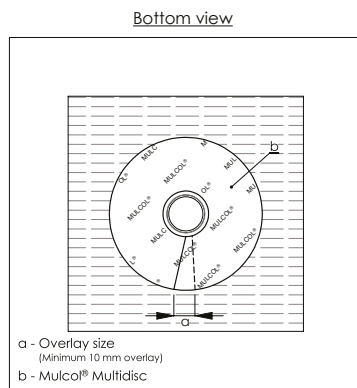


Drawing: RF.E-MLA-MM2.3.10

Services	Pipe dimensions (mm)		Sealing (mm)	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	≤ Ø 32	3.0	Multisealant GR ≥ 15 x 20 (wxd)	EI 30 U/C, E 90 U/C

B.1.12 Multimortar + Multimastic FB - ≥ 150 mm - Multilayer pipes (MLC)

B.1.12.2 Multilayer pipes (MLC) - Multidisc



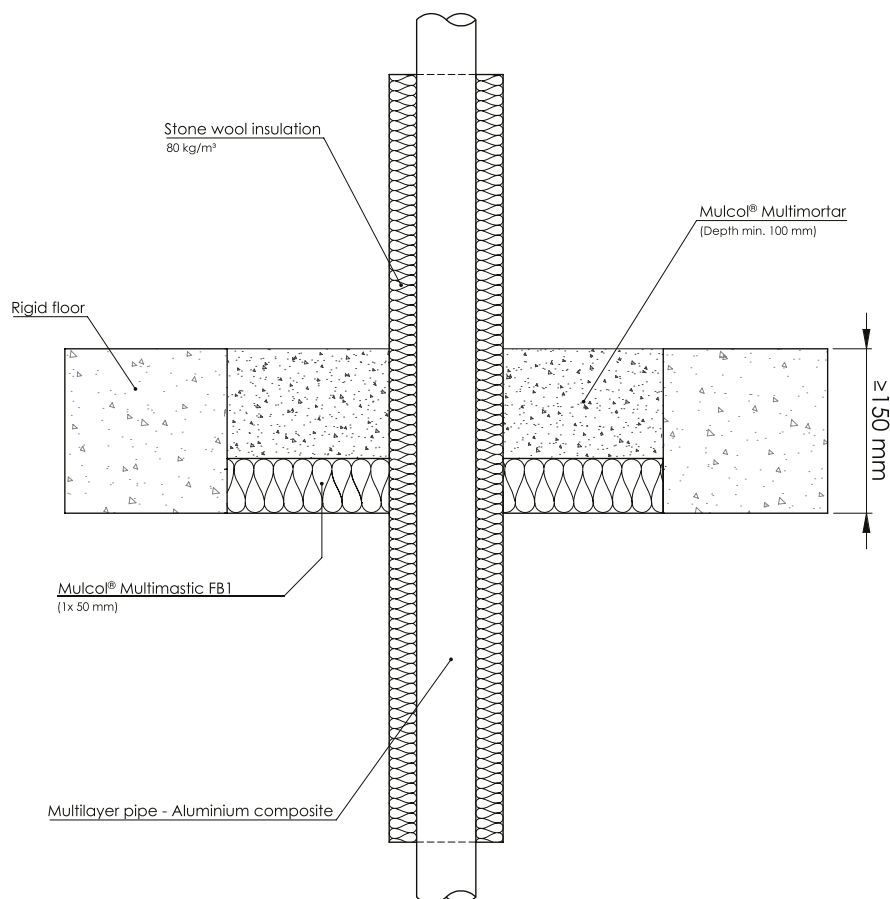
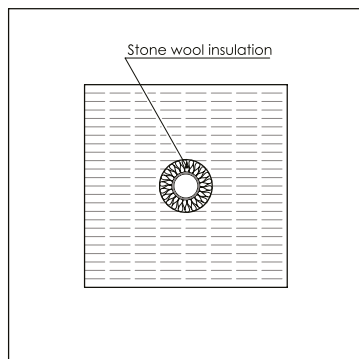
Drawing: RF.E-MLA-M1-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \varnothing 16$	2.0	Multidisc bottom of floor	EI 120 U/C

B.1.12 Multimortar + Multimastic FB - ≥ 150 mm - Multilayer pipes (MLC)

B.1.12.3 Multilayer pipes (MLC) - Stone wool LS 400 / CS

Bottom view

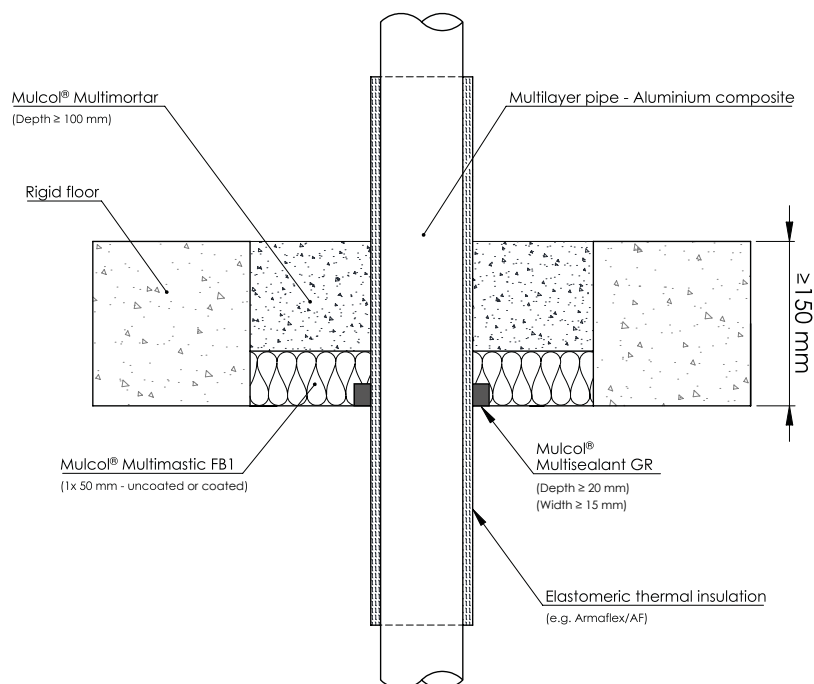
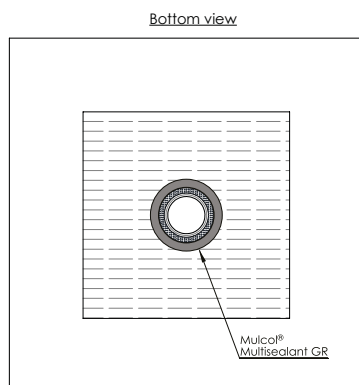


Drawing: RF.E-MLA-MM2.7.20

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Multilayer pipes (MLC)	$\leq \varnothing 20$	2.0	Stone wool (≥ 80 kg/m³)	≥ 25	LS 400 / CS	EI 120 U/C
	$\leq \varnothing 90$	7.0				

B.1.12 Multimortar + Multimastic FB - ≥ 150 mm - Multilayer pipes (MLC)

B.1.12.4 Multilayer pipes (MLC) - Elastomer LS 400 / CS - Multisealant GR

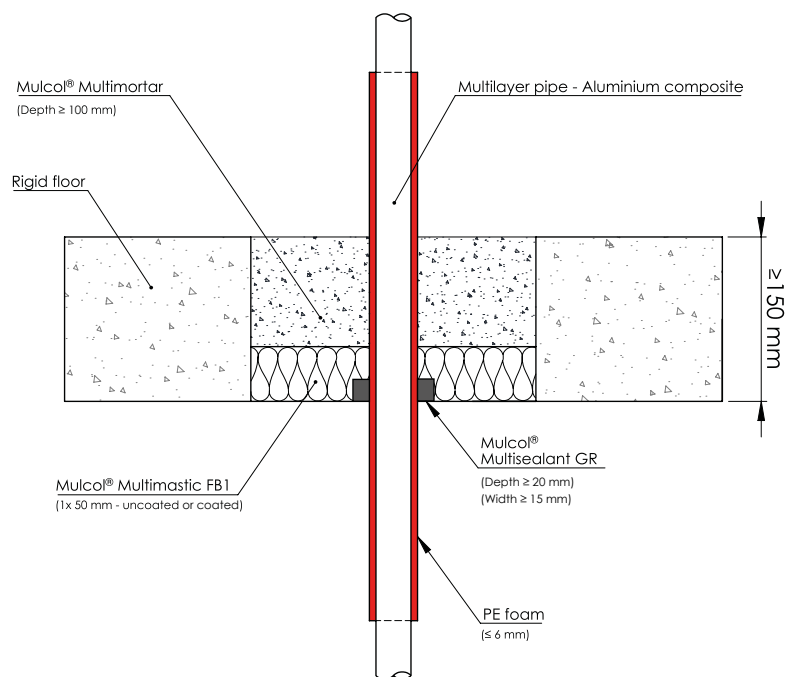
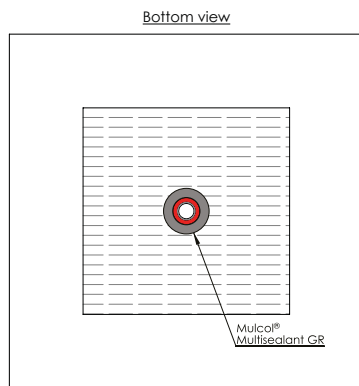


Drawing: RF.E-MLA-MM2.2.22

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \varnothing 75$	6.0	ArmaFlex AF (min. class B-s3, d0 B _L -s3, d0)	9 - 32	LS 400 / CS	Multisealant GR $\geq 15 \times 20$ (wxd)	EI 90 U/C

B.1.12 Multimortar + Multimastic FB - ≥ 150 mm - Multilayer pipes (MLC)

B.1.12.5 Multilayer pipes (MLC) - PE foam - Multisealant GR

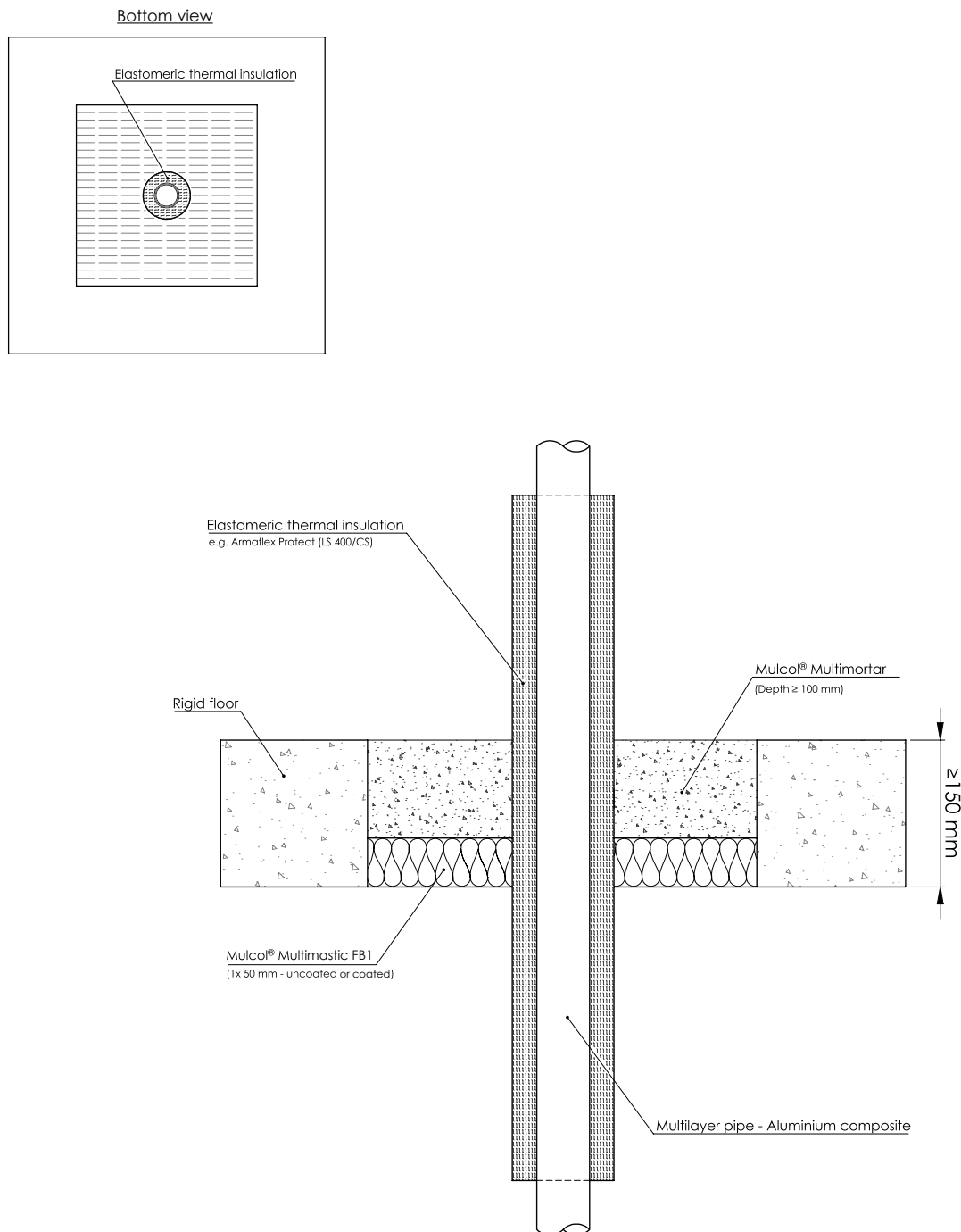


Drawing: RF.E-MLA_pr-MM2.2.23

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \varnothing 32$	3.0	Henco PE foam	≤ 6	LS 300 / CS LI 300 / CI	Multisealant GR $\geq 15 \times 20$ (wxd)	EI 30 U/C, E 90 U/C

B.1.12 Multimortar + Multimastic FB - ≥ 150 mm - Multilayer pipes (MLC)

B.1.12.6 Multilayer pipes (MLC) - ArmaFlex Protect LS 400 / CS

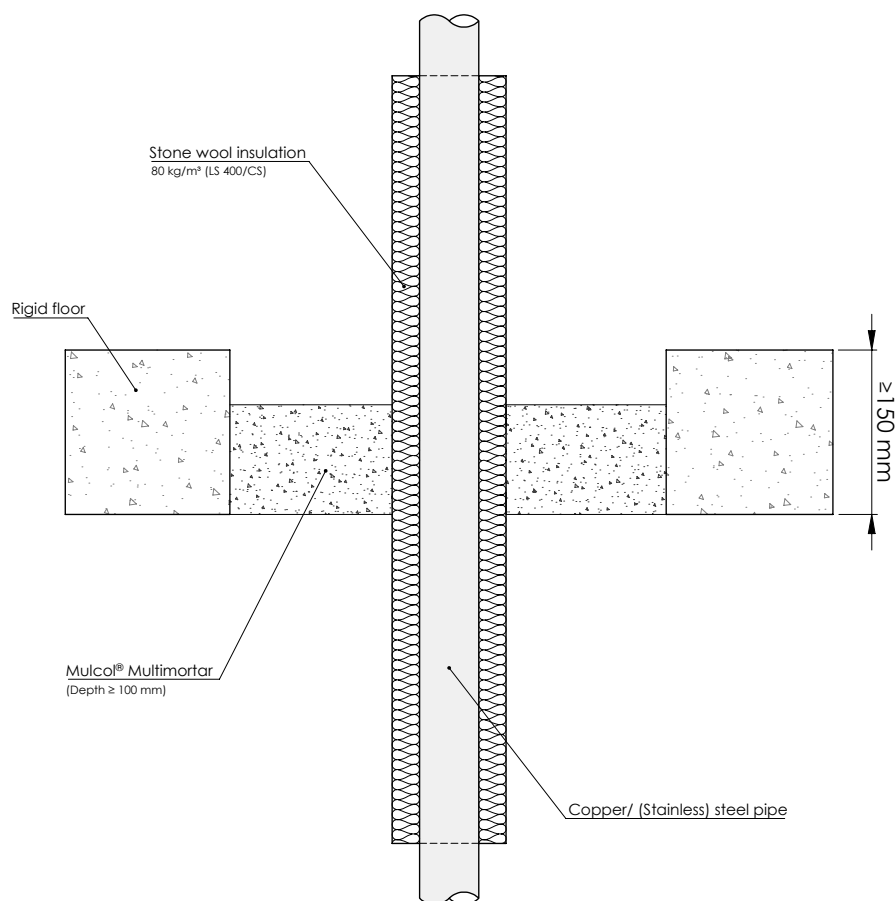
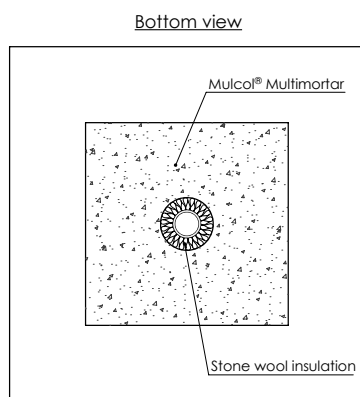


Drawing: RF.E-MLA-MM2.2.22

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Multilayer pipes (MLC)	$\leq \varnothing 26$	3.0	ArmaFlex Protect	20	LS 400 / CS	EI 120 U/C
	$\leq \varnothing 75$	6.0		25		

B.1.13 Multimortar - ≥ 100 mm - Metal pipes insulated mineral wool

B.1.13.1 Copper and steel pipes - Stone wool LS 400 / CS

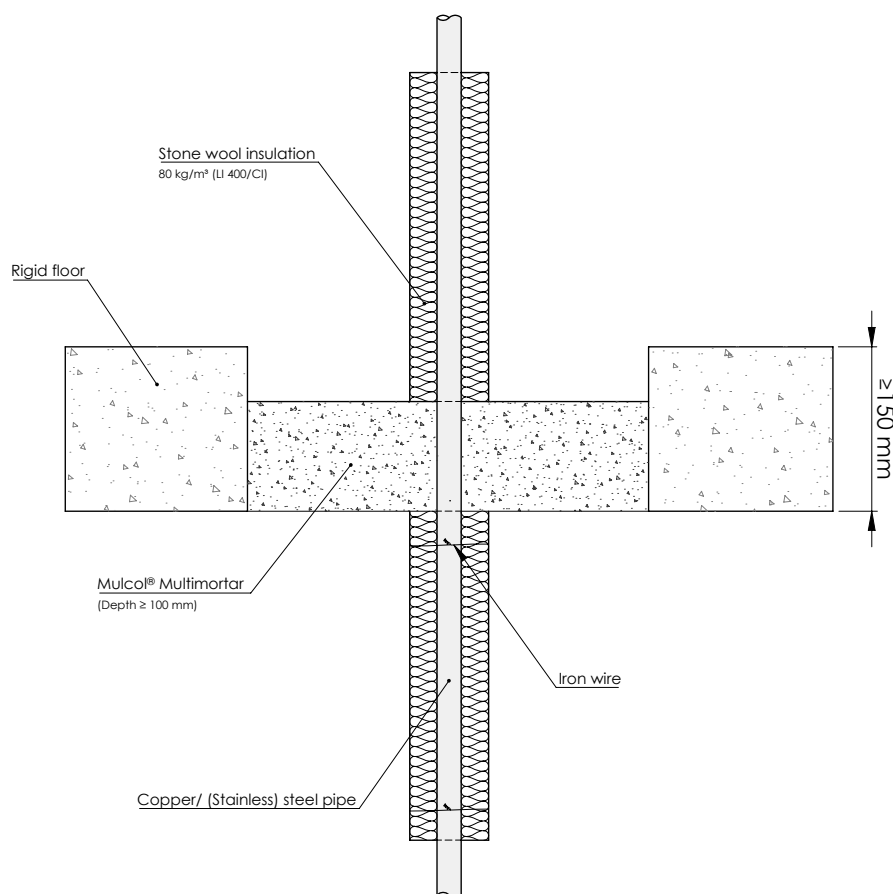
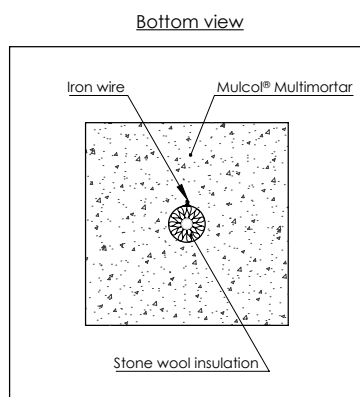


Drawing: RF.E-CU-MM1.2.20

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	LS 400 / CS	EI 180 C/U	
	≤ Ø 54	≥ 1.5					
(Stainless) Steel / cast iron	≤ Ø 324	≥ 3.7		30			EI 60 C/U E 120 C/U
		≥ 6.3					EI 120 C/U E 180 C/U EI 120 C/U E 240 C/U

B.1.13 Multimortar - ≥ 100 mm - Metal pipes insulated mineral wool

B.1.13.2 Copper and steel pipes - Stone wool LI 400 / CI



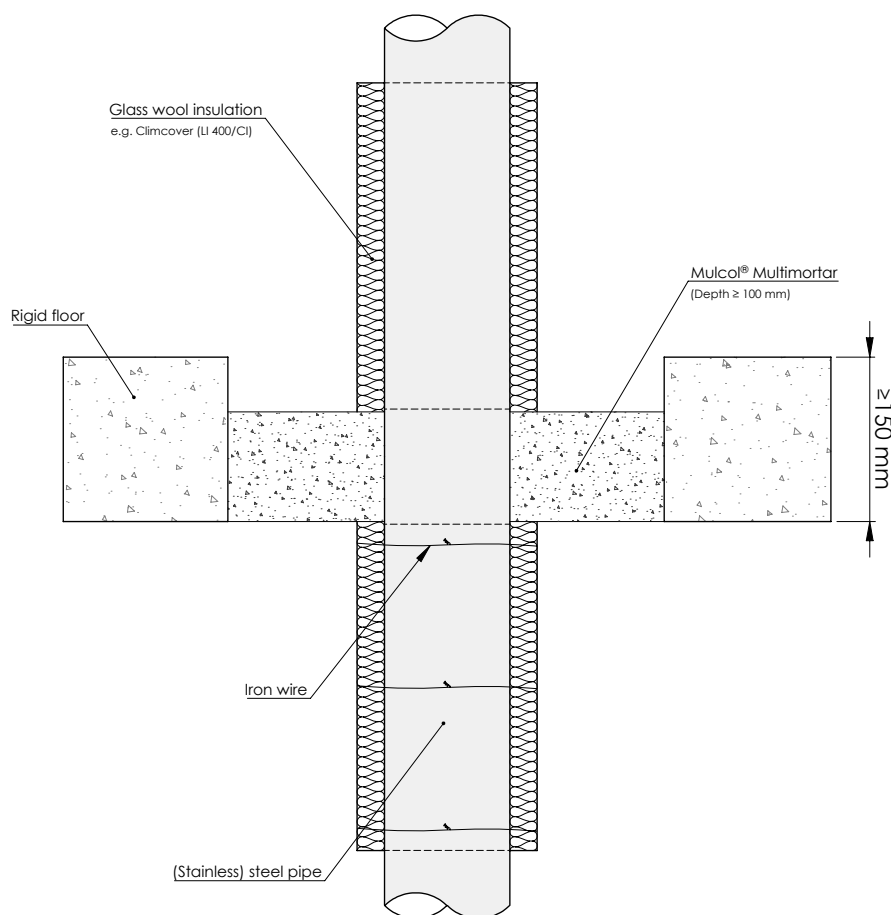
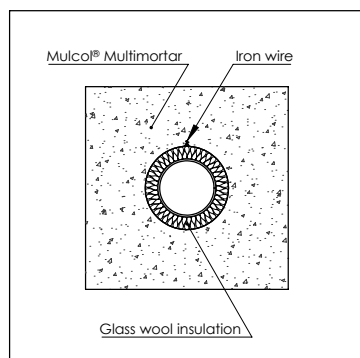
Drawing: RF.E-CU-MM1.2.20.LI

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 180 C/U
	≤ Ø 54	≥ 1.5				
(Stainless) Steel / cast iron	≤ Ø 40	≥ 1.0				EI 240 C/U
	≤ Ø 114.3	≥ 3.6				EI 120 C/U E 180 C/U
	≤ Ø 40	≥ 1.0		EI 240 C/U		
	≤ Ø 219	≥ 4.0		EI 120 C/U E 180 C/U		

B.1.13 Multimortar - ≥ 100 mm - Metal pipes insulated mineral wool

B.1.13.3 Copper and steel pipes - Glass wool LS 400 / CS

Bottom view

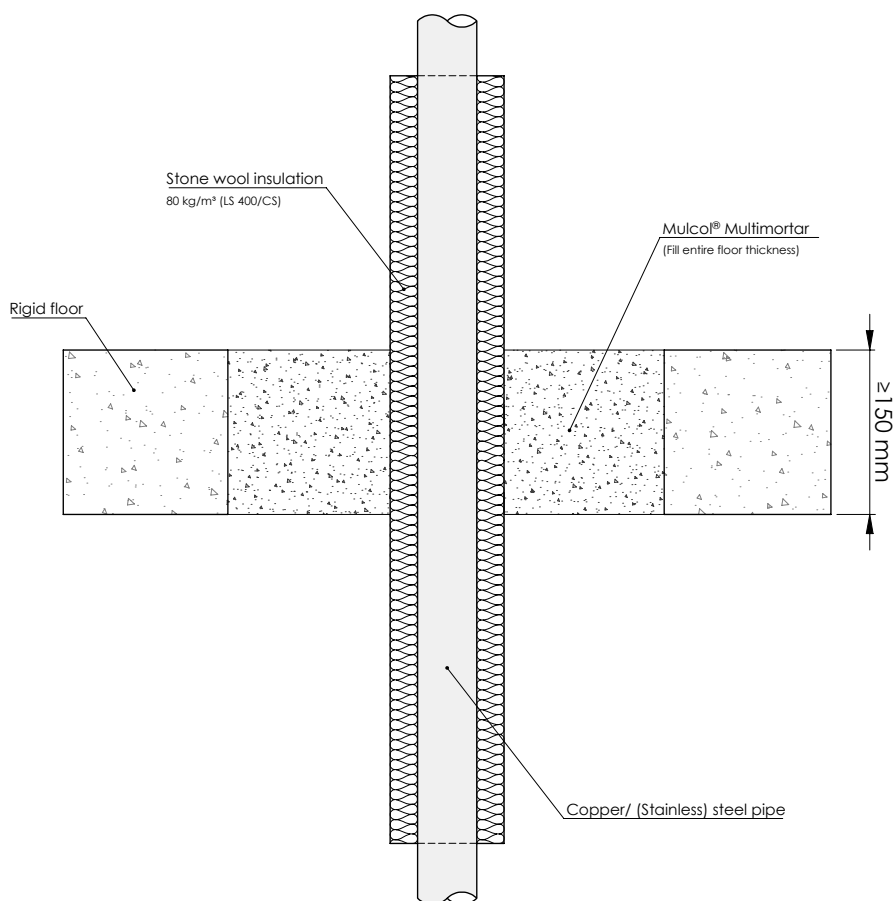
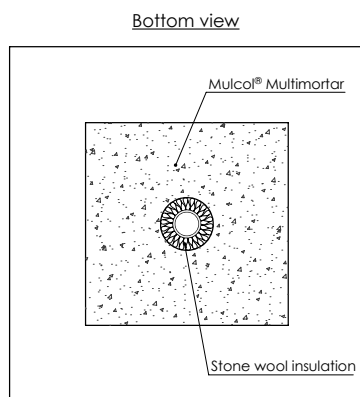


Drawing: RF.E-ST-MM1.2.20.LI

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
(Stainless) Steel / cast iron	$\leq \varnothing 40$	≥ 2.0	Isover Climcover Glass wool ($\geq 33 \text{ kg/m}^3$)	25	LI 400 / CI	EI 120 C/U
	$\leq \varnothing 114.3$	≥ 3.6				EI 90 C/U E 120 C/U
	$\leq \varnothing 219$	≥ 4.0		30		EI 60 C/U E 120 C/U

B.1.14 Multimortar - ≥ 150 mm - Metal pipes insulated mineral wool

B.1.14.1 Copper and steel pipes - Stone wool LS 400 / CS

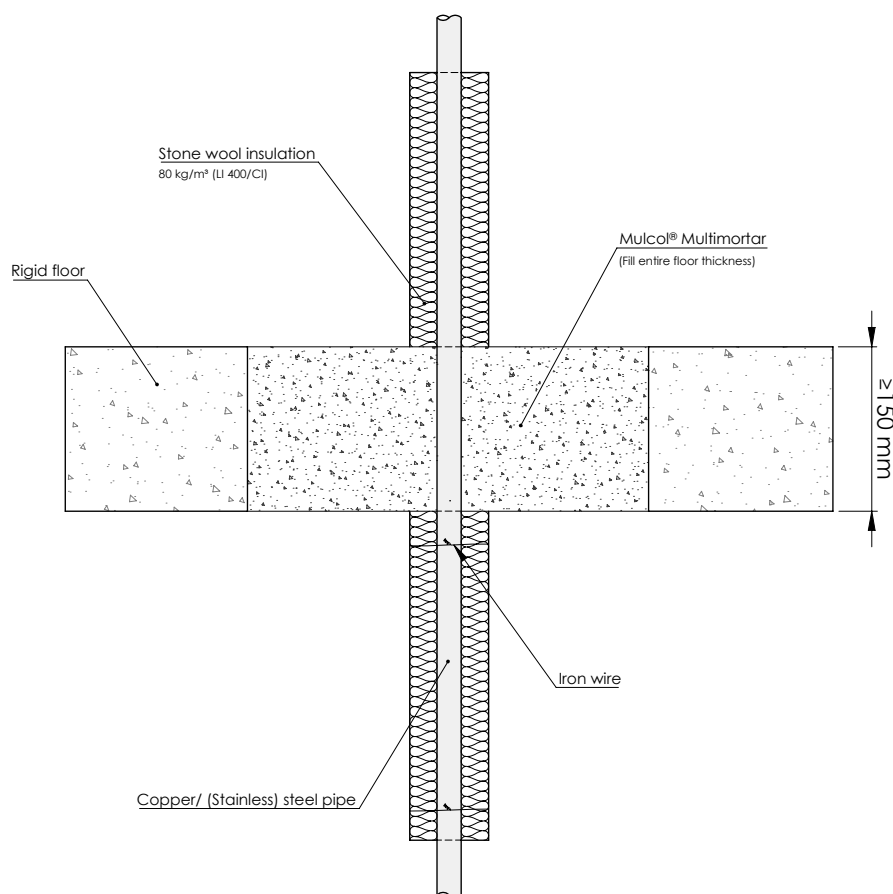
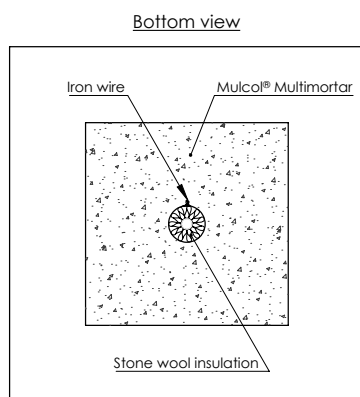


Drawing: RF.E-CU-MM1.3.20

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	LS 425 / CS	EI 180 C/U E 240 C/U	
	≤ Ø 54	≥ 1.5		≥ 25		EI 120 C/U E 240 C/U	
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6		≥ 30	LS 400 / CS	EI 120 C/U E 180 C/U	
	≤ Ø 324	≥ 3.7				EI 120 C/U E 240 C/U	
		≥ 6.3			≥ 50	CS	EI 240 C/U

B.1.14 Multimortar - ≥ 150 mm - Metal pipes insulated mineral wool

B.1.14.2 Copper and steel pipes - Stone wool LI 400 / CI

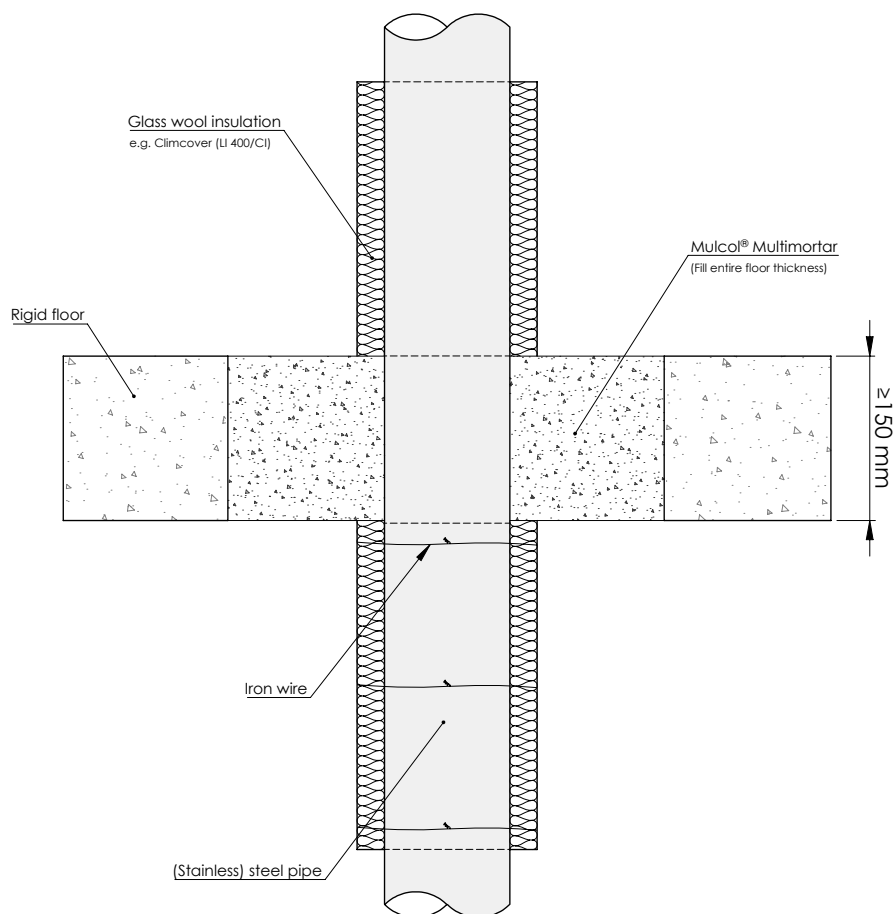
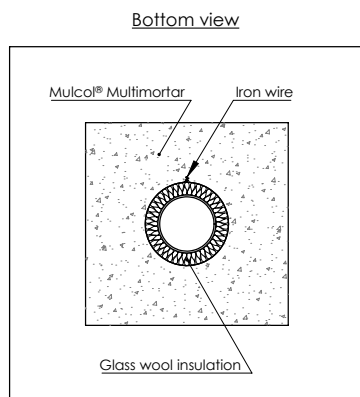


