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## European Technical Assessment

**ETA 24/0330  
of 04/12/2024**

**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® Multicollar *Slim*

**Product family to which the construction product belongs** Fire Stopping and Sealing Product:  
• Penetration Seals

**Manufacturer** Mulcol International BV  
Promenade 75  
5401GM Uden  
The Netherlands

**Manufacturing plant(s)** L/002  
E/002

**This European Technical Assessment contains** 281 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, September 2017

**This version replaces** ETA 24/0330 issued on 16/09/2024

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## I. SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

### 1. Technical description of the product

- 1) Mulcol® Multicollar *Slim* is a pipe closure device 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® Multicollar *Slim* is supplied with a 30 by 12 mm intumescent liner within a stainless steel spine, to be closed around the service and fixed to the supporting element.
- 3) The products below can be used in conjunction with Mulcol® Multicollar *Slim* depending upon the required application and classification (see Annex A/B). These products are subject to separate ETAs.
  - Mulcol® Multimastic FB, Firestop board
  - Mulcol® Multimortar, Firestop mortar
  - Mulcol® Multimastic SP, Firestop mastic
  - Mulcol® Multisealant A, Firestop sealant
- 4) The annular gap around the service may be filled with Multisealant A, Multimastic SP or Multimortar. The annular gap between the pipe/insulation and the Multicollar *Slim* may be:  $\leq 15$  mm when the outer diameter is  $\leq 125$  mm,  $\leq 5$  mm when the outer diameter is  $\geq 125$  mm.
- 5) The applicant has submitted a written declaration that Mulcol® Multicollar *Slim* 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® Multicollar *Slim* is to reinstate the fire resistance performance of flexible, rigid, sand wick and CLT walls and rigid and CLT floor constructions where they are penetrated by various services.
- 2) The specific elements of construction that the system Mulcol® Multicollar *Slim* 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/m<sup>3</sup>.
  - c) CLT walls: The wall must have a minimum thickness of 100 mm, with a minimum density of 376 kg/m<sup>3</sup>
  - d) Sandwich panel walls: The wall must have a minimum thickness of 100 mm, consisting of a stone wool core with a minimum density of 115 kg/m<sup>3</sup>
  - e) Rigid floors: The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 400 kg/m<sup>3</sup>.
  - f) CLT floors: The floor must have a minimum thickness of 140 mm, with a minimum density of 350 kg/m<sup>3</sup>

\* See Annex C for the field of application.

The supporting construction must be classified in accordance with EN 13501-2 for the required fire resistance period.

- 3) The system Mulcol® Multicollar *Slim* may be used to provide a penetration seal with services e.g. cables, 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 minimum permitted separation between adjacent seals/apertures is 100 mm when penetration seals are  $\leq 300 \times 300$  mm, a separation of 200 mm is needed for larger seals.
- 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 Z<sub>1</sub>; product intended for use at conditions exposed to free weathering.
- 7) Mutual distances between services and minimum support distances are given in Annex C.

8) 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<sub>L</sub>, C<sub>L</sub> or D<sub>L</sub> classification (linear insulation).

9) 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)
- Kelox Modulrohr
- Kelox Plus-Rohr (PE-RT/AL/PE-RT)

The following fibre composite pipes (or equal) are allowed:

- Aquatechnik Fusio PP-R 80, Aquatechnik Fusio PP-RCT
- Aquatherm Blue-MF, Aquatherm Blue-S, Aquatherm Red-MF, Aquatherm Green-MF, Aquatherm Green-MS, Aquatherm Green-S, Aquatherm Lilac-S, Aquatherm Grey-MS and Aquatherm Orange M
- Bänninger PP-R, Bänninger Climatec PP-RCT and Bänninger Watertec PP-RCT

The following low-noise (Silent) pipes (or equal) are allowed:

- Coes PhoNoFire and Coestilen BluePower
- Geberit Silent PP and Geberit Silent dB 20
- Girpi Friaphon and Marley Silent
- Pipelife Master 3 and PhonEX AS
- Poloplast POLO-KAL NG and Poloplast POLO-KAL 3S
- Skolan dB
- Raupiano Plus
- Valsir Triplus,
- DykaSono
- Uponor Decibel
- Geberit Silent Pro
- Wavin SiTech+
- Wavin SiTech B1
- Wavin AS

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

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

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

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

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 factory production control shall be in accordance with the Control Plan of 14th September 2023 relating to the European Technical Assessment ETA 24/0330 issued on 04/12/2024 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:

04-12-2024

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

## Annex - Resistance to Fire Classification - Mulcol® Multicollar *Slim*

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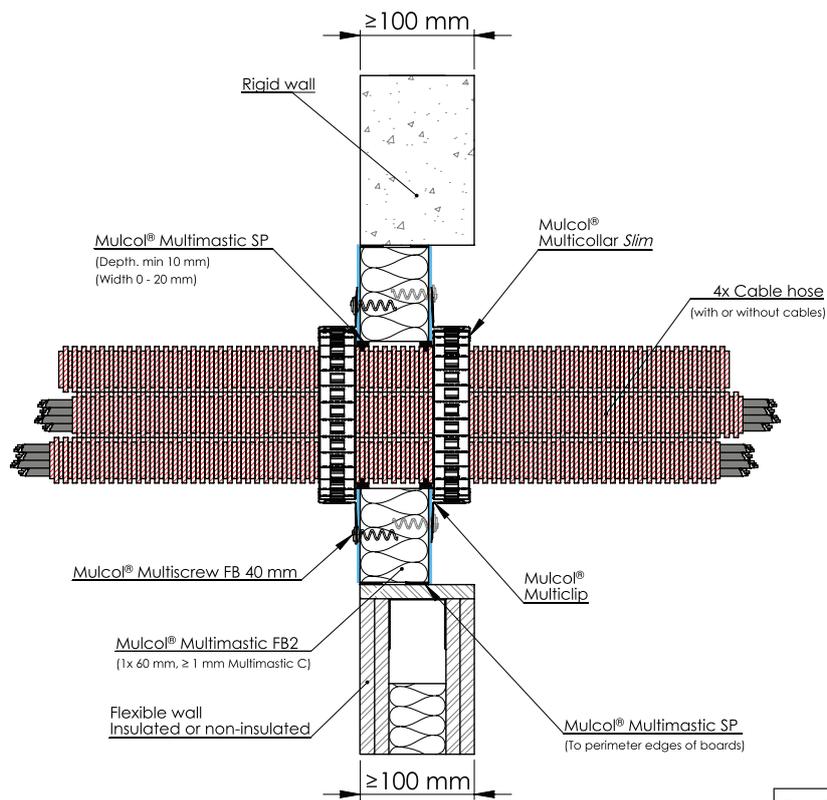
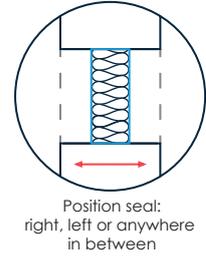
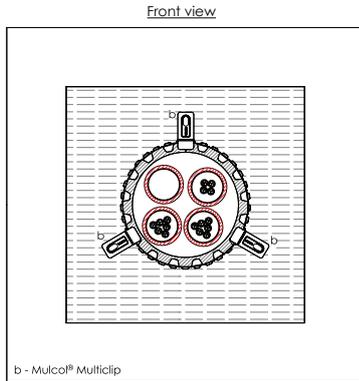
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**A.1.1 Multimastic FB2 - 1x60 mm - Cables, trays and conduits**

**A.1.1.1 Multiple flexible conduits with cables**



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

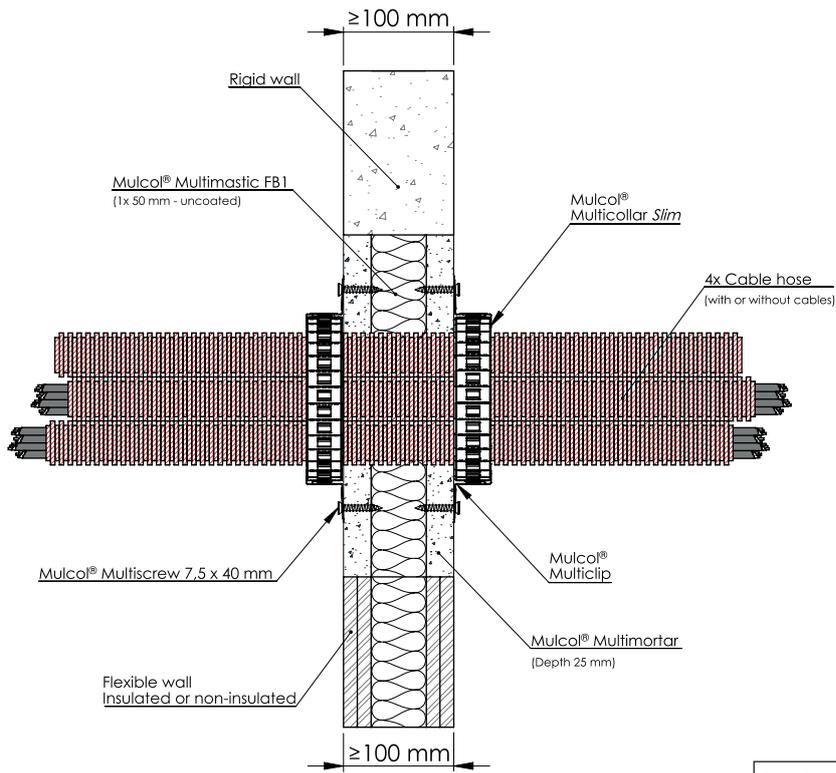
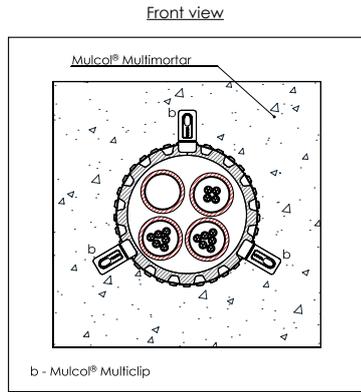
Services	Number of sleeves	Product	Sealing (mm)	Classification
Ribbed PE-sleeve conduit ≤ Ø 63 mm, with or without cables	≤ 4	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/C, E 120 U/C

**A.1.2**

**Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm -  
Cables, trays and conduits**

**A.1.2.1**

**Multiple flexible conduits with cables**

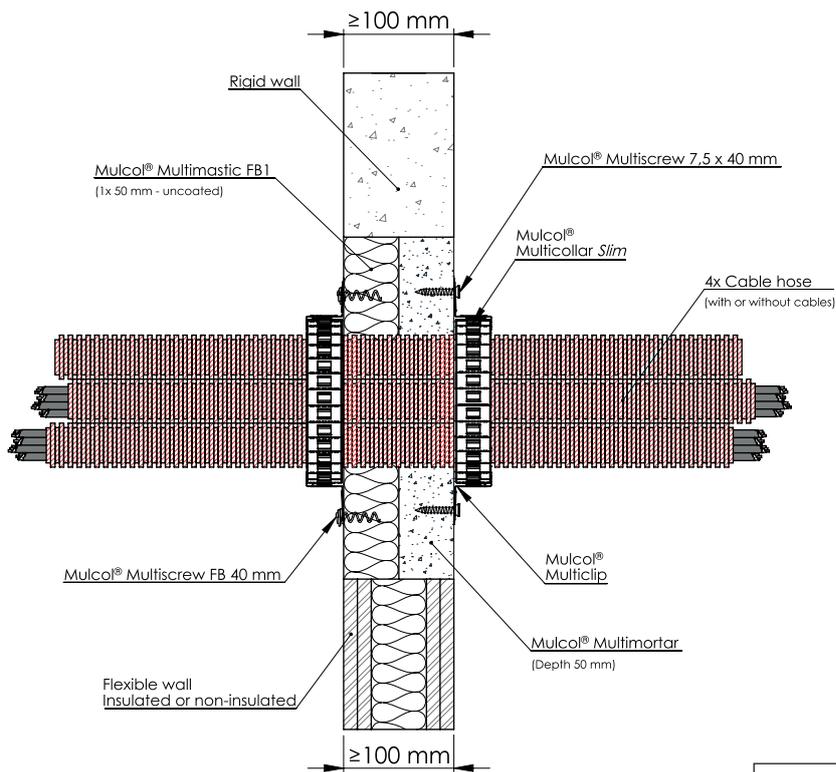
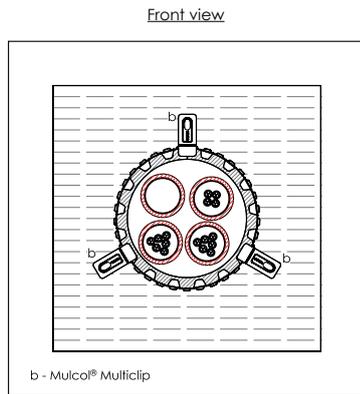


Drawing: FW.E-MC30-ECH4-MM3.4.30

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

## A.1.3 Multimortar + Multimastic FB - $\geq 100$ mm - Cables, trays and conduits

### A.1.3.1 Multiple flexible conduits with cables

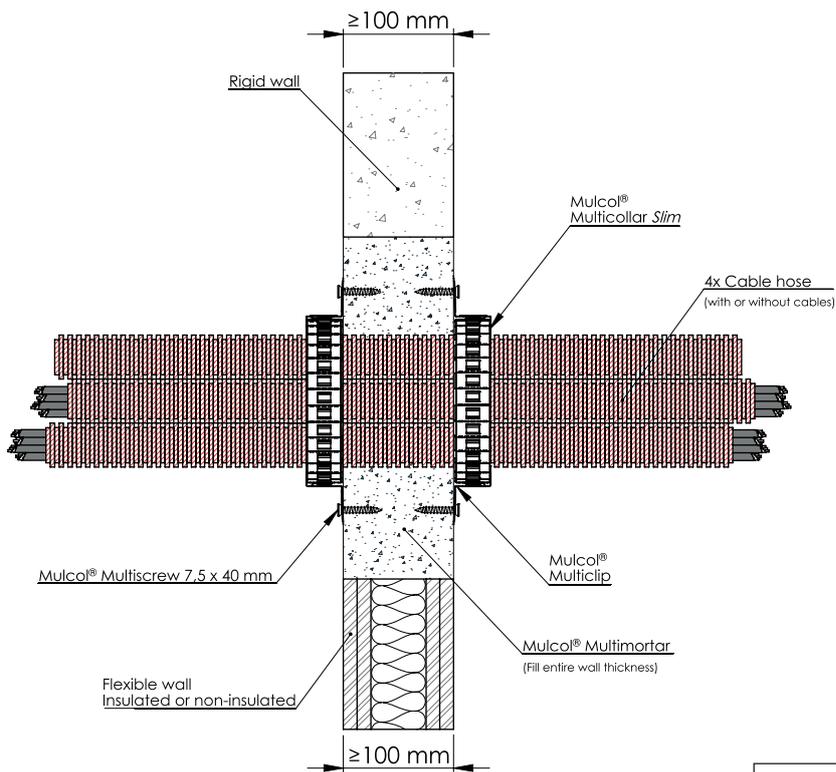
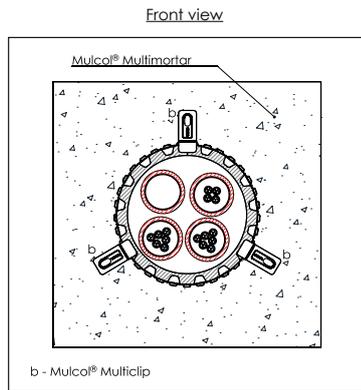


Drawing: FW.E-MC30-ECH4-MM2.5.30

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

## A.1.4 Multimortar - $\geq 100$ mm - Cables, trays and conduit

### A.1.4.1 Multiple flexible conduits with cables

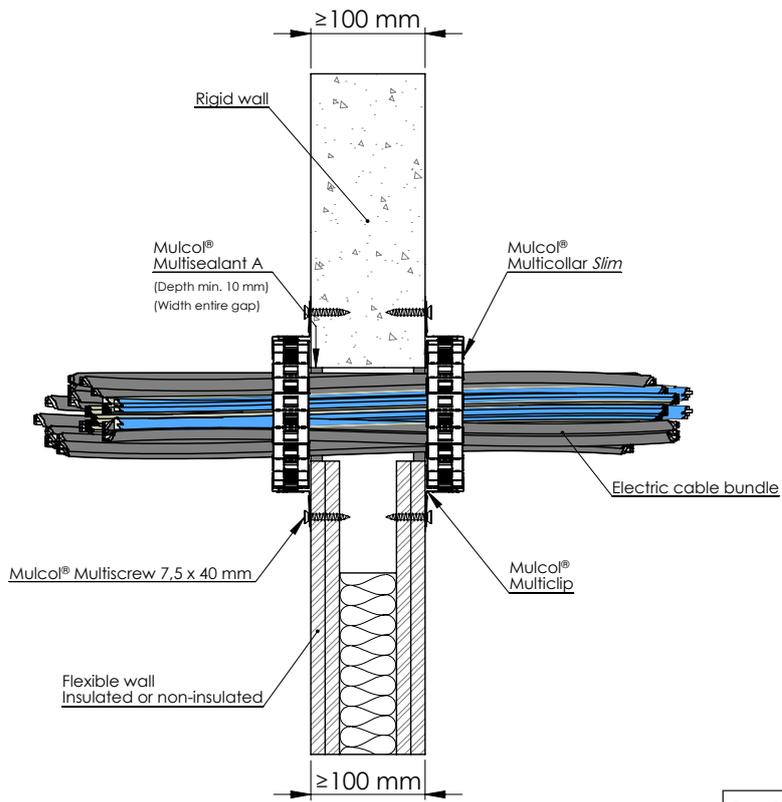
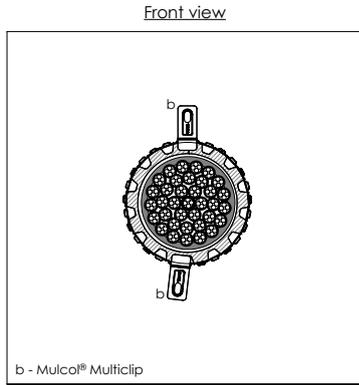


Drawing: FW.E-MC30-ECH4-MM1.2.30

Services	Number of sleeves	Product	Allowed cables	Classification
Ribbed PE-sleeve conduit $\leq \varnothing 63$ mm with or without cables	$\leq 4$	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
Ribbed PE-sleeve conduit $\leq \varnothing 50$ mm with or without cables	$\leq 5$	Multicollar <i>Slim</i>	Sheathed cables $\leq \varnothing 21$ mm (single or bundled) Cables $\leq \varnothing 21$ mm in a tied bundle	EI 120 U/U

**A.1.5 Directly through wall -  $\geq 100$  mm - Cables, trays and conduits**

**A.1.5.1 Electrical cables**

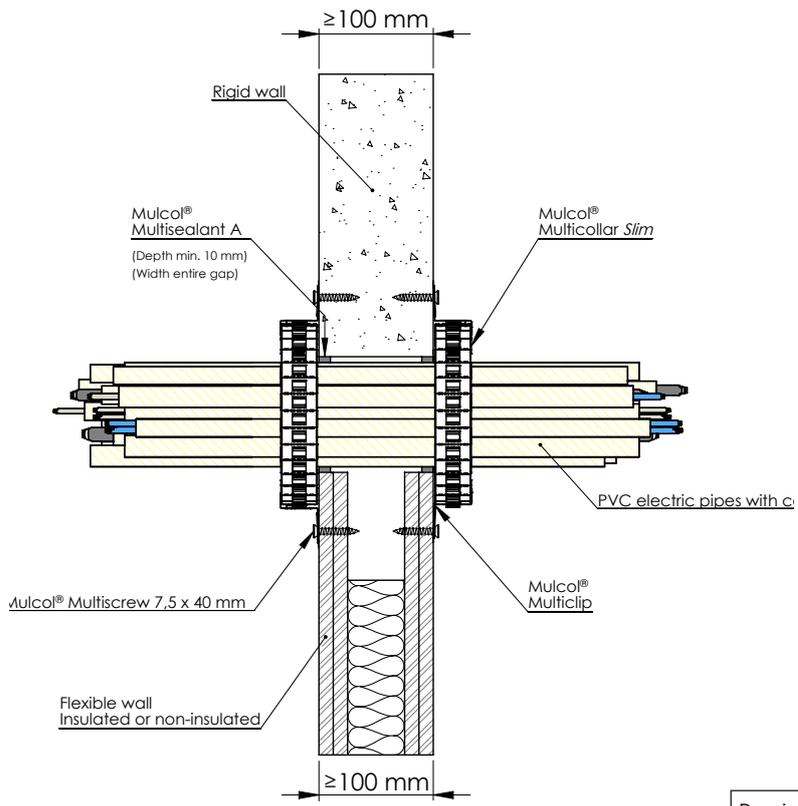
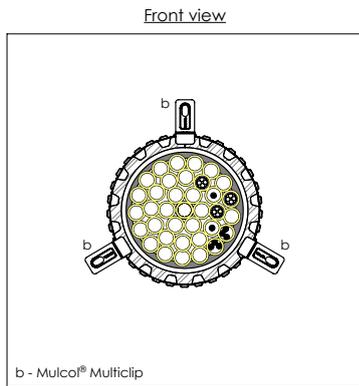


Drawing: FW.E-MC30-ECB-10.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Multiple electrical / telecommunication cables max. 63 pcs.	Multicollor Slim	$\leq \varnothing 100$	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 120

**A.1.5 Directly through wall -  $\geq 100$  mm - Cables, trays and conduits**

**A.1.5.2 Multiple PVC conduits**

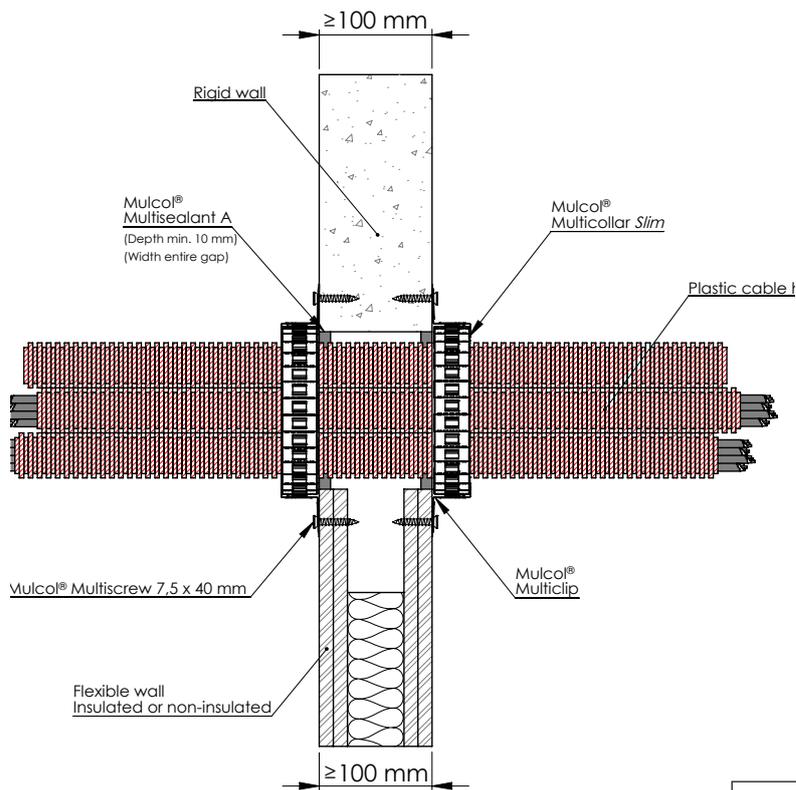
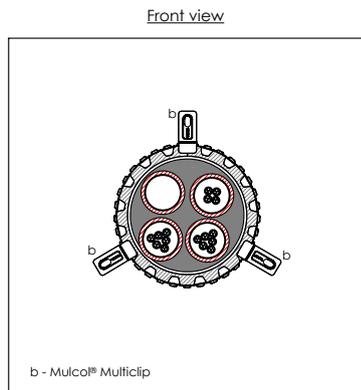


Drawing: FW.E-MC30-EPB-10.0.40

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Multiple PVC conduits max. 18 pcs., max. $\leq \varnothing 25$ mm with or without cables	Multicollar <i>Slim</i>	$\leq \varnothing 100$	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 90 U/U

**A.1.5 Directly through wall -  $\geq 100$  mm - Cables, trays and conduits**

**A.1.5.3 Multiple flexibles conduits with cables**

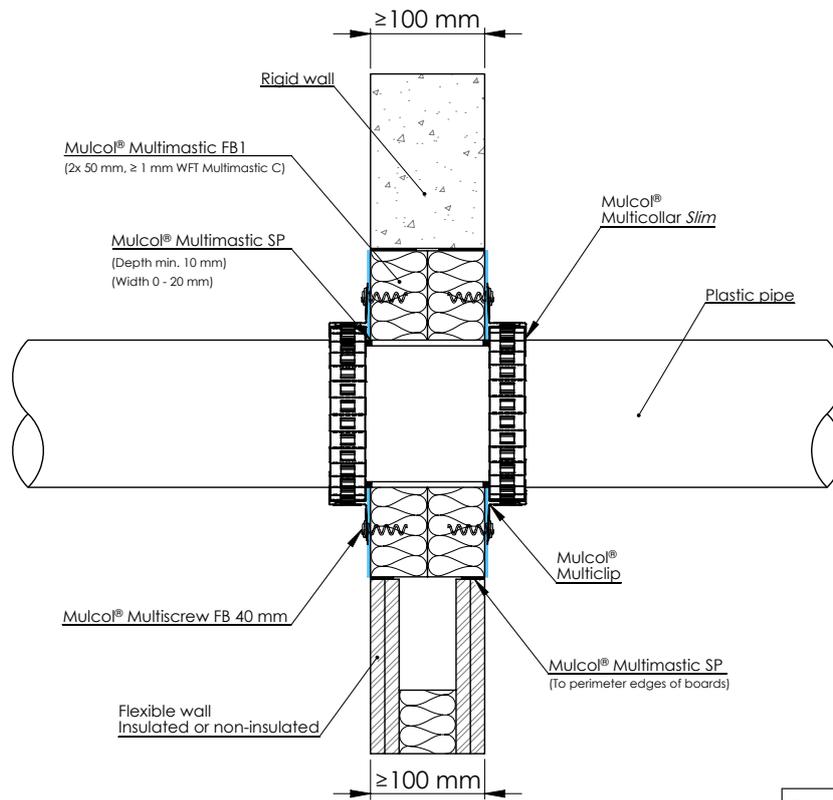
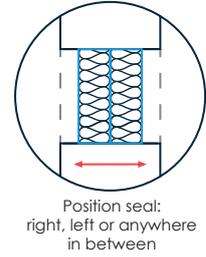
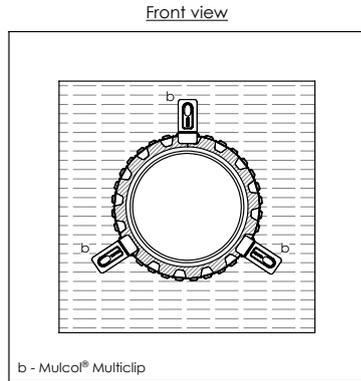


Drawing: FW.E-MC30-ECH-10.0.30

Services	Number of sleeves	Product	Allowed cables	Classification
Ribbed PE-sleeve conduit $\leq \varnothing 50$ mm with or without cables	$\leq 5$	Multicollar Slim	Sheathed cables $\leq \varnothing 21$ mm (single or bundled) Cables $\leq \varnothing 21$ mm in a tied bundle	EI 120 U/U

## A.1.6 Multimastic FB1 - 2x50 mm - Combustible pipes

### A.1.6.1 Plastic pipes



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

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC PP PVC(-U/-C)	≤ Ø 40	2.3 - 9.3	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 U/U
PE(-HD) / PE-X / ABS / SAN+PVC		2.7 - 6.6			EI 120 U/U
		6.6 - 9.3			EI 60 U/U
PP	≤ Ø 110	2.7			EI 120 U/U
		2.7 - 9.3			EI 60 U/U
2.7		EI 120 U/U			
PVC(-U/-C)		2.7 - 9.3	EI 60 U/U		

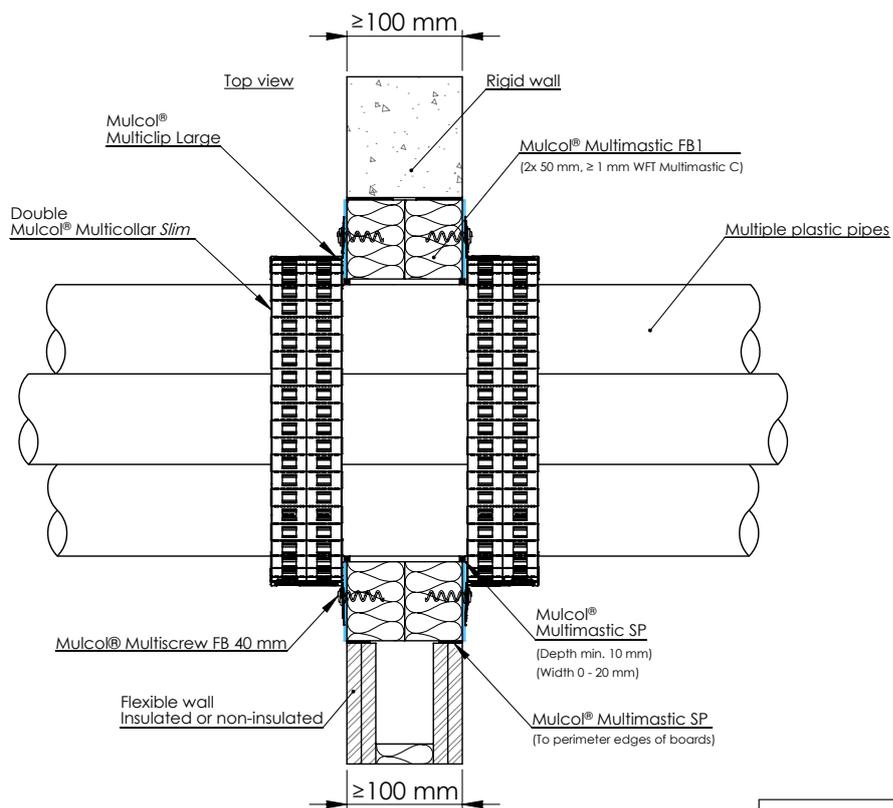
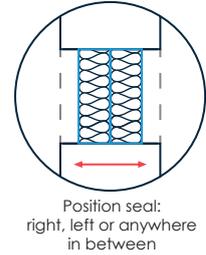
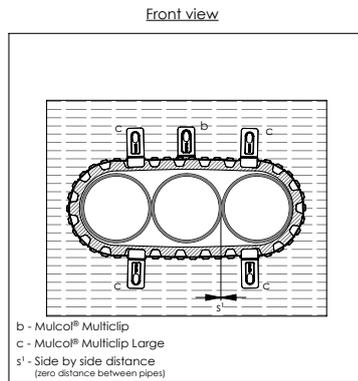
**A.1.6 Multimastic FB1 - 2x50 mm - Combustible pipes**

**A.1.6.1 Plastic pipes**

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification		
	Outer dimension	Wall thickness					
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 125	3.1 - 9.3	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	<b>EI 60 U/U</b>		
PP							
PVC(-U/-C)							
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 160	4.0 - 9.5					<b>EI 60 U/C</b>
PP		4.0 - 9.1					
PVC(-U/-C)							

## A.1.6 Multimastic FB1 - 2x50 mm - Combustible pipes

### A.1.6.2 Multiple plastic pipes



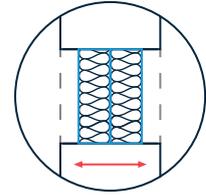
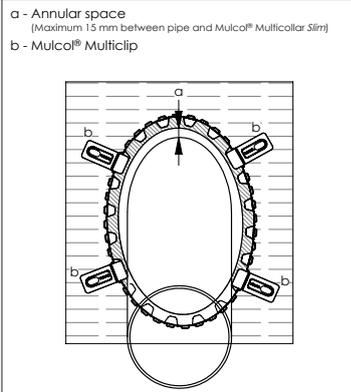
Drawing: PBfw.E-MLP3-20.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	$3x \leq \varnothing 110$	2.7	Multicollar <i>Slim</i> Double	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/C, E 120 U/C

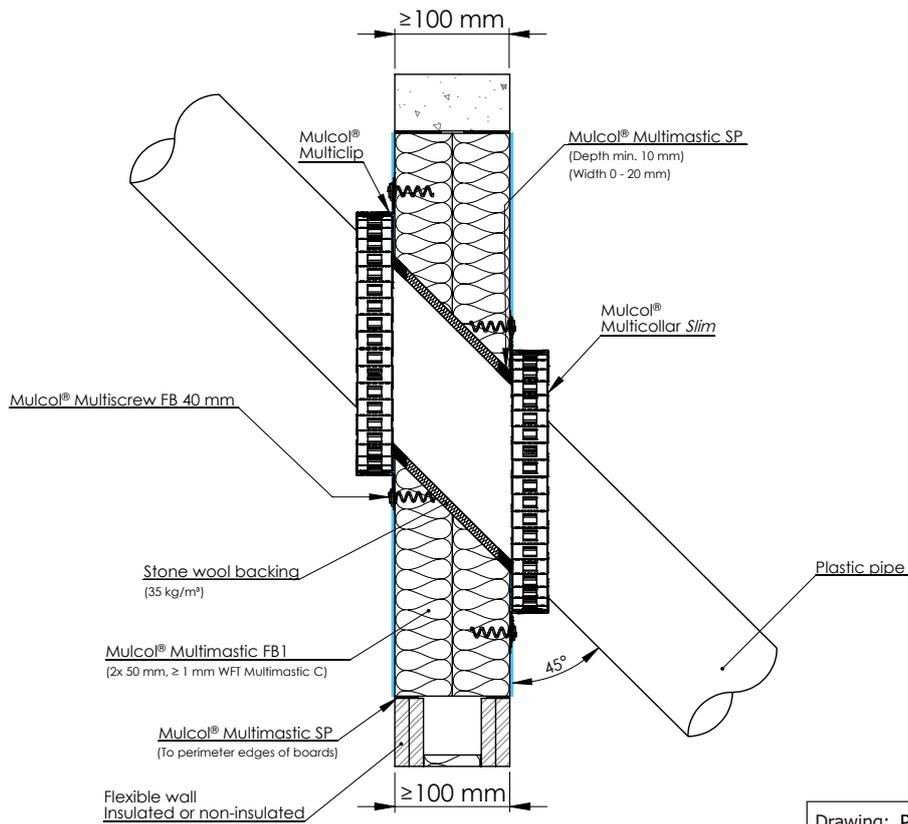
## A.1.6 Multimastic FB1 - 2x50 mm - Combustible pipes

### A.1.6.3 Plastic pipes perpendicular to 45°

Front view



Position seal:  
right, left or anywhere  
in between

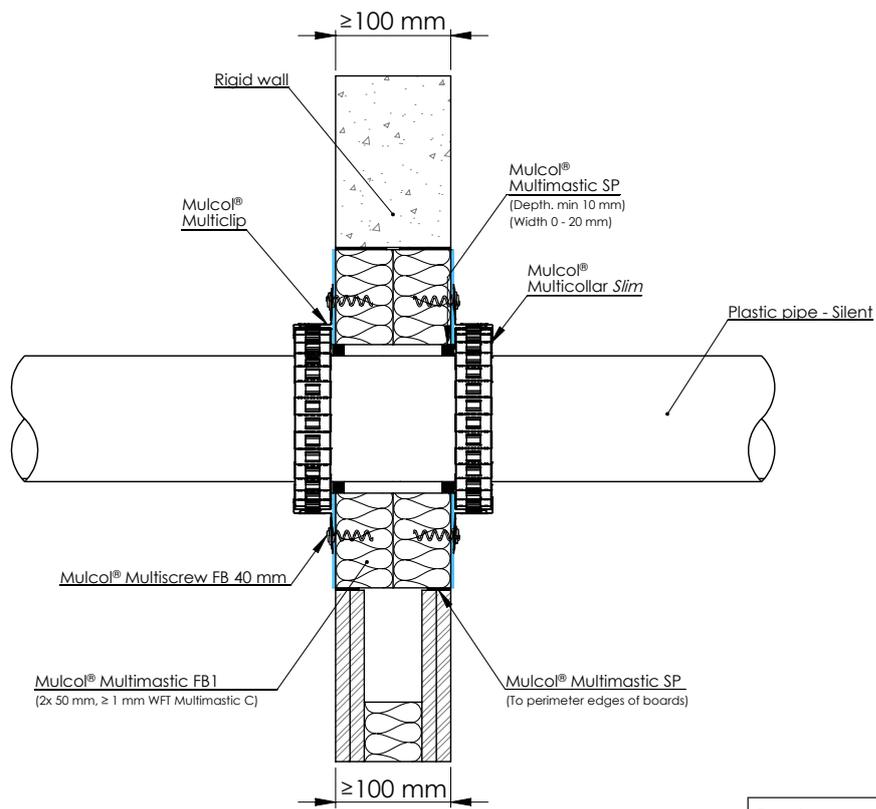
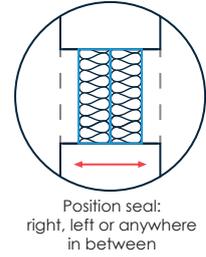
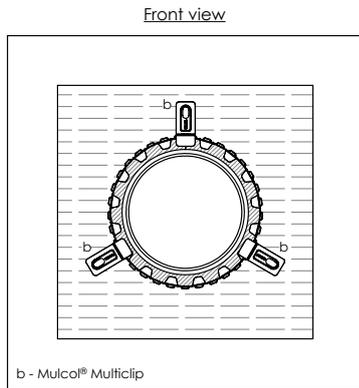


Drawing: PBFw.E-PP-MFB1-10.1.10

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

**A.1.6 Multimastic FB1 - 2x50 mm - Combustible pipes**

**A.1.6.4 Plastic pipes (Silent)**

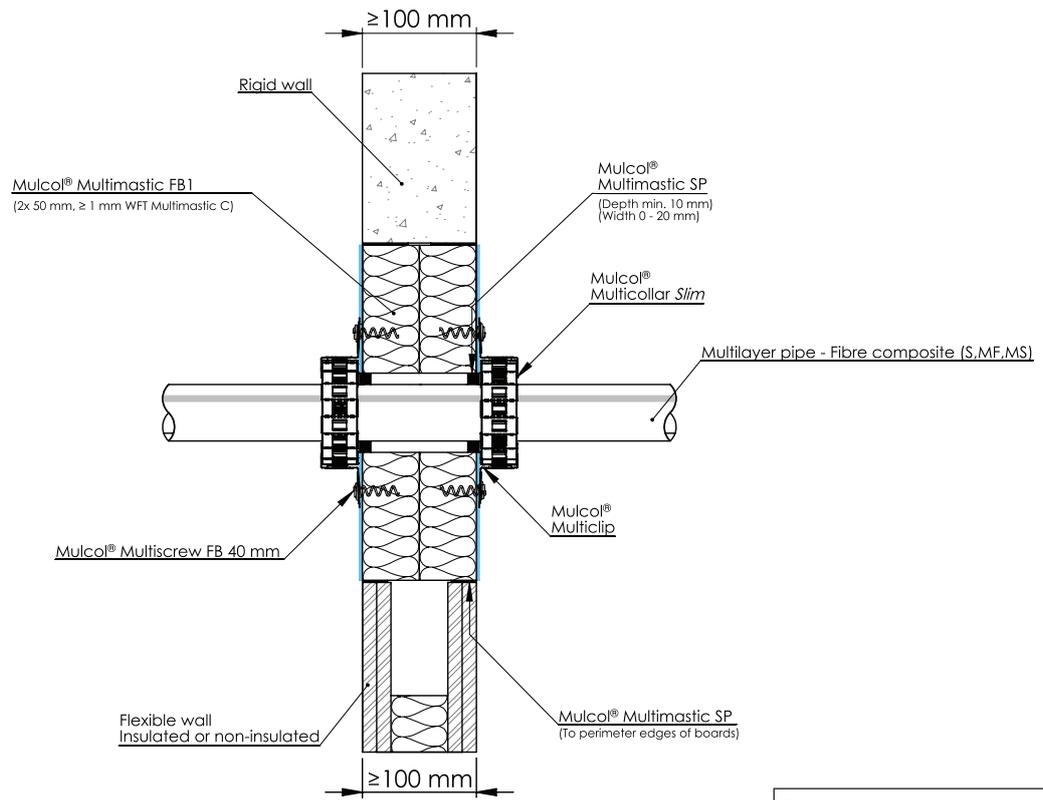
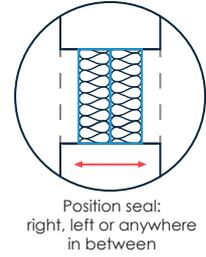
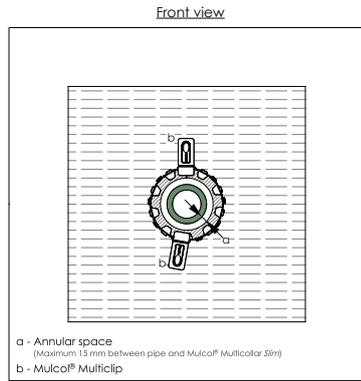


Drawing: PBfw.E-MC30-PPS-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB20	≤ Ø 110	6.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 U/U

**A.1.6 Multimastic FB1 - 2x50 mm - Combustible pipes**

**A.1.6.5 PP-R Multilayer pipes**

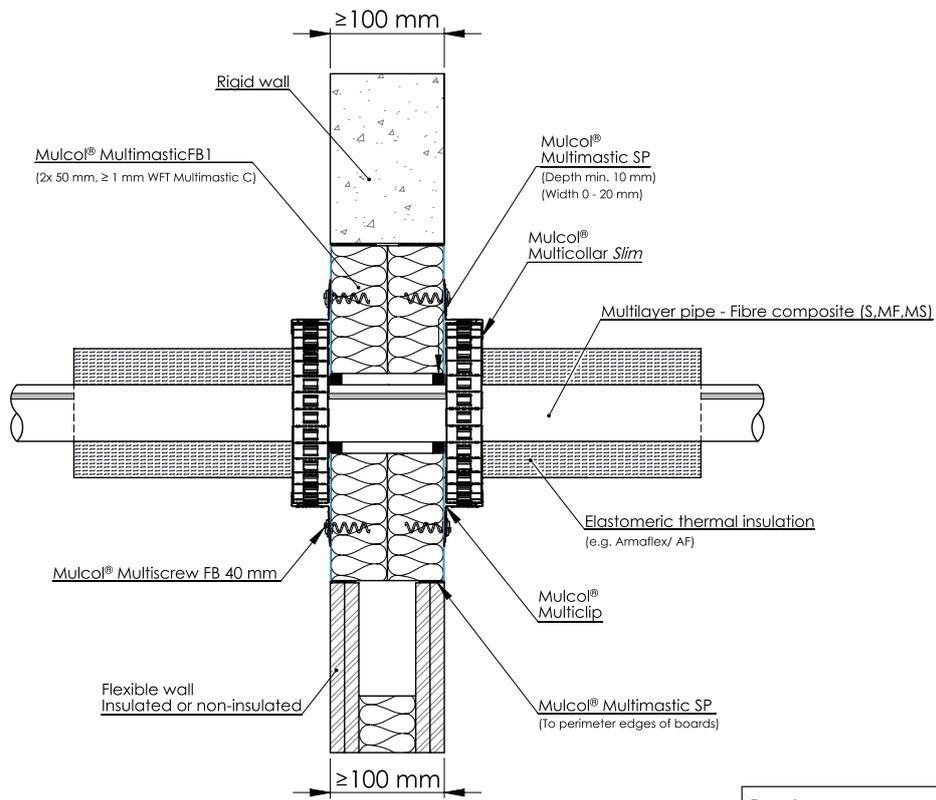
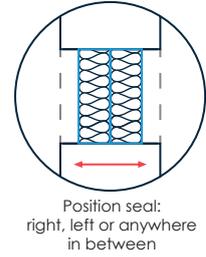
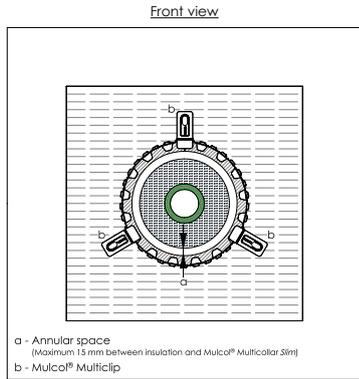


Drawing: PBfw.E-MLF-MC30-10.0.10

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

**A.1.6 Multimastic FB1 - 2x50 mm - Combustible pipes**

**A.1.6.6 PP-R Multilayer pipes - Elastomer LI 300 / CI**

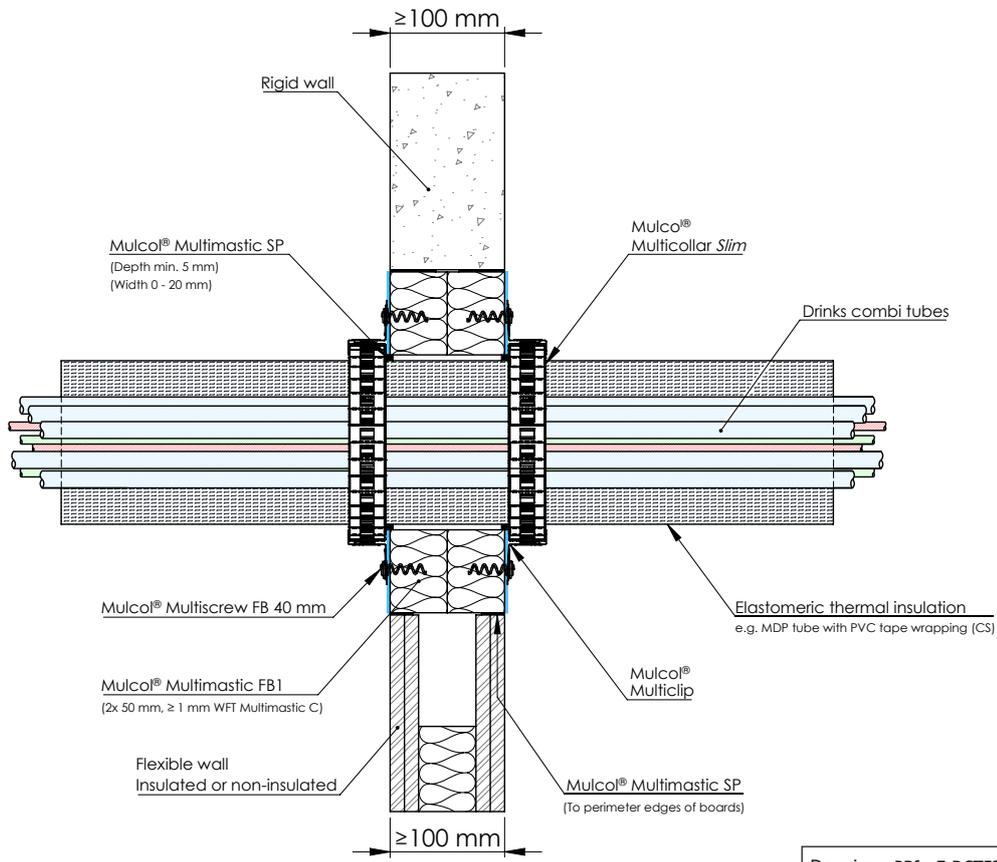
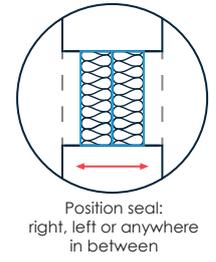
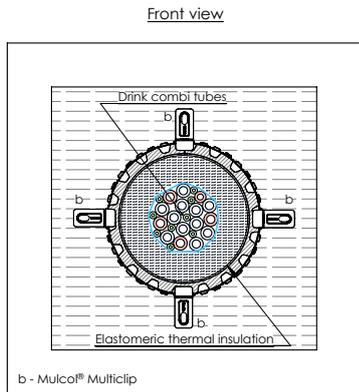


Drawing: PBfw.E-MLF-MC30-10.0.22

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

**A.1.6 Multimastic FB1 - 2x50 mm - Combustible pipes**

**A.1.6.7 Drinks tubing system**



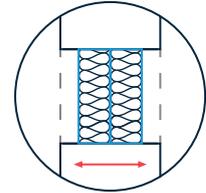
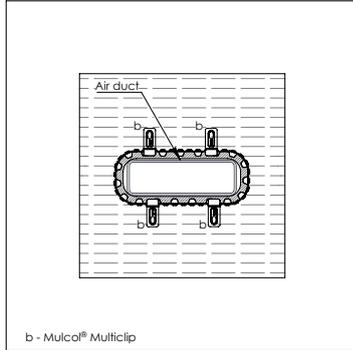
Drawing: PBfw.E-DCT52-MC30-10.0.22

Services	Dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Hoses no.	Type	Thickness (mm)	Configuration			
Drinks tubing system	≤ Ø 47	≤ 3	Elastomeric foam	8 - 35	CS	Multicollar Slim	Multimastic SP ≥ 0-20 x 5 (wx d)	EI 60 U/C
	≤ Ø 145	≤ 52						

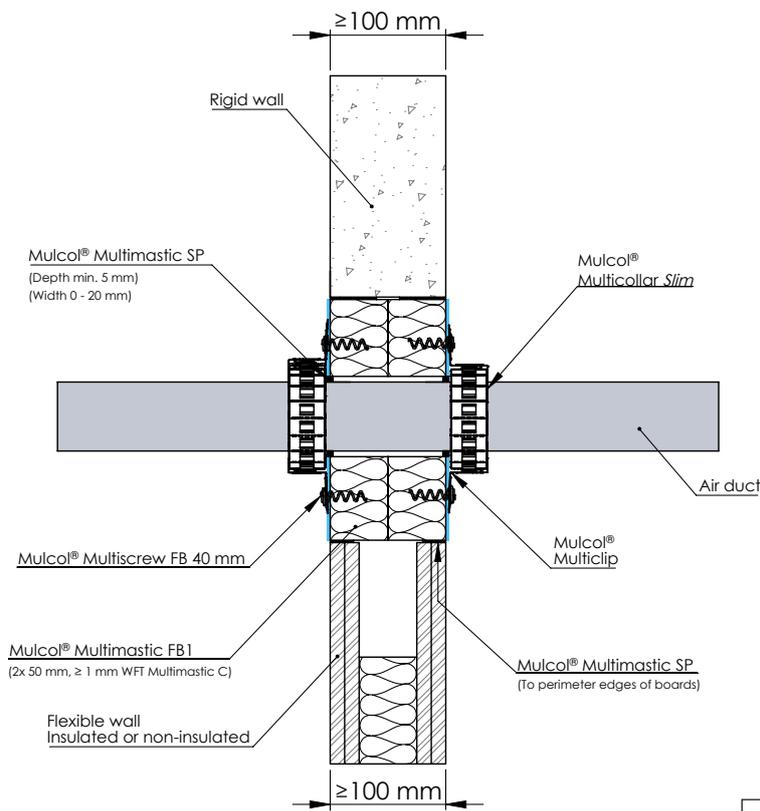
**A.1.6 Multimastic FB1 - 2x50 mm - Combustible pipes**

**A.1.6.8 Rectangular plastic duct**

Front view



Position seal:  
right, left or anywhere  
in between

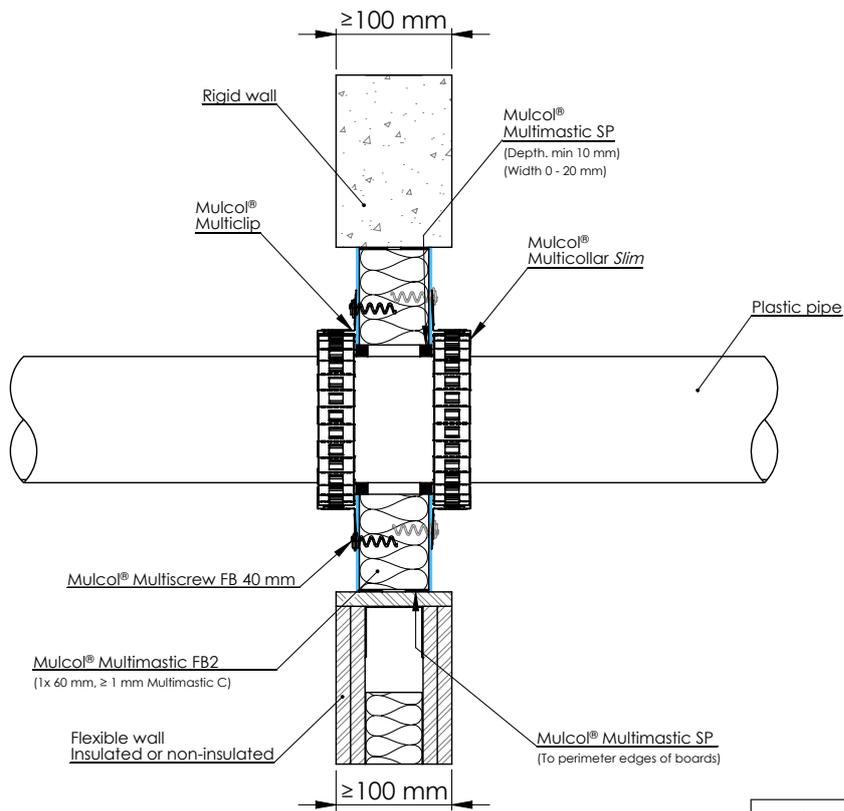
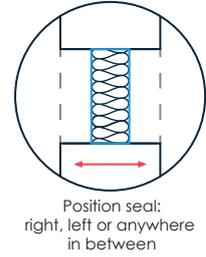
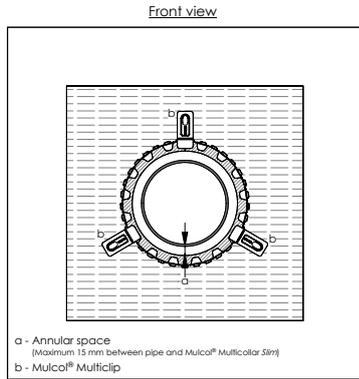


Drawing: PBfw.E-AD-MFB1.2.10

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

**A.1.7 Multimastic FB2 - 1x60 mm - Combustible pipes**

**A.1.7.1 Plastic pipes**

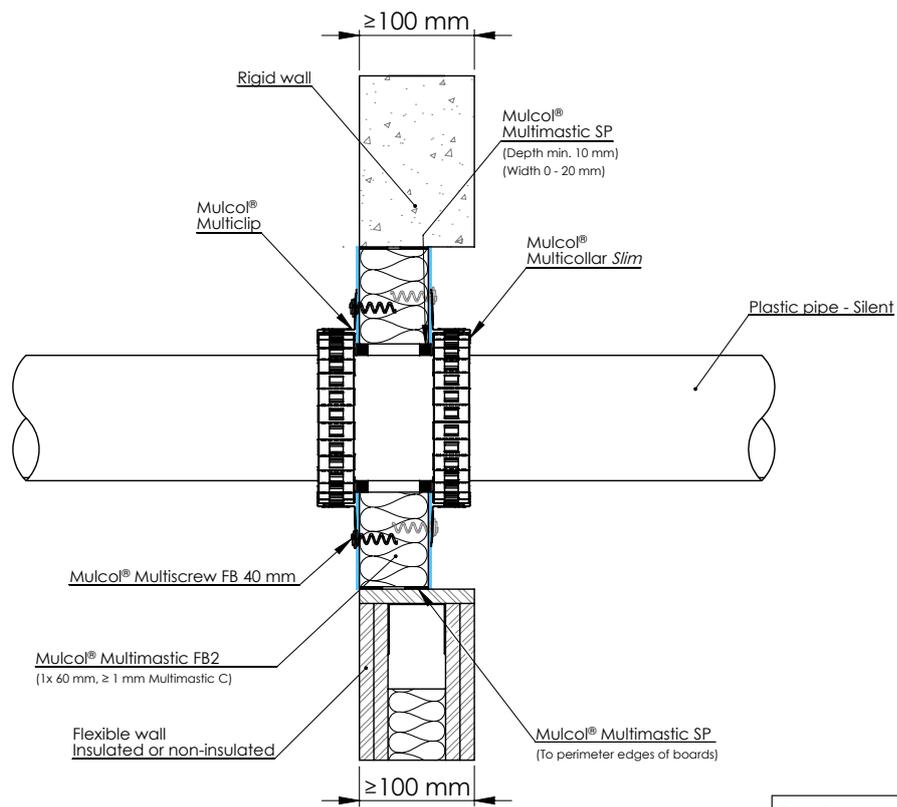
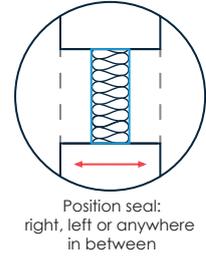
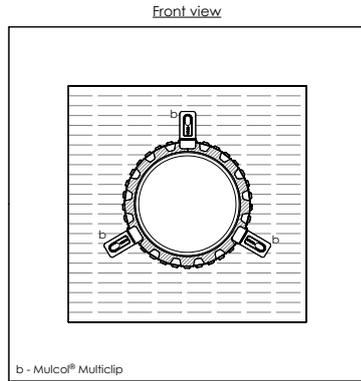


Drawing: PBfw.E-PP-MFB2.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC PVC(-U/-C)	≤ Ø 110	2.7	Multicollar <i>Slim</i>	Multimastic SP ≥ 0-20 x 10 (wxd)	EI 120 U/U
PE(-HD) / PE-X / ABS / SAN+PVC					EI 45 U/U E 60 U/U
PP	≤ Ø 125	3.9			EI 60 U/U
PVC(-U/-C)					

**A.1.7 Multimastic FB2 - 1x60 mm - Combustible pipes**

**A.1.7.2 Plastic pipes (Silent)**

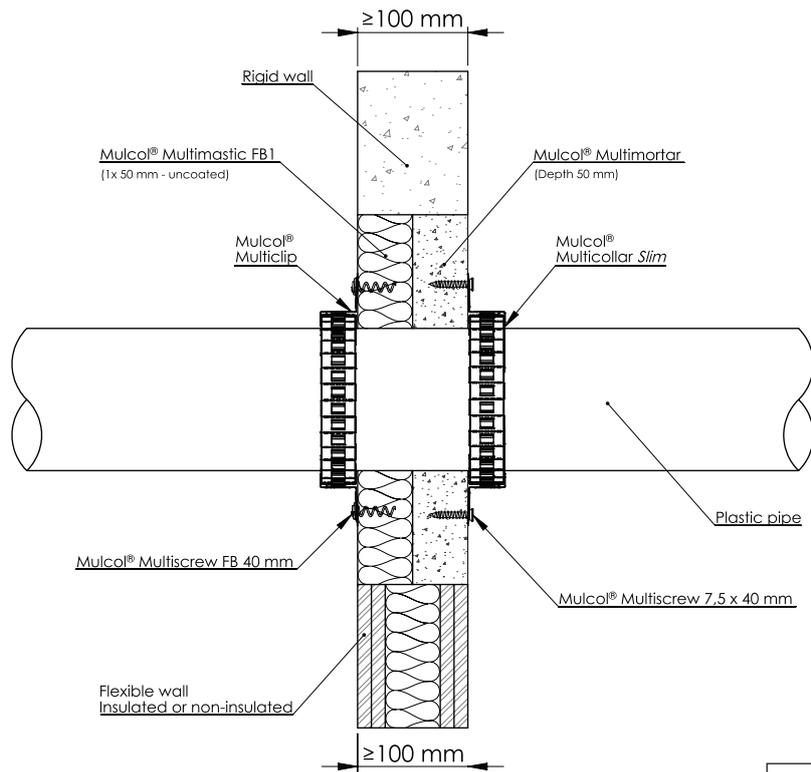
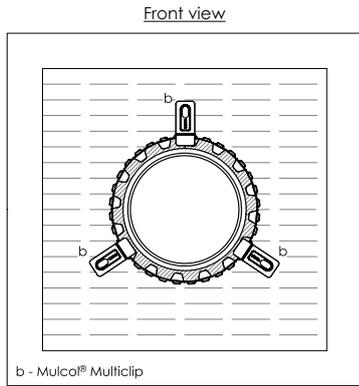


Drawing: PBfw.E-MC30-PPS-MFB2.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB20	≤ Ø 110	6.0	Multicollor <i>Slim</i>	Multimastic SP ≥ 0-20 x 10 (wxd)	EI 60 U/U

**A.1.8 Multimortar + Multimastic FB -  $\geq 100$  mm - Combustible pipes**

**A.1.8.1 Plastic pipes**

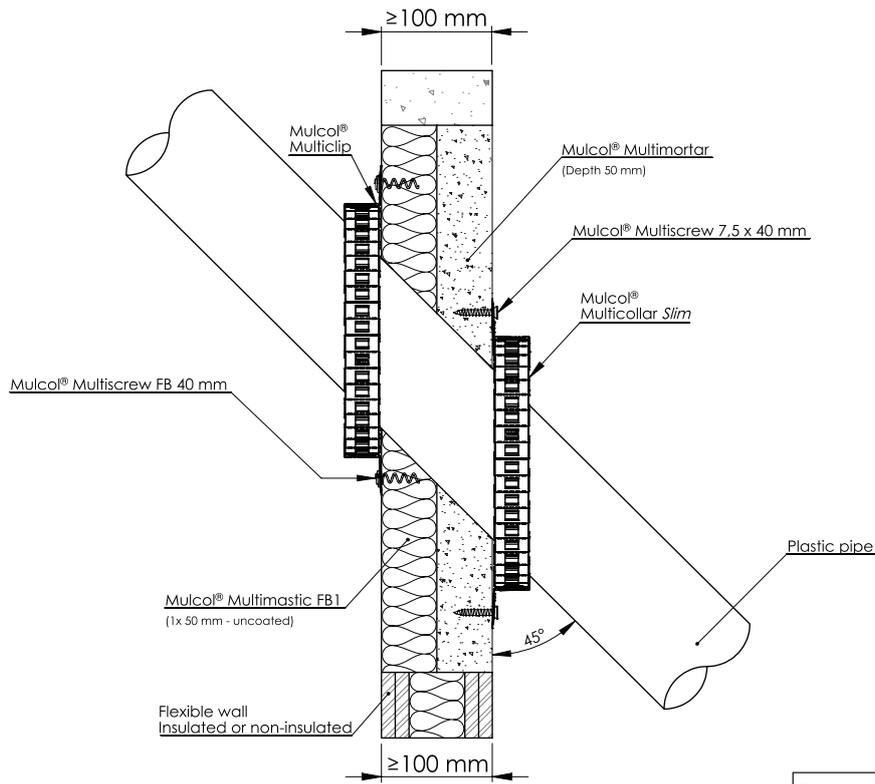
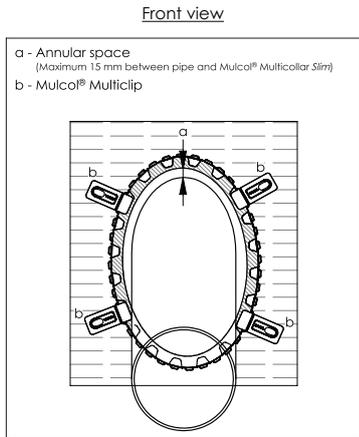


Drawing: FW.E-MC30-PP-MM2.5.10

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

**A.1.8 Multimortar + Multimastic FB -  $\geq 100$  mm - Combustible pipes**

**A.1.8.2 Plastic pipes perpendicular to 45°**

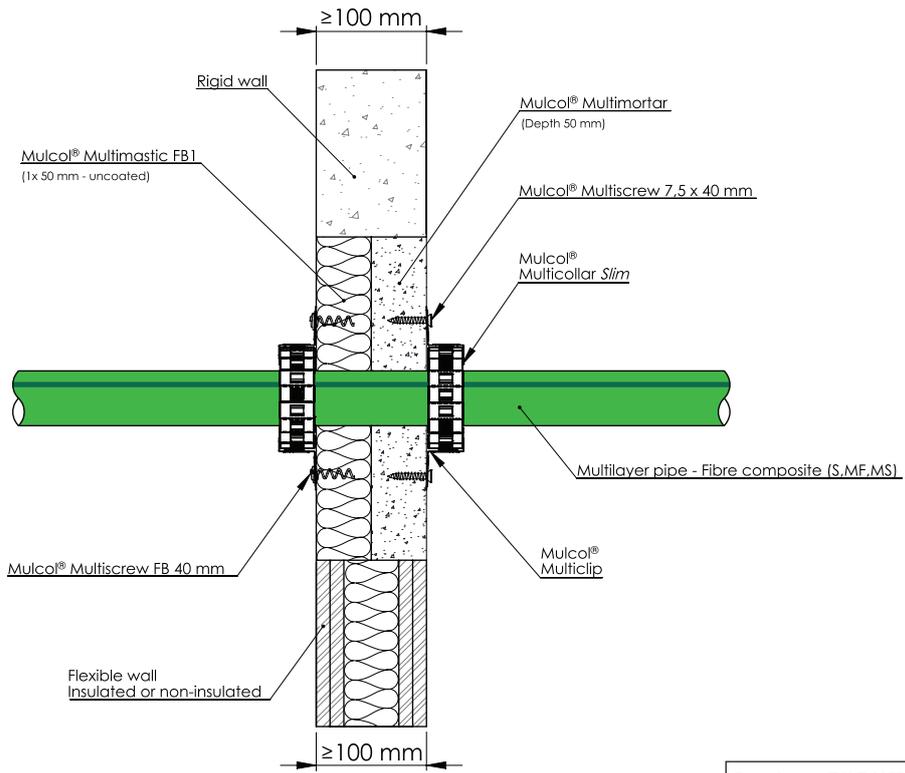
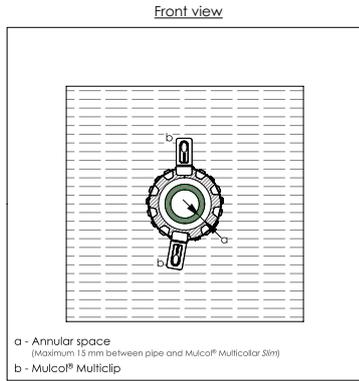


Drawing: FW.E-MC30o-PP-MM2.5.10

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

**A.1.8 Multimortar + Multimastic FB -  $\geq 100$  mm - Combustible pipes**

**A.1.8.3 PP-R Multilayer pipes**

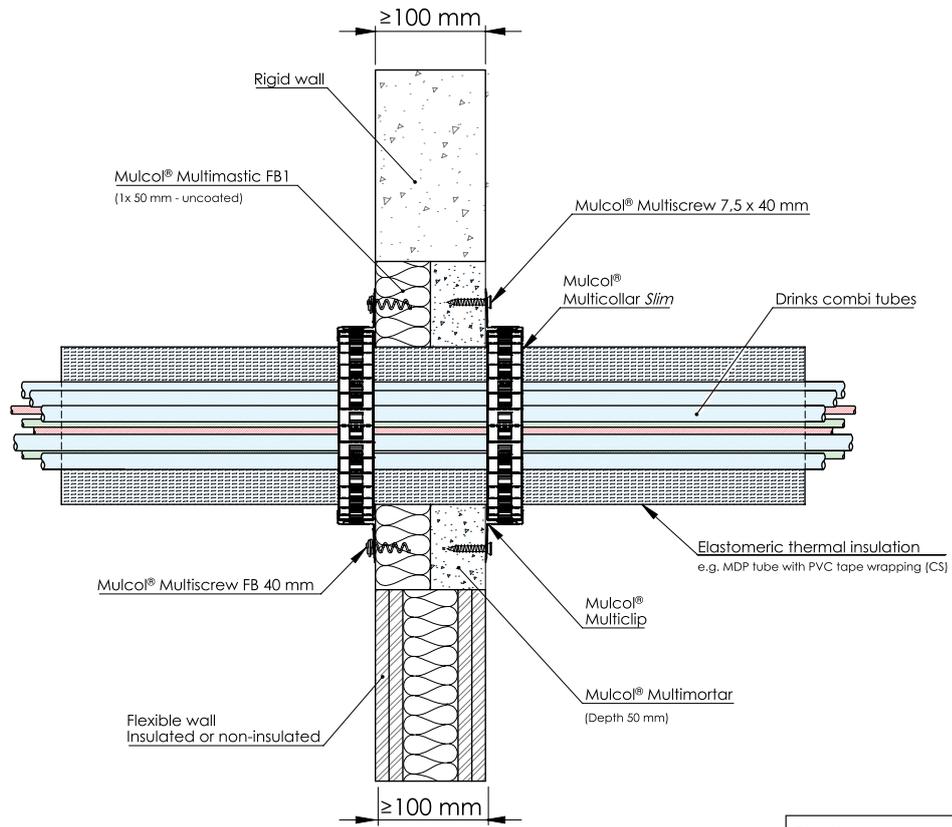
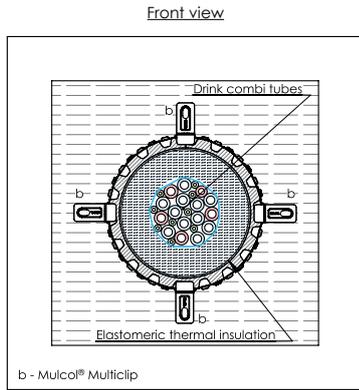


Drawing: FW.E-MC30-MLF-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	$\leq \text{Ø } 50$	6.9	Multicollar Slim	EI 120 U/C

**A.1.8 Multimortar + Multimastic FB -  $\geq 100$  mm - Combustible pipes**

**A.1.8.4 Drinks tubing system**

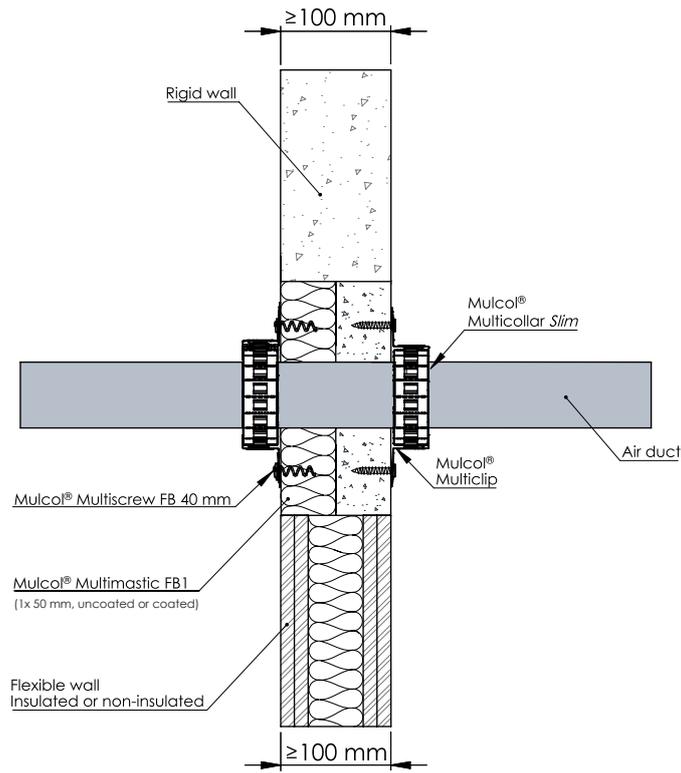
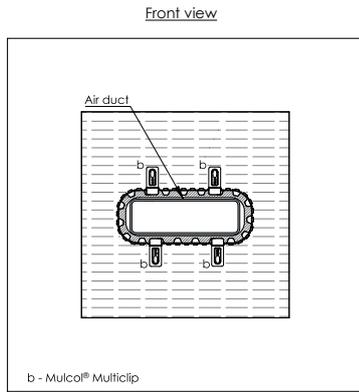


Drawing: FW.E-MC30-DCT52-MM2.5.10

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

**A.1.8 Multimortar + Multimastic FB -  $\geq 100$  mm - Combustible pipes**

**A.1.8.5 Rectangular plastic duct**



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

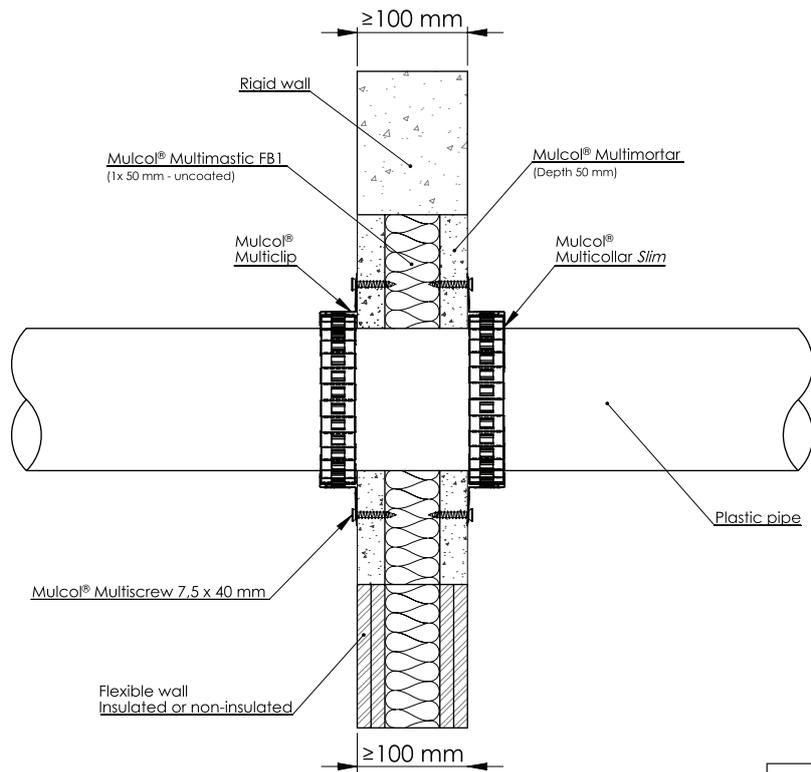
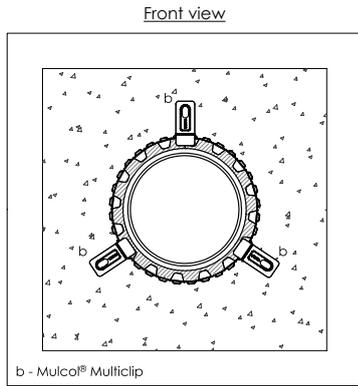
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rectangular plastic duct	$\leq 220 \times 90$	1.0	Multicollar Slim	EI 45 U/C
		2.0		EI 120 U/C

**A.1.9**

**Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm - Combustible pipes**

**A.1.9.1**

**Plastic pipes**

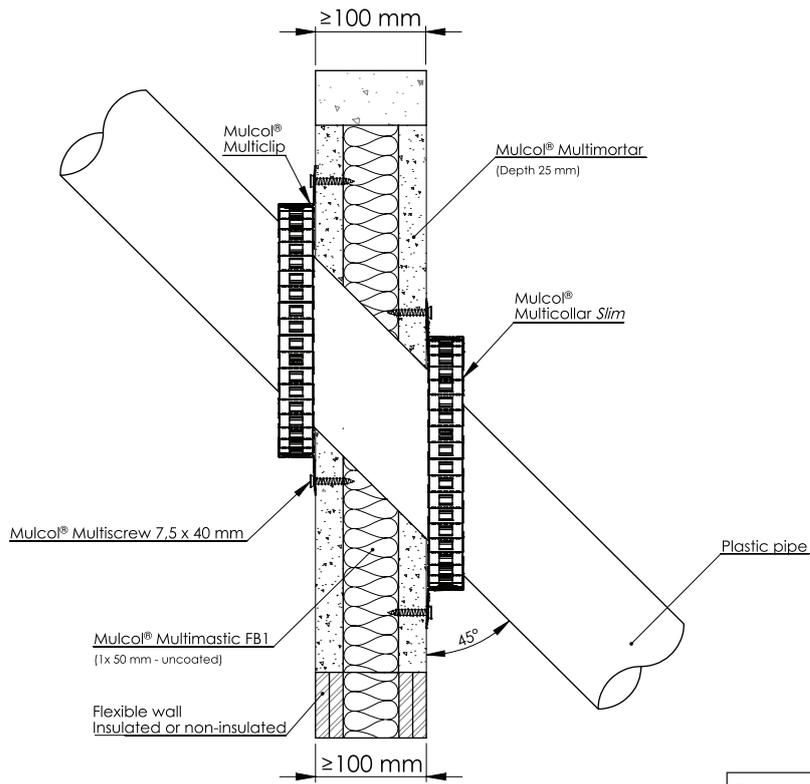
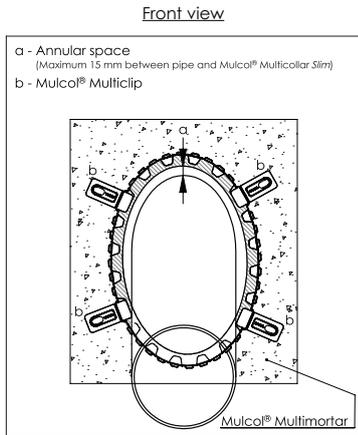


Drawing: FW.E-MC30-PP-MM3.4.10

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

**A.1.9 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm - Combustible pipes**

**A.1.9.2 Plastic pipes perpendicular to 45°**



Drawing: FW.E-PP-MM3.4.10

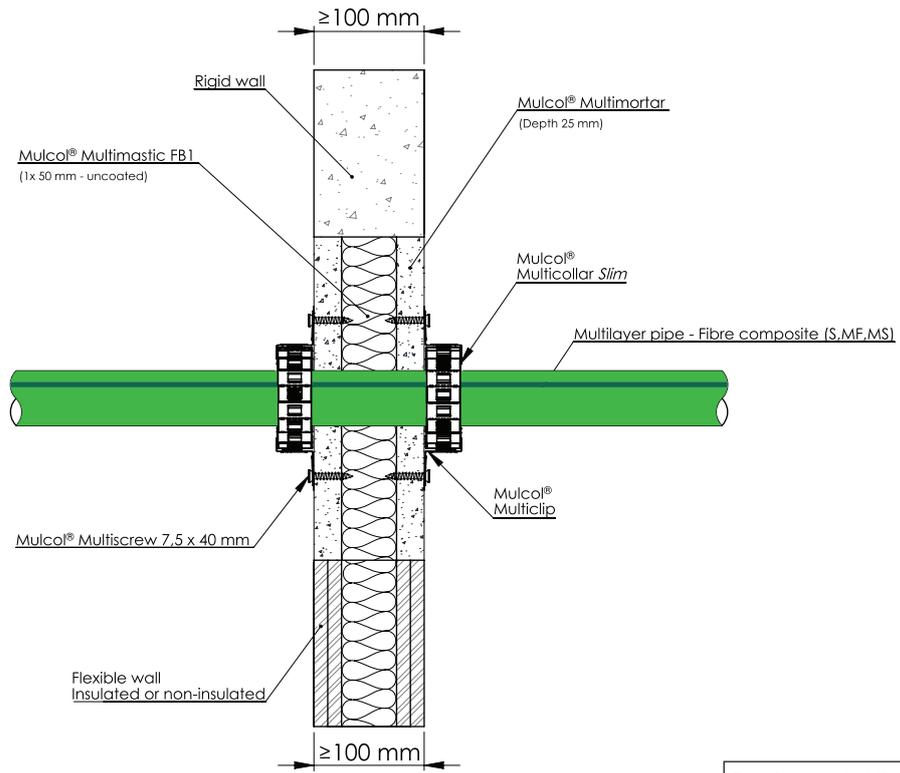
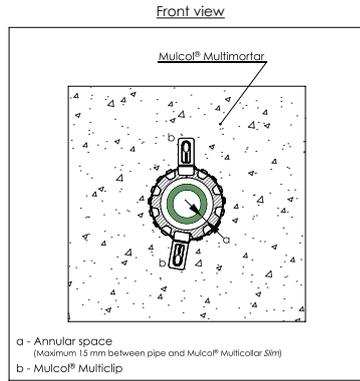
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 110$	2.7	Multicollar Slim	EI 60 U/U, E 90 U/U
PP				
PVC(-U/-C)				

**A.1.9**

**Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm - Combustible pipes**

**A.1.9.3**

**PP-R Multilayer pipes**



Drawing: FW.E-MLF-MM3.4.10

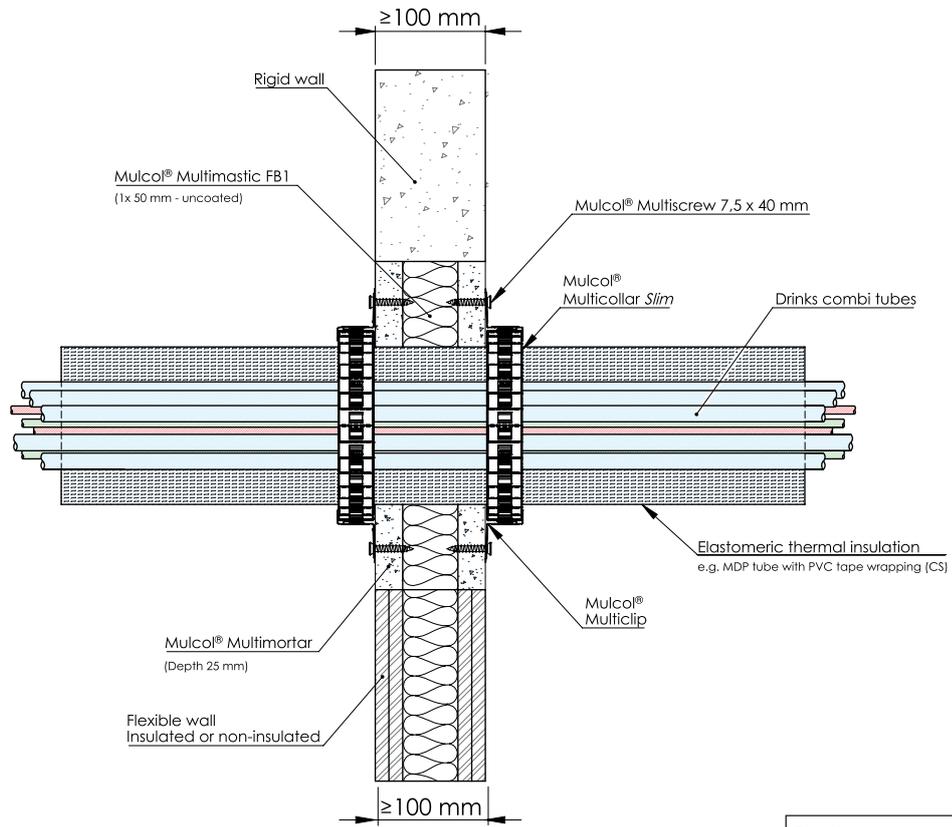
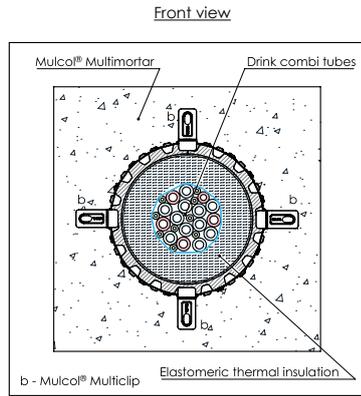
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	$\leq \text{Ø } 50$	6.9	Multicollar Slim	EI 120 U/C

**A.1.9**

**Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm - Combustible pipes**

**A.1.9.4**

**Drinks tubing system**



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

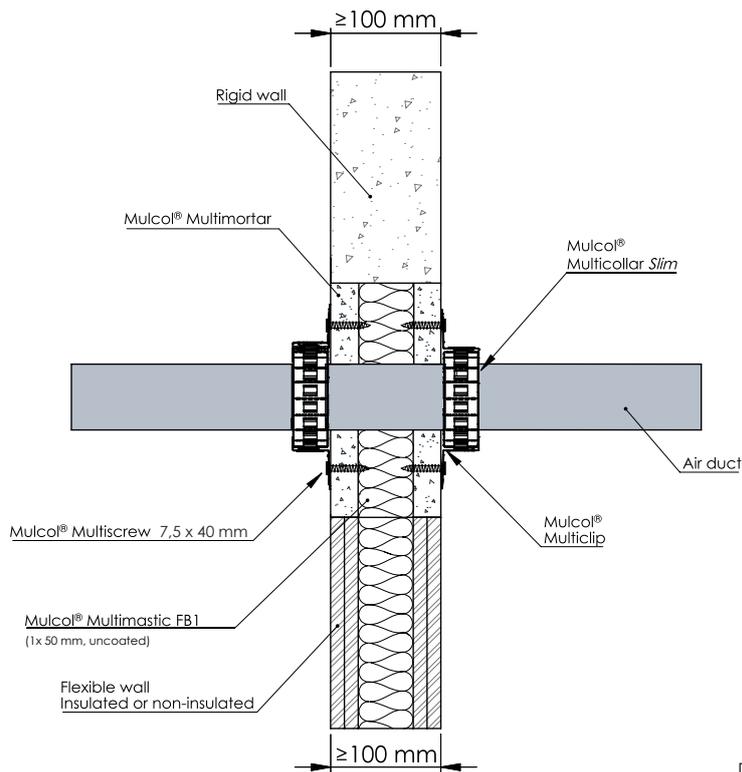
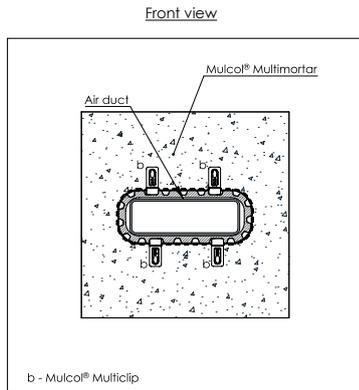
Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Hoses no.	Type	Thickness (mm)	Configuration		
Drinks tubing system	$\leq \text{Ø } 145$	$\leq 52$	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	EI 60 U/C

**A.1.9**

**Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm - Combustible pipes**

**A.1.9.5**

**Rectangular plastic duct**

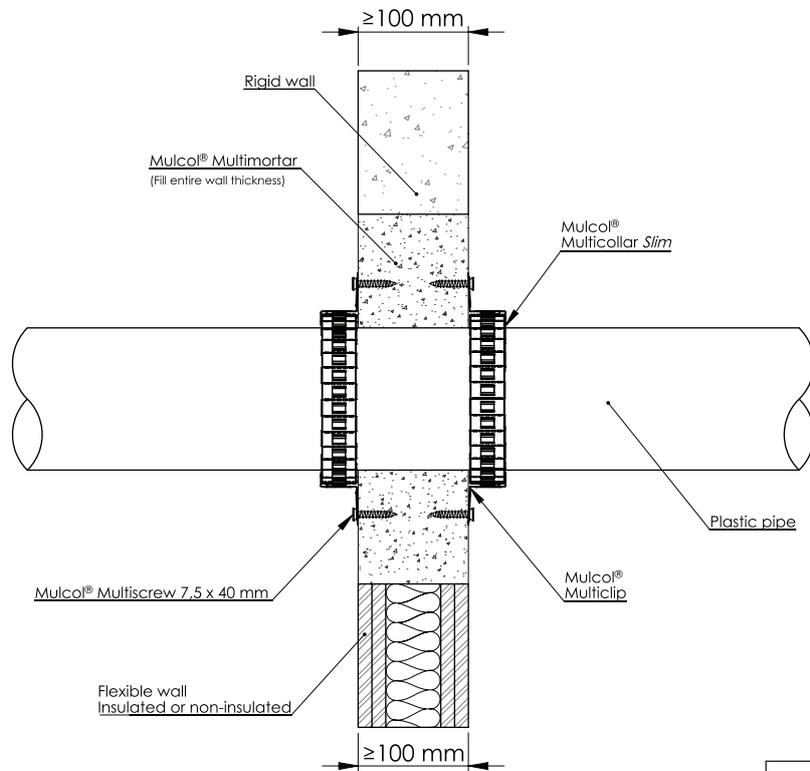
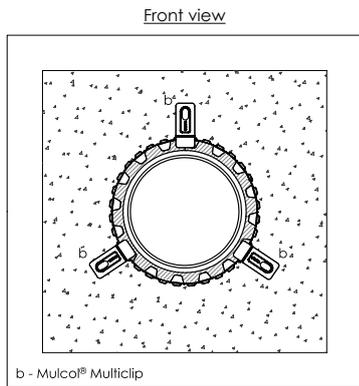


Drawing: FW.E-MC30-AD-MM3.4.10

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.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.1 Plastic pipes**



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	$\leq \text{Ø } 40$	2.4 - 6.6	Multicollar Slim	EI 120 U/U
	$\leq \text{Ø } 50$	3.0 - 6.6		
	$\leq \text{Ø } 110$	2.7 - 6.6		EI 90 U/U, E 120 U/U
		6.6 - 7.4		EI 60 U/U
		7.4 - 10.0		EI 120 U/U
	$\leq \text{Ø } 125$	3.1 - 4.9		EI 90 U/U, E 120 U/U
		4.9 - 7.4		EI 45 U/U
		7.4 - 11.4		EI 90 U/C
		7.4 - 14.6		EI 90 U/U
	$\leq \text{Ø } 160$	4.0		EI 30 U/U
4.0 - 14.6		EI 90 U/C		

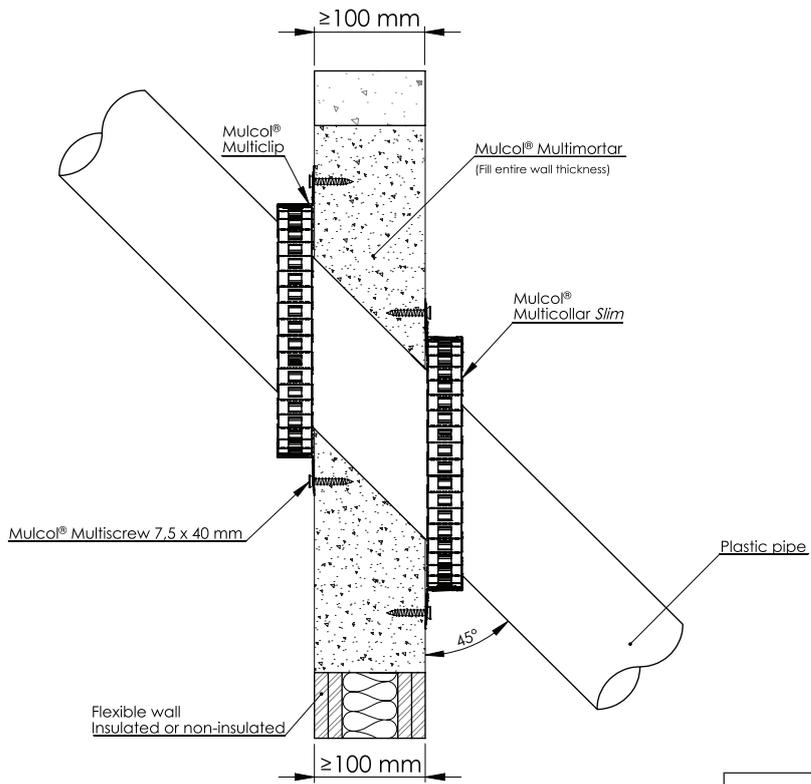
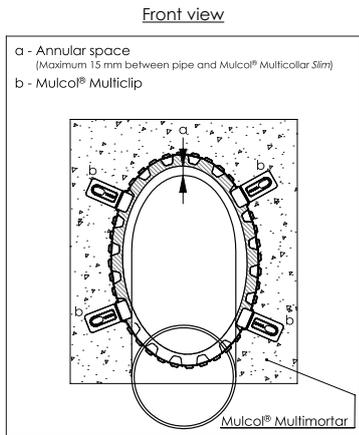
**A.1.10 Multimortar - ≥ 100 mm - Combustible pipes**

**A.1.10.1 Plastic pipes**

Services	Pipe dimensions (mm)		Product	Classification	
	Outer dimension	Wall thickness			
PE-HD / PE-X / ABS / SAN+PVC	≤ Ø 160	4.0 - 9.5	Multicollar <i>Slim</i> double	EI 120 U/U	
		9.5 - 14.6		EI 60 U/U	
				EI 120 U/C	
Services	Pipe dimensions (mm)		Product	Classification	
	Outer dimension	Wall thickness			
PP	≤ Ø 40	1.8 - 6.3	Multicollar <i>Slim</i>	EI 120 U/U	
	≤ Ø 110	2.7 - 6.3		EI 90 U/U	
		6.3 - 7.1		EI 120 U/U	
	≤ Ø 125	3.1		EI 90 U/U, E 120 U/U	
		3.1 - 7.1		EI 120 U/C	
		3.1 - 9.1		EI 120 U/U	
	≤ Ø 160	4.0		EI 45 U/U, E 60 U/U	
		4.0 - 6.2		EI 30 U/U	
		6.2 - 14.6		EI 120 U/C	
		9.1		EI 120 U/U	
		4.0		Multicollar <i>Slim</i> double	EI 90 U/U
		4.0 - 9.1			EI 60 U/U
		9.1 - 14.6			EI 120 U/C
	Services	Pipe dimensions (mm)		Product	Classification
Outer dimension		Wall thickness			
PVC(-U/-C)	≤ Ø 40	1.9 - 9.3	Multicollar <i>Slim</i>	EI 120 U/U	
	≤ Ø 110	2.2 - 9.3		EI 120 U/U	
		9.3 - 12.3		EI 90 U/U, E 120 U/U	
		12.3 - 14.6		EI 30 U/U	
	≤ Ø 125	2.5 - 9.3		EI 120 U/U	
		9.3 - 11.8		EI 90 U/U, E 120 U/U	
		11.8 - 14.6		EI 30 U/U	
	≤ Ø 160	1.8 - 11.8		EI 90 U/U, E 120 U/U	
		11.8 - 14.6		EI 30 U/U	
		1.8 - 11.8		Multicollar <i>Slim</i> double	EI 120 U/U
		11.8 - 14.6			EI 60 U/U
	≤ Ø 315	7.7			EI 120 U/C
					EI 90 U/C

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.2 Plastic pipes perpendicular to 45°**

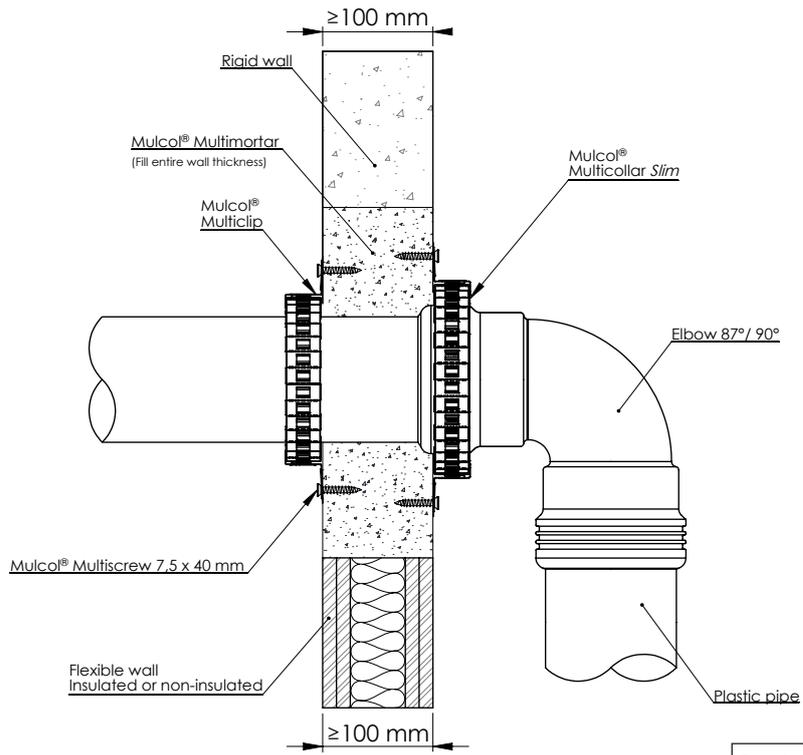
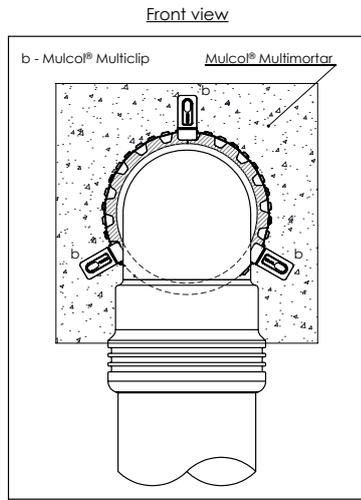


Drawing: FW.E-MC30o-PP-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 110$	2.7	Multicollar Slim	EI 60 U/U, E 90 U/U
PP				
PVC(-U/-C)	$\leq \text{Ø } 125$	2.5		EI 30 U/C, E 45 U/C
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 110$	3.4 - 10.0	Multicollar Slim double	EI 120 U/C
PP		3.4		
		3.4 - 10.0		
PVC(-U/-C)		3.4		
				EI 60 U/C
				EI 120 U/C

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.3 Plastic pipes with elbow**

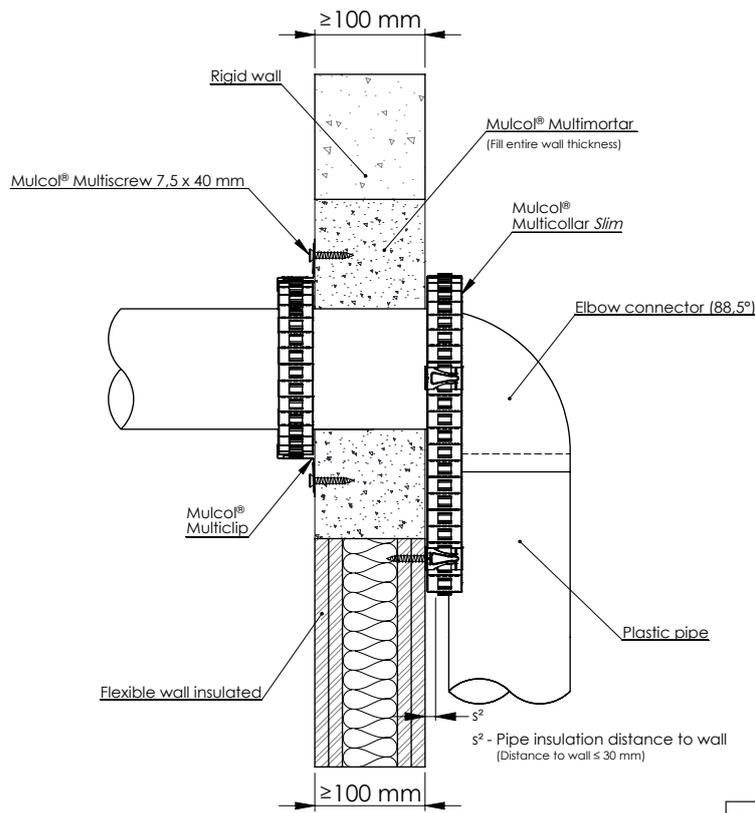
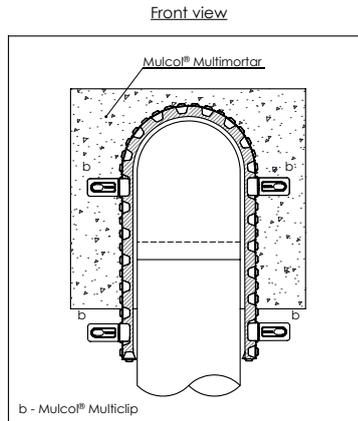


Drawing: FW.E-MC30-PP-MM1.2.70

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP	$\leq \varnothing 125$	3.1	Multicollar <i>Slim</i>	EI 90 U/C
PVC(-U/-C)		2.5		EI 90 U/U

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.4 Plastic pipes with elbow and U-shape Multicollar *Slim***

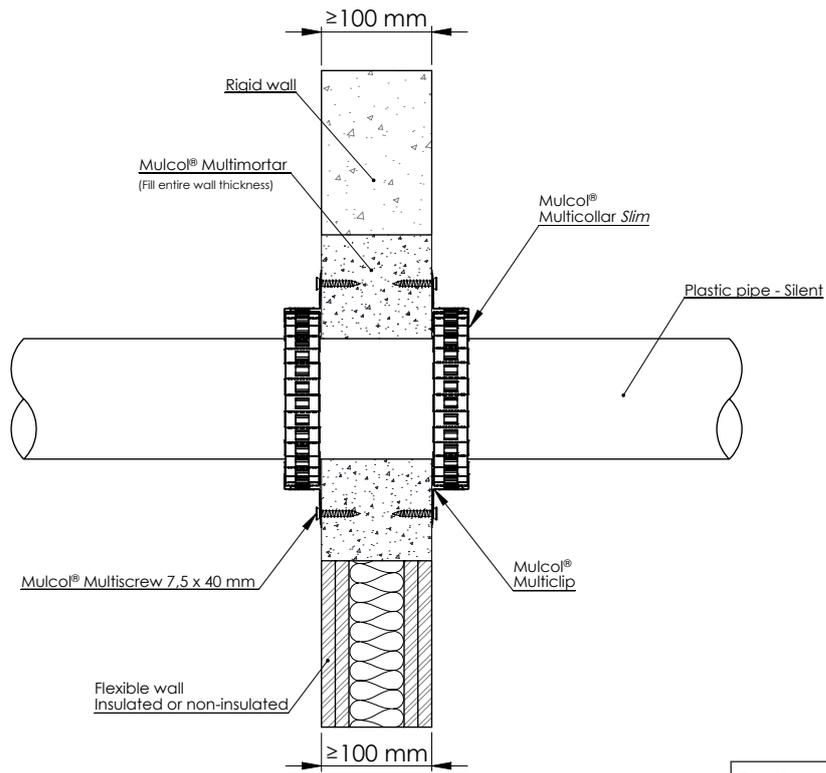
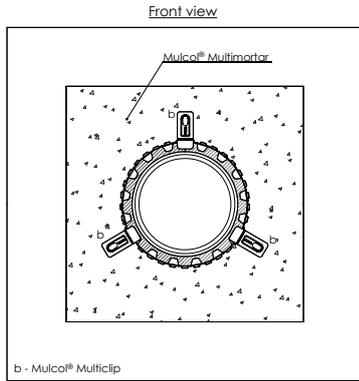


Drawing: FW.E-MC30u-PP-MM1.2.70

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 110$	3.4	Multicollar <i>Slim</i>	EI 120 U/C
PP				
PVC(-U/-C)				

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.5 Plastic pipes (Silent)**

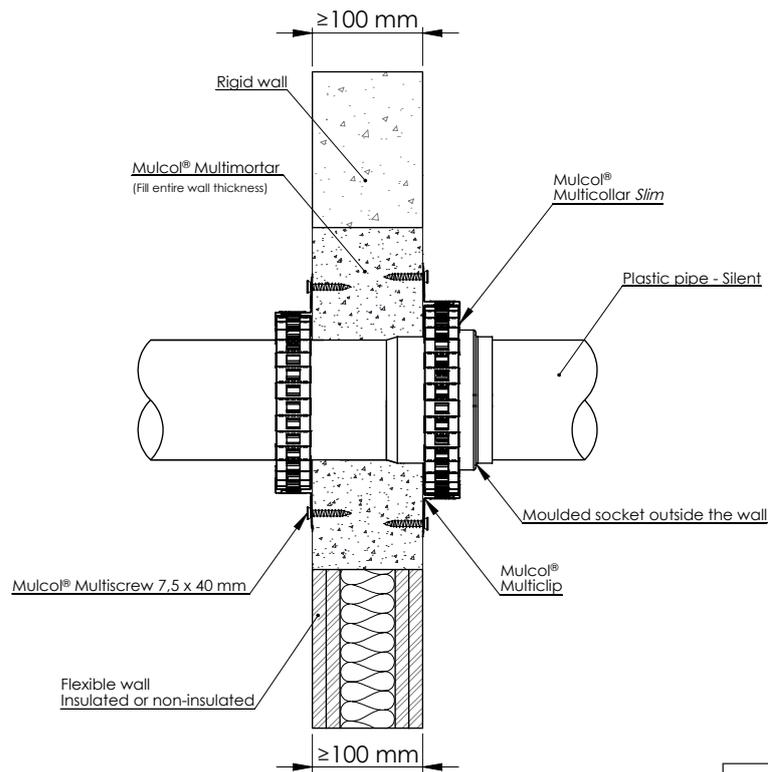
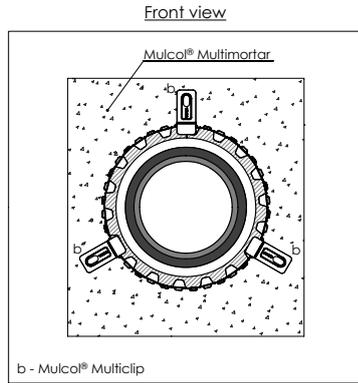


Drawing: FW.E-MC30-PPS-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Wavin SiTech+	$\leq \text{Ø } 32$	2.0	Multicollar Slim	EI 120 U/U
Geberit Silent dB 20	$\leq \text{Ø } 110$	3.6		EI 90 U/U, E 120 U/U
		6.0		EI 120 U/U
Wavin SiTech+	$\leq \text{Ø } 160$	5.0	double Multicollar Slim	EI 90 U/U, E 120 U/U

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.6 Plastic pipes (Silent) with moulded socket**

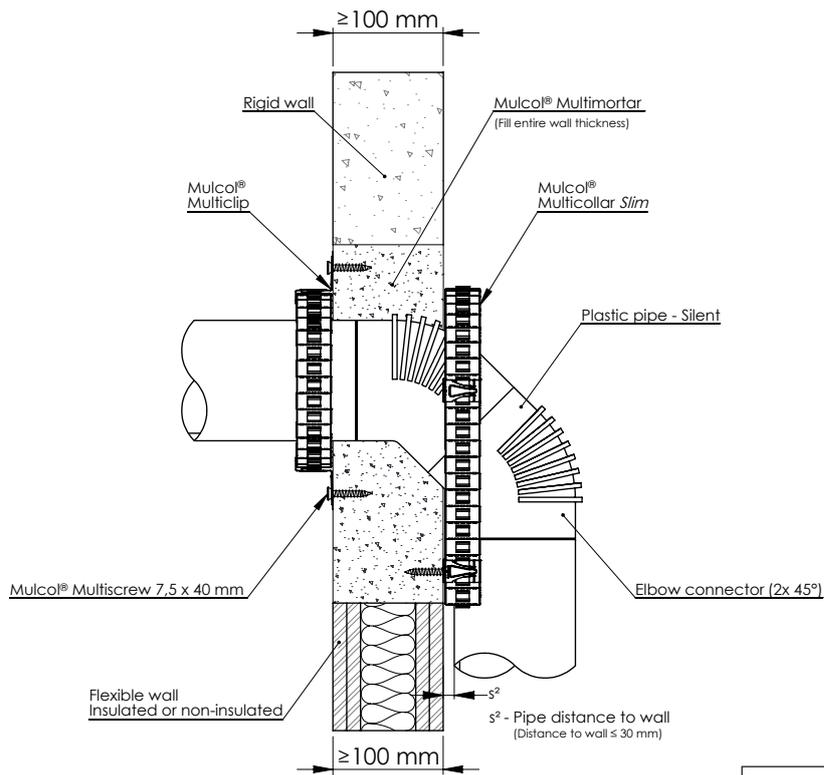
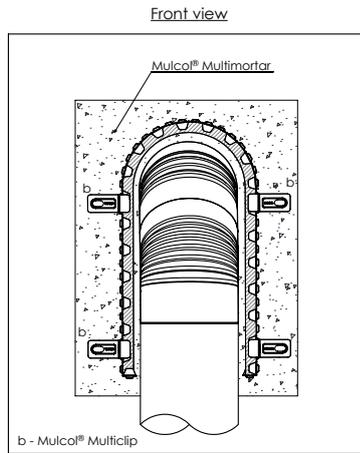


Drawing: FW.E-MC30-PPS-MM1.2.60

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Raupiano Plus	$\leq \text{Ø } 110$	2.7	Multicollar <i>Slim</i>	EI 120 U/C

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.7 Plastic pipes (Silent) with elbow and U-shape Multicollar *Slim***

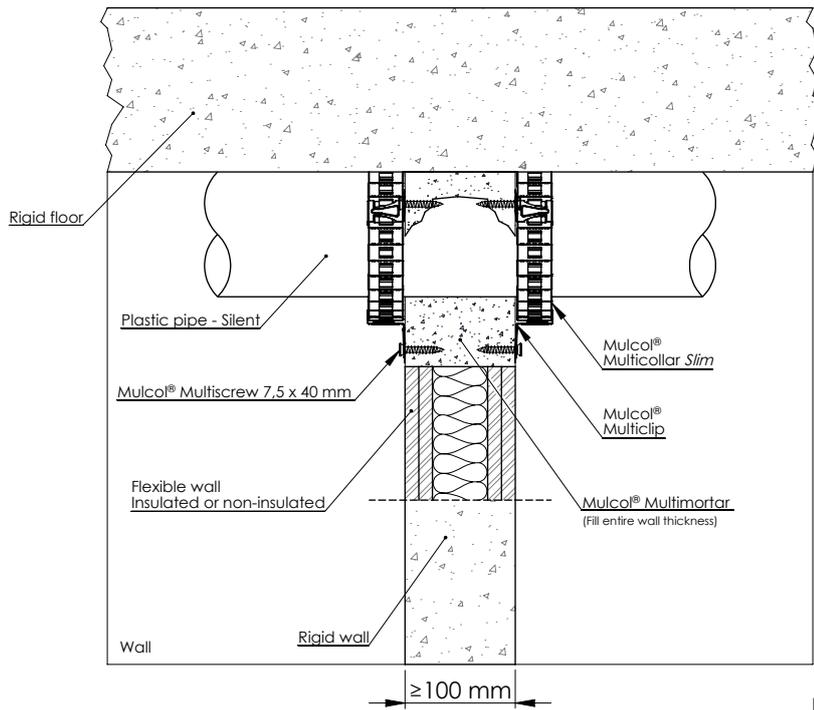
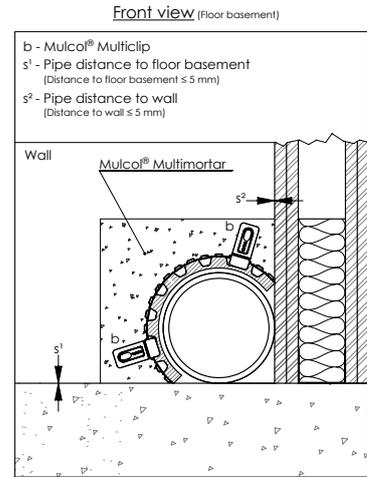
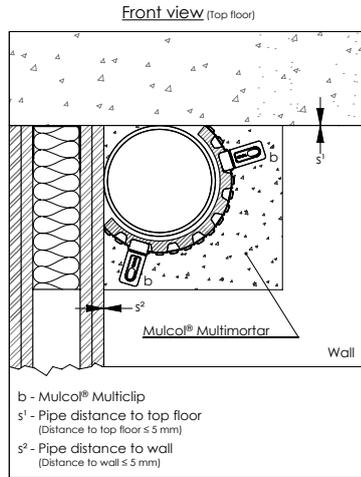


Drawing: FW.E-MC30u-PPS-MM1.2.80

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Wavin SiTech+	$\leq \text{Ø } 110$	3.6	Multicollar <i>Slim</i>	EI 60 U/U
Geberit Silent dB 20		6.0		EI 90 U/U, E 120 U/U

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.8 Plastic pipes (Silent) in corner**

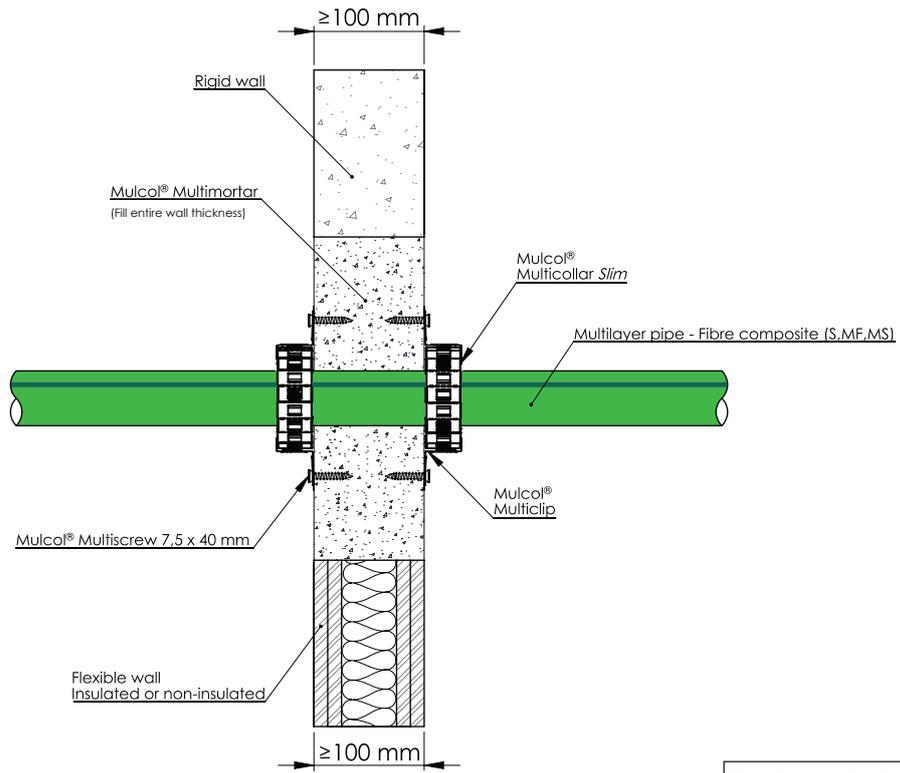
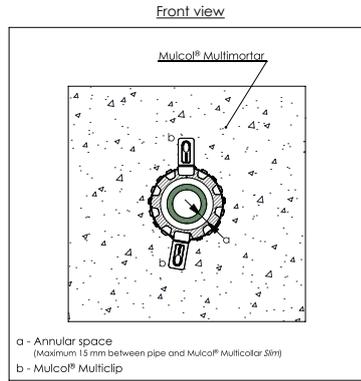


Drawing: FW.E-MC30c-PPS-MM1.2.10

Services	Pipe dimensions (mm)		Position	Product	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB 20	$\leq \text{Ø } 110$	6.0	Floor	Multicollor Slim	EI 120 U/U
			Ceiling		EI 60 U/U

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.9 PP-R multilayer pipes**

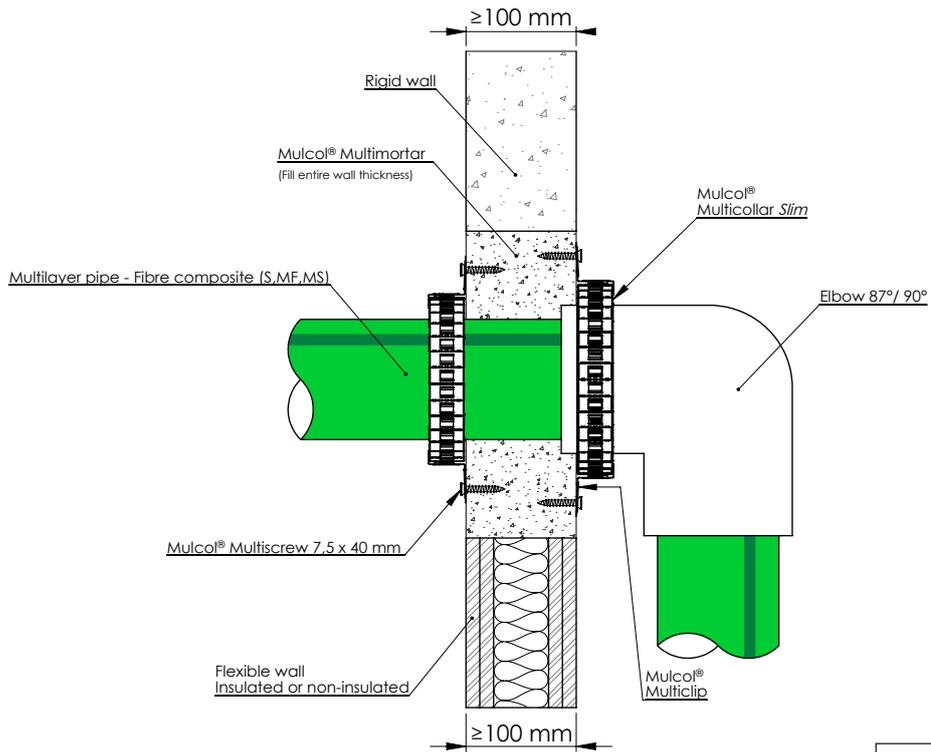
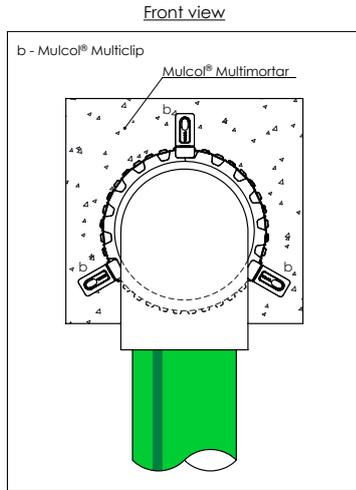


Drawing: FW.E-MLF-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	$\leq \text{Ø } 50$	6.9	Multicollar Slim	EI 60 U/U, E 90 U/U
Aquatherm Blue	$\leq \text{Ø } 20$	2.8		EI 90 U/C
	$\leq \text{Ø } 110$	10.0		EI 60 U/C
	$\leq \text{Ø } 160$	14.6		EI 90 U/C
Aquatherm Red	$\leq \text{Ø } 110$	15.1		EI 90 U/C

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.10 PP-R multilayer pipes with elbow**

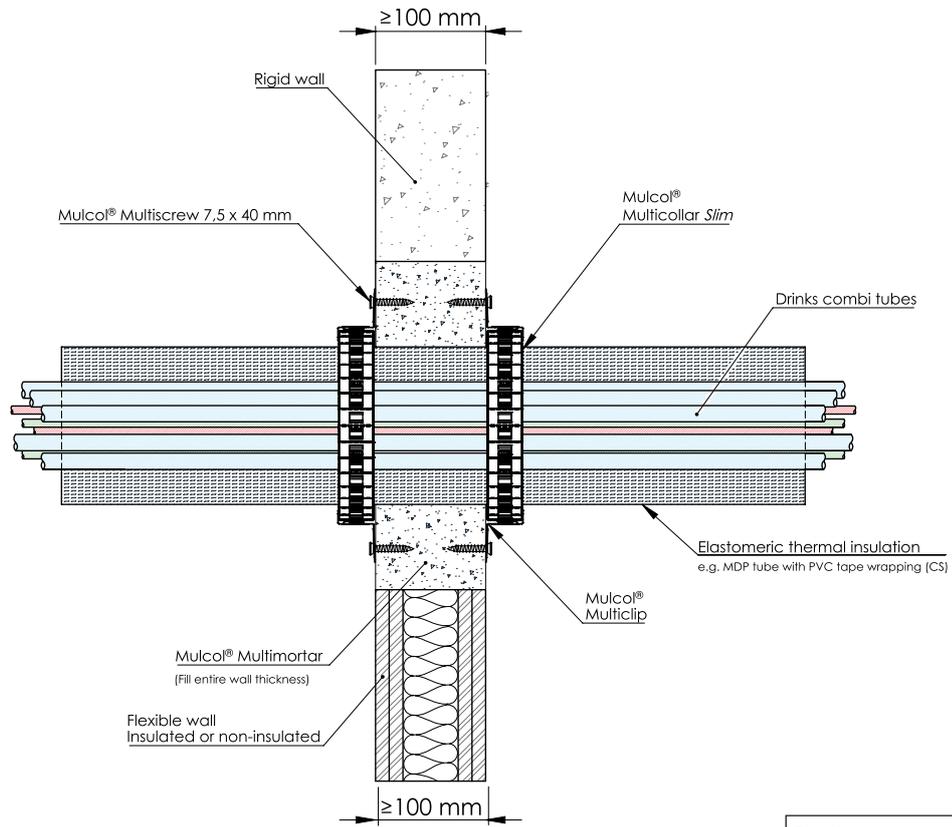
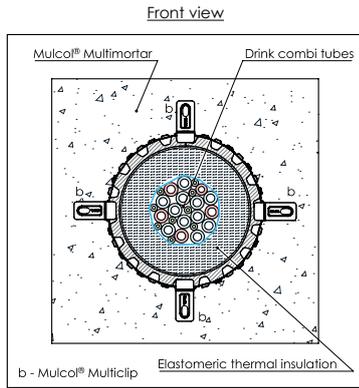


Drawing: FW.E-MC30-MLF-MM1.2.70

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Blue	$\leq \text{Ø } 110$	10.0	Multicollar <i>Slim</i>	EI 90 U/C, E 120 U/C

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.11 Drinks tubing system**

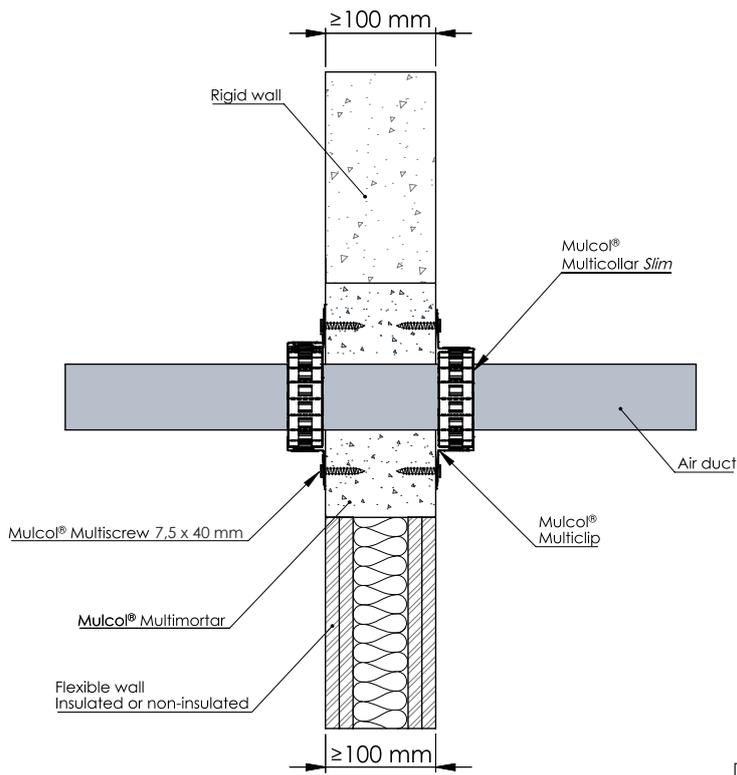
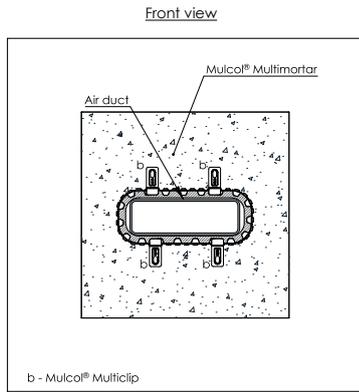


Drawing: FW.E-MC30-DCT52-MM1.2.10

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Hoses no.	Type	Thickness (mm)	Configuration		
Drinks tubing system	$\leq \text{Ø } 47$	$\leq 3$	Elastomeric foam	8 - 35	CS	Multicollar <i>Slim</i>	EI 90 U/C
	$\leq \text{Ø } 145$	$\leq 52$					EI 60 U/C

**A.1.10 Multimortar -  $\geq 100$  mm - Combustible pipes**

**A.1.10.12 Rectangular plastic duct**

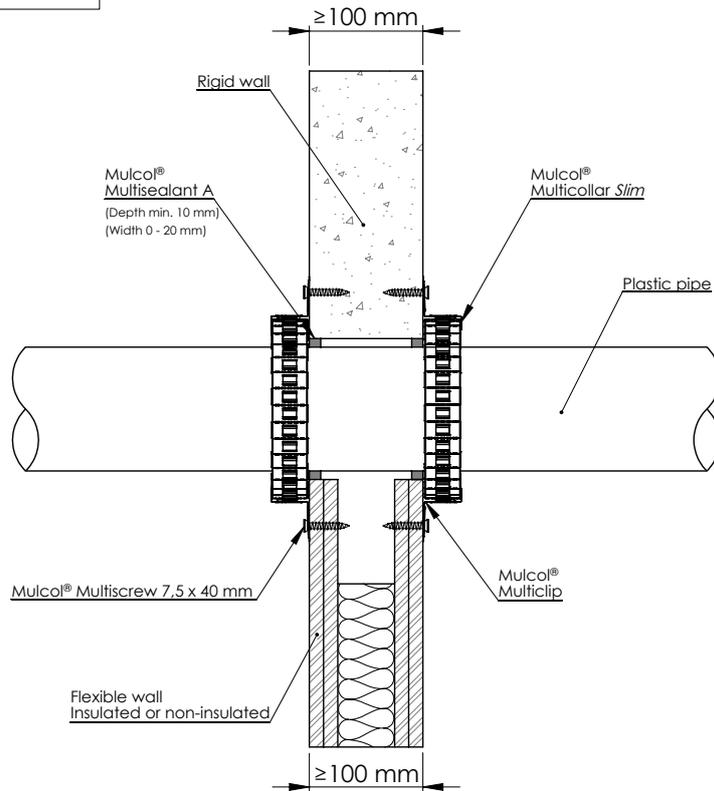
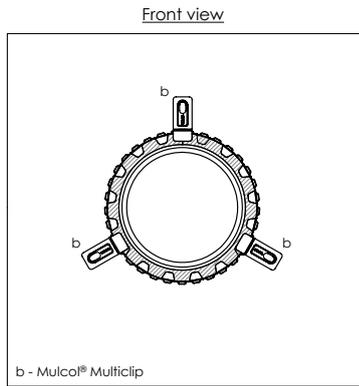


Drawing: FW.E-MC30-AD-MM1.2.10

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.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.1 Plastic pipes**



Drawing: FW.E-MC30-PP-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 40$	2.4 - 6.6	Multicollar <i>Slim</i>	EI 120 U/U
		6.6 - 14.6		EI 90 U/C
	$\leq \varnothing 50$	3.0 - 6.6		EI 120 U/U
	$\leq \varnothing 110$	3.1 - 6.6		EI 90 U/U, E 120 U/U
		6.6 - 7.4		EI 60 U/U
		7.4 - 10.0		EI 30 U/U
	$\leq \varnothing 125$	10.0 - 14.6		EI 120 U/U
		3.1 - 4.9		EI 90 U/U, E 120 U/U
		4.9 - 7.4		EI 45 U/U
		7.4 - 11.4		EI 30 U/U
	$\leq \varnothing 160$	11.4 - 14.6		EI 90 U/C
		7.4 - 14.6		EI 90 U/U
		4.0		EI 30 U/U
		4.0 - 14.6		EI 90 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.1 Plastic pipes**

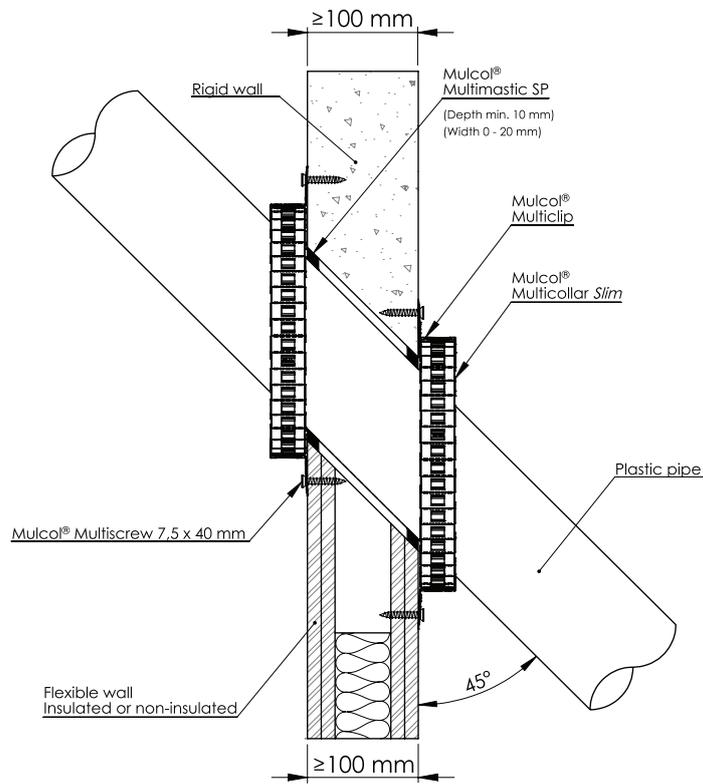
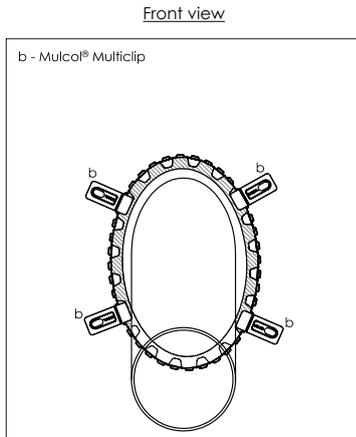
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 160$	4.0 - 9.5	Multicollar <i>Slim</i> double	EI 120 U/U
		9.5 - 14.6		EI 60 U/U
	$\leq \varnothing 250$	7.7		EI 120 U/C
		EI 60 U/C		

Services	Pipe dimensions (mm)		Product	Classification	
	Outer dimension	Wall thickness			
PP	$\leq \varnothing 40$	6.3 - 9.1	Multicollar <i>Slim</i>	EI 120 U/C	
		1.8 - 6.3		EI 120 U/U	
	$\leq \varnothing 110$	2.7 - 6.3		EI 90 U/U	
		6.3 - 7.1		EI 30 U/U	
		7.1 - 14.6		EI 120 U/C	
		2.7 - 9.1		EI 120 U/U	
	$\leq \varnothing 125$	3.1		EI 90 U/U, E 120 U/U	
		3.1 - 7.1		EI 30 U/U	
		7.1 - 11.4		EI 120 U/C	
		3.1 - 9.1		EI 90 U/U, E 120 U/U	
	$\leq \varnothing 160$	4.0		EI 45 U/U, E 60 U/U	
		4.0 - 6.2		EI 30 U/U	
		6.2 - 14.6		EI 120 U/C	
		9.1		EI 90 U/C	
		4.0 - 9.1		EI 120 U/U	
		9.1 - 14.6		EI 60 U/U	
				Multicollar <i>Slim</i> double	EI 120 U/C

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PVC(-U/-C)	$\leq \varnothing 40$	1.9 - 9.3	Multicollar <i>Slim</i>	EI 120 U/U
		9.3 - 12.3		EI 90 U/U, E 120 U/U
		12.3 - 14.6		EI 30 U/U
	$\leq \varnothing 110$	2.2 - 9.3		EI 120 U/U
		9.3 - 12.3		EI 90 U/U, E 120 U/U
		12.3 - 14.6		EI 30 U/U
	$\leq \varnothing 125$	2.5 - 9.3		EI 120 U/U
		9.3 - 11.8		EI 90 U/U, E 120 U/U
		11.8 - 14.6		EI 30 U/U
	$\leq \varnothing 160$	1.8 - 11.8		EI 90 U/U, E 120 U/U
		11.8 - 14.6		EI 30 U/U
		1.8 - 11.8		EI 120 U/U
		11.8 - 14.6		EI 60 U/U
	$\leq \varnothing 315$	7.7		Multicollar <i>Slim</i> double
			EI 90 U/C	

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.2 Plastic pipes perpendicular to  $45^\circ$**

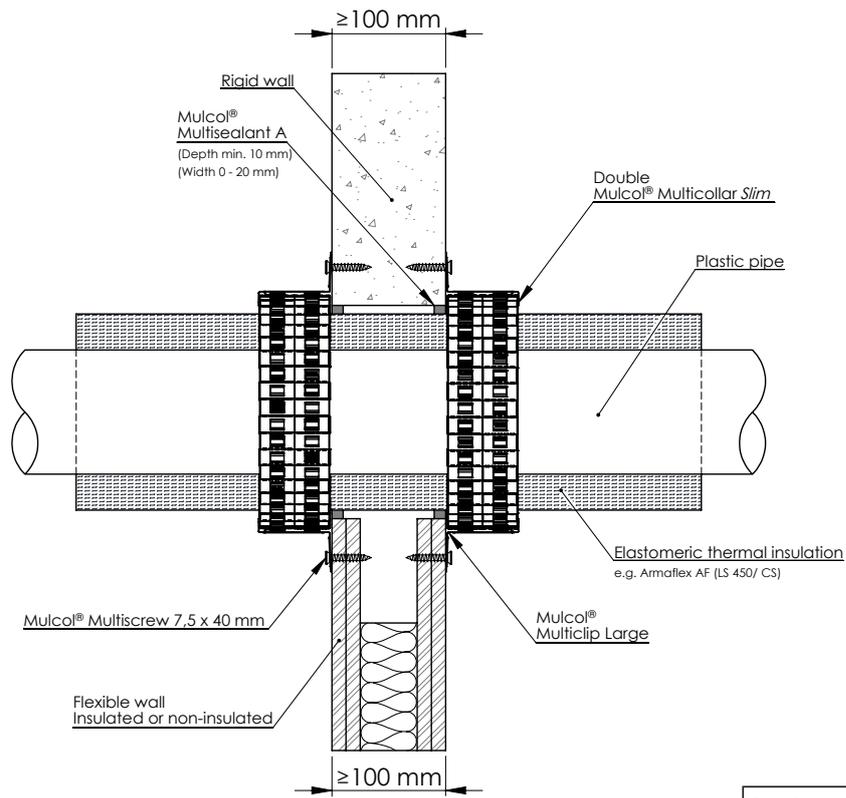
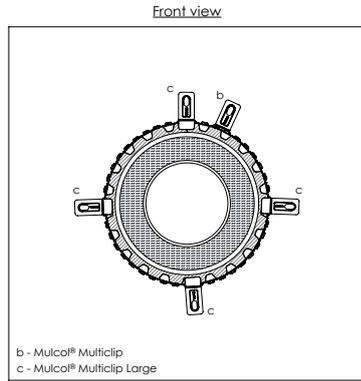


Drawing: FW.E-MC30o-PP-10.1.10

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/C
		3.4 - 10.0	Multicollar <i>Slim</i> double	EI 120 U/C
2.7		Multicollar <i>Slim</i>	EI 45 U/C, E 60 U/C	
3.4		Multicollar <i>Slim</i> double	EI 120 U/C	
PP	$\leq \varnothing 110$	3.4 - 10.0	Multicollar <i>Slim</i> double	EI 60 U/C
		2.7	Multicollar <i>Slim</i>	EI 45 U/C, E 60 U/C
$\leq \varnothing 125$		2.5	Multicollar <i>Slim</i>	EI 30 U/C, E 45 U/C
PVC(-U/-C)		$\leq \varnothing 110$	3.4	Multicollar <i>Slim</i>
	3.4 - 10.0		Multicollar <i>Slim</i> double	EI 60 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.3 Plastic pipes - Elastomer LS 450 / CS**

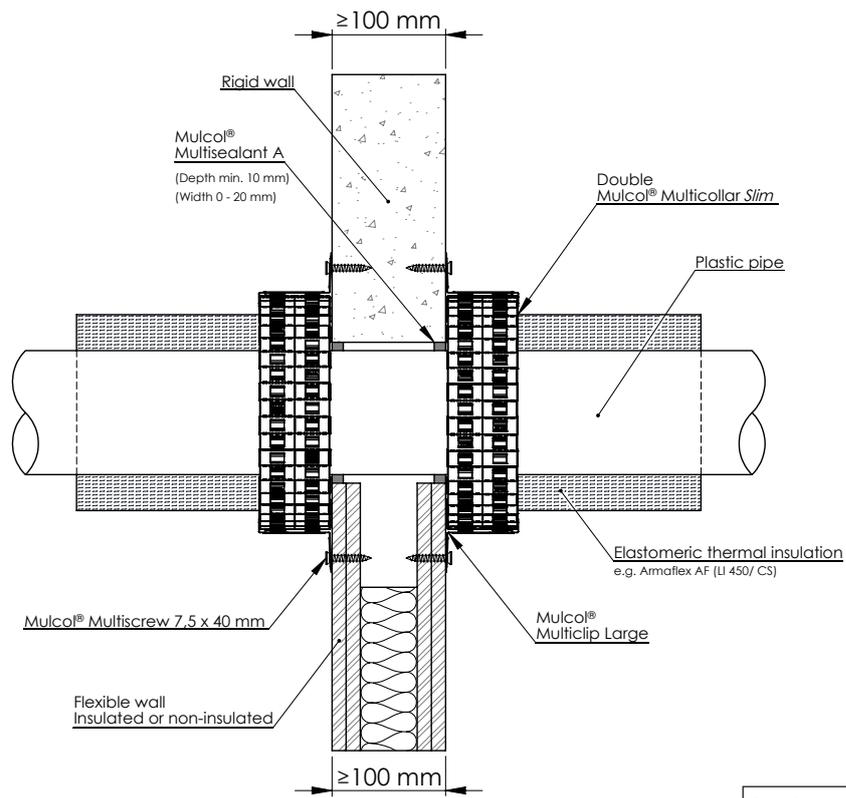
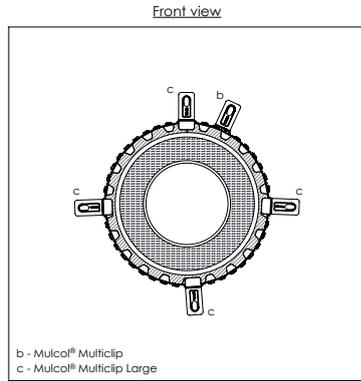


Drawing: FW.E-MC60-PP-20.0.22.LS

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
PVC(-U/-C)	$\leq \text{Ø } 110$	3.2	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32	LS 450 / CS	Multicollar Slim double	EI 90 U/U E 120 U/U

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.4 Plastic pipes - Elastomer LI 450 / CI**