Drawing: RF.E-CU-MM1.3.20.LI

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 240 C/U
	≤ Ø 54	≥ 1.5				EI 240 C/U
(Stainless) Steel / cast iron	≤ Ø 40	≥ 1.0		EI 240 C/U		
	≤ Ø 114.3	≥ 3.6		EI 120 C/U E 240 C/U		
	≤ Ø 219	≥ 4.0		≥ 30		

B.1.14 Multimortar - ≥ 150 mm - Metal pipes insulated mineral wool

B.1.14.3 Copper and steel pipes - Glass wool LI 400 / CI

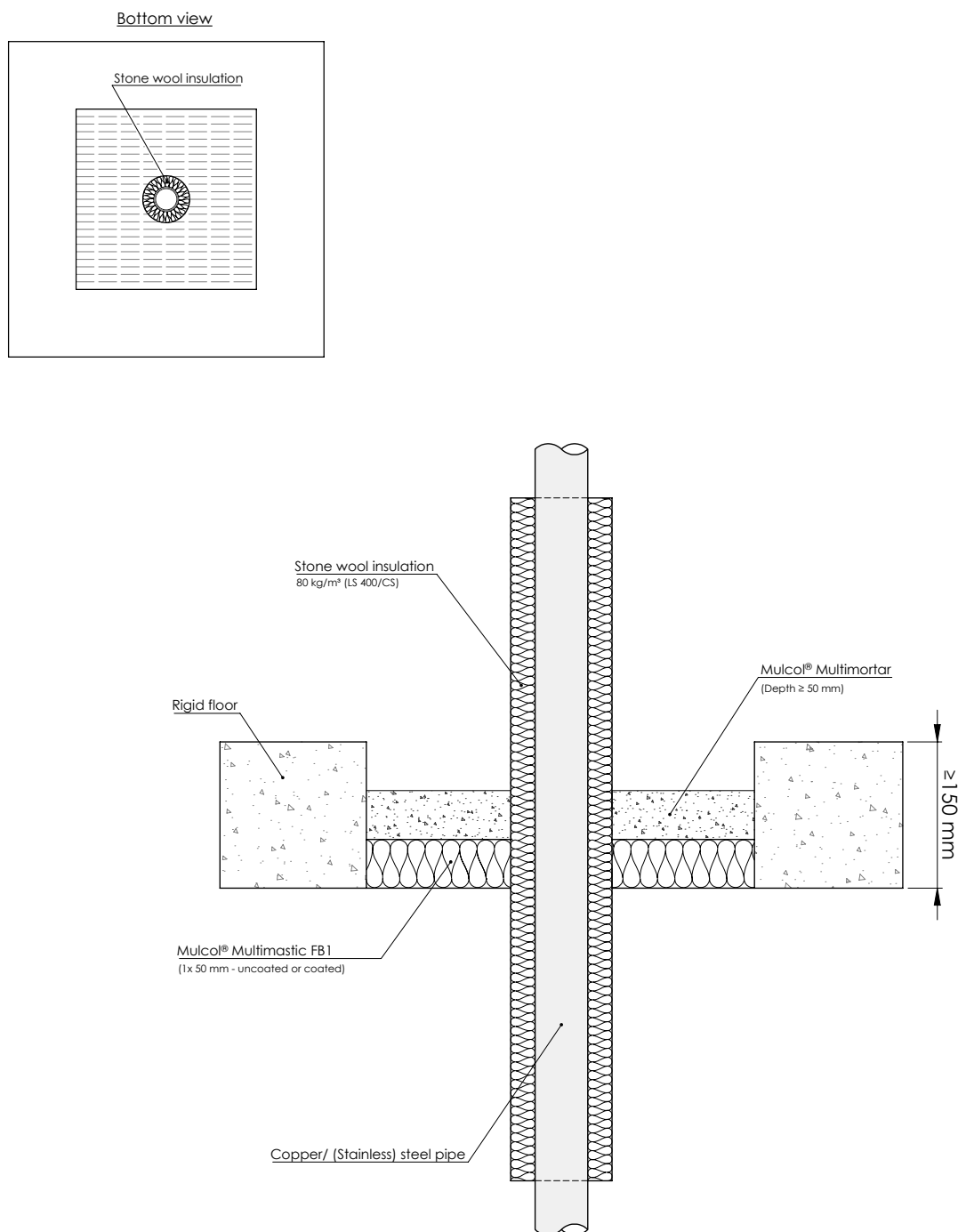


Drawing: RF.E-ST-MM1.3.20.LI

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
(Stainless) Steel / cast iron	≤ Ø 40	≥ 2.0	Isover Climcover Glass wool (≥ 33 kg/m³)	≥ 25	LI 400 / CI	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.1.15 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated mineral wool

B.1.15.1 Copper and steel pipes - Stone wool LS 400 / CS

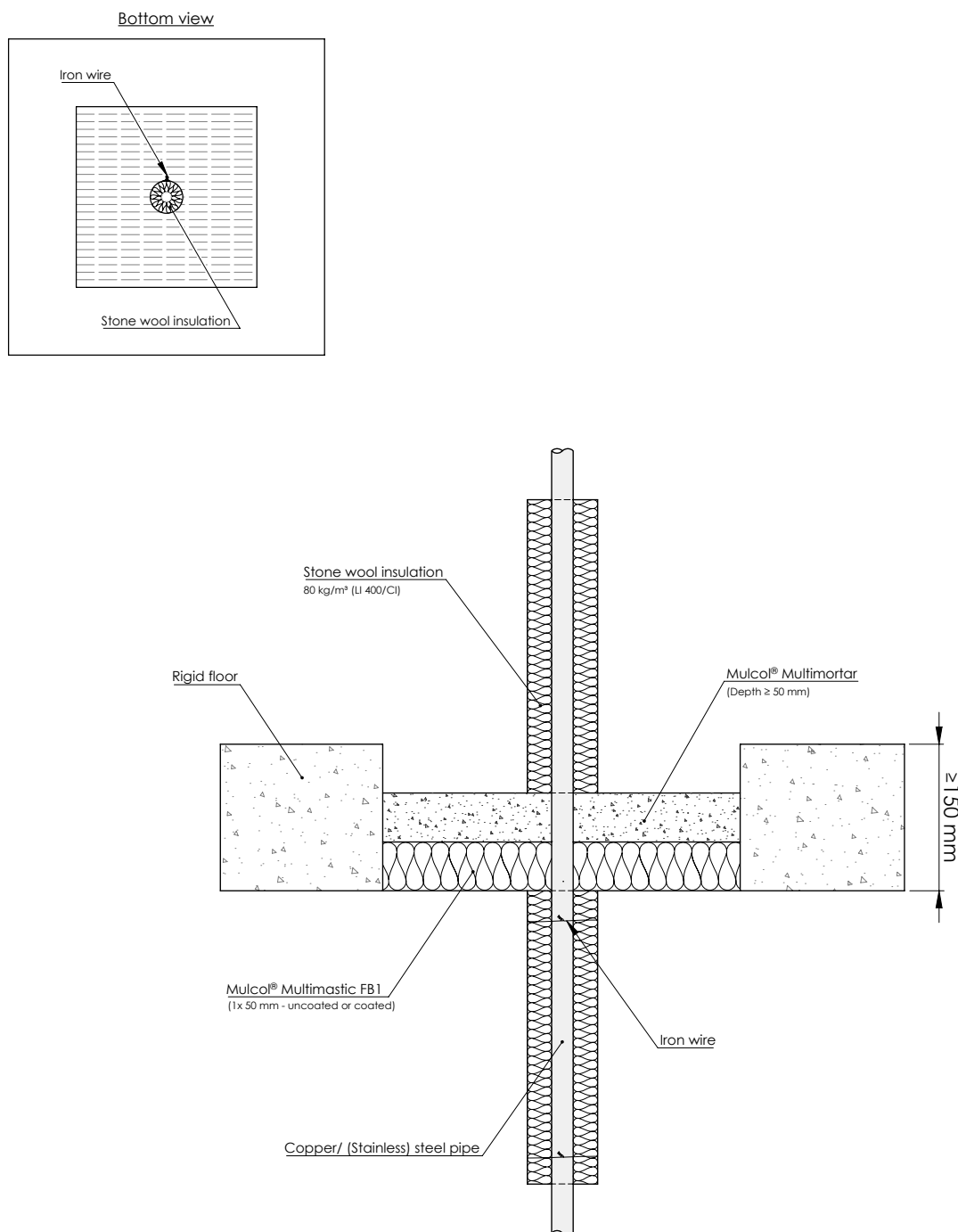


Drawing: RF.E-CU-MM2.5.20

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	LS 400 / CS	EI 120 C/U
	≤ Ø 54	≥ 1.5				E 180 C/U
(Stainless) Steel / cast iron	≤ Ø 324	≥ 3.7		30		EI 60 C/U
						E 120 C/U
					EI 120 C/U	
					E 180 C/U	

B.1.15 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated mineral wool

B.1.15.2 Copper and steel pipes - Stone wool LI 400 / CI



Drawing: RF.E-CU-MM2.5.20.LI

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 120 C/U
	≤ Ø 54	≥ 1.5				E 180 C/U
(Stainless) Steel / cast iron	≤ Ø 40	≥ 1.0		EI 180 C/U		
	≤ Ø 114.3	≥ 3.6		EI 120 C/U		
	≤ Ø 219	≥ 4.0		E 180 C/U		

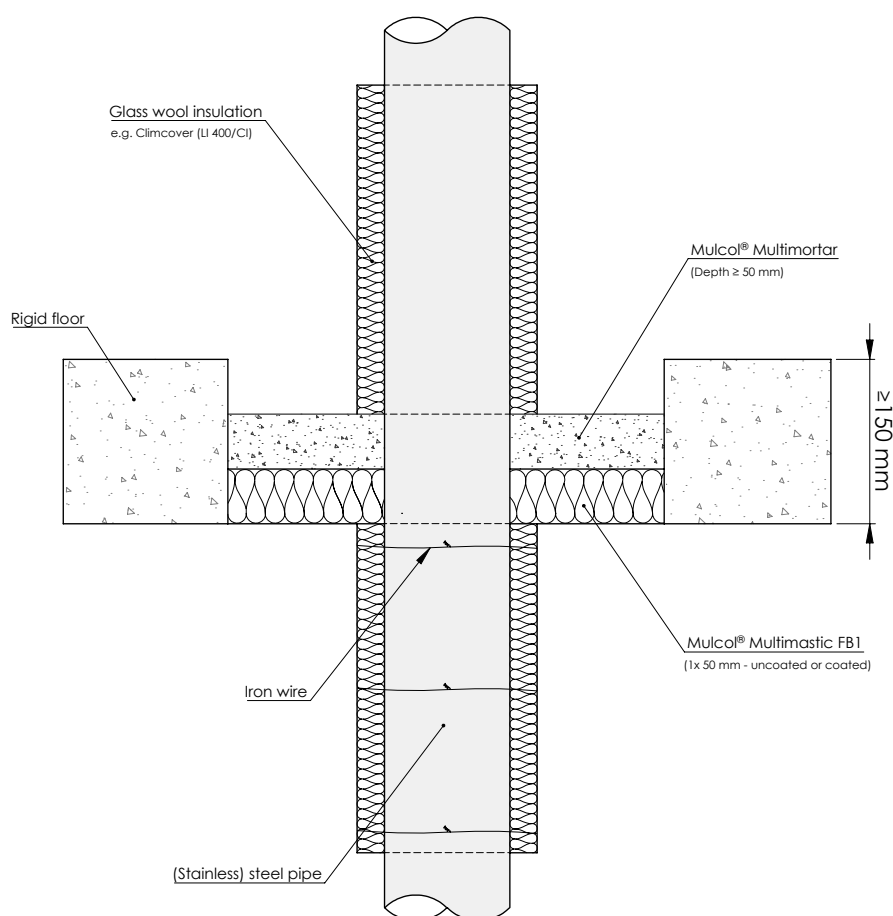
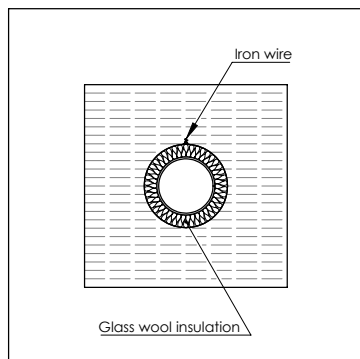
B.1.15

Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated mineral wool

B.1.15.3

Copper and steel pipes - Glass wool LI 400 / CI

Bottom view



Drawing: RF.E-ST-MM2.5.20.LI

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
(Stainless) Steel / cast iron	$\leq \varnothing 40$	≥ 2.0	Glass wool ($\geq 33 \text{ kg/m}^3$)	25	LI 400 / CI	EI 120 C/U
	$\leq \varnothing 114.3$	≥ 3.6				EI 90 C/U E 120 C/U
	$\leq \varnothing 219$	≥ 4.0		30		EI 60 C/U E 120 C/U

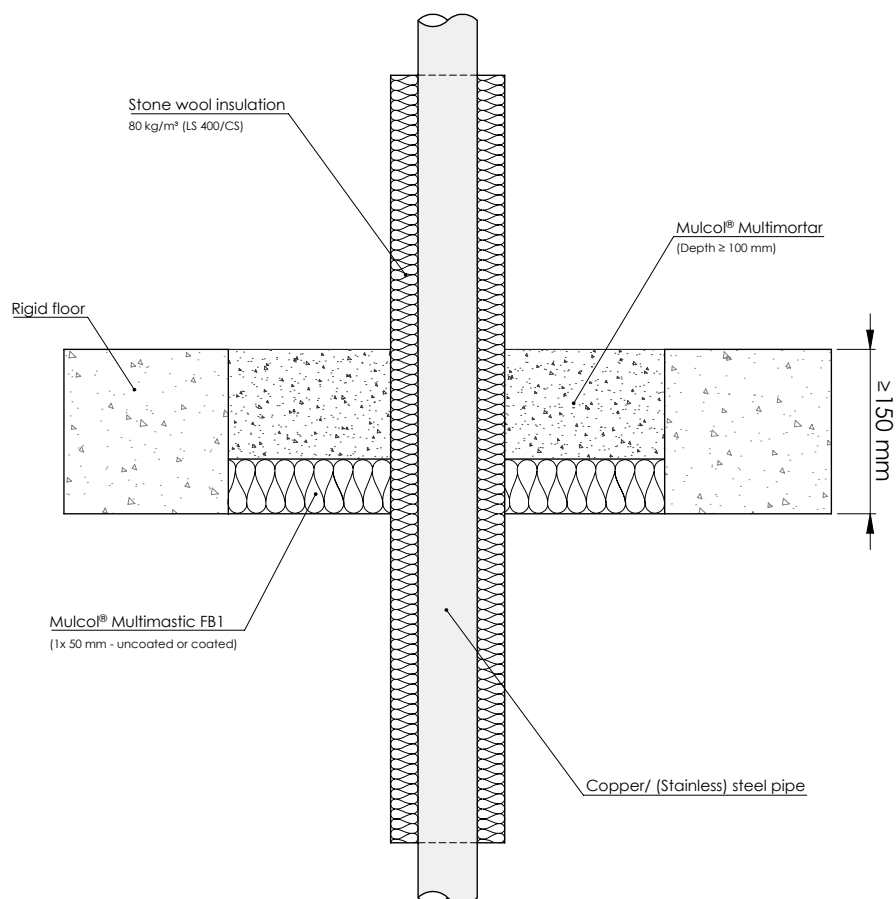
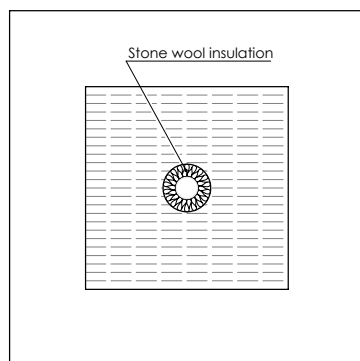
B.1.16

Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes insulated mineral wool

B.1.16.1

Copper and steel pipes - Stone wool LS 400 / CS

Bottom view



Drawing: RF.E-CU-MM2.7.20

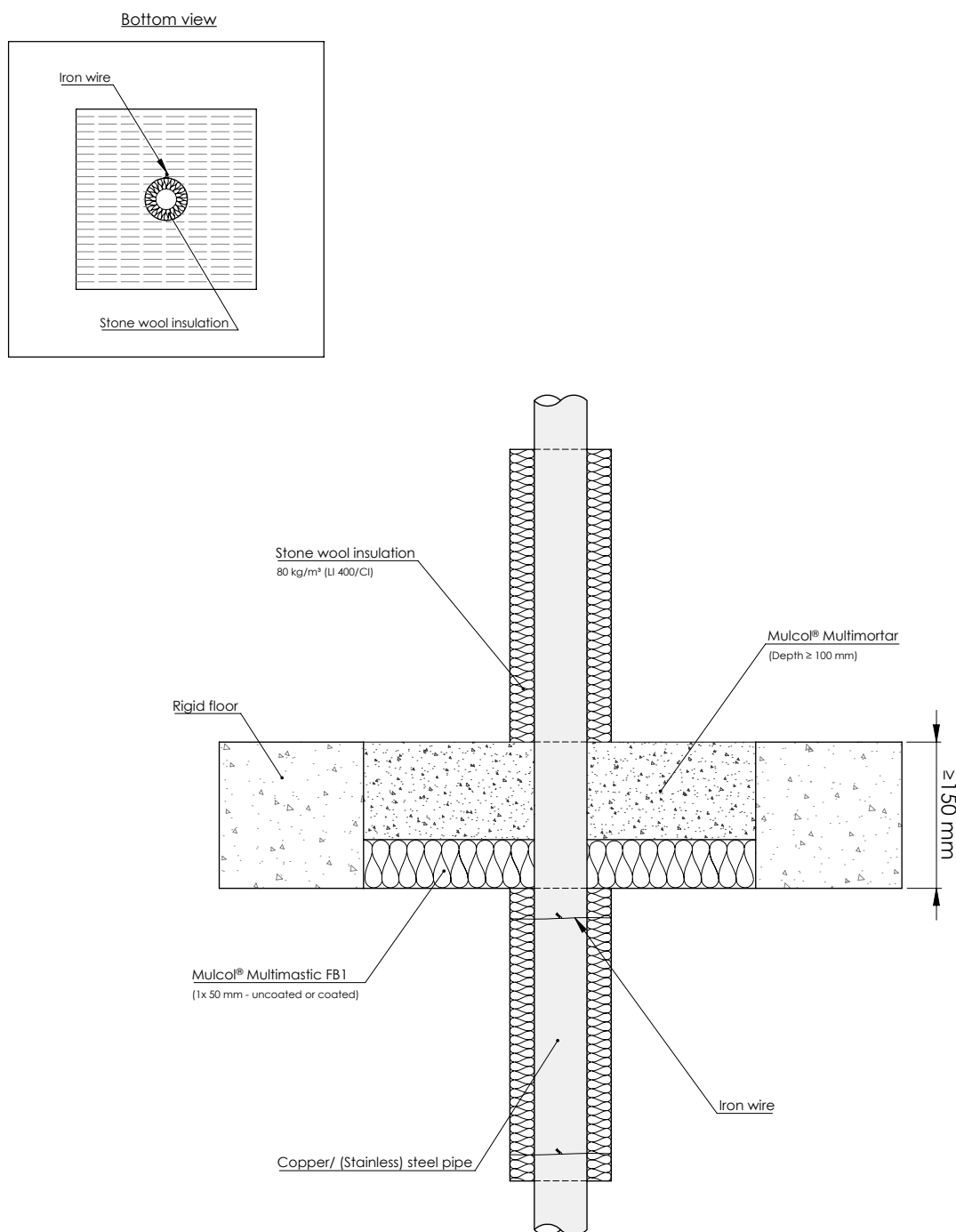
Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m³)	25	LS 400 / CS	EI 180 C/U
	≤ Ø 54	≥ 1.5				EI 60 C/U E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 324	≥ 3.7		30		EI 120 C/U E 180 C/U
	≤ Ø 324	≥ 6.3				EI 120 C/U E 240 C/U

B.1.16

Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes insulated mineral wool

B.1.16.2

Copper and steel pipes - Stone wool LI 400 / CI



Drawing: RF.E-CU-MM2.7.20.LI

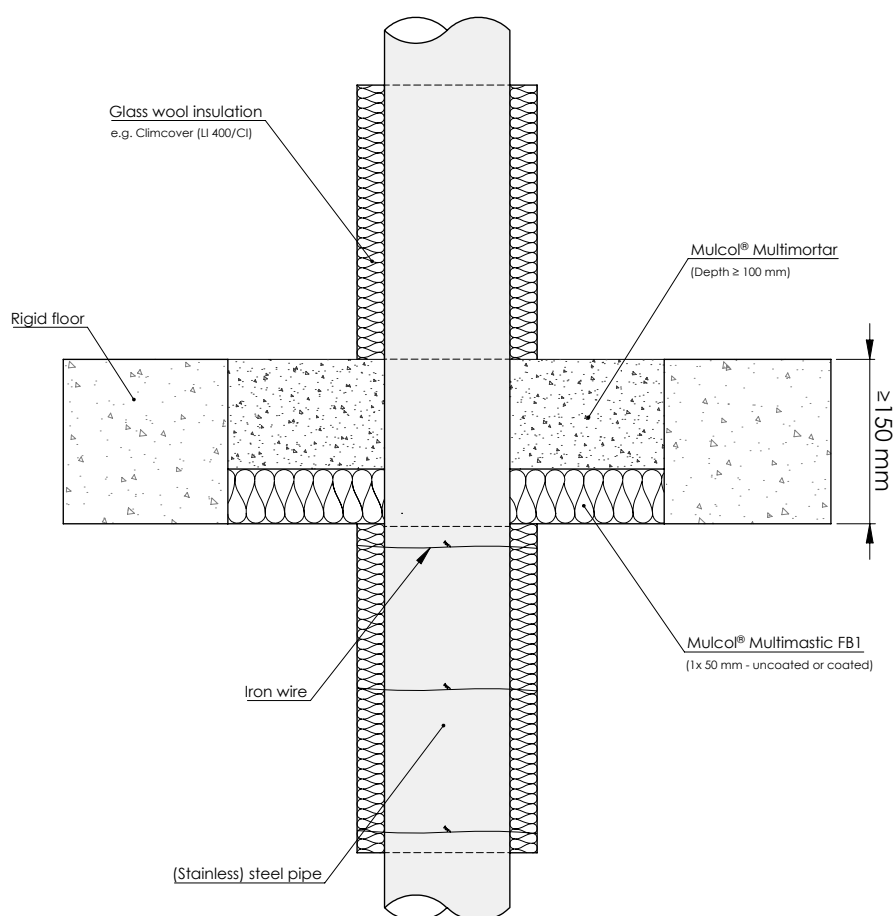
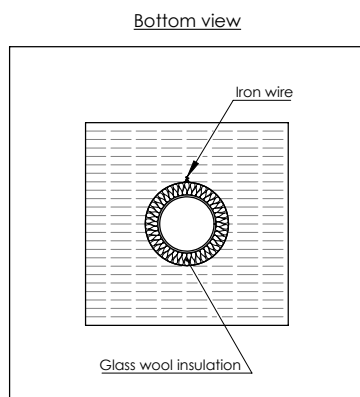
Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	≤ Ø 22	≥ 1.0	Stone wool (≥ 80 kg/m³)	25	LI 400 / CI	EI 180 C/U
	≤ Ø 54	≥ 1.5				EI 240 C/U
(Stainless) Steel / cast iron	≤ Ø 40	≥ 1.0		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

B.1.16

Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes insulated mineral wool

B.1.16.3

Copper and steel pipes - Glass wool LI 400 / CI

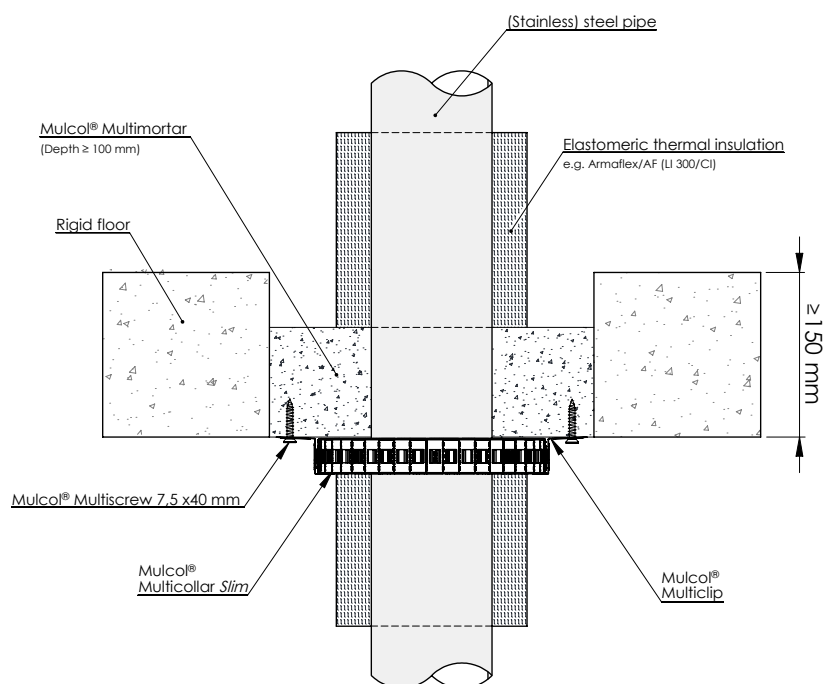
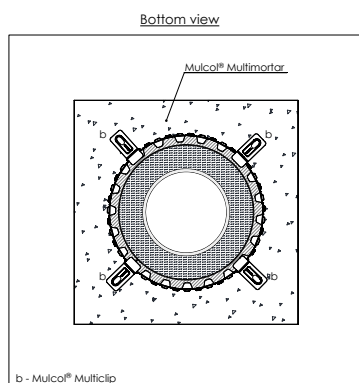


Drawing: RF.E-ST-MM2.7.20.LI

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
(Stainless) Steel / cast iron	$\leq \varnothing 40$	≥ 2.0	Isover Climcover Glass wool ($\geq 33 \text{ kg/m}^3$)	25	LI 400 / CI	EI 120 C/U
	$\leq \varnothing 114.3$	≥ 3.6				EI 90 C/U E 120 C/U
	$\leq \varnothing 219$	≥ 4.0		30		EI 60 C/U E 120 C/U

B.1.17 Multimortar - ≥ 100 mm - Metal pipes insulated elastomer

B.1.17.1 Copper and steel pipes - Elastomer LI 300 / CI - Multicollar *Slim*

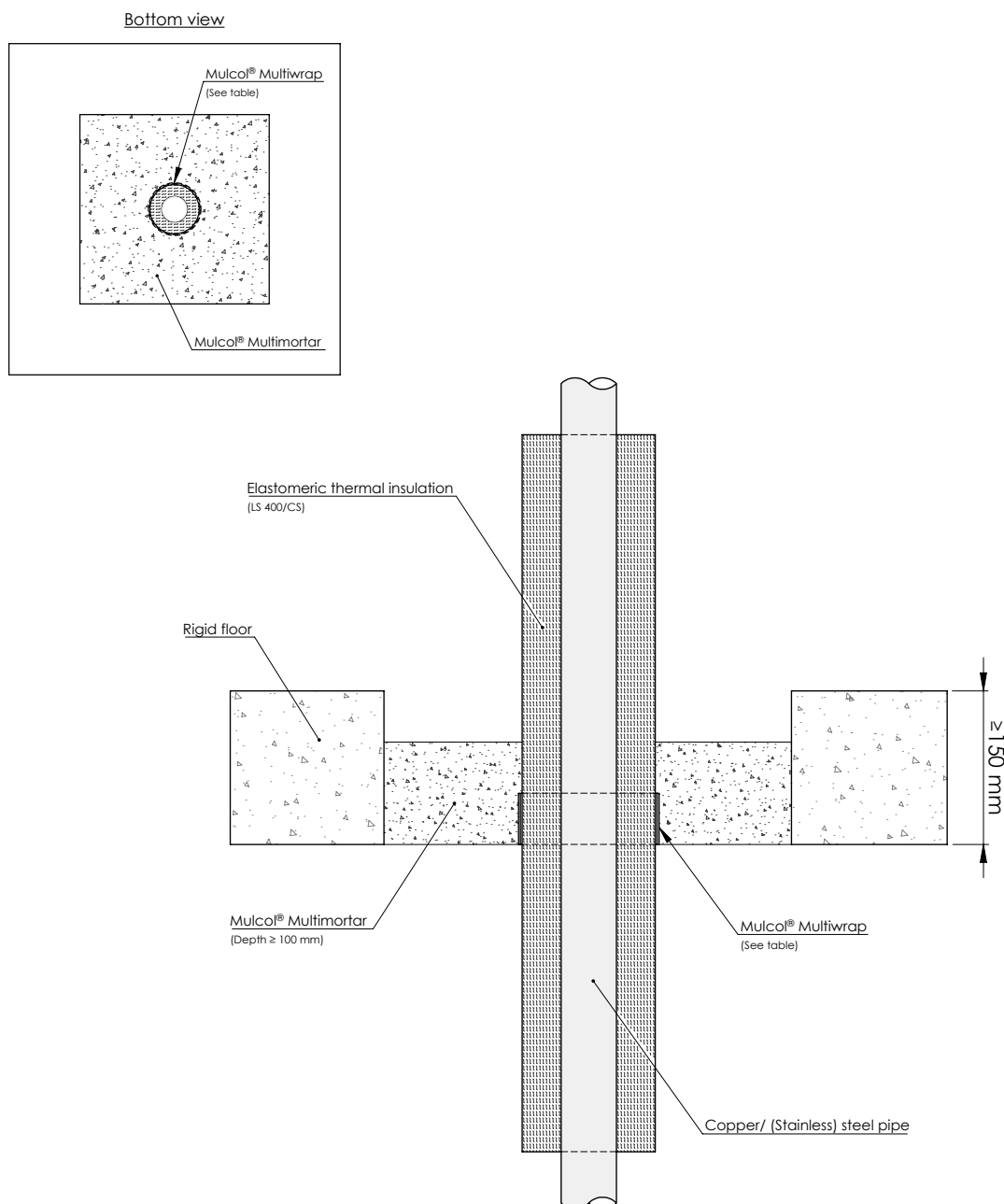


Drawing: RF.E-MC30-ST-MM1.2.22

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	$\leq \varnothing 114.3$	≥ 3.6	ArmaFlex AF (min. class B-s3, d0 B _L -s3, d0)	32	LI 300 / CI	Multicollar <i>Slim</i>	EI 90 C/U

B.1.17 Multimortar - ≥ 100 mm - Metal pipes insulated elastomer

B.1.17.2 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap



Drawing: RF.E-CU-MW-MM1.2.22

Services	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 _L -s3, d0)	11	LS 400 / CS	Multiwrap (1 layer)	EI 180 C/U E 240 C/U
				11 - 19			EI 90 C/U E 240 C/U
	≤ Ø 40	13 - 19		EI 180 C/U E 240 C/U			
(Stainless) Steel / cast iron	≤ Ø 168.3	≥ 2.0		19	CS		EI 120 C/U E 240 C/U
		≥ 4.5			LS 400 / CS		EI 90 C/U E 240 C/U

B.1.17 Multimortar - ≥ 100 mm - Metal pipes insulated elastomer

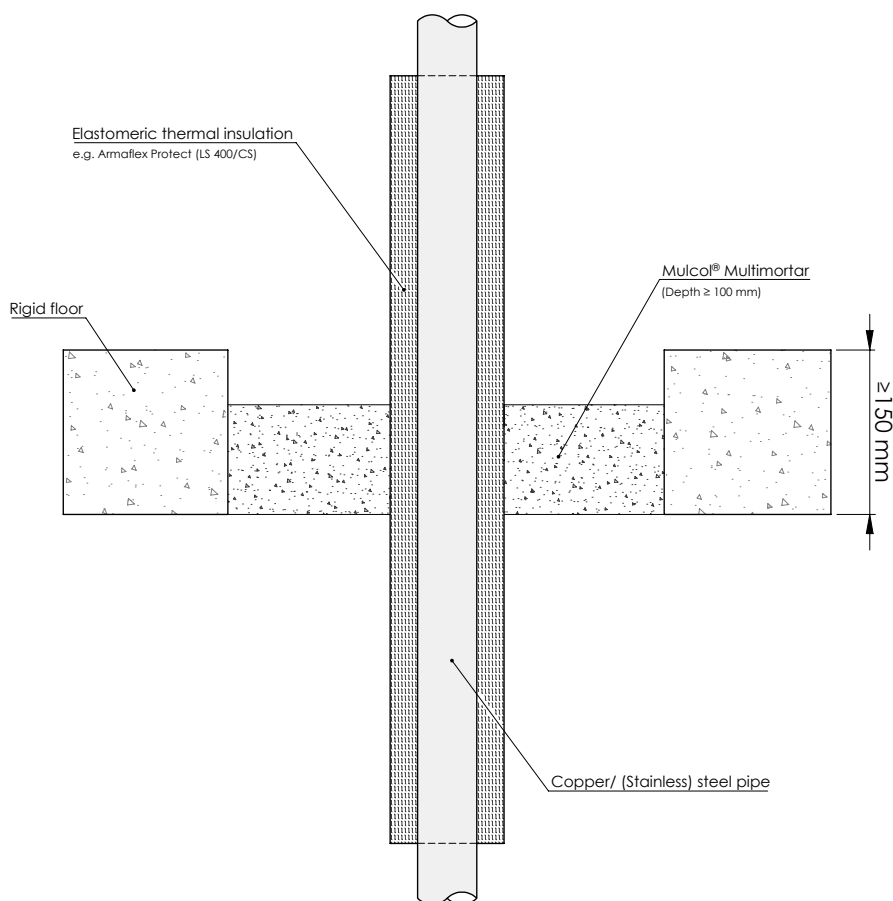
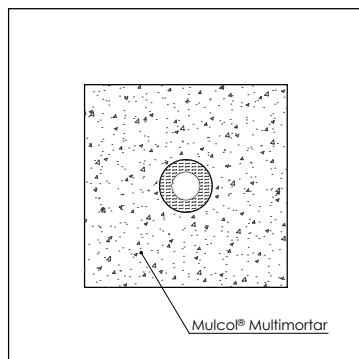
B.1.17.2 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap

Services	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 _L -s3, d0)	11	LS 400 / CS	Multiwrap (2 layers)	EI 120 C/U E 240 C/U		
				11 - 38			EI 90 C/U		
(Stainless) Steel / cast iron	≤ Ø 40			25			EI 180 C/U		
				25 - 38			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
				28.5 - 38					EI 120 C/U E 180 C/U
(Stainless) Steel / cast iron	≤ Ø 324	≥ 6.3		25			Multiwrap (3 layers)	EI 30 C/U E 120 C/U	
	≤ Ø 40	≥ 1.0							
	≤ Ø 324	≥ 6.3		50					CS
			EI 45 C/U E 240 C/U						
					EI 120 C/U E 240 C/U				

B.1.17 Multimortar - ≥ 100 mm - Metal pipes insulated elastomer

B.1.17.3 Copper and steel pipes - ArmaFlex Protect LS 400 / CS

Bottom view

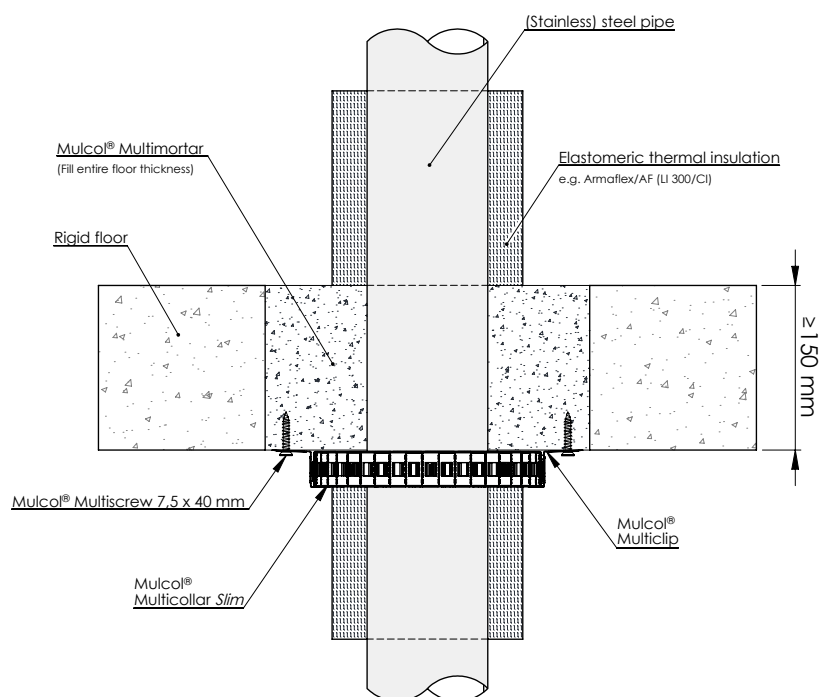
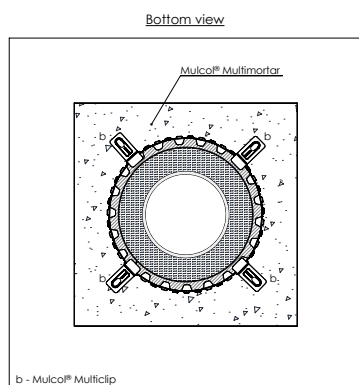


Drawing: RF.E-CU-MM1.2.22

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	ArmaFlex Protect	20 - 25	LS 400 / CS	EI 120 C/U
	$\leq \varnothing 54$	≥ 1.5		25		

B.1.18 Multimortar - ≥ 150 mm - Metal pipes insulated elastomer

B.1.18.1 Copper and steel pipes - Elastomer LI 300 / CI - Multicollar *Slim*

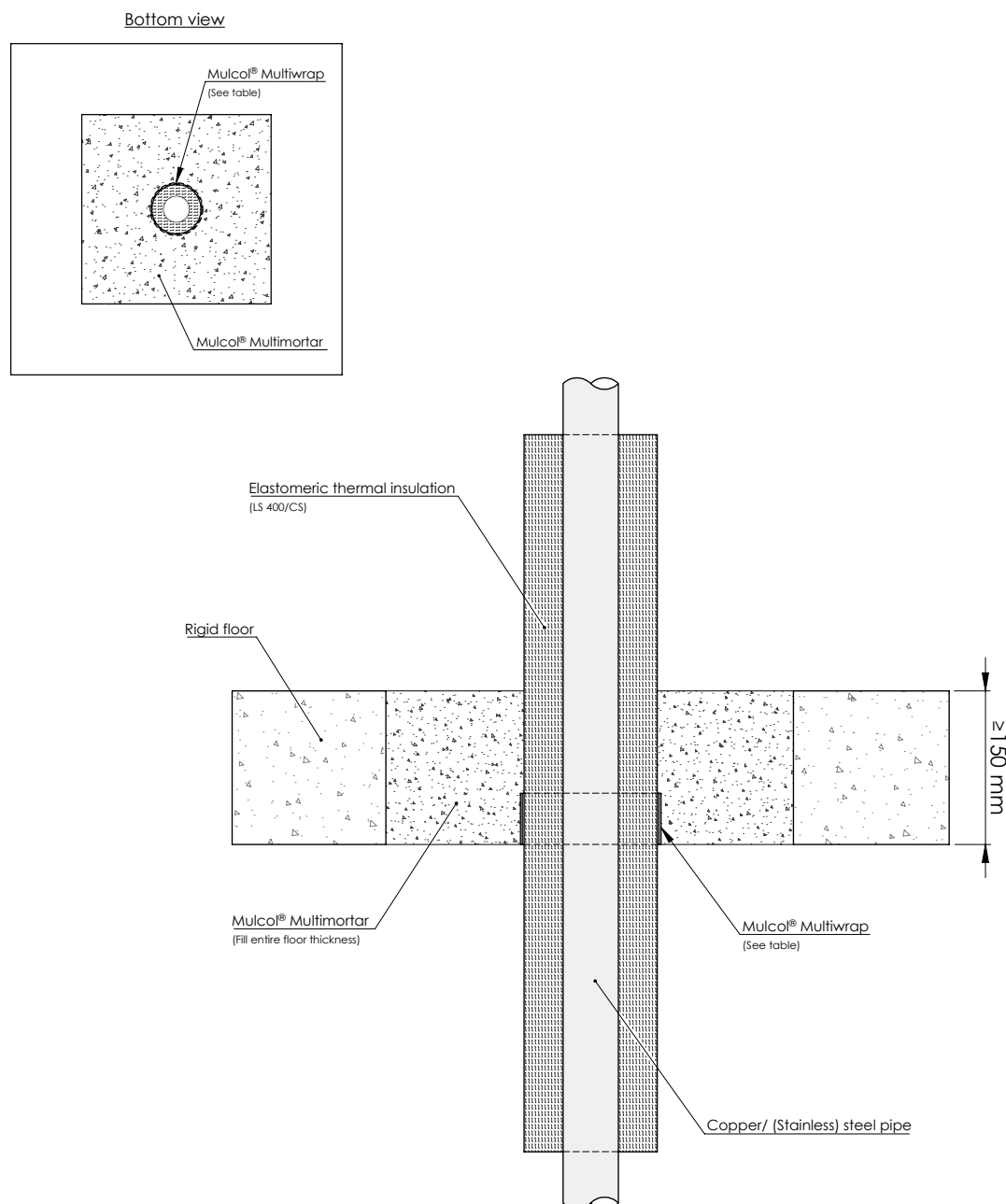


Drawing: RF.E-MC30-ST-MM1.3.22

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	$\leq \varnothing 114.3$	≥ 3.6	ArmaFlex AF (min. class B-s3, d0 B _L -s3, d0)	32	LI 300 / CI	Multicollar <i>Slim</i>	EI 90 C/U

B.1.18 Multimortar - ≥ 150 mm - Metal pipes insulated elastomer

B.1.18.2 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap



Drawing: RF.E-CU-MW-MM1.3.22

Services	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 _L -s3, d0)	11	LS 400 / CS	Multiwrap (1 layer)	EI 180 C/U E 240 C/U
				11 - 19			EI 90 C/U E 240 C/U
	≤ Ø 40						EI 180 C/U E 240 C/U
(Stainless) Steel / cast iron	≤ Ø 168.3	≥ 2.0		13 - 19			EI 45 C/U E 240 C/U
				19	CS		EI 120 C/U E 240 C/U
		≥ 4.5			LS 400 / CS		EI 90 C/U E 240 C/U

B.1.18 Multimortar - ≥ 150 mm - Metal pipes insulated elastomer

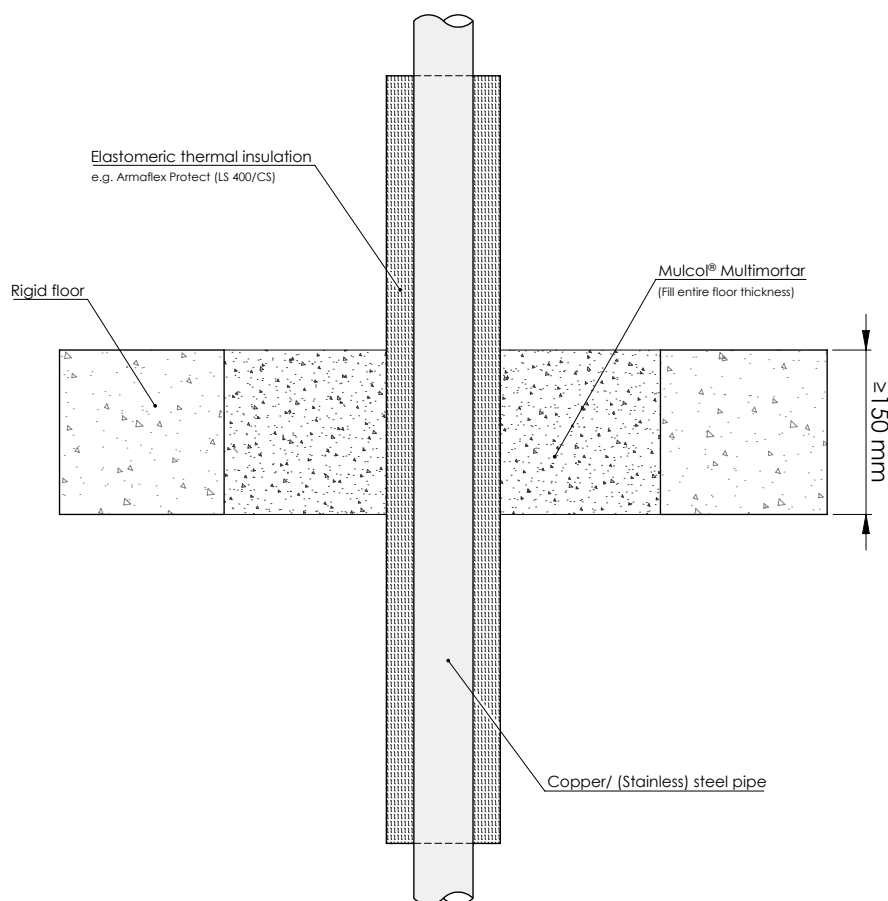
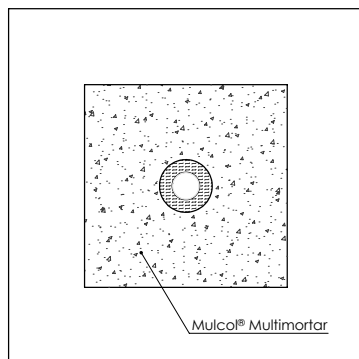
B.1.18.2 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap

Services	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 _L -s3, d0)	11	LS 400 / CS	Multiwrap (2 layers)	EI 120 C/U E 240 C/U
				11 - 38			EI 90 C/U
(Stainless) Steel / cast iron	≤ Ø 40			25			EI 180 C/U
				25 - 38			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
				28.5 - 38			EI 120 C/U E 180 C/U
(Stainless) Steel / cast iron	≤ Ø 54	≥ 1.5		25	LS 400 / CS	Multiwrap (2 layers)	EI 30 C/U E 120 C/U
	≤ Ø 324	≥ 6.3					EI 60 C/U E 120 C/U
	≤ Ø 40	≥ 1.0		50		Multiwrap (3 layers)	EI 240 C/U
	≤ Ø 324	≥ 6.3					EI 45 C/U E 240 C/U
			EI 120 C/U E 240 C/U				
				CS			

B.1.18 Multimortar - ≥ 150 mm - Metal pipes insulated elastomer

B.1.18.3 Copper and steel pipes - ArmaFlex Protect LS 400 / CS

Bottom view

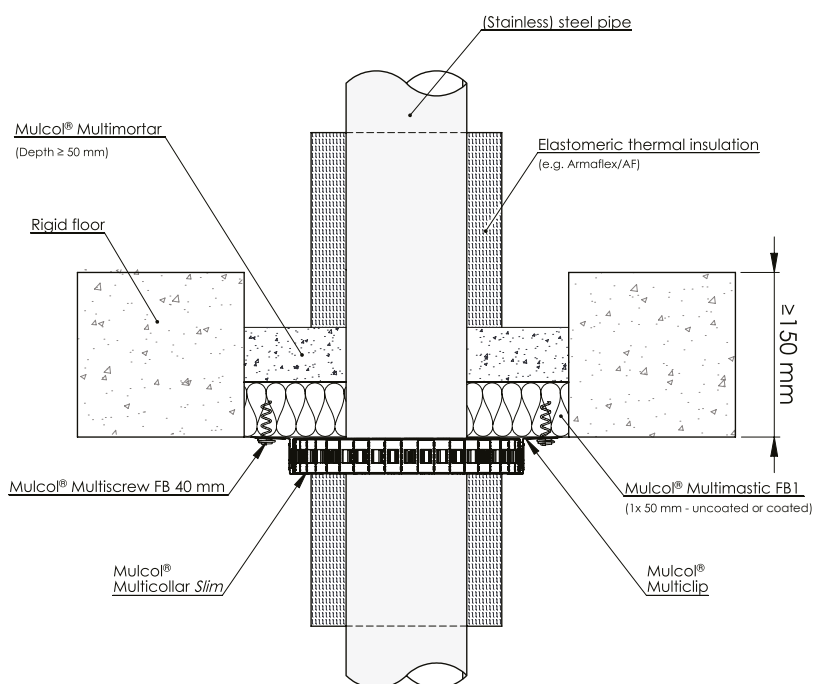
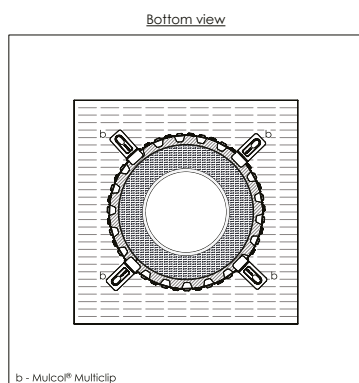


Drawing: RF.E-CU-MM1.3.22

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	ArmaFlex Protect	20 - 25	LS 400 / CS	EI 120 C/U
	$\leq \varnothing 54$	≥ 1.5		25		

B.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated elastomer

B.1.19.1 Copper and steel pipes - Elastomer LI 300 / CI - Multicollar *Slim*

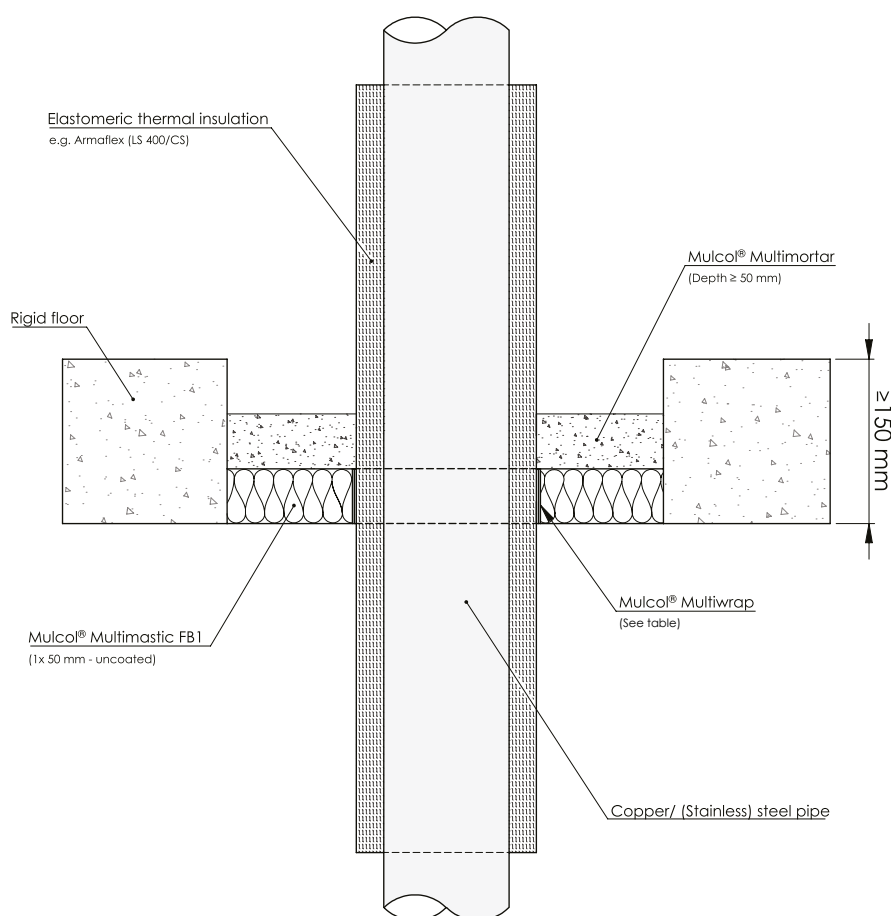
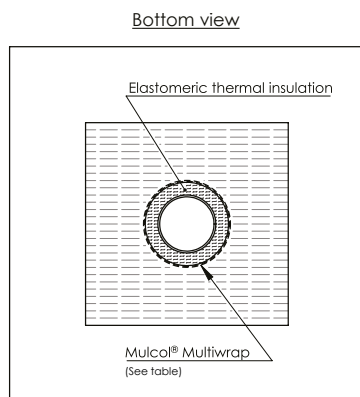


Drawing: RF.E-ST-MM2.5.22

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	$\leq \varnothing 114.3$	≥ 3.6	ArmaFlex (min. class B-s3, d0 B _L -s3, d0)	32	LI 300 / CI	Multicollar <i>Slim</i>	EI 90 C/U

B.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated elastomer

B.1.19.2 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap



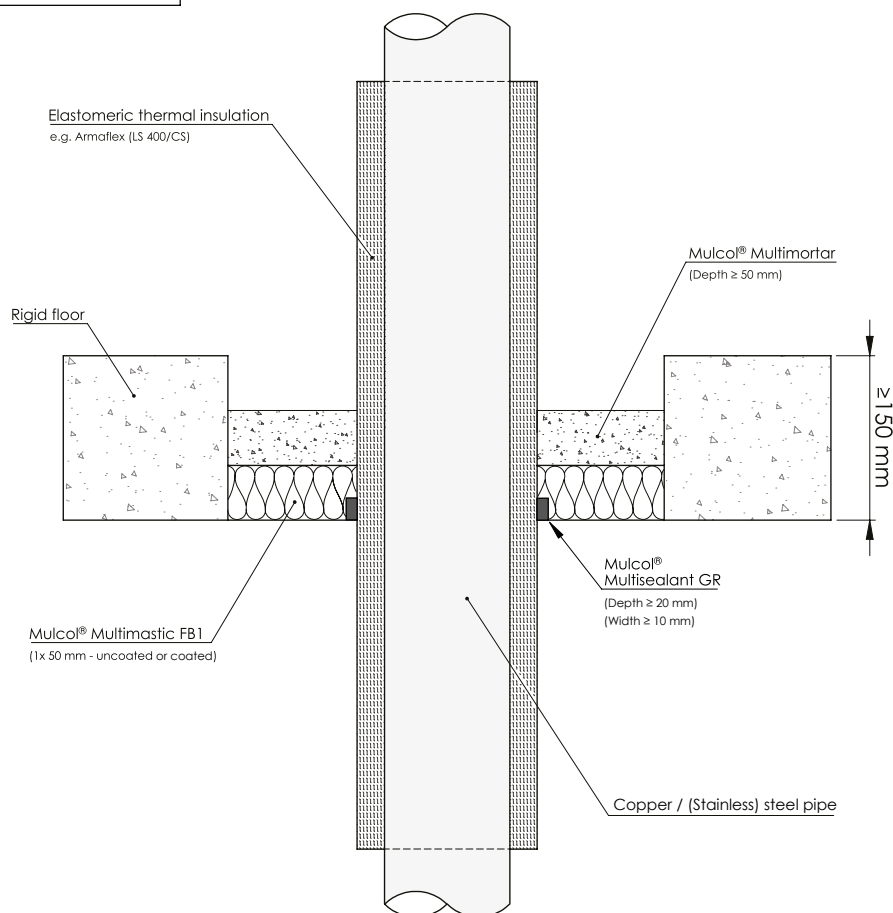
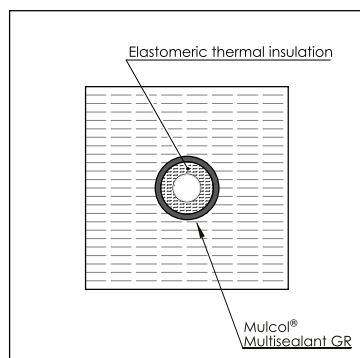
Drawing: RF.E-ST-MW2-MM2.5.22

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 12	≥ 1.0	ArmaFlex (min. class B-s3, d0 B _L -s3, d0)	11	LS 400 / CS	Multiwrap (2 layers)	EI 120 C/U E 180 C/U
				11 - 38			EI 90 C/U
	≤ Ø 54	≥ 1.5		13.5 - 38			EI 45 C/U E 90 C/U
				28.5 - 38			EI 90 C/U
(Stainless) Steel / cast iron	≤ Ø 168.3	≥ 4.5		13 - 19		EI 45 C/U E 120 C/U	

B.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated elastomer

B.1.19.3 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR

Bottom view



Drawing: RF-CU-G1.18-MM2.5.22

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 _L -s3, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 60 C/U E 120 C/U
				8.5 - 33.5			EI 60 C/U E 90 C/U
	≤ Ø 54	≥ 1.5		13.5	CS		EI 120 C/U
				13.5 - 38	LS 400 / CS		EI 90 C/U E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		8.5 - 35			CS
	≤ Ø 114.3	≥ 3.6		15	LS 400 / CS		
				15 - 43			

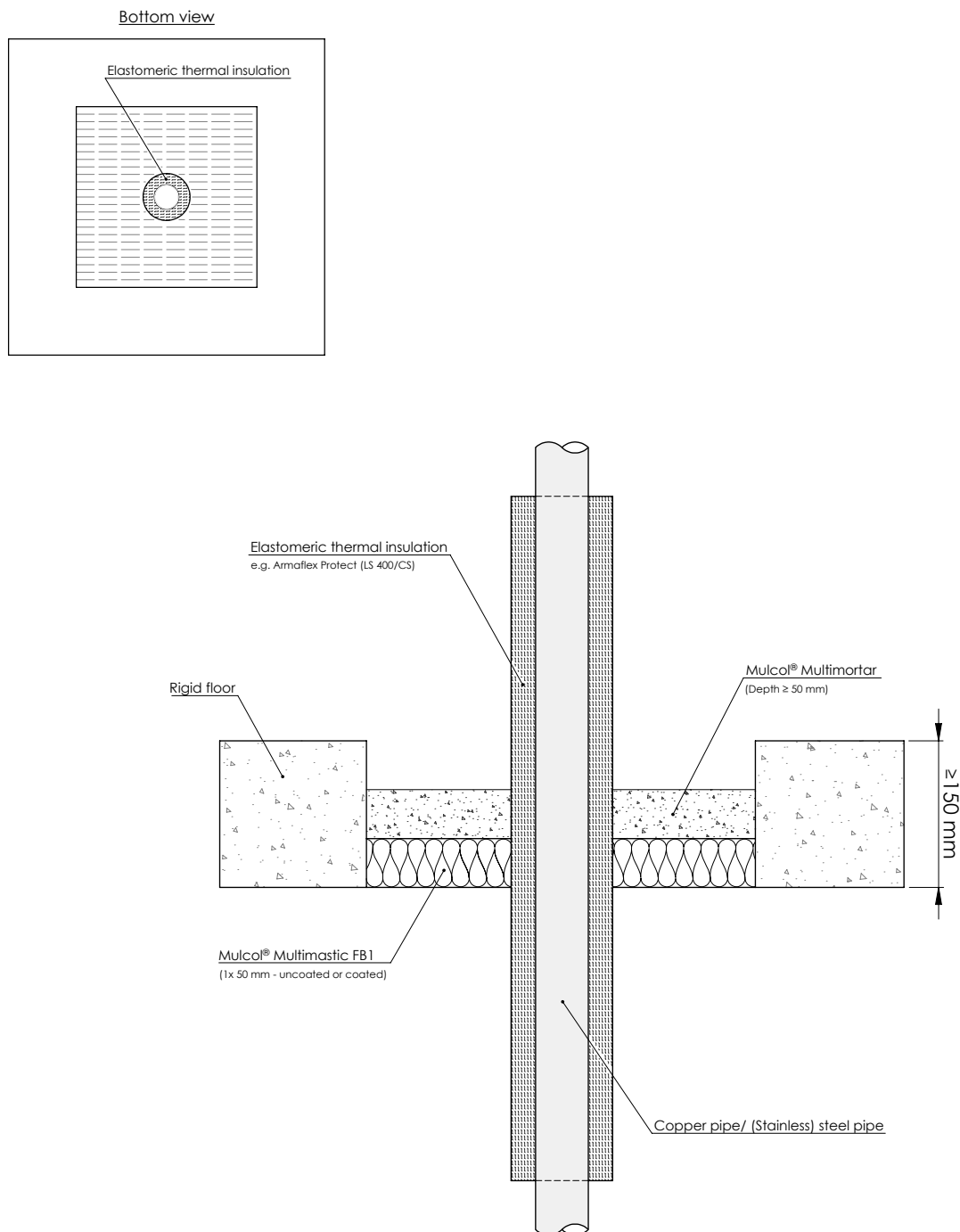
B.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated elastomer**B.1.19.3 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR**

Services	Pipe dimensions (mm)		Insulation			Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	ArmaFlex NH (min. class D-s3, d0 D _L -s3, d0)	9 - 25	LS 400 / CS	Multisealant GR $\geq 10 \times 20$ (wxd)	EI 120 C/U
	$\leq \varnothing 54$	≥ 1.5		13			EI 90 C/U
	$\leq \varnothing 26.9$	≥ 2.3		13 - 25			EI 120 C/U
(Stainless) Steel / cast iron	$\leq \varnothing 114.3$	≥ 3.6		9 - 25			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 Ultima (min. class B-s1, d0 B _L -s1, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	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
	≤ Ø 54	≥ 1.5		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
≤ Ø 114.3	≥ 3.6	25			EI 90 C/U E 120 C/U		
		13			EI 60 C/U E 120 C/U		
		13 - 32			EI 60 C/U E 120 C/U		

B.1.19 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes insulated elastomer

B.1.19.4 Copper and steel pipes - ArmaFlex Protect LS 400 / CS

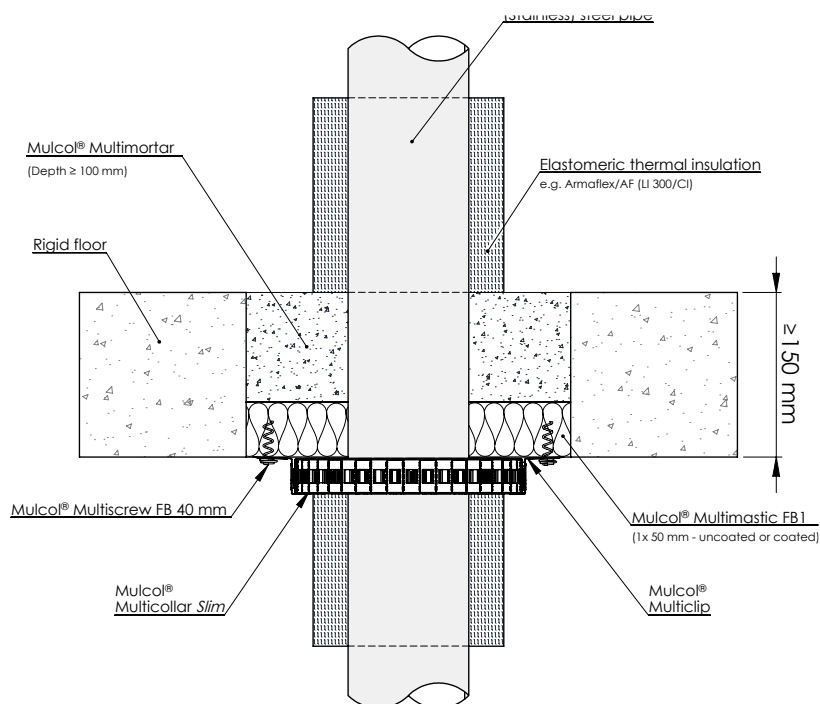
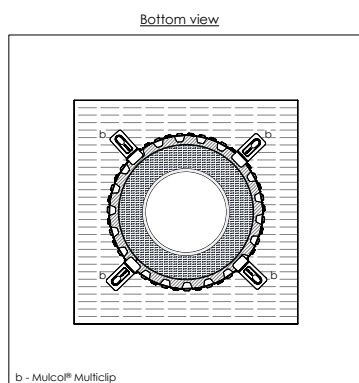


Drawing: RF.E-CU-MM2.5.22

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	ArmaFlex Protect	20 - 25	LS 400 / CS	EI 120 C/U
	$\leq \varnothing 54$	≥ 1.5		25		

B.1.20 Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes insulated elastomer

B.1.20.1 Copper and steel pipes - Elastomer LI 300 / CI - Multicollar *Slim*

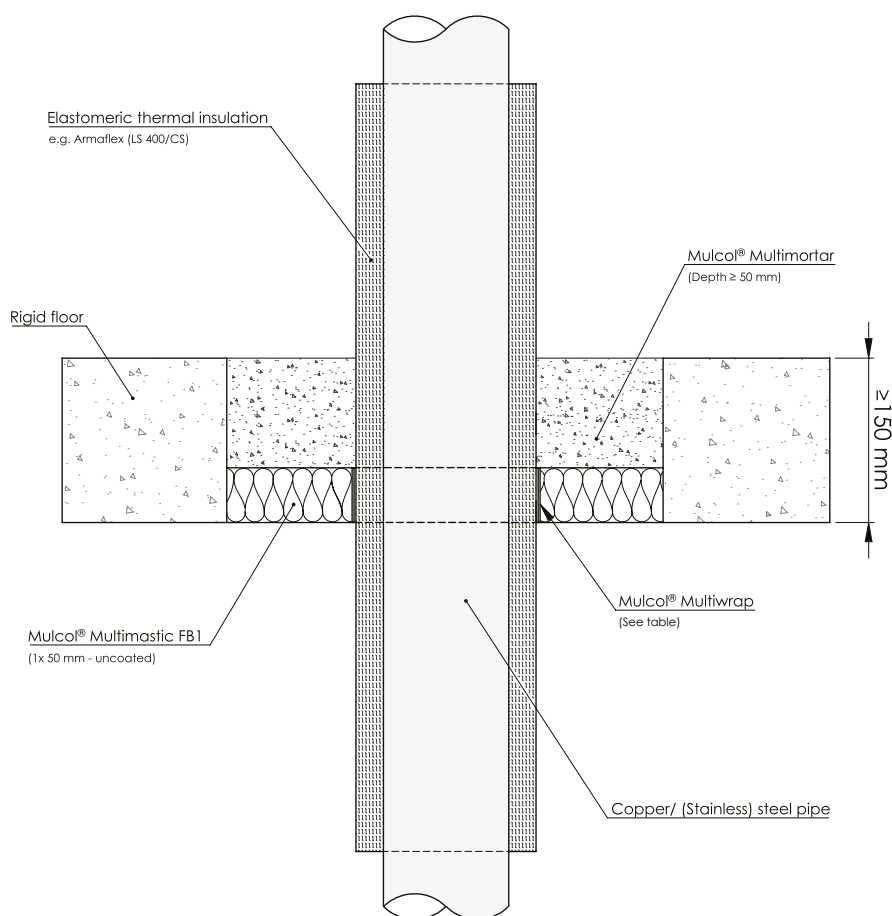
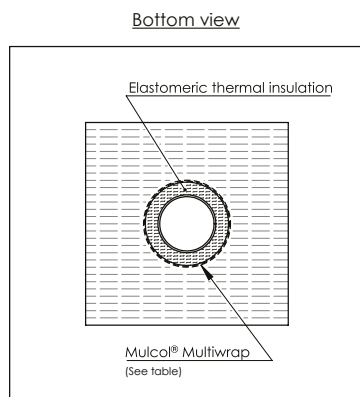


Drawing: RF.E-MC30-ST-MM2.7.22

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	$\leq \varnothing 114.3$	≥ 3.6	ArmaFlex (min. class B-s3, d0 B _L -s3, d0)	32	LI 300 / CI	Multicollar <i>Slim</i>	EI 90 C/U

B.1.20 Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes insulated elastomer