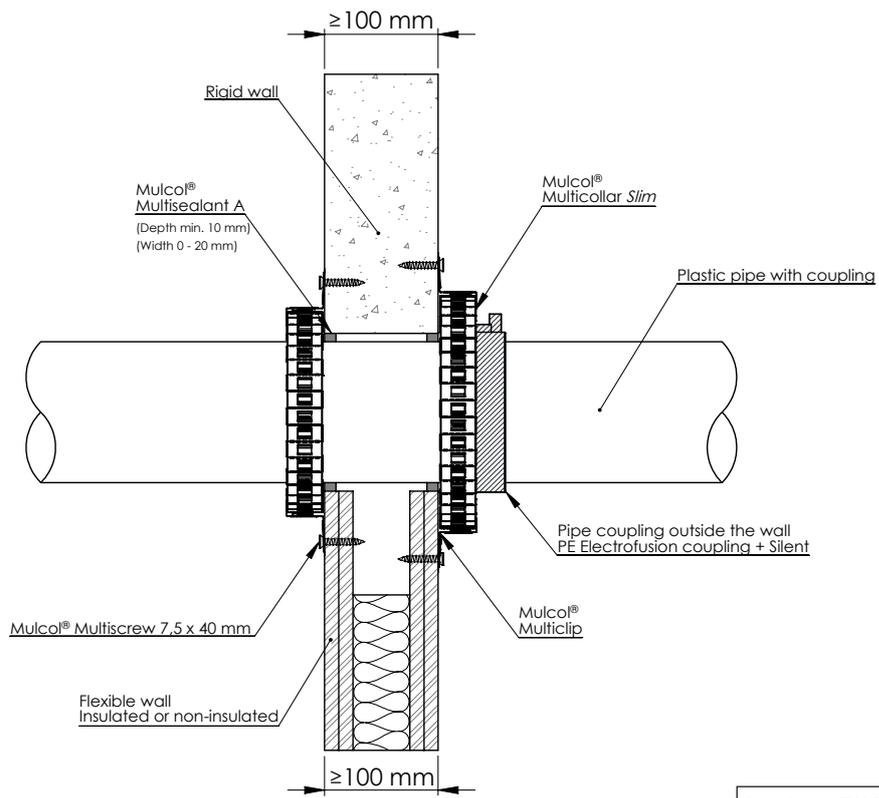
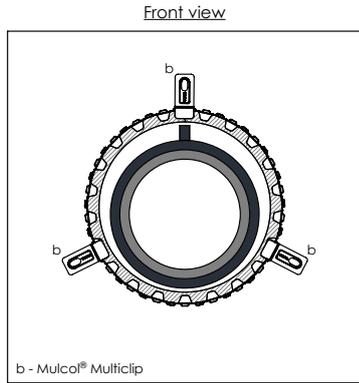


Drawing: FW.E-MC60-PP-20.0.22.LI

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
PVC(-U/-C)	$\leq \text{Ø } 110$	3.2	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32	LI 450 / CI	Multicollar <i>Slim</i> double	EI 120 U/U

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.5 Plastic pipes with socket**

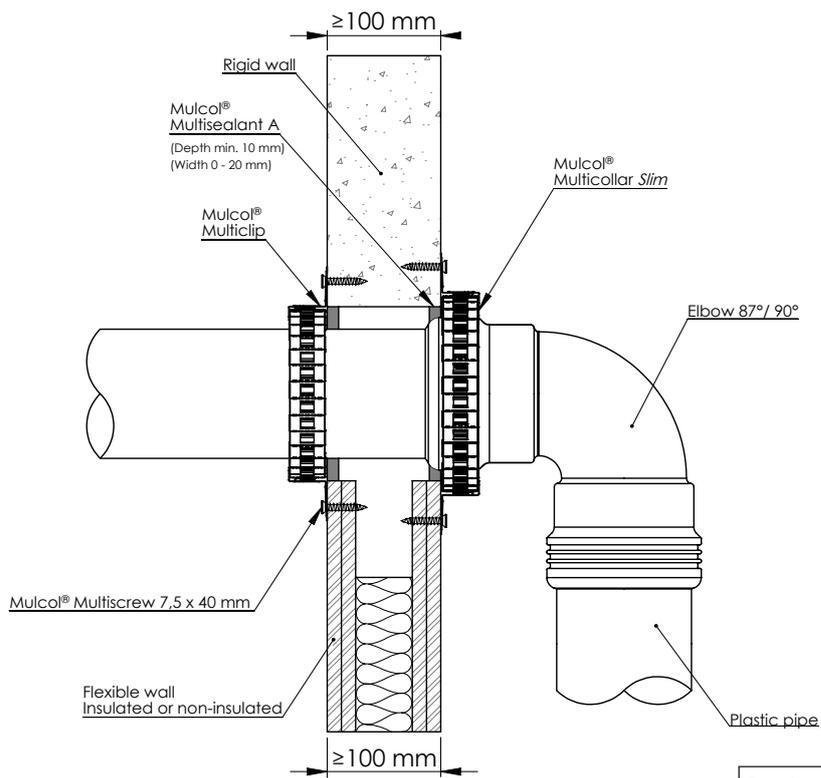
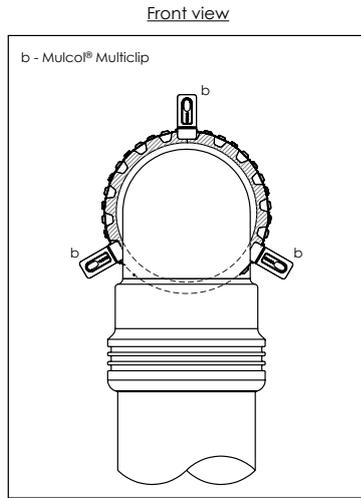


Drawing: FW.E-MC30-PP-10.0.60

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 110$	4.3 - 7.4	Multicollar <i>Slim</i>	EI 120 U/C
	$\leq \text{Ø } 125$	7.4		EI 60 U/C, E 90 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.6 Plastic pipes with elbow**

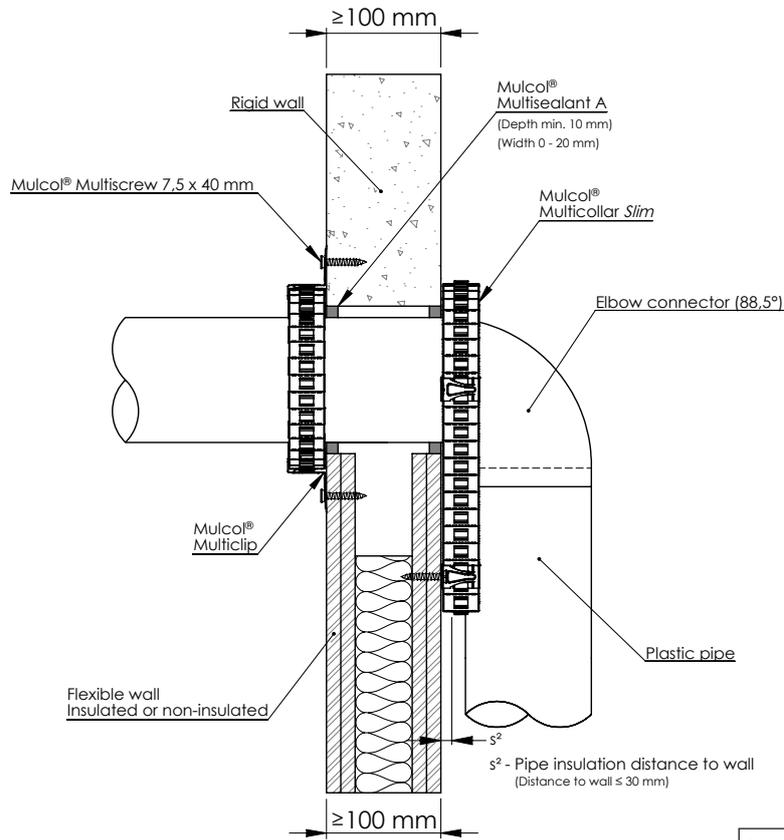
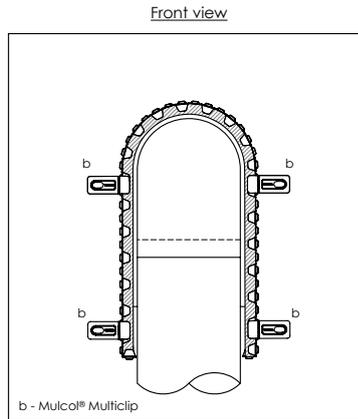


Drawing: FW.E-MC30-PP-10.0.70

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP	$\leq \varnothing 125$	3.1	Multicollar <i>Slim</i>	EI 90 U/C
PVC(-U/-C)		2.5		EI 90 U/U

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.7 Plastic pipes with elbow and U-shape Multicollar *Slim***

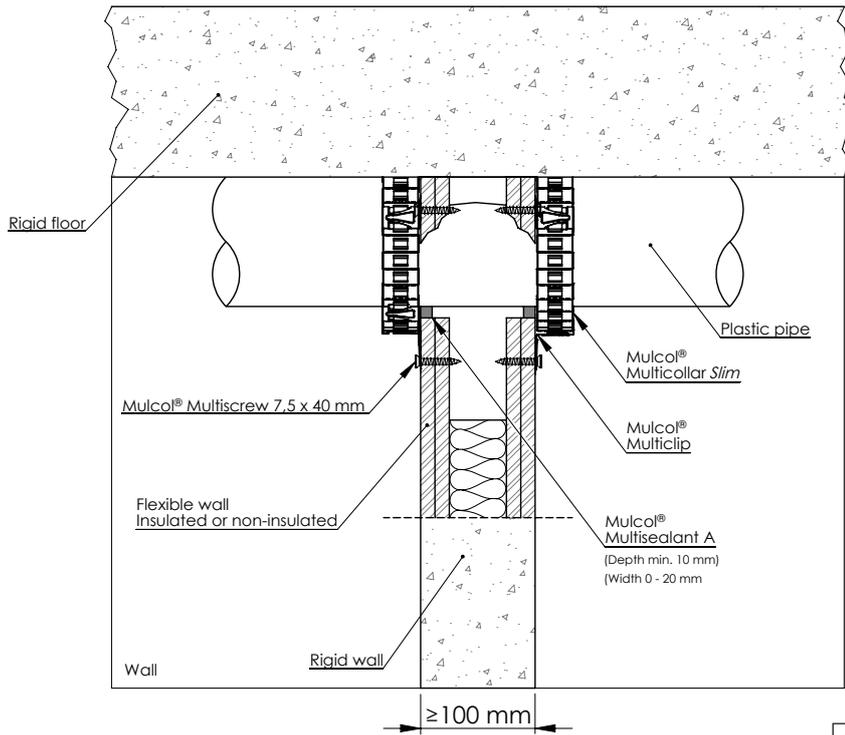
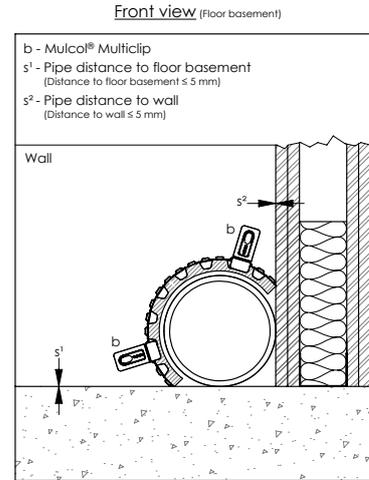
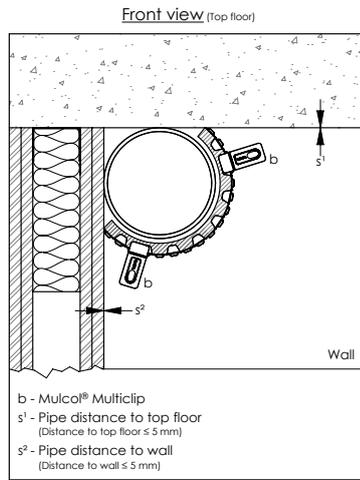


Drawing: FW.E-MC30u-PP-10.0.70

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	≤ Ø 110	3.4	Multicollar <i>Slim</i>	EI 120 U/C
PP				
PVC(-U/-C)				

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.8 Plastic pipes in corner**

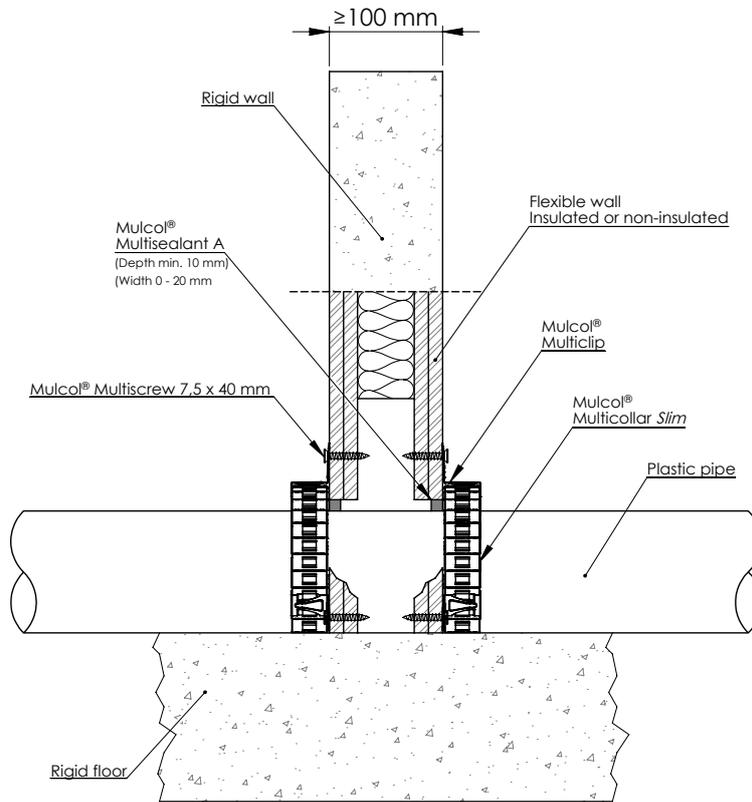
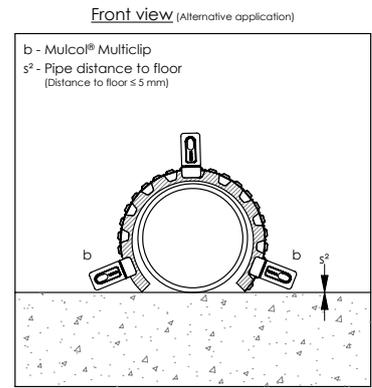
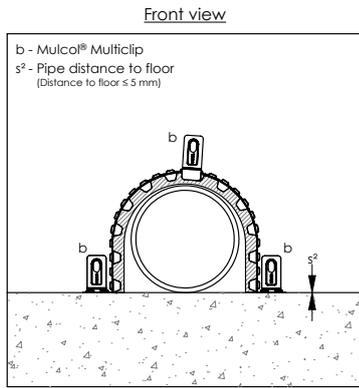


Drawing: FW.E-MC30f-PP-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PVC(-U/-C)	$\leq \text{Ø } 110$	2.2	Multicollar Slim	EI 90 U/U, E 120 U/U
		3.2		

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.9 Plastic pipes at zero distance to floor**



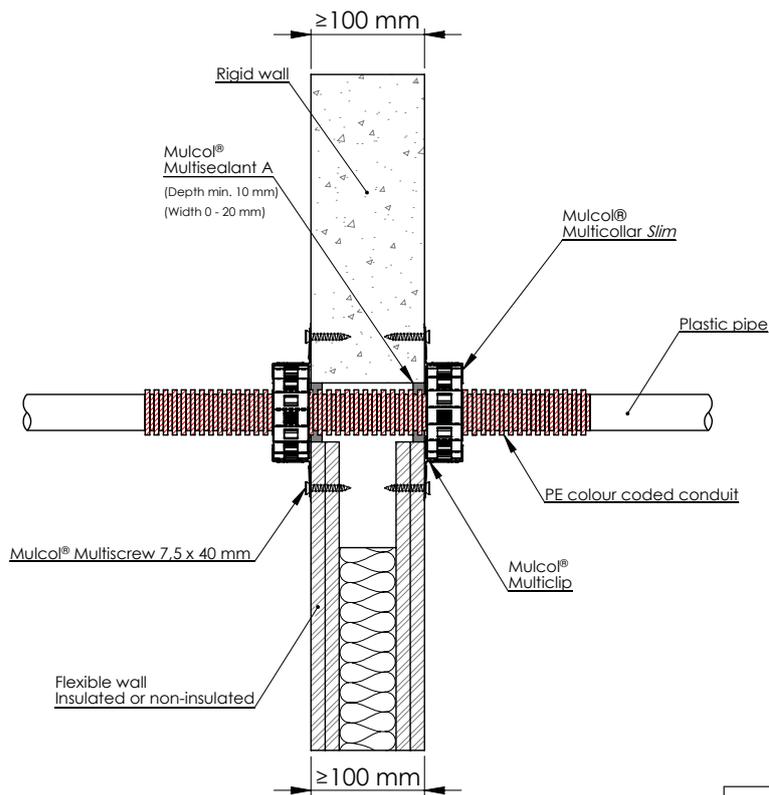
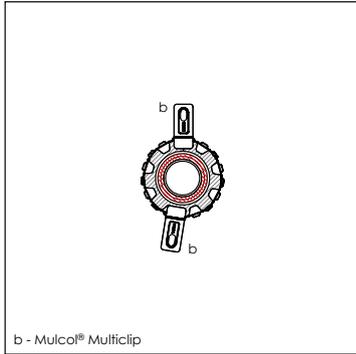
Drawing: FW.E-MC30f-PP-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 90$	2.8	Multicollar Slim	EI 90 U/U
PVC(-U/-C)	$\leq \text{Ø } 110$	2.2		

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.10 Plastic pipes in conduit**

Front view

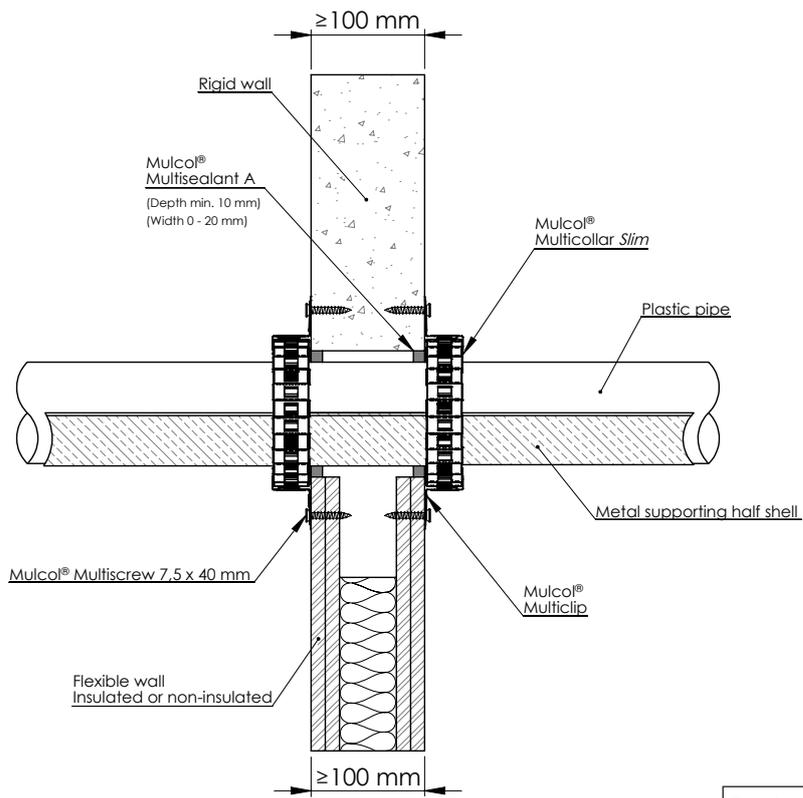
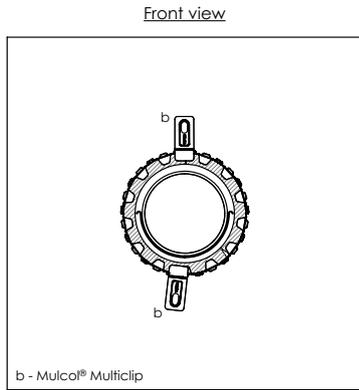


Drawing: FW.E-MC30-PP-10.0.30

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Diameter (mm)	Configuration		
PE-Xa	$\leq \text{Ø } 25$	3.5	PE conduit	32	LS 300 / CS LI 300 / CI	Multicollar Slim	EI 90 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.1 Plastic pipes - Steel half shell support**

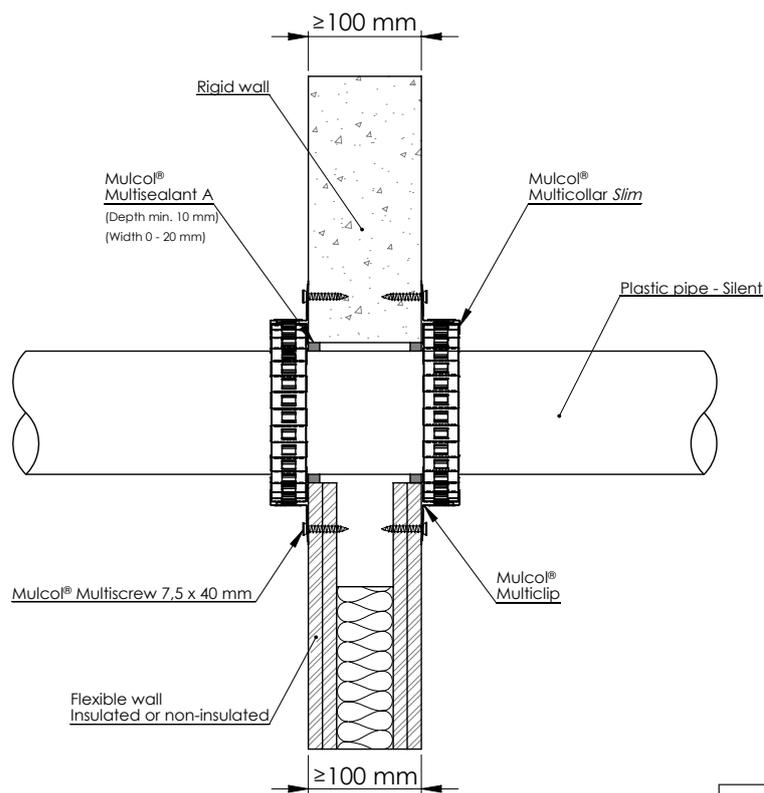
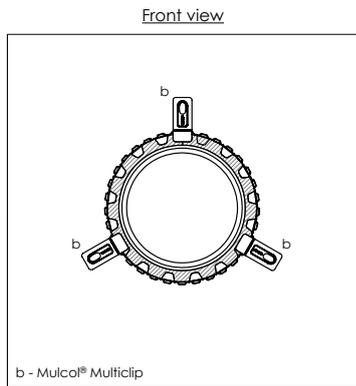


Drawing: FW.E-MC30-PP-10.0.50

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 90$	2.8	Multicollar <i>Slim</i>	EI 90 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.12 Plastic pipes (Silent)**

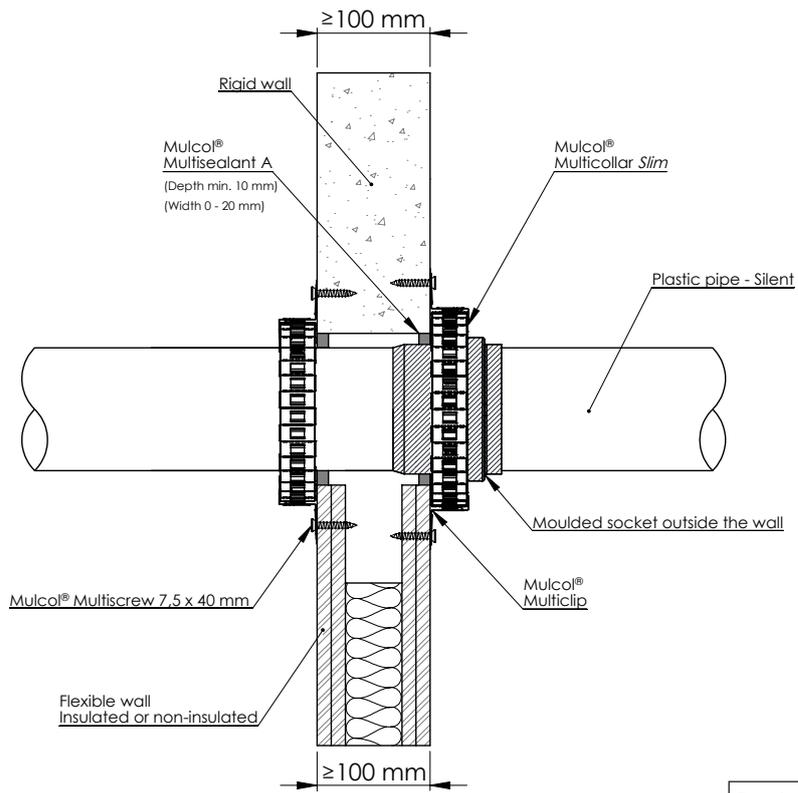
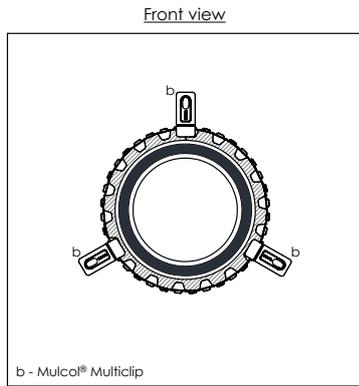


Drawing: FW.E-MC30-PPS-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Wavin SiTech+	$\leq \text{Ø } 32$	2.0 - 3.6	Multicollar <i>Slim</i>	EI 120 U/U
Geberit Silent dB 20	$\leq \text{Ø } 110$	3.6		EI 90 U/U, E 120 U/U
Wavin SiTech+	$\leq \text{Ø } 160$	5.0	Multicollar <i>Slim</i> double	EI 120 U/U
				EI 90 U/U, E 120 U/U

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.13 Plastic pipes (Silent) with socket**

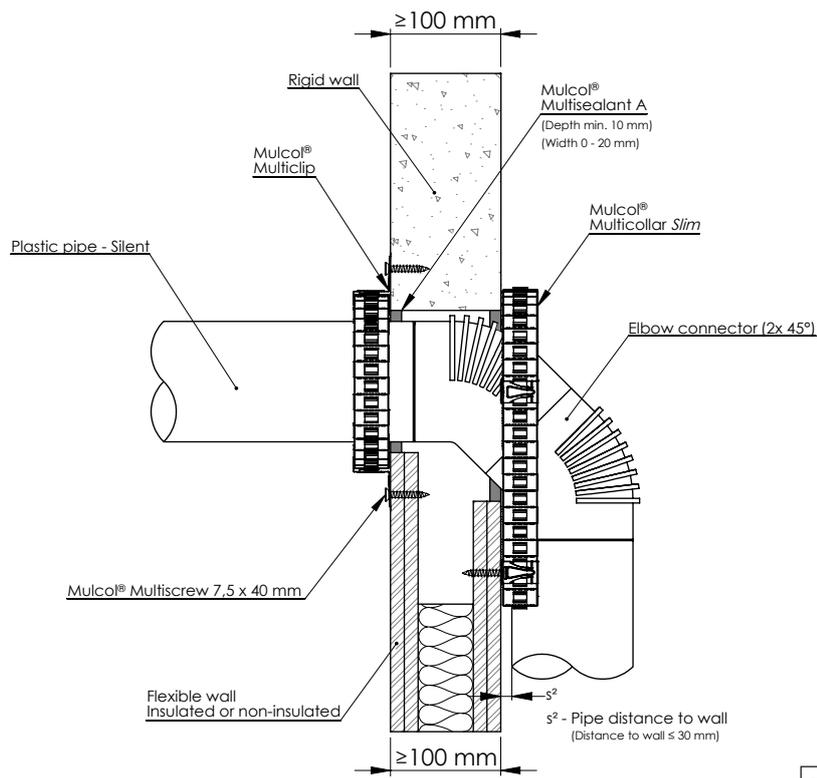
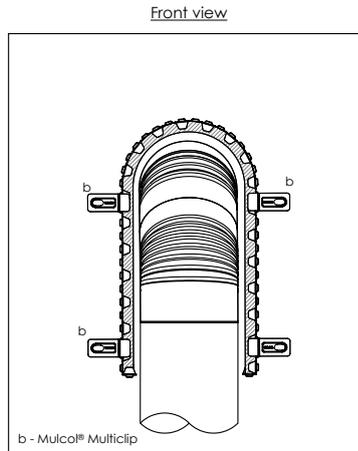


Drawing: FW.E-MC30-PPS-10.0.60

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Raupiano Plus	$\leq \text{Ø } 110$	2.7	Multicollar <i>Slim</i>	EI 120 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.14 Plastic pipes (Silent) with elbow**

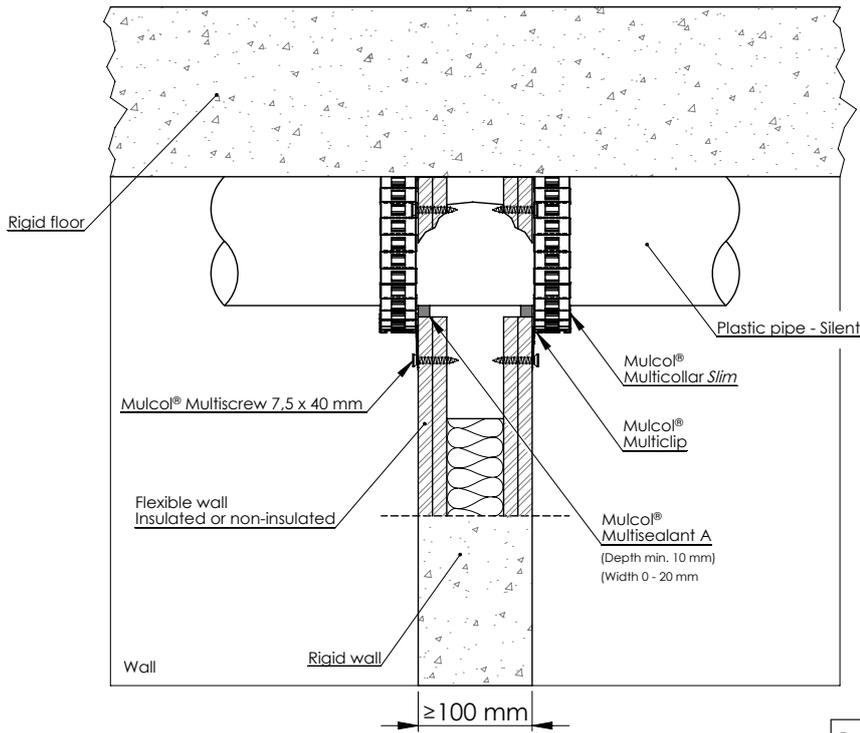
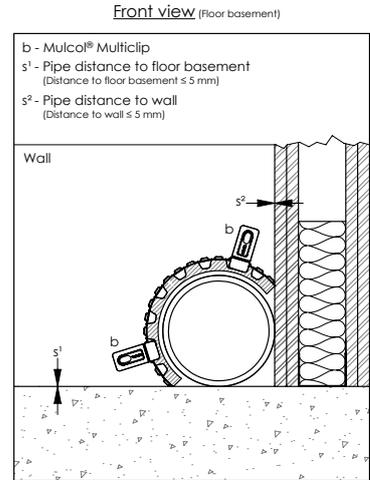
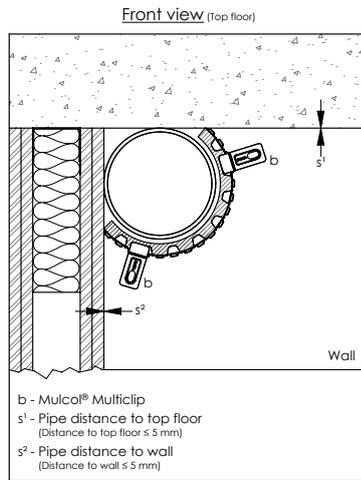


Drawing: FW.E-MC30u-PPS-10.0.80

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Wavin SiTech+	≤ Ø 110	3.6	Multicollar Slim	EI 60 U/U
Geberit Silent dB 20		6.0		EI 90 U/U, E 120 U/U

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.15 Plastic pipes (Silent) in corner**

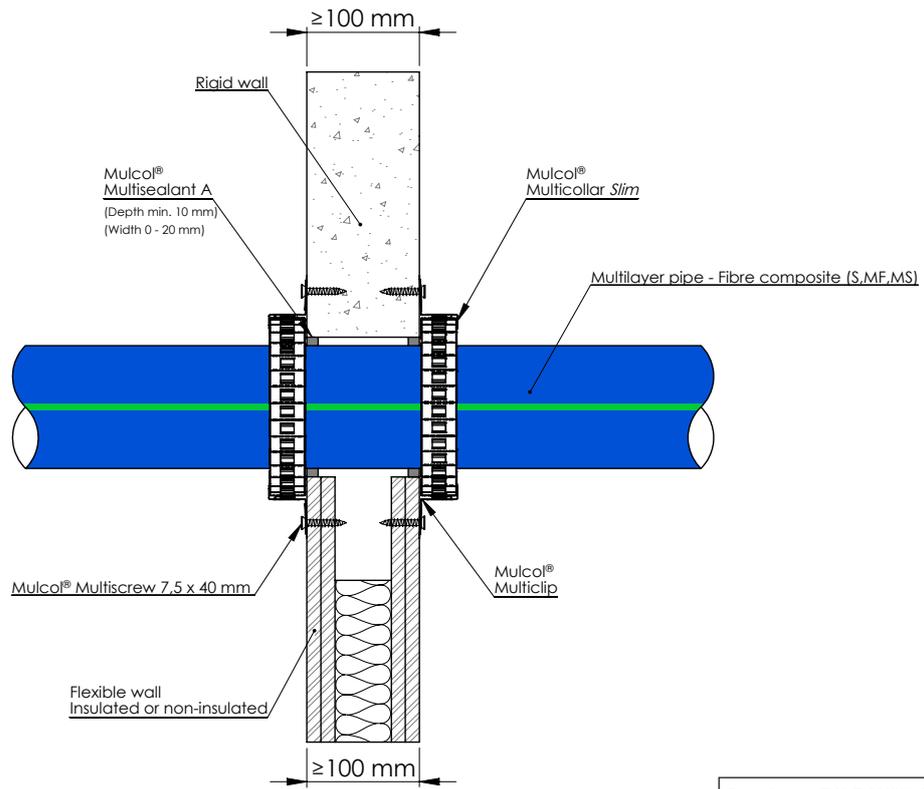
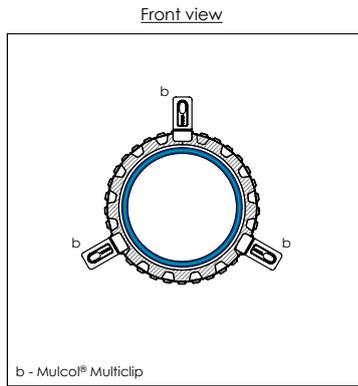


Drawing: FW.E-MC30c-PPS-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20, bottom corner	$\leq \text{Ø } 110$	6.0	Multicollar Slim	EI 120 U/U
Geberit Silent dB 20, top corner				EI 60 U/U

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.16 PP-R Multilayer pipes**

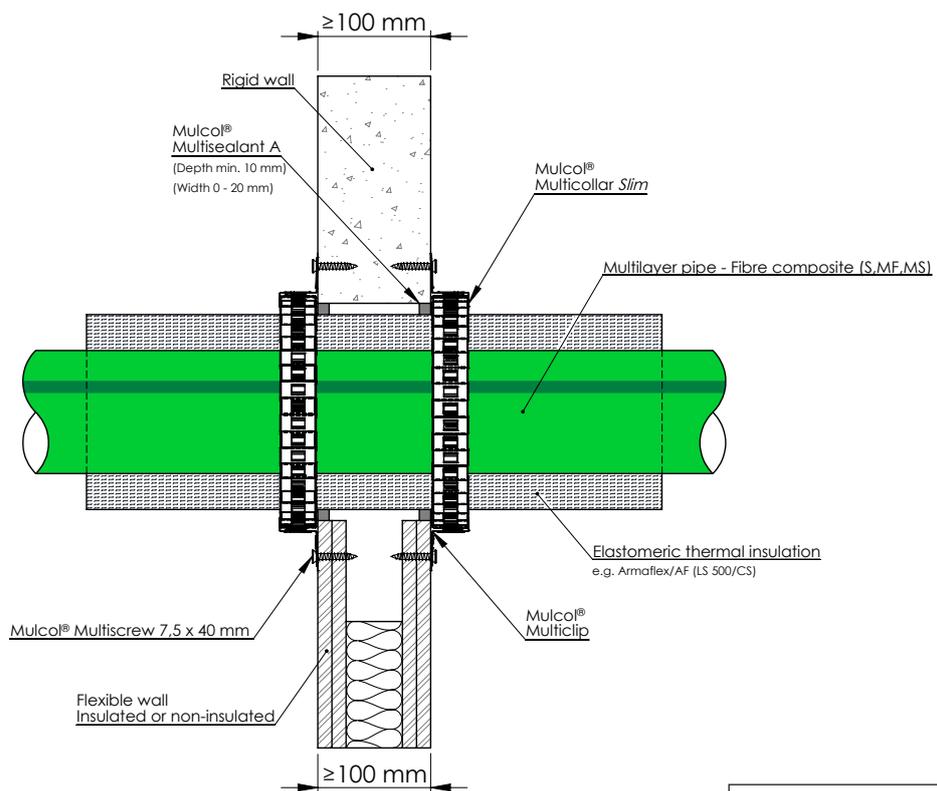
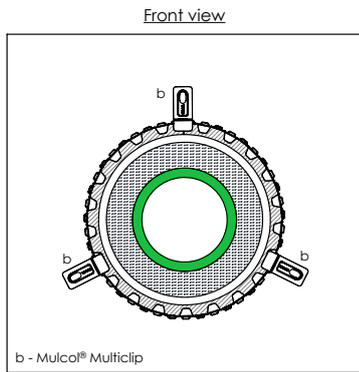


Drawing: FW.E-MC30-MLF-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Blue-MF	$\leq \text{Ø } 20$	2.8	Multicollar Slim	EI 90 U/C
	$\leq \text{Ø } 110$	10.0		EI 60 U/C
	$\leq \text{Ø } 160$	14.6		EI 90 U/C
Aquatherm Red-MF	$\leq \text{Ø } 110$	15.1		EI 90 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.17 PP-R Multilayer pipes - Elastomer LS 500 / CS**

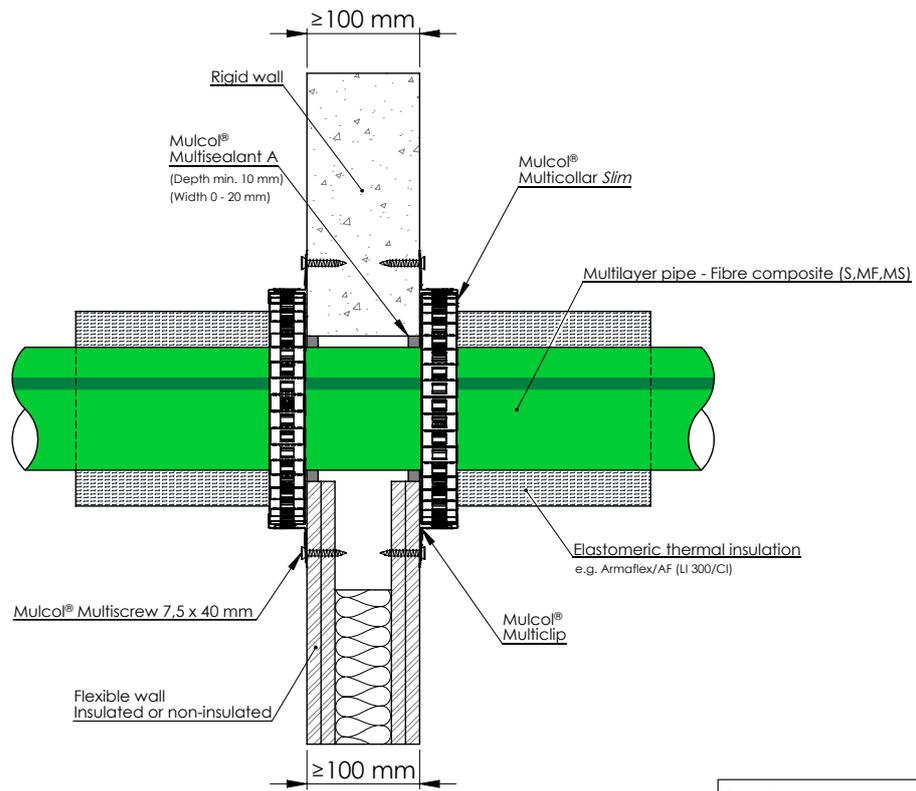
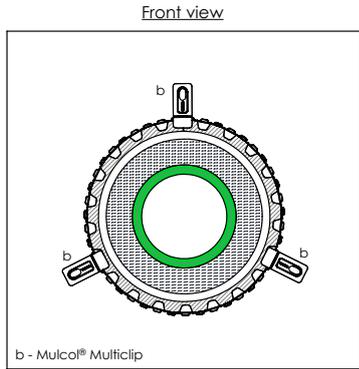


Drawing: FW.E-MC30-MLF-10.0.22.LS

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
Aquatherm Green-S	$\leq \varnothing 110$	18.3	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32	LS 500 / CS	Multicollar <i>Slim</i>	EI 90 U/C
Aquatherm Green-MS		15.2					
Aquatherm Green-MF		15.1					
Aquatherm Blue-MF	$\leq \varnothing 20$	2.8		9			
	$\leq \varnothing 110$	10.0	EI 90 U/C E 120 U/C				

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.18 PP-R Multilayer pipes - Elastomer LI 300 / CI**

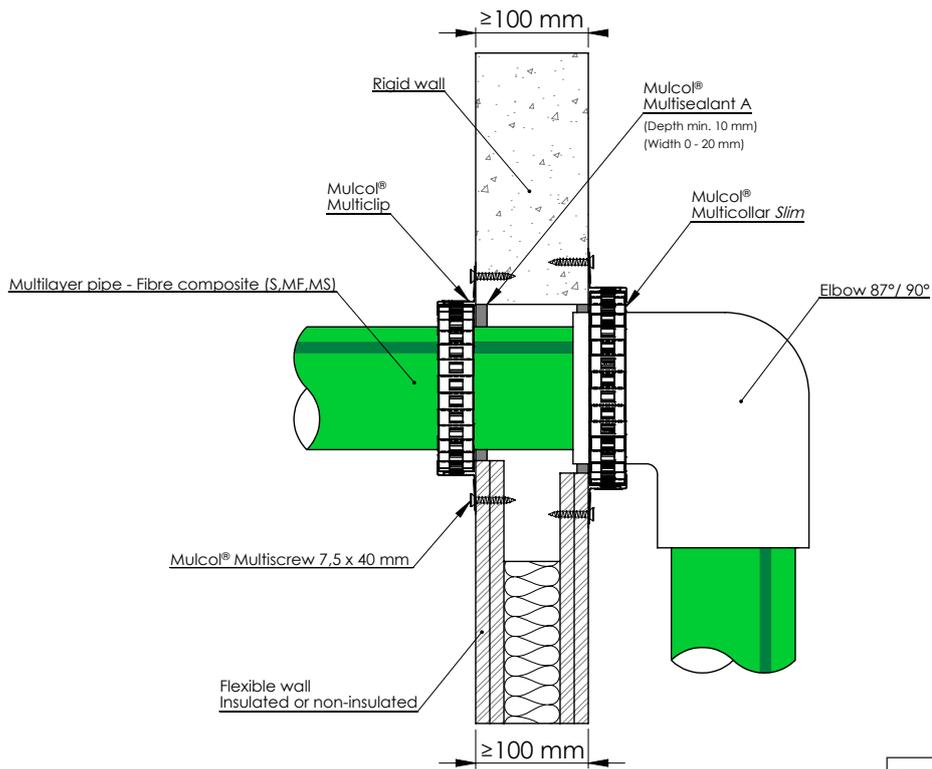
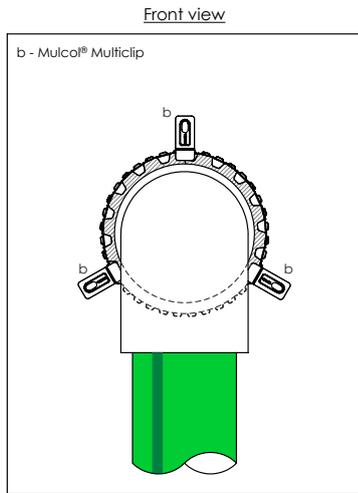


Drawing: FW,E-MC30-MLF-10.0.22.LI

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
AquaTherm Blue-MF	$\leq \varnothing 110$	10.0 - 14.6	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32	LI 300 / CI	Multicollar <i>Slim</i>	EI 90 U/C
	$\leq \varnothing 160$	14.6		32			
	$\leq \varnothing 110$	10.0 - 14.6					EI 120 U/C
	$\leq \varnothing 160$	14.6					

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.19 PP-R Multilayer pipes with elbow**

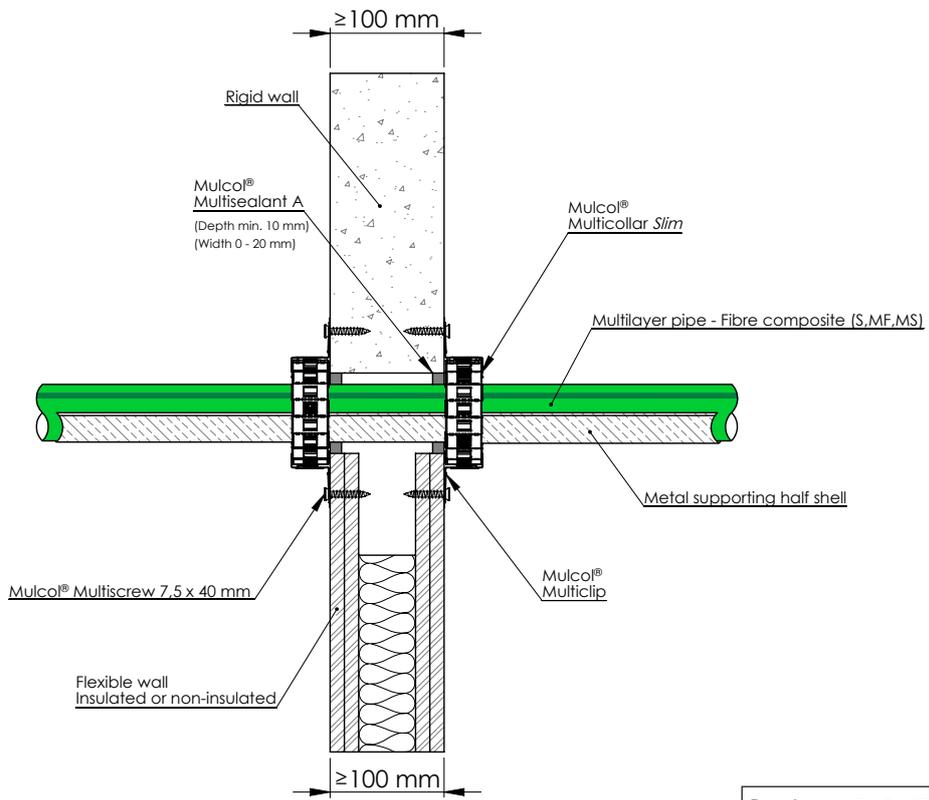
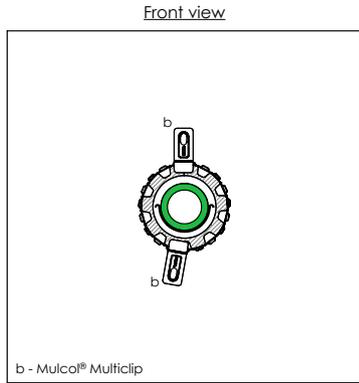


Drawing: FW.E-MC30-MLF-10.0.70

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Blue-MF	$\leq \text{Ø } 110$	10.0	Multicollar <i>Slim</i>	EI 90 U/C, E 120 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.20 PP-R Multilayer pipes - Steel half shell support**

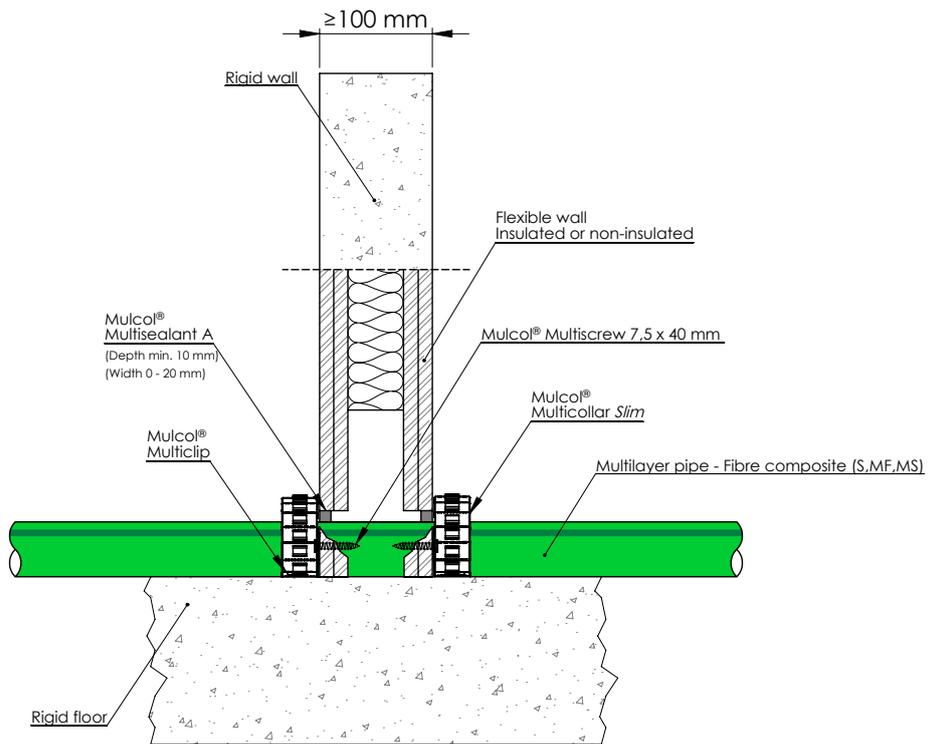
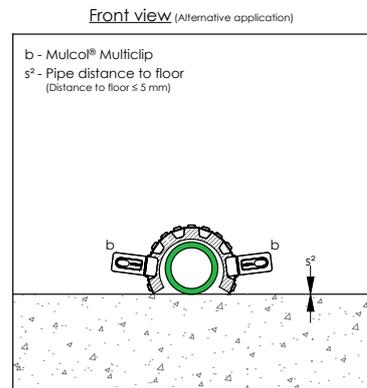
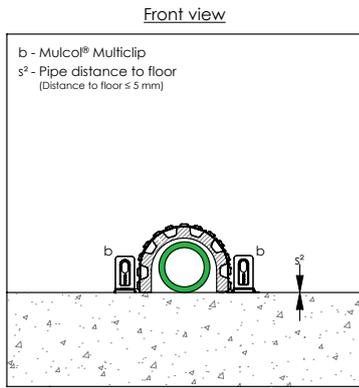


Drawing: FW.E-MC30-MLF-10.0.50

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green-MS	$\leq \text{Ø } 50$	6.9	Multicollar <i>Slim</i>	EI 90 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.21 PP-R Multilayer at zero distance to floor**

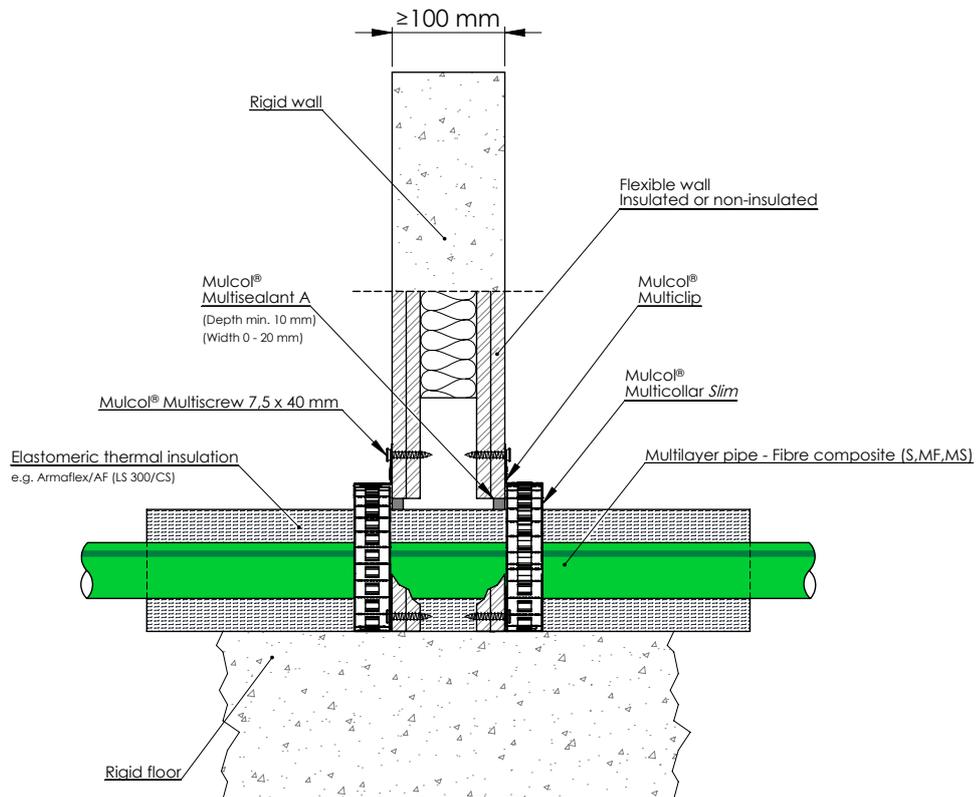
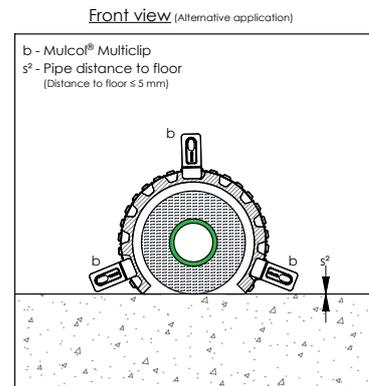
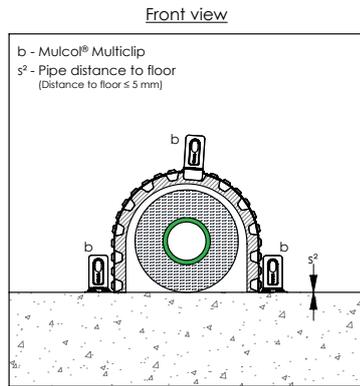


Drawing: FW.E-MC30F-MLF-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green-MF	$\leq \text{Ø } 50$	6.9	Multicollar <i>Slim</i>	EI 90 U/C

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.22 PP-R Multilayer pipes at zero distance to floor - Elastomer LS 300 / CS**



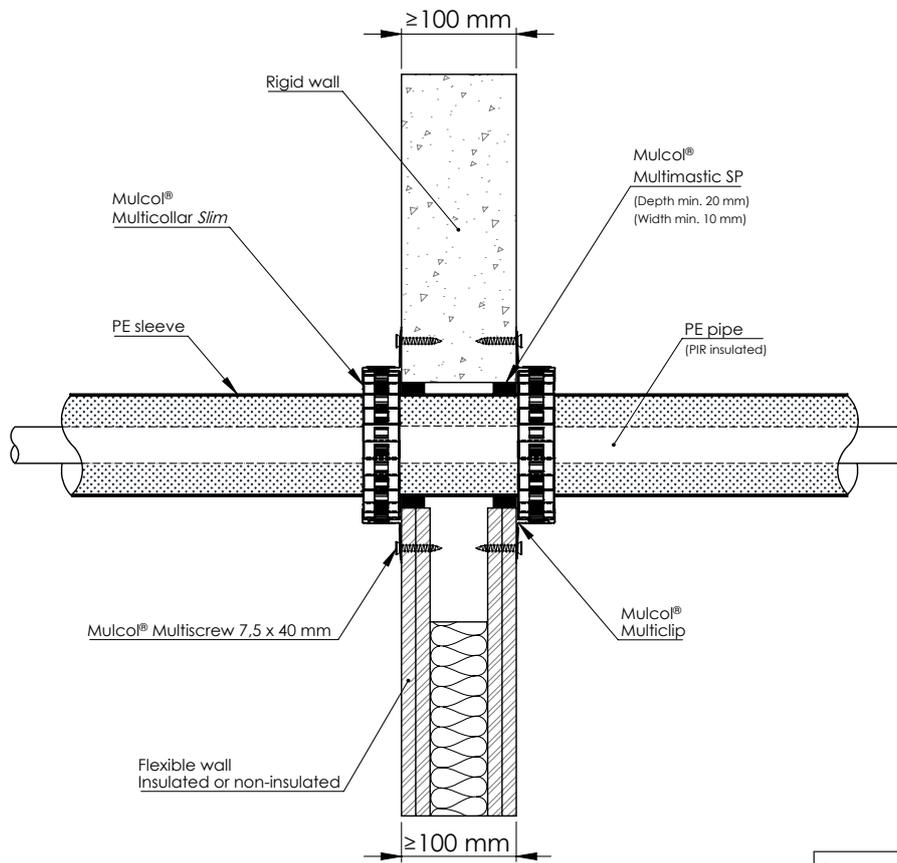
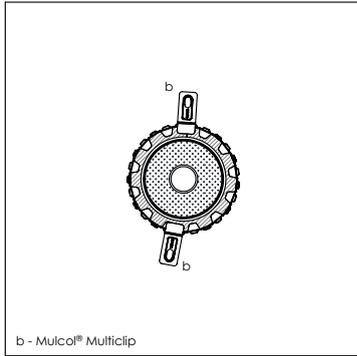
Drawing: FW-E-MC30f-MLF-10.0.22

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
Aquatherm Blue-MF	$\leq \text{Ø } 50$	6.9	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32	LS 300 / CS	Multicollar <i>Slim</i>	<b>EI 90 U/C</b>

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.23 PE Pipe insulated PIR**

Front view



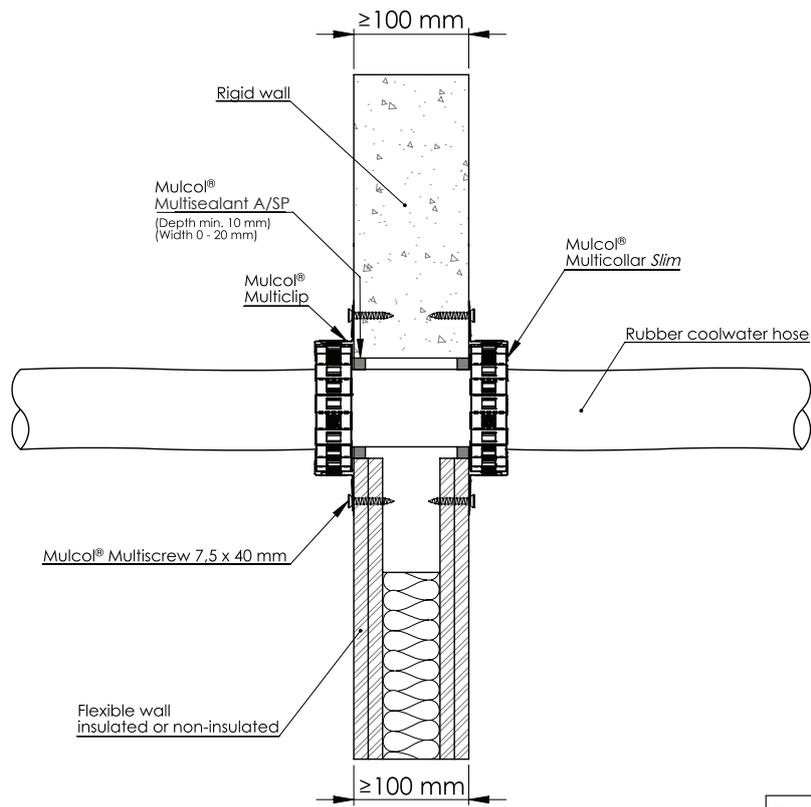
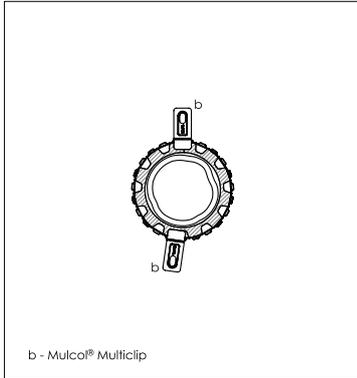
Drawing: FW-MC30-PP\_pr-10.0.23

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
PE	$\leq \text{Ø } 50$	$\geq 5.0$	PIR / PUR + PE coating	20	CS	Multicollor Slim	EI 60 C/U

**A.1.11 Directly through wall -  $\geq 100$  mm - Combustible pipes**

**A.1.11.24 Rubber cool-water hose**

Front view

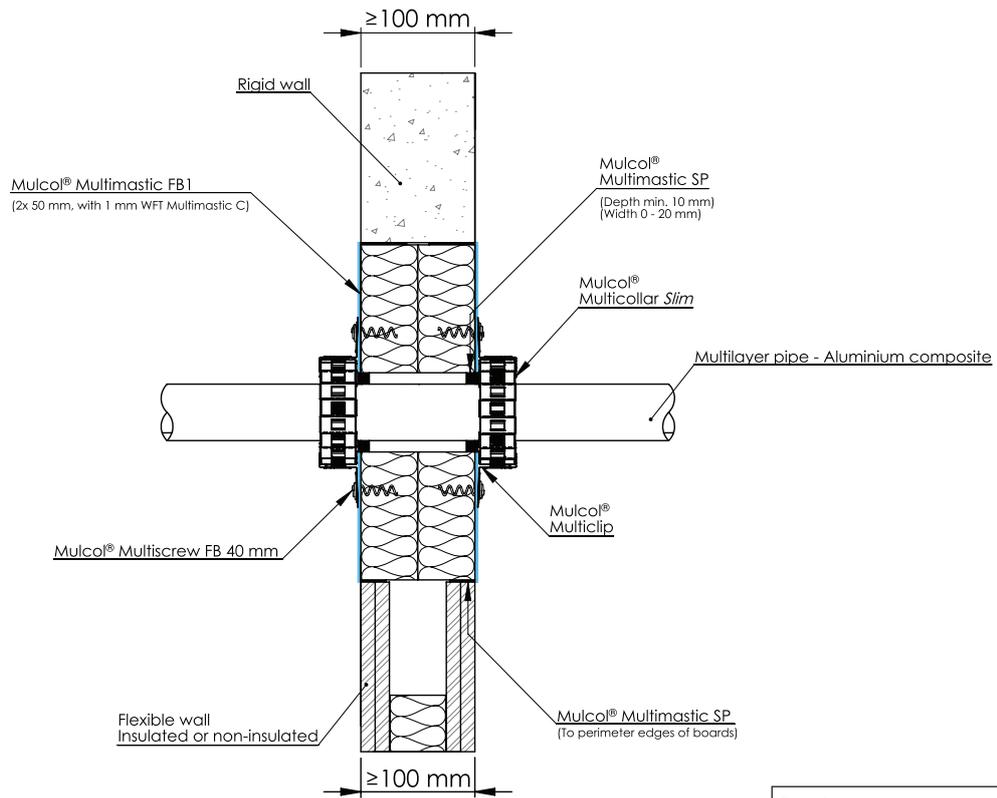
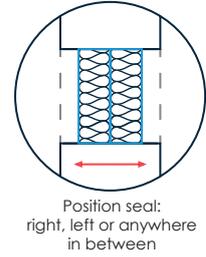
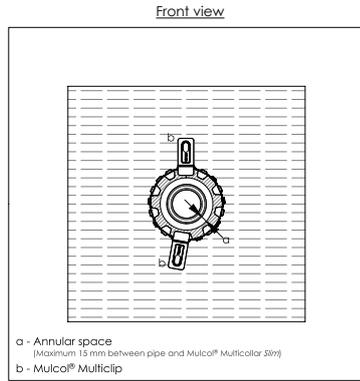


Drawing: FW-CWH-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Rubber cool-water hose	$\leq \text{Ø } 75$	6.0	Multicollar <i>Slim</i>	EI 60 U/C

**A.1.12 Multimastic FB1 - 2x50 mm - Multilayer pipes (MLC)**

**A.1.12.1 Multilayer pipes (MLC)**

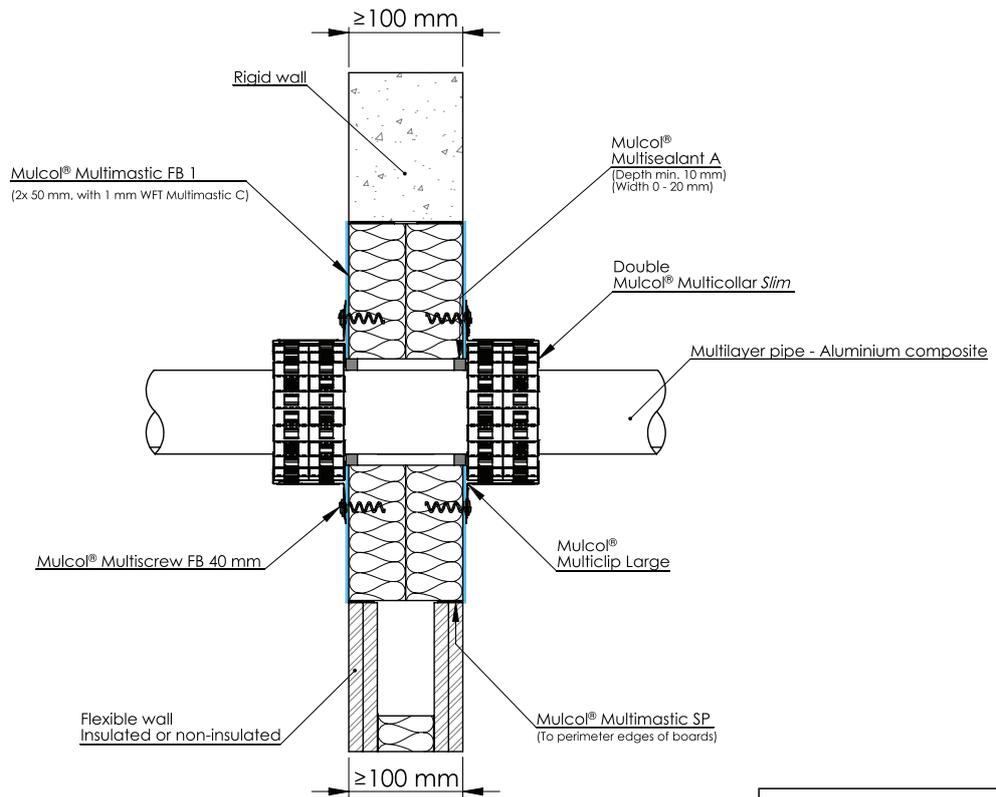
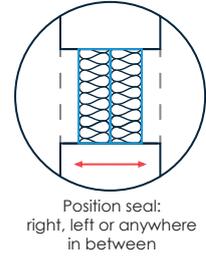
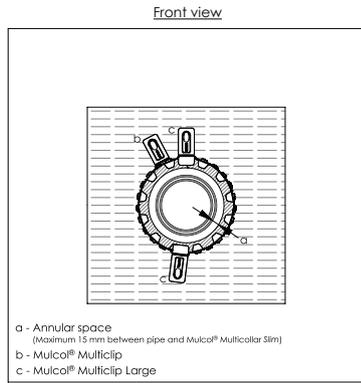


Drawing: PBFw.E-MLA-MC30-MFB1.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 20	2.0	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/C
	≤ Ø 25	3.5			
	≤ Ø 32	3.0			
	≤ Ø 40	3.5			
	≤ Ø 40	4.0			
	≤ Ø 50	4.0			
	≤ Ø 63	4.5			
					EI 90 U/C, E 120 U/C

**A.1.12 Multimastic FB1 - 2x50 mm - Multilayer pipes (MLC)**

**A.1.12.2 Multilayer pipes (MLC) - double Multicollar *Slim***

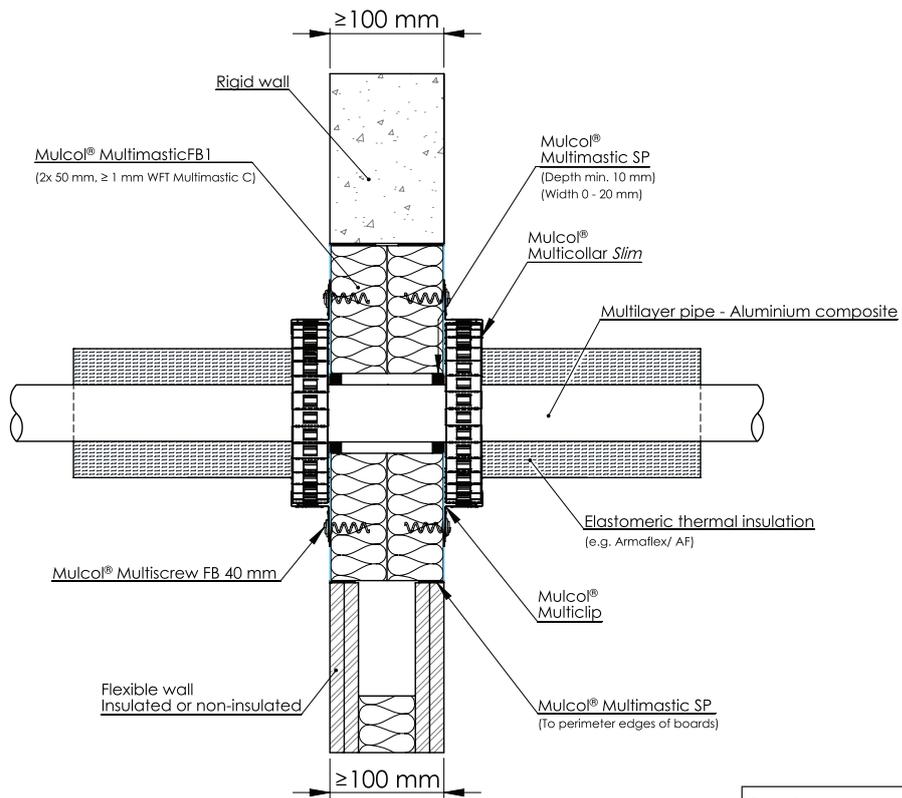
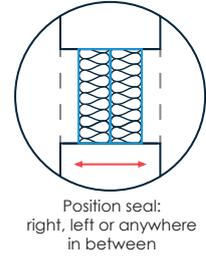
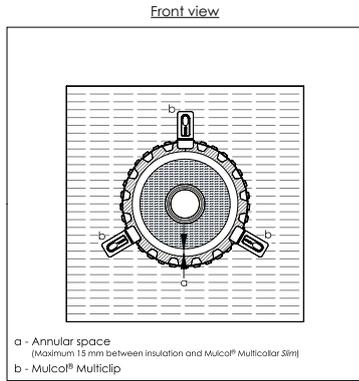


Drawing: PBFw.E-MLA-MC60-MFB1.0.10

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

**A.1.12 Multimastic FB1 - 2x50 mm - Multilayer pipes (MLC)**

**A.1.12.3 Multilayer pipes (MLC) - Elastomer LI 300 / CI**

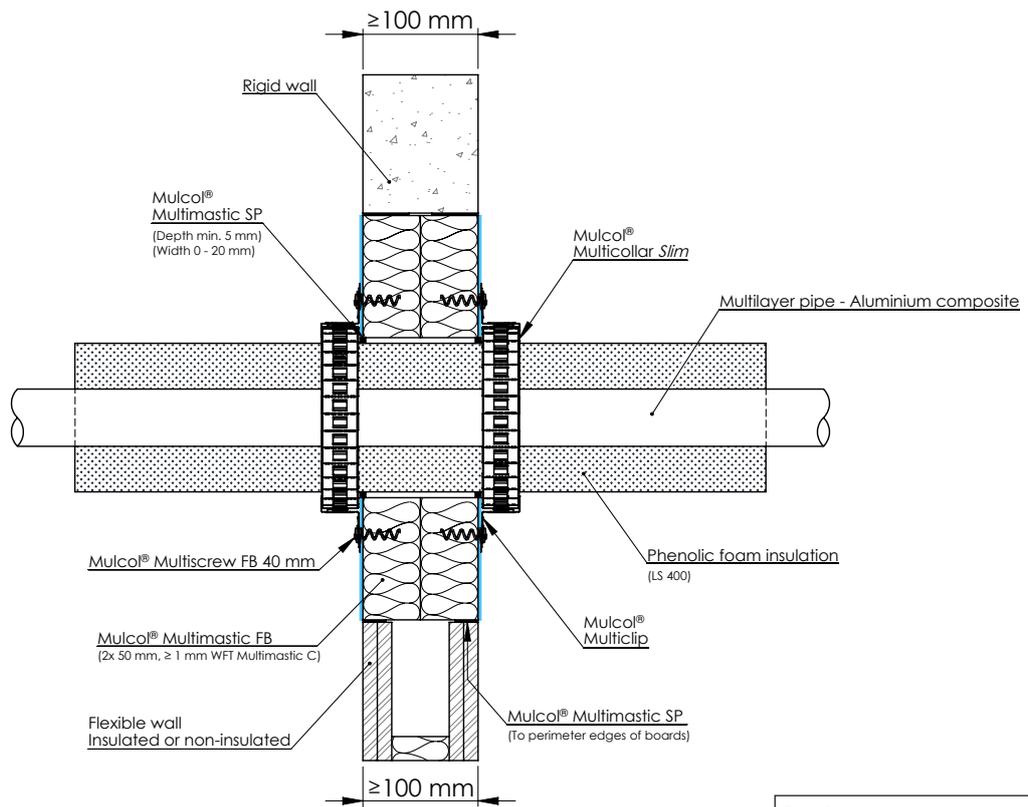
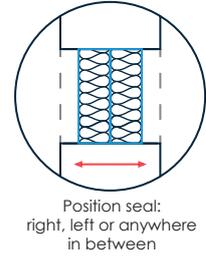
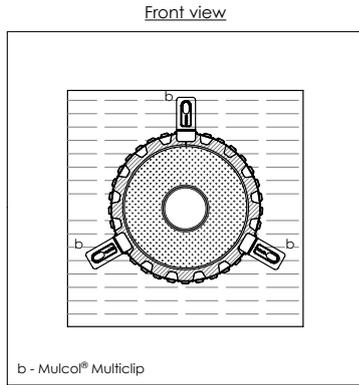


Drawing: PBFw.E-MLA-MC30-10.0.22

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

**A.1.12 Multimastic FB1 - 2x50 mm - Multilayer pipes (MLC)**

**A.1.12.4 Multilayer pipes (MLC) - Phenolic foam LS 400 / CS**

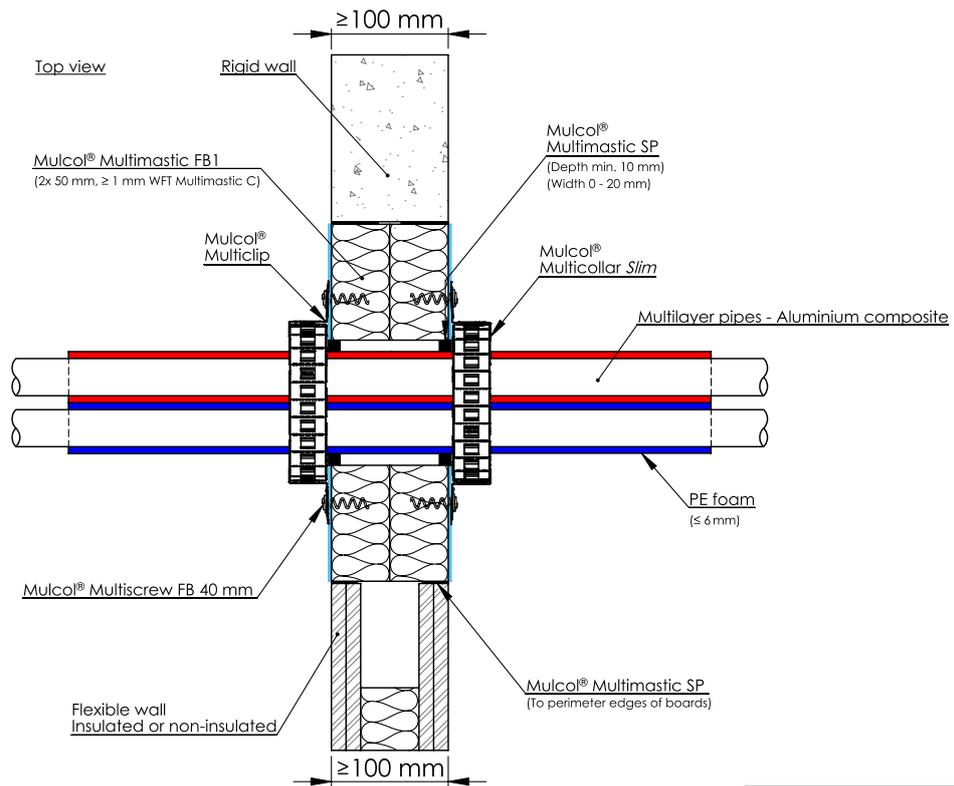
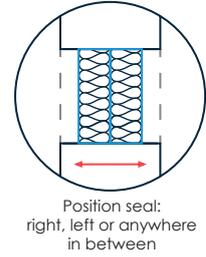
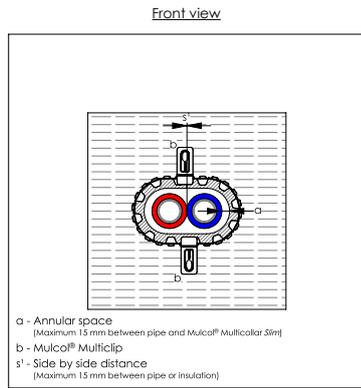


Drawing: PBfw.E-MLA-MC30-MFB1.0.22

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

**A.1.12 Multimastic FB1 - 2x50 mm - Multilayer pipes (MLC)**

**A.1.12.5 Multiple Multilayer pipes (MLC) - PE foam**

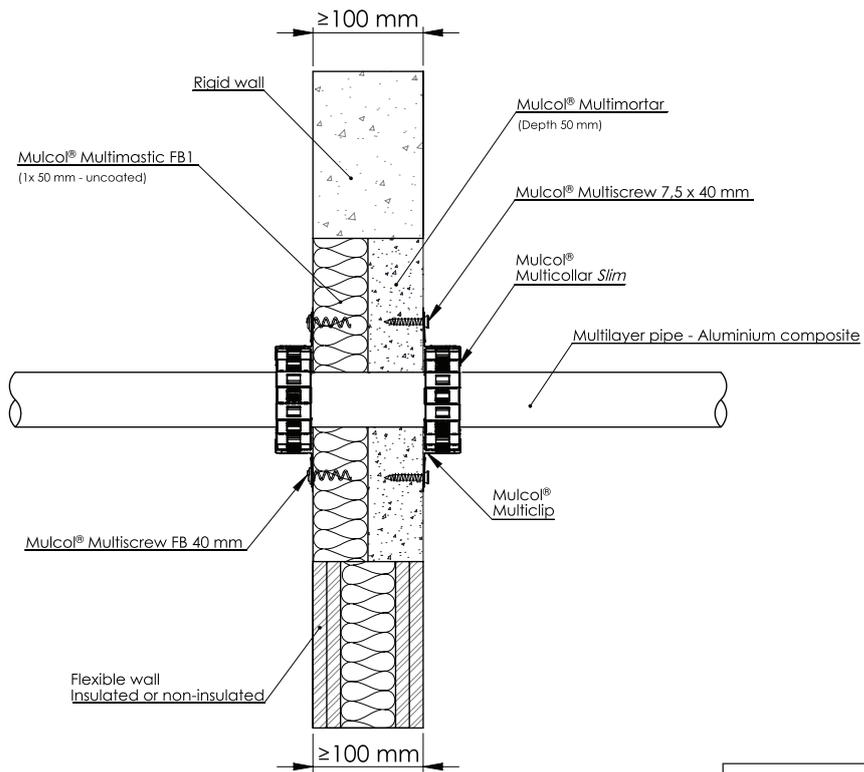
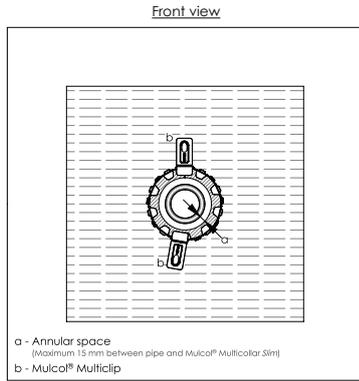


Drawing: PBfw.E-MC30-MLP2-10.0.2

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

**A.1.13 Multimortar + Multimastic FB -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.13.1 Multilayer pipes (MLC)**

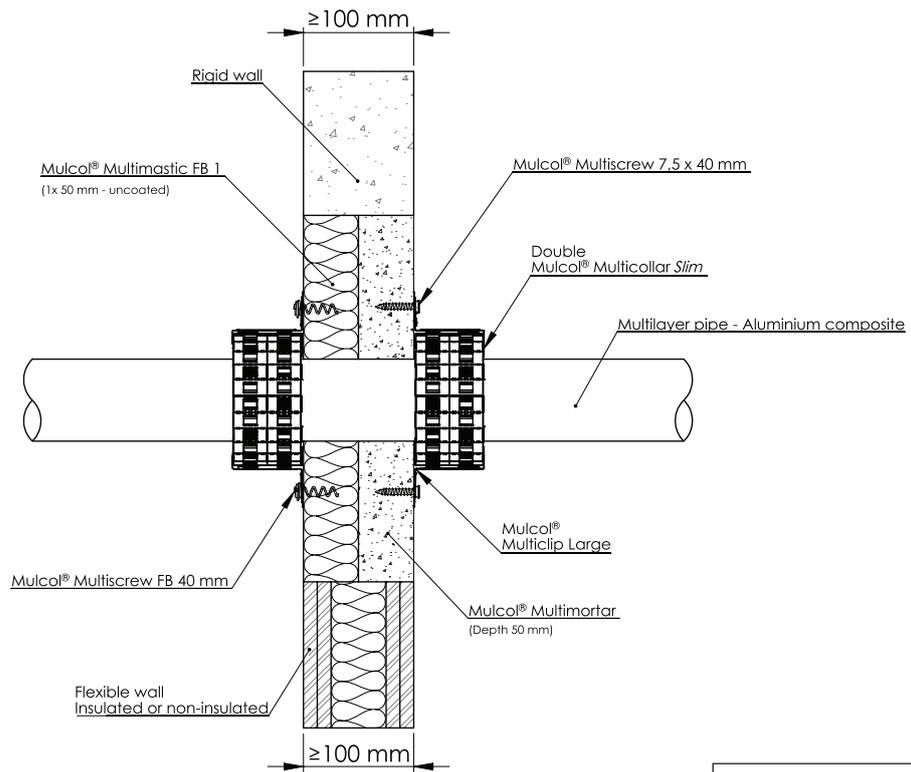
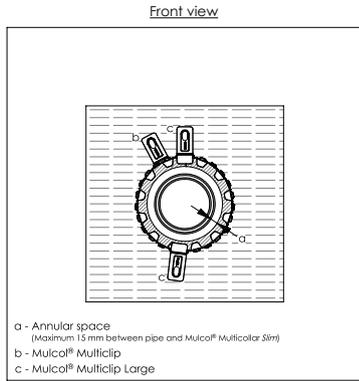


Drawing: FW.E-MLA-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \text{Ø } 32$	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
	$\leq \text{Ø } 50$	4.0		EI 60 U/C, E 120 U/C

**A.1.13 Multimortar + Multimastic FB -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.13.2 Multilayer pipes (MLC) - double Multicollar *Slim***

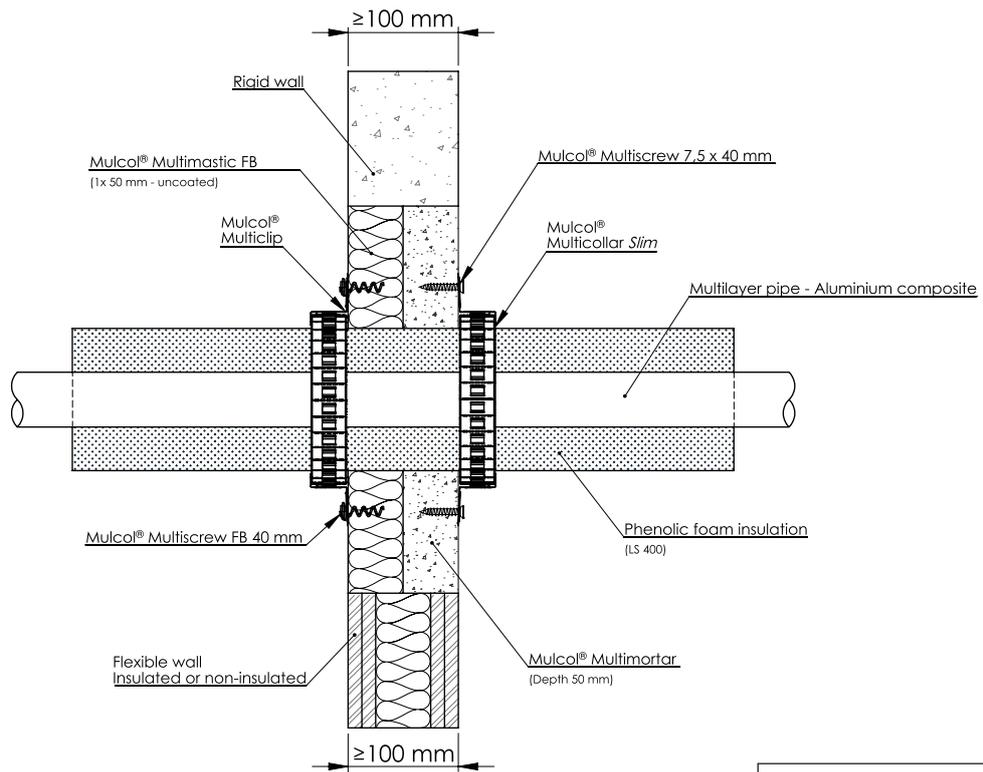
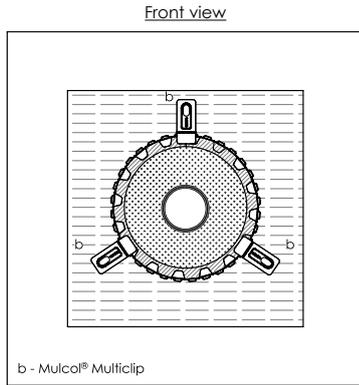


Drawing: FW.E-MLA-MM2.5.10

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

**A.1.13 Multimortar + Multimastic FB -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.13.3 Multilayer pipes (MLC) - Phenolic foam**

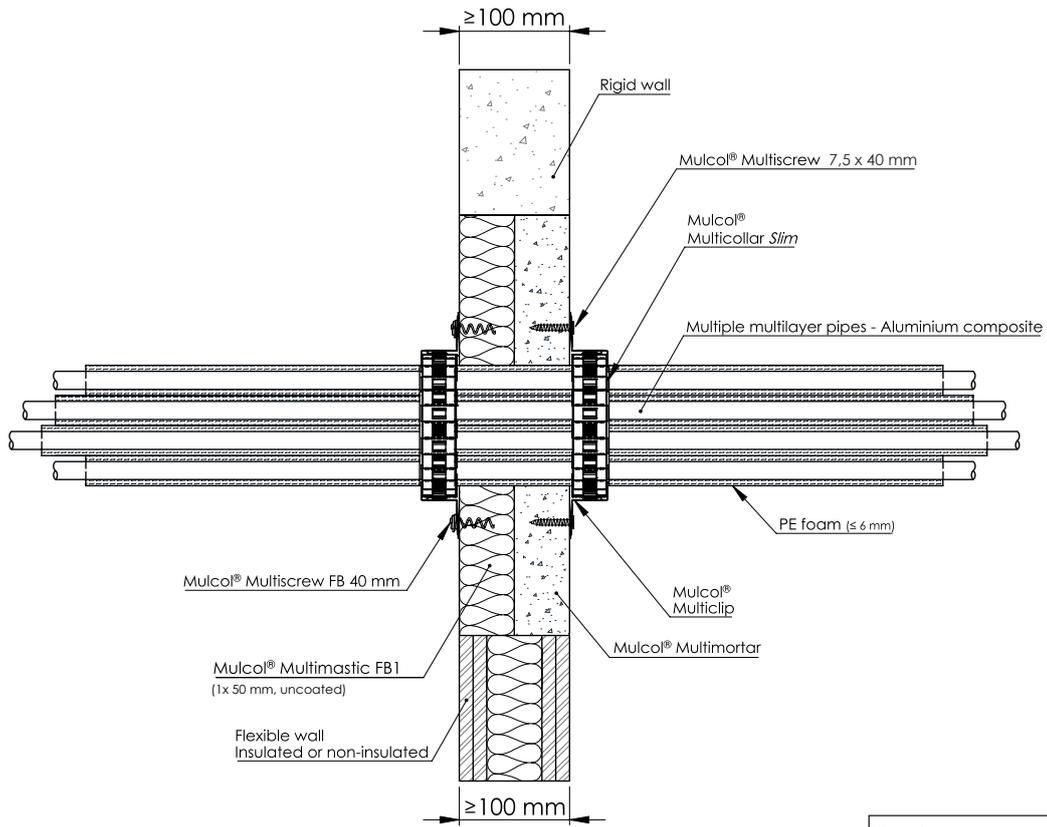
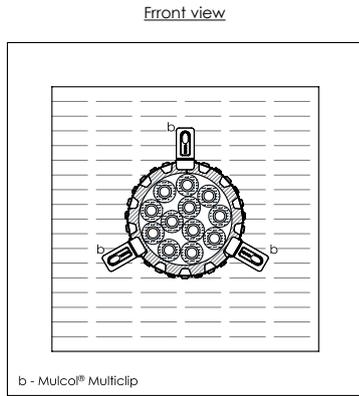


Drawing: FW.E-MLA-MM2.5.10

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

**A.1.13 Multimortar + Multimastic FB -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.13.4 Multiple Multilayer pipes (MLC) - PE foam**



Drawing: FW.E-MC30-MLA\_pr-MM2.5.40-T

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

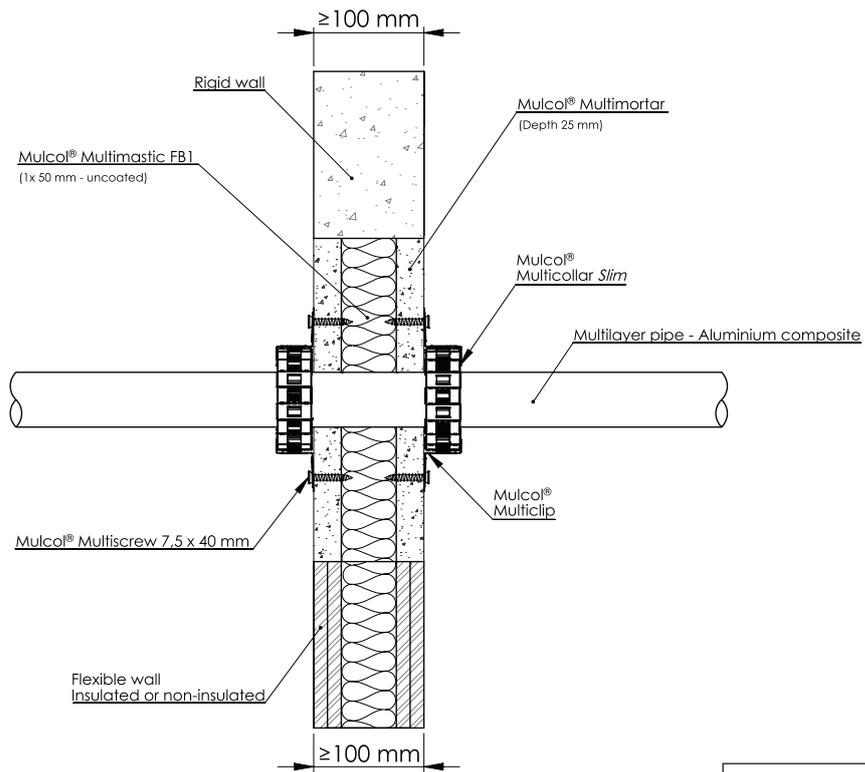
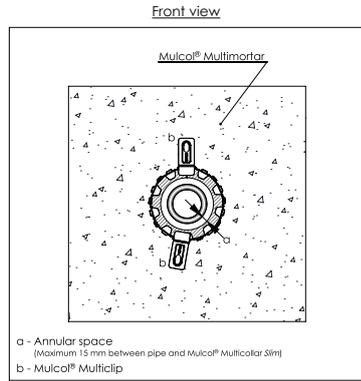
**A.1.14**

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

**Multilayer pipes (MLC)**

**A.1.14.1**

**Multilayer pipes (MLC)**



Drawing: FW-MLA-MM3.4.10

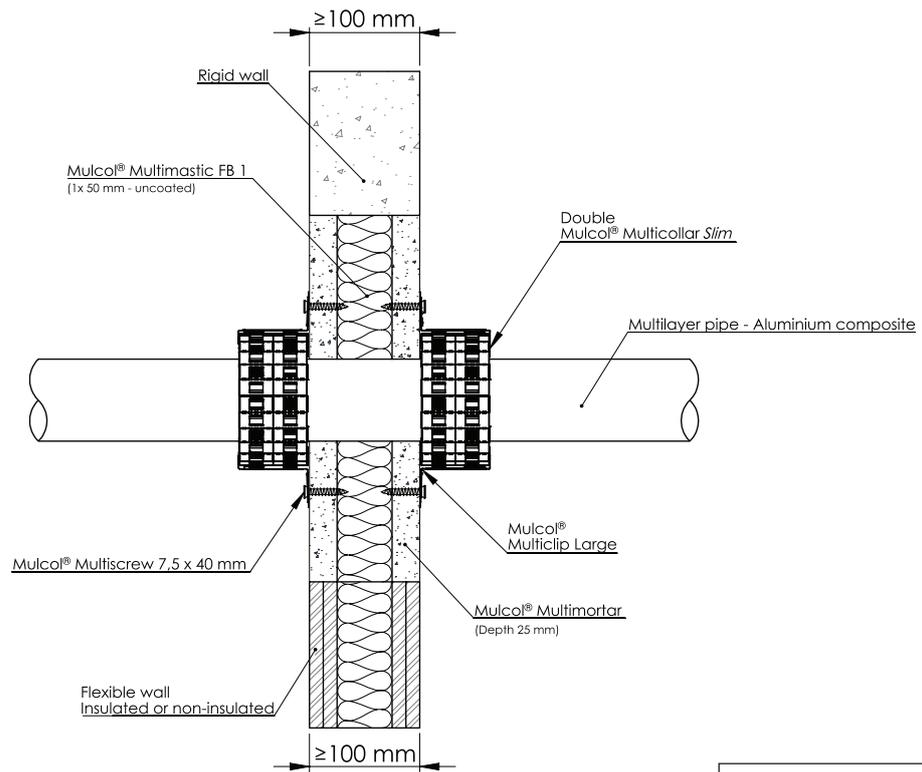
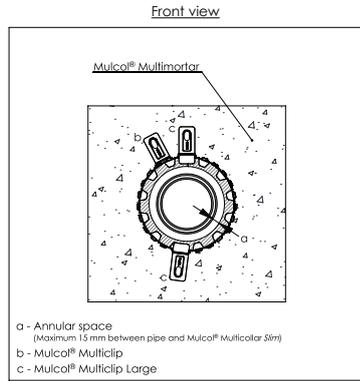
Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	≤ Ø 32	3.2	Multicollar Slim	EI 45 C/U, E 90 C/U
		3.2 - 4.0		EI 45 U/C, E 90 U/C
	≤ Ø 50	4.0		EI 60 U/C, E 120 U/C

**A.1.14**

**Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.14.2**

**Multilayer pipes (MLC) - double Multicollar *Slim***

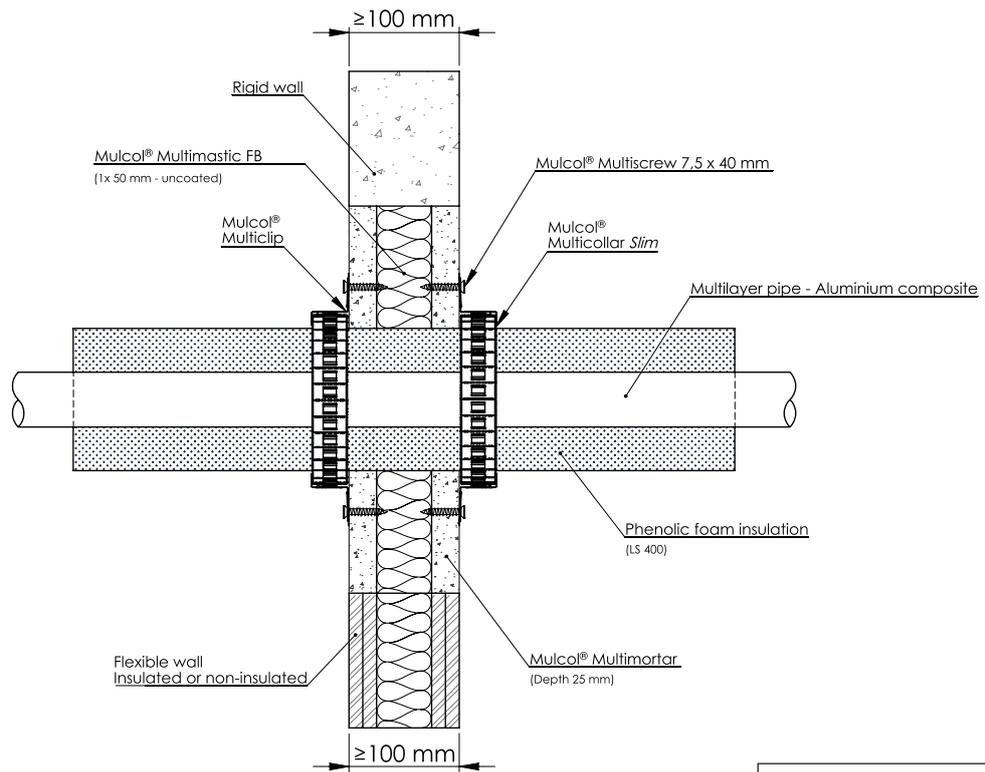
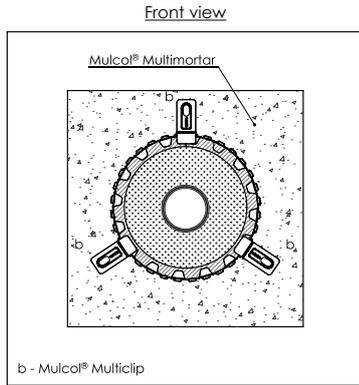


Drawing: FW-MLA-MM3.4.10

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

**A.1.14 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.14.3 Multilayer pipes (MLC) - Phenolic foam**



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)	$\leq \text{Ø } 20$	2.0	Kingspan Kooltherm	15 - 40	LS 400 / CS	Multicollar Slim	EI 60 U/C
	$\leq \text{Ø } 40$	3.5					
	$\leq \text{Ø } 63$	4.5		20 - 40			

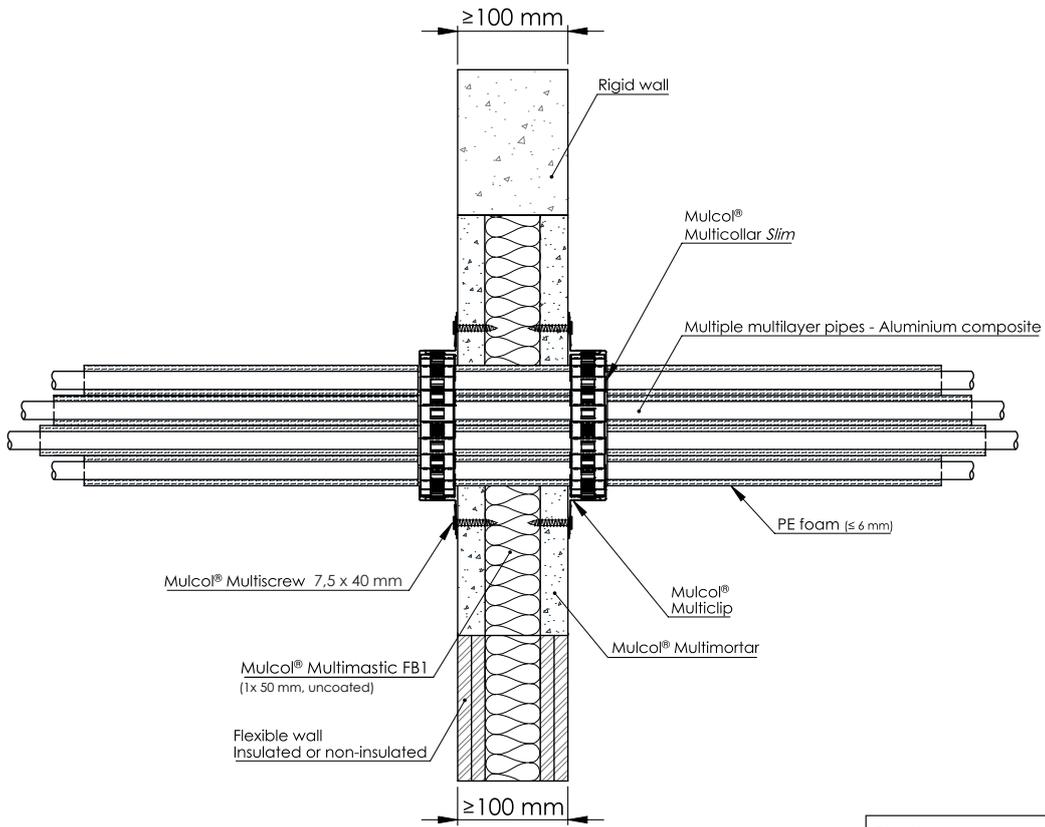
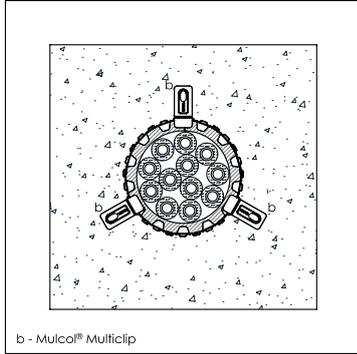
**A.1.14**

**Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.14.4**

**Multiple Multilayer pipes (MLC) - PE foam**

Front view

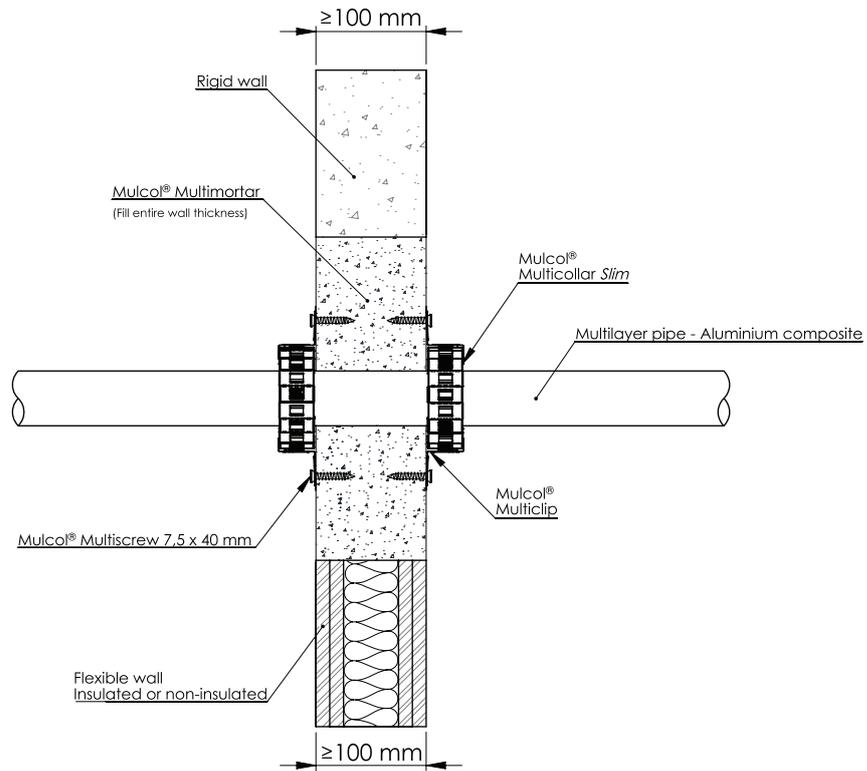
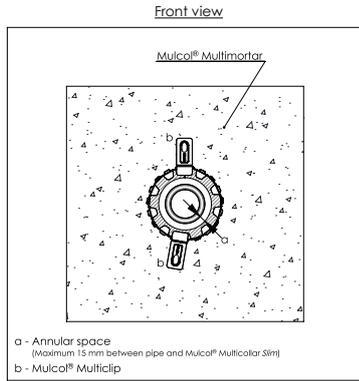


Drawing: FW-E-MC30-MLA\_pr-MM3.4.40-T

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

**A.1.15 Multimortar -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.15.1 Multilayer pipes (MLC)**

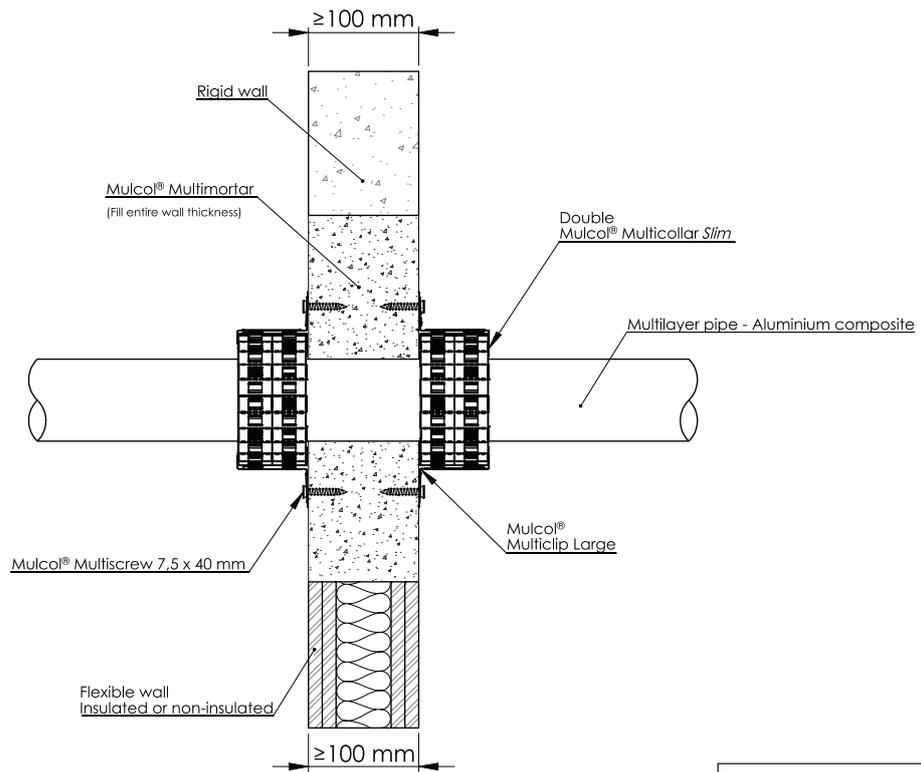
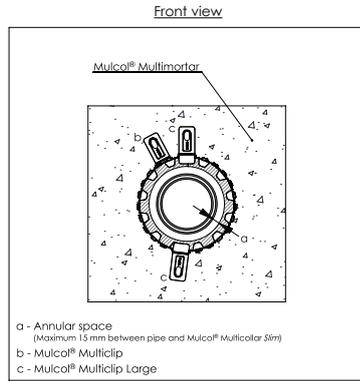


FW.E-MLA-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \text{Ø } 20$	2.0	Multicollar Slim	EI 120 U/C
	$\leq \text{Ø } 25$	3.5		
	$\leq \text{Ø } 32$	3.0		EI 45 C/U, E 90 C/U EI 45 U/C, E 90 U/C
		3.2		
		3.2 - 4.0		
	$\leq \text{Ø } 40$	3.5		EI 120 U/C
	$\leq \text{Ø } 50$	4.0		
	$\leq \text{Ø } 63$	4.5		
$\leq \text{Ø } 75$	6.0	EI 60 U/C, E 90 U/C		

**A.1.15 Multimortar -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.15.2 Multilayer pipes (MLC) - double Multicollar *Slim***

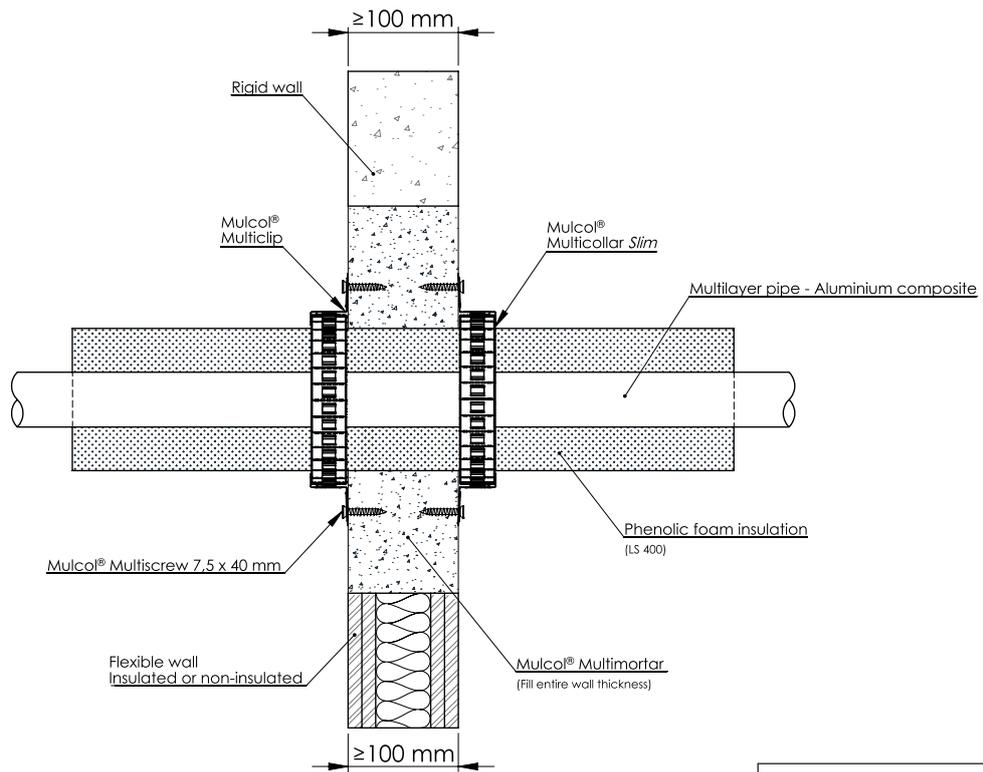
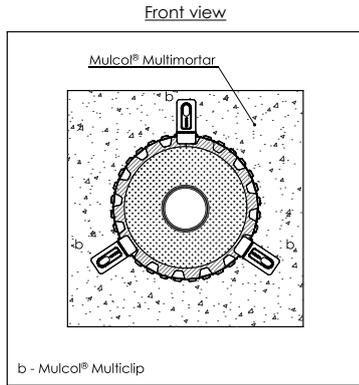


Drawing: FW.E-MLA-MM1.2.10

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

**A.1.15 Multimortar -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.15.3 Multilayer pipes (MLC) - Phenolic foam**

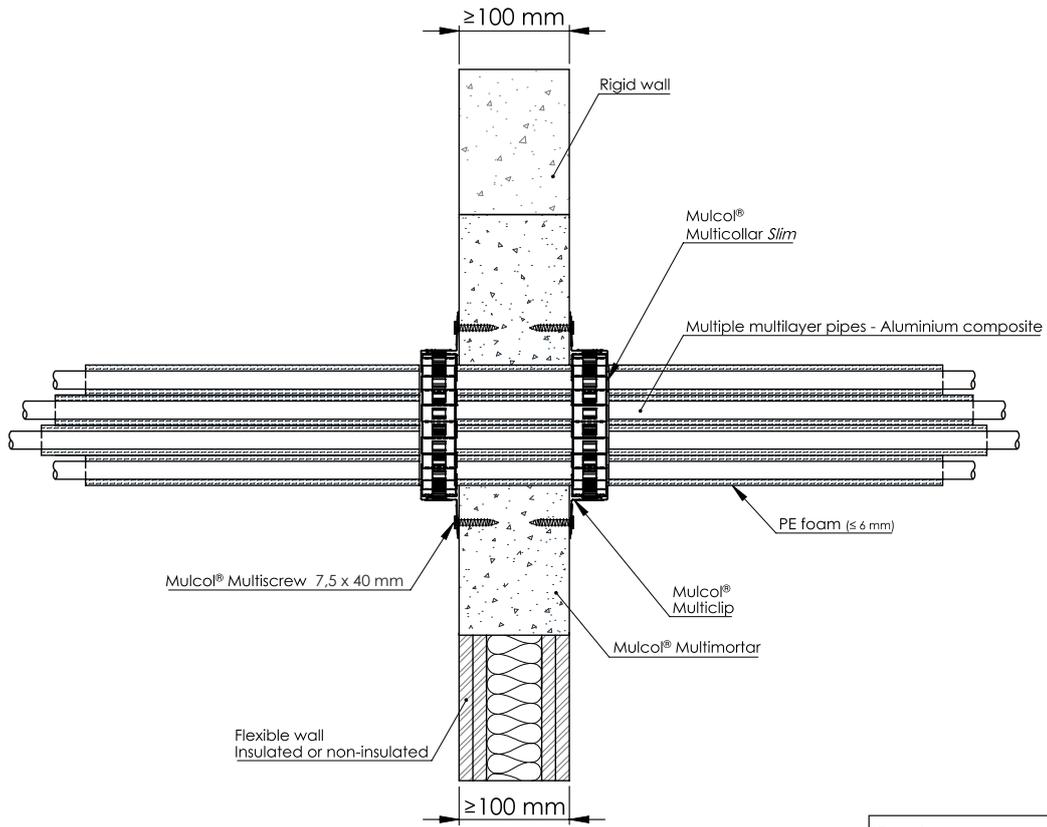
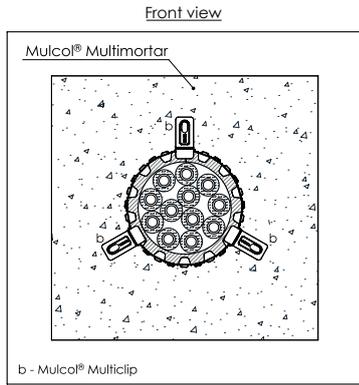


Drawing: FW-MC30-MLA-MM1.2.22

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

**A.1.15 Multimortar -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.15.4 Multiple Multilayer pipes (MLC) - PE foam**

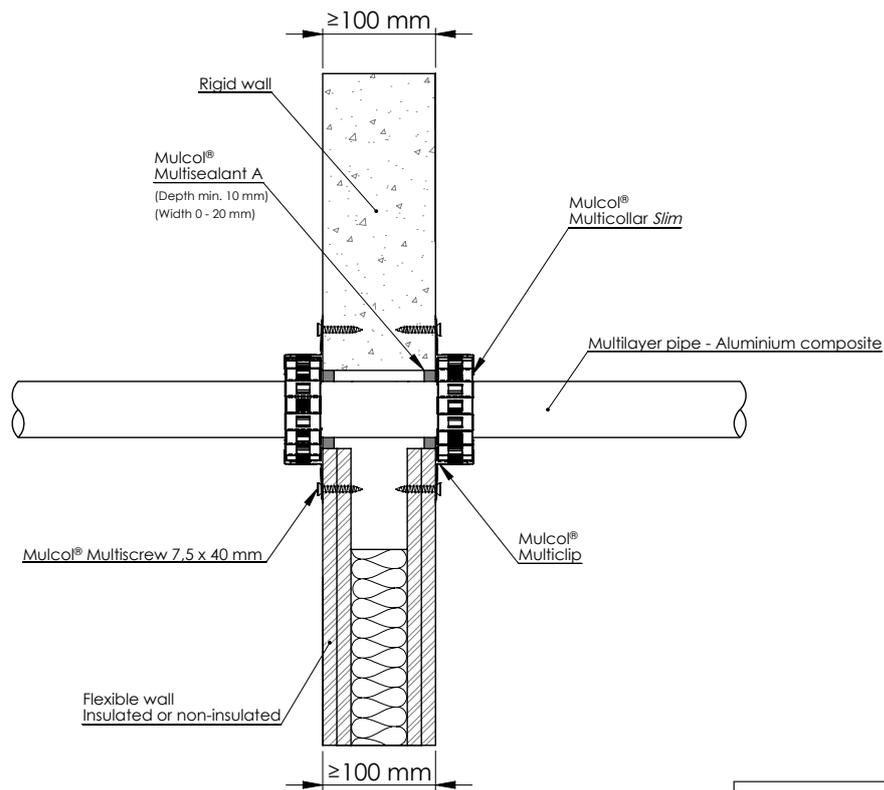
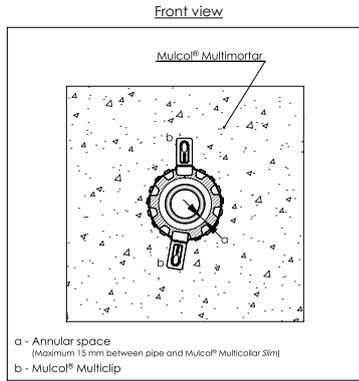


Drawing: FW-MC30-MLA\_pr-MM1.2.40-T

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

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.1 Multilayer pipes (MLC)**

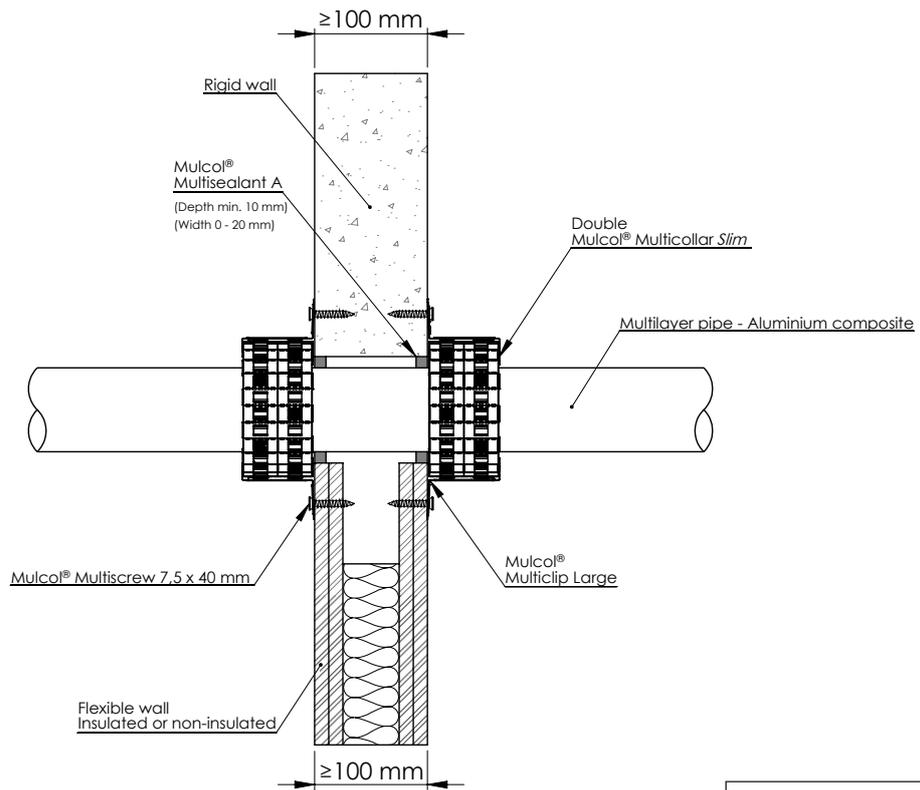
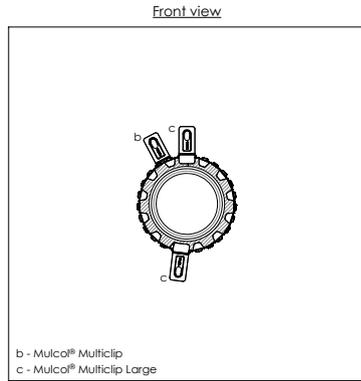


Drawing: FW.E-MLA-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \text{Ø } 20$	2.0	Multicollar Slim	EI 120 U/C
	$\leq \text{Ø } 25$	3.5		
	$\leq \text{Ø } 32$	3.0		
	$\leq \text{Ø } 40$	3.5		
	$\leq \text{Ø } 50$	4.0		
	$\leq \text{Ø } 63$	4.5		
	$\leq \text{Ø } 75$	6.0	EI 60 U/C, E 90 U/C	

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.2 Multilayer pipes (MLC) - double Multicollar *Slim***

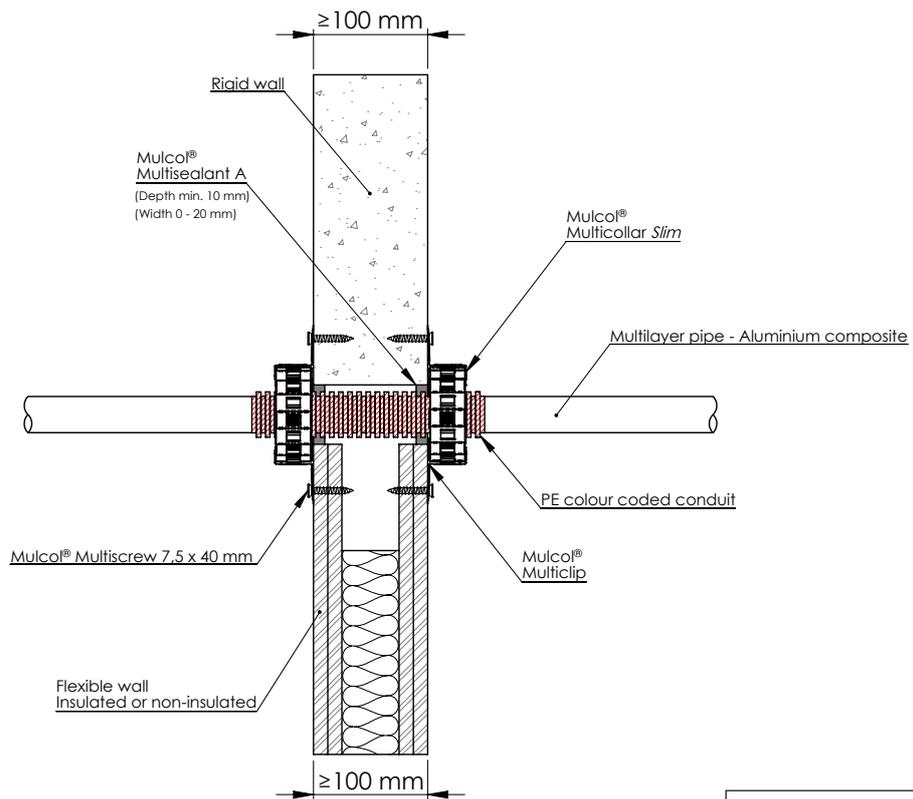
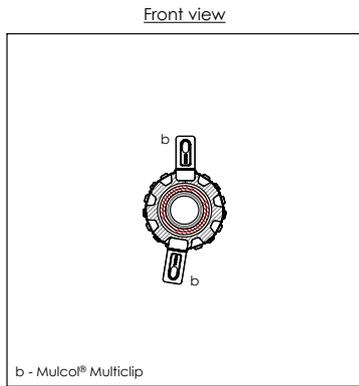


Drawing: FW.E-MC60-MLA-20.0.10

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

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.3 Multilayer pipes (MLC) - PE conduit LS 50 / CS**

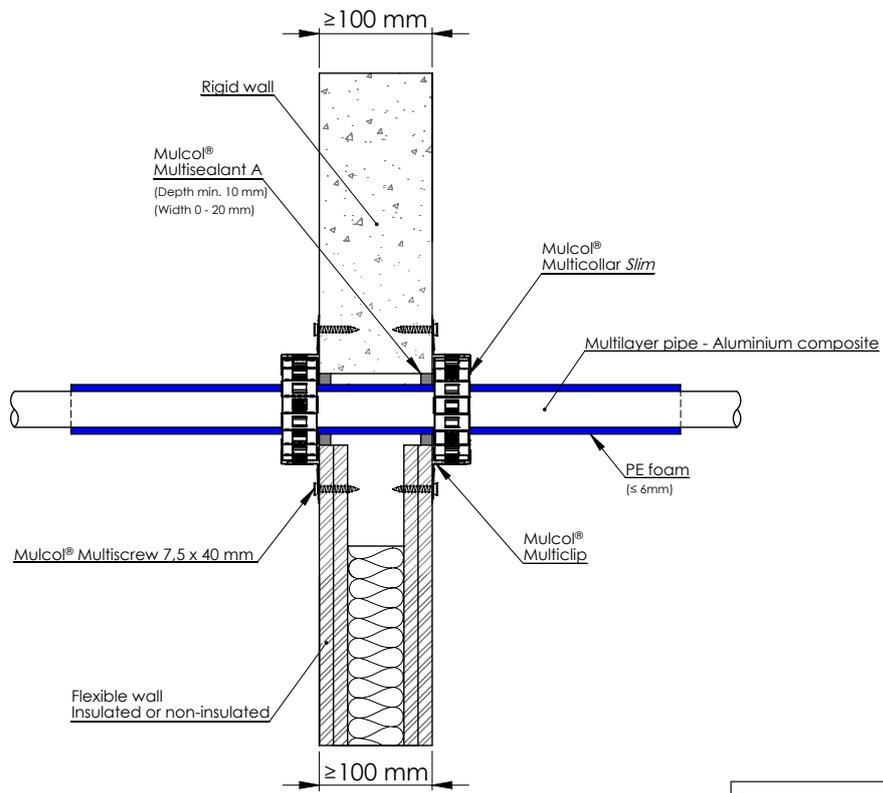
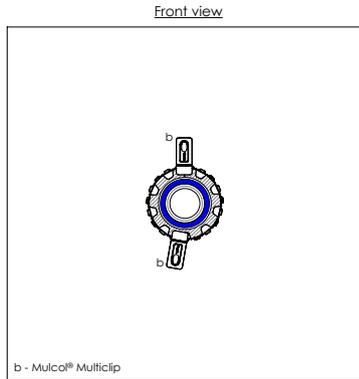


Drawing: FW.E-MC30-MLA-10.0.30

Services	Pipe dimensions (mm)		Conduit			Product	Classification
	Outer dimensions	Wall thickness	Type	Outer dimension (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \text{Ø } 32$	3.0	PE-conduit ribbed	40	LS 50 / CS	Multicollar <i>Slim</i>	EI 90 U/C

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.4 Multilayer pipes (MLC) - PE conduit LS-LI 300 / CS-CI**

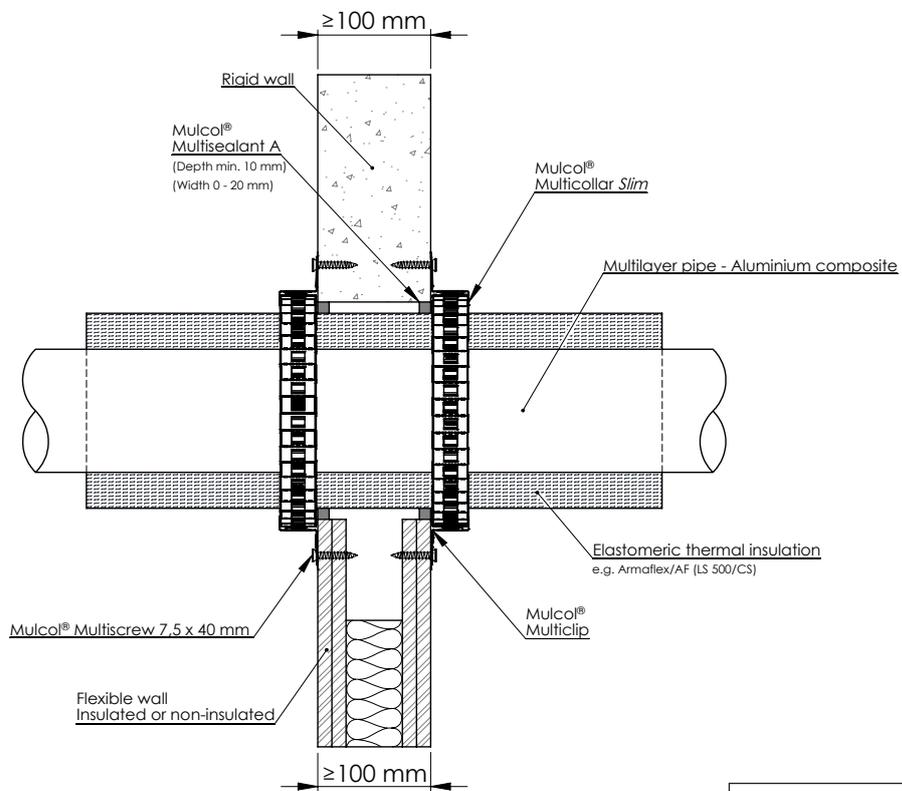
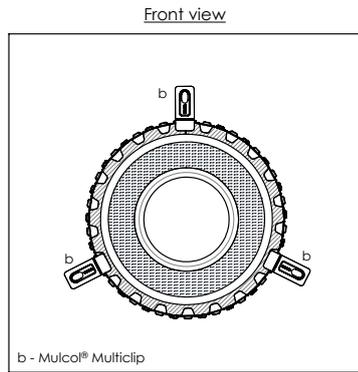


Drawing: FW.E-MC30-MLA\_pr-10.0.25

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \text{Ø } 20$	2.0	PE Foam	6	LS 300 / CS LI 300 / CI	Multicollar Slim	EI 120 U/C
	$\leq \text{Ø } 26$						
	$\leq \text{Ø } 32$	3.0					

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.5 Multilayer pipes (MLC) - Elastomer LS-LI 500 / CS-CI**

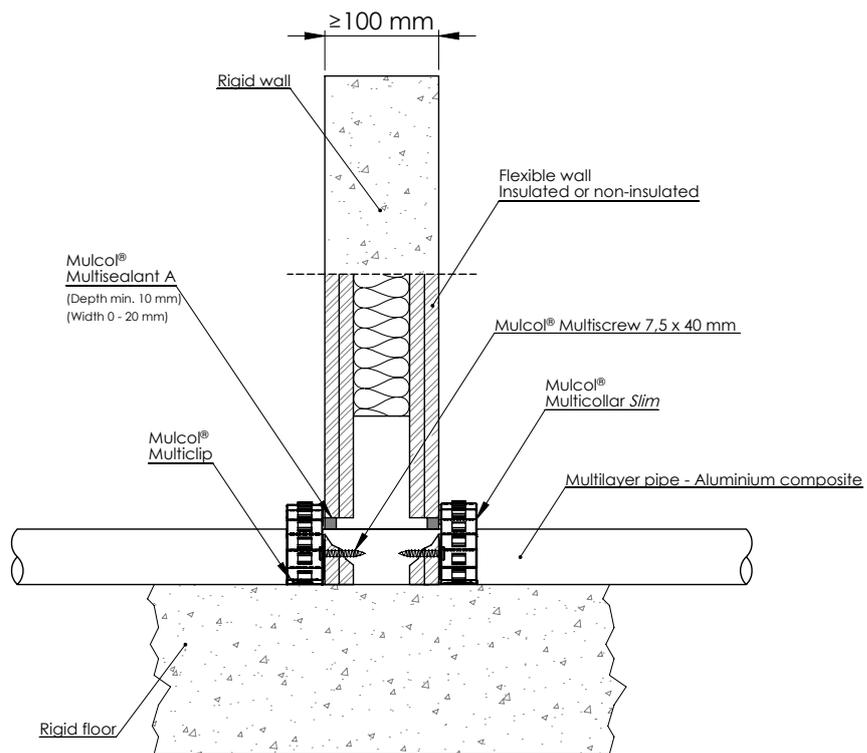
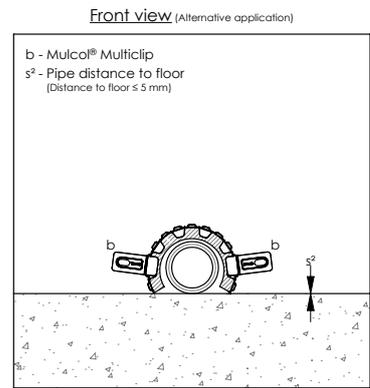
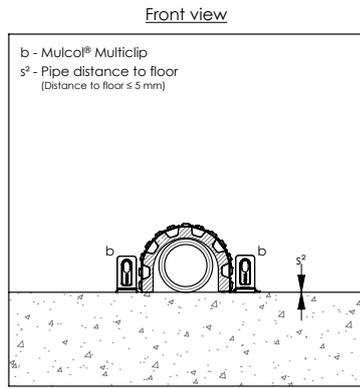


Drawing: FW.E-MC30-MLA-10.0.22.LS

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipes (MLC)	$\leq \varnothing 20$	3.0 - 4.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LS 500 / CS LI 500 / CI	Multicollar Slim	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 120 U/C
	$\leq \varnothing 32$	3.0						EI 120 U/C
	$\leq \varnothing 40$	3.5 - 4.0						EI 120 U/C
	$\leq \varnothing 50$	4.0						EI 90 U/C E 120 U/C
	$\leq \varnothing 63$	4.5						EI 120 U/C
	$\leq \varnothing 75$	4.7 - 6.0						EI 90 U/C E 120 U/C
	$\leq \varnothing 75$	6.0 - 7.5						EI 120 U/C
	$\leq \varnothing 90$	7.0						EI 90 U/C
	$\leq \varnothing 110$	10.0		32			EI 120 U/C	

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.6 Multilayer pipes (MLC) at zero distance to floor**

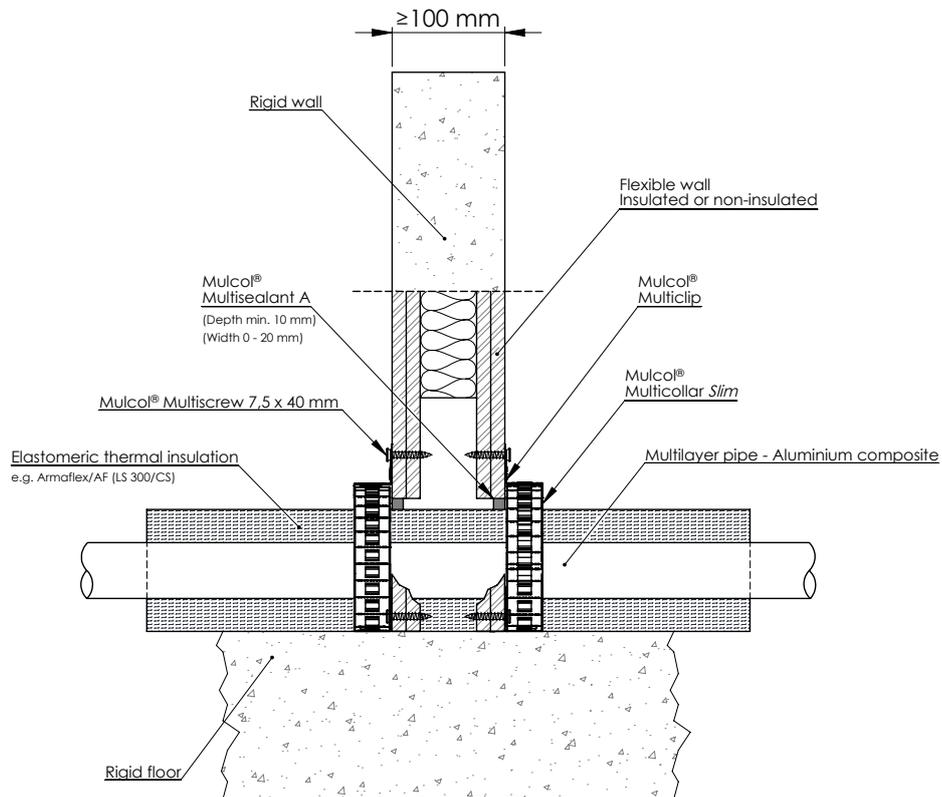
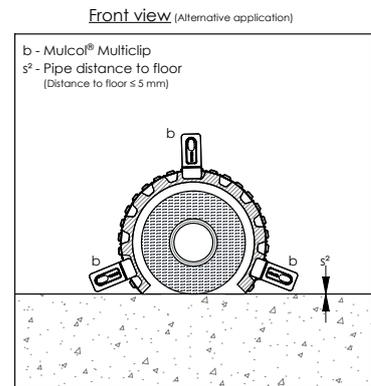
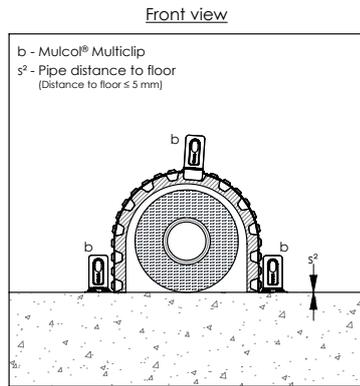


Drawing: FW.E-MC30f-MLA-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \text{Ø } 32$	3.0	Multicollar <i>Slim</i>	EI 90 U/C

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.7 Multilayer pipes (MLC) at zero distance to floor - Elastomer LS-LI 300 / CS-CI**

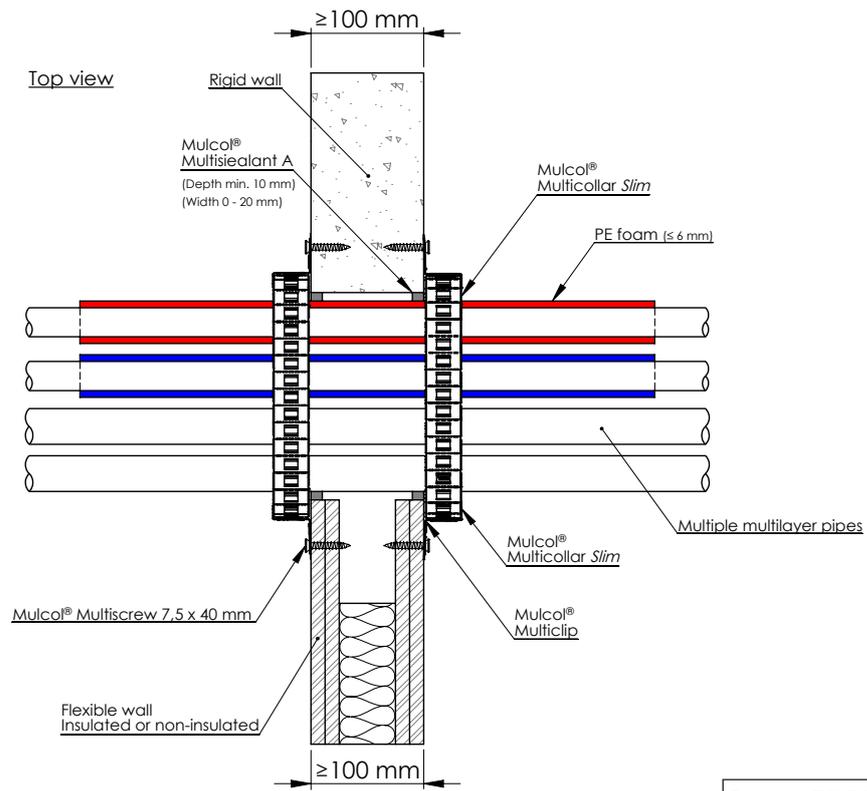
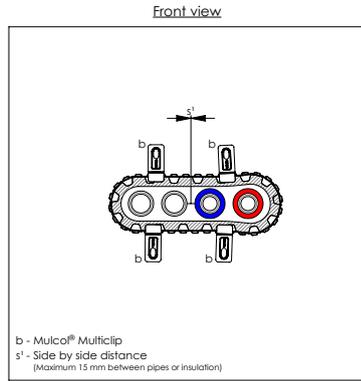