B.1.20.2 Copper and steel pipes - Elastomer LS 400 / CS - Multiwrap

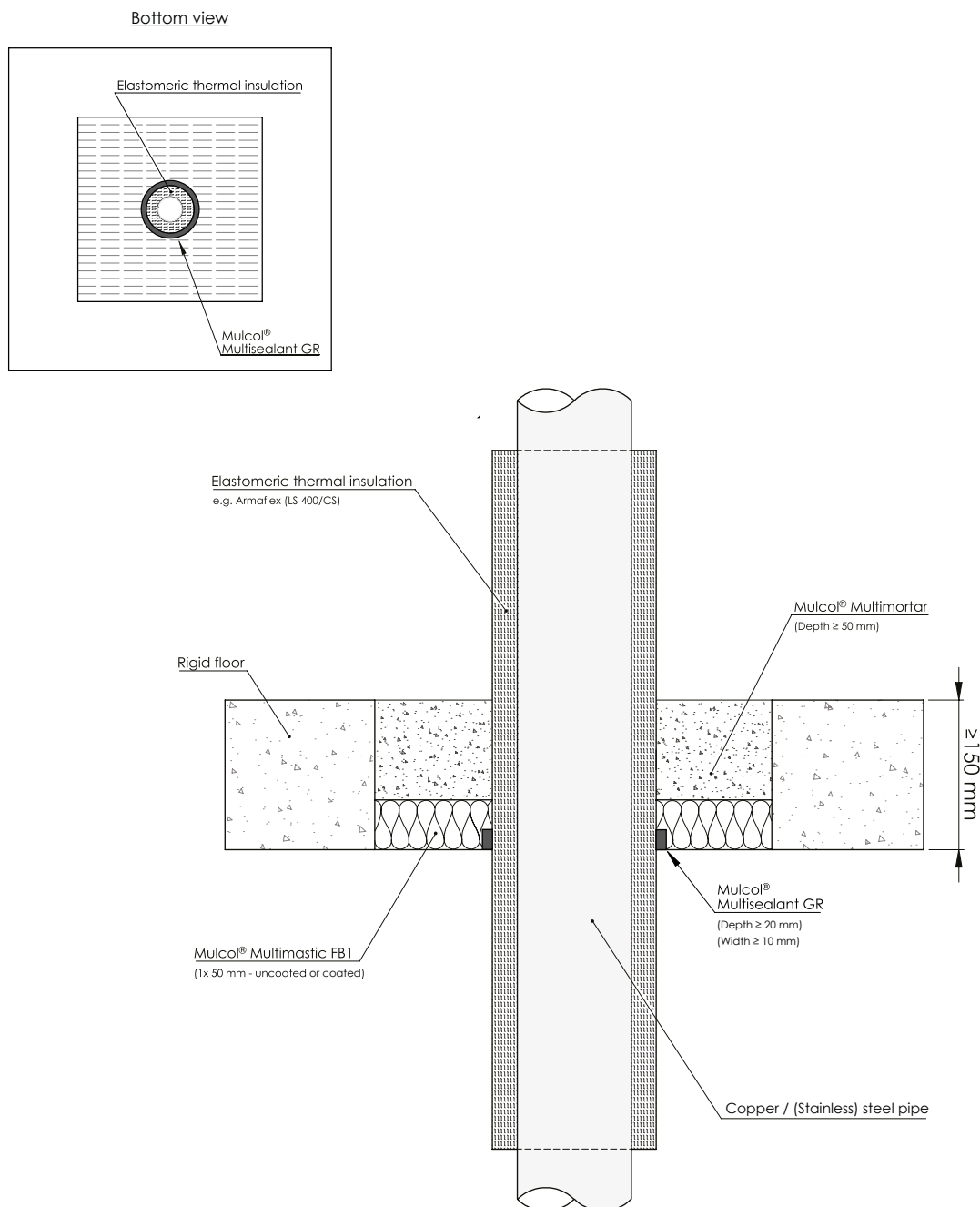


Drawing: RF.E-CU-MW-MM2.7.22

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (stainless) steel / cast iron	≤ Ø 12	≥ 1.0	ArmaFlex (min. class B-s3, d0 B _L -s3, d0)	11	LS 400 / CS	Multiwrap (2 layers)	EI 120 C/U E 180 C/U
				11 - 38			EI 90 C/U
	≤ Ø 54	≥ 1.5		13.5 - 38			EI 45 C/U E 90 C/U
				28.5 - 38			EI 90 C/U
(Stainless) Steel / cast iron	≤ Ø 168.3	≥ 4.5		13 - 19		EI 45 C/U E 120 C/U	

B.1.20 Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes insulated elastomer

B.1.20.3 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR



Drawing: RF.E-CU-G1.18-MM2.7.22

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 (min. class B-s3, d0 B _L -s3, d0)	8.5	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 60 C/U E 120 C/U
				8.5 - 33.5			EI 60 C/U E 90 C/U
	≤ Ø 54	≥ 1.5		13.5	CS		EI 120 C/U
				13.5 - 38	LS 400 / CS		EI 90 C/U E 120 C/U
(Stainless) Steel / cast iron	≤ Ø 26.9	≥ 2.3		8.5 - 35			CS
	≤ Ø 114.3	≥ 3.6		15	EI 120 C/U		
				15 - 43	LS 400 / CS		EI 90 C/U E 120 C/U

B.1.20 Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes insulated elastomer

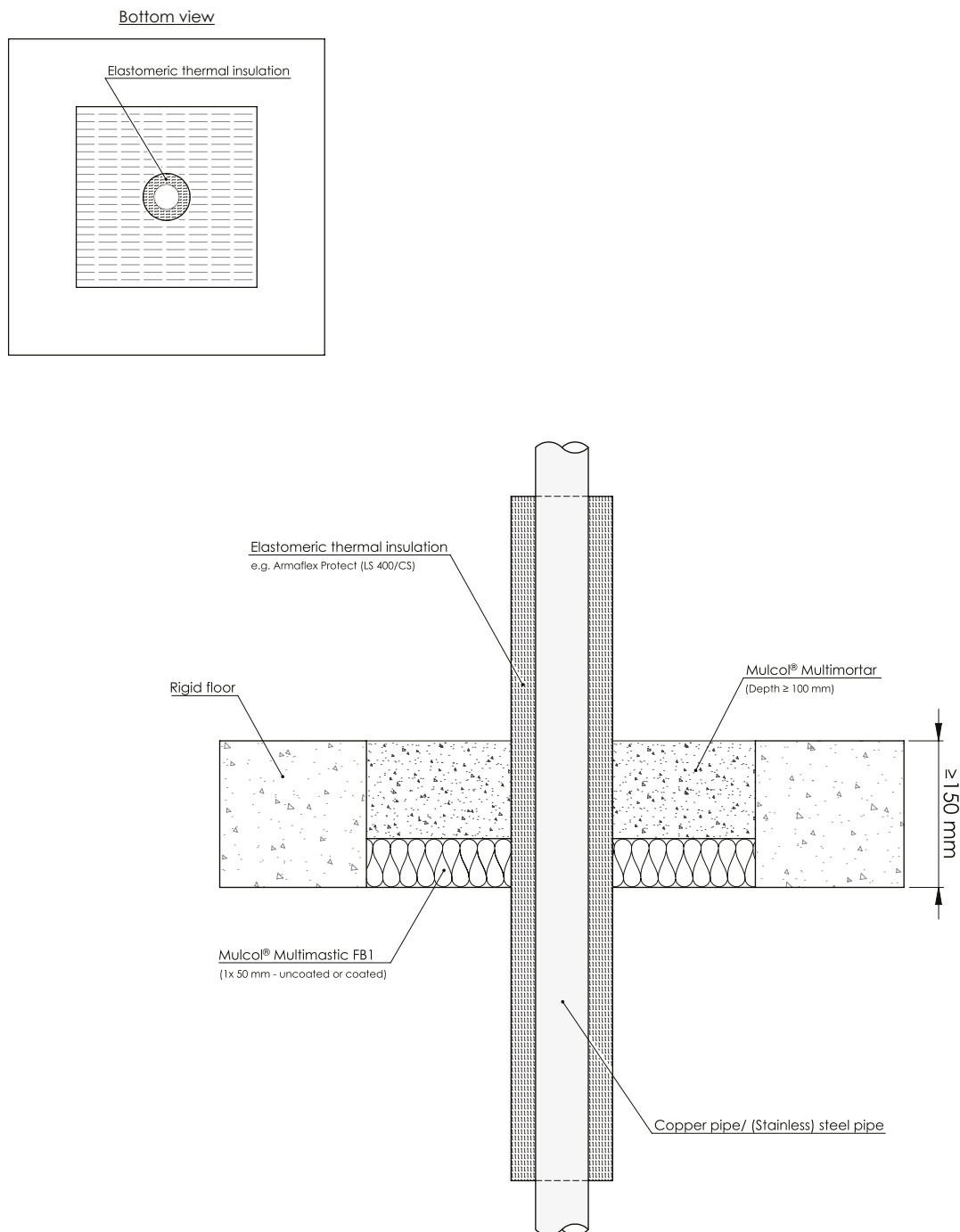
B.1.20.3 Copper and steel pipes - Elastomer LS 400 / CS - Multisealant GR

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	ArmaFlex NH (min. class D-s3, d0 D _L -s3, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	EI 120 C/U
	≤ Ø 54	≥ 1.5		13			EI 90 C/U
	≤ Ø 26.9	≥ 2.3		13 - 25			EI 120 C/U
(Stainless) Steel / cast iron	≤ Ø 114.3	≥ 3.6		9 - 25			EI 120 C/U
				19 - 25			

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 _L -s1, d0)	9 - 25	LS 400 / CS	Multisealant GR ≥ 10 x 20 (wxd)	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
	≤ Ø 54	≥ 1.5		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
≤ Ø 114.3	≥ 3.6	25			EI 90 C/U E 120 C/U		
		13			EI 60 C/U E 120 C/U		
		13 - 32					

B.1.20 Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes insulated elastomer

B.1.20.4 Copper and steel pipes - ArmaFlex Protect LS 400 / CS

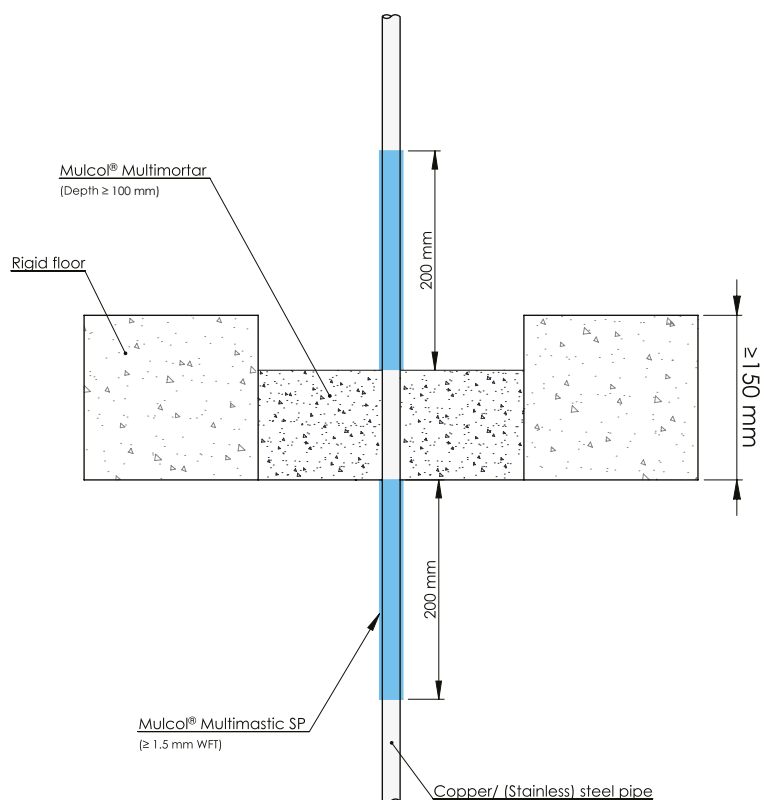
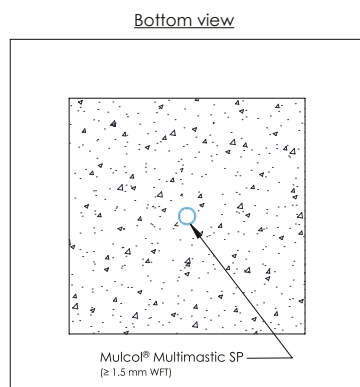


Drawing: RF.E-CU-MM2.7.22

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	ArmaFlex Protect	20 - 25	LS 400 / CS	EI 120 C/U
	$\leq \varnothing 54$	≥ 1.5		25		

B.1.21 Multimortar - ≥ 100 mm - Metal pipes uninsulated

B.1.21.1 Copper and steel pipes - Multimastic SP

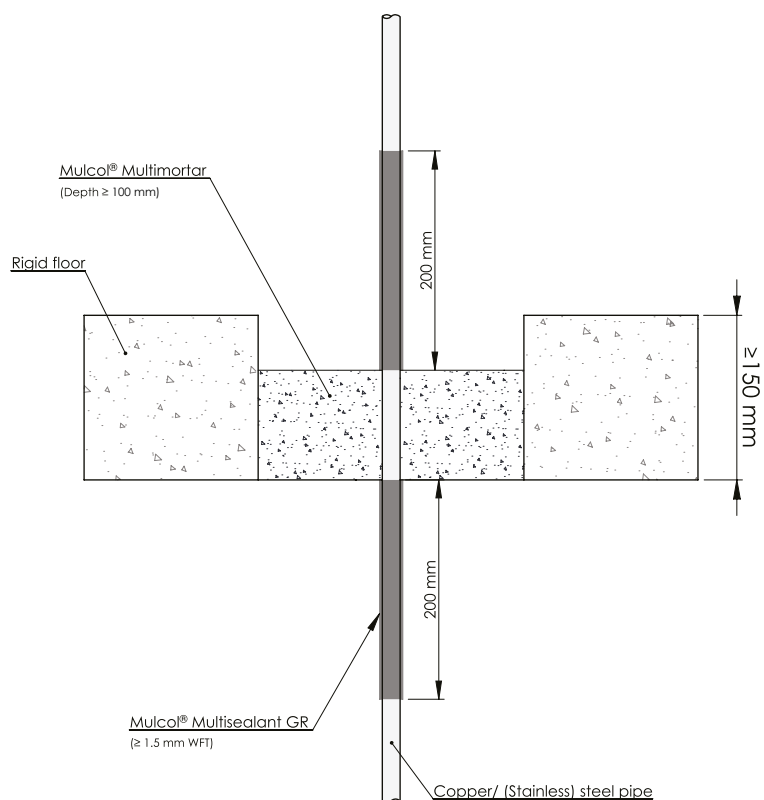
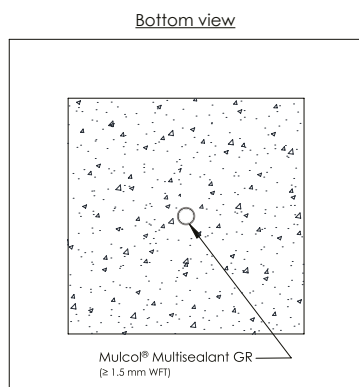


Drawing: RF.E-CU-SPC-MM1.2.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	Multimastic SP	1.5 WFT	LI 200	EI 20 C/U, E 90 C/U
(Stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0				EI 30 C/U, E 90 C/U
	$\leq \varnothing 42.4$	≥ 3.2				

B.1.21 Multimortar - ≥ 100 mm - Metal pipes uninsulated

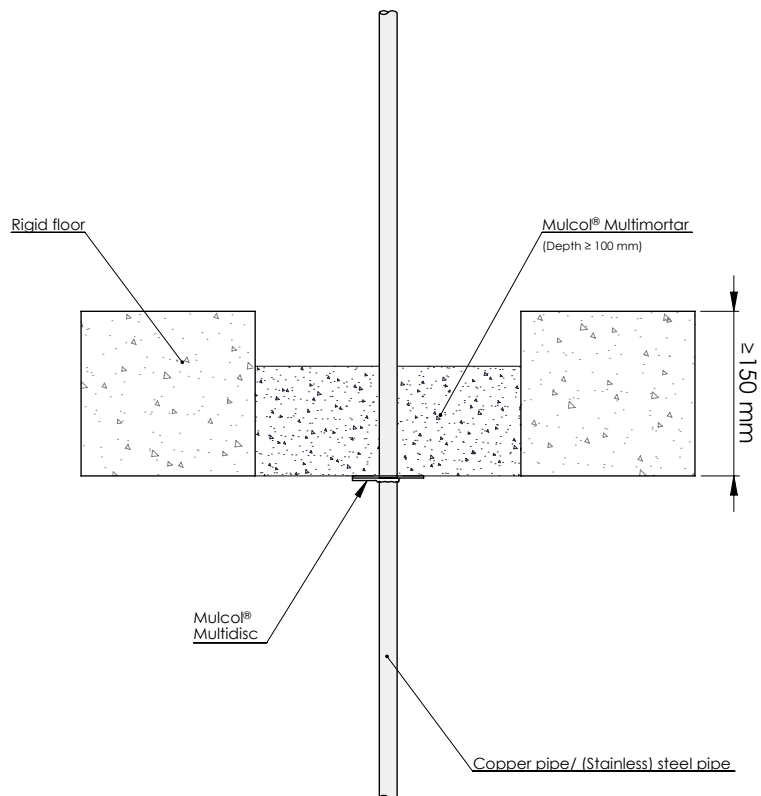
B.1.21.2 Copper and steel pipes - Multisealant GR



Drawing: RF.E-CU-GRC-MM1.2.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 15$	≥ 1.0	Multisealant GR	1.5 WFT	LI 200	EI 60 C/U, E 90 C/U
(Stainless) steel / cast iron	$\leq \varnothing 15$	≥ 1.0				
	$\leq \varnothing 42.4$	≥ 3.2				

B.1.21.3 Copper and steel pipes - Multidisc

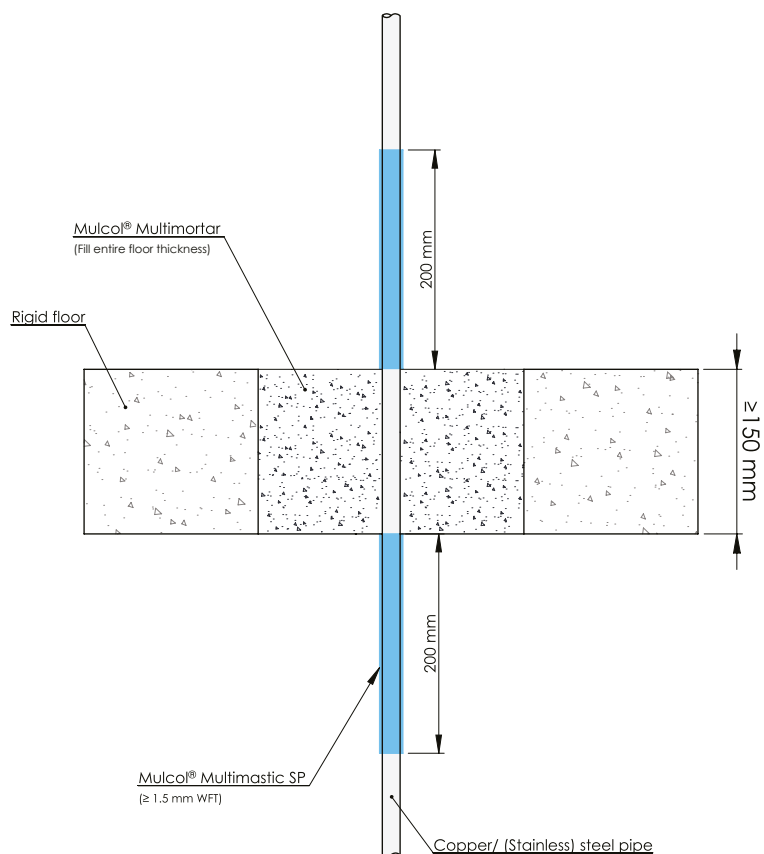
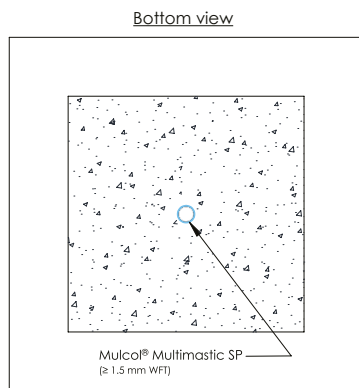


Drawing: RF.E-CU-M1-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Multidisc bottom of floor	EI 60 U/C

B.1.22 Multimortar - ≥ 150 mm - Metal pipes uninsulated

B.1.22.1 Copper and steel pipes - Multimastic SP

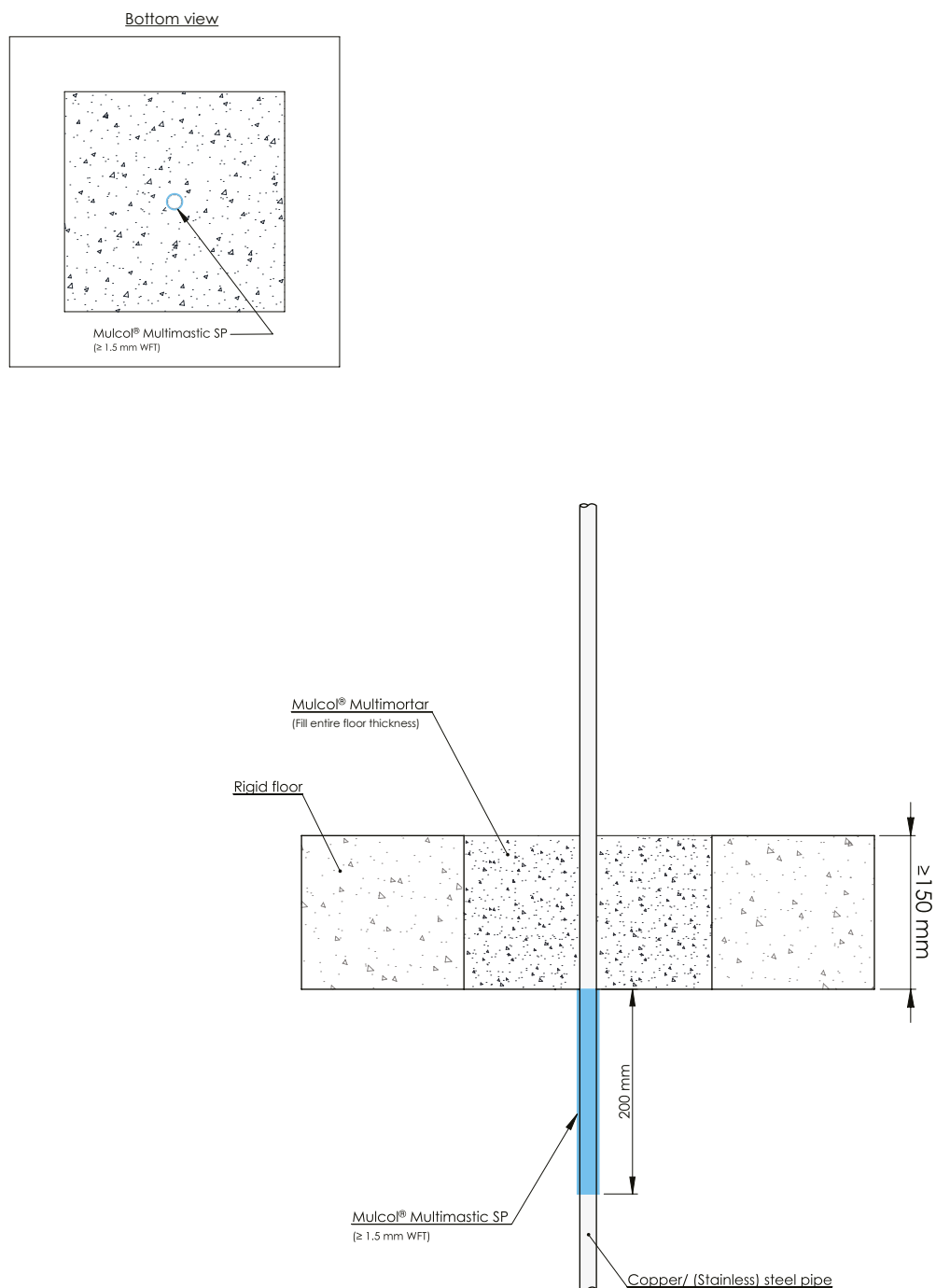


Drawing: RF.E-CU-SPC-MM1.3.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	Multimastic SP	1.5 WFT	LI 200	EI 20 C/U, E 90 C/U
(Stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0				EI 30 C/U, E 90 C/U
	$\leq \varnothing 42.4$	≥ 3.2				

B.1.22 Multimortar - ≥ 150 mm - Metal pipes uninsulated

B.1.22.2 Copper and steel pipes - Multimastic SP - either side

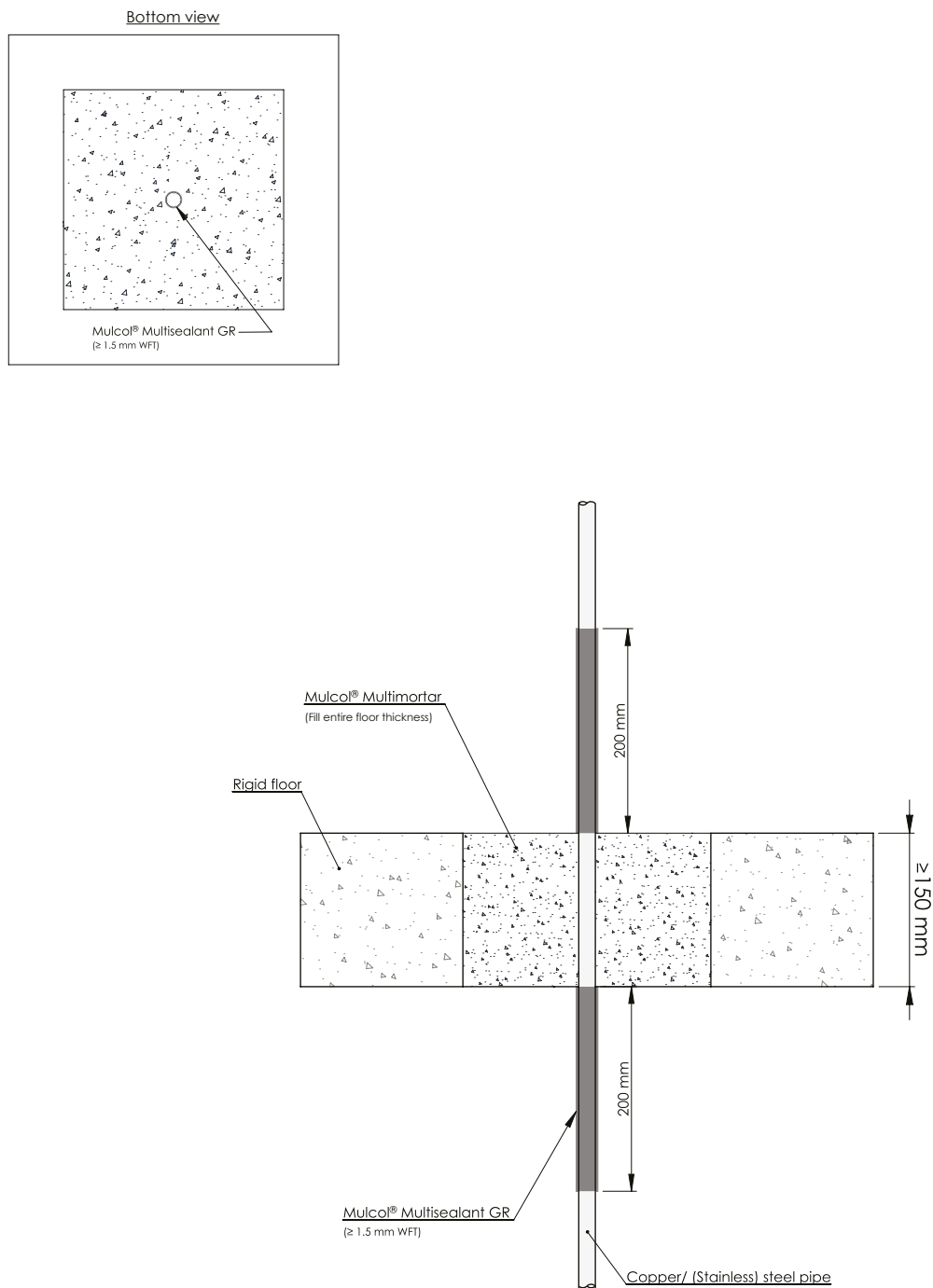


Drawing: RF.E-CU-SPC.2-MM1.3.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
(Stainless) steel / cast iron	$\leq \varnothing 35$	≥ 2.0	Multimastic SP	1.5 WFT	LI 200 either side	EI 120 C/U

B.1.22 Multimortar - ≥ 150 mm - Metal pipes uninsulated

B.1.22.3 Copper and steel pipes - Multisealant GR



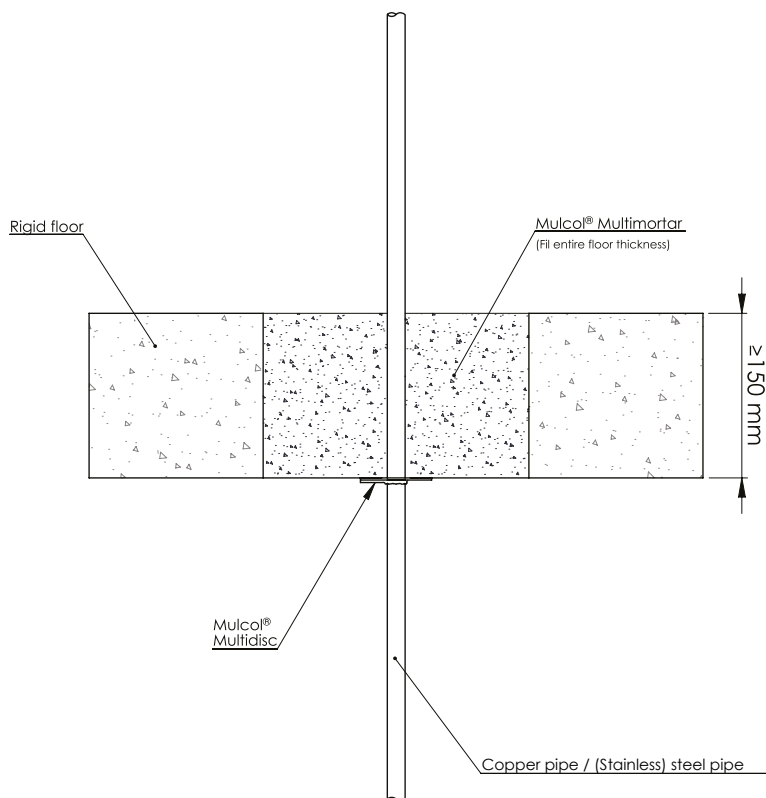
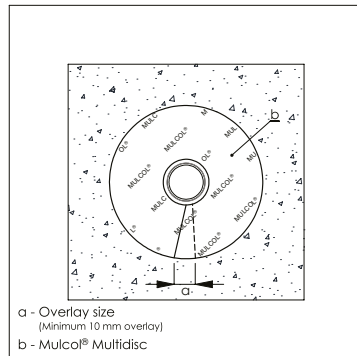
Drawing: RF.E-CU-GRC-MM1.3.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 15$	≥ 1.0	Multisealant GR	1.5 WFT	LI 200	EI 60 C/U, E 90 C/U
(Stainless) steel / cast iron	$\leq \varnothing 15$	≥ 1.0				
	$\leq \varnothing 42.4$	≥ 3.2				

B.1.22 Multimortar - ≥ 150 mm - Metal pipes uninsulated

B.1.22.4 Copper and steel pipes - Multidisc

Bottom view

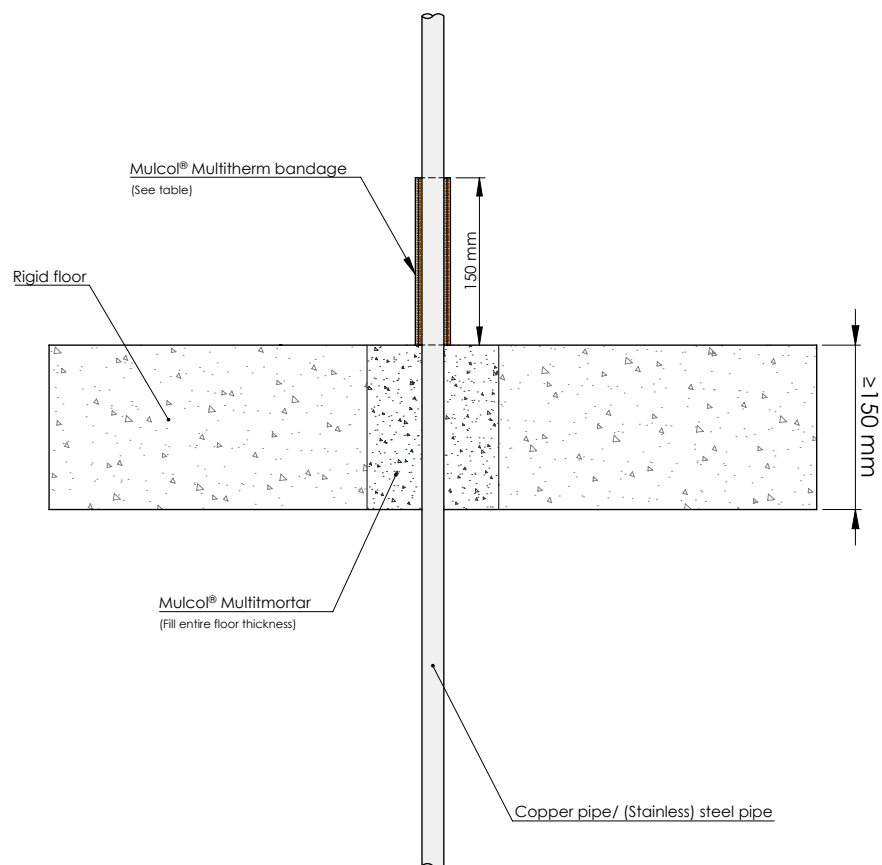
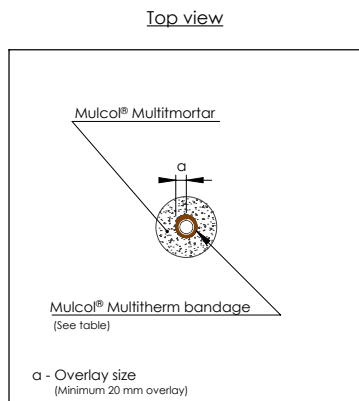