Drawing: FW-E-MC30f-MLA-10.0.22

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \text{Ø } 32$	3.0	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32	LS 300 / CS LI 300 / CI	Multicollar Slim	EI 90 U/C
	$\leq \text{Ø } 50$	4.0					

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.8 Multiple Multilayer pipes (MLC) - PE Foam LS-LI 300 / CS-CI**

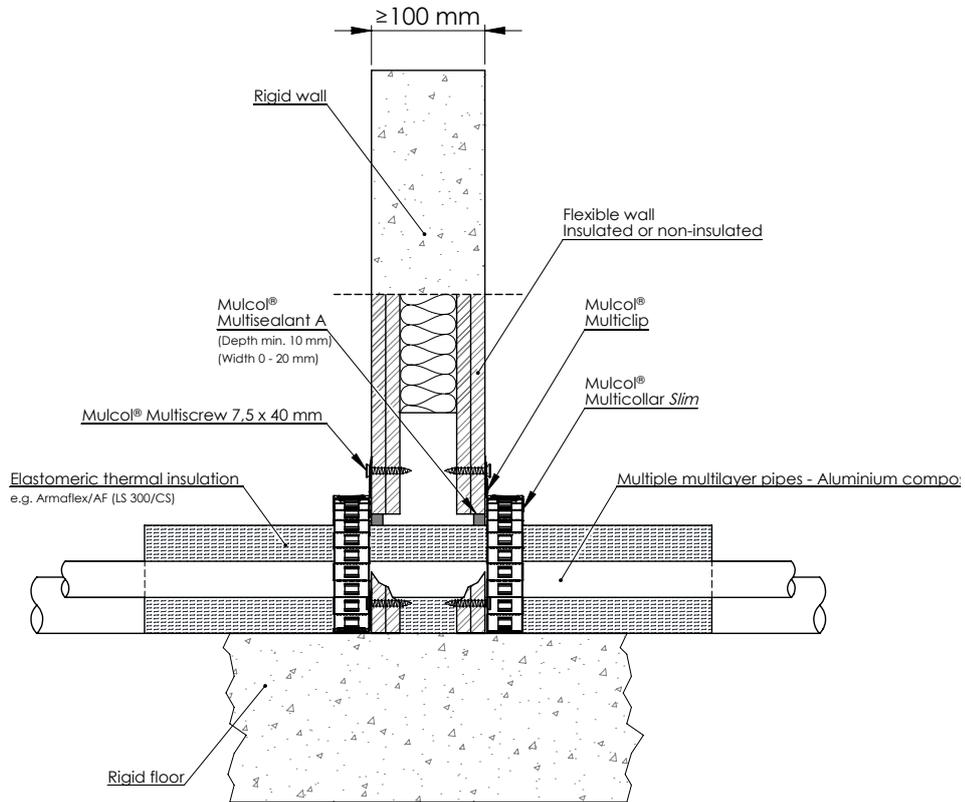
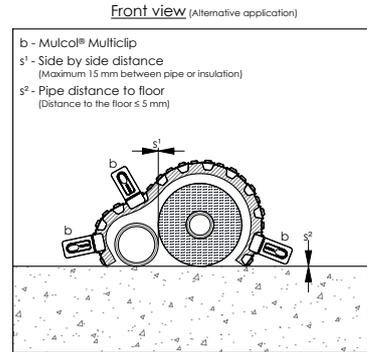
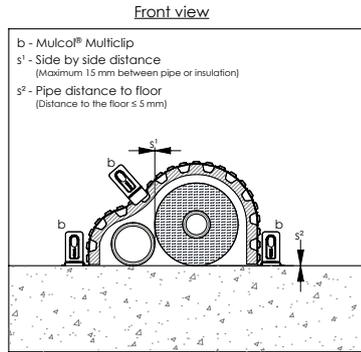


Drawing: FW.E-MC30-MLP4-10.0.40

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \text{Ø } 26$	3.0	PE Foam	6	LS 300 / CS LI 300 / CI	Multicollor Slim	EI 120 U/C
	$\leq \text{Ø } 32$	4.0	-	-	-		

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.9 Multiple Multilayer pipes (MLC) at zero distance to floor - Elastomer LS-LI 300 / CS-CI**

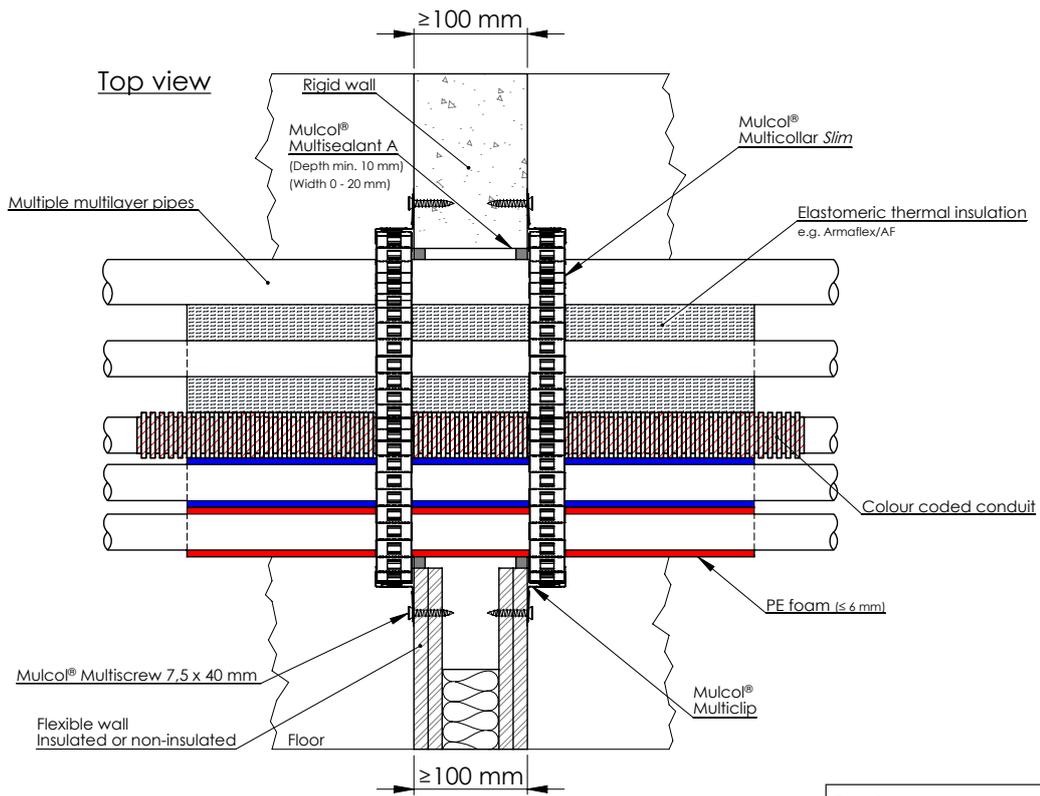
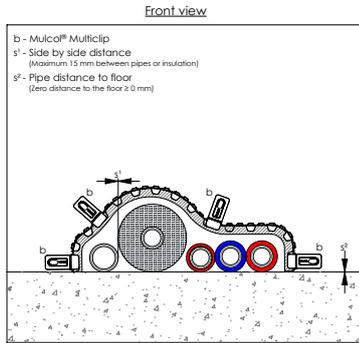


Drawing: FW.E-MC30f-MLP2-10.0.40

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \varnothing 32$	3.0	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32	LS 300 / CS LI 300 / CI	Multicollar Slim	EI 90 U/C
	$\leq \varnothing 50$	4.0	-				

**A.1.16 Directly through wall -  $\geq 100$  mm - Multilayer pipes (MLC)**

**A.1.16.10 Multiple Multilayer pipes (MLC) at zero distance to floor - Elastomer, PE Foam, PE conduit LS-LI 300 / CS-CI**



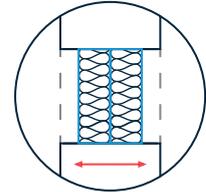
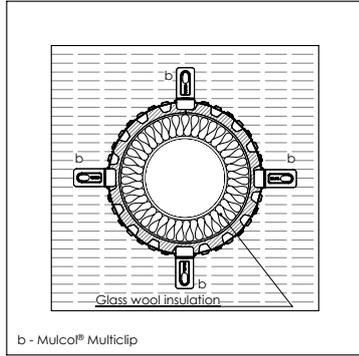
Drawing: FW.E-MC30f-MLP5-10.0.40

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 32	3.0	PE Foam	6	LS 300 / CS LI 300 / CI	Multicollar Slim	EI 120 U/C
			PE-conduit ribbed	4			
			ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32			
	≤ Ø 40	4.0	-				

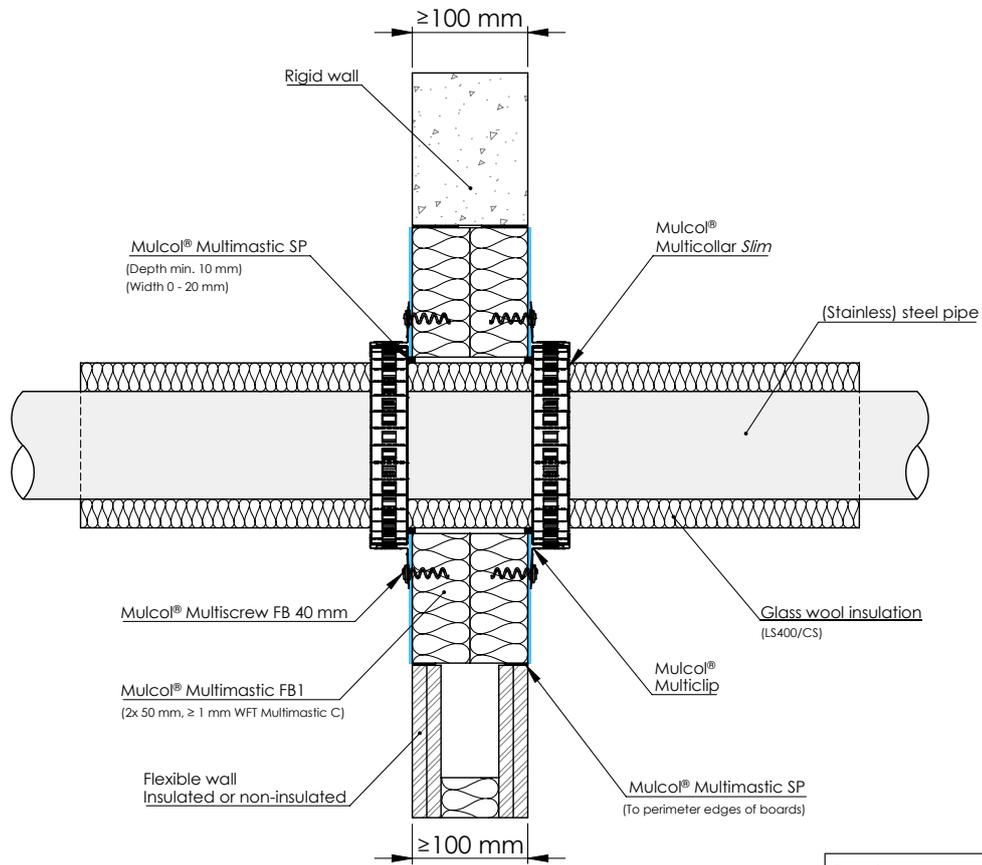
**A.1.17 Multimastic FB1 - 2x50 mm - Metal pipes insulated mineral wool**

**A.1.17.1 Steel pipes - Multimastic FB1 - Glass wool LS 400 / CS**

Front view



Position seal:  
right, left or anywhere  
in between

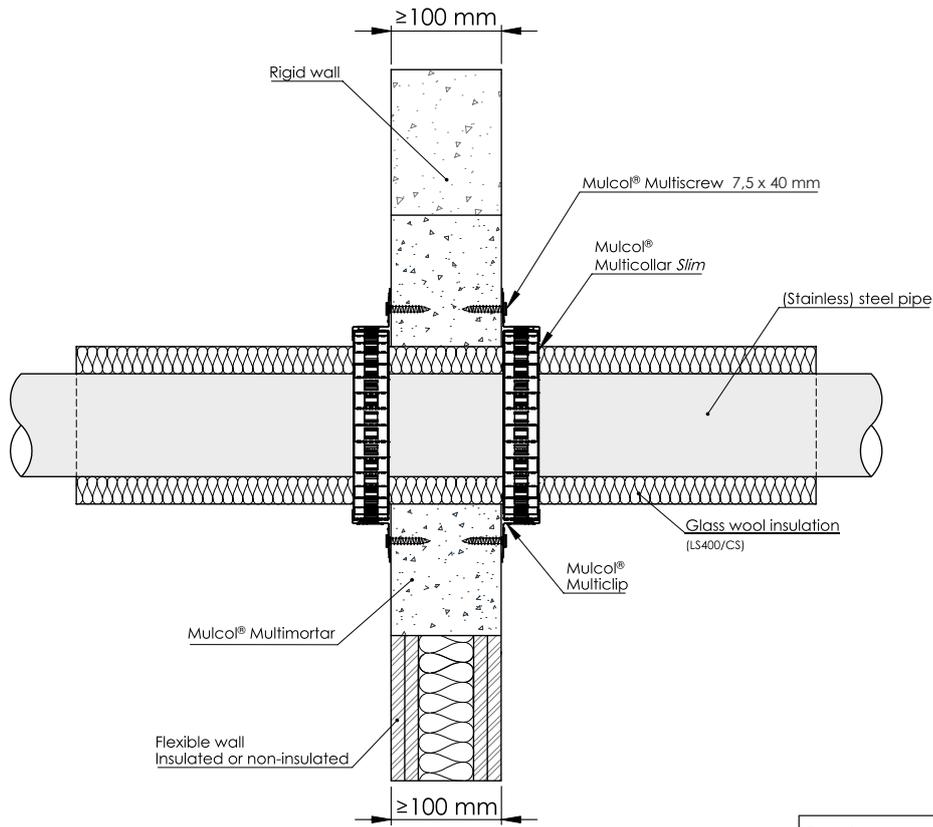
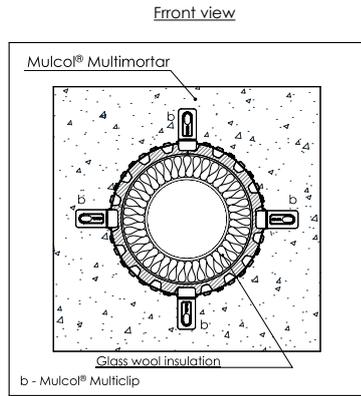


Drawing: PBfw.E-ST-MC30-MFB1.2.20

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
(Stainless) Steel / cast iron	≤ Ø 76.2	≥ 3.3	Glass wool (≥ 33 kg/m <sup>3</sup> )	30	LS 400 / CS	Multicollor Slim	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 C/U
	≤ Ø 139.7	≥ 4.0		50				EI 120 C/U
								EI 60 C/U
								EI 90 C/U

**A.1.18 Multimortar -  $\geq 100$  mm - Metal pipes insulated mineral wool**

**A.1.18.1 Steel pipes - Multimortar - Glass wool LS 400 / CS**

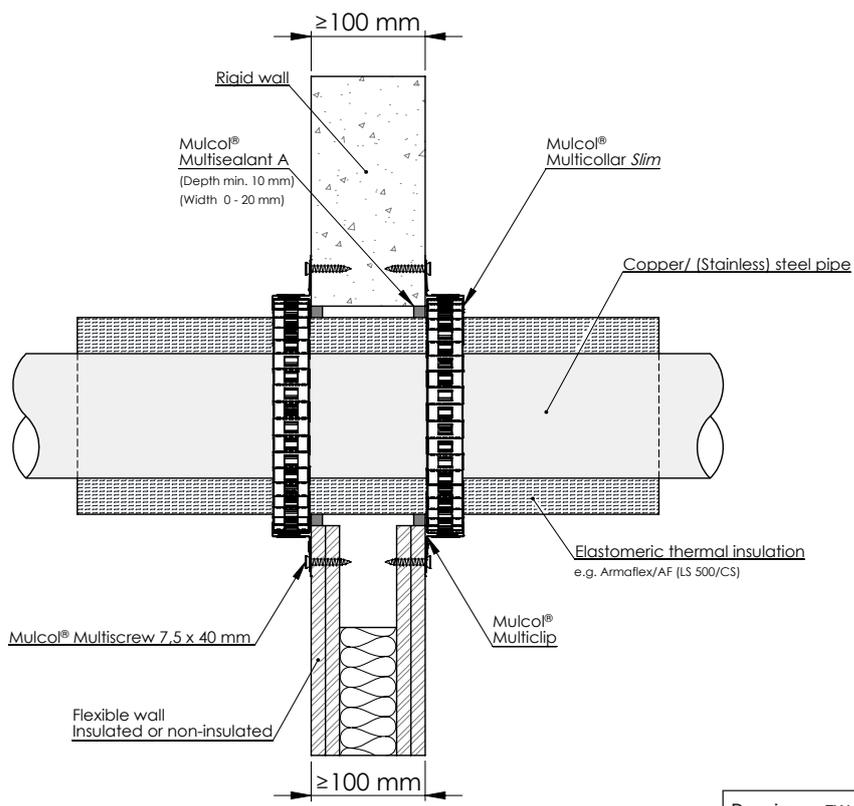
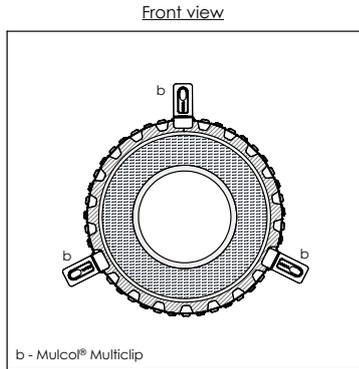


Drawing: FW.E-MC30-ST-MM1.2.21

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

**A.1.19 Directly through wall -  $\geq 100$  mm - Metal pipes insulated elastomer**

**A.1.19.1 Copper and steel pipes - Elastomer LS 500 / CS**

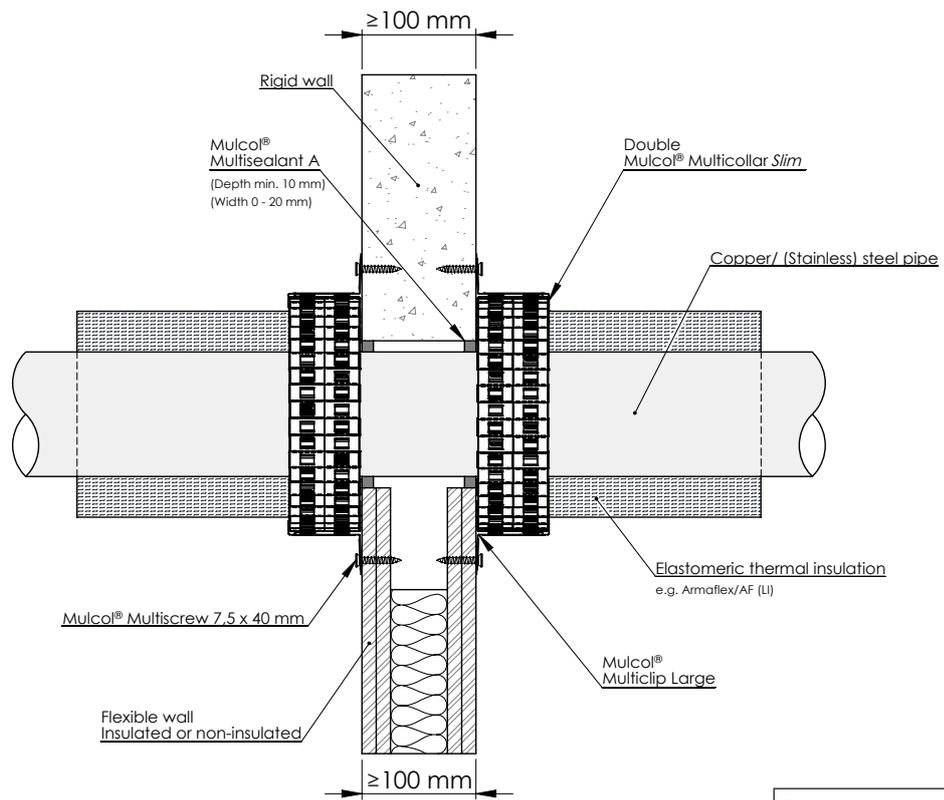
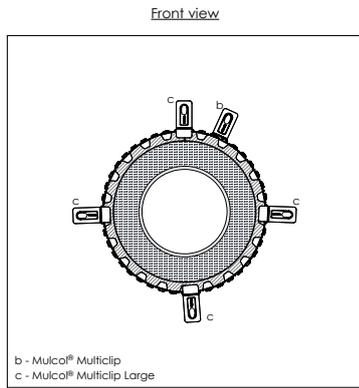


Drawing: FW.E-MC30-CU-10.0.22.LS

Services	Pipe dimensions (mm)		Insulation			Product	Classification	
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (Stainless) Steel / cast iron	$\leq \text{Ø } 54$	$\geq 1.5$	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32	LS 500 / CS	Multicollar Slim	EI 60 C/U, E 120 C/U	
				32				EI 90 C/U, E 120 C/U
	$\leq \text{Ø } 88.9$	$\geq 2.0$		9 - 32	CS			EI 45 C/U, E 120 C/U
(Stainless) Steel / cast iron	$\leq \text{Ø } 219.1$	$\geq 4.0$			LS 500 / CS		CS	EI 60 C/U, E 120 C/U
						EI 90 C/U, E 120 C/U		

**A.1.19 Directly through wall -  $\geq 100$  mm - Metal pipes insulated elastomer**

**A.1.19.2 Copper and steel pipes - Elastomer CI**

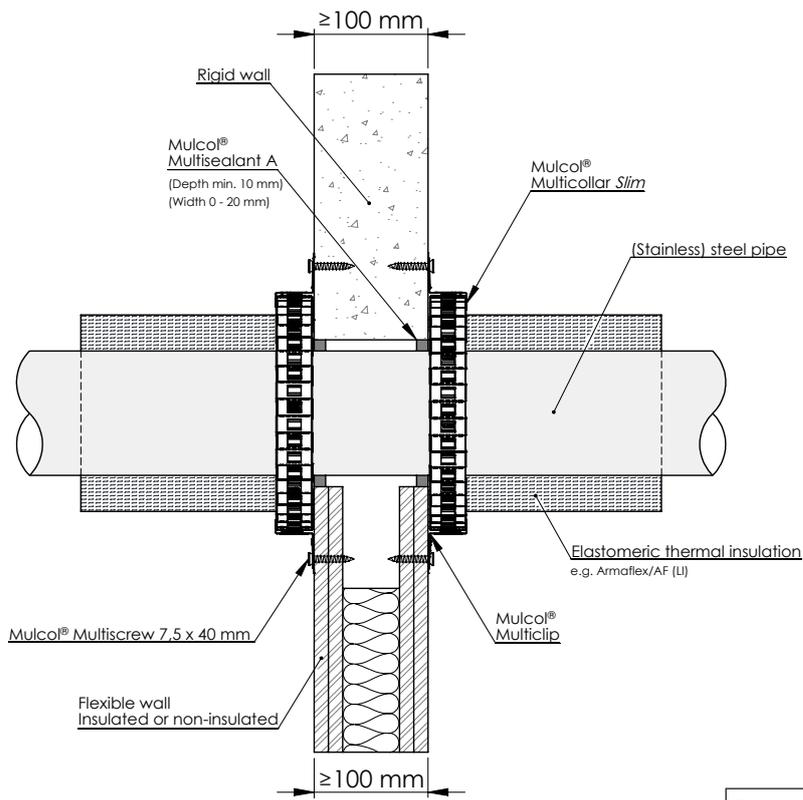
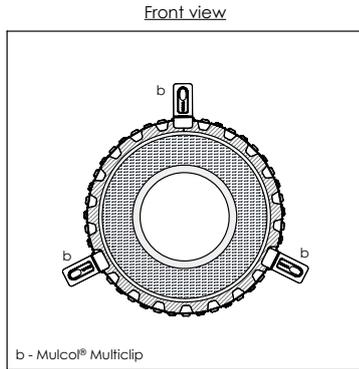


Drawing: FW.E-MC60-CU-20.0.22.LI

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper/ (Stainless) Steel / cast iron	$\leq \varnothing 88.9$	$\geq 2.0$	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	9 - 32	CI	Multicollar Slim	EI 120 C/U
				32			EI 60 C/U, E 120 C/U

**A.1.19 Directly through wall -  $\geq 100$  mm - Metal pipes insulated elastomer**

**A.1.19.3 Steel pipes - Elastomer CI**



Drawing: FW.E-MC30-ST-10.0.22\_LI

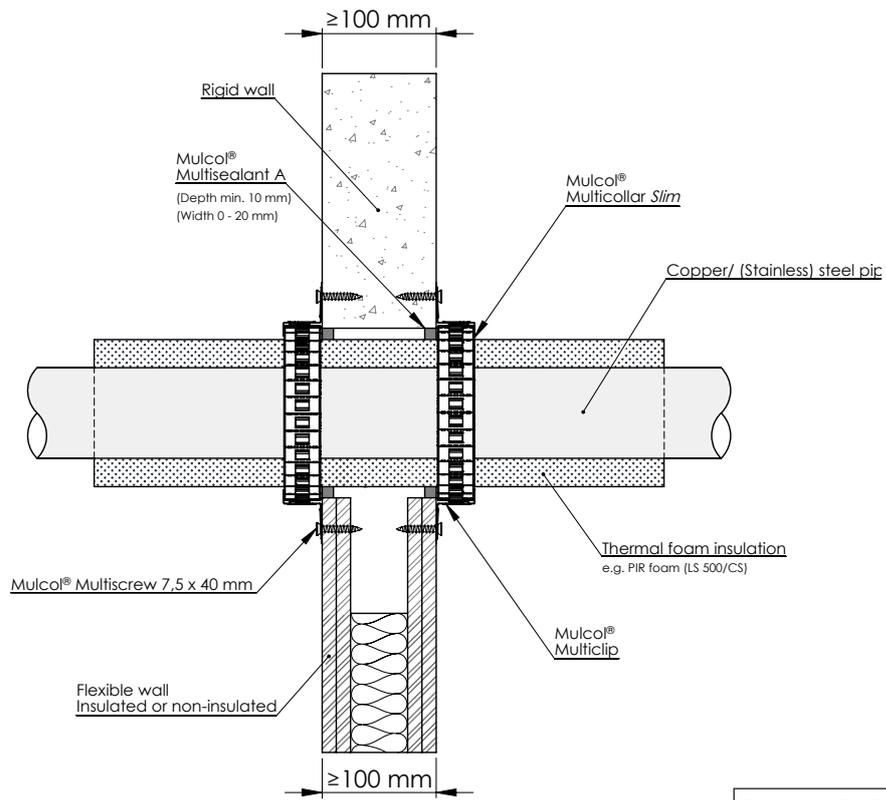
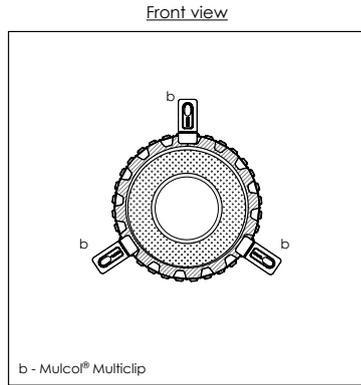
Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	$\leq \varnothing 168.3$	$\geq 4.5$	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	32	CI	Multicollar <i>Slim</i>	EI 120 C/U
				9 - 32			EI 60 C/U, E 120 C/U

**A.1.20**

**Directly through wall -  $\geq 100$  mm - Metal pipes insulated elastomer**

**A.1.20.1**

**Copper and steel pipes - PIR / PUR foam LS 500 / CS**

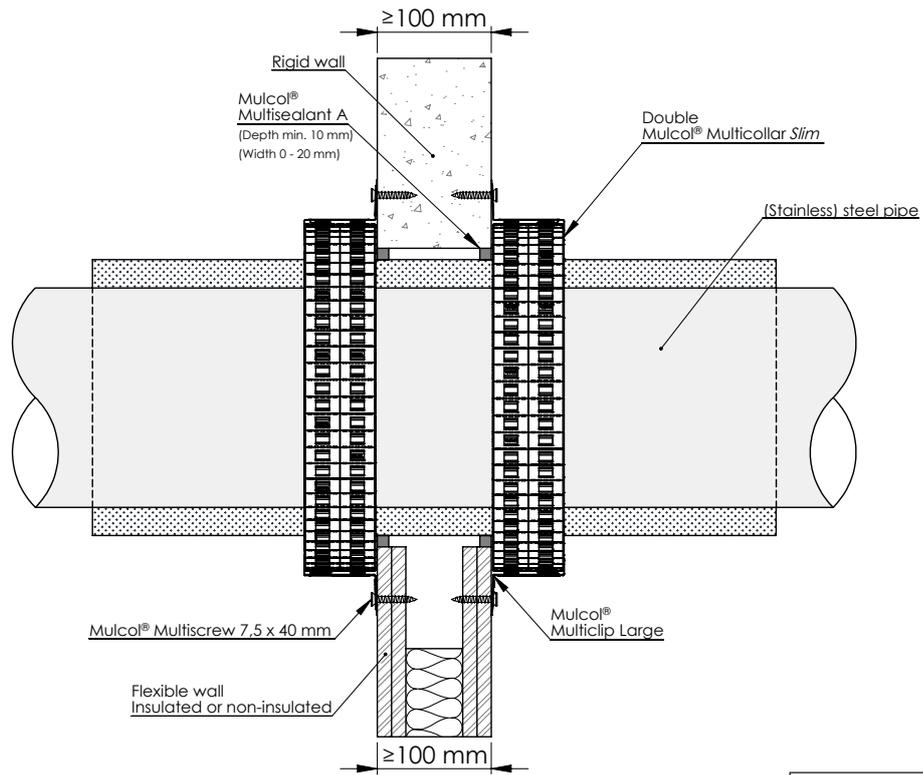
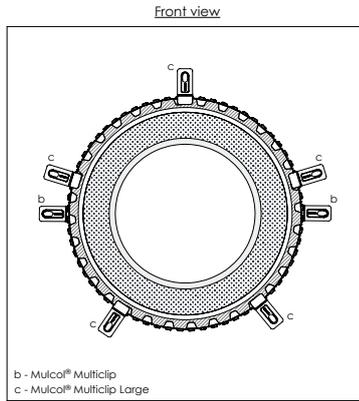


Drawing: FW.E-MC30-CU-10.0.25

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Copper / (Stainless) Steel / cast iron	$\leq \varnothing 54$	$\geq 1.5$	PIR / PUR	25	LS 500 / CS	Multicollars Slim	EI 60 C/U, E 120 C/U
	$\leq \varnothing 76.1$	$\geq 2.0$					

**A.1.20 Directly through wall -  $\geq 100$  mm - Metal pipes insulated elastomer**

**A.1.20.2 Steel pipes - PIR / PUR foam LS 500 / CS**



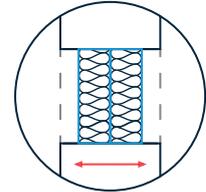
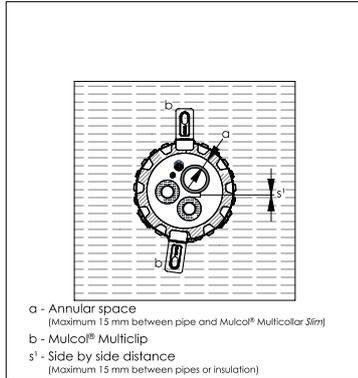
Drawing: FW.E-MC60-ST250-20.0.25

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	$\leq \varnothing 219.1$	$\geq 4.0$	PIR / PUR	25	LS 500 / CS	Multicollor <i>Slim</i>	EI 60 C/U, E 120 C/U
					CS		EI 90 C/U, E 120 C/U

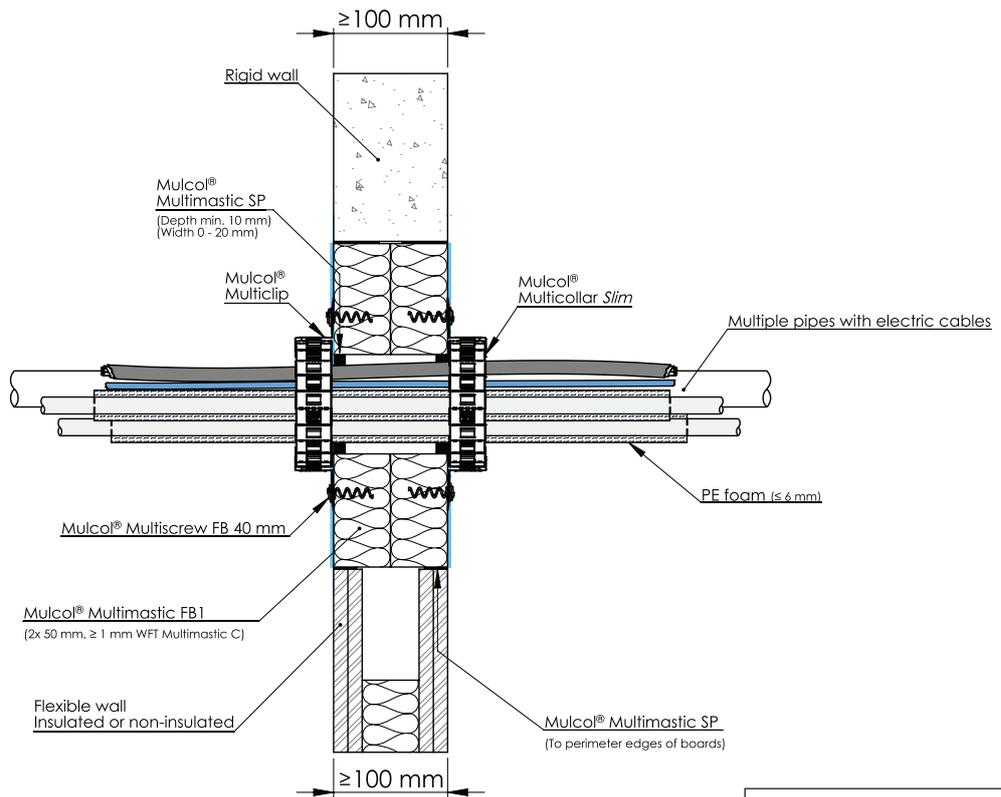
## A.1.21 Multimastic FB1 - 2x50 mm - Multiple services

### A.1.21.1 Airconditioning set

Front view



Position seat:  
right, left or anywhere  
in between



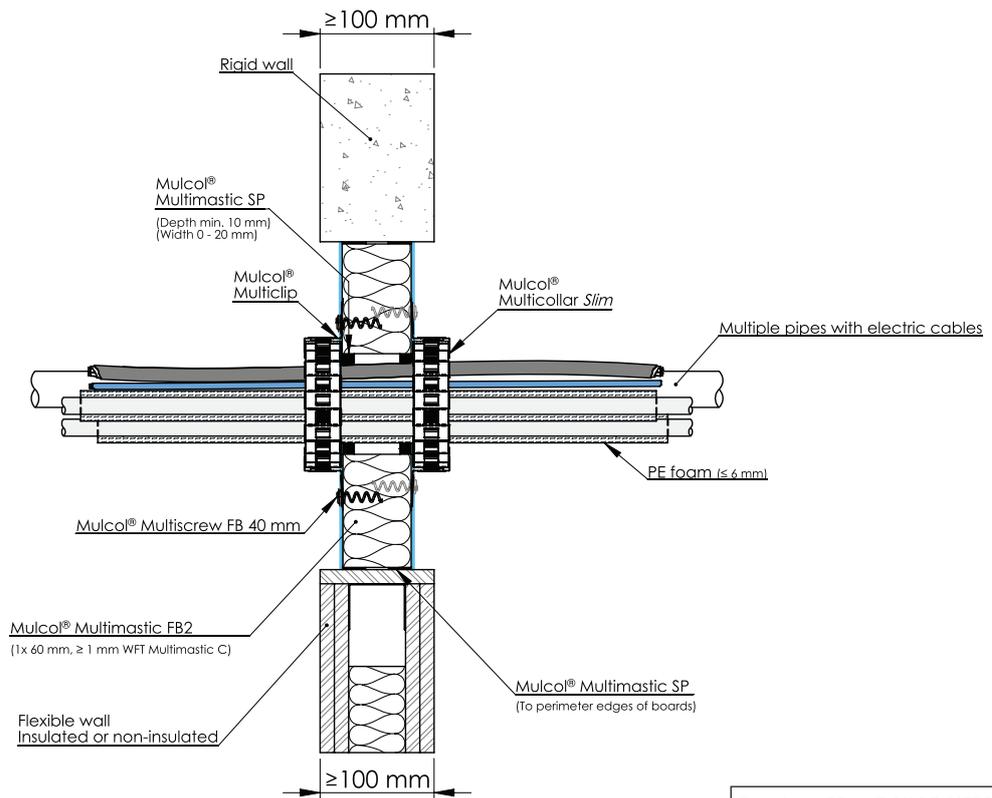
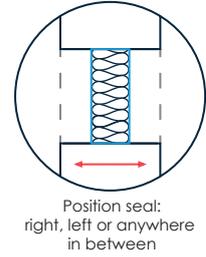
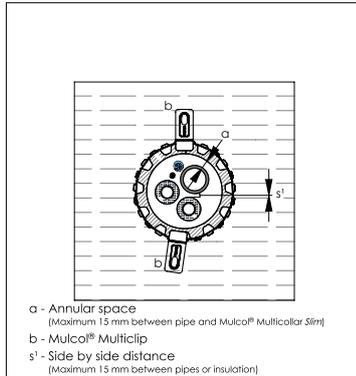
Drawing: PBfw.E-MLP5-MFB1.2.40

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

## A.1.22 Multimastic FB2 - 1x60 mm - Multiple services

### A.1.22.1 Airconditioning set

Front view



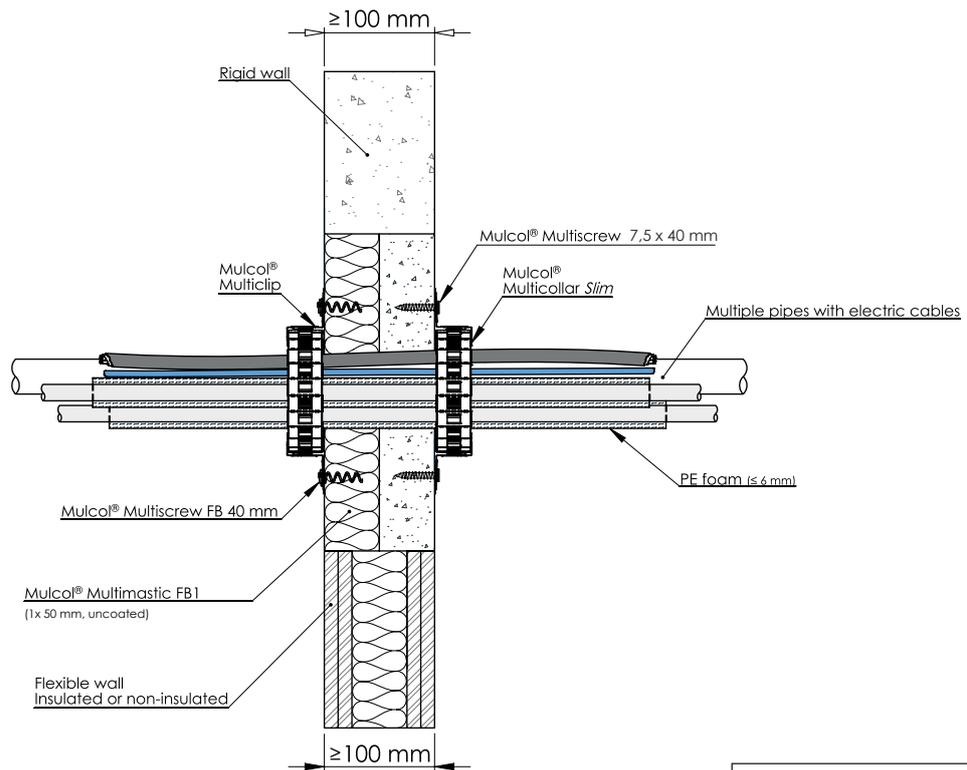
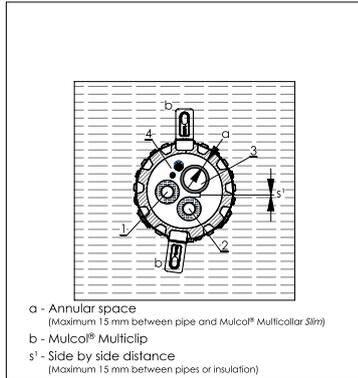
Drawing: PBfw.E-MLP5-MFB2.1.40

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

## A.1.23 Multimortar + Multimastic FB - $\geq 100$ mm - Multiple services

### A.1.23.1 Airconditioning set

Front view

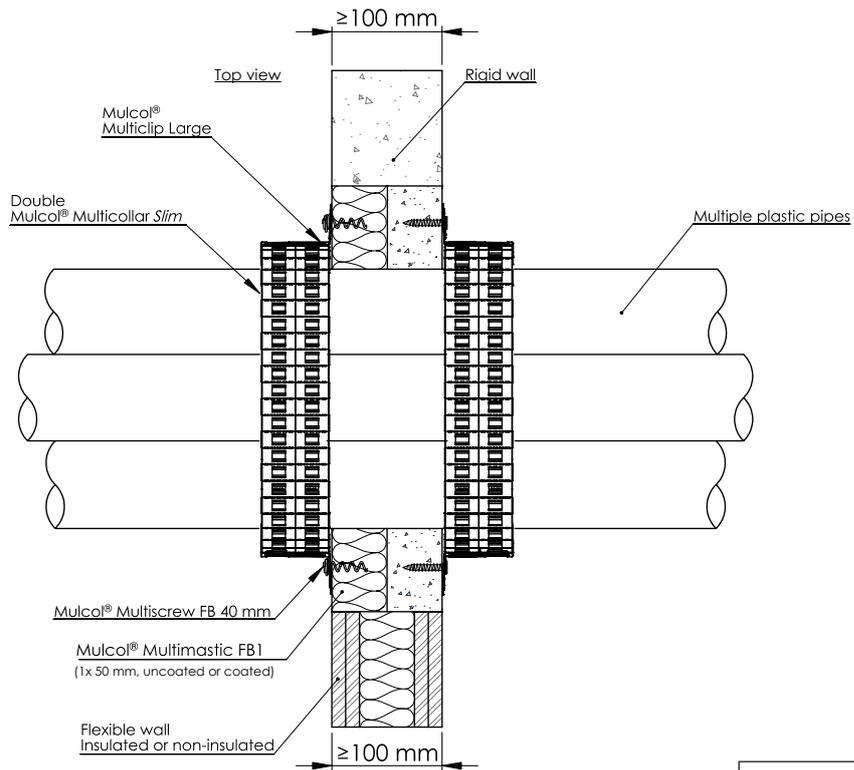
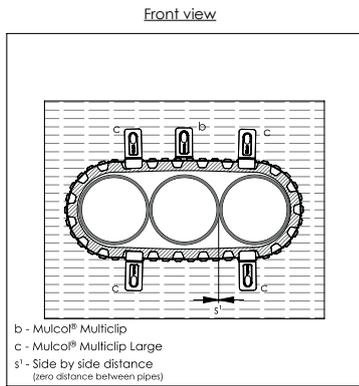


Drawing: FW.E-MC30-MLP5-MM2.5.40

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	$\geq 6$	LS 400 / CS LI 400 / CI	Multicollar Slim	EI 60 C/U E 120 C/U
PVC-U / PVC-C	$\leq \varnothing 40$	3.0					EI 60 U/U E 120 U/U
Telecommunication cable	UTP Cat 5/6						
Sheathed cable	$\leq \text{YMKV } 5 \times 2.5 \text{ mm}^2$						EI 60 E 120

**A.1.23 Multimortar + Multimastic FB -  $\geq 100$  mm - Multiple services**

**A.1.23.2 Multiple plastic pipes**



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	$3x \leq \text{Ø } 110$	2.7	Multicollar Slim double	EI 90 U/C, E 120 U/C

**A.1.24**

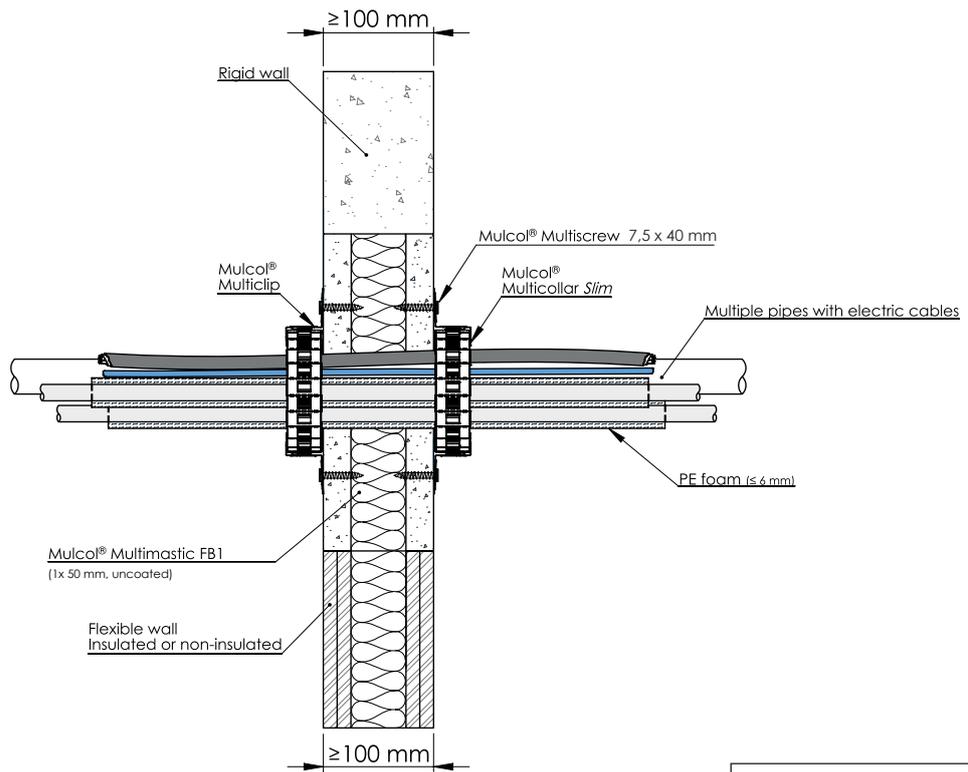
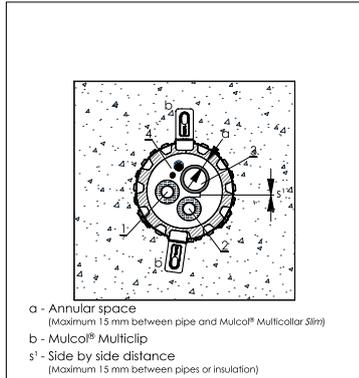
**Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm -**

**Multiple services**

**A.1.24.1**

**Airconditioning set**

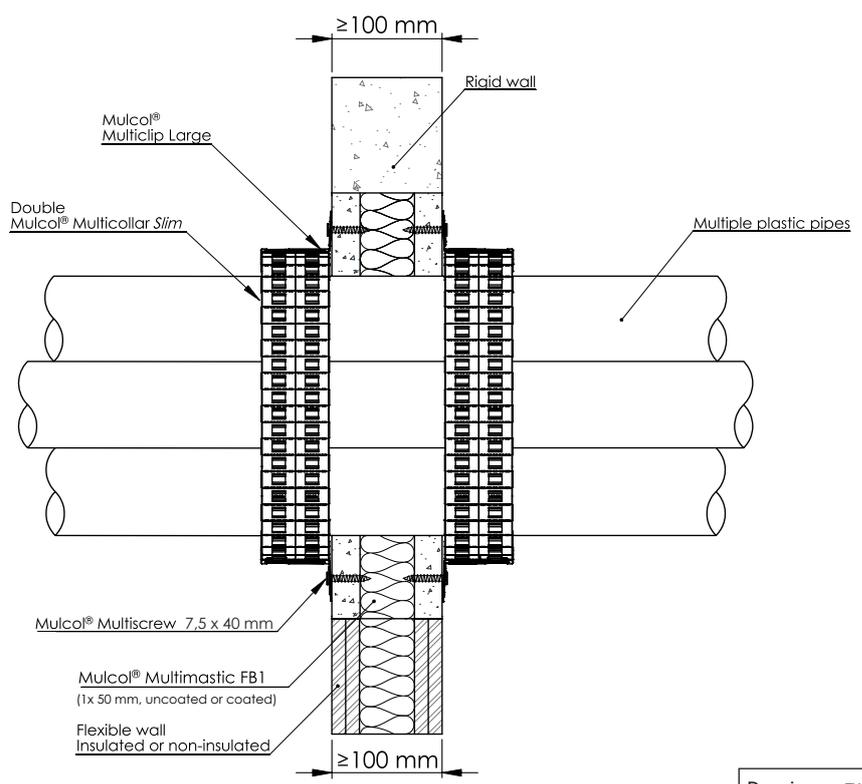
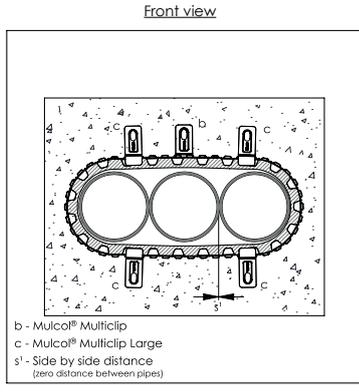
Front view



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	$\geq 6$	LS 400 / CS LI 400 / CI	Multicollar Slim	EI 60 C/U E 120 C/U
PVC-U / PVC-C	$\leq \varnothing 40$	3.0	-	-	-		EI 60 U/U E 120 U/U
Telecommunication cable	UTP Cat 5/6	-	-	-	-		EI 60 E 120
Sheathed cable	$\leq$ YMKV 5 x 2.5 mm <sup>2</sup>	-	-	-	-		

**A.1.24 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm -  
Multiple services  
A.1.24.2 Multiple plastic pipes**



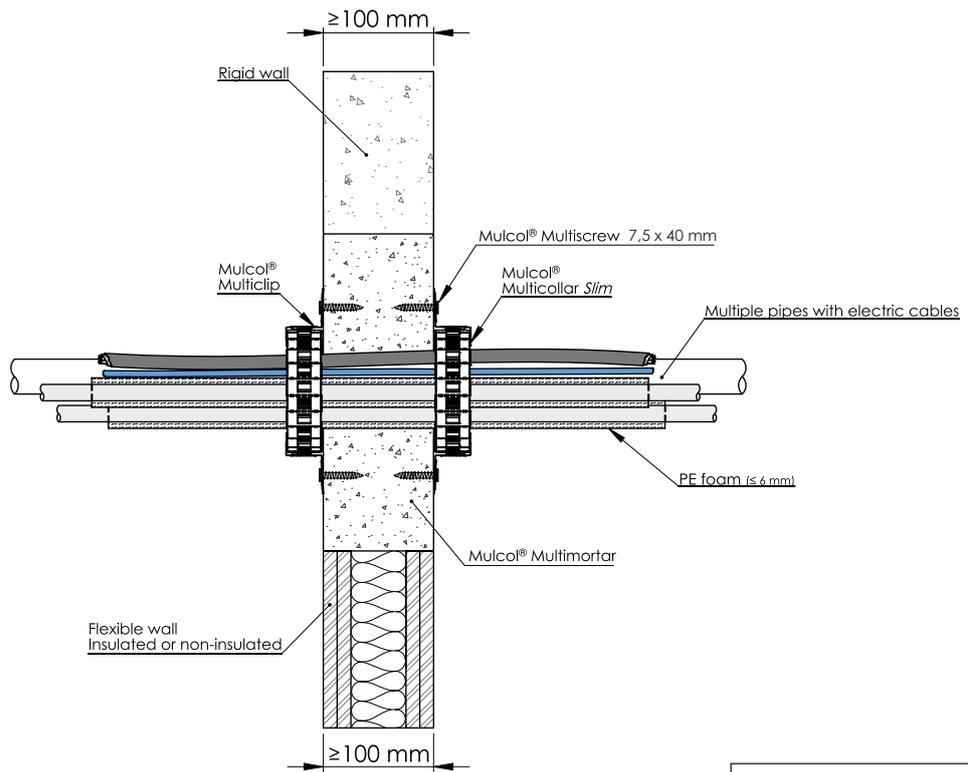
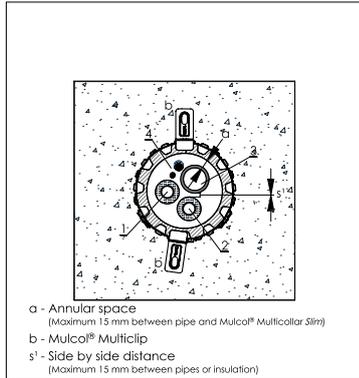
Drawing: FW.E-MC60-MLP3-MM3.4.10

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

**A.1.25 Multimortar -  $\geq 100$  mm - Multiple services**

**A.1.25.1 Airconditioning set**

Front view

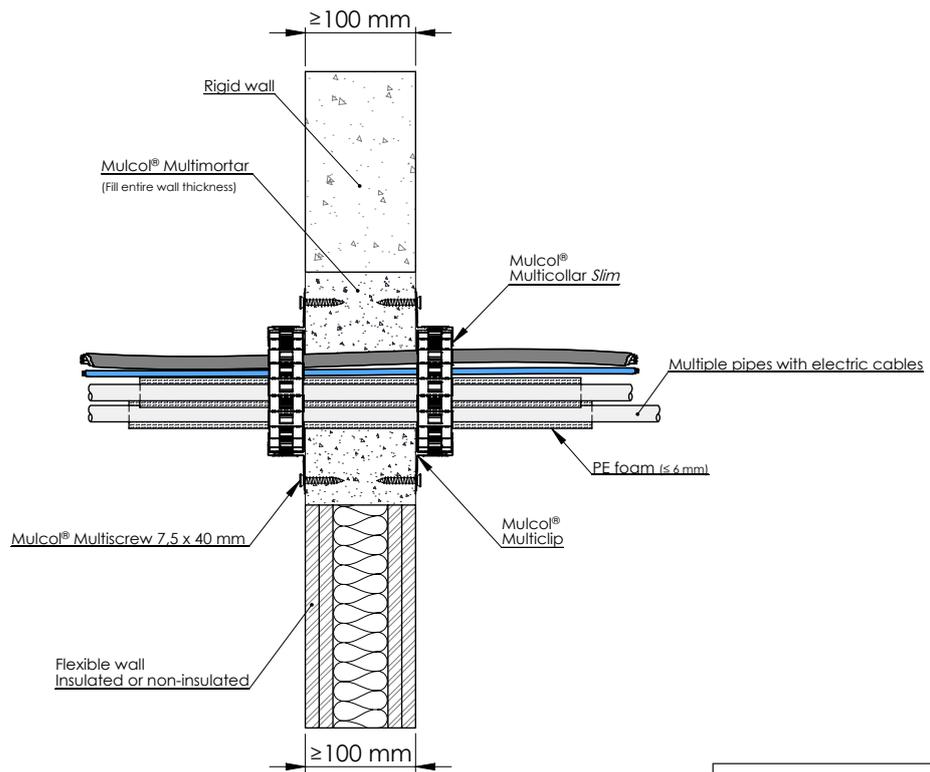
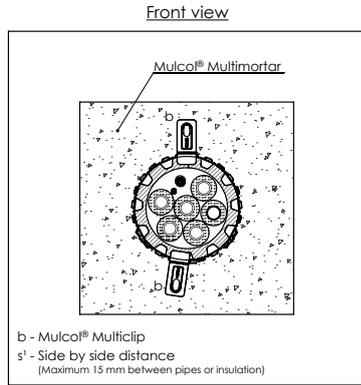


Drawing: FW.E-MC30-MLP5-MM1.2.40

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	$\geq 6$	LS 400 / CS LI 400 / CI	Multicollar Slim	EI 60 C/U E 120 C/U
PVC-U / PVC-C	$\leq \varnothing 40$	3.0	-	-	-		EI 60 U/U E 120 U/U
Telecommunication cable	UTP Cat 5/6	-	-	-	-		EI 60 E 120
Sheathed cable	$\leq \text{YMKV } 5 \times 2.5 \text{ mm}^2$	-	-	-	-		

**A.1.25 Multimortar -  $\geq 100$  mm - Multiple services**

**A.1.25.2 Multiple airconditioning sets**

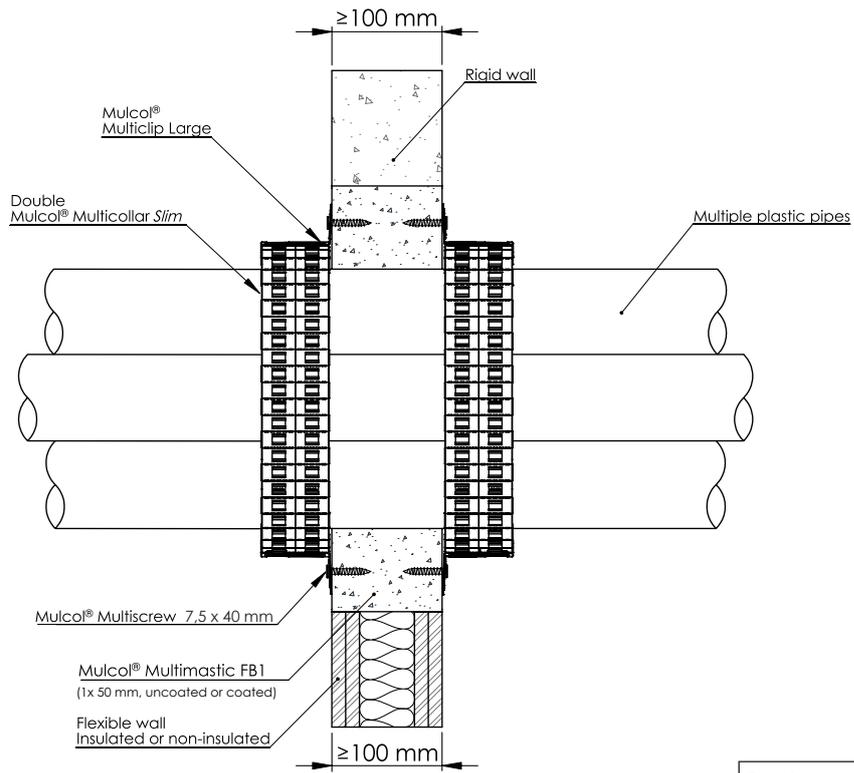
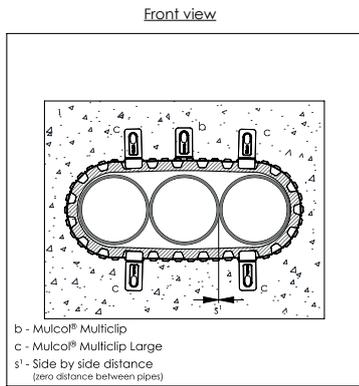


Drawing: FW.E-MC30-MLP6-MM1.2.23

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer diameter	Wall thickness	Type	Thickness (mm)	Configuration		
Multiple sets of airconditioning pipes	$6x \leq \text{Ø } 15$	1.5	PE foam	$\leq 6$	LS 400 / CS LI 400 / CI	Multicollars Slim	EI 60 C/U E 90 C/U
Sheathed cable $\leq 3$ pcs.	$\leq \text{YMKV } 5 \times 2.5 \text{ mm}^2$	-	-	-	-		

**A.1.25 Multimortar -  $\geq 100$  mm - Multiple services**

**A.1.25.3 Multiple plastic pipes**

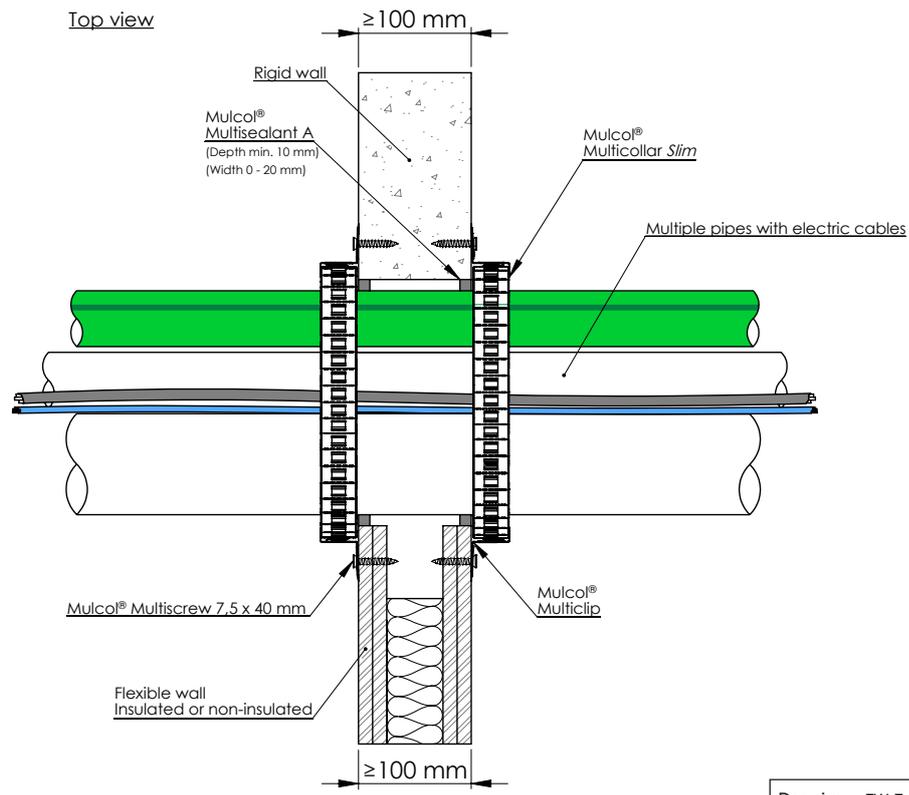
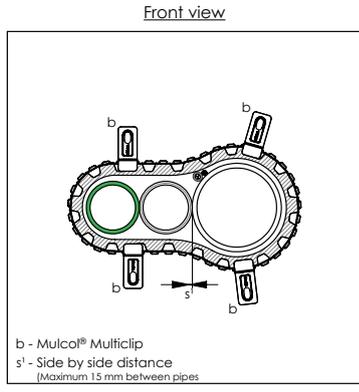


Drawing: FW.E-MC60-MLP3-MM1.2.10

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

**A.1.26 Directly through wall -  $\geq 100$  mm - Multiple services**

**A.1.26.1 Multiple pipes and cables**

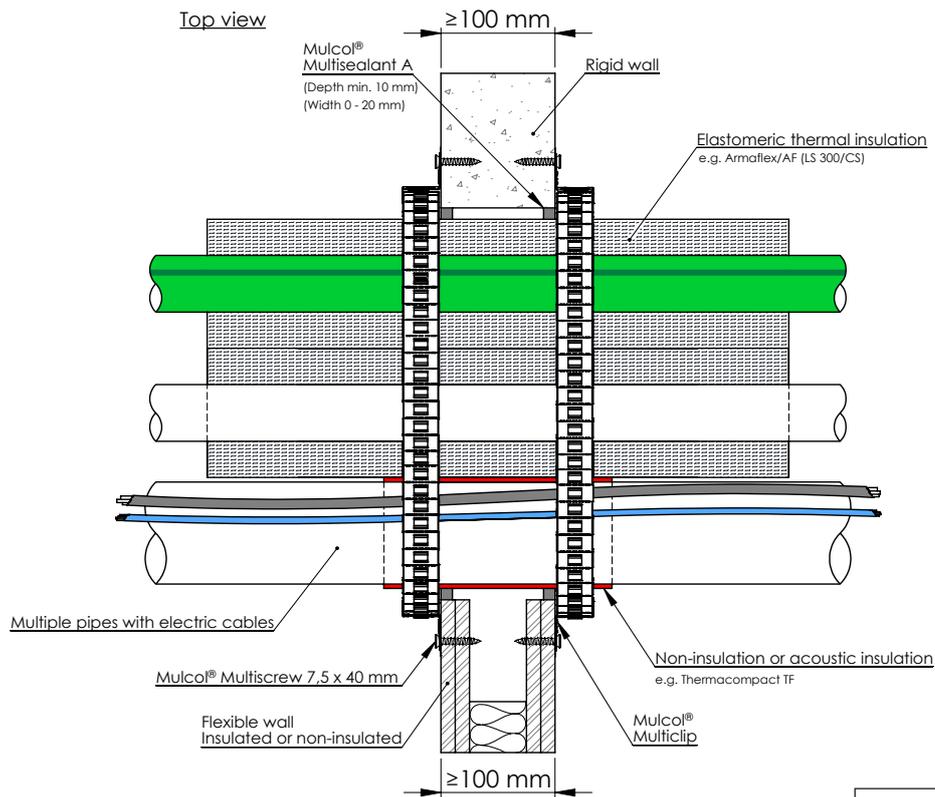
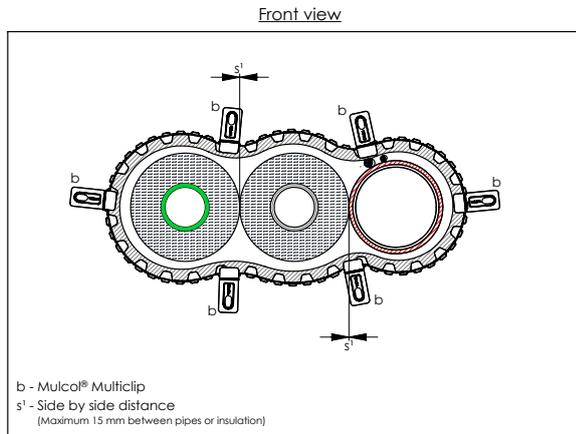


Drawing: FW.E-MC30-MLP3-EC-10.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 90$	2.8	Multicollor Slim	EI 120 U/U
Multilayer pipes (MLC)	$\leq \varnothing 50$	4.0		EI 90 U/C, E 120 U/C
Aquatherm Green-MF		6.9		EI 120 U/C
Telecommunication cable	UTP Cat 5/6	-		EI 120
Sheathed cable	$\leq 5 \times 2.5 \text{ mm}^2$	-		

**A.1.26 Directly through wall -  $\geq 100$  mm - Multiple services**

**A.1.26.2 Multiple pipes and cables - Elastomer LS-LI 300 / CS-CI**

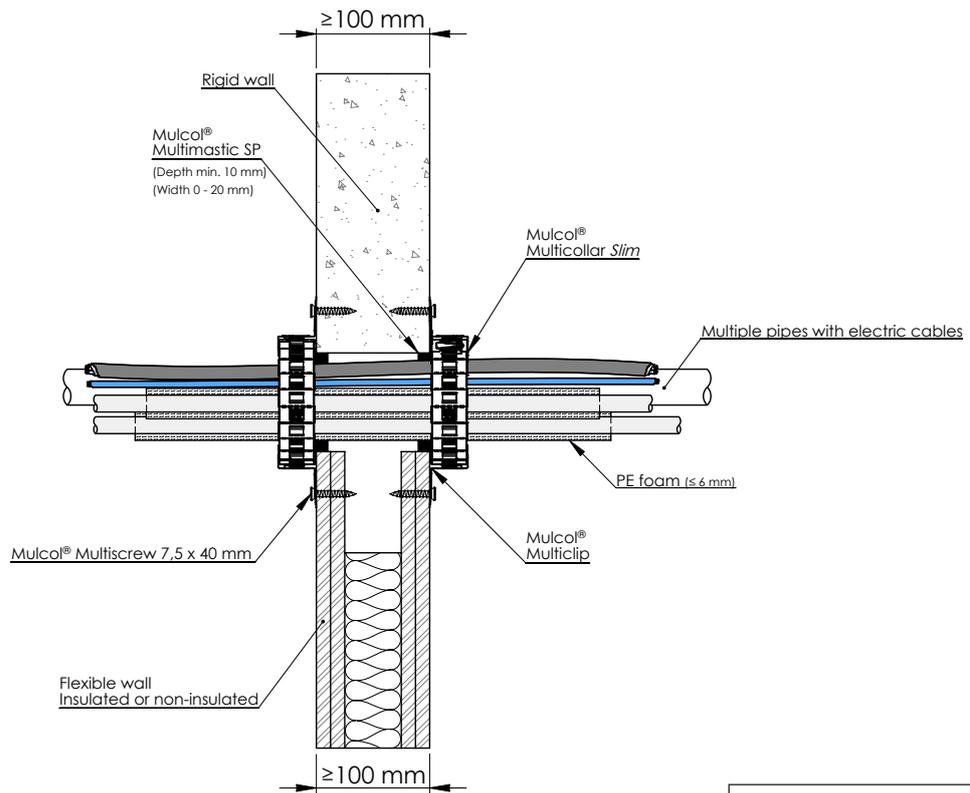
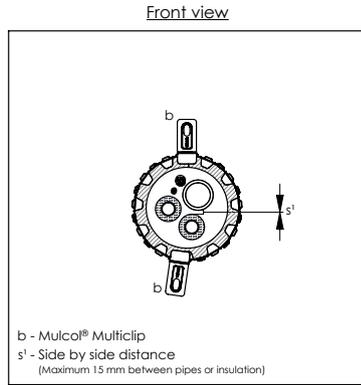


Drawing: FW.E-MC30-MLP3-EC-10.0.40

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer diameter	Wall thickness	Type	Thickness (mm)	Configuration		
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 90$	2.8	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	4	LS 300 / CS LI 300 / CI	Multicollar <i>Slim</i>	EI 60 C/U
Multilayer pipes (MLC)	$\leq \text{Ø } 50$	4.0		9 - 32			
Aquatherm Green-MF		6.9					
Telecommunication cable	UTP Cat 5/6	-	-	-	-		EI 60
Sheathed cable	$\leq \text{YMKV } 5 \times 2.5 \text{ mm}^2$	-	-	-	-		

**A.1.26 Directly through wall -  $\geq 100$  mm - Multiple services**

**A.1.26.3 Airconditioning set**

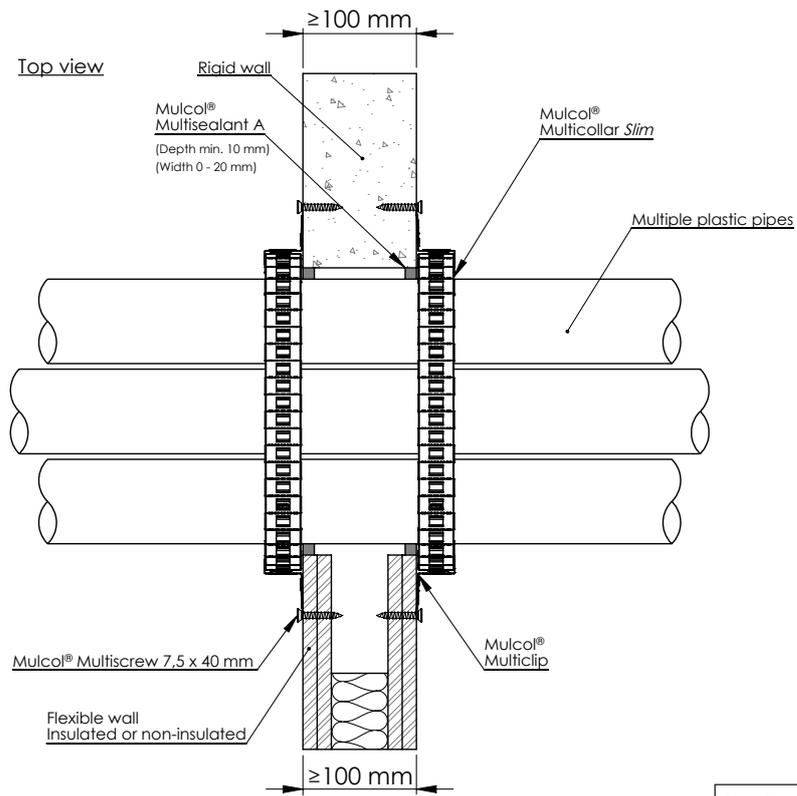
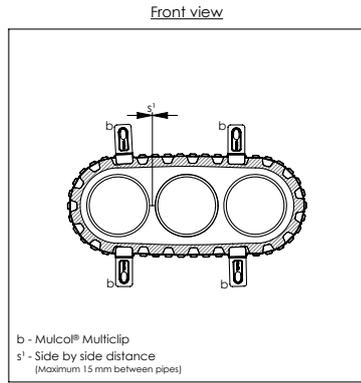


Drawing: FW.E-MC30-MLP5-EC-10.0.40

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

**A.1.26 Directly through wall -  $\geq 100$  mm - Multiple services**

**A.1.26.4 Multiple plastic pipes**

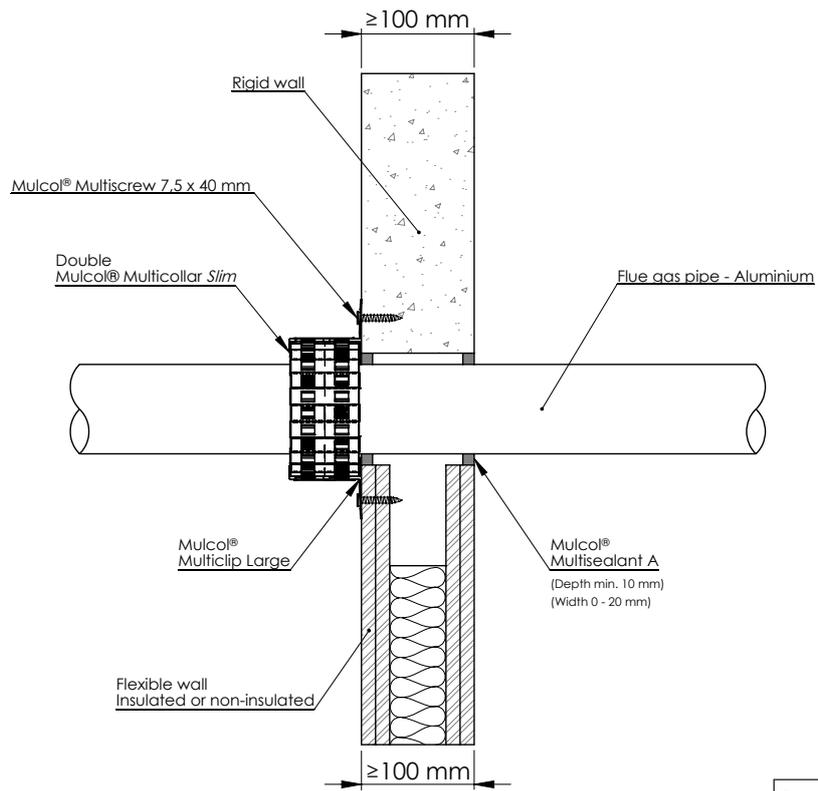
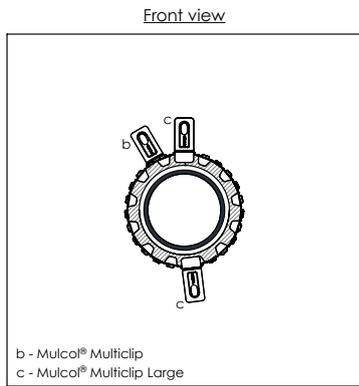


Drawing: FW.E-MC30-MLP3-10.0.10

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

**A.1.27 Directly through wall -  $\geq 100$  mm - Flue gas pipes**

**A.1.27.1 Aluminium flue gas pipes**



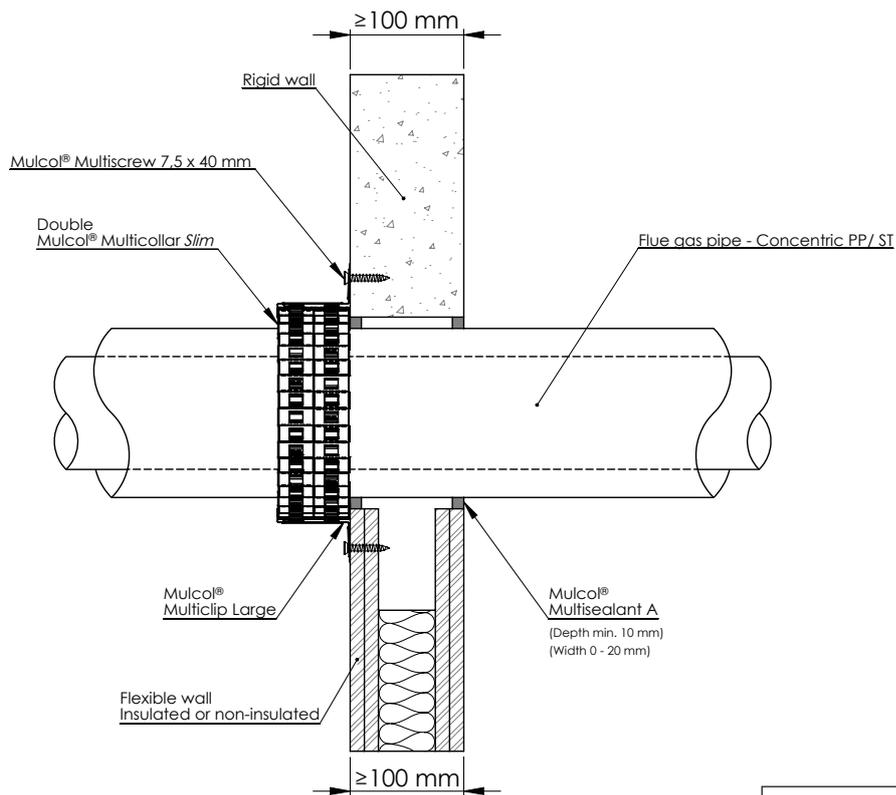
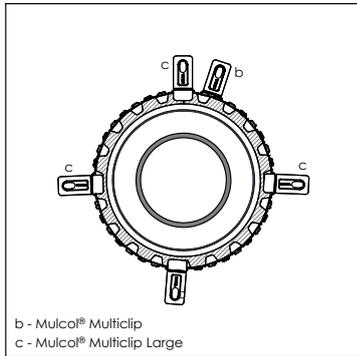
Drawing: FW.E-MC60-RGA-21.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aluminium	$\leq \text{Ø } 80$	1.5	Multicollar <i>Slim</i> double	EI 15 U/C, E 90 U/C
	$\leq \text{Ø } 130$			E 90 U/C

**A.1.27 Directly through wall -  $\geq 100$  mm - Flue gas pipes**

**A.1.27.2 Concentric steel flue gas pipes**

Front view

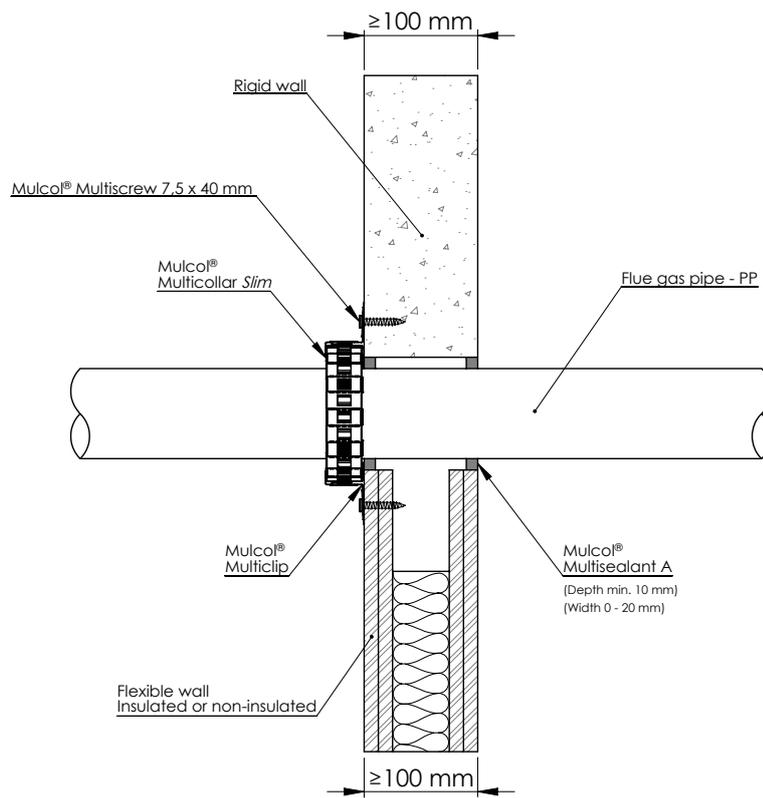
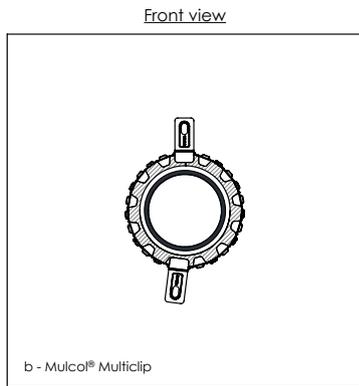


Drawing: FW.E-MC60-RGAT-21.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer pipe dimension	Inner pipe dimension		
Steel / PP flue gas system concentric	$\leq \text{Ø } 110$	$\leq \text{Ø } 60$	Multicollar <i>Slim</i> double	<b>E 90 U/C</b>
	$\leq \text{Ø } 125$	$\leq \text{Ø } 80$		
	$\leq \text{Ø } 150$	$\leq \text{Ø } 100$		
	$\leq \text{Ø } 200$	$\leq \text{Ø } 130$		

**A.1.27 Directly through wall -  $\geq 100$  mm - Flue gas pipes**

**A.1.27.3 Plastic flue gas pipes**



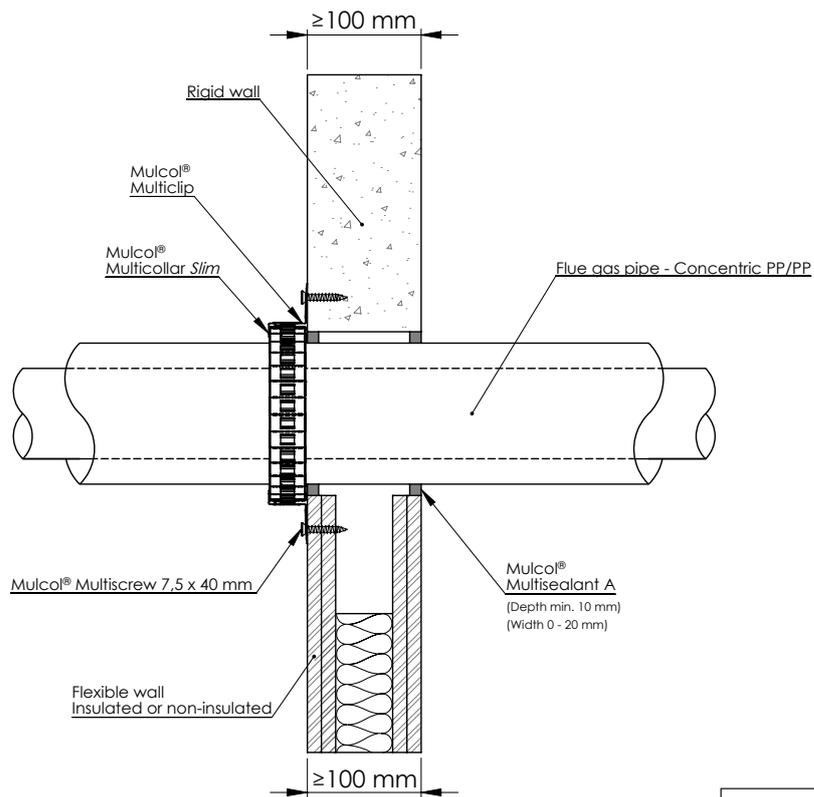
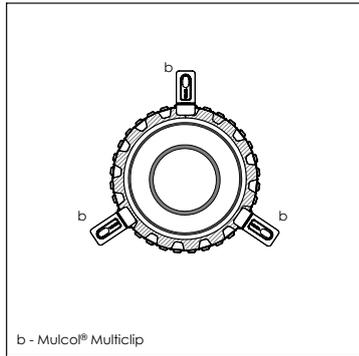
Drawing: FW.E-MC30-RGA\_PP-11.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP	$\leq \text{Ø } 40$	1.8 - 4.0	Multicollar <i>Slim</i>	EI 90 U/U
	$\leq \text{Ø } 125$	3.1 - 4.0		

**A.1.27 Directly through wall -  $\geq 100$  mm - Flue gas pipes**

**A.1.27.4 Concentric plastic flue gas pipes**

Front view

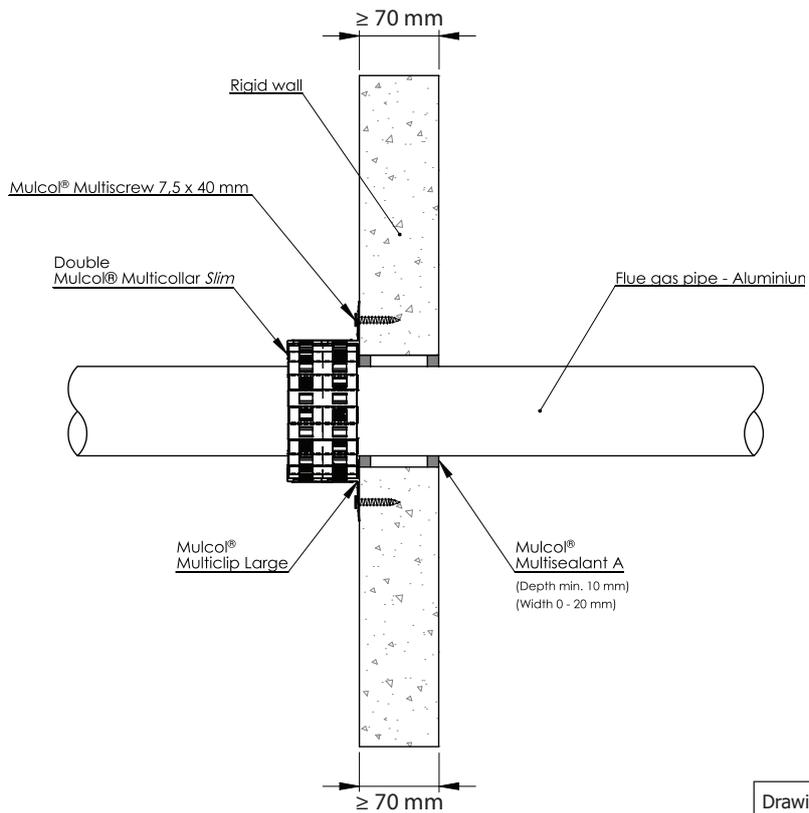
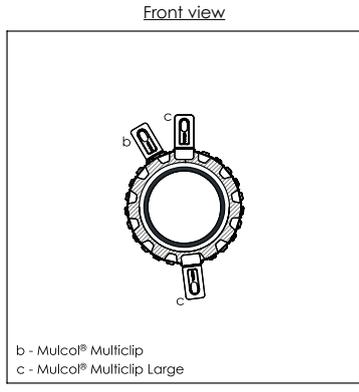


Drawing: FW.E-MC30-RGAT\_PP-11.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP / PP	$\leq \text{Ø } 40$	1.8 - 4.0	Multicollar <i>Slim</i>	EI 90 U/U
	$\leq \text{Ø } 125$	3.1 - 4.0		

**A.2.1 Directly through wall -  $\geq 70$  mm - Flue gas pipes**

**A.2.1.1 Aluminium flue gas pipes**

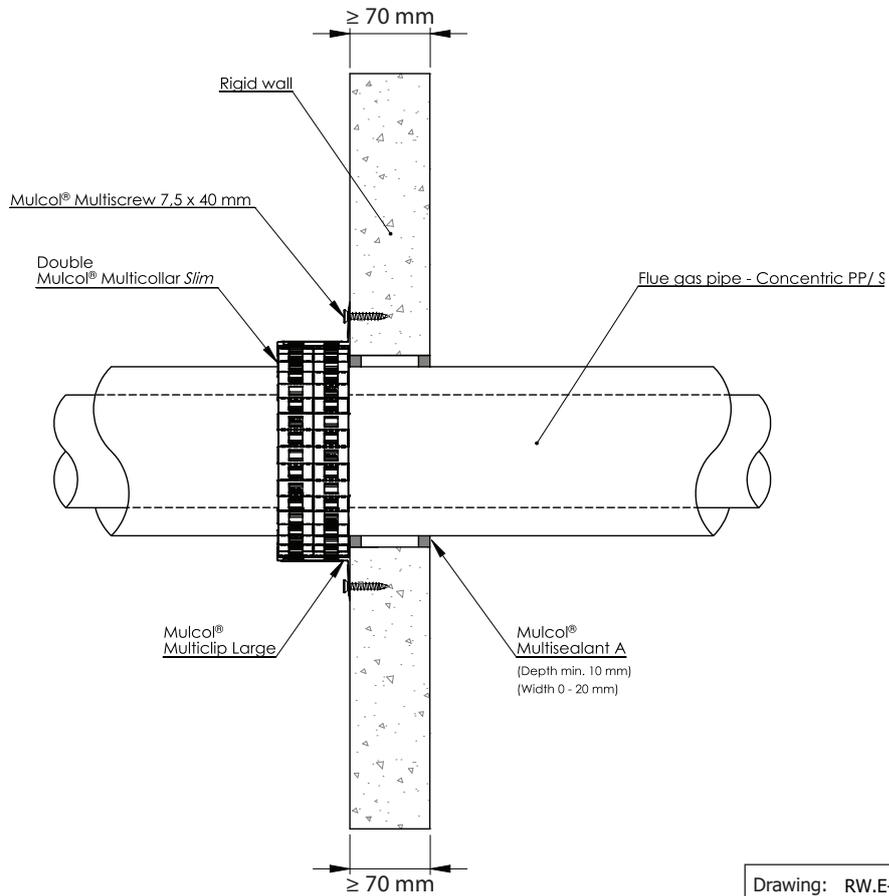
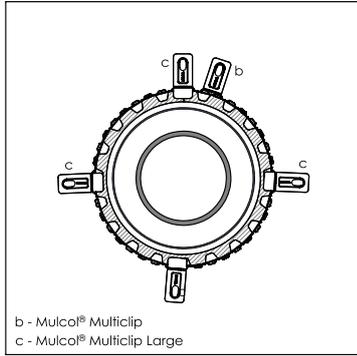


Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aluminium	$\leq \text{Ø } 80$	1.5	Multicollar <i>Slim</i> double	EI 15 U/C, E 90 U/C
	$\leq \text{Ø } 130$			E 90 U/C

**A.2.1 Directly through wall -  $\geq 70$  mm - Flue gas pipes**

**A.2.1.2 Concentric steel flue gas pipes**

Front view

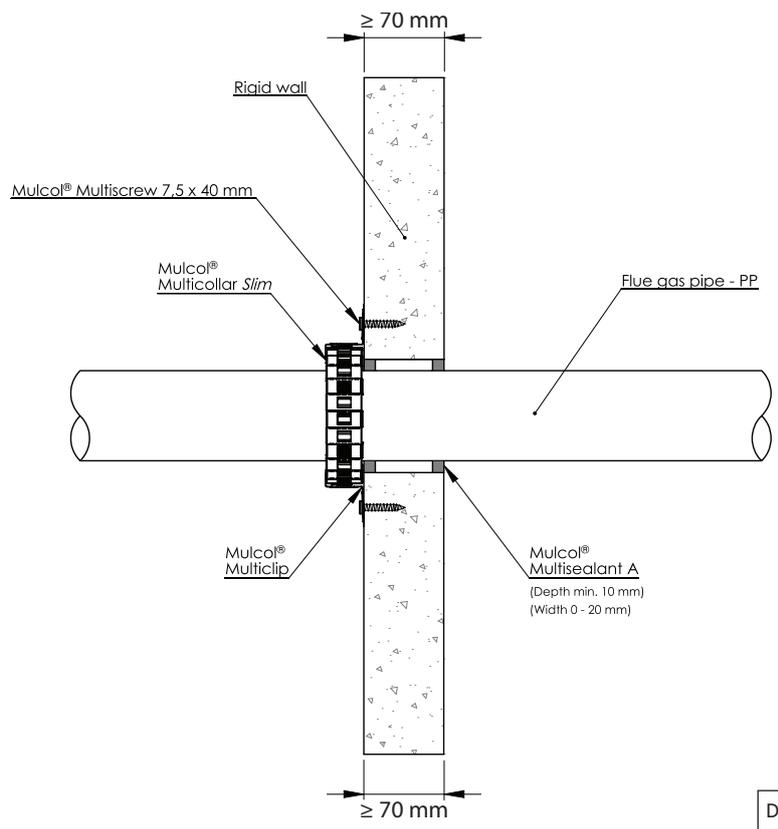
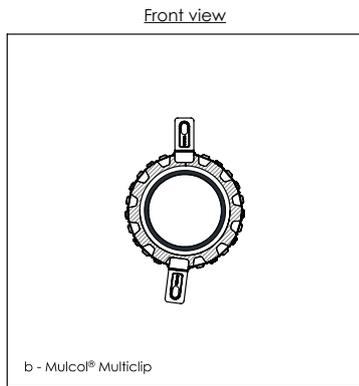


Drawing: RW.E-MC60-RGAT-21.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer pipe dimension	Inner pipe dimension		
Steel / PP flue gas system concentric	$\leq \text{Ø } 110$	$\leq \text{Ø } 60$	Multicollar <i>Slim</i> double	<b>E 90 U/C</b>
	$\leq \text{Ø } 125$	$\leq \text{Ø } 80$		
	$\leq \text{Ø } 150$	$\leq \text{Ø } 100$		
	$\leq \text{Ø } 200$	$\leq \text{Ø } 130$		

**A.2.1 Directly through wall -  $\geq 70$  mm - Flue gas pipes**

**A.2.1.3 Plastic flue gas pipes**



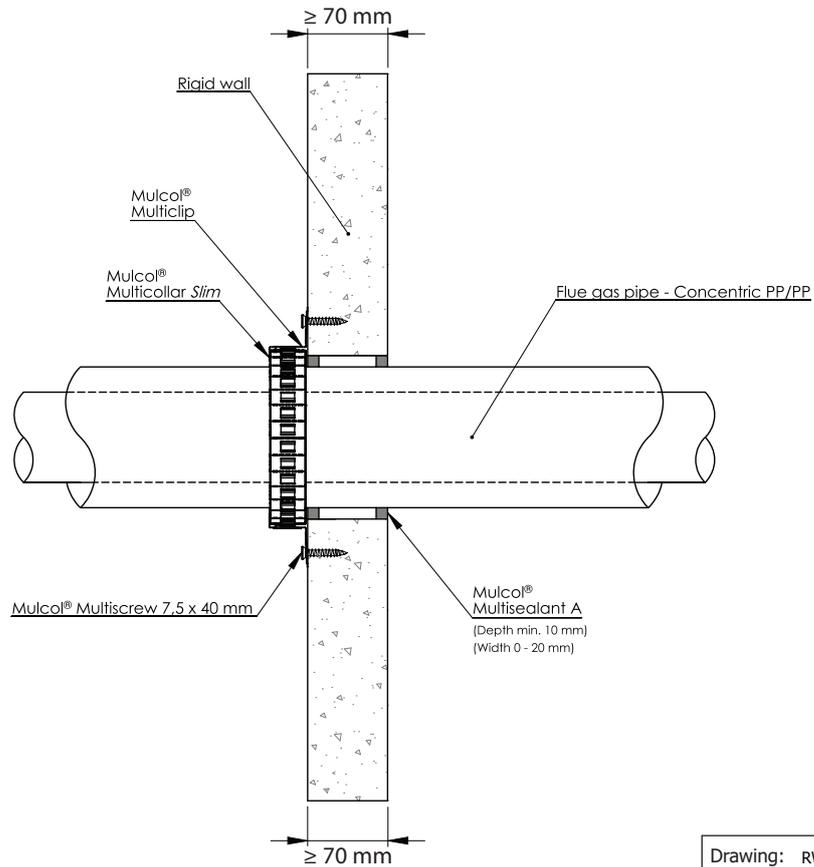
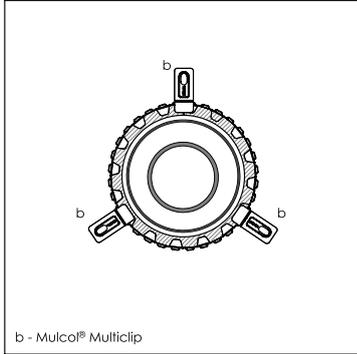
Drawing: RW.E-MC30-RGA\_PP-11.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP	$\leq \text{Ø } 40$	1.8 - 4.0	Multicollar <i>Slim</i>	EI 90 U/U
	$\leq \text{Ø } 125$	3.1 - 4.0		

**A.2.1 Directly through wall -  $\geq 70$  mm - Flue gas pipes**

**A.2.1.4 Concentric plastic flue gas pipes**

Front view

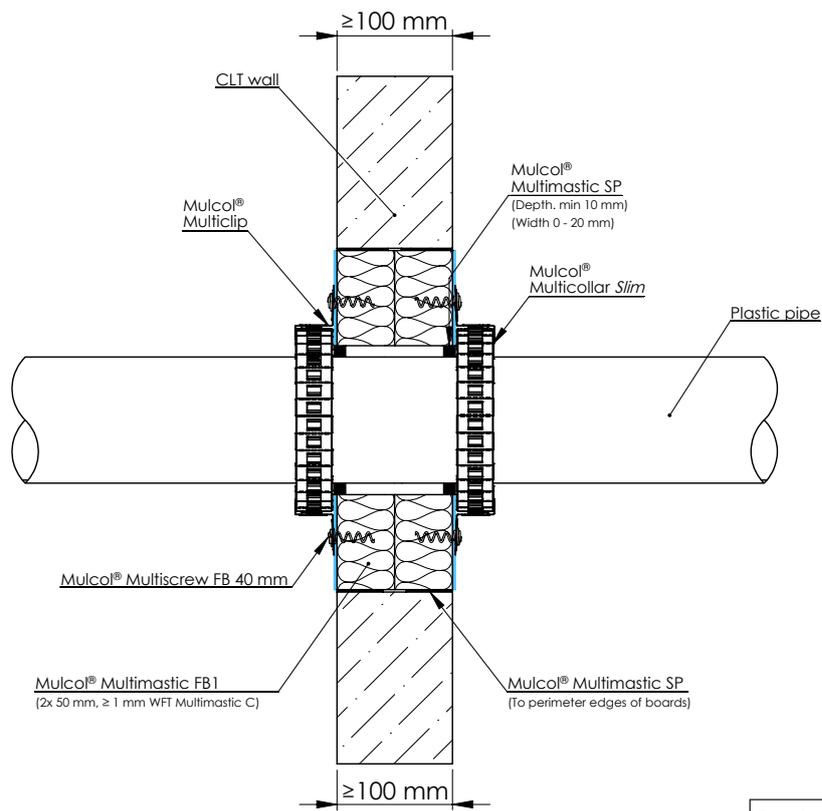
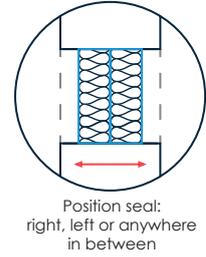
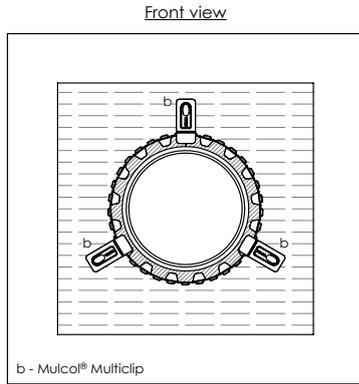


Drawing: RW.E-MC30-RGAT\_PP-11.0.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP / PP	$\leq \text{Ø } 40$	1.8 - 4.0	Multicollar Slim	EI 90 U/U
	$\leq \text{Ø } 125$	3.1 - 4.0		

### A.3.1 Multimastic FB1 - 2x50 mm - Combustible pipes

#### A.3.1.1 Plastic pipes



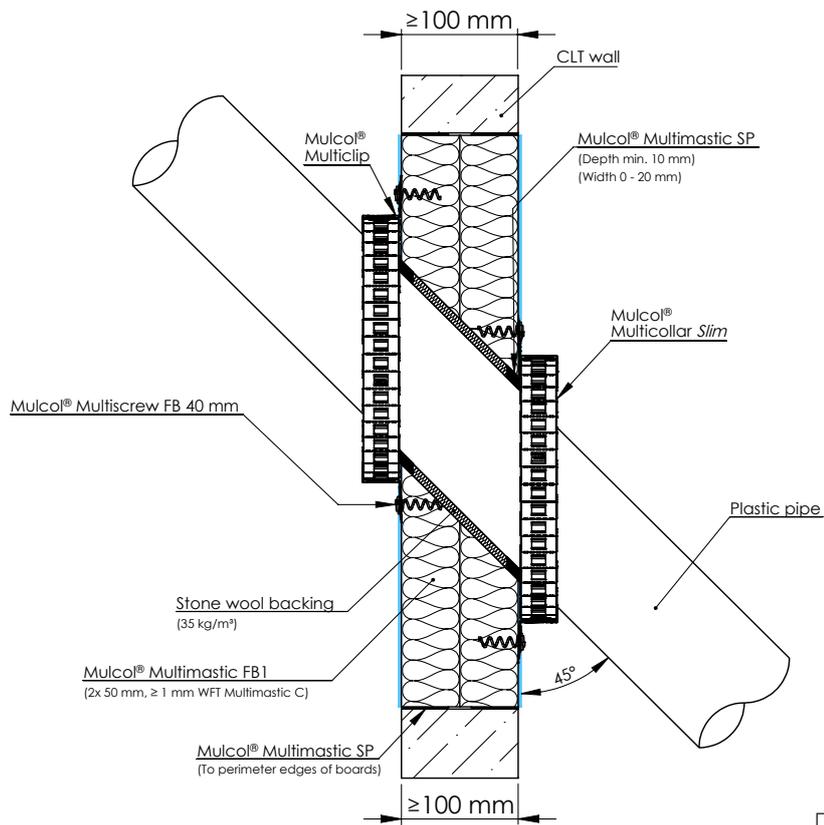
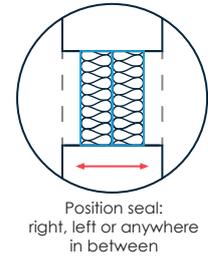
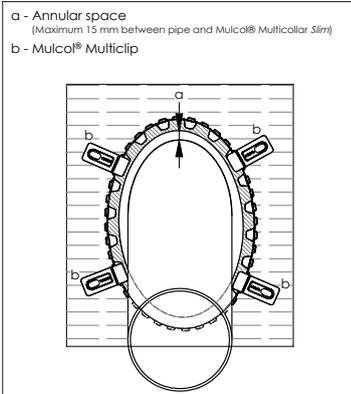
Drawing: WCLT.E-MC30-PP-MFB1.2.10

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

### A.3.1 Multimastic FB1 - 2x50 mm - Combustible pipes

#### A.3.1.2 Plastic pipes perpendicular to 45°

Front view



Drawing: WCLT.E-MC30-PP-MFB1-10.1.10

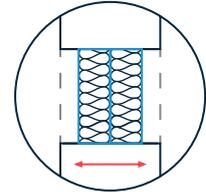
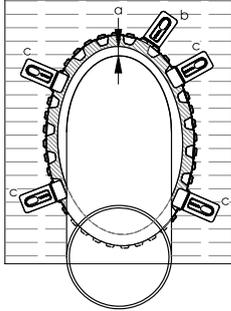
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/C
PP					
PVC(-U/-C)					

### A.3.1 Multimastic FB1 - 2x50 mm - Combustible pipes

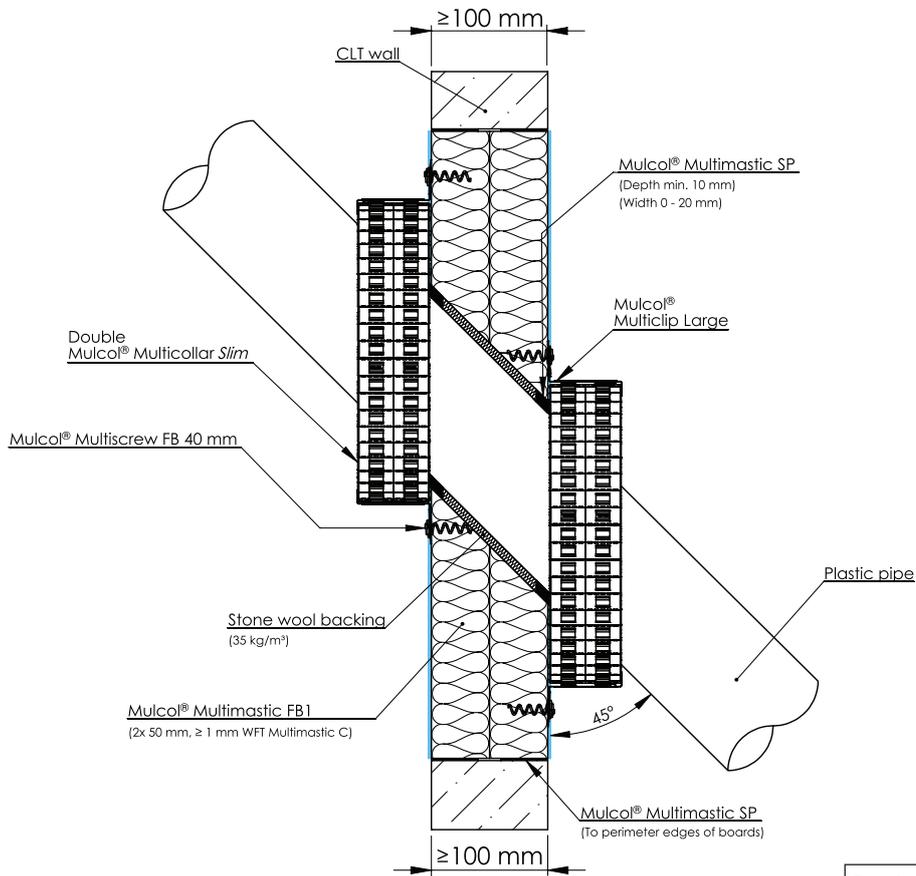
#### A.3.1.3 Plastic pipes perpendicular to 45° - double Multicollar Slim

Front view

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



Position seat:  
right, left or anywhere  
in between

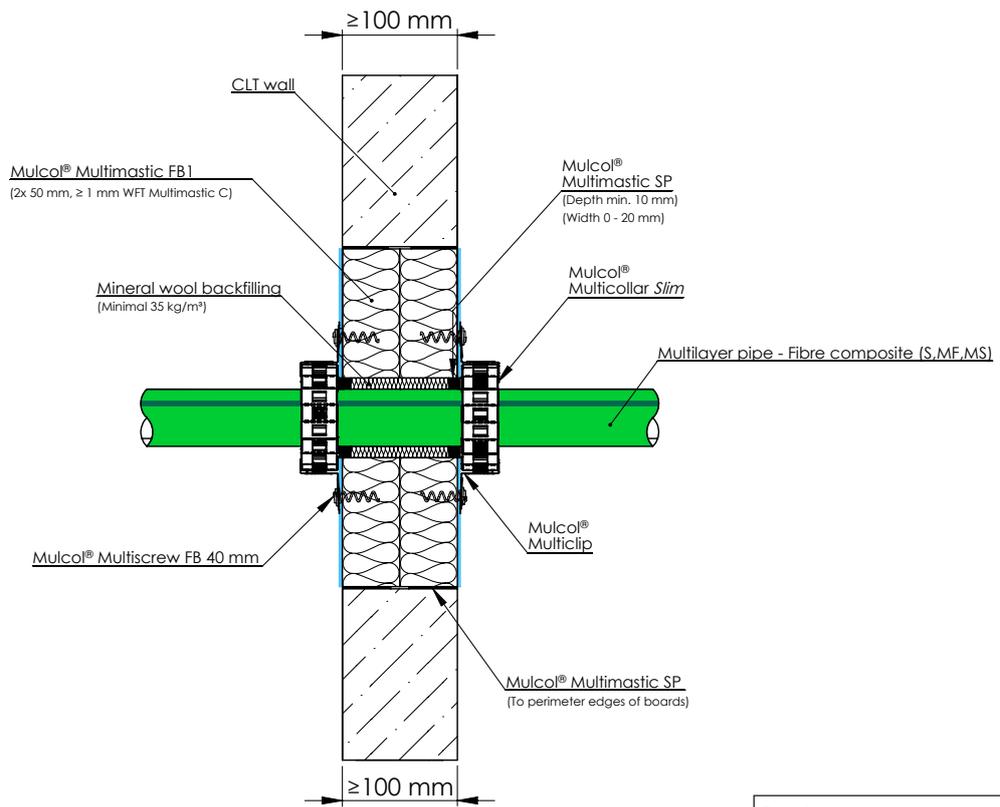
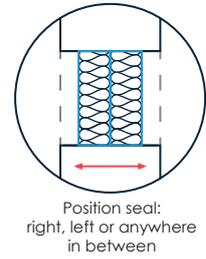
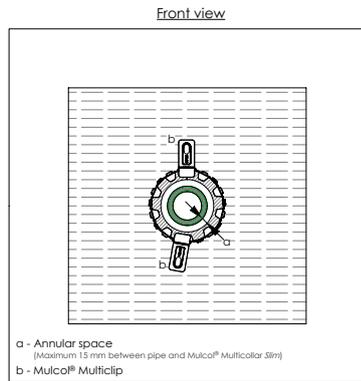


Drawing: WCLT.E-MC60-PP-MFB1-20.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar Slim Double	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/U
		2.7 - 10.0			EI 90 U/C
PP		2.7			EI 30 U/U
		3.4			EI 90 U/C
PVC(-U/-C)		3.4 - 10.0			EI 60 U/C
		2.7			EI 30 U/U
	3.4	EI 90 U/C			
		3.4 - 10.0	EI 60 U/C		

### A.3.1 Multimastic FB1 - 2x50 mm - Combustible pipes

#### A.3.1.4 PP-R multilayer pipes

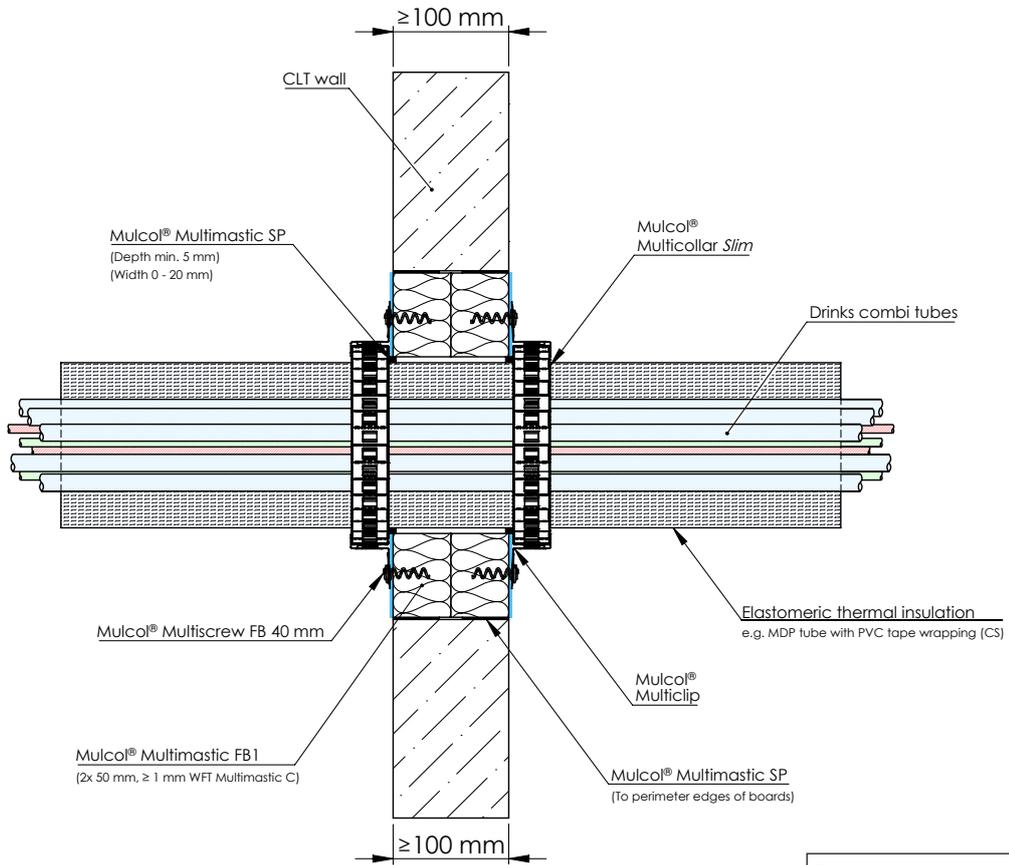
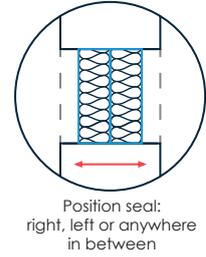
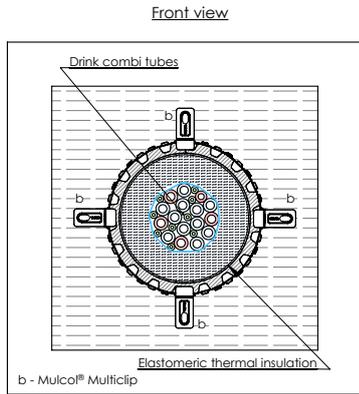


Drawing: WCLT.E-MC30-MLF-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Aquatherm Green	≤ Ø 50	6.9	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/C

### A.3.1 Multimastic FB1 - 2x50 mm - Combustible pipes

#### A.3.1.5 Drinks tubing system

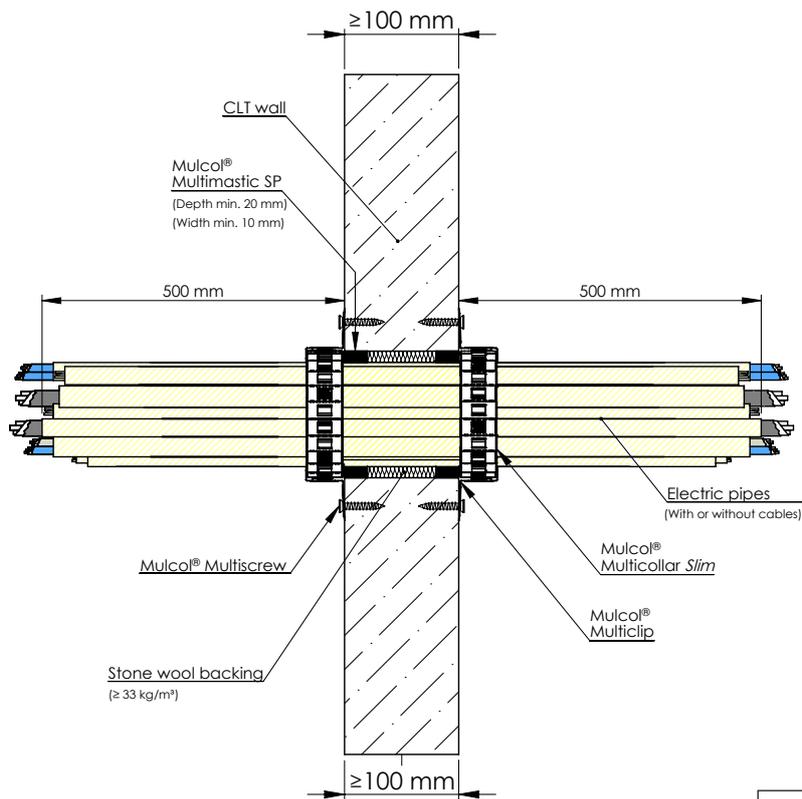
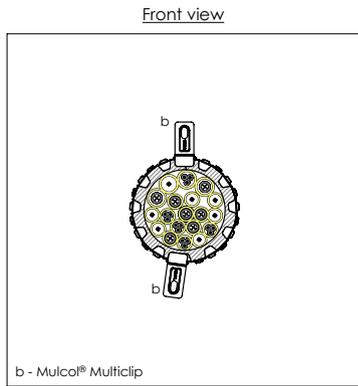


Drawing: WCLT-E-MC30-DCT52-MFB1.2.22

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

### A.3.2 Directly through wall - $\geq 100$ mm - Cables, trays and conduits

#### A.3.2.1 Multiple PVC conduits



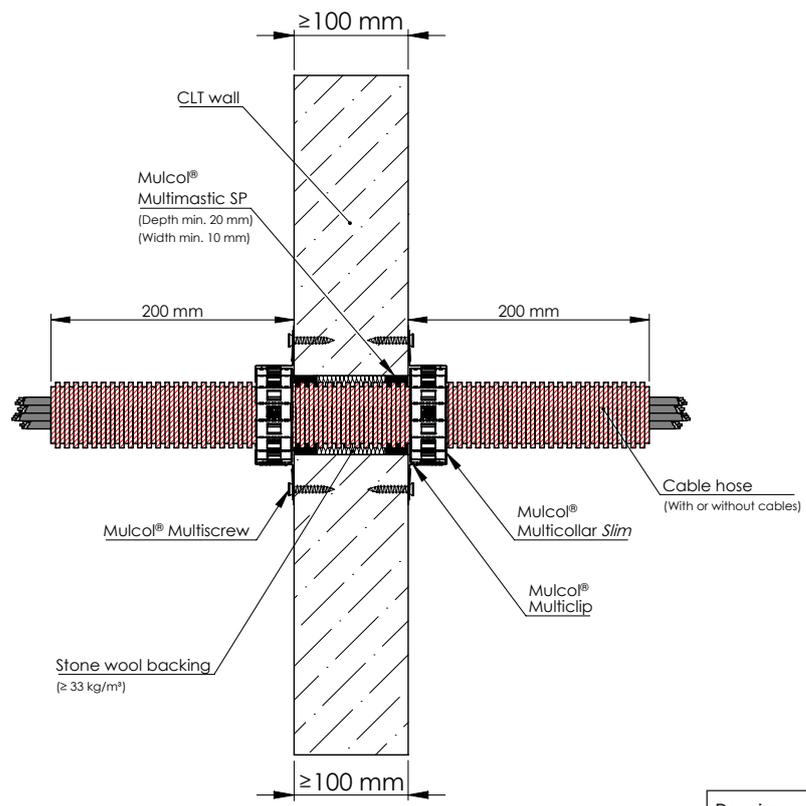
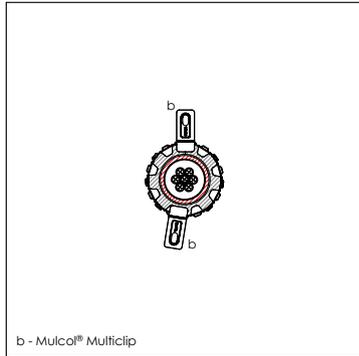
Drawing: WCLT.E-MC30-EPB-10.0.40

Services	Length of conduit	Product	Allowed cables	Classification
Multiple PVC conduits max. $\leq \varnothing 80$ mm, max. $\leq \varnothing 19$ mm each with or without cables	$\geq 500$ mm	Multicollar Slim	Sheathed cables $\leq \varnothing 10.2$ mm Unsheathed cables $\leq \varnothing 5$ mm	EI 90 U/U

### A.3.2 Directly through wall - $\geq 100$ mm - Cables, trays and conduits

#### A.3.2.2 Flexible conduit with cables

Front view

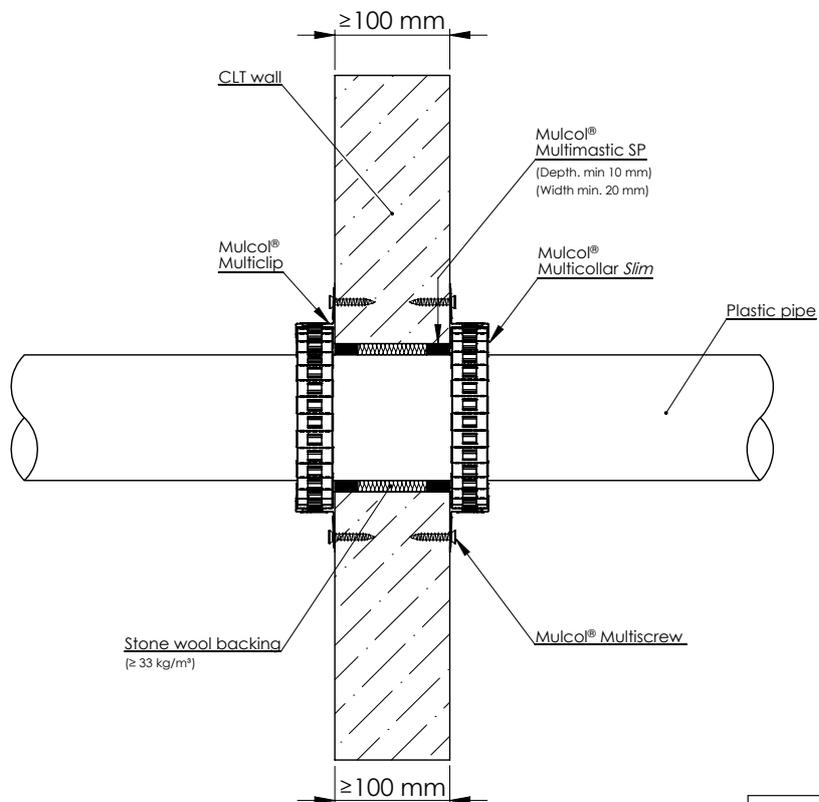
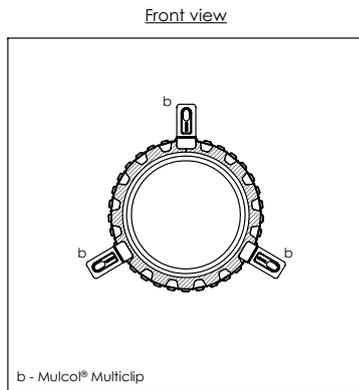


Drawing: WCLT.E-MC30-ECH-10.0.30

Services	Length of conduit	Product	Allowed cables	Classification
Ribbed PE-sleeve conduit $\leq \text{Ø } 63$ mm, with or without cables	$\geq 200$ mm	Multicollar <i>Slim</i>	Sheathed cables $\leq \text{Ø } 60$ mm (single or bundled) Telecommunication cables $\leq \text{Ø } 21$ mm in a tied bundle $\leq \text{Ø } 60$ mm	<b>EI 90 U/U</b>

### A.3.3 Directly through wall - $\geq 100$ mm - Combustible pipes

#### A.3.3.1 Plastic pipes

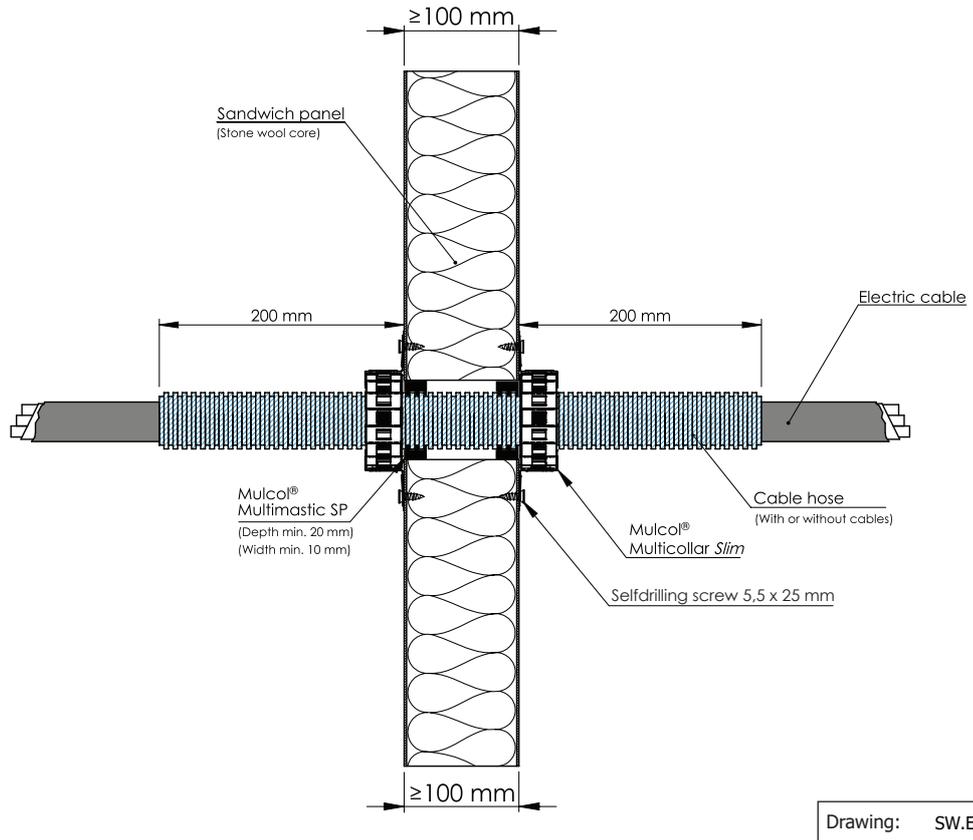
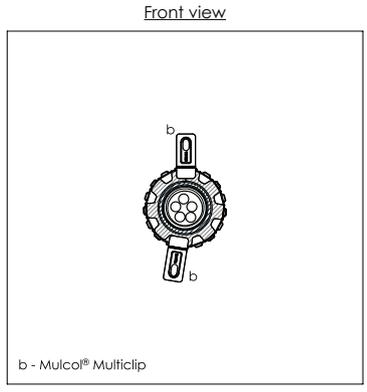


Drawing: WCLT.E-MC30-PP-10.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification		
	Outer dimension	Wall thickness					
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 40$	2.3 - 10.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 60 U/U		
	$\leq \varnothing 110$	2.7 - 10.0			EI 90 U/U		
	$\leq \varnothing 125$	2.7			EI 90 U/C		
PP	$\leq \varnothing 40$	3.9			Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 90 U/U
	$\leq \varnothing 40$	2.3					EI 60 U/U
	$\leq \varnothing 110$	2.3 - 10.0					EI 90 U/U
	$\leq \varnothing 110$	2.7					EI 90 U/C
PVC(-U/-C)	$\leq \varnothing 125$	3.1			Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 90 U/C
	$\leq \varnothing 40$	2.3 - 10.0					EI 60 U/U
	$\leq \varnothing 110$	2.7 - 10.0	EI 90 U/U				
	$\leq \varnothing 110$	3.2 - 8.1	EI 90 U/U				

**A.4.1 Directly through wall -  $\geq 100$  mm - Cables, trays and conduits**

**A.4.1.1 Flexible conduit with cable**

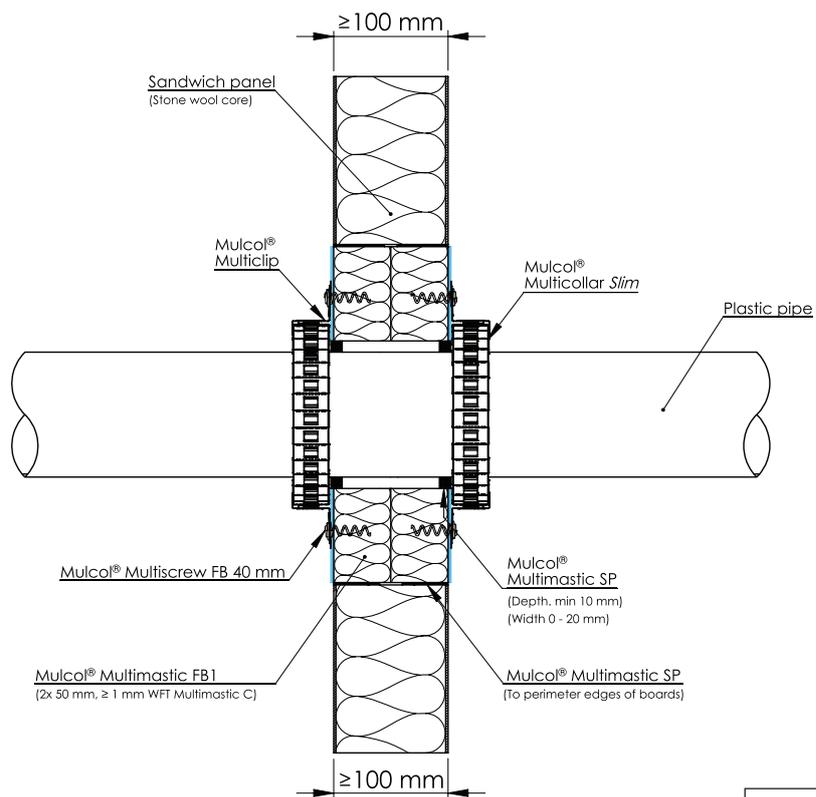
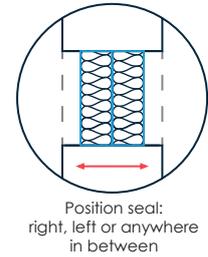
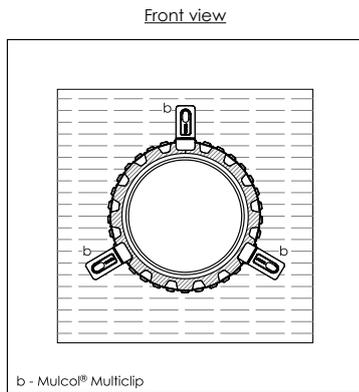


Drawing: SW.E-MC30-ECH-10.0.30

Services	Length of conduit	Product	Allowed cables	Classification
Ribbed PE-sleeve conduit $\leq \text{Ø } 40$ mm, with or without cable	$\geq 200$ mm	Multicollor <i>Slim</i>	Sheathed cables $\leq \text{Ø } 28$ mm	EI 90 U/C

## A.4.2 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.4.2.1 Plastic pipes



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

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 40	2.3 - 9.3	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 U/U
	≤ Ø 110	2.7 - 6.6			EI 120 U/U
		6.6 - 9.3			EI 60 U/U
	≤ Ø 125	3.1 - 9.3			EI 60 U/C
≤ Ø 160	4.0 - 9.5				

**A.4.2 Multimastic FB1 - 2x 50 mm - Combustible pipes**

**A.4.2.1 Plastic pipes**

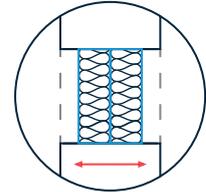
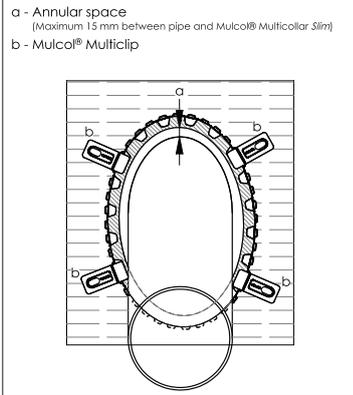
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PP	≤ Ø 40	2.3 - 9.3	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 U/U
	≤ Ø 110	2.7			EI 120 U/U
		2.7 - 9.3			EI 60 U/U
	≤ Ø 125	3.1 - 9.3			EI 60 U/C
≤ Ø 160	4.0 - 9.1				

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PVC(-U/-C)	≤ Ø 40	2.3 - 9.3	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 U/U
	≤ Ø 110	2.7			EI 120 U/U
		2.7 - 9.3			EI 60 U/U
	≤ Ø 125	3.1 - 9.3			EI 60 U/C
≤ Ø 160	4.0 - 9.1				

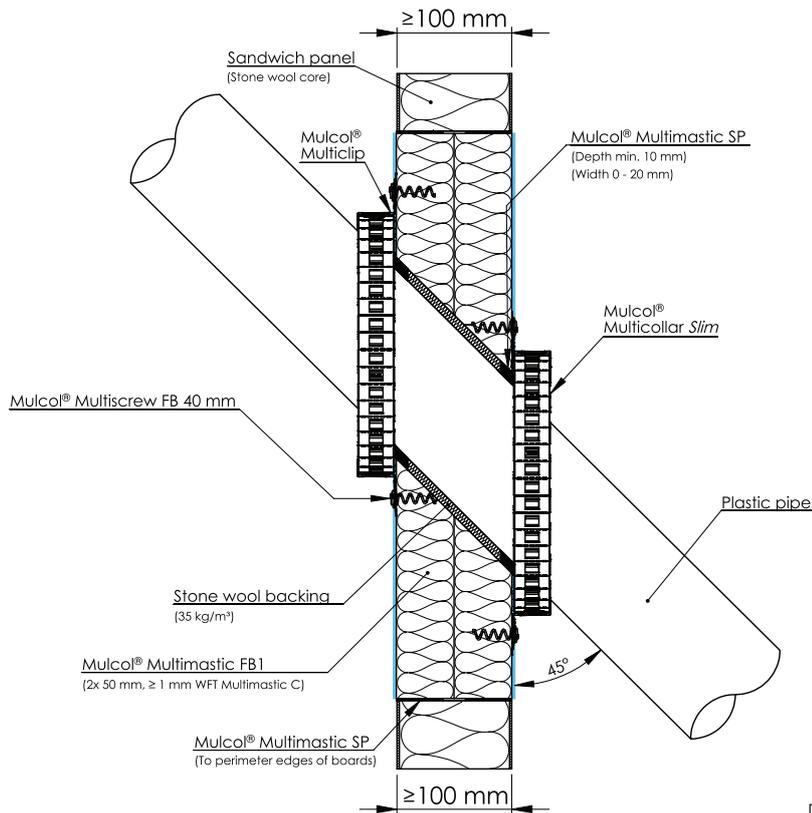
## A.4.2 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.4.2.2 Plastic pipes perpendicular to 45°

Front view



Position seal:  
right, left or anywhere  
in between



Drawing: SW.E-MC30-PP-MFB1-10.1.10

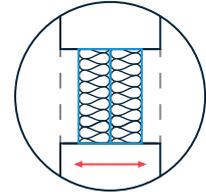
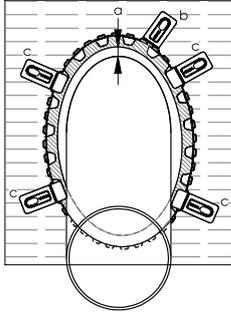
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/C
PP					
PVC(-U/-C)					

## A.4.2 Multimastic FB1 - 2x 50 mm - Combustible pipes

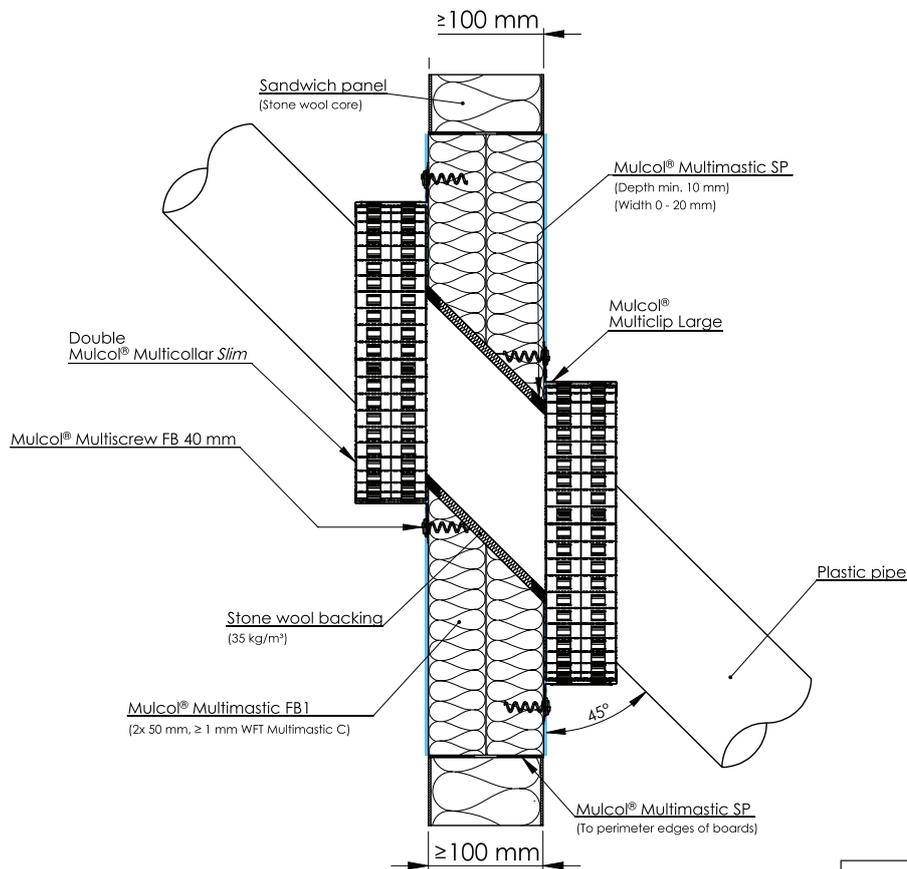
### A.4.2.3 Plastic pipes perpendicular to 45° - double Multicollar Slim

Front view

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



Position seat:  
right, left or anywhere  
in between

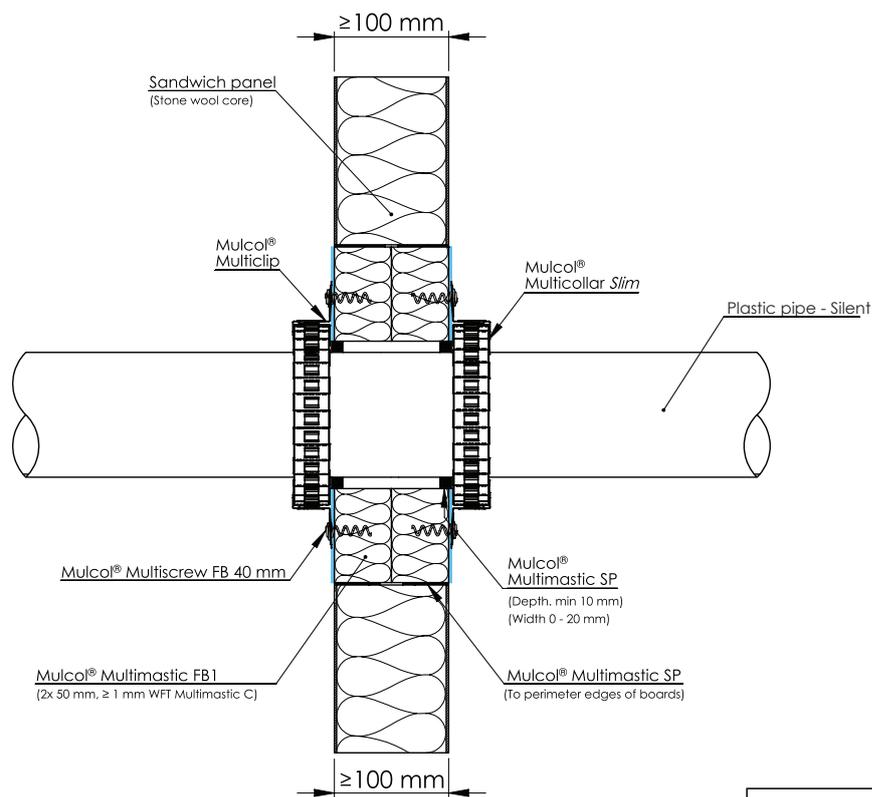
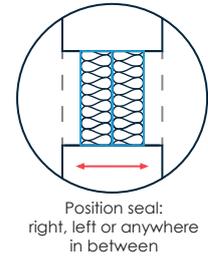
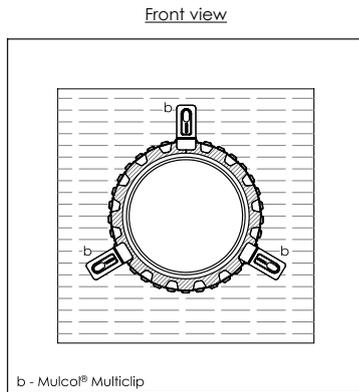