Drawing: RF.E-CU-M1-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Copper / (stainless) steel / cast iron	$\leq \varnothing 15$	≥ 1.0	Multidisc bottom of floor	EI 60 U/C

B.1.22 Multimortar - ≥ 150 mm - Metal pipes uninsulated

B.1.22.5 Copper and steel pipes - Multitherm Bandage - either side

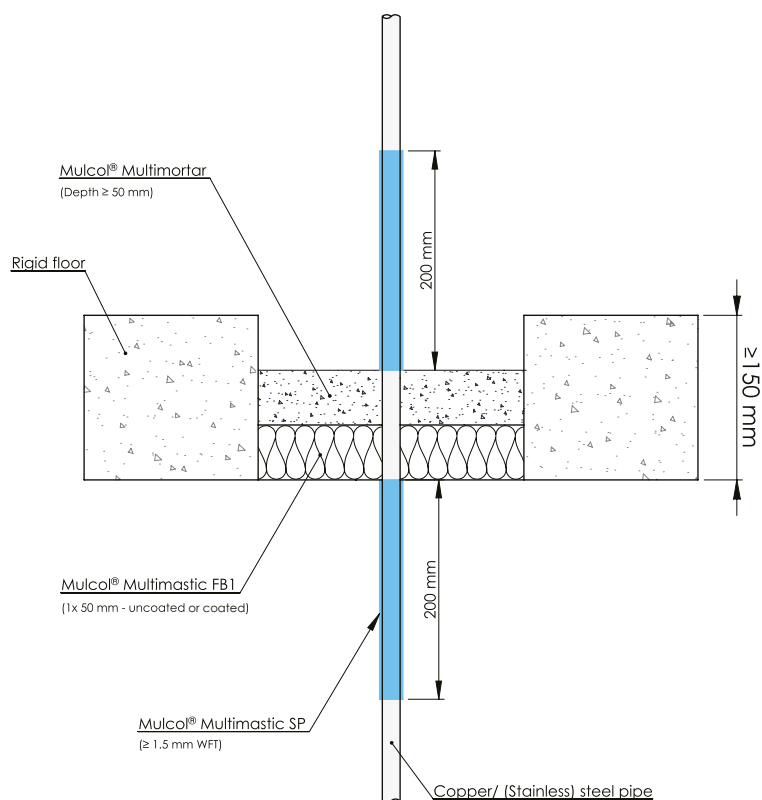
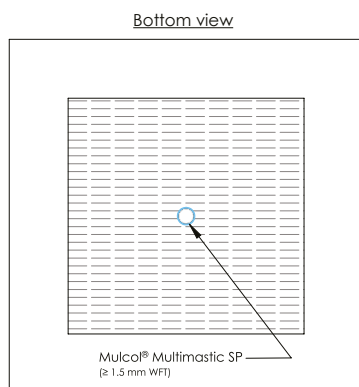


Drawing: RF.E-CU-B3-MM1.3.10

Services	Pipe dimensions (mm)		Multitherm Bandage	Classification
	Outer dimension	Wall thickness		
(Stainless) Steel / cast iron	≤ Ø 40	≥ 2.0	LI 150 one layer top of floor	EI 120 C/U
Copper / (stainless) steel / cast iron	≤ Ø 35	≥ 1.1	LI 150 two layers top of floor	
(Stainless) Steel / cast iron	≤ Ø 60	≥ 1.5		

B.1.23 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes uninsulated

B.1.23.1 Copper and steel pipes - Multimastic SP

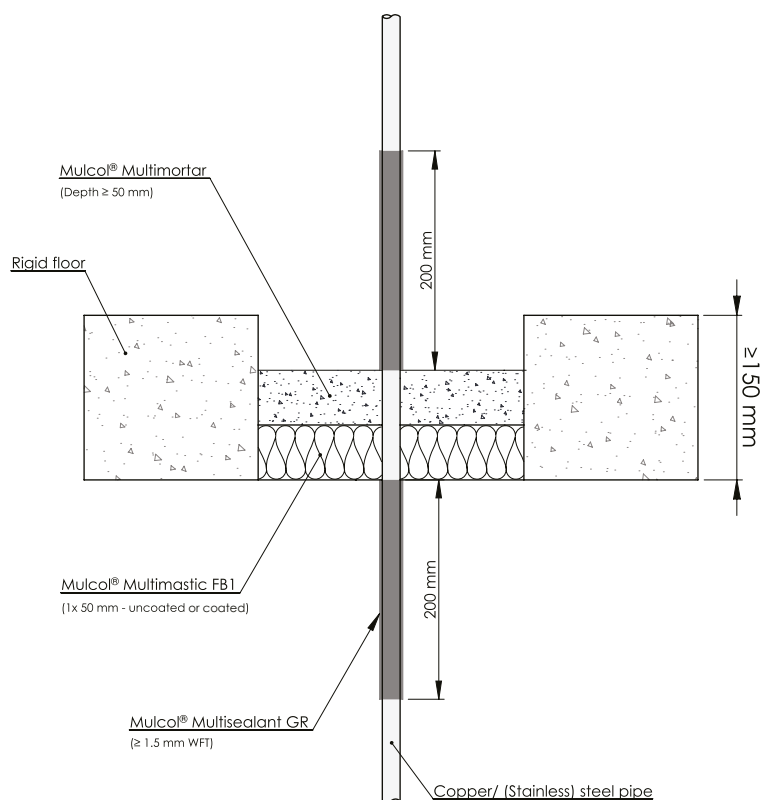
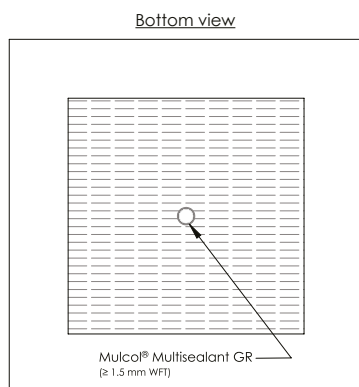


Drawing: RF.E-CU-SPC-MM2.5.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	Multimastic SP	1.5 WFT	LI 200	EI 20 C/U, E 90 C/U
(Stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0				EI 30 C/U, E 90 C/U
	$\leq \varnothing 42.4$	≥ 3.2				

B.1.23 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes uninsulated

B.1.23.2 Copper and steel pipes - Multisealant GR

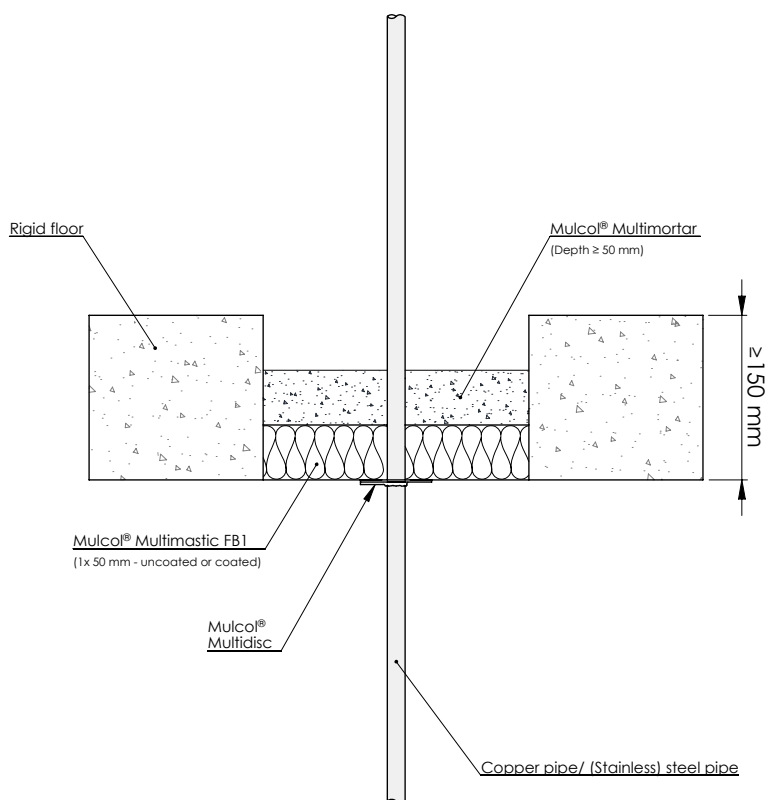
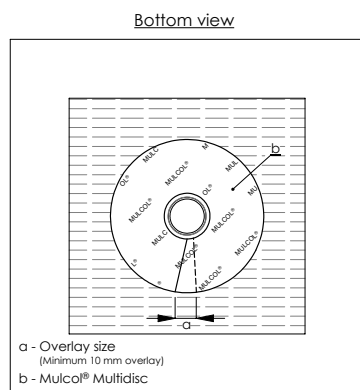


Drawing: RF.E-CU-GRC-MM2.5.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Multisealant GR	1.5 WFT	LI 200	EI 60 C/U, E 90 C/U
(Stainless) steel / cast iron	≤ Ø 15	≥ 1.0				
	≤ Ø 42.4	≥ 3.2				

B.1.23 Multimortar + Multimastic FB - ≥ 100 mm - Metal pipes uninsulated

B.1.23.3 Copper and steel pipes - Multidisc

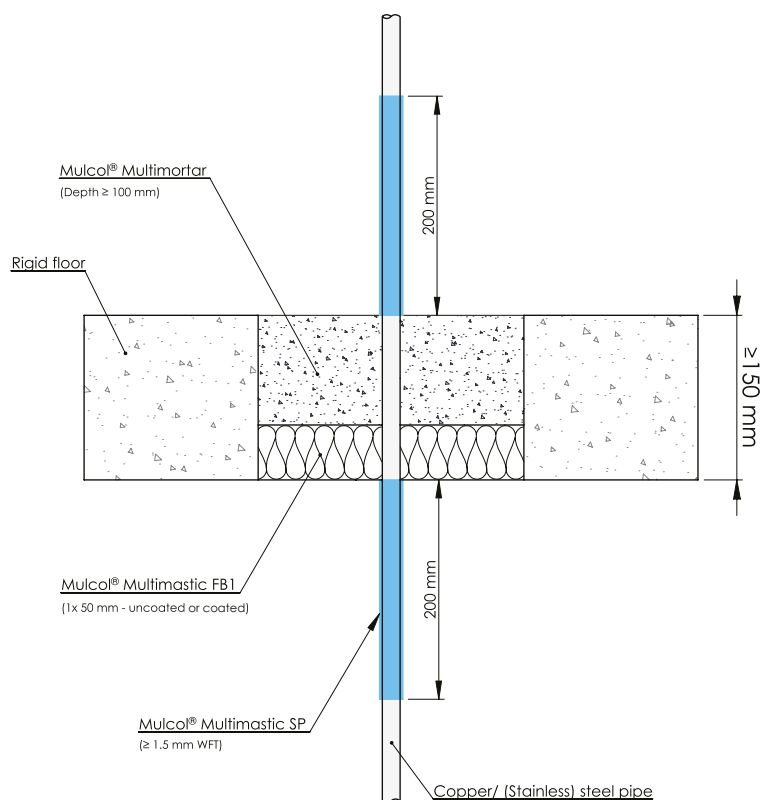
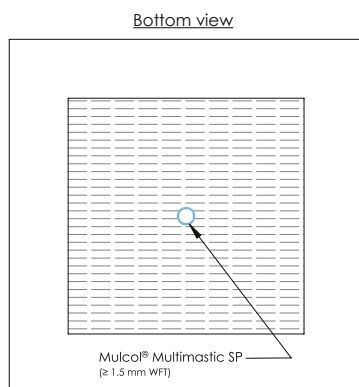


Drawing: RF.E-CU-M1-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Copper / (stainless) steel / cast iron	$\leq \varnothing 15$	≥ 1.0	Multidisc bottom of floor	EI 60 U/C

B.1.24 Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes uninsulated

B.1.24.1 Copper and steel pipes - Multimastic SP

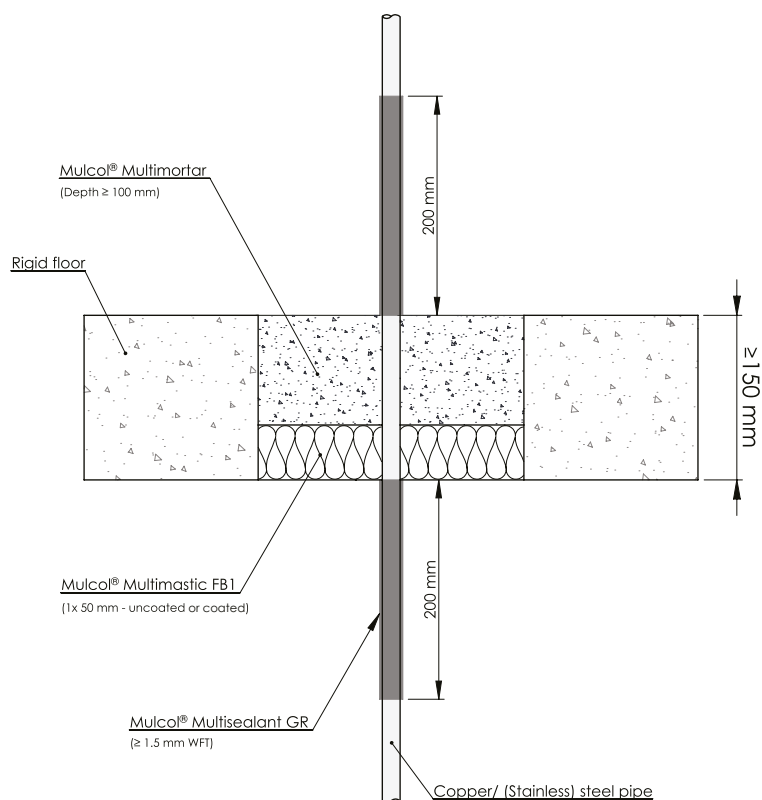
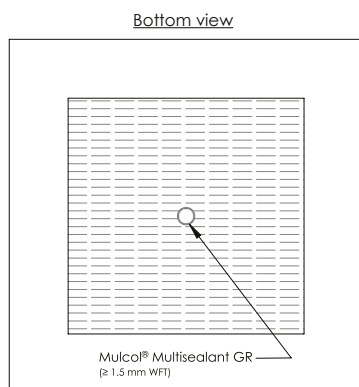


Drawing: RF.E-CU-SPC-MM2.2.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	$\leq \varnothing 22$	≥ 1.0	Multimastic SP	1.5 WFT	LI 200	EI 90 C/U, E 120 C/U
(Stainless) steel / cast iron	$\leq \varnothing 26.9$	≥ 2.3				EI 120 C/U
	$\leq \varnothing 22$	≥ 1.0				EI 90 C/U, E 120 C/U
	$\leq \varnothing 42.4$	≥ 3.2				

B.1.24 Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes uninsulated

B.1.24.2 Copper and steel pipes - Multisealant GR

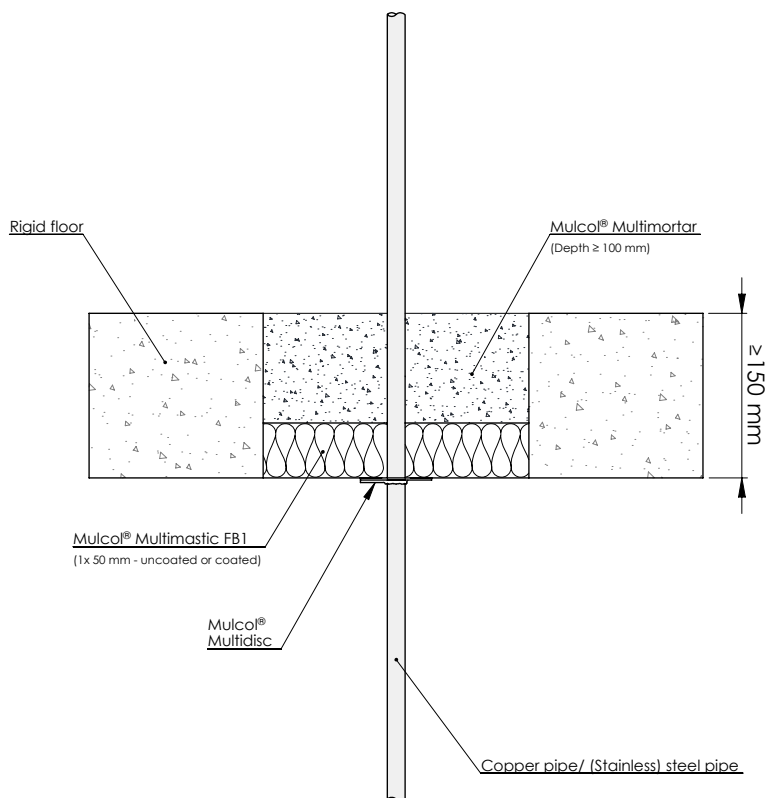
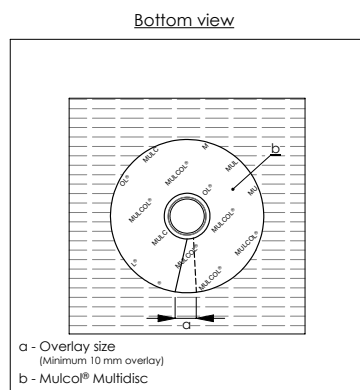


Drawing: RF.E-CU-GRC-MM2.2.10

Services	Pipe dimensions (mm)		Insulation			Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration	
Copper / (stainless) steel / cast iron	≤ Ø 15	≥ 1.0	Multisealant GR	1.5 WFT	LI 200	EI 60 C/U, E 90 C/U
(Stainless) steel / cast iron	≤ Ø 15	≥ 1.0				EI 120 C/U
	≤ Ø 42.4	≥ 3.2				

B.1.24 Multimortar + Multimastic FB - ≥ 150 mm - Metal pipes uninsulated

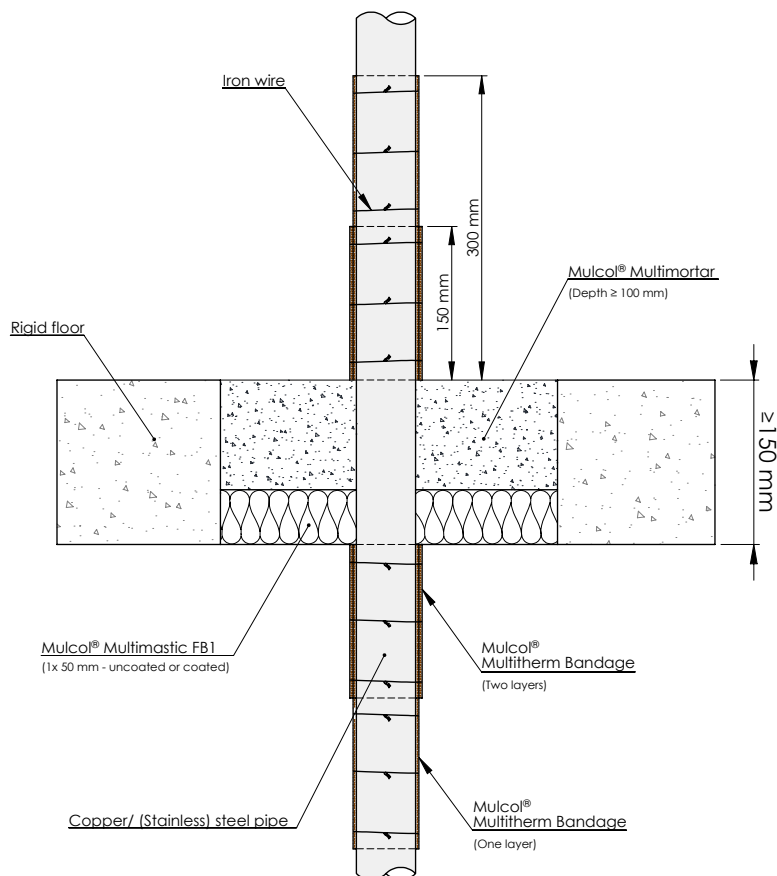
B.1.24.3 Copper and steel pipes - Multidisc



Drawing: RF.E-CU-M1-MM2.7.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Copper / (stainless) steel / cast iron	$\leq \varnothing 15$	≥ 1.0	Multidisc bottom of floor	EI 60 U/C

B.1.24.4 Copper and steel pipes - Multitherm Bandage

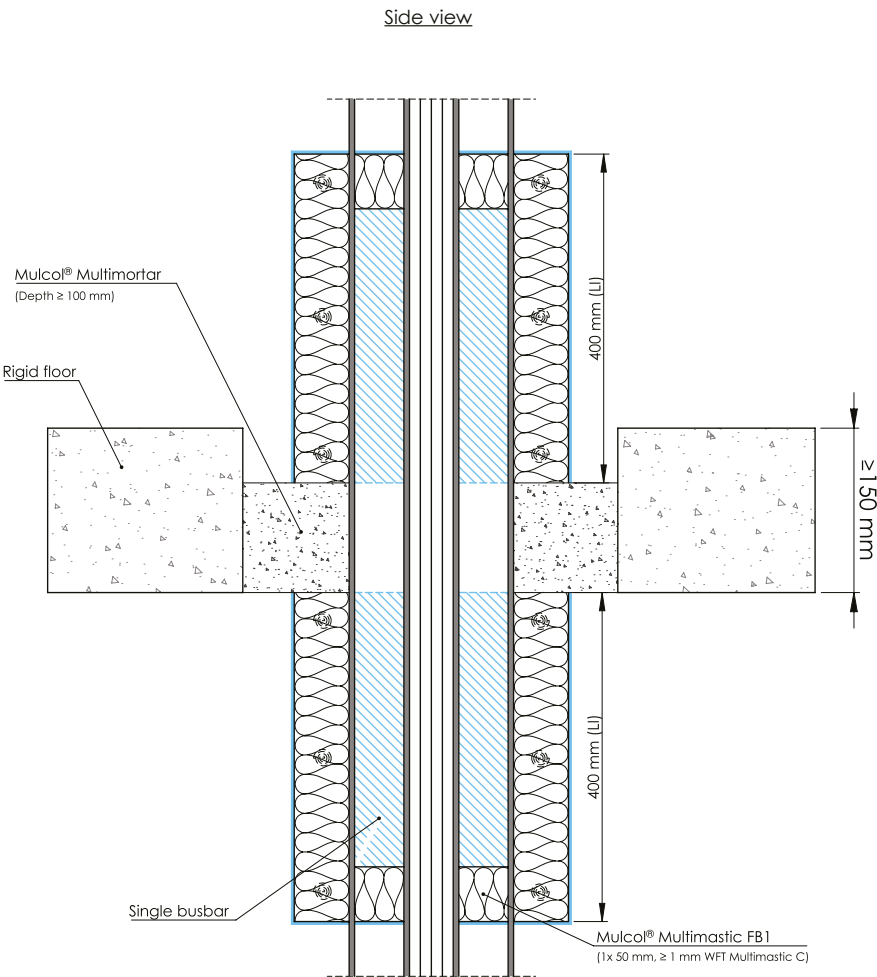


Drawing: RF.E-CU-B2-MM2.7.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Copper / (stainless) steel / cast iron	≤ Ø 54	≥ 1.5	LI 150 two layers (two wires) + LI 300 one layer (two wires)	EI 90 C/U, E 120 C/U