Drawing: SW.E-MC60-PP-MFB1-20.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar Slim double	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/U
		3.4 - 10.0			EI 120 U/C
PP		2.7			EI 30 U/U
		3.4			EI 120 U/C
PVC(-U/-C)		3.4 - 10.0			EI 60 U/C
		2.7			EI 30 U/U
	3.4	EI 120 U/C			
		3.4 - 10.0	EI 60 U/C		

## A.4.2 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.4.2.4 Plastic pipes (Silent)

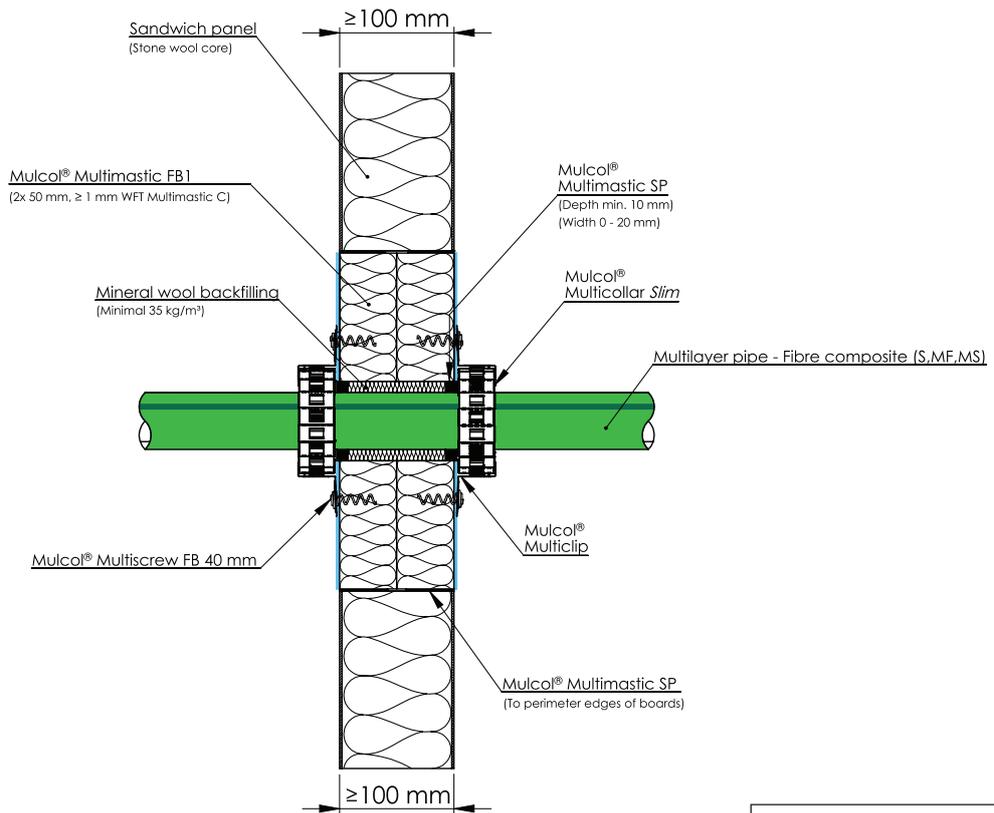
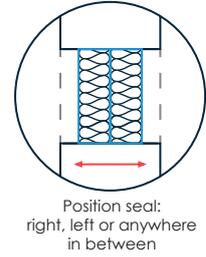
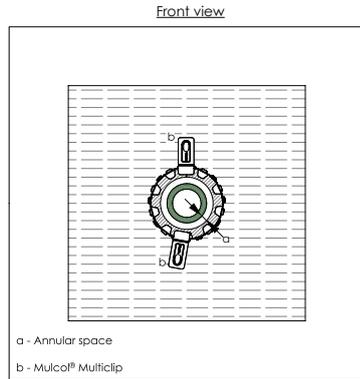


Drawing: SW.E-MC30-PPS-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB20	≤ Ø 110	6.0	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 60 U/U

## A.4.2 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.4.2.5 PP-R multilayer pipes

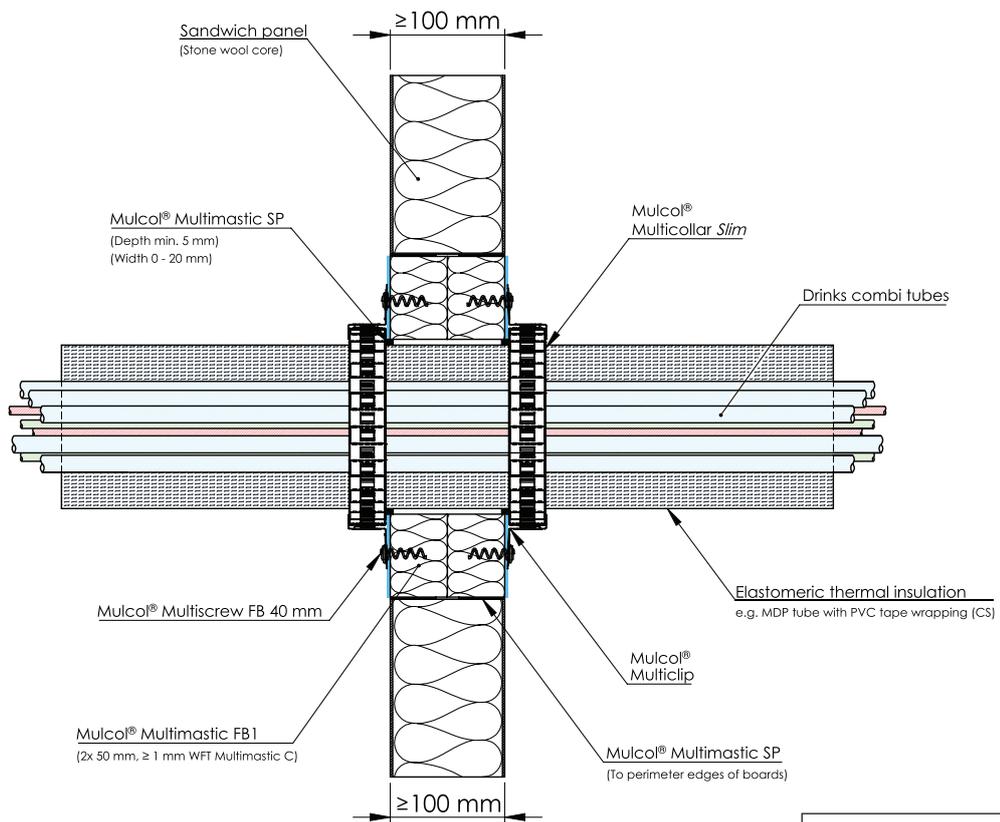
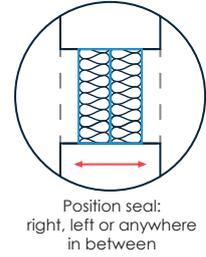
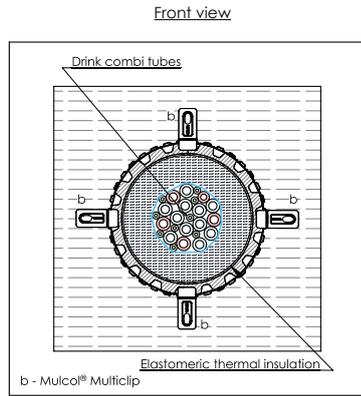


Drawing: SW.E-MC30-MLF-MFB1.2.10

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

## A.4.2 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.4.2.6 Drinks tubing system

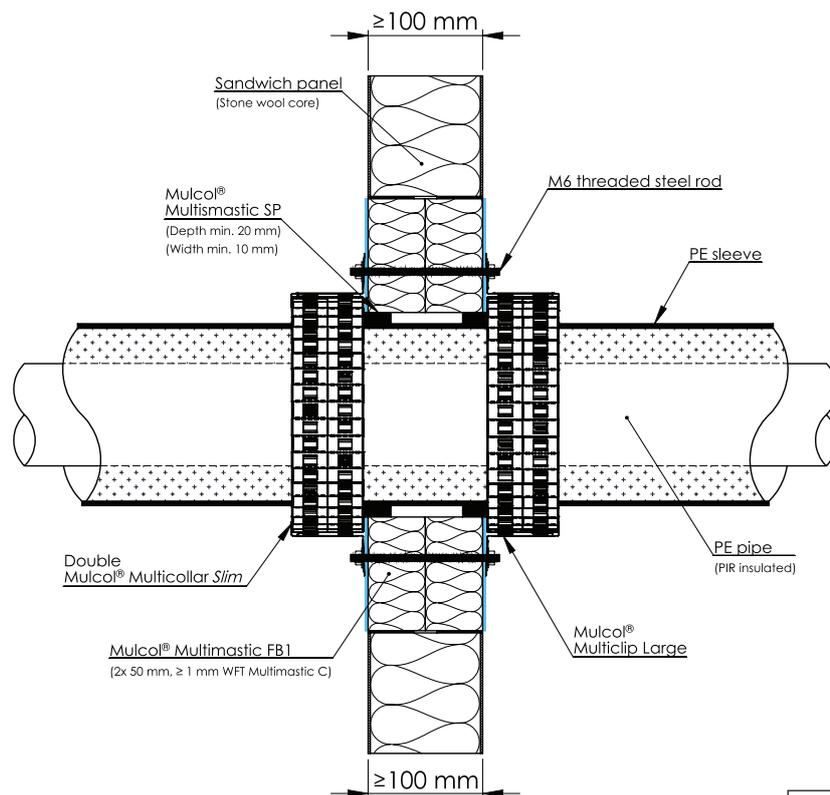
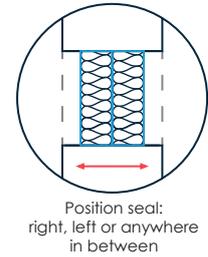
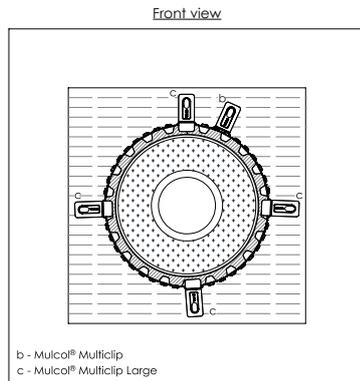


Drawing: SW.E-MC30-DCT52-MFB1.2.22

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

## A.4.2 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.4.2.7 PE Pipe insulated PIR

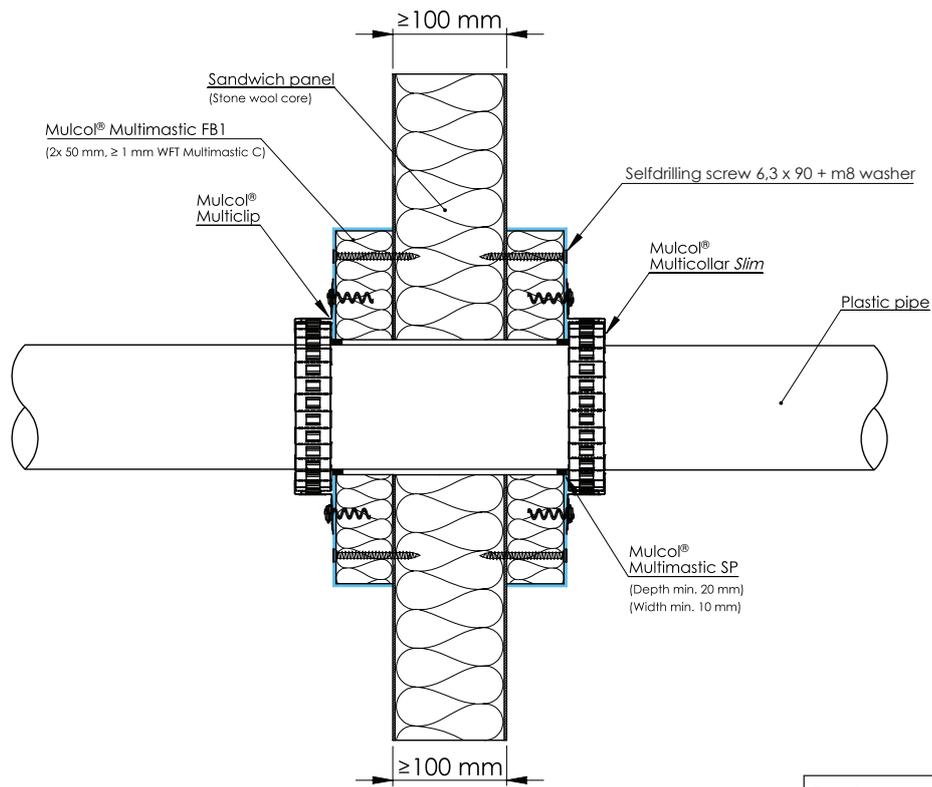
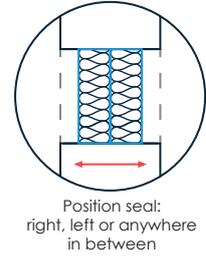
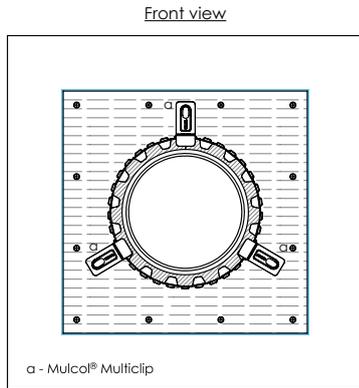


Drawing: SW.E-MC60-PP\_pr-MFB1.2.23

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
PE	≤ Ø 160	≥ 3.5	PIR / PUR + PE coating	30	CS	Multicollar Slim	EI 120 U/C

### A.4.3 Multimastic FB1 Pattress fixed to wall - 2x50 mm - Combustible pipes

#### A.4.3.1 Plastic pipes

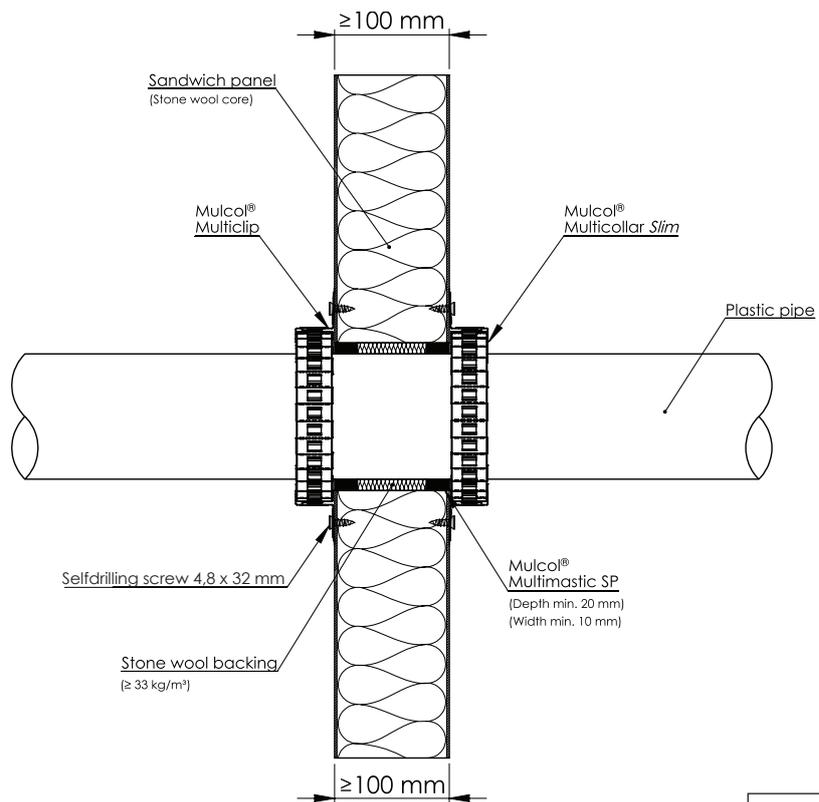
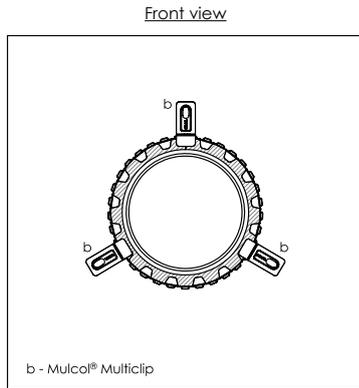


Drawing: SW.E-MC30-PP-MFB1.2.10\_pat

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 40	2.4	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 30 U/U, E 90 U/U
	≤ Ø 110	3.4			EI 90 U/U
PP	≤ Ø 40	2.3 - 2.7			
	≤ Ø 110	2.7			EI 90 U/U
PVC(-U/-C)	≤ Ø 40	2.4			
	≤ Ø 110	3.4			

## A.4.4 Directly through wall - $\geq 100$ mm - Combustible pipes

### A.4.4.1 Plastic pipes - Multicollar *Slim* fixed with screws

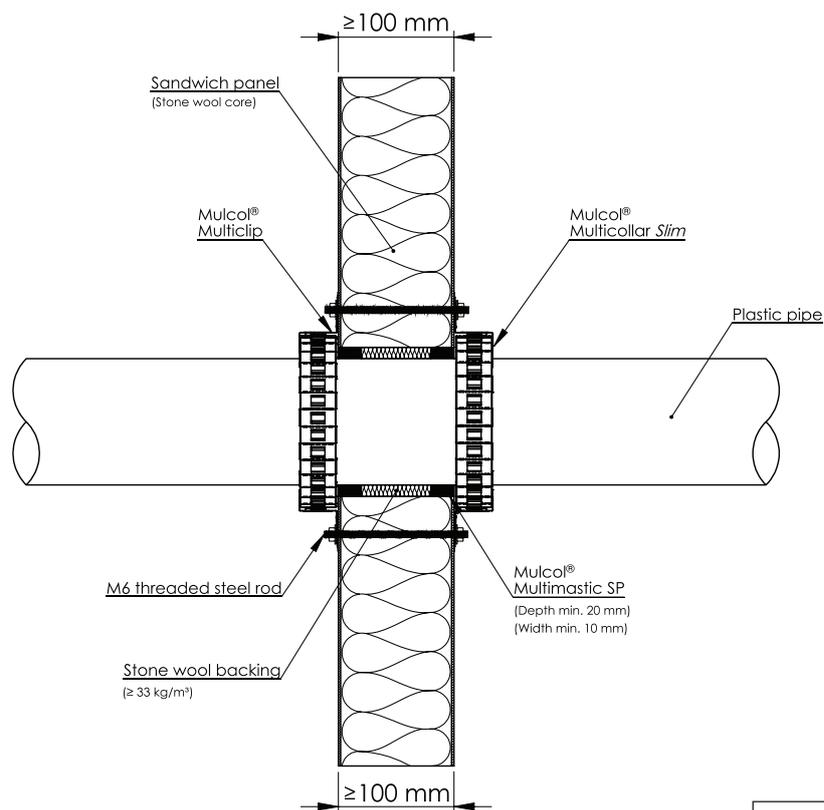
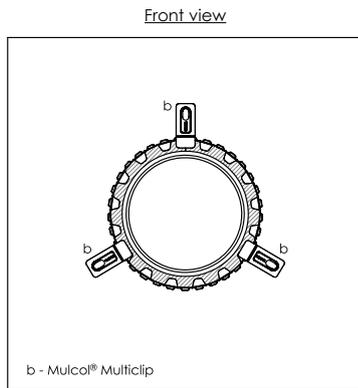


Drawing: SW.E-MC30-PP-10.0.10\_S

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 40$	2.4	Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 90 U/U
	$\leq \text{Ø } 110$	3.4			EI 45 U/U, E 90 U/U
PP	$\leq \text{Ø } 40$	2.3			EI 90 U/U
	$\leq \text{Ø } 110$	2.7			EI 45 U/U, E 90 U/U
PVC(-U/-C)	$\leq \text{Ø } 40$	2.4			EI 90 U/U
	$\leq \text{Ø } 110$	3.4			EI 45 U/U, E 90 U/U

## A.4.4 Directly through wall - $\geq 100$ mm - Combustible pipes

### A.4.4.2 Plastic pipes - Multicollar *Slim* fixed with bolts

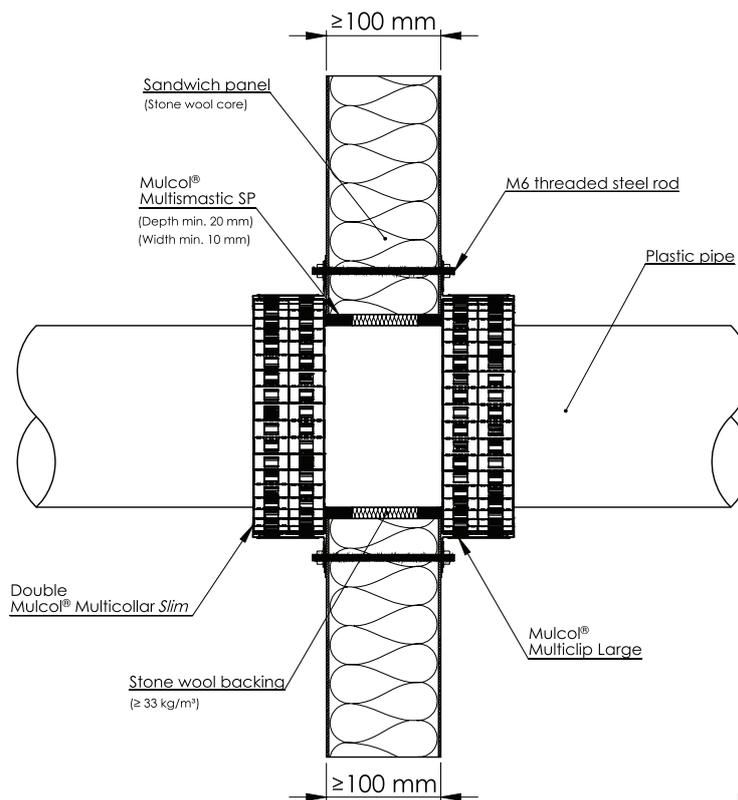
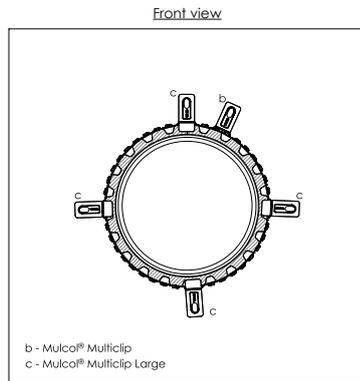


Drawing: SW.E-MC30-PP-10.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 40$	2.4	Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 120 U/U
	$\leq \text{Ø } 125$	3.1			EI 120 U/C
PP	$\leq \text{Ø } 40$	2.3			EI 120 U/U
PVC(-U/-C)	$\leq \text{Ø } 40$	2.4			

## A.4.4 Directly through wall - $\geq 100$ mm - Combustible pipes

### A.4.4.3 Plastic pipes - double Multicollar *Slim*

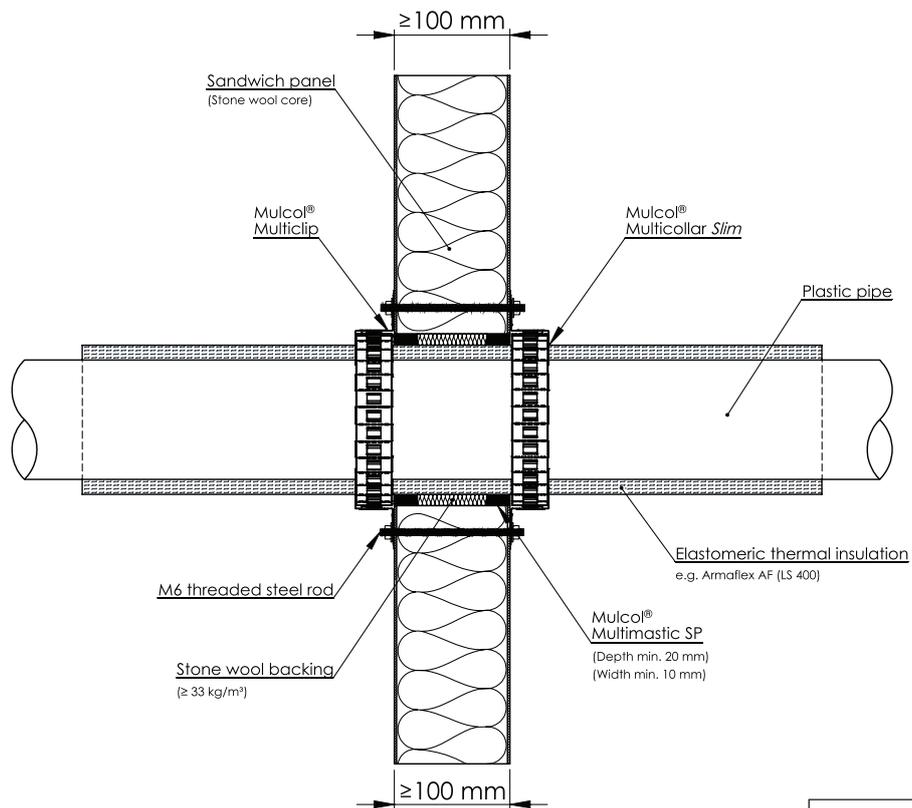
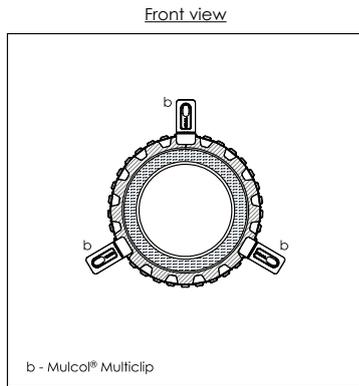


Drawing: SW.E-MC60-PP-10.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 160$	4.9	Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 120 U/C

## A.4.4 Directly through wall - $\geq 100$ mm - Combustible pipes

### A.4.4.4 Plastic pipes - Elastomer LS 400 / CS

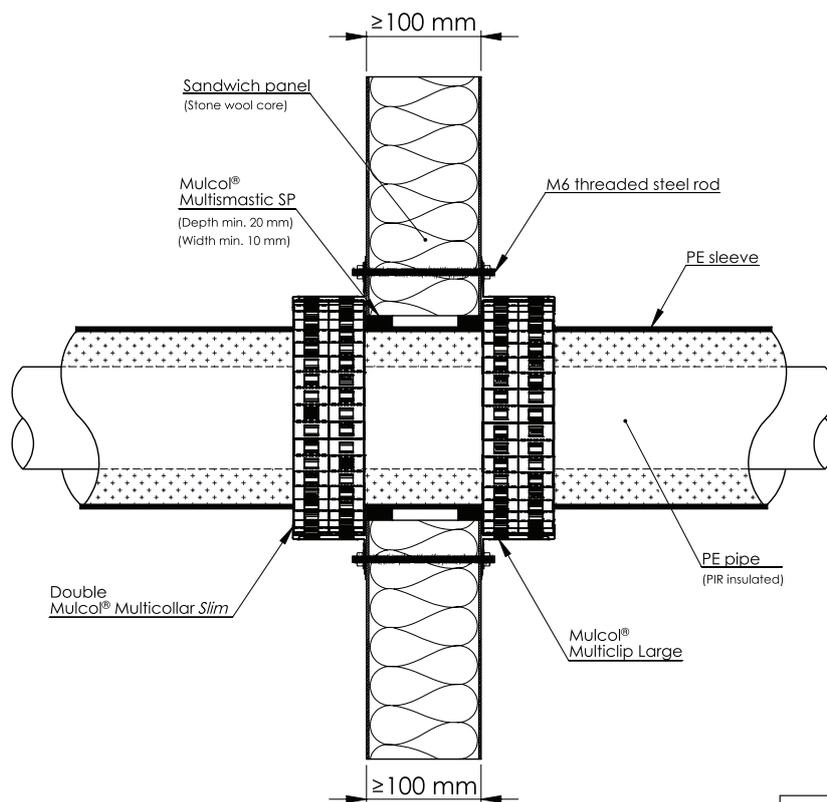
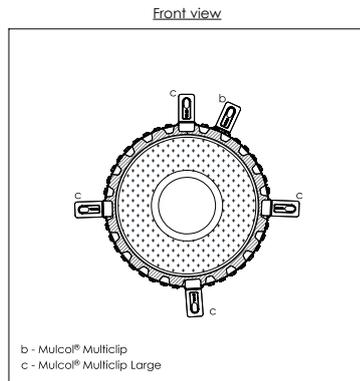


Drawing: SW.E-MC30-PP-10.0.22

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	ArmaFlex AF (min. class B <sub>L</sub> -s3, d0 B-s3, d0)	14.5	LS 400 / CS	Multicollar <i>Slim</i>	EI 120 U/U

## A.4.4 Multimastic FB1 - 2x 50 mm - Combustible pipes

### A.4.4.5 PE Pipe insulated PIR

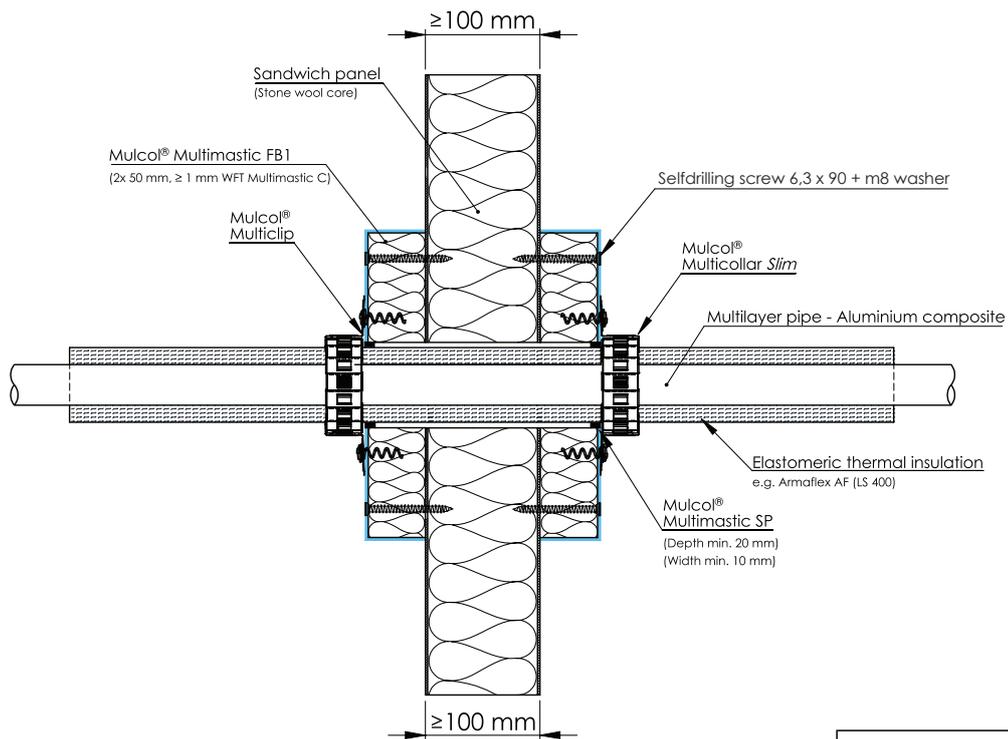
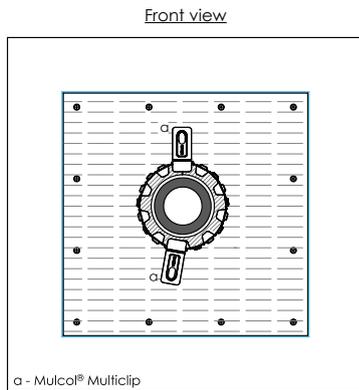


Drawing: SW.E-MC60-PP\_pr-10.0.23

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
PE	≤ Ø 160	≥ 3.5	PIR / PUR + PE coating	30	CS	Multicollar Slim	EI 120 C/U

## A.4.5 Multimastic FB1 Pattress fixed to wall - 2x50 mm - Multilayer pipe (MLC)

### A.4.5.1 Multilayer pipe (MLC) - Elastomer LS 400 / CS



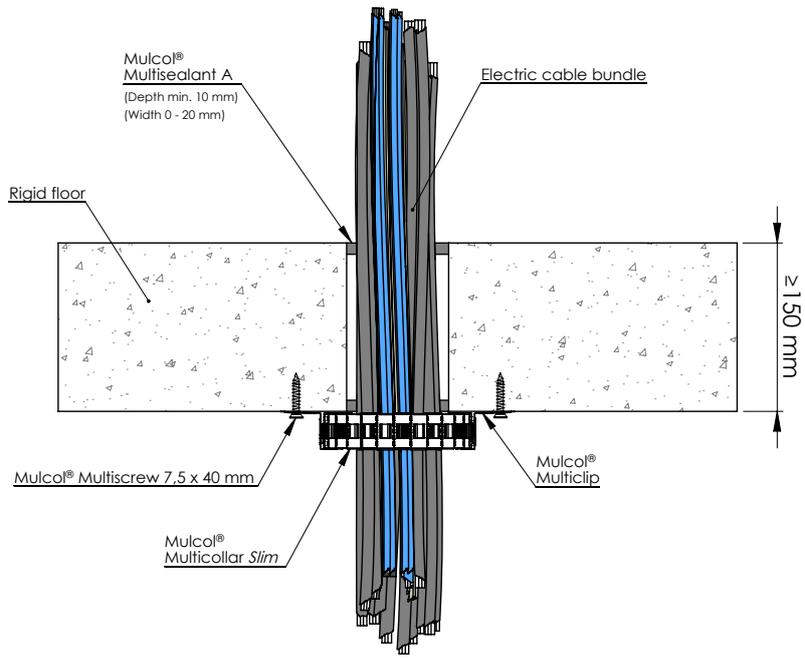
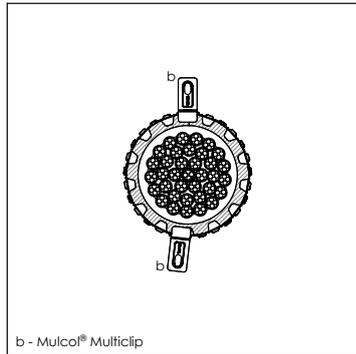
Drawing: SW.E-MC30-MLA-MFB1.2.10\_pat

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	≤ Ø 32	3.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	13	LS 400 / CS	Multicollar Slim	EI 90 U/C

**B.1.1 Directly through floor - Cables, trays and conduits**

**B.1.1.1 Cable bundle**

Bottom view



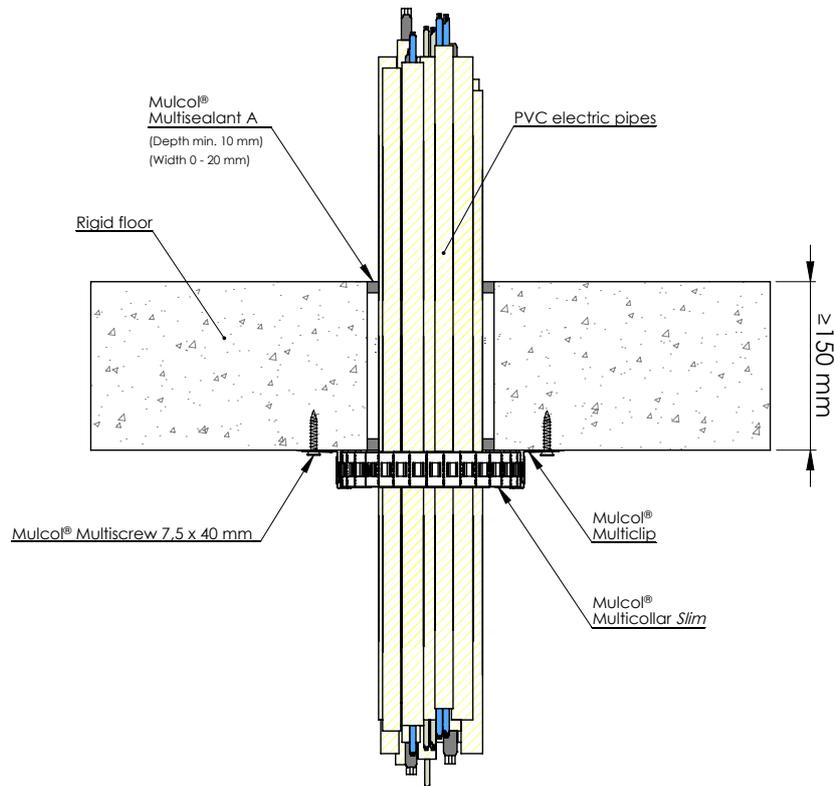
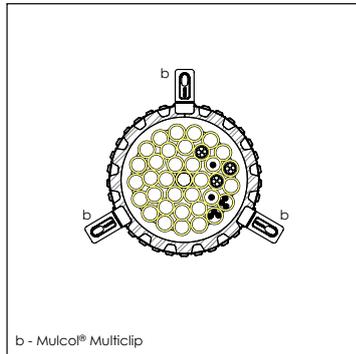
Drawing: RF.E-MC30-ECB-11.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Multiple electrical / telecommunication cables max. 42 pcs.	Multicollar <i>Slim</i>	≤ Ø 80	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120

## B.1.1 Directly through floor - Cables, trays and conduits

### B.1.1.2 Multiple PVC conduits

Bottom view



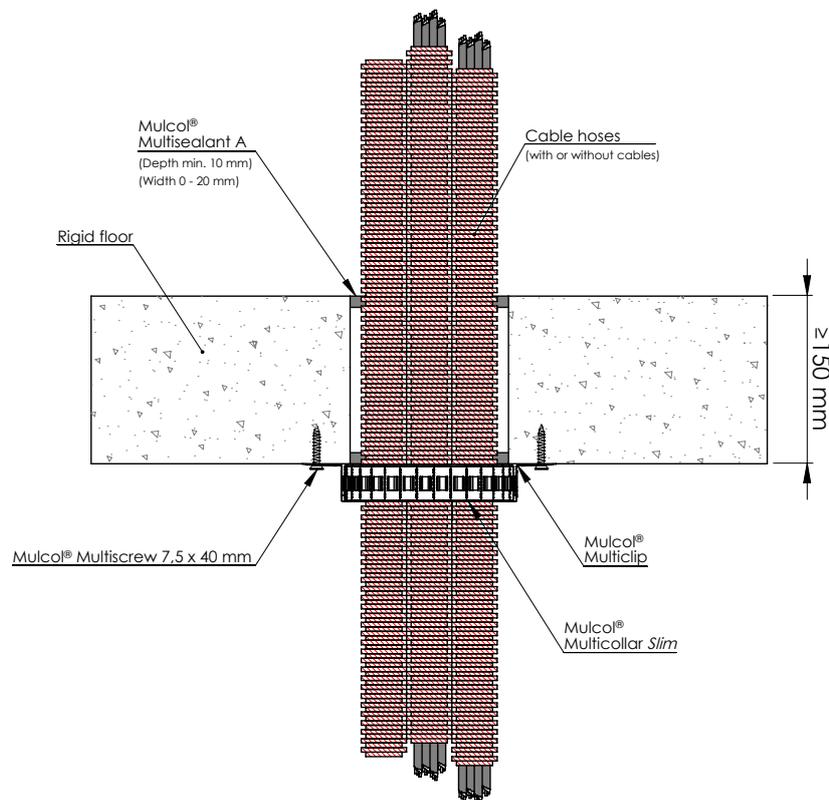
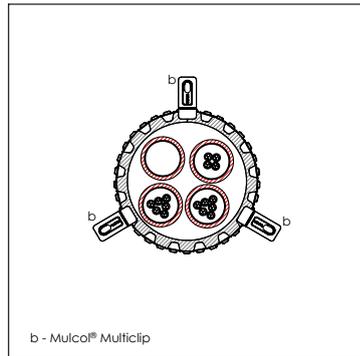
Drawing: RF.E-MC30-EPB-11.0.10

Services	Product	Aperture (mm)	Sealing (mm)	Classification
Multiple PVC conduits max. 18 pcs., max. $\leq \varnothing 25$ mm with or without cables	Multicollar <i>Slim</i>	$\leq \varnothing 100$	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 120 U/U

## B.1.1 Directly through floor - Cables, trays and conduits

### B.1.1.3 Multiple flexible conduits with cables

Bottom view

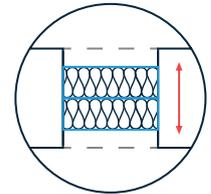
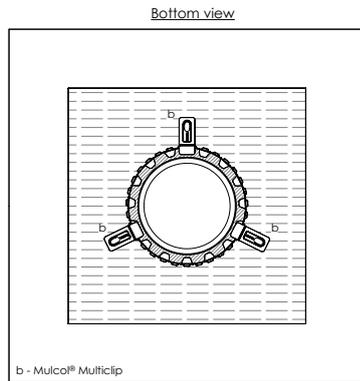


Drawing: RF.E-MC30-ECHB-11.0.30

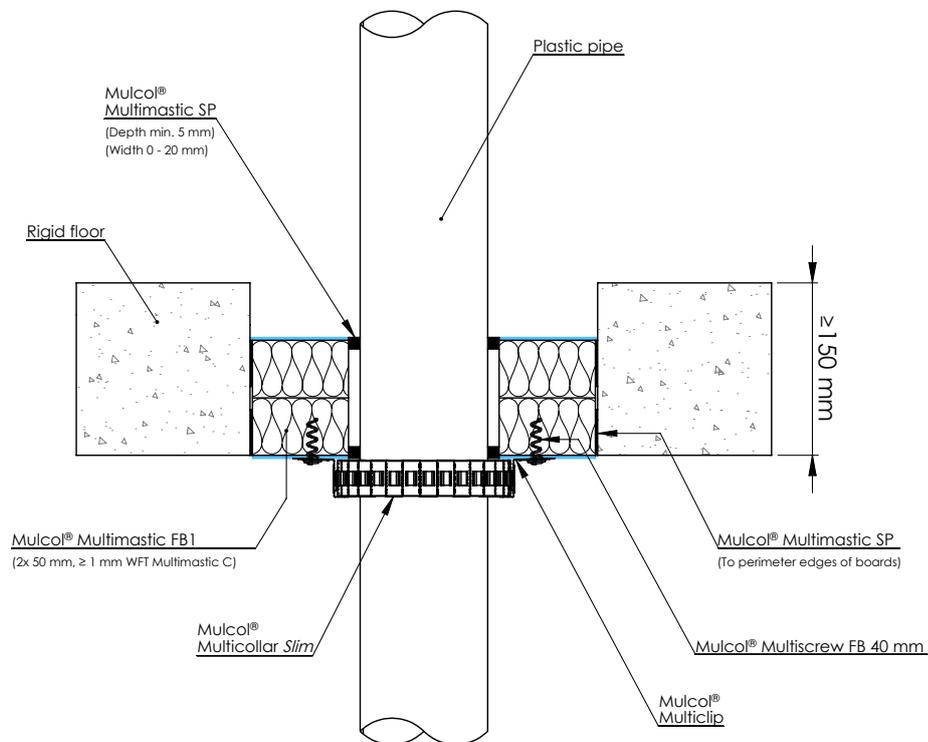
Services	Number of sleeves	Product	Allowed cables	Classification
Ribbed PE-sleeve conduit ≤ Ø 63 mm, with or without cables	≤ 5	Multicollar Slim	Sheathed cables ≤ Ø 21 mm (single or bundled) Telecommunication cables	EI 60 U/U

## B.1.2 Multimastic FB1 - 2x50 mm no cavity - Combustible pipes

### B.1.2.1 Plastic pipes



Position seal:  
top, bottom or anywhere  
in between

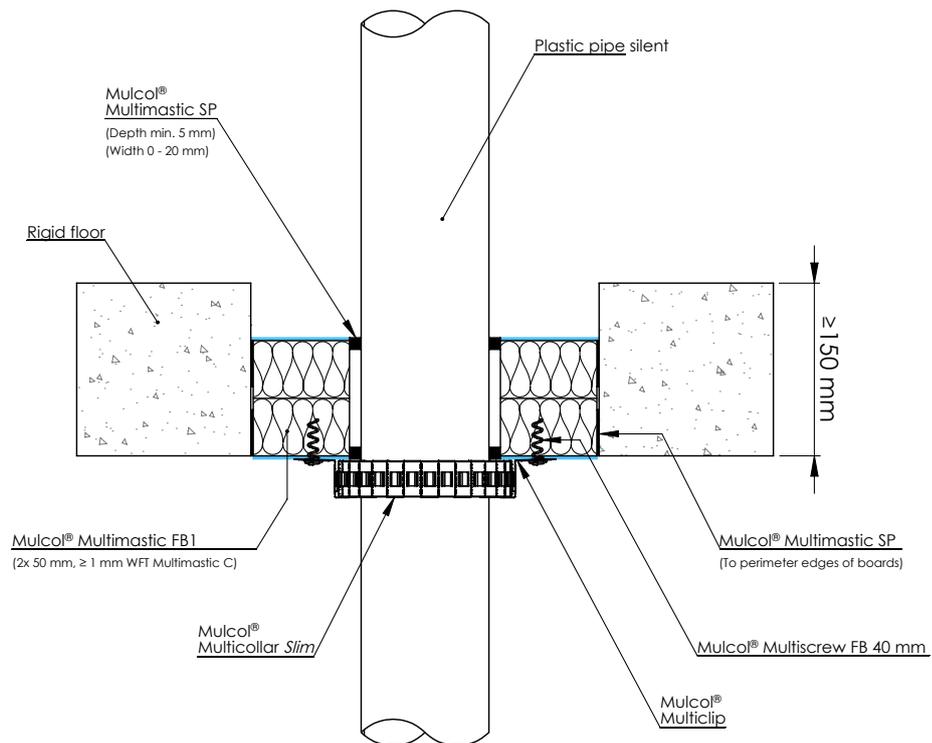
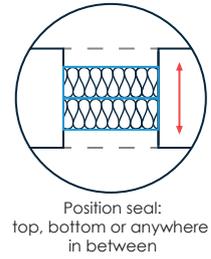
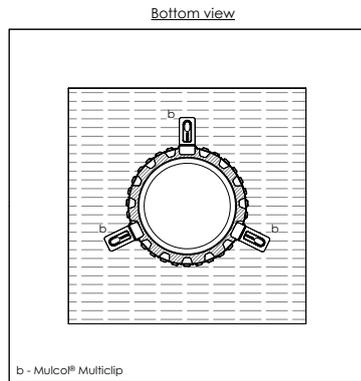


Drawing: PBr.E-PP-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/U
		2.7 - 6.6			EI 60 U/U
PP		2.7			EI 90 U/U
		2.7 - 6.3			EI 60 U/U
PVC(-U/-C)		2.7			EI 90 U/U
		2.7 - 6.3			EI 60 U/U
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 160	4.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/C, E 120 U/C
		4.0 - 14.6			EI 60 U/C
PP		4.0			EI 45 U/C, E 60 U/C
		4.0 - 14.6			EI 60 U/C
PVC(-U/-C)		4.0			EI 45 U/C, E 60 U/C
		4.0 - 14.6			EI 60 U/C

## B.1.2 Multimastic FB1 - 2x50 mm no cavity - Combustible pipes

### B.1.2.2 Plastic pipes (Silent)

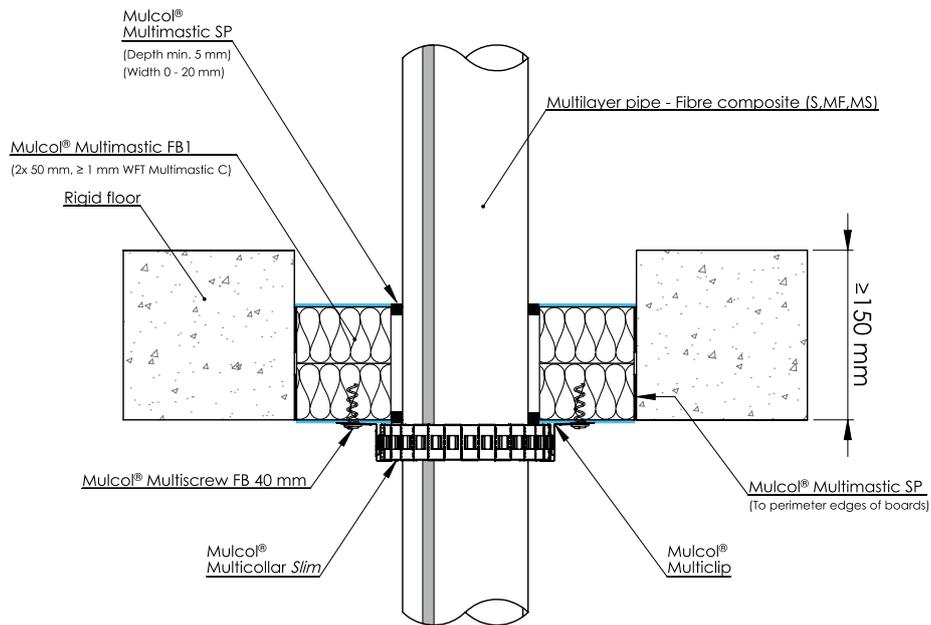
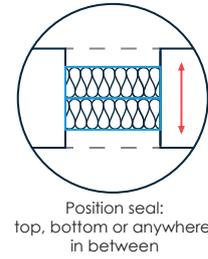
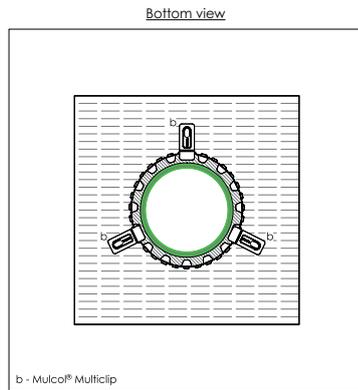


Drawing: PBrf.E-PPS-MFB1.2.10

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

## B.1.2 Multimastic FB1 - 2x50 mm no cavity - Combustible pipes

### B.1.2.3 PP-R Multilayer pipes

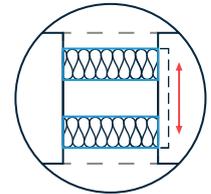
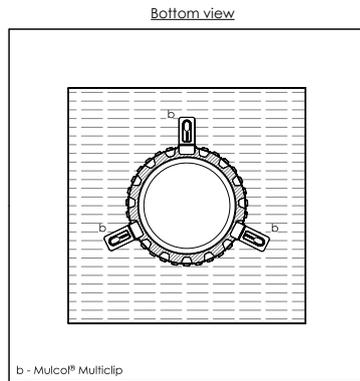


Drawing: PBrf.E-MLF-11.0.10

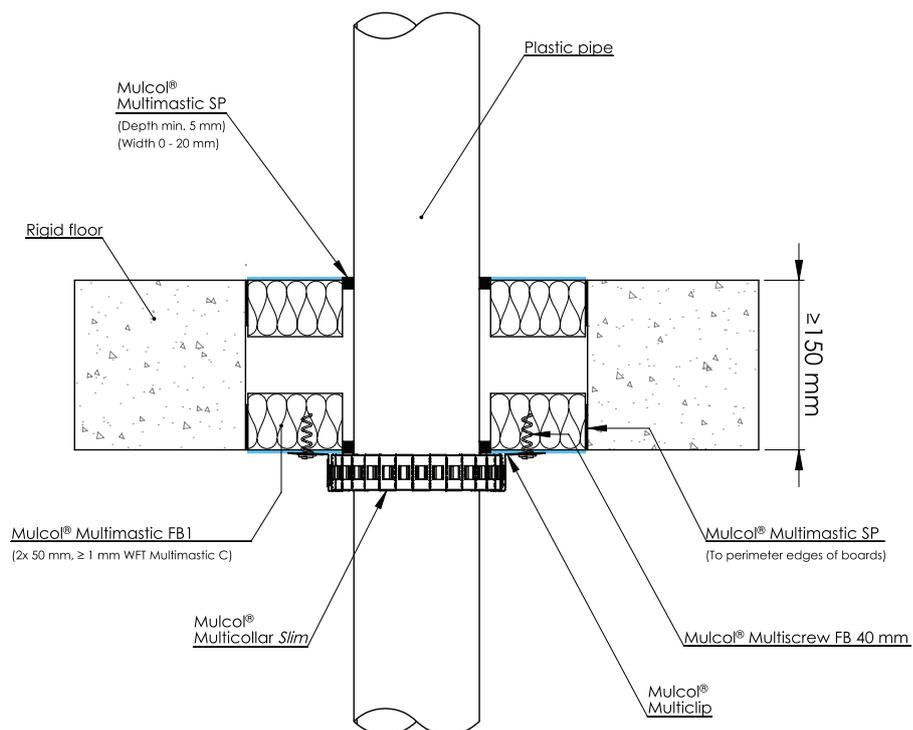
Services	Pipe dimensions (mm)		System	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Aquatherm Green-MF	≤ Ø 50	6.9	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/C
	≤ Ø 110	10.0			EI 60 U/C

## B.1.3 Multimastic FB1 - 2x50 mm cavity 50 mm - Combustible pipes

### B.1.3.1 Plastic pipes



Position seal:  
top, bottom or anywhere  
in between

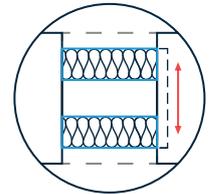
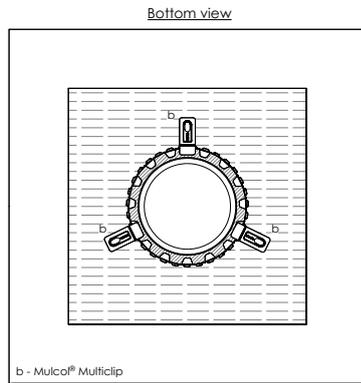


Drawing: PBrf.E-PP-MFB1.2.10.C

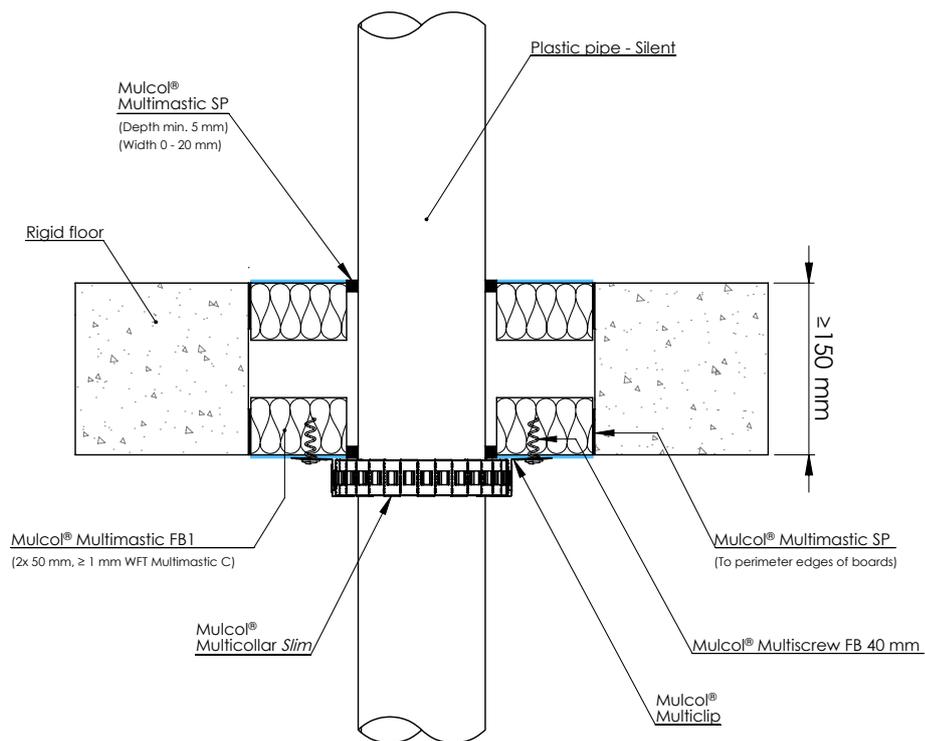
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollor Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/U
		2.7 - 6.6			EI 60 U/U
		2.7 - 3.1			EI 120 U/C
PP	≤ Ø 125	3.1			EI 90 U/U
		2.7			EI 60 U/U
PVC(-U/-C)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

## B.1.3 Multimastic FB1 - 2x50 mm cavity 50 mm - Combustible pipes

### B.1.3.2 Plastic pipes (Silent)



Position seal:  
top, bottom or anywhere  
in between

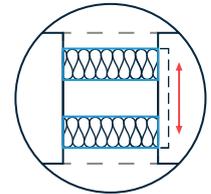
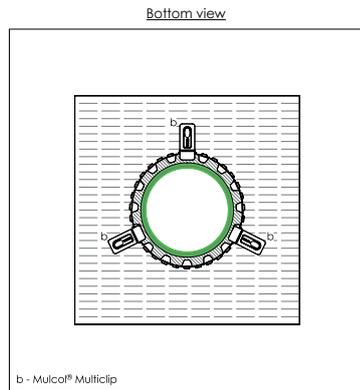


Drawing: PBrf-PPS-MFB1.2.10.C

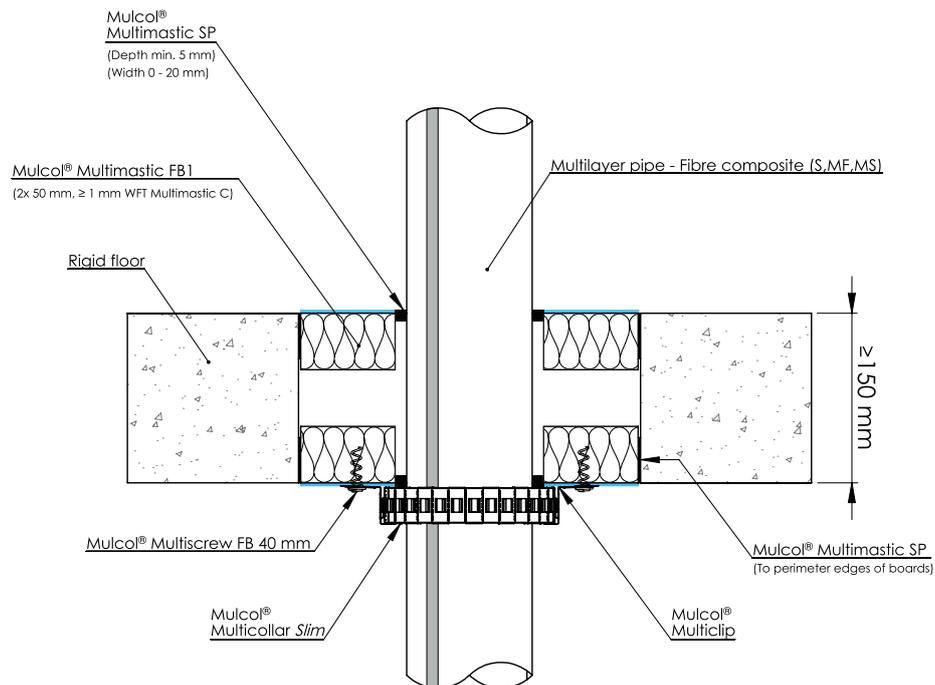
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimensions	Wall thickness			
Geberit Silent dB20	≤ Ø 110	6.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 90 U/U

## B.1.3 Multimastic FB1 - 2x50 mm cavity 50 mm - Combustible pipes

### B.1.3.3 PP-R Multilayer pipes



Position seal:  
top, bottom or anywhere  
in between

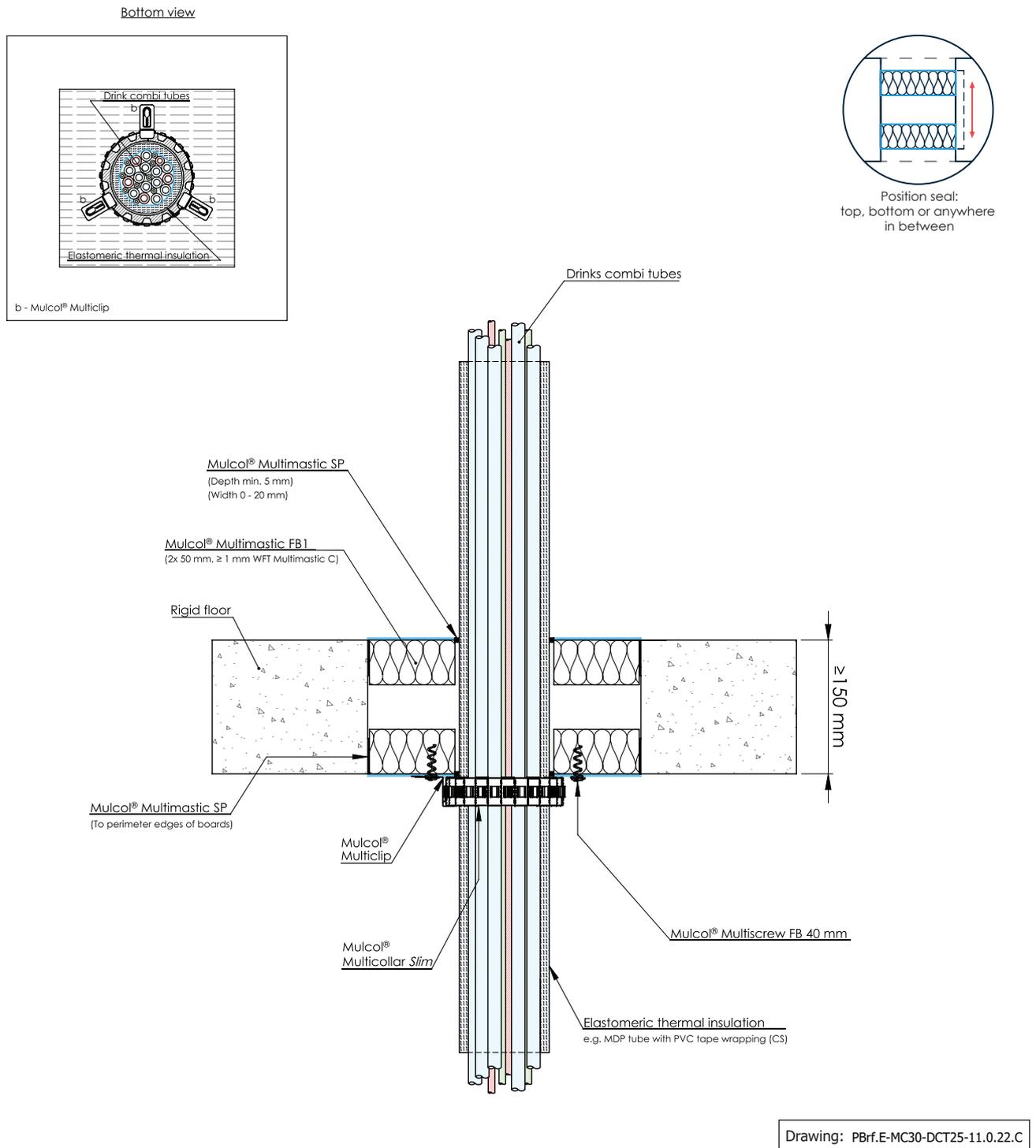


Drawing: PBrf.E-MLF-11.0.10.C

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

## B.1.3 Multimastic FB1 - 2x50 mm cavity 50 mm - Combustible pipes

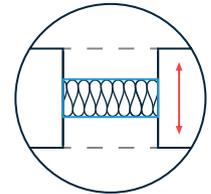
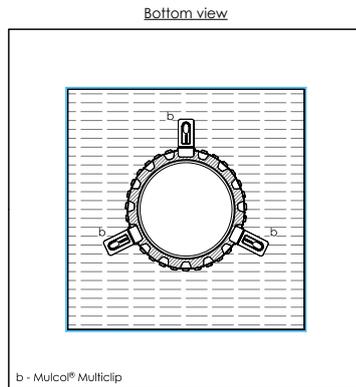
### B.1.3.4 Drinks tubing system



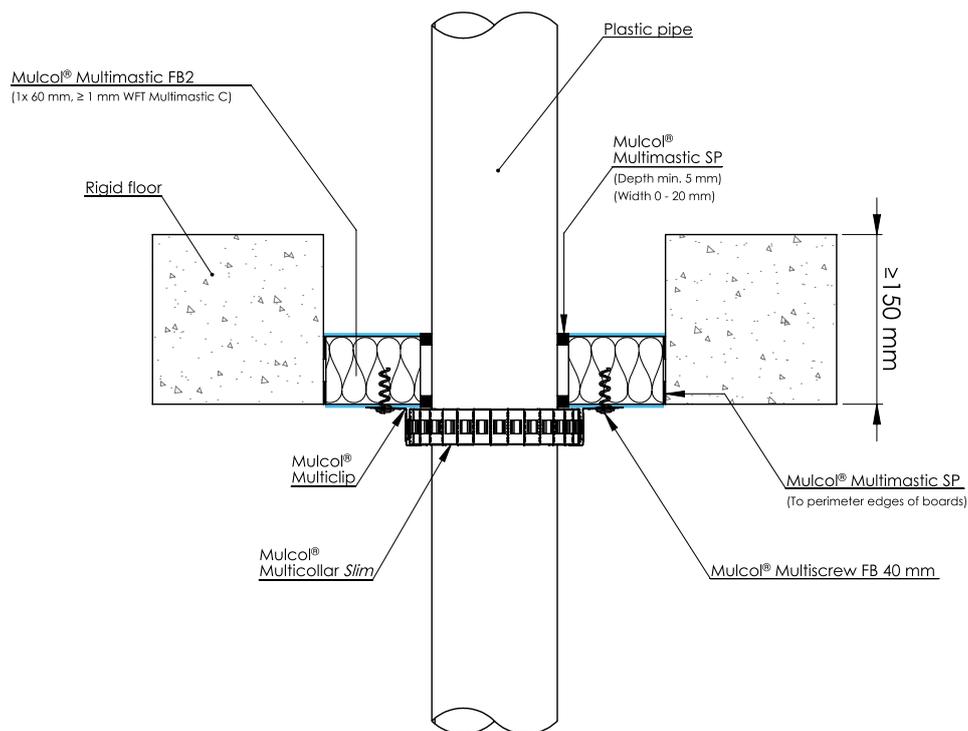
Services	Dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimension	No. of Hoses	Type	Thickness (mm)	Configuration			
Drinks tubing system	≤ Ø 47	≤ 3	Elastomeric foam	8 - 35	CS	Multicollar Slim	Multimastic SP 0-20 x ≥ 5 (wxd)	EI 120 U/C
	≤ Ø 90	≤ 3						
	≤ Ø 100	≤ 25						
	≤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

## B.1.4 Multimastic FB1 - 1x60 mm - Combustible pipes

### B.1.4.1 Plastic pipes



Position seal:  
top, bottom or anywhere  
in between

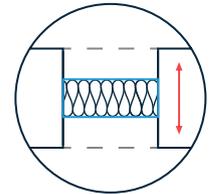
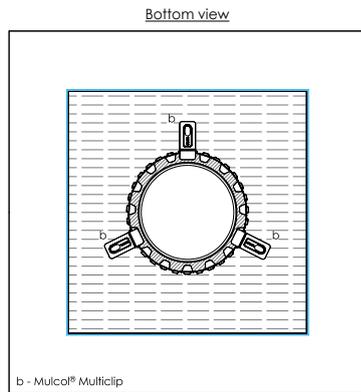


Drawing: PBrf.E-PP-MFB2.1.10

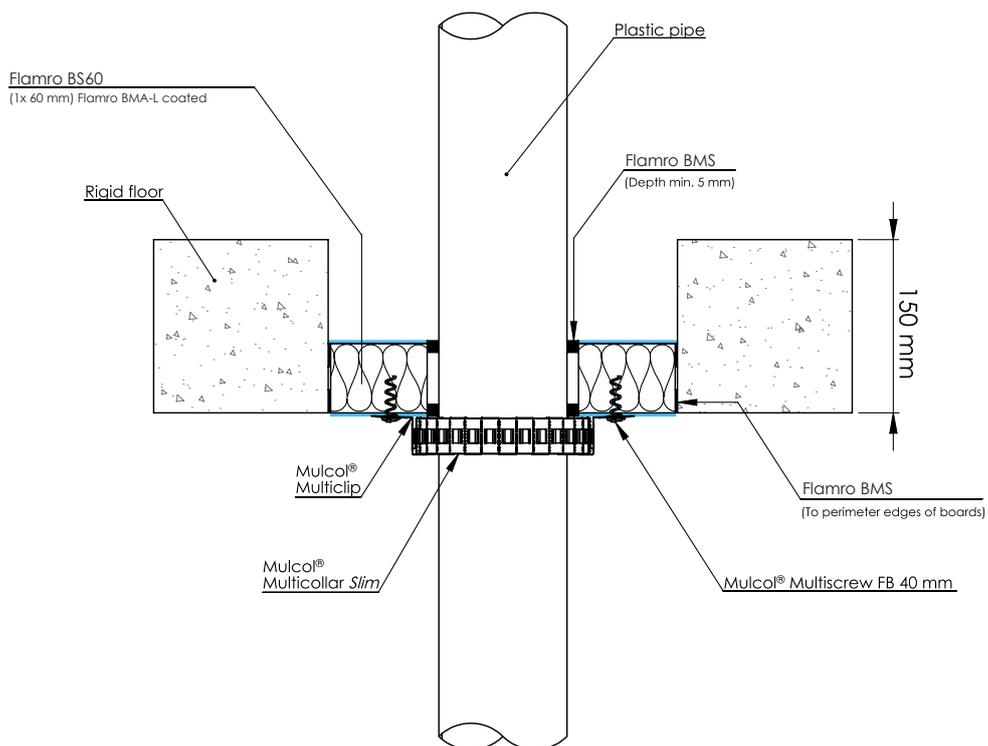
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification			
	Outer dimension	Wall thickness						
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 40$	2.4	Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 5$ (wxd)	EI 60 U/U, E 90 U/U			
		2.4 - 6.6			EI 30 U/U			
PP		1.8			EI 90 U/U, E 180 U/U			
		1.8 - 5.5			EI 30 U/U			
PVC(-U/-C)		2.4			EI 60 U/U, E 90 U/U			
		2.4 - 4.3			EI 30 U/U			
PE(-HD) / PE-X / ABS / SAN+PVC		$\leq \varnothing 110$			2.7	Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 5$ (wxd)	EI 120 U/U
					2.7 - 6.6			EI 30 U/U
PP	$\leq \varnothing 125$	3.9	EI 120 U/C					
		3.9 - 7.4	EI 45 U/C					
3.1 - 7.1								

## B.1.5 SVT Flamro BS60 - 1x60 mm - Combustible pipes

### B.1.5.1 Plastic pipes



Position seal:  
top, bottom or anywhere  
in between

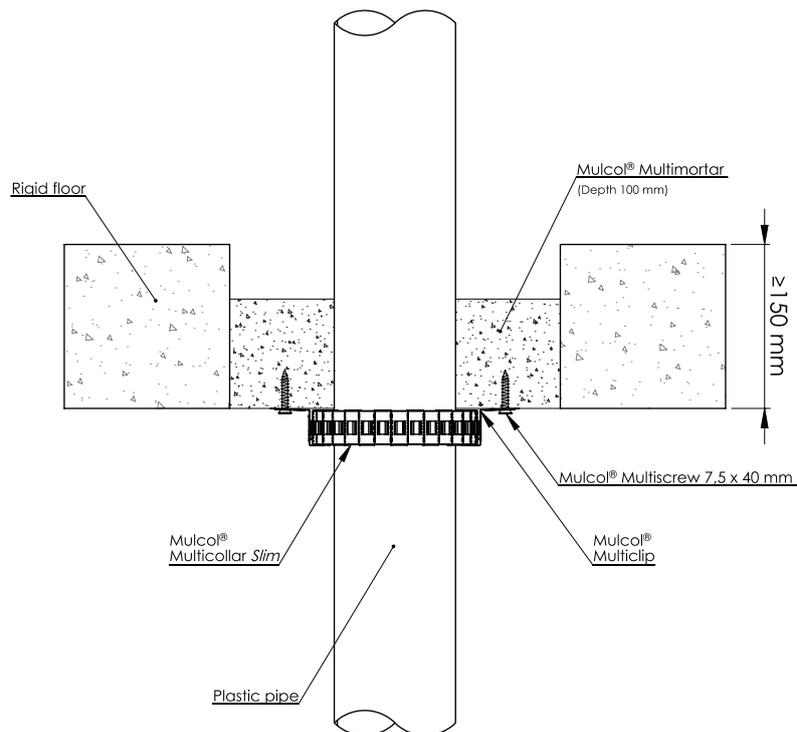
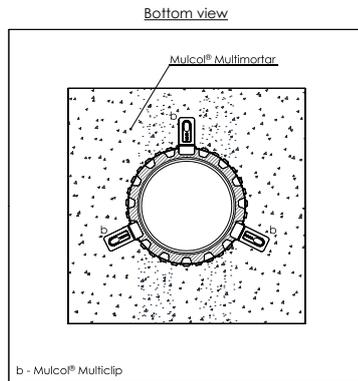


Drawing: PBrf.E-PP-BS2.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	$\leq \varnothing 125$	3.9	Multicollar Slim	Flamro BMS 0-20 x $\geq 5$ (wxd)	EI 120 U/C, E 180 U/C

## B.1.6 Multimortar - $\geq 100$ mm - Combustible pipes

### B.1.6.1 Plastic pipes

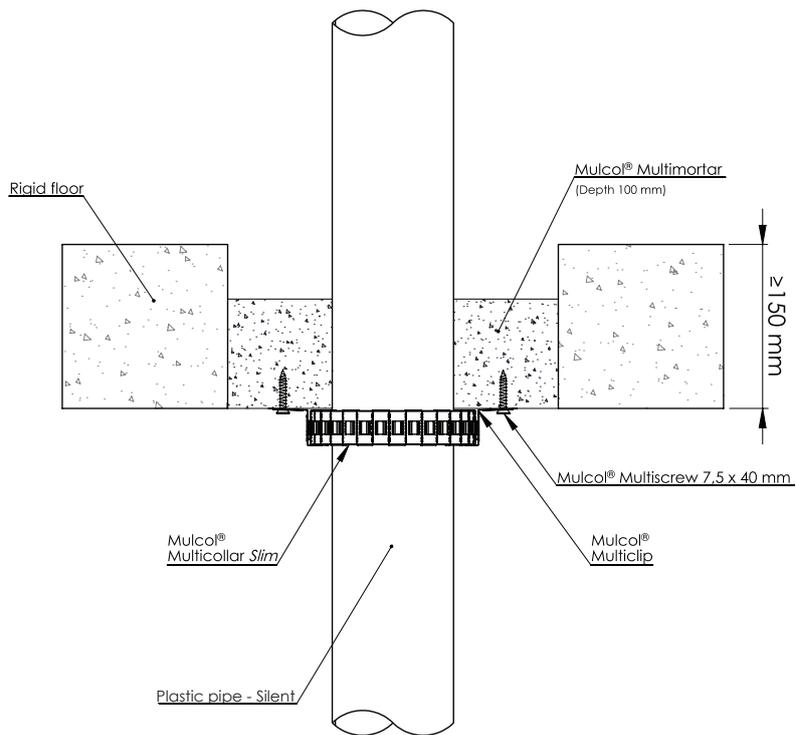
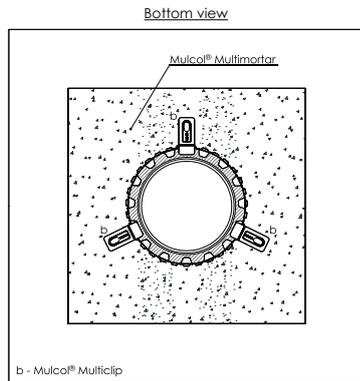


Drawing: RF.E-MC30-PP-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	2.7	Multicollar Slim	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.1.6 Multimortar -  $\geq 100$  mm - Combustible pipes**

**B.1.6.2 Plastic pipes (Silent)**

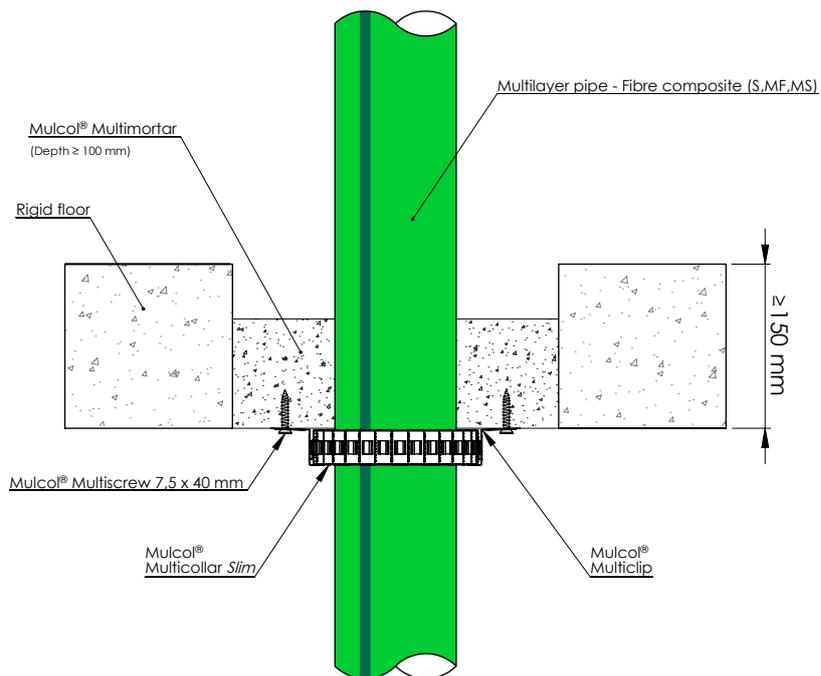
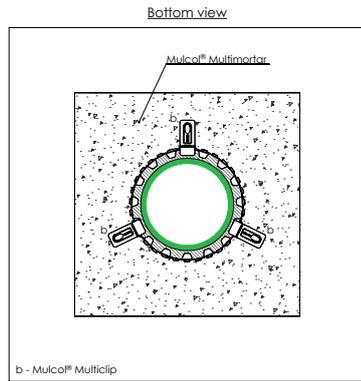


Drawing: RF,E-MC30-PPS-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	$\leq \text{Ø } 110$	6.0	Multicollor Slim	EI 90 U/U

**B.1.6 Multimortar -  $\geq 100$  mm - Combustible pipes**

**B.1.6.3 PP-R Multilayer pipes**

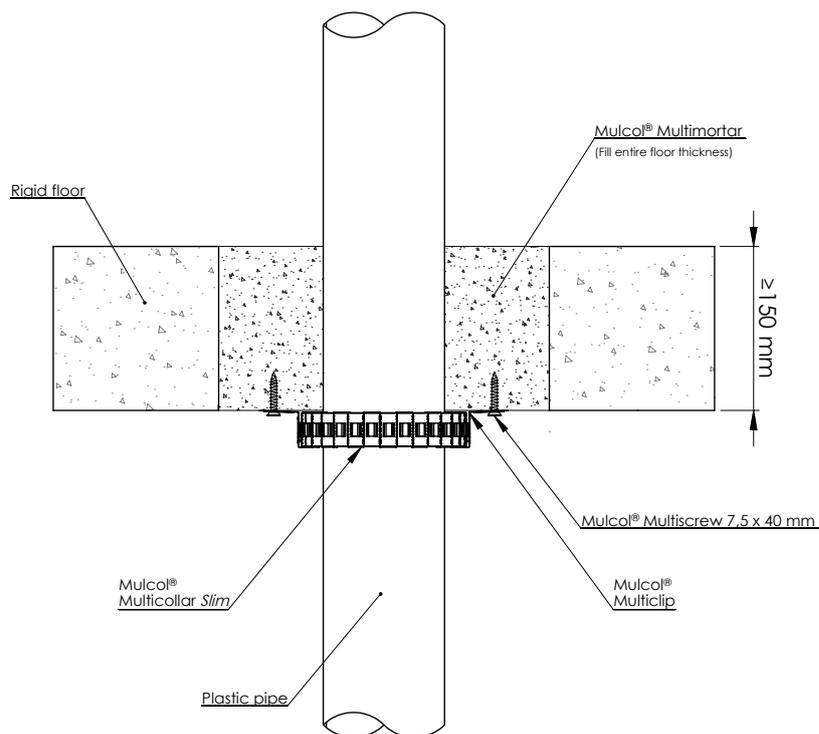
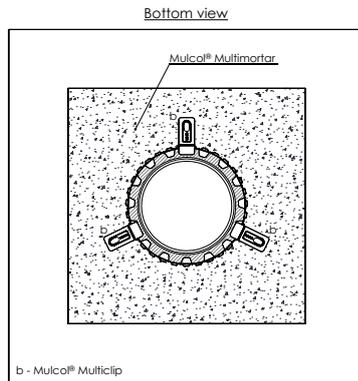


Drawing: RF,E-MC30-MLF-MM1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green	$\leq \text{Ø } 50$	6.9	Multicollar Slim	EI 90 U/C
Aquatherm Blue	$\leq \text{Ø } 110$	10.0		EI 60 U/C

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.1 Plastic pipes**



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

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 40$	2.4 - 6.6	Multicollar Slim	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 120 U/U
		6.6 - 14.6			EI 120 U/C
	$\leq \text{Ø } 110$	2.7 - 6.6			EI 90 U/U
		6.6			EI 120 U/U
		6.6 - 14.6			EI 120 U/C
	$\leq \text{Ø } 160$	4.0			EI 60 U/U
		4.0 - 14.6			EI 60 U/C
		14.6			EI 120 U/C

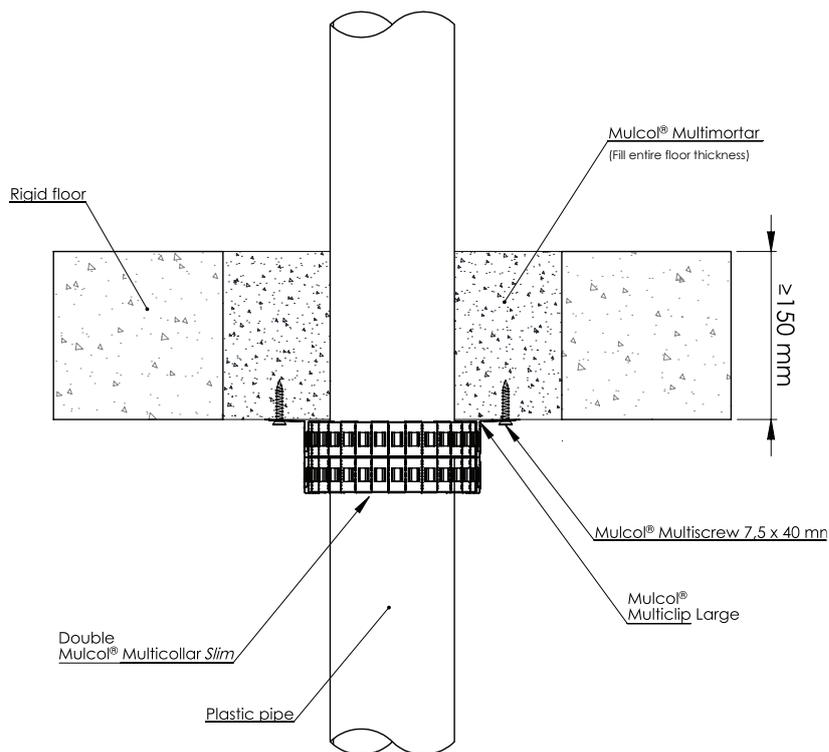
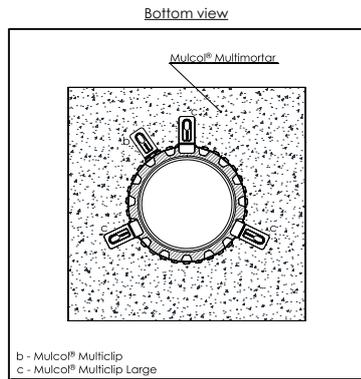
**B.1.7 Multimortar - ≥ 150 mm - Combustible pipes**

**B.1.7.1 Plastic pipes**

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PP	≤ Ø 40	1.8 - 6.3	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/U
		6.3 - 14.6			EI 120 U/C
	≤ Ø 110	2.7 - 6.3			EI 90 U/U
		6.3 - 14.6			EI 90 U/C
		14.6			EI 120 U/C
	≤ Ø 125	3.1 - 4.0			EI 90 U/U
		4.0 - 4.8			EI 60 U/U
		4.8 - 14.6			EI 90 U/C
		14.6			EI 120 U/C
	≤ Ø 160	4.0			EI 90 U/U
		4.0 - 14.6			EI 90 U/C
		14.6			EI 120 U/C
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PVC(-U/-C)	≤ Ø 40	1.9 - 8.2	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/U
		8.2 - 14.6			EI 120 U/C
	≤ Ø 110	2.2 - 8.2			EI 120 U/U
		8.2 - 12.3			EI 90 U/U
		12.3 - 14.6			EI 120 U/C
	≤ Ø 125	2.5 - 4.0			EI 60 U/U
		4.0 - 14.6			EI 60 U/C
	≤ Ø 160	1.8 - 4.0			EI 30 U/U
		4.0			EI 60 U/U
		4.0 - 14.6			EI 60 U/C
		14.6			EI 120 U/C

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.2 Plastic pipes - double Multicollar *Slim***

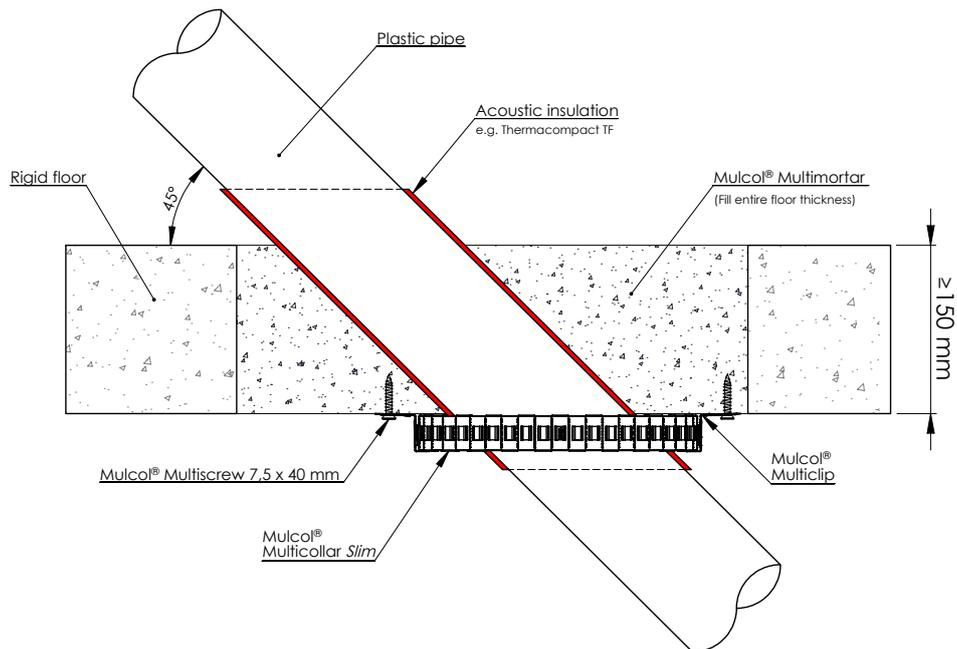
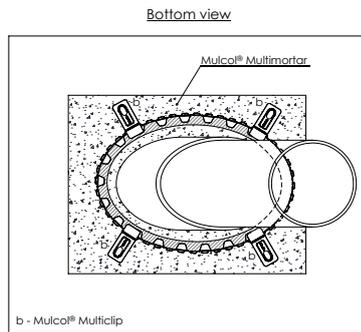


Drawing: RF.E-MC60-PP-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 160$	4.0	Multicollar <i>Slim</i> double	EI 90 U/U
		4.0 - 14.6		EI 90 U/C
PVC(-U/-C)	$\leq \varnothing 250$	7.7		EI 90 U/U
	$\leq \varnothing 160$	3.2 - 11.8		EI 120 U/C
	$\leq \varnothing 315$	7.7		

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.3 Plastic pipes perpendicular to 45°**

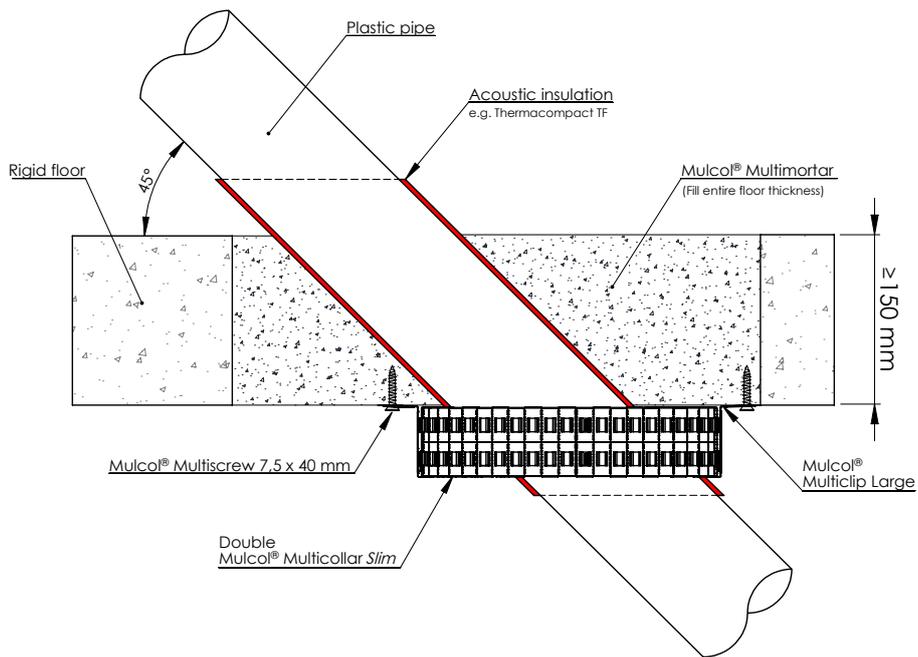
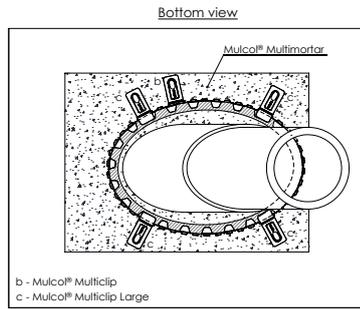


Drawing: RF.E-MC30o-PP-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 110$	3.4	Multicollar Slim	EI 60 U/U

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.4 Plastic pipes perpendicular to  $45^\circ$  - double Multicollar *Slim***

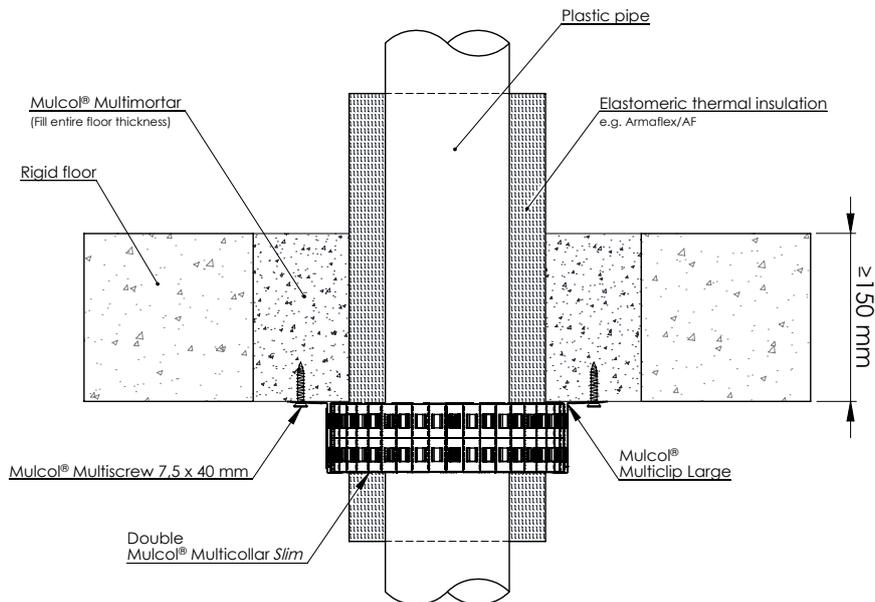
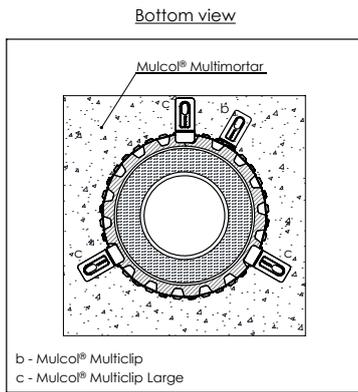


Drawing: RF.E-MC60o-PP-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	3.4 - 10.0	Multicollar <i>Slim</i> double	EI 60 U/U
		10.0		EI 90 U/U
PP		3.4		EI 120 U/U
		3.4 - 10.0		EI 90 U/U
PVC(-U/-C)		10.0		EI 90 U/U

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.5 Plastic pipes - Elastomer LS-LI 450 / CS-CI**



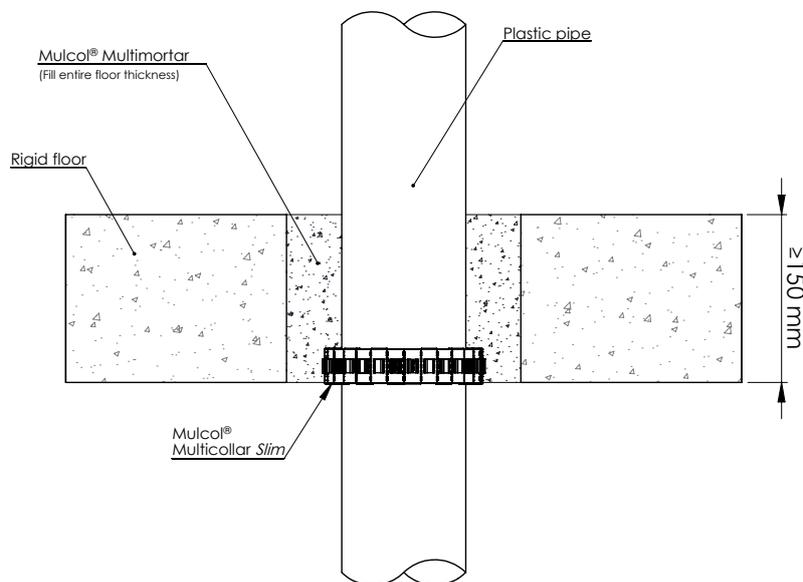
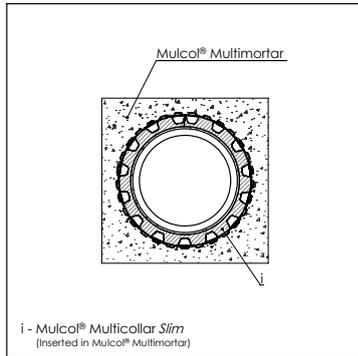
Drawing: RF.E-MC60-PP-MM1.3.22

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
PVC(-U/-C)	$\leq \text{Ø } 110$	3.2	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LS 450 / CS LI 450 / CI	Multicollar Slim double	EI 120 U/U

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.6 Plastic pipes - Multicollar *Slim* recessed into soffit**

Bottom view

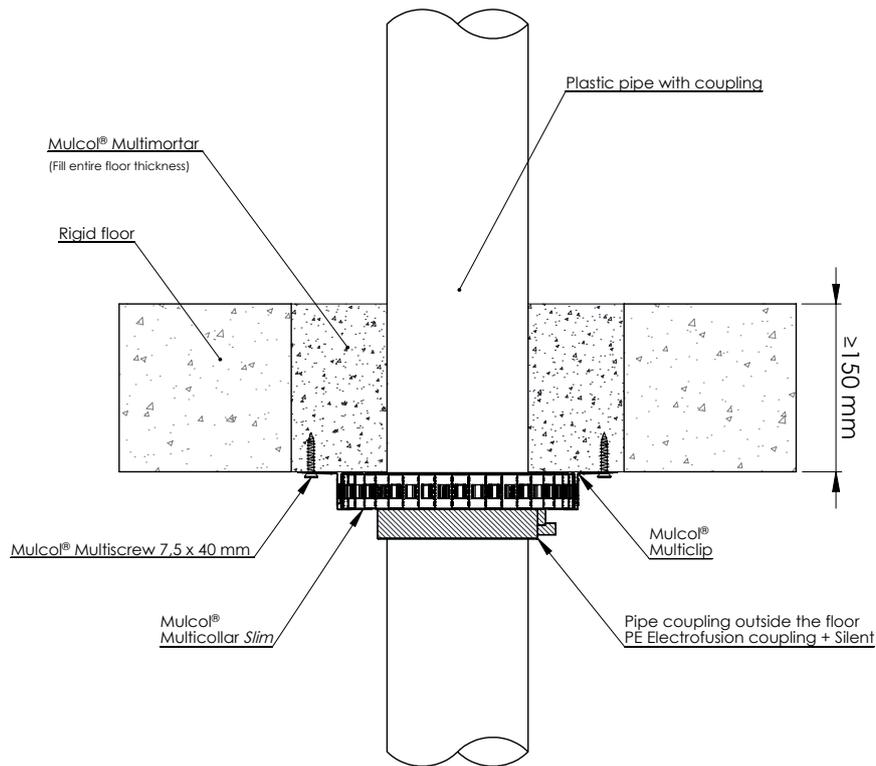
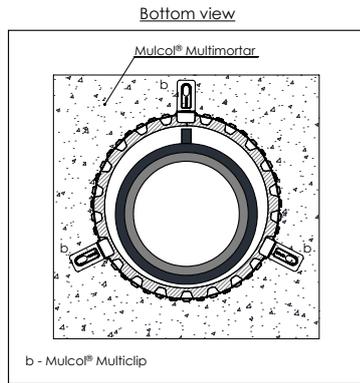


Drawing: RF.E-MC30i-PP-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PP	$\leq \text{Ø } 110$	6.3	Multicollar <i>Slim</i>	EI 30 U/U

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.7 Plastic pipes with socket**

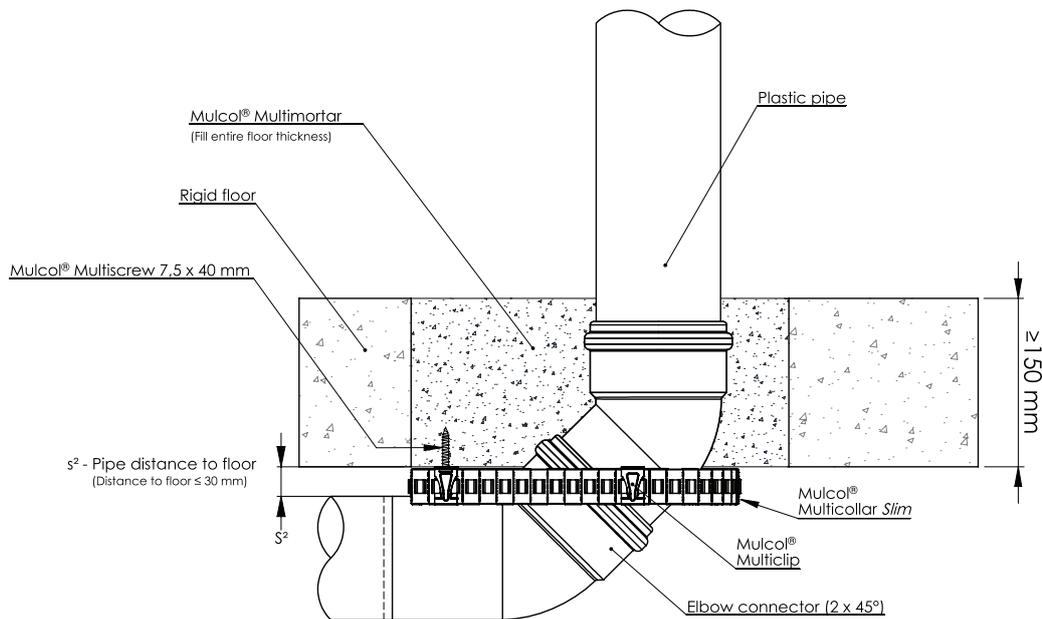
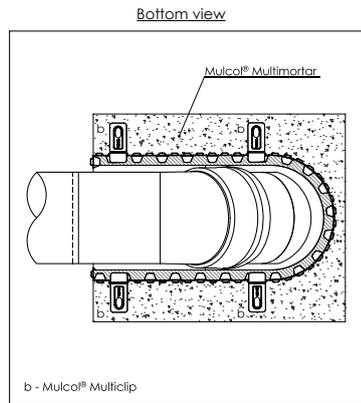


Drawing: RF.E-MC30-PP-MM1.3.60

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 110$	4.3	Multicollar <i>Slim</i>	EI 90 U/C
	$\leq \text{Ø } 125$	7.4		EI 60 U/C

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.8 Plastic pipes with elbow and U-shape Multicollar *Slim***

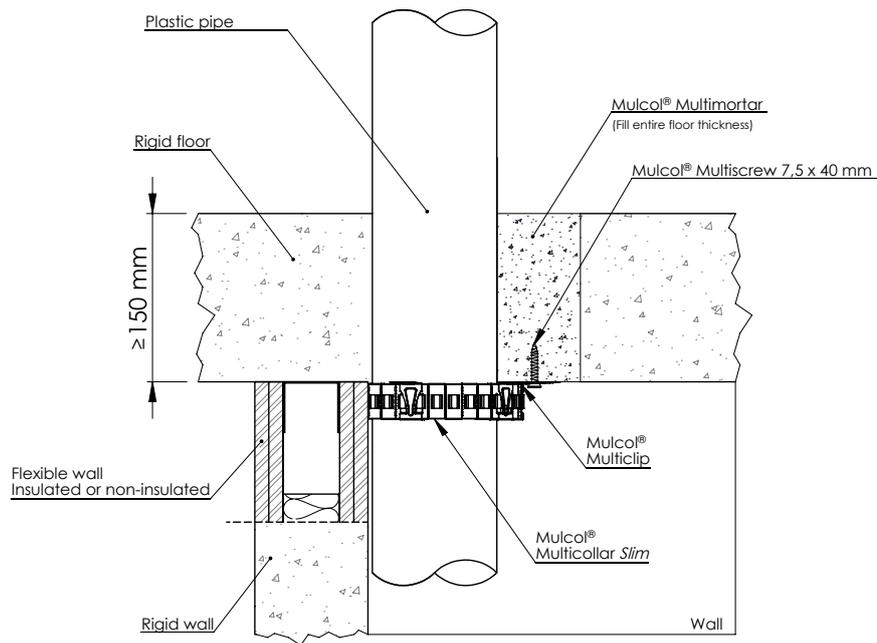
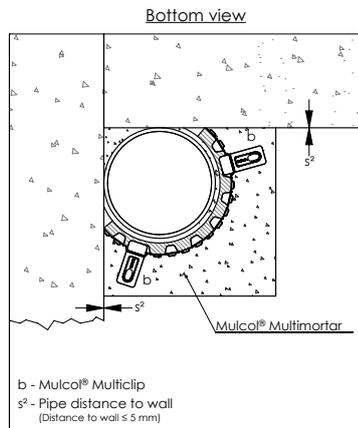


Drawing: RF.E-MC30u-PP-MM1.3.80

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PVC(-U/-C)	$\leq \text{Ø } 50$	2.7 - 3.0	Multicollar <i>Slim</i>	EI 90 U/U
		2.7		EI 120 U/U
PE-HD / PE-X / ABS / SAN+PVC	$\leq \text{Ø } 110$	2.7 - 6.6	Multicollar <i>Slim</i> double	EI 60 U/U, E 120 U/U

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.9 Plastic pipes in corner**

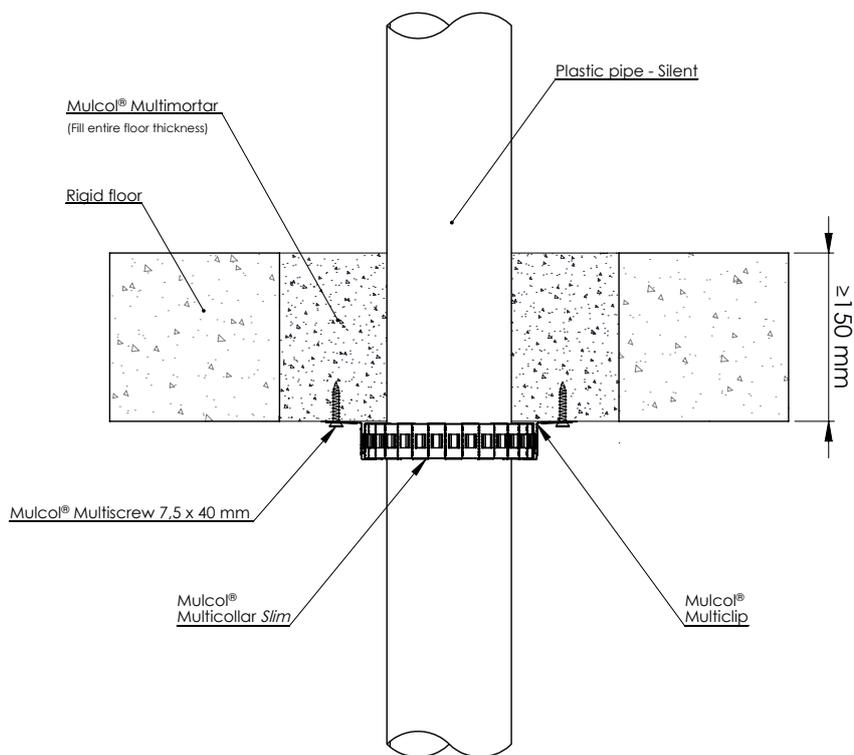
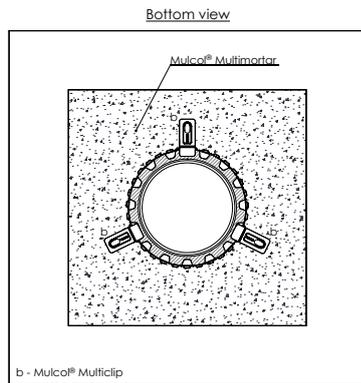


Drawing: RF.E-MC30c-PP-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	6.6	Multicollar Slim	EI 120 U/U
PP		6.3		EI 90 U/U
PVC(-U/-C)	$\leq \varnothing 125$	7.4		EI 60 U/C

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.10 Plastic pipes (Silent)**

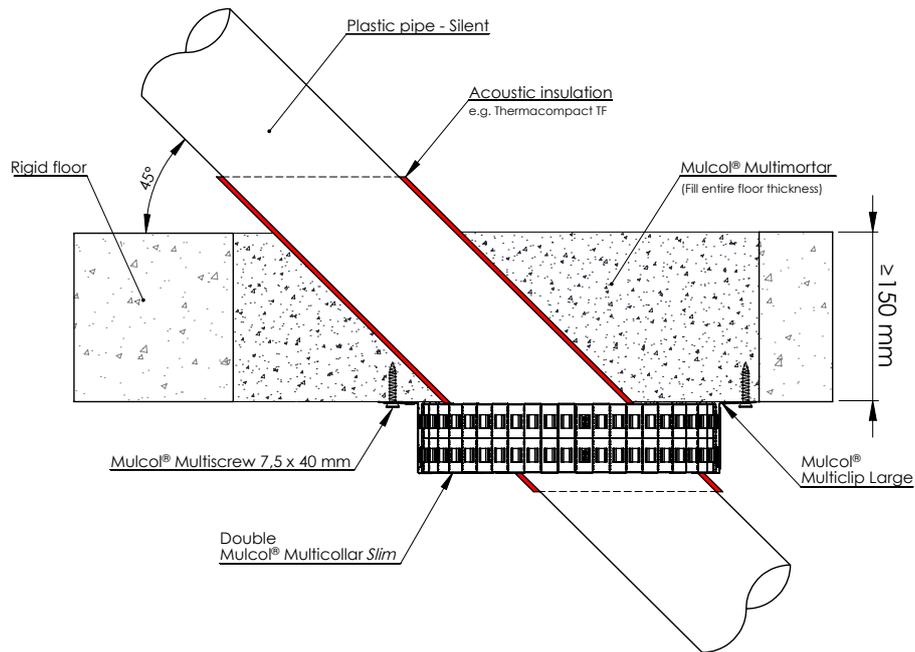
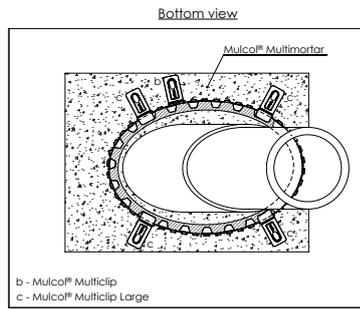


Drawing: RF.E-MC30-PPS-MM1.3.10

Services	Pipe dimensions (mm)		Product		Classification
	Outer dimension	Wall thickness			
Geberit Silent dB 20	$\leq \text{Ø } 56$	3.2 - 7.0	Multicollar Slim	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 120 U/U
	$\leq \text{Ø } 110$	6.0 - 7.0			
	$\leq \text{Ø } 160$	7.0			
Raupiano Plus	$\leq \text{Ø } 50$	1.8 - 4.0			
	$\leq \text{Ø } 110$	2.7 - 4.0			
	$\leq \text{Ø } 160$	4.0			
Wavin SiTech+	$\leq \text{Ø } 110$	3.6			

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.11 Plastic pipes (Silent) perpendicular to 45° - double Multicollar *Slim***

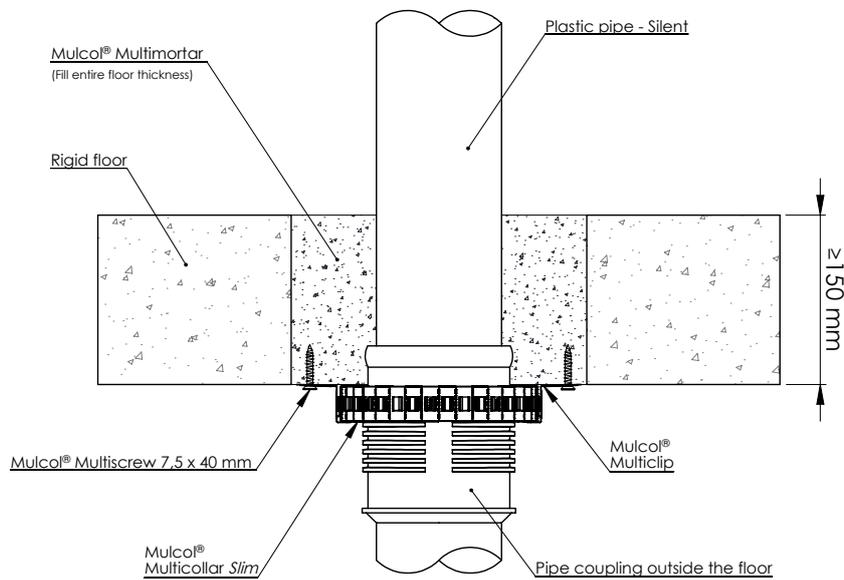
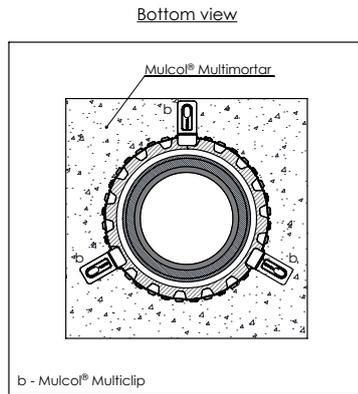


Drawing: RF-E-MC60o-PPS-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	$\leq \text{Ø } 110$	6.0	Multicollar <i>Slim</i> double	EI 120 U/U

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.12 Plastic pipes (Silent) with socket**

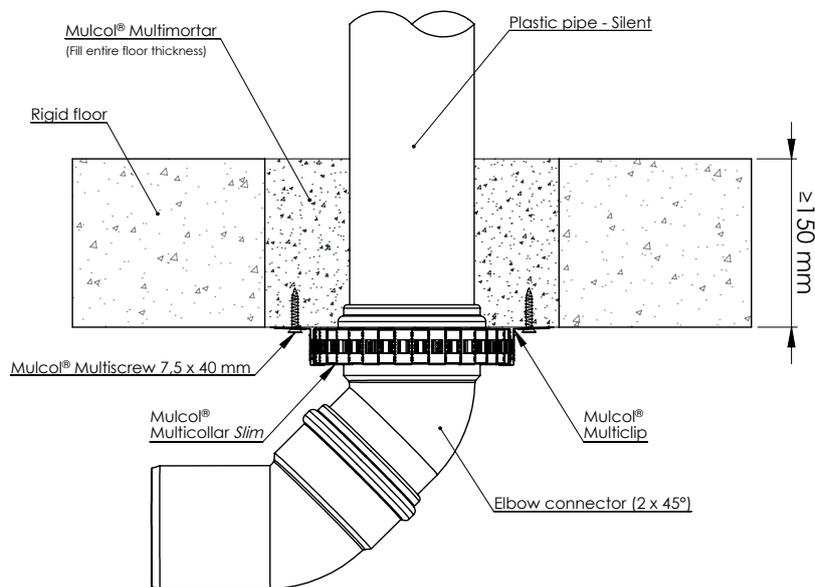
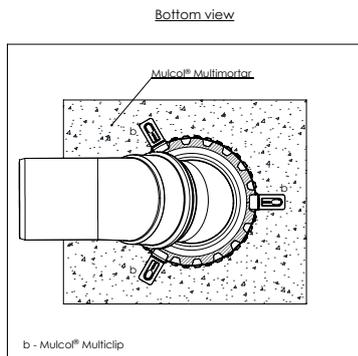


Drawing: RF.E-MC30-PPS-MM1.3.60

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	$\leq \text{Ø } 110$	6.0	Multicollar Slim	EI 120 U/C
Raupiano Plus		2.7		EI 120 U/U
Wavin SiTech+		3.6		

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.13 Plastic pipes (Silent) with elbow**

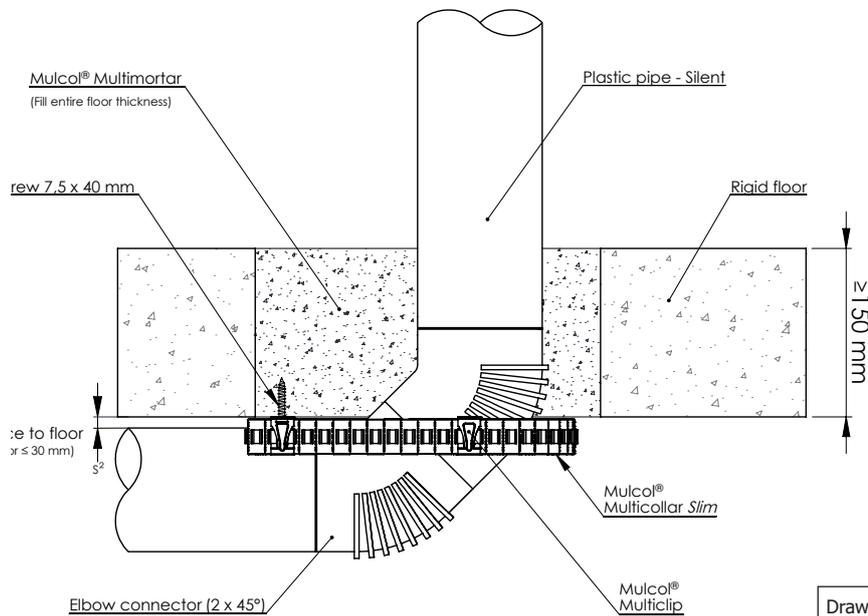
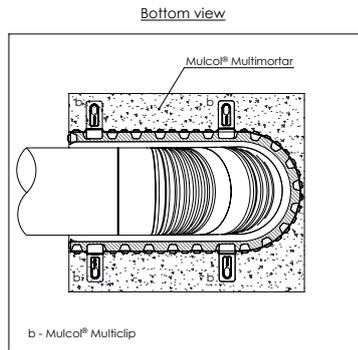


Drawing: RF,E-MC30-PPS-MM1.3.80

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	$\leq \text{Ø } 110$	6.0	Multicollar Slim	EI 90 U/U
Wavin AS		5.3		EI 120 U/U

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.14 Plastic pipes (Silent) with elbow and U-shape Multicollar *Slim***

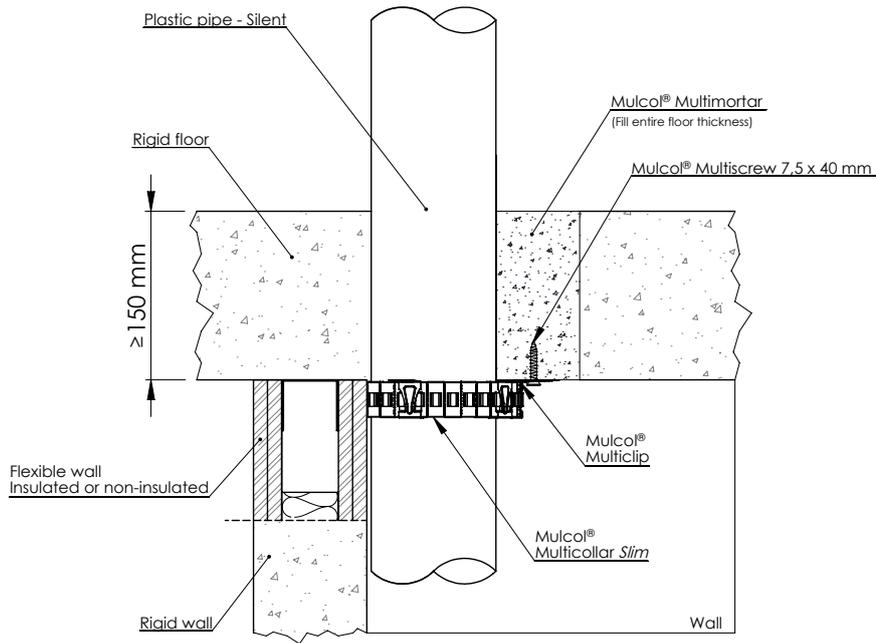
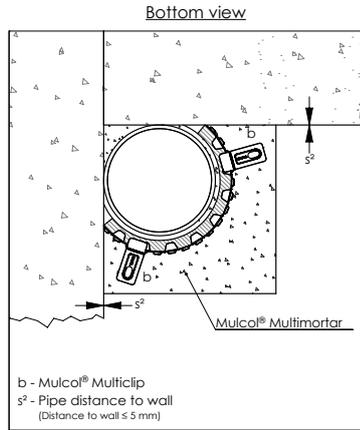


Drawing: RF.E-MC30u-PPS-MM1.3.80

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

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.15 Plastic pipes (Silent) in corner**

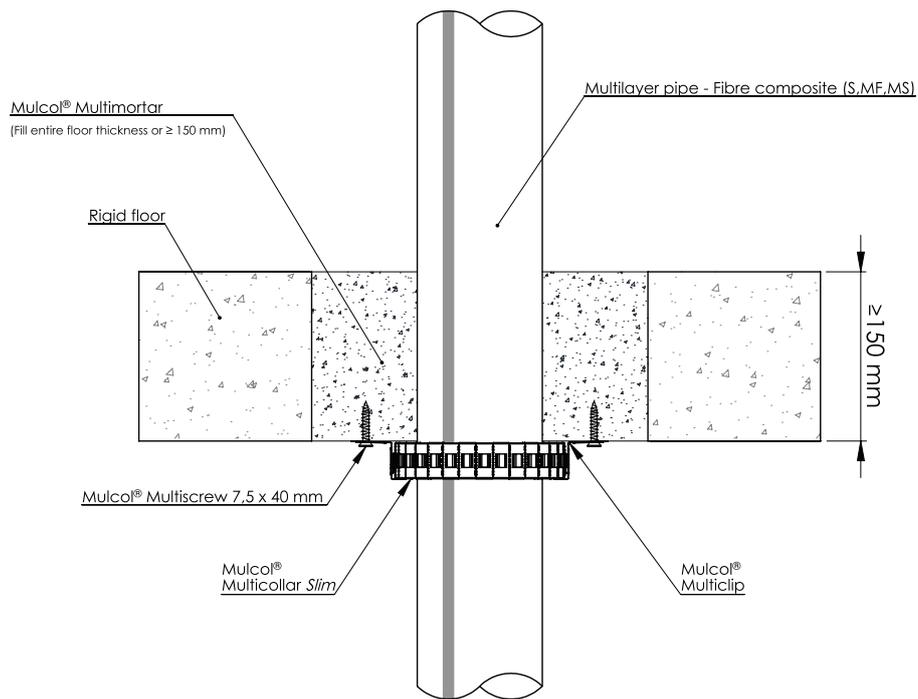
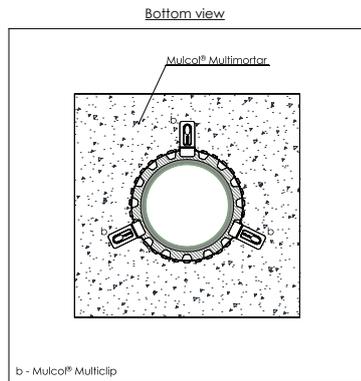


Drawing: RF,E-MC30c-PPS-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	$\leq \text{Ø } 110$	6.0	Multicollar <i>Slim</i>	EI 120 U/C

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.16 PP-R Multilayer pipes**

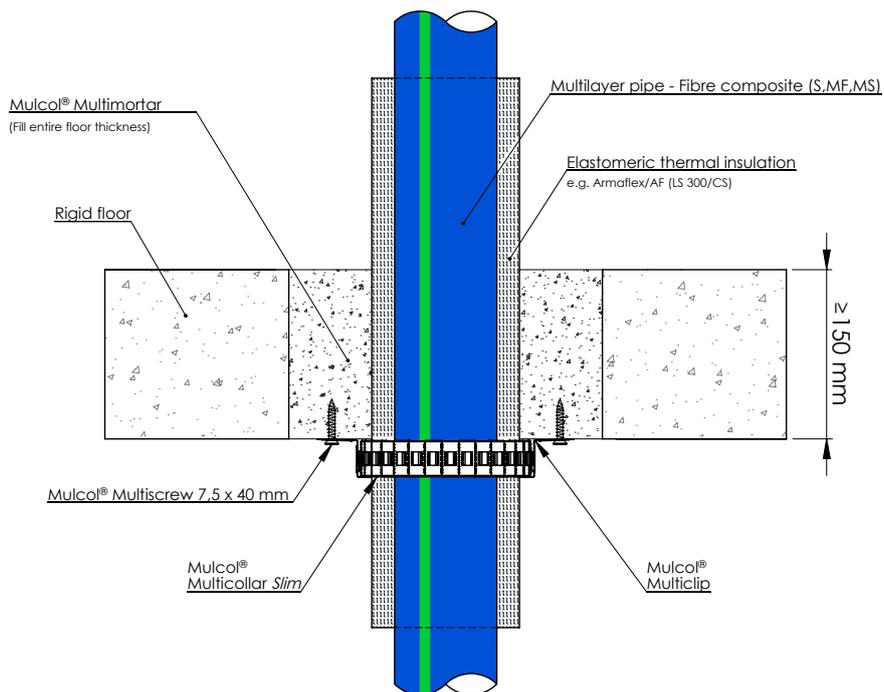
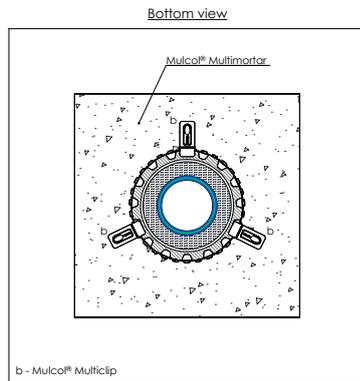


Drawing: RF.E-MC30-MLF-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Blue-MF	$\leq \text{Ø } 20$	2.8	Multicollar Slim	EI 120 U/C
	$\leq \text{Ø } 110$	10.0 - 14.6		EI 90 U/C
	$\leq \text{Ø } 160$	14.6		EI 120 U/C
Aquatherm Green-MF	$\leq \text{Ø } 50$	6.9	Multicollar Slim double	EI 120 U/C
Aquatherm Red-MF	$\leq \text{Ø } 110$	15.1		
Aquatherm Blue-MF	$\leq \text{Ø } 250$	22.7		

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.17 PP-R Multilayer pipes - Elastomer LS-LI 300 / CS-CI**

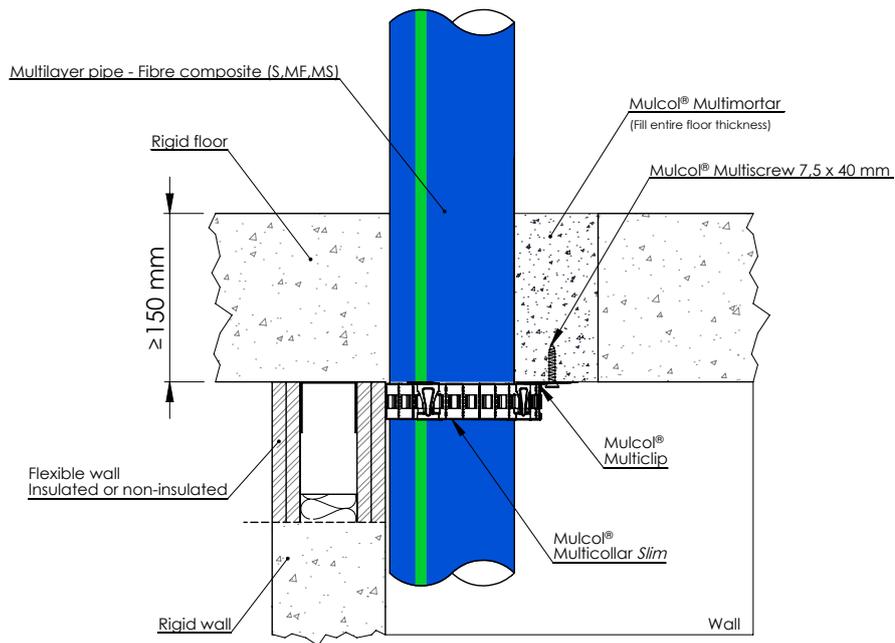
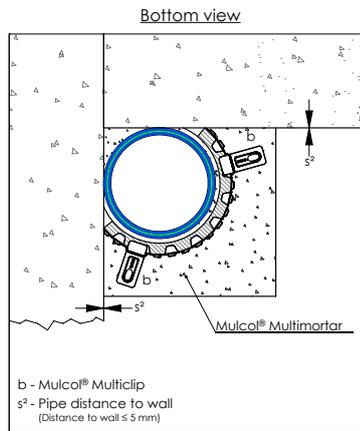


Drawing: RF.E-MC30-MLF-MM1.3.22

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
Aquatherm Green-MF	$\leq \text{Ø } 110$	18.3	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LS 300 / CS LI 300 / CI	Multicollar Slim	EI 120 U/C
		15.2					
		15.1					
Aquatherm Blue-MF	$\leq \text{Ø } 20$	2.8					
	$\leq \text{Ø } 110$	10.0					

**B.1.7 Multimortar -  $\geq 150$  mm - Combustible pipes**

**B.1.7.18 PP-R Multilayer pipes in corner**

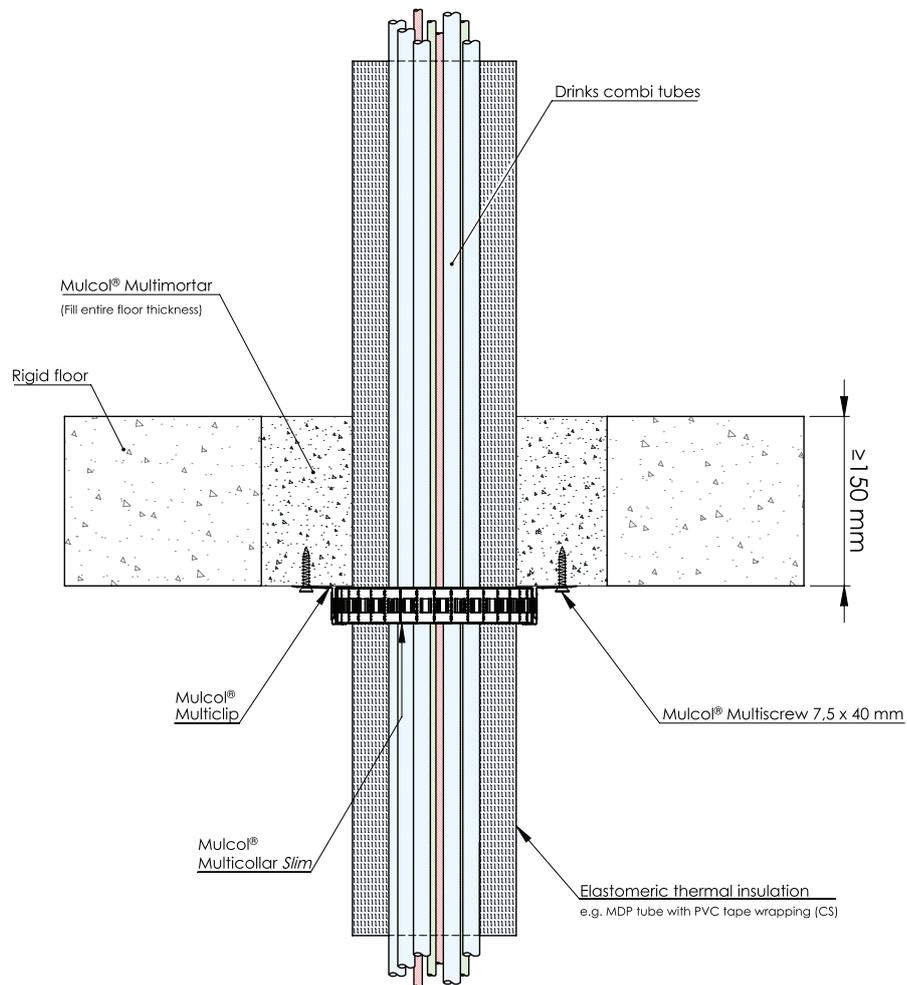
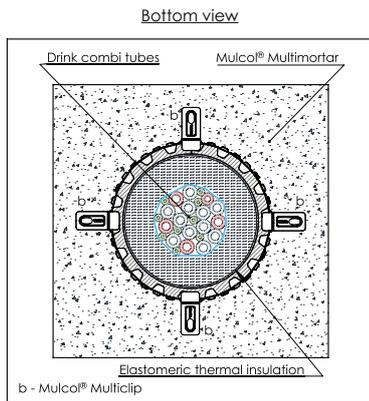


Drawing: RF.E-MC30c-MLF-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Blue-MF	$\leq \text{Ø } 110$	10.0	Multicollar <i>Slim</i>	EI 90 U/C

## B.1.7 Multimortar - $\geq 150$ mm - Combustible pipes

### B.1.7.19 Drinks tubing system

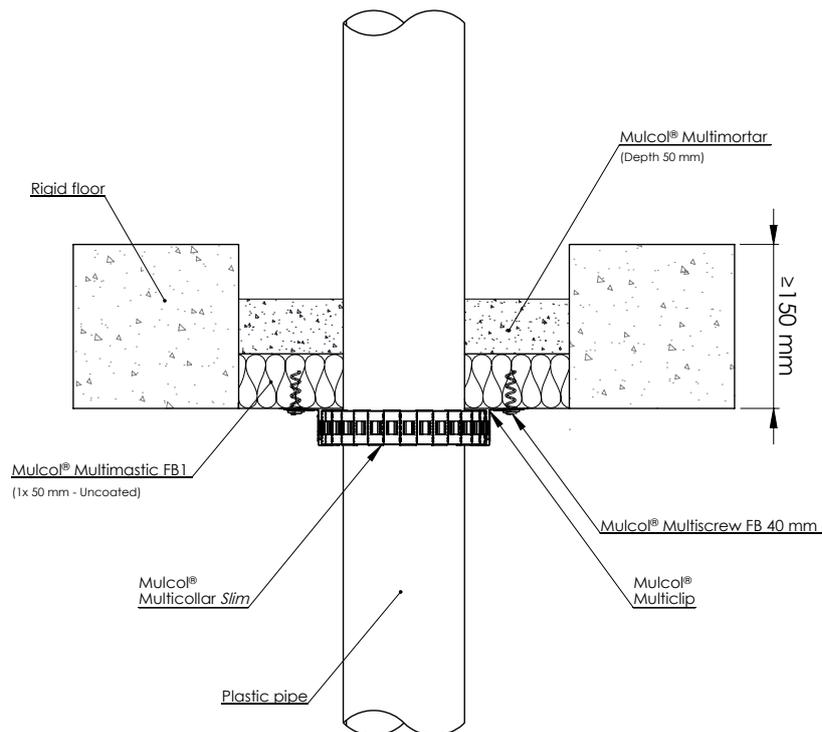
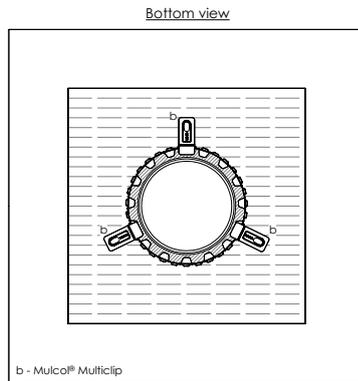


Drawing: RF.E-MC30-DCP52-MM1.3.10

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

## B.1.8 Multimortar + Multimastic FB - $\geq 100$ mm - Combustible pipes

### B.1.8.1 Plastic pipes

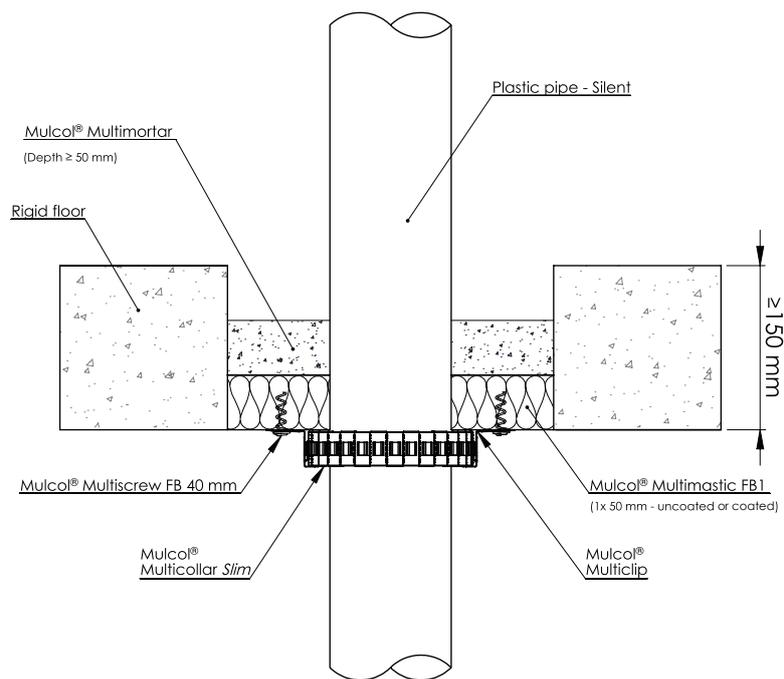
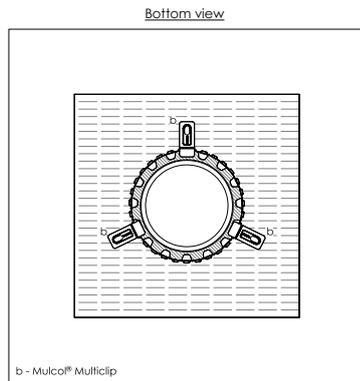


Drawing: RF.E-MC30-PP-MM2.5.10

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

## B.1.8 Multimortar + Multimastic FB - $\geq 100$ mm - Combustible pipes

### B.1.8.2 Plastic pipes (Silent)

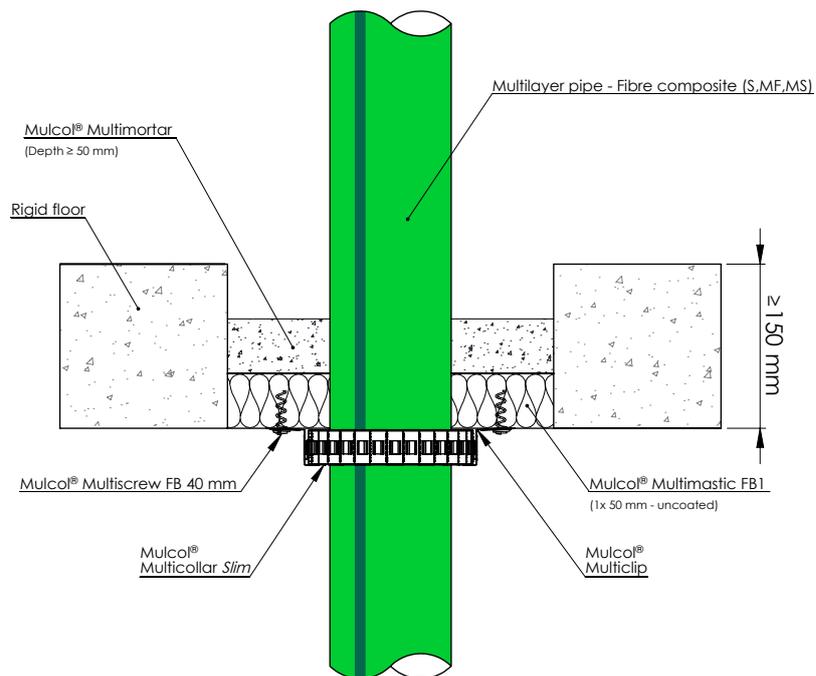
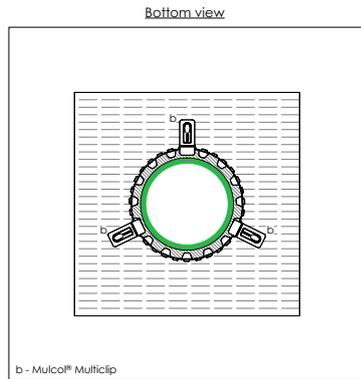


Drawing: RF.E-PPS-MM2.5.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Geberit Silent dB 20	$\leq \text{Ø } 110$	6.0	Multicollor Slim	EI 60 U/U

**B.1.8 Multimortar + Multimastic FB -  $\geq 100$  mm - Combustible pipes**

**B.1.8.3 PP-R Multilayer pipes**