B.1.25 Multimortar - ≥ 100 mm - Busbars

B.1.25.1 Single busbar



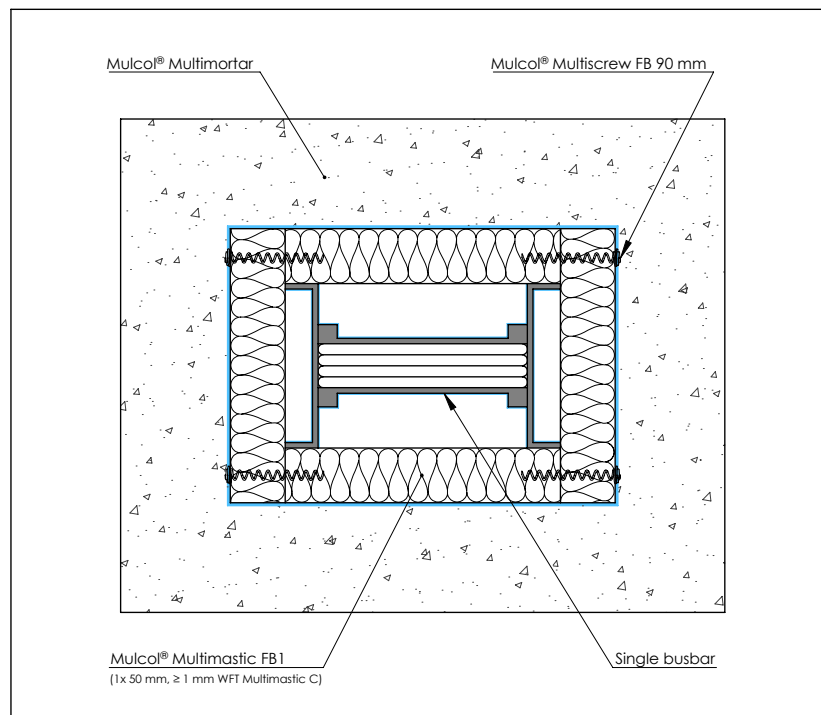
Drawing: RF.E-1BB-MM1.2.10

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

B.1.25 Multimortar - ≥ 100 mm - Busbars

B.1.25.1 Single busbar

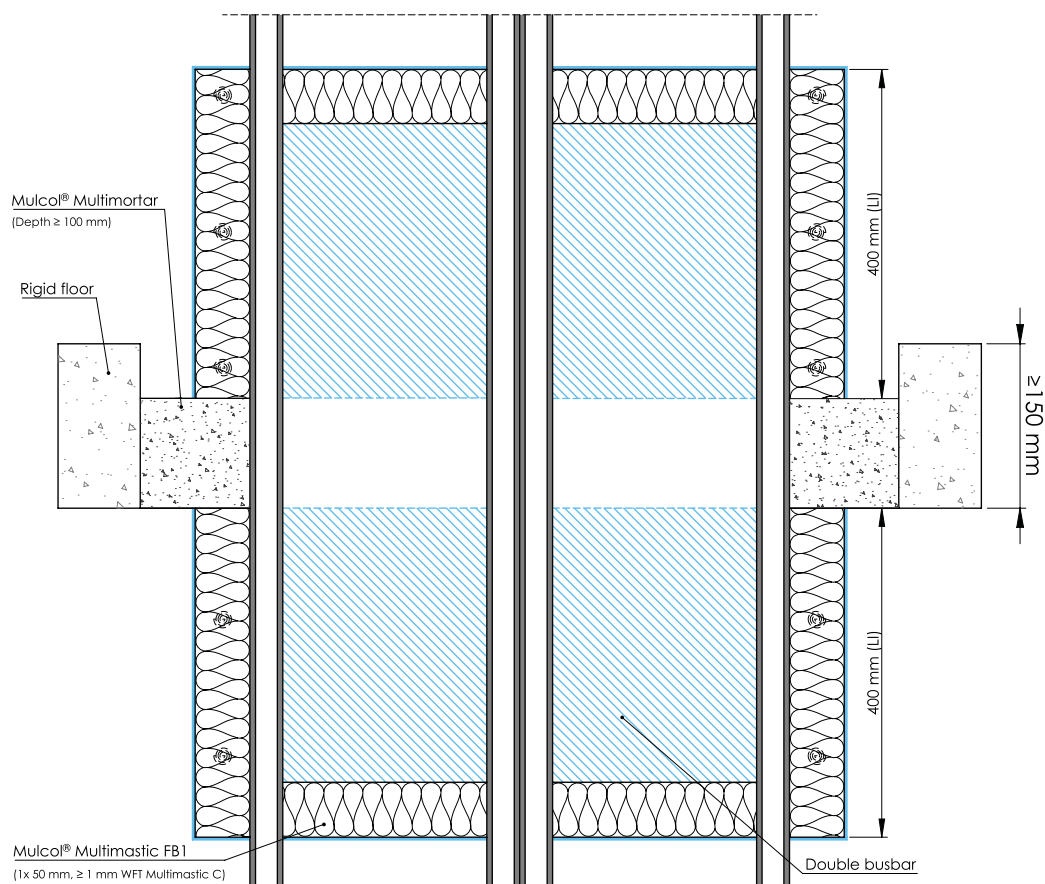
Bottom view



Drawing: RF.E-1BB-MM1.2.10

B.1.25 Multimortar - ≥ 100 mm - Busbars

B.1.25.2 Multiple busbars



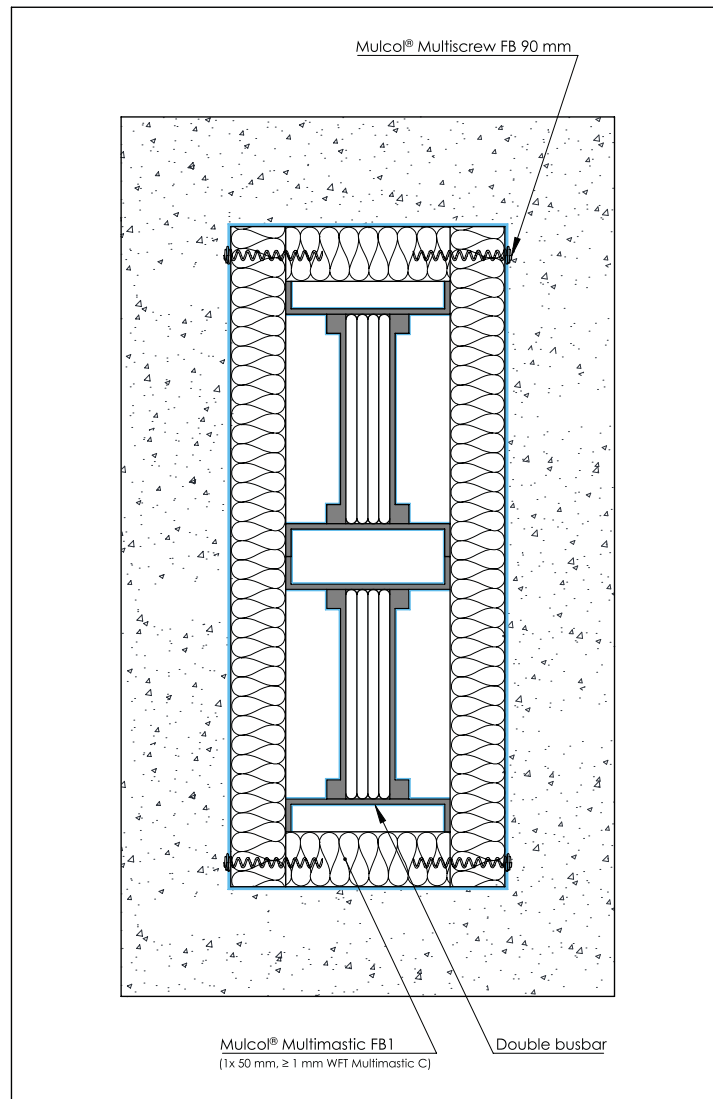
Drawing: RF.E-2BB-MM2.2.10

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

B.1.25 Multimortar - ≥ 100 mm - Busbars

B.1.25.2 Multiple busbars

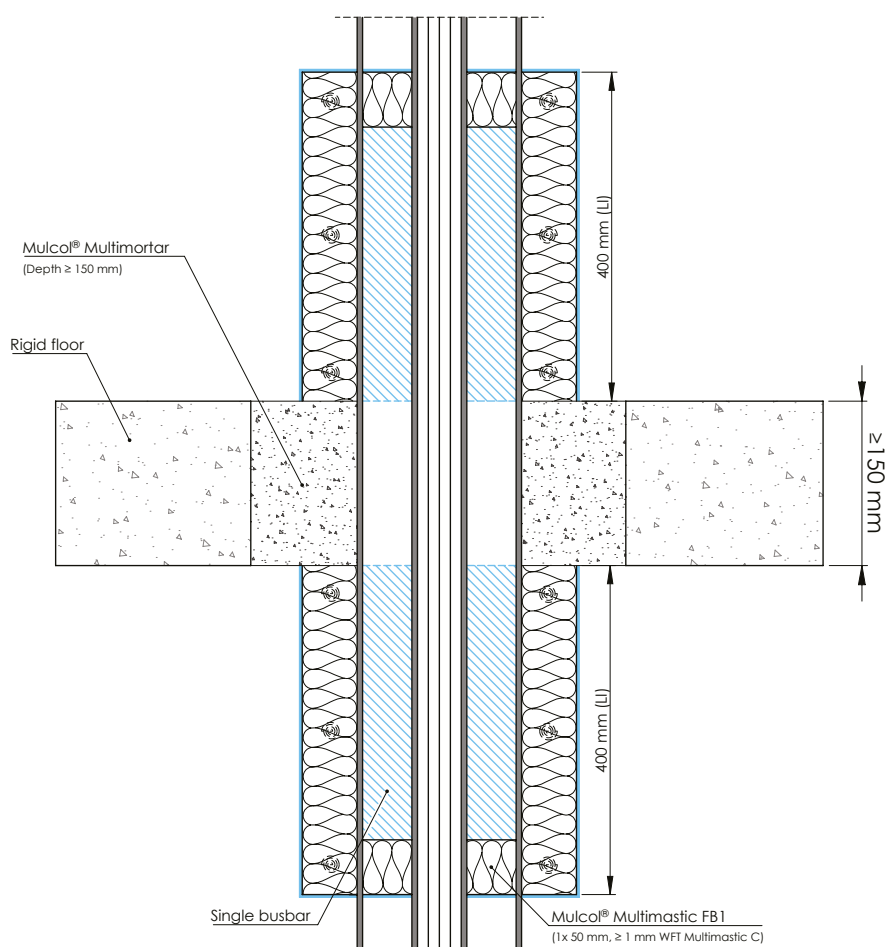
Bottom view



Drawing: RF.E-2BB-MM2.2.10

B.1.26 Multimortar - ≥ 150 mm - Busbars

B.1.26.1 Single busbar



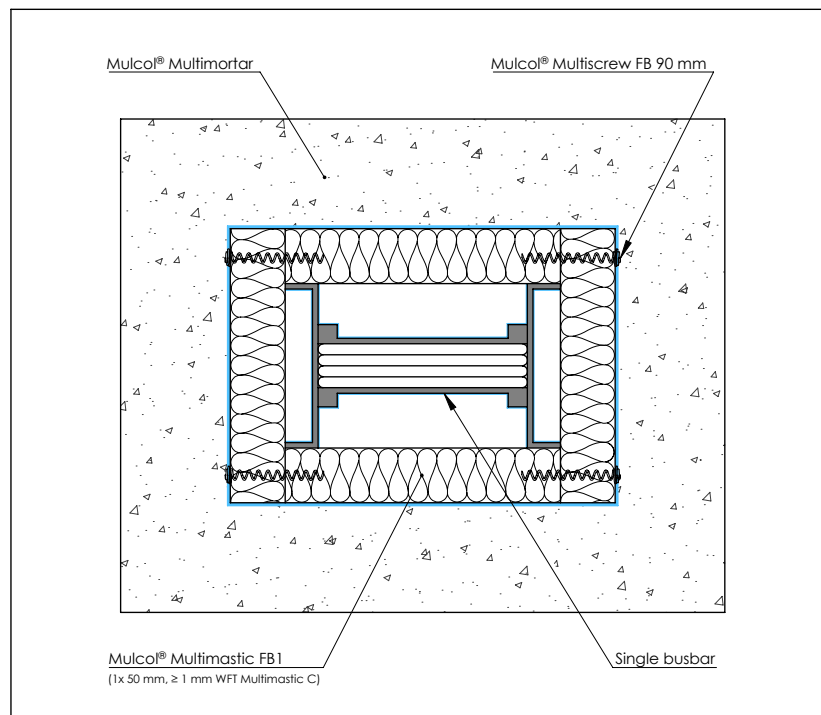
Drawing: RF.E-1BB-MM1.3.10

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

B.1.26 Multimortar - ≥ 150 mm - Busbars

B.1.26.1 Single busbar

Bottom view

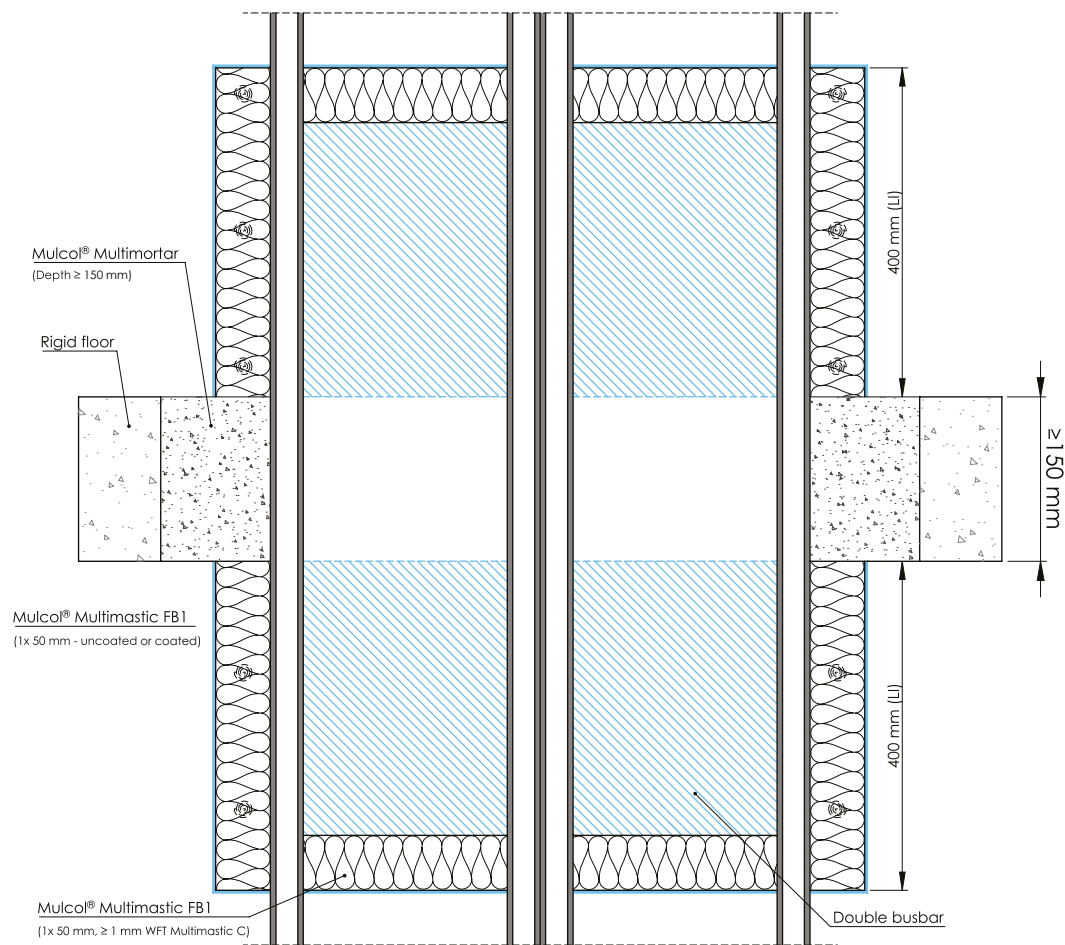


Drawing: RF.E-1BB-MM1.2.10

B.1.26 Multimortar - ≥ 150 mm - Busbars

B.1.26.2 Multiple busbars

Side view



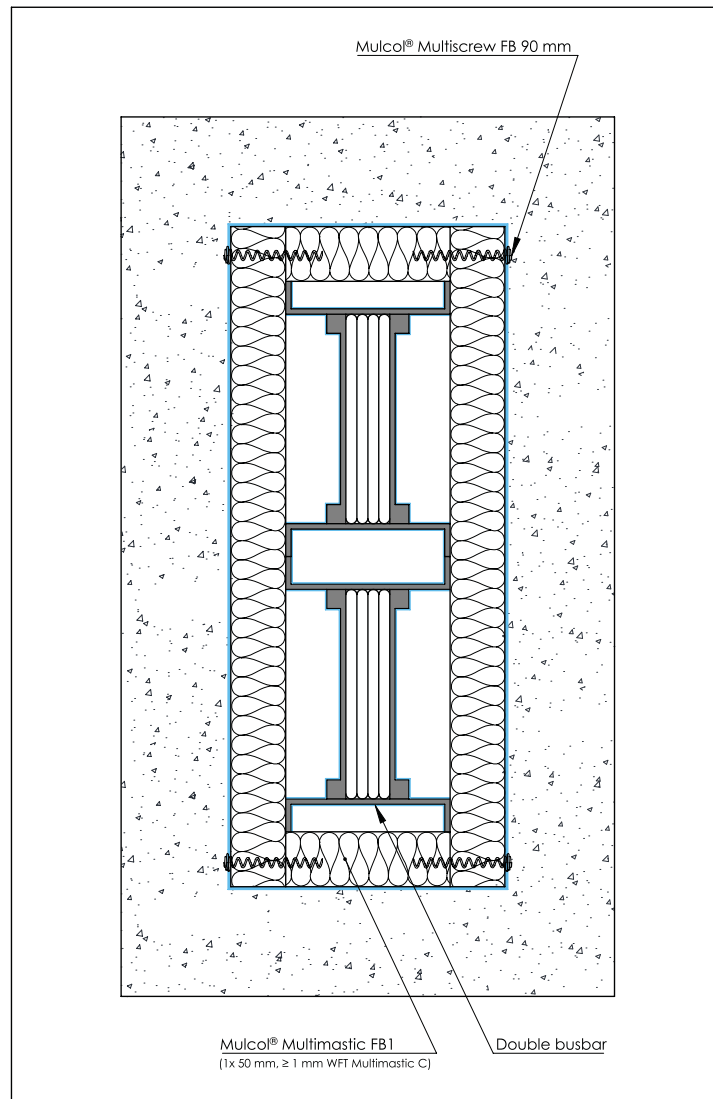
Drawing: RF.E-2BB-MM1.3.10

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 FB	50	LI 400 / CI	EI 120

B.1.26 Multimortar - ≥ 150 mm - Busbars

B.1.26.2 Multiple busbars

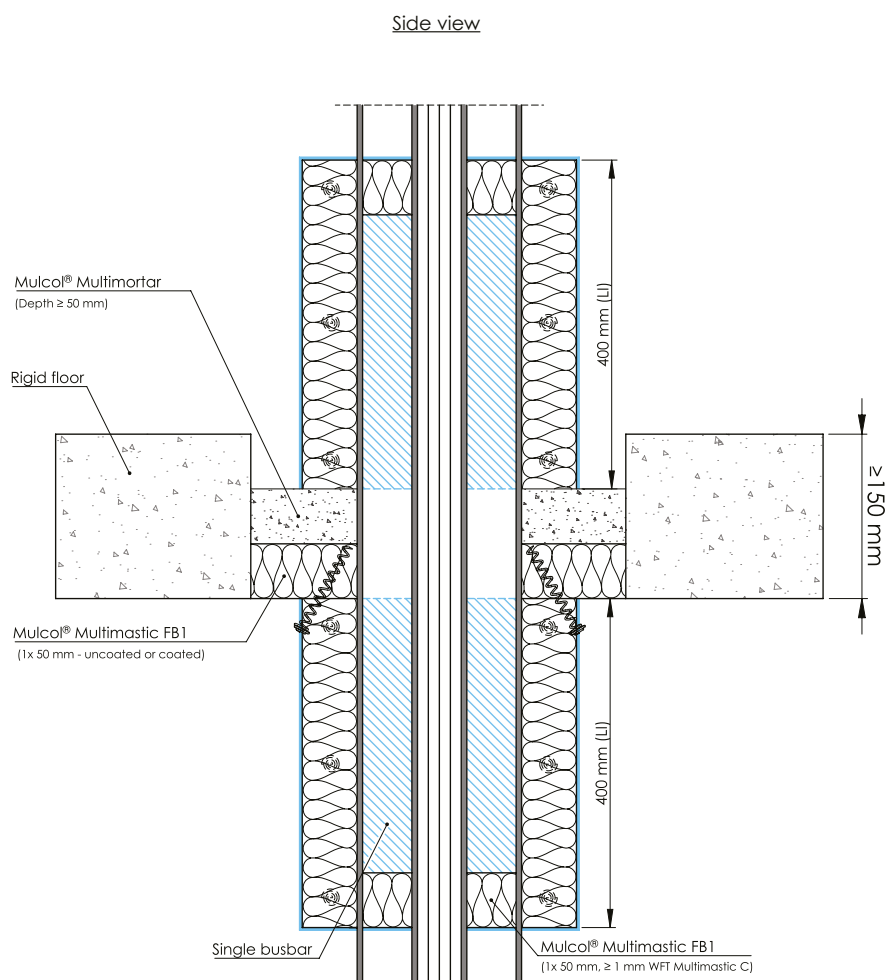
Bottom view



Drawing: RF.E-2BB-MM1.3.10

B.1.27 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

B.1.27.1 Single busbar



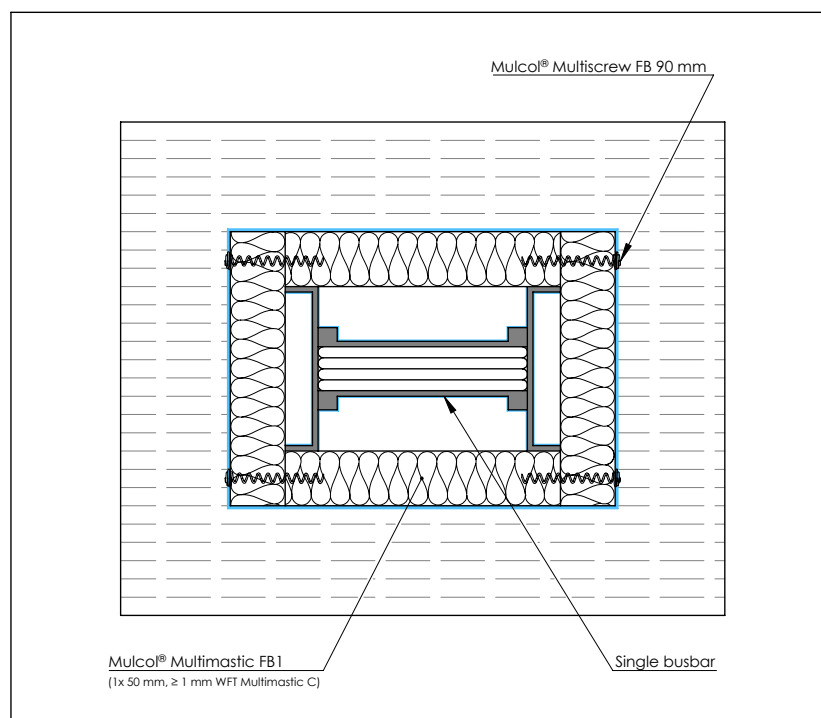
Drawing: RF.E-1BB-MM2.5.10

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

B.1.27 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

B.1.27.1 Single busbar

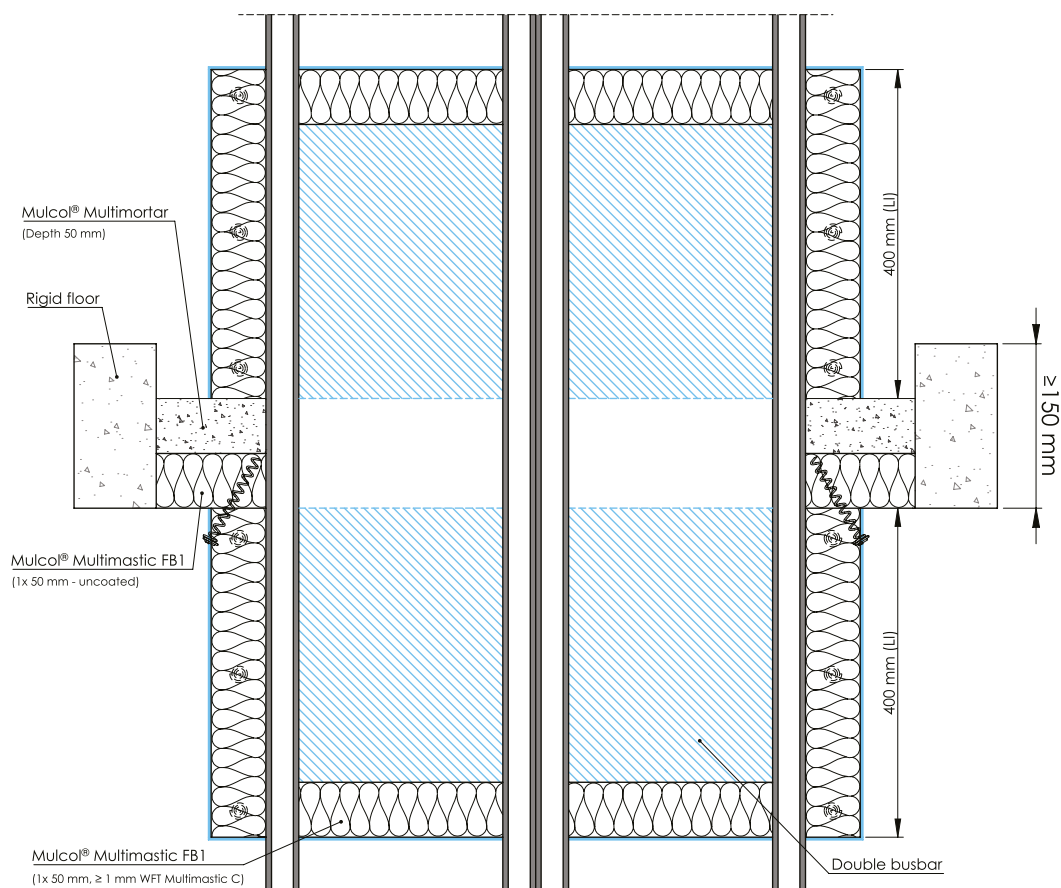
Bottom view



Drawing: RF.E-1BB-MM2.5.10

B.1.27 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

B.1.27.2 Multiple busbars



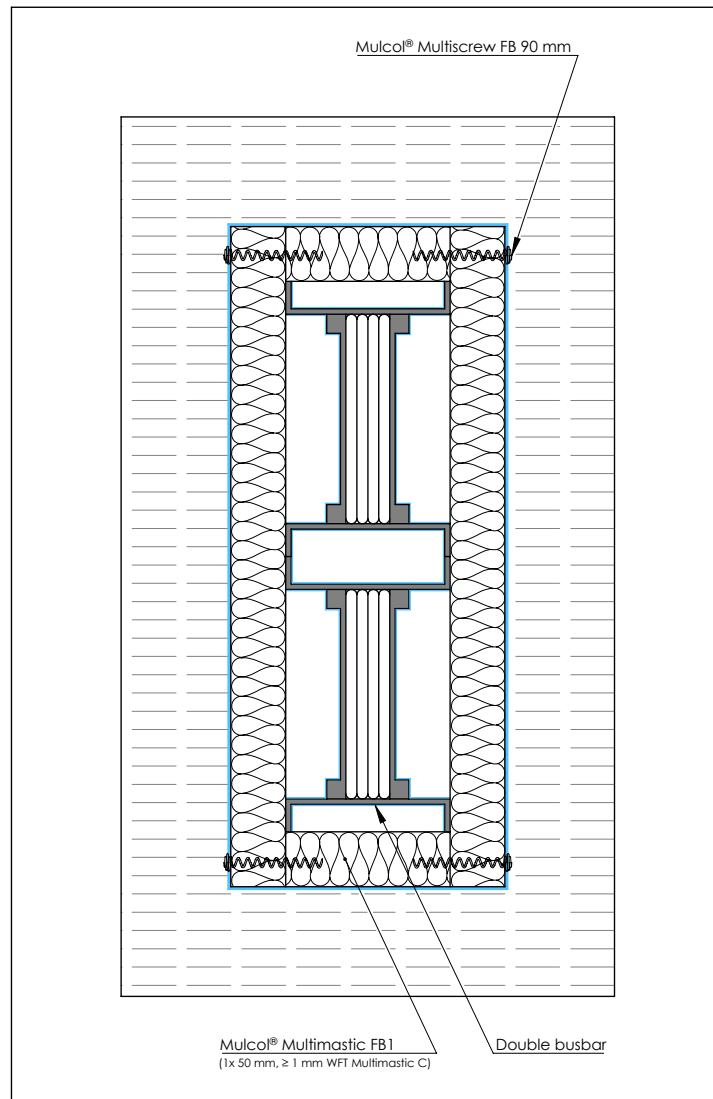
Drawing: RF.E-2BB-MM2.5.10

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

B.1.27 Multimortar + Multimastic FB - ≥ 100 mm - Busbars

B.1.27.2 Multiple busbars

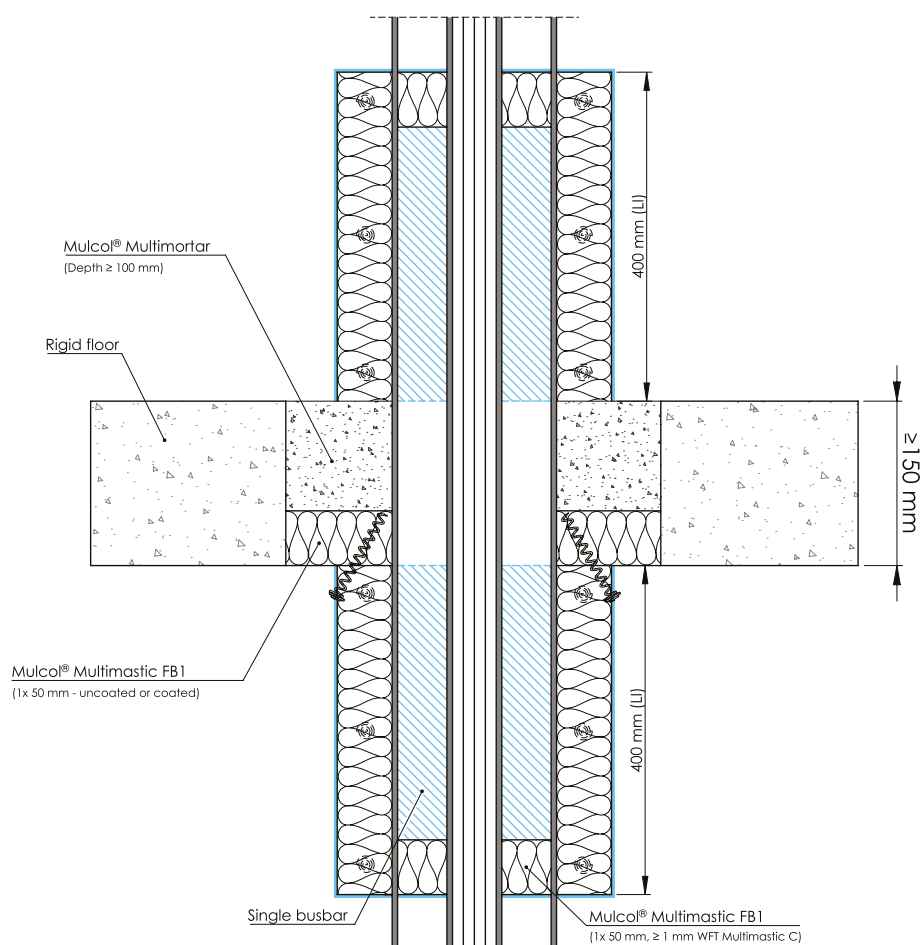
Bottom view



Drawing: RF.E-2BB-MM2.5.10

B.1.28 Multimortar + Multimastic FB - ≥ 150 mm - Busbars

B.1.28.1 Single busbar



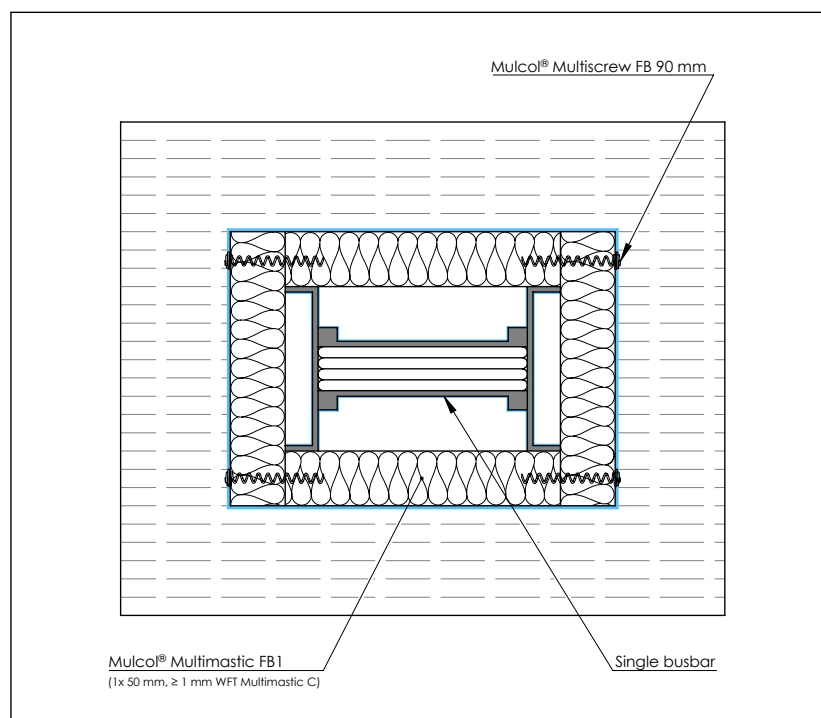
Drawing: RF.E-1BB-MM2.7.10

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

B.1.28 Multimortar + Multimastic FB - ≥ 150 mm - Busbars

B.1.28.1 Single busbar

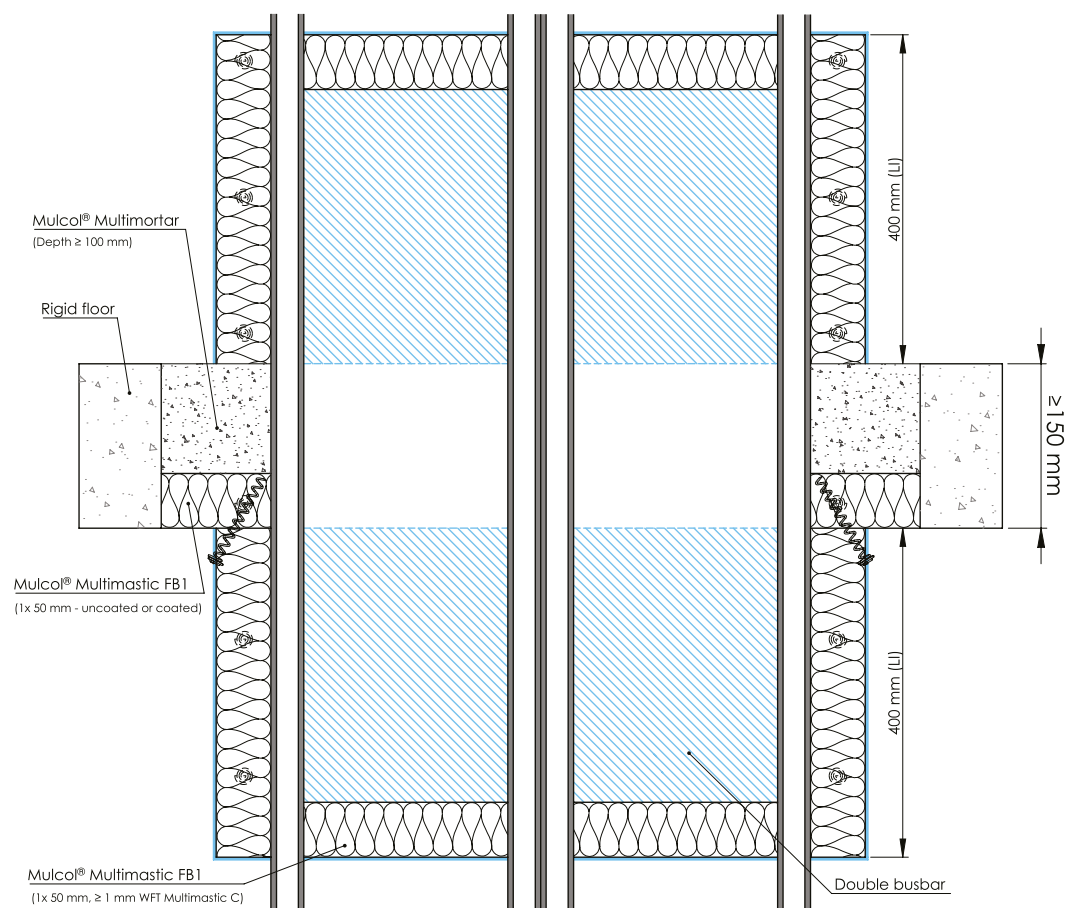
Bottom view



Drawing: RF.E-1BB-MM2.7.10

B.1.28 Multimortar + Multimastic FB - ≥ 150 mm - Busbars

B.1.28.2 Multiple busbars



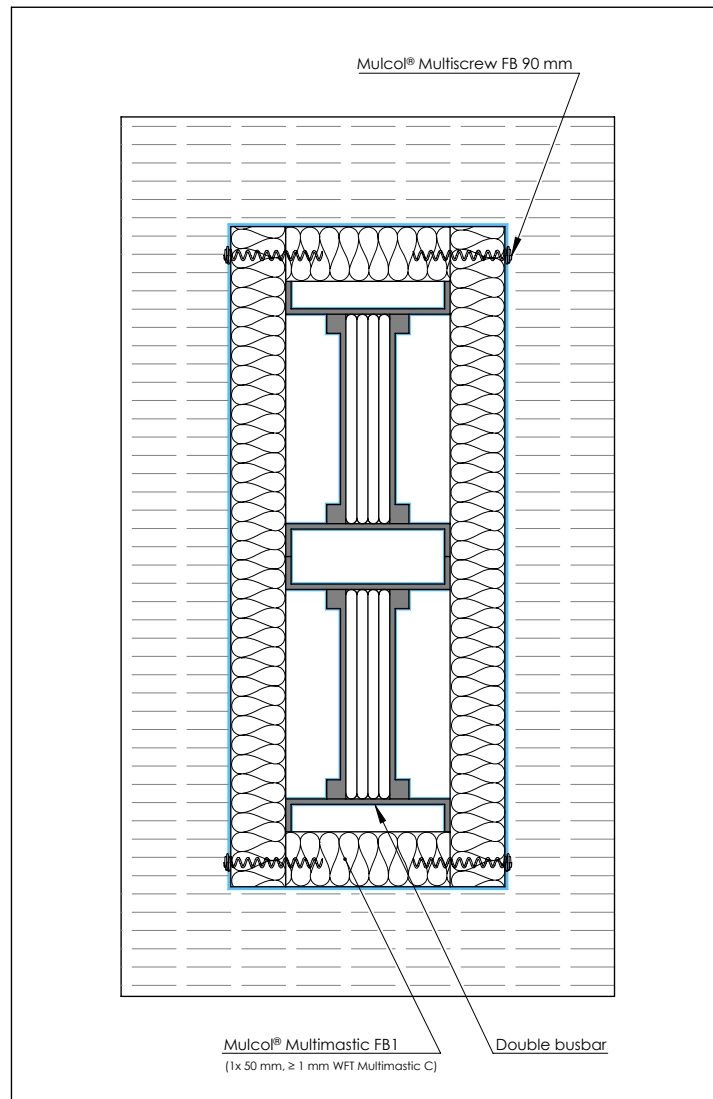
Drawing: RF.E-2BB-MM2.7.10

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

B.1.28 Multimortar + Multimastic FB - ≥ 150 mm - Busbars

B.1.28.2 Multiple busbars

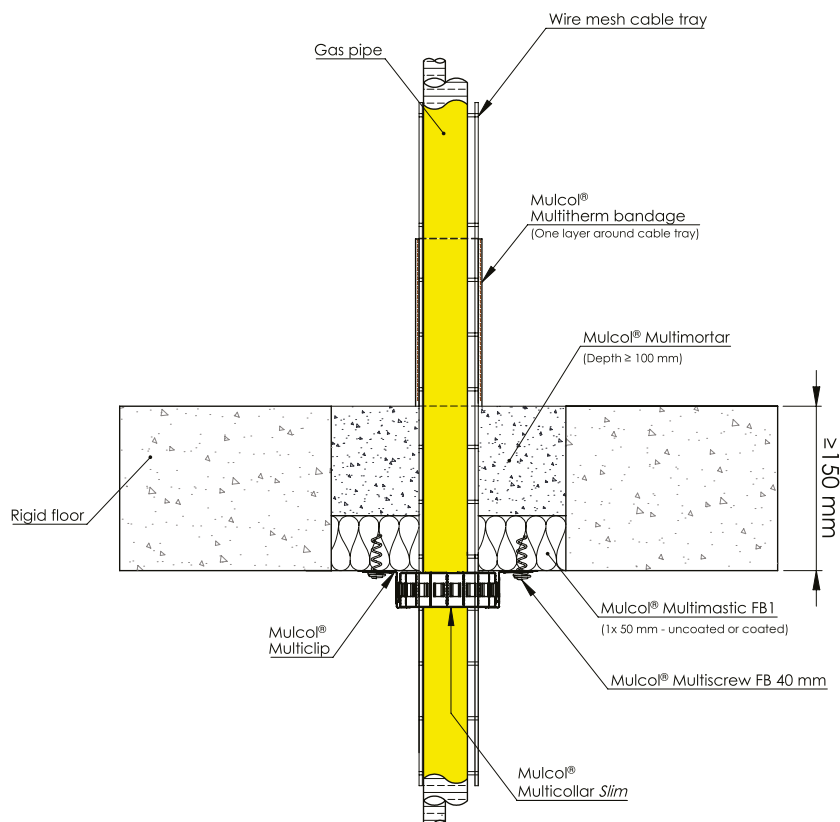
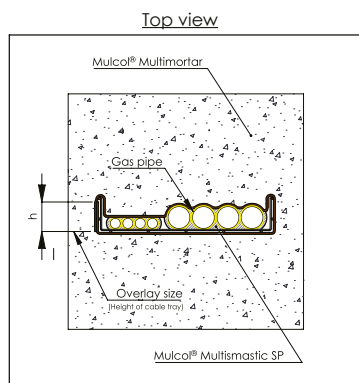
Bottom view



Drawing: RF.E-2BB-MM2.7.10

B.1.29 Multimortar + Multimastic FB - ≥ 150 mm - Gas pipes

B.1.29.1 Corrugated stainless steel tube gas (CSST) pipes - Multicollar *Slim* - Multitherm Bandage

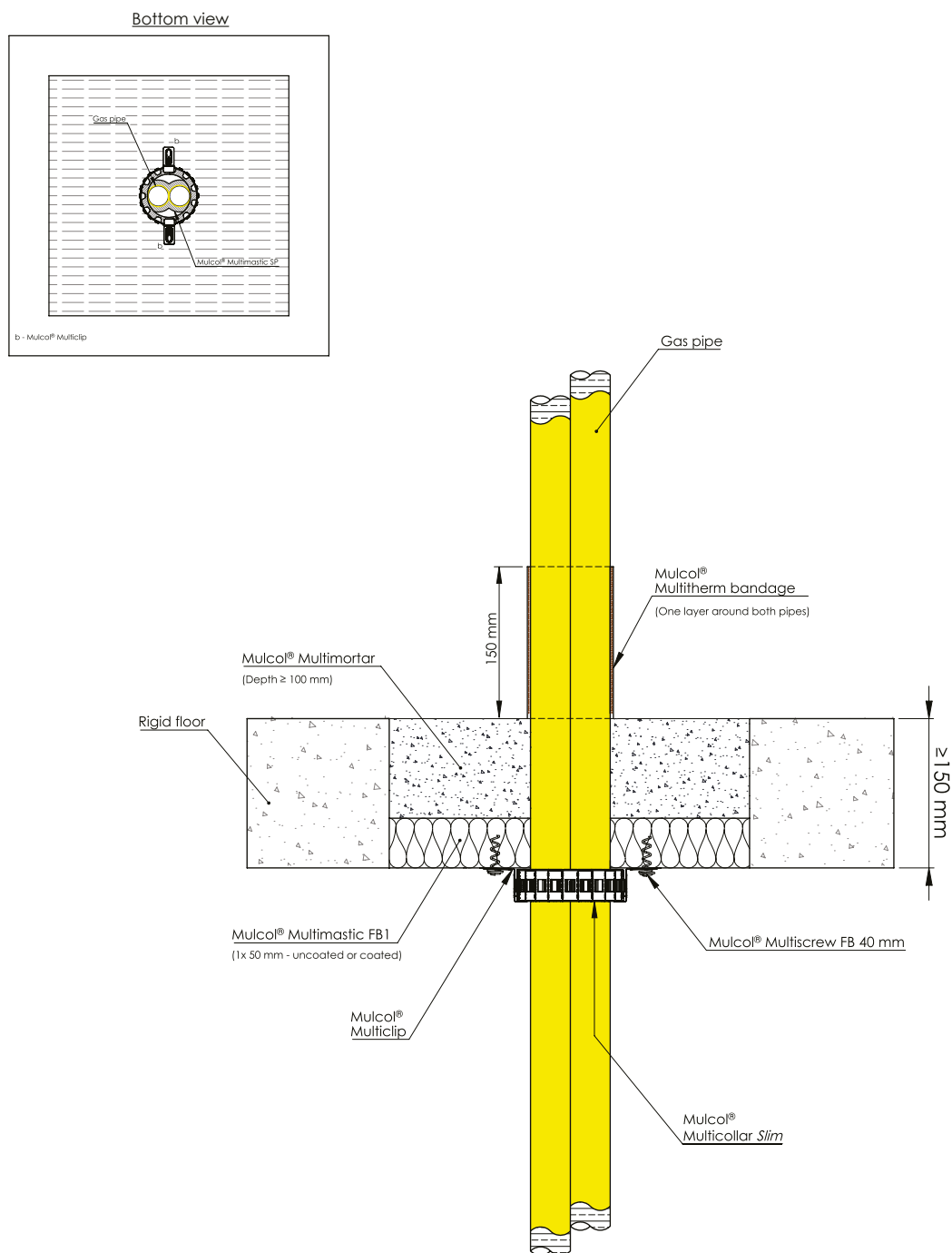


Drawing: RF.E-CT-GFS-MM2.2.10

Services	Number of pipes	Product	Sealing (mm)	Classification
CFS CSST gas pipe $\leq \varnothing 20$ mm in wire mesh cable tray	≤ 4	Multicollar <i>Slim</i> bottom of floor	LI 150 one layer top of floor	EI 120 U/C
CFS CSST gas pipe $\leq \varnothing 41$ mm in wire mesh cable tray	≤ 4			

B.1.29 Multimortar + Multimastic FB - ≥ 150 mm - Gas pipes

B.1.29.2 Corrugated stainless steel tube gas (CSST) pipes - Multicollar *Slim* - Multitherm Bandage

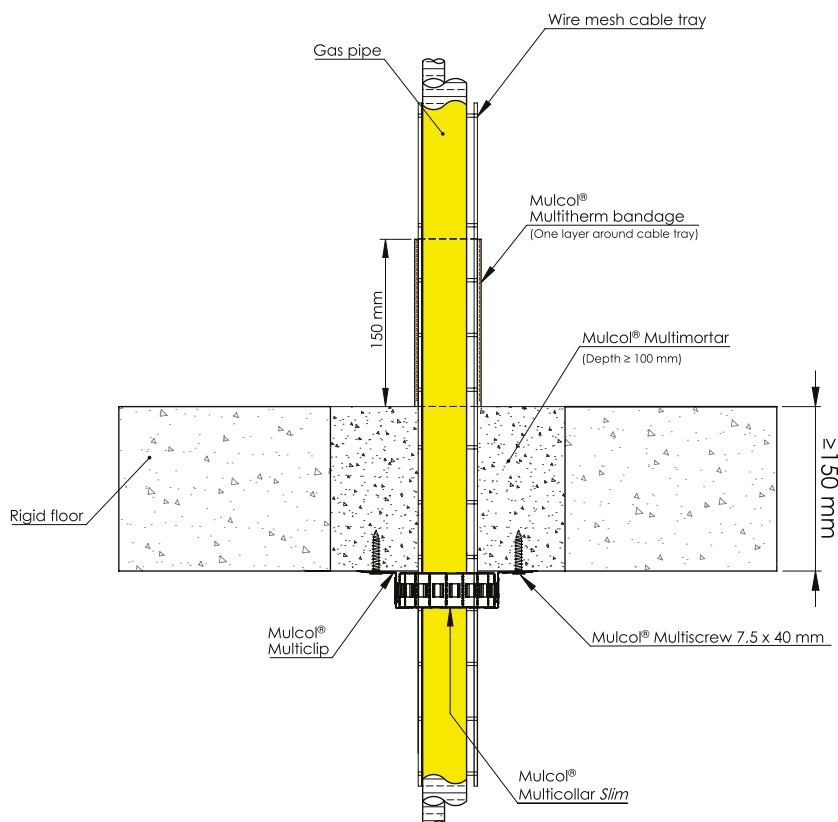
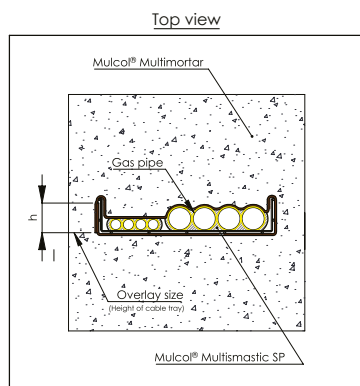


Drawing: RF.E-GFS2-MM2.2.1

Services	Number of pipes	Product	Sealing (mm)	Classification
CFS CSST gas pipe $\leq \varnothing 41$ mm	≤ 2	Multicollar <i>Slim</i> bottom of floor	LI 150 one layer top of floor	EI 120 U/C

B.1.30 Multimortar - ≥ 150 mm - Gas pipes

B.1.30.1 Corrugated stainless steel tube gas (CSST) pipes - Multicollar *Slim* - Multitherm Bandage

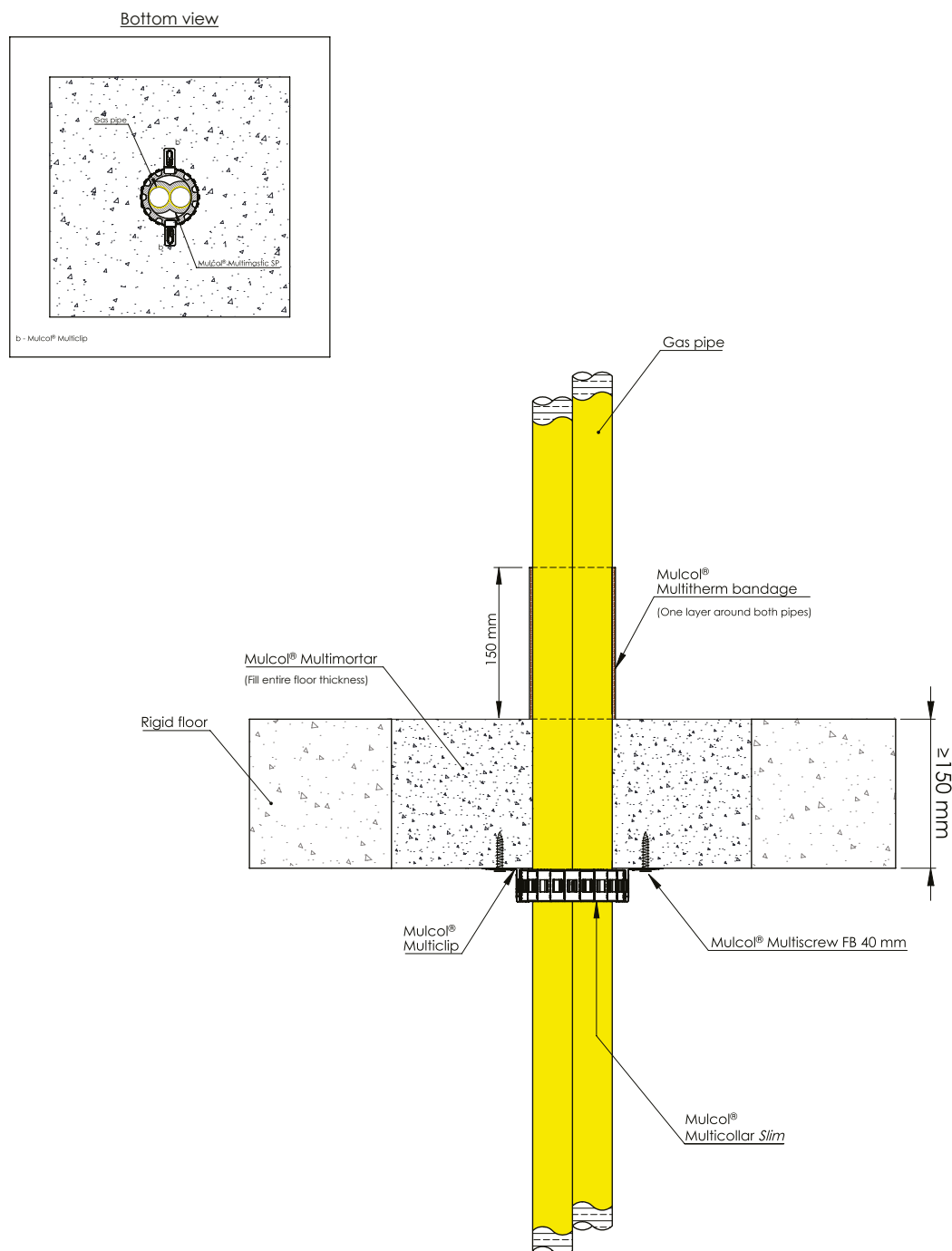


Drawing: RF-E-CT-GFS-MC30-MM1.3.10

Services	Number of pipes	Product	Sealing (mm)	Classification
CFS CSST gas pipe $\leq \varnothing 20$ mm in wire mesh cable tray	≤ 4	Multicollar <i>Slim</i> bottom of floor	LI 150 one layer top of floor	EI 120 U/C
CFS CSST gas pipe $\leq \varnothing 41$ mm in wire mesh cable tray	≤ 4			

B.1.30 Multimortar - ≥ 150 mm - Gas pipes

B.1.30.2 Corrugated stainless steel tube gas (CSST) pipes - Multicollar *Slim* - Multitherm Bandage

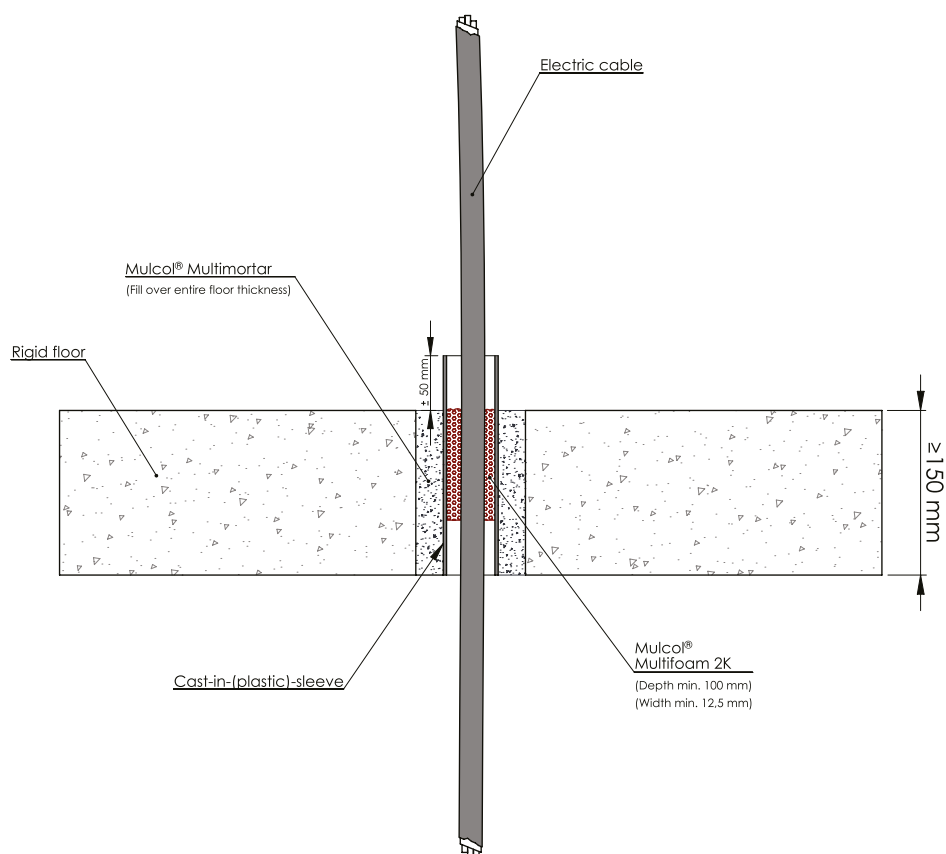
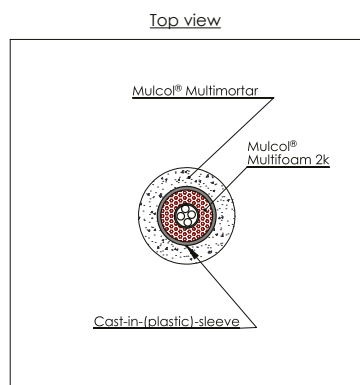


Drawing: RF.E-GFS2-MC30-MM1.3.10

Services	Number of pipes	Product	Sealing (mm)	Classification
CFS CSST gas pipe $\leq \varnothing 41$ mm	≤ 2	Multicollar <i>Slim</i> bottom of floor	LI 150 one layer top of floor	EI 120 U/C

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.1 Cables - Multifoam 2K

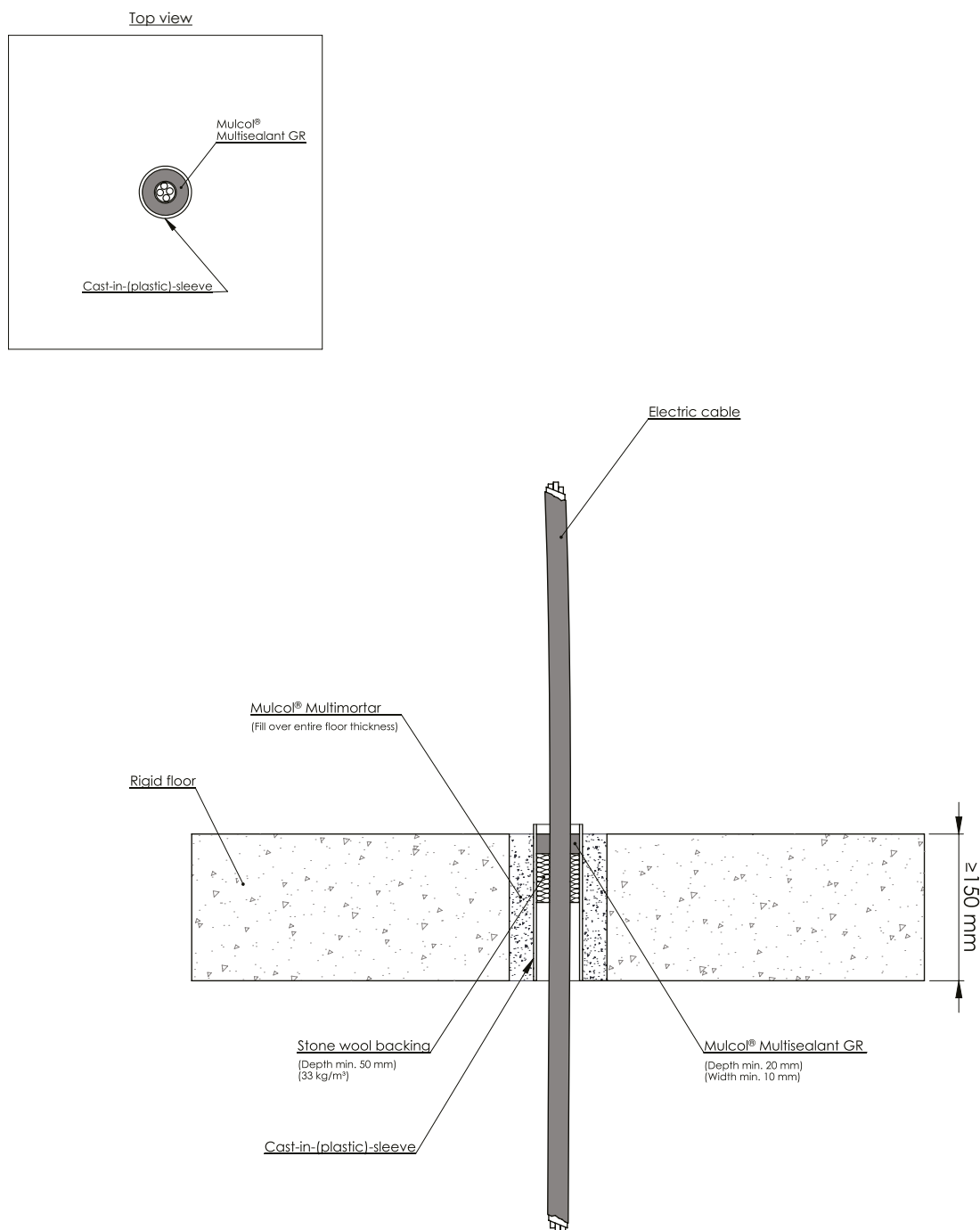


Drawing: RFmk.E-EC21-MF.1.31

Services		Sealing (mm)	Classification
Cables $\leq \varnothing 21$ mm	with plastic cast-in sleeve	Multifoam 2K $\geq 12.5 \times 100$ (wxd)	EI 90, E 120

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.2 Cables - Multisealant GR

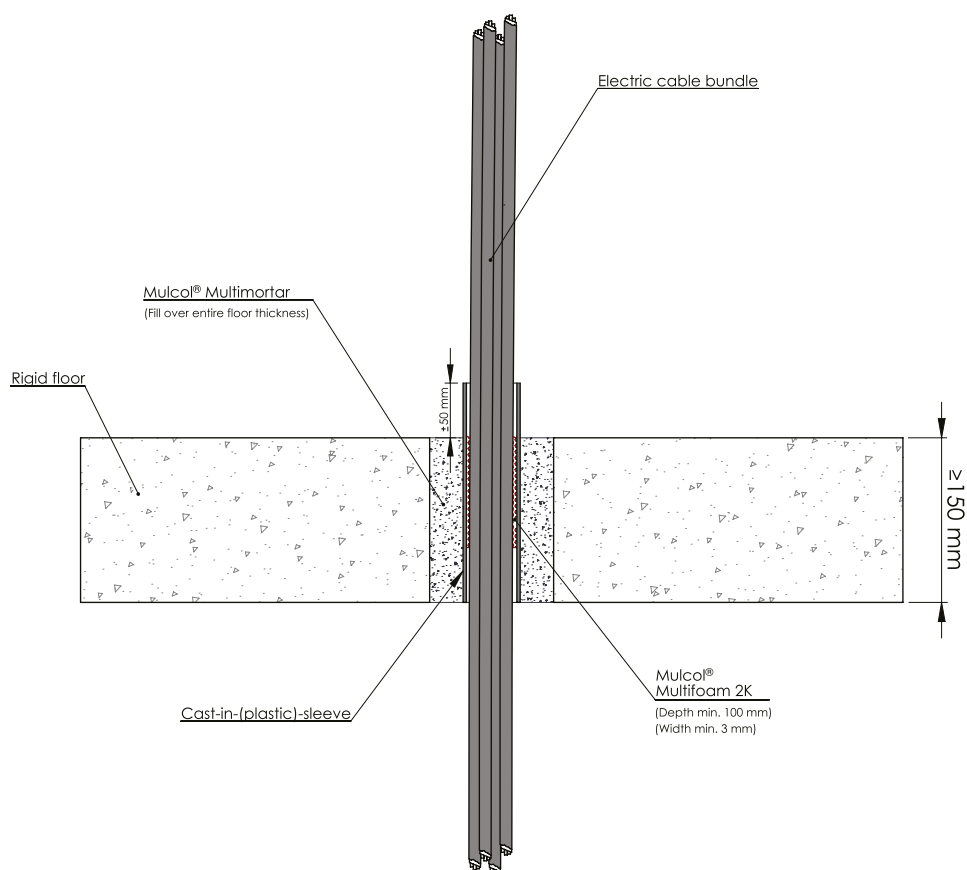
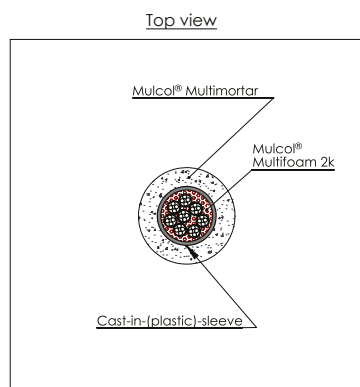


Drawing: RF-EC21-G3.12.10

Services		Pipe dimensions (mm)	Sealing (mm)	Backing	Classification
		Outer dimension			
Cables $\leq \varnothing 21$ mm	with plastic cast-in sleeve	$\leq \varnothing 50$	Multisealant GR $\geq 10 \times 20$ (wxd)	50 mm stone wool (≥ 33 kg/m ³)	EI 120

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.3 Multiple cables - Multifoam 2K

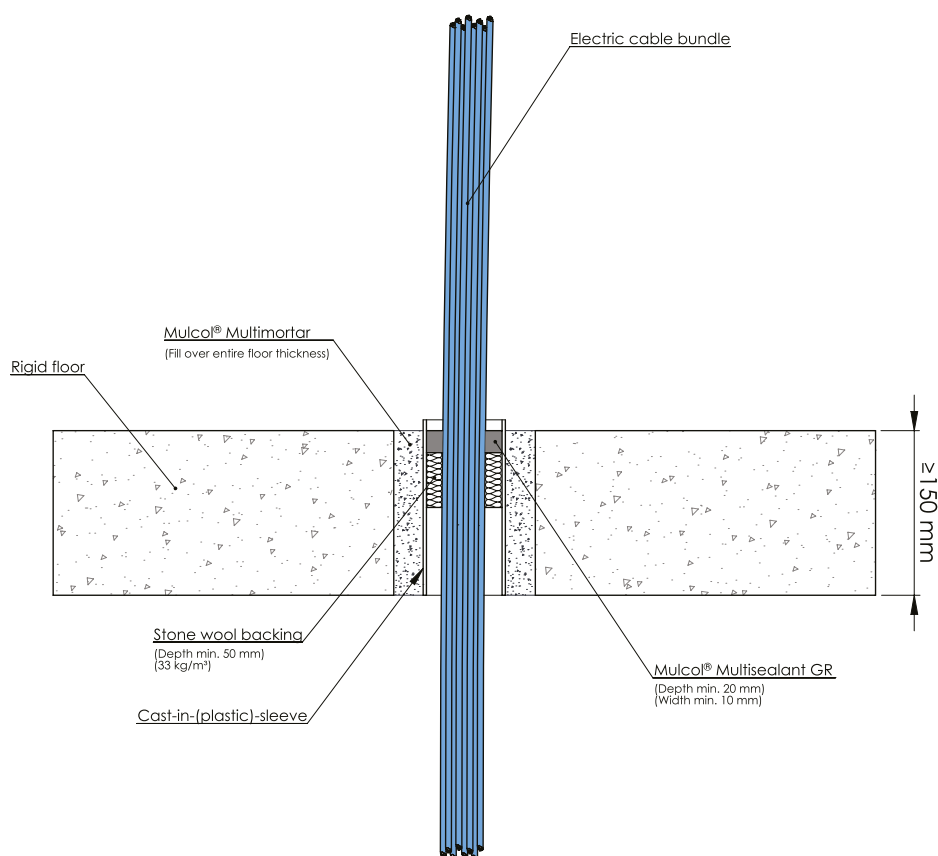
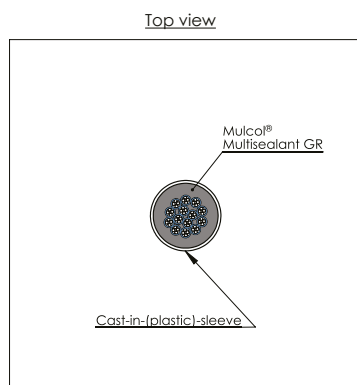


Drawing: Rfmk.E-ECB40-MF.1.31

Services		Sealing (mm)	Classification
Cable bundle $\leq \varnothing 40$ mm ≤ 8 cables	with plastic cast-in sleeve	Multifoam 2K $\geq 3 \times 100$ (wxd)	EI 60

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.4 Multiple cables - Multisealant GR

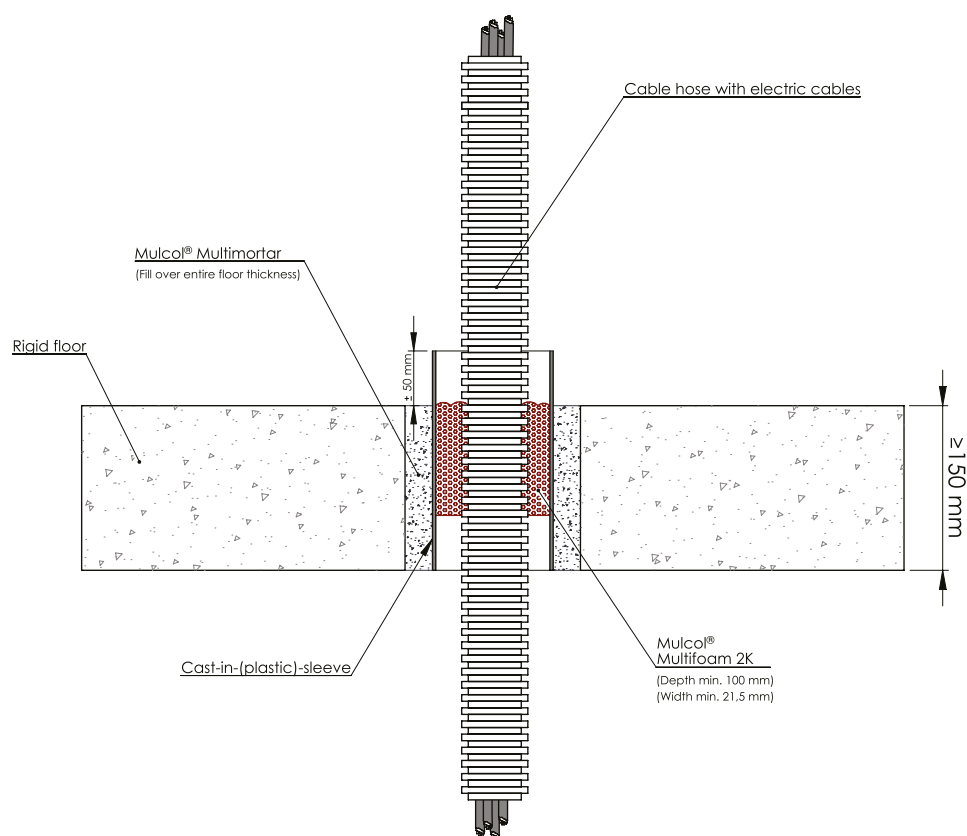
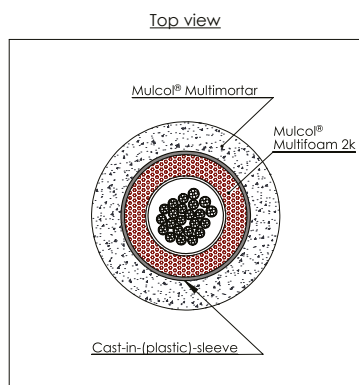


Drawing: RF.E-ECB-G3.12.10

Services		Pipe dimensions (mm)	Sealing (mm)	Backing	Classification
		Outer dimension			
Bundle (telecommunication-) cables ≤ 40 cables	with plastic cast-in sleeve	$\leq \varnothing 75$	Multisealant GR $\geq 10 \times 20$ (wxd)	50 mm stone wool (≥ 33 kg/m³)	EI 120

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.5 Flexible conduit with cables - Multifoam 2K

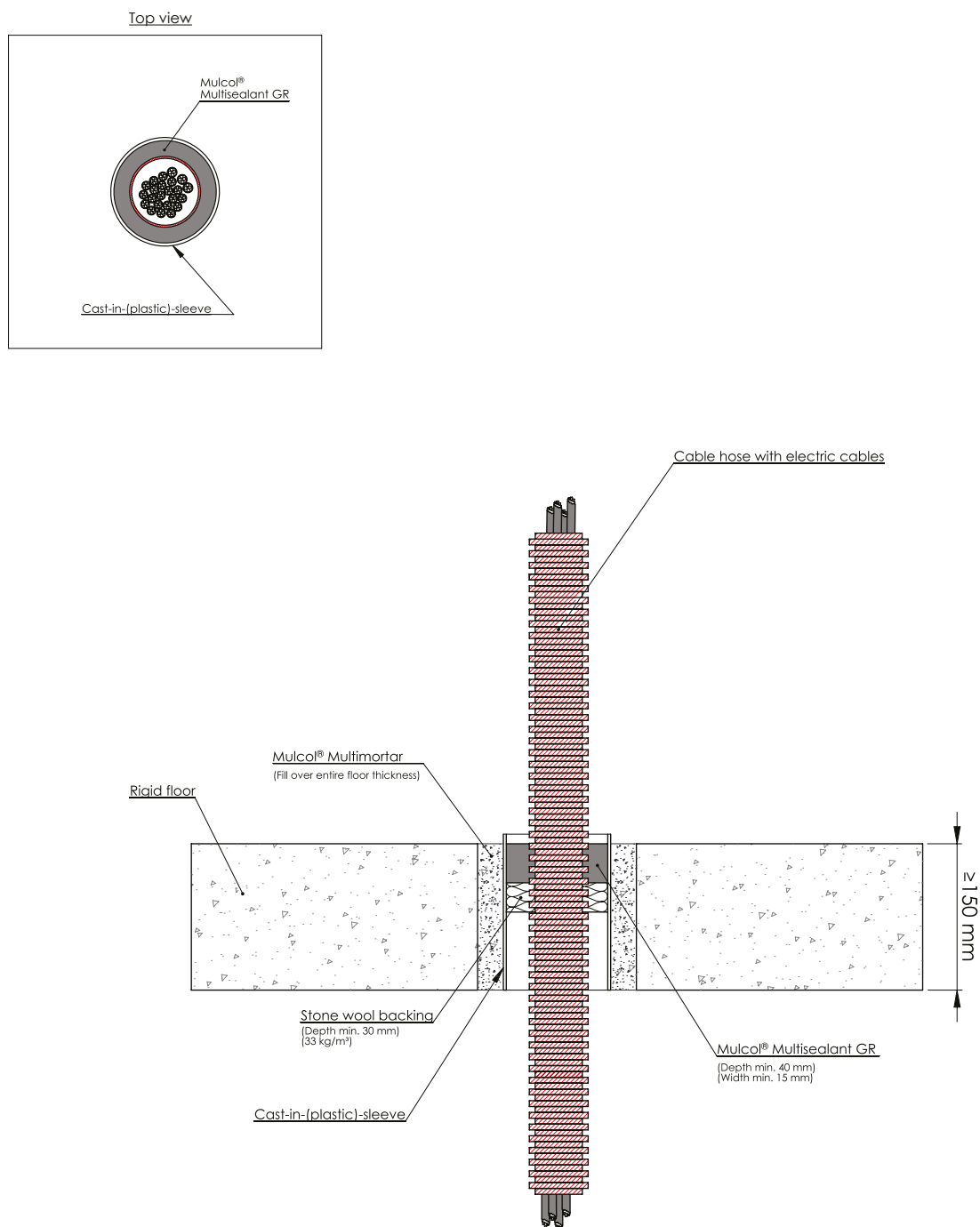


Drawing: RFmk.E-ECH63-MF.1.31

Services		Pipe dimensions (mm)	Sealing (mm)	Classification
		Outer dimension		
Bundle cables ≤ 24 cables	with plastic cast-in sleeve	$\leq \varnothing 110$	Multifoam 2K $\geq 21.5 \times 100$ (wxd)	EI 90 C/U, E 120 C/U
	Ribbed PE conduit	$\leq \varnothing 63$		

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.6 Flexible conduit with cables - Multisealant GR

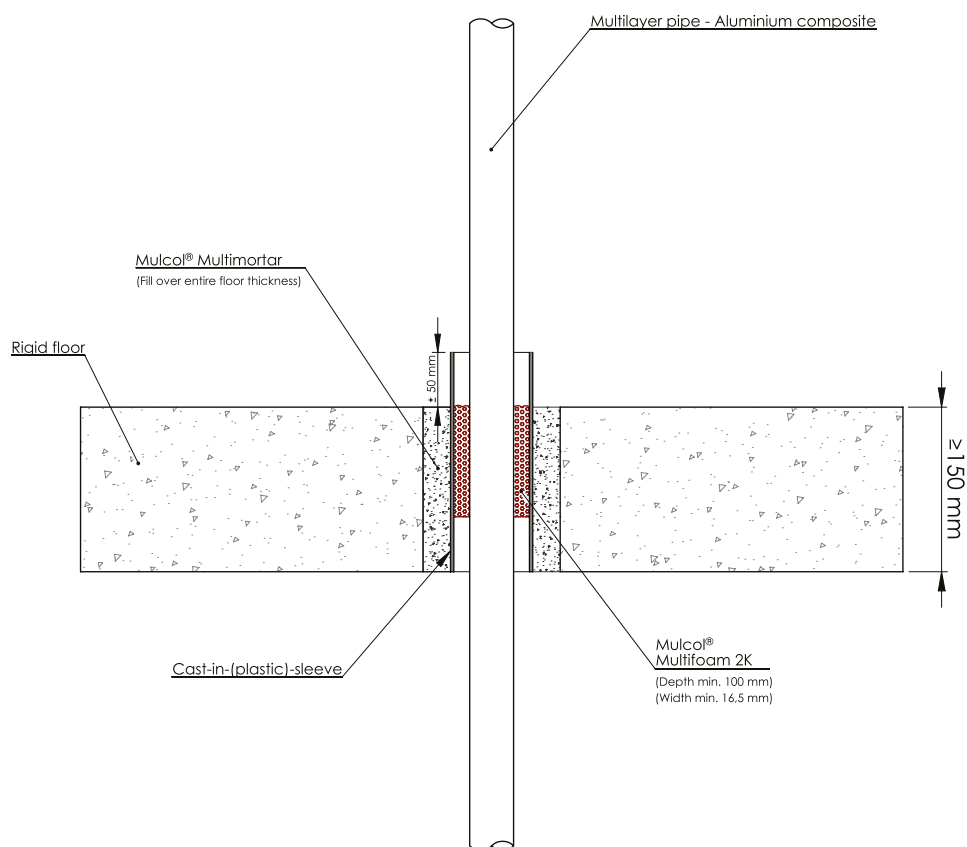
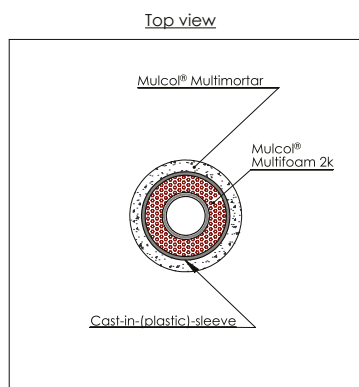


Drawing: RF.E-ECH63-G3.16.30

Services		Pipe dimensions (mm)	Sealing (mm)	Backing	Classification
		Outer dimension			
Bundle (telecommunication-) cables ≤ 13 cables	with plastic cast-in sleeve	$\leq \varnothing 90$	Multisealant GR $\geq 10 \times 20$ (wxd)	50 mm stone wool (≥ 33 kg/m³)	EI 120
	Ribbed PE conduit (LS 200 / CS)	$\leq \varnothing 63$			

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.7 Multilayer pipes (MLC) - Multifoam 2K

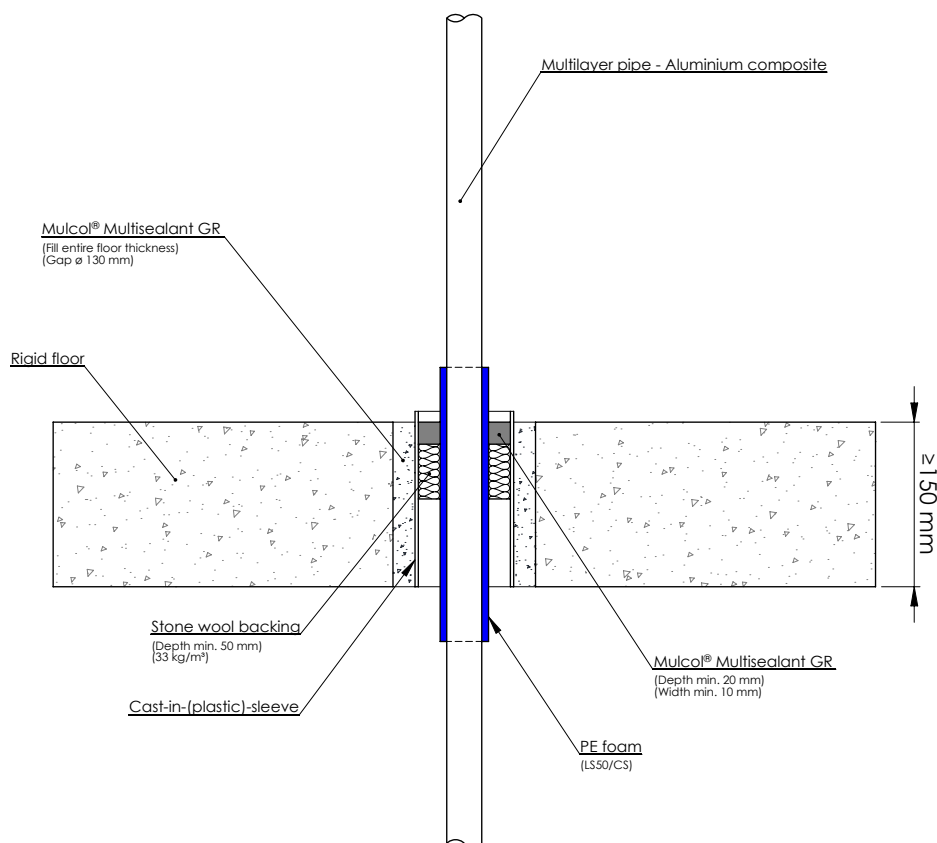
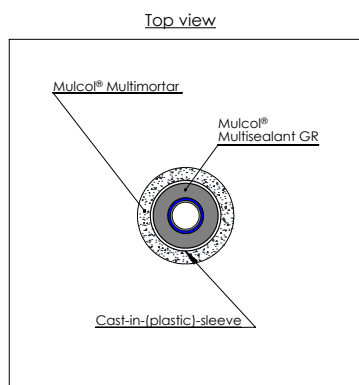


Drawing: Rfmk.E-MLA-MF.1.31

Services		Pipe dimensions (mm)		Sealing (mm)	Classification
		Outer dimension	Wall thickness		
Multilayer pipes (MLC)	with plastic cast-in sleeve	$\leq \varnothing 40$	3.0 - 3.5	Multifoam 2K $\geq 16.5 \times 100$ (wxd)	EI 90 U/C, E 120 U/C

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.8 Multilayer pipes (MLC) - PE foam insulation LS 50 / CS - Multisealant GR

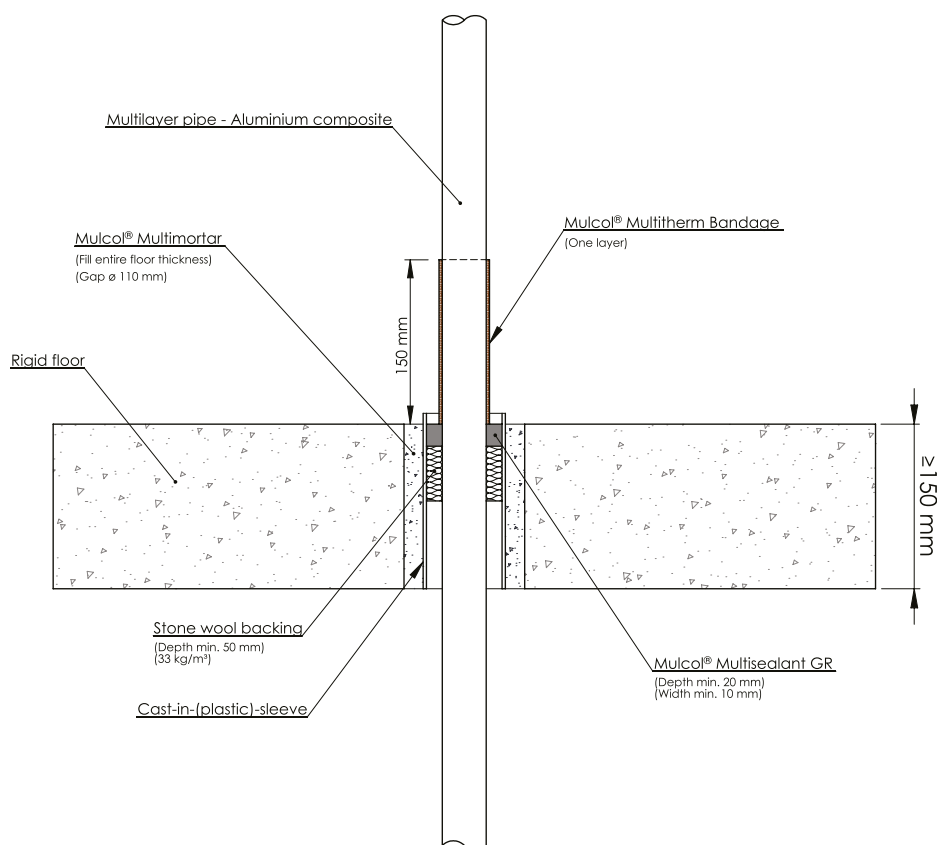
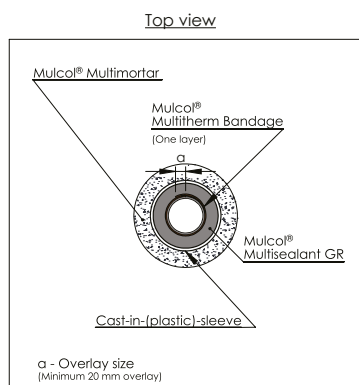


Drawing: RF.E-pr_MLA-G3.4.10

Services		Pipe dimensions (mm)		Insulation			Sealing (mm)	Backing	Classification
		Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipes (MLC)	with or without plastic cast-in sleeve $\leq \varnothing 90$	$\leq \varnothing 35$	3.0	PE foam	≤ 6	LS 50 / CS LI 50 / CI	Multisealant GR $\geq 10 \times 20$ (wxd)	50 mm stone wool ($\geq 33 \text{ kg/m}^3$)	EI 120 U/C

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.9 Multilayer pipes (MLC) - Multisealant GR - Multitherm Bandage

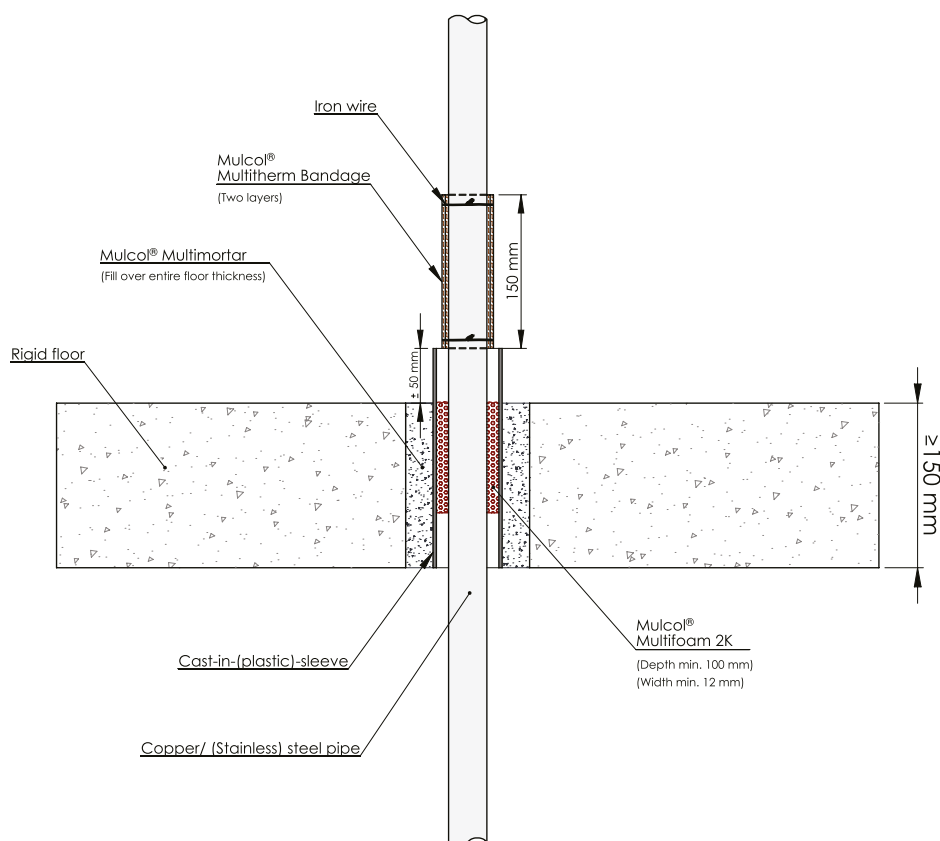
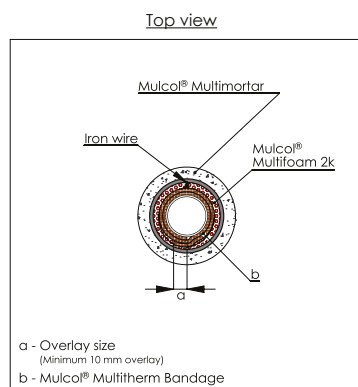


Drawing: RF.E-MLA-G3.4.10

Services		Pipe dimensions (mm)		Sealing (mm)	Backing	Multitherm Bandage	Classification
		Outer dimension	Wall thickness				
Multilayer pipes (MLC)	with or without plastic cast-in sleeve $\leq \varnothing 75$ mm	$\leq \varnothing 40$	3.5	Multisealant GR $\geq 10 \times 20$ (wxd)	50 mm stone wool (≥ 33 kg/m³)	LI 150 one layer top of floor	EI 120 U/C

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.10 Copper and steel pipes - Multifoam 2K - Multitherm Bandage

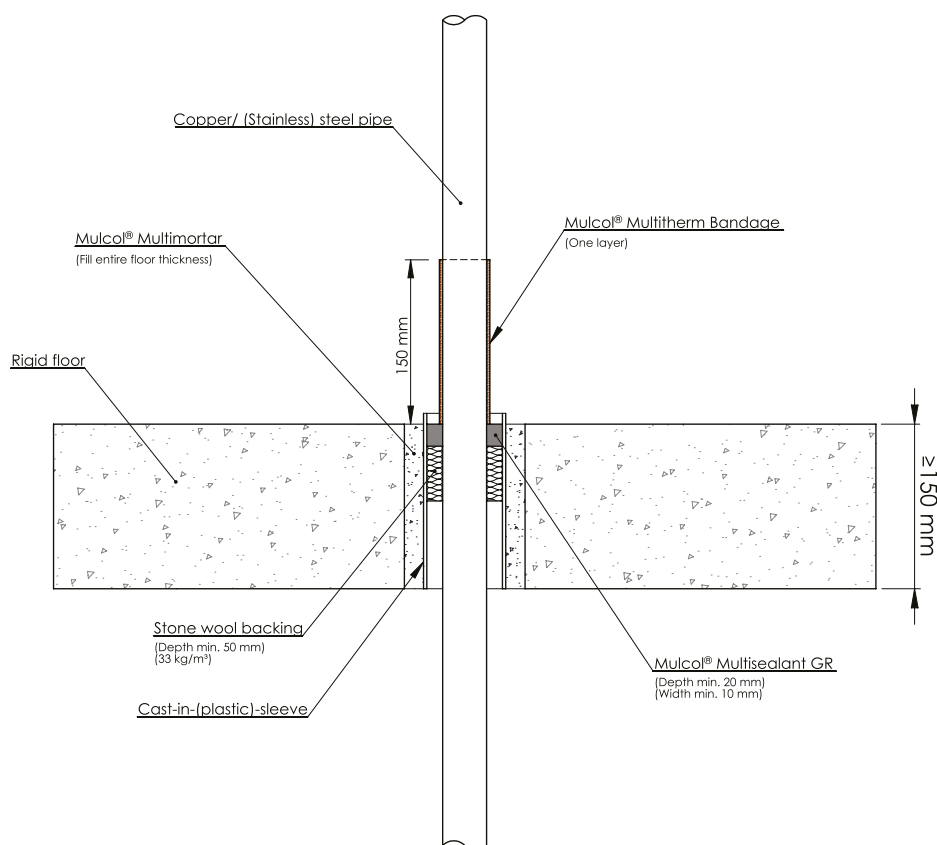
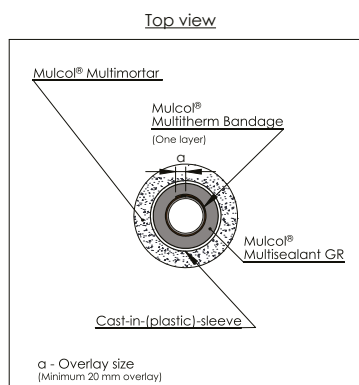


Drawing: RFmk.E-CU-B3-MF.1.31

Services		Pipe dimensions (mm)		Sealing (mm)	Multitherm Bandage	Classification
		Outer dimension	Wall thickness			
Copper / (stainless) steel / cast iron	with plastic cast-in sleeve	$\leq \varnothing 35$	1.0	Multifoam 2K $\geq 12 \times 100$ (wxd)	LI 150 two layers top of floor (two wires)	EI 90 C/U E 120 C/U

B.1.31 Multimortar - ≥ 150 mm - Electrical room services

B.1.31.11 Copper and steel pipes - Multisealant GR - Multitherm Bandage

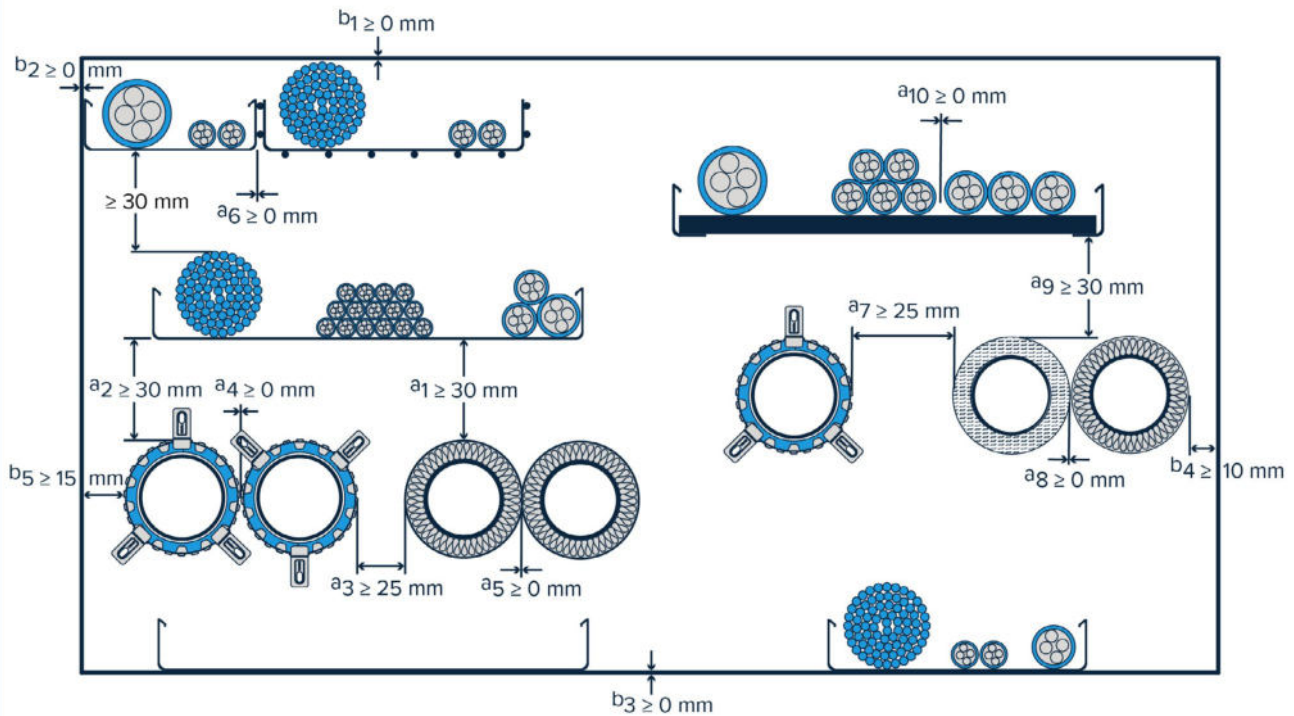


Drawing: RFmk.E-CU-MM1-B3-G3.4.10

Services		Pipe dimensions (mm)		Sealing (mm)	Backing	Multitherm Bandage	Classification
		Outer dimension	Wall thickness				
Copper / (stainless) steel / cast iron	with plastic cast-in sleeve $\leq \varnothing 50$ mm	$\leq \varnothing 35$	≥ 1.5	Multisealant GR $\geq 15 \times 20$ (wxd)	50 mm stone wool (≥ 33 kg/m³)	LI 150 two layers top of floor	EI 120 C/U

C.1 Flexible and rigid wall - General

C.1.1 Mutual distances & distance to first support



Mutual distances Mixed Penetration Seal – Mulcol® Multimortar

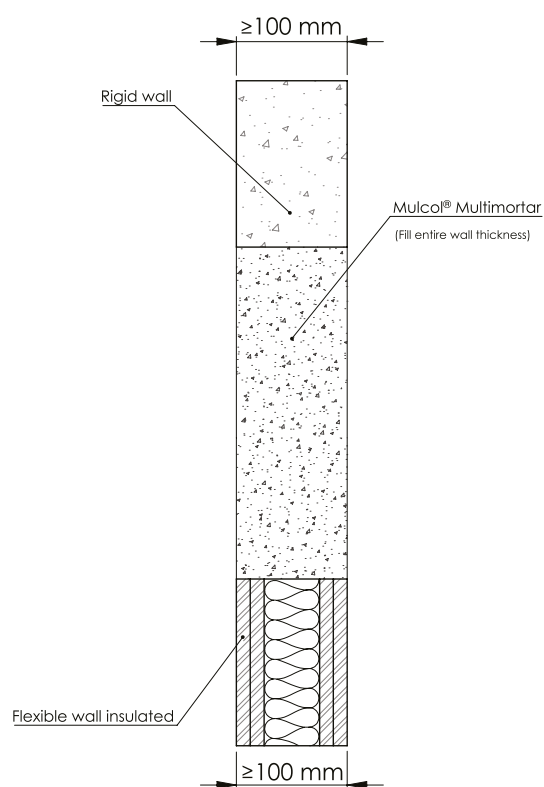
- a_1 Distance between cables/cable trays and metal pipes
- a_2 Distance between cables/cable trays and plastic pipes
- a_3 Distance between metal pipes and plastic pipes
- a_4 Distance between plastic pipes
- a_5 Distance between metal pipes with non-combustible insulation
- a_6 Distance between cable 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 Multimortar - ≥ 100 mm

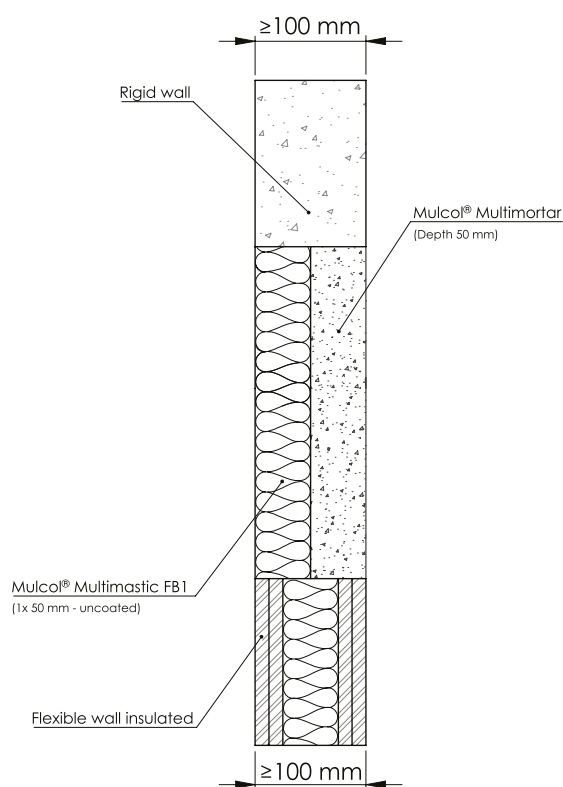


Drawing: FW.E-BS-MM1.2.10

Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3 m ²	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 2.4 m ²	EI 180
Maximum circular seal size Ø 1748 mm	

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

C.1.2.2 Multimortar + Multimastic FB system - ≥ 100 mm

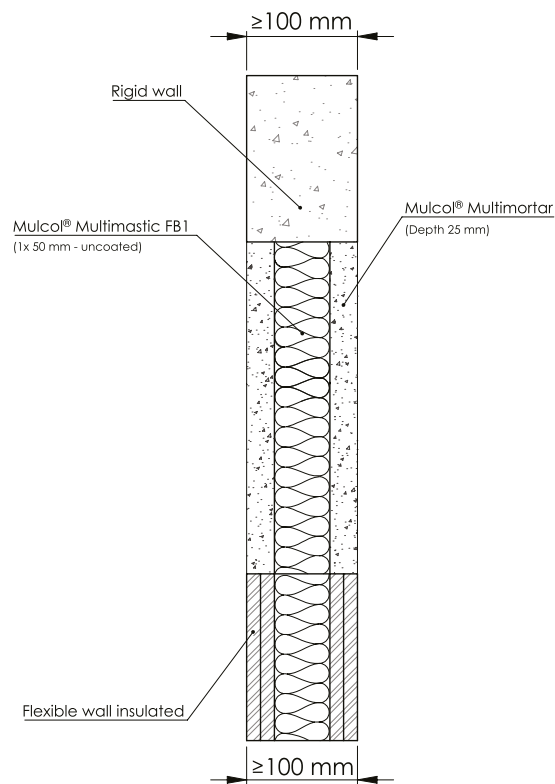


Drawing: FW.E-BS-MM2.5.10

Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3 m ²	EI 60
Maximum circular seal size Ø 1954 mm	
Maximum seal size 1200 x 1200 mm (width x height or height x width) With a maximum surface of 1.44 m ²	EI 60, E 90
Maximum circular seal size Ø 1354 mm	
Maximum seal size 625 x 750 mm (width x height or height x width) With a maximum surface of 0.38 m ²	EI 120
Maximum circular seal size Ø 691 mm	

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

C.1.2.3 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm - ≥ 100 mm

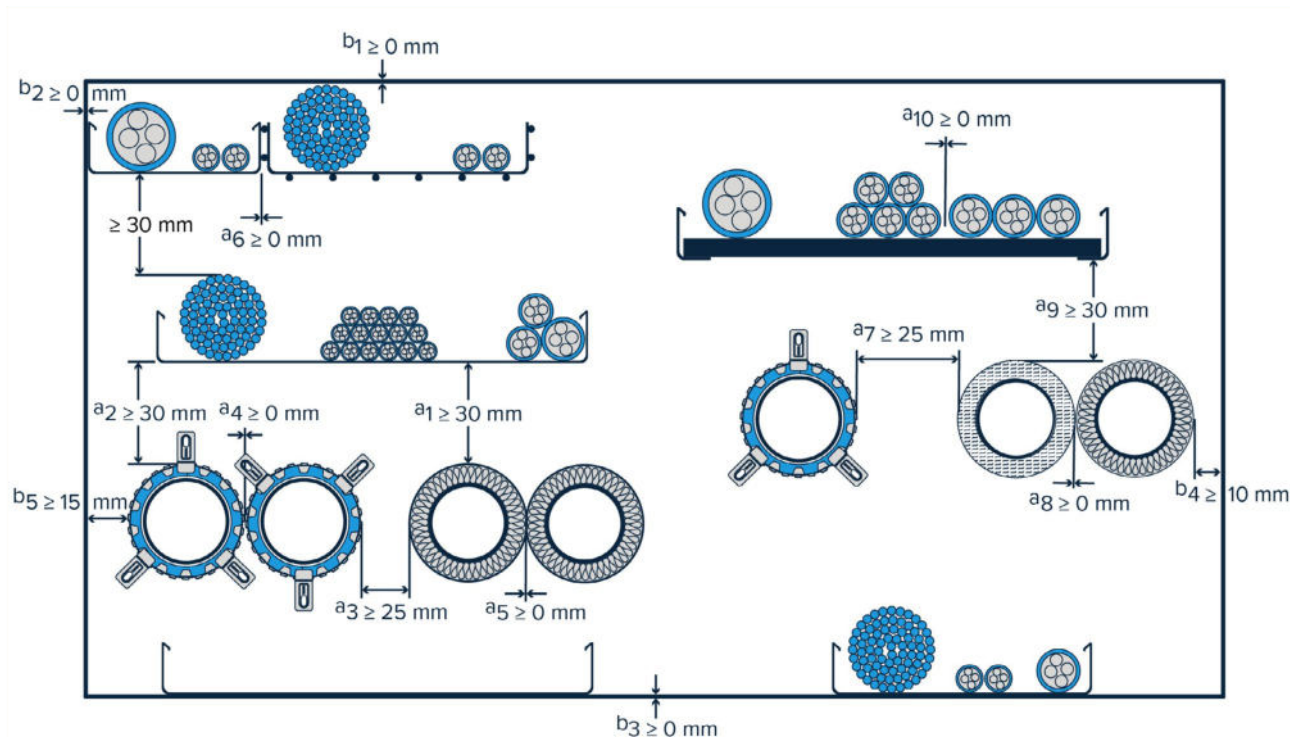


Drawing: FW.E-BS-MM3.4.10

Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3 m ²	EI 60
Maximum circular seal size Ø 1954 mm	
Maximum seal size 1200 x 1200 mm (width x height or height x width) With a maximum surface of 1.44 m ²	EI 60, E 90
Maximum circular seal size Ø 1354 mm	
Maximum seal size 625 x 750 mm (width x height or height x width) With a maximum surface of 0.38 m ²	EI 120
Maximum circular seal size Ø 691 mm	

C.2 Rigid floor - General

C.2.1 Mutual distances & distance to first support



Mutual distances Mixed Penetration Seal – Mulcol® Multimortar

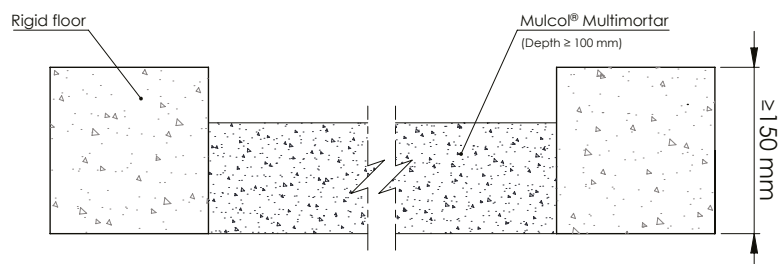
- a_1 Distance between cables/cable trays and metal pipes
- a_2 Distance between cables/cable trays and plastic pipes
- a_3 Distance between metal pipes and plastic pipes
- a_4 Distance between plastic pipes
- a_5 Distance between metal pipes with non-combustible insulation
- a_6 Distance between cable 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 Multimortar - ≥ 100 mm

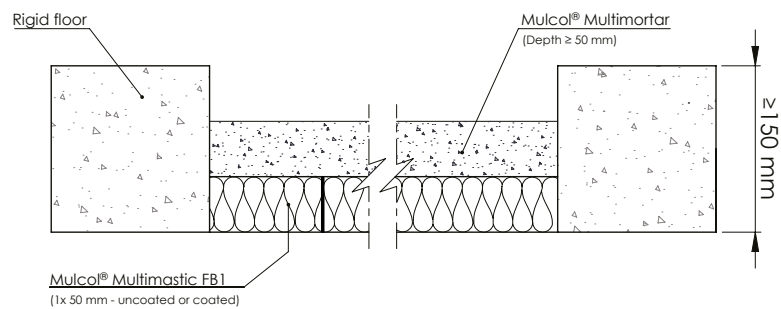


Drawing: RF.E-BS-MM1.3.10

Services	Classification
Maximum seal size 1200 x 1000 mm Maximum seal size 8500 x 820 mm	EI 180
Maximum circular seal size $\varnothing$ 1236 mm	
Maximum seal size 1000 x 750 mm Maximum circular seal size $\varnothing$ 977 mm	EI 240

C.2.2 Rigid floor - General - Maximum seal dimensions

C.2.2.2 Multimortar + Multimastic FB system - ≥ 100 mm

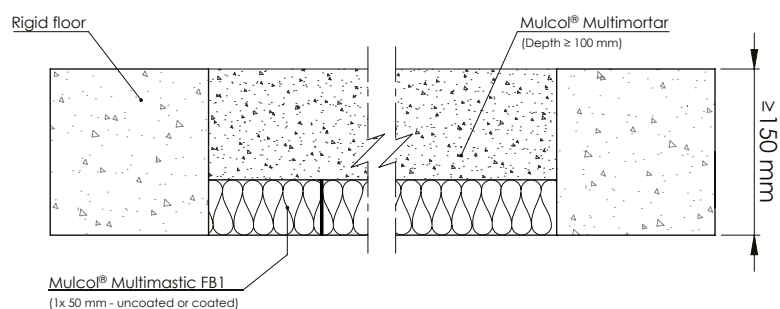


Drawing: RF.E-BS-MM2.5.10

Services	Classification
Maximum seal size 1200 x 1000 mm	EI 180
Maximum seal size 8200 x 820 mm	
Maximum circular seal size $\varnothing$ 1236 mm	

C.2.2 Rigid floor - General - Maximum seal dimensions

C.2.2.3 Multimortar + Multimastic FB system - ≥ 150 mm



Drawing: RF.E-BS-MM2.2.10

Services	Classification
Maximum seal size 1200 x 1000 mm	EI 180
Maximum seal size 8200 x 820 mm	
Maximum circular seal size $\varnothing$ 1236 mm	
Maximum seal size 450 x 450 mm	EI 240
Maximum circular seal size $\varnothing$ 508 mm	

C.3 Wall configurations

C.3.1 Allowed wall configurations

The use of Mulcol® Multimortar 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.

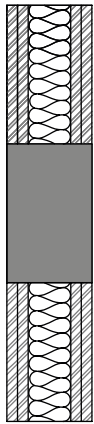
Field of direct application rules for double-sided flexible wall constructions:

- 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;
- 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;
- 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/m³. In case of hollow brick wall the same rules regarding aperture framing apply as for double-sided flexible walls.

Allowed constructions (not limited by):

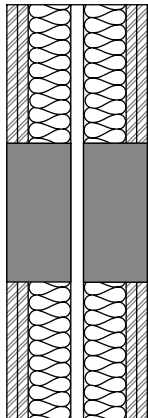
Flexible walls, fully insulated with any type of insulation.

e.g.:



Double stud walls, separated by ≥ 0 mm, fully insulated with any type of insulation.

e.g.:



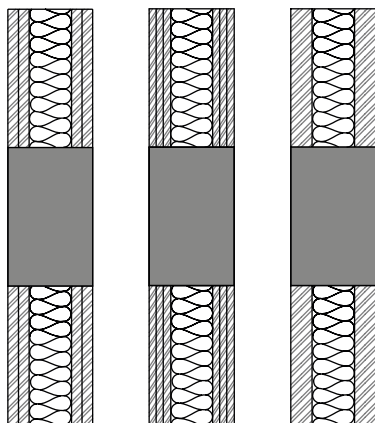
C.3 Wall configurations

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.:

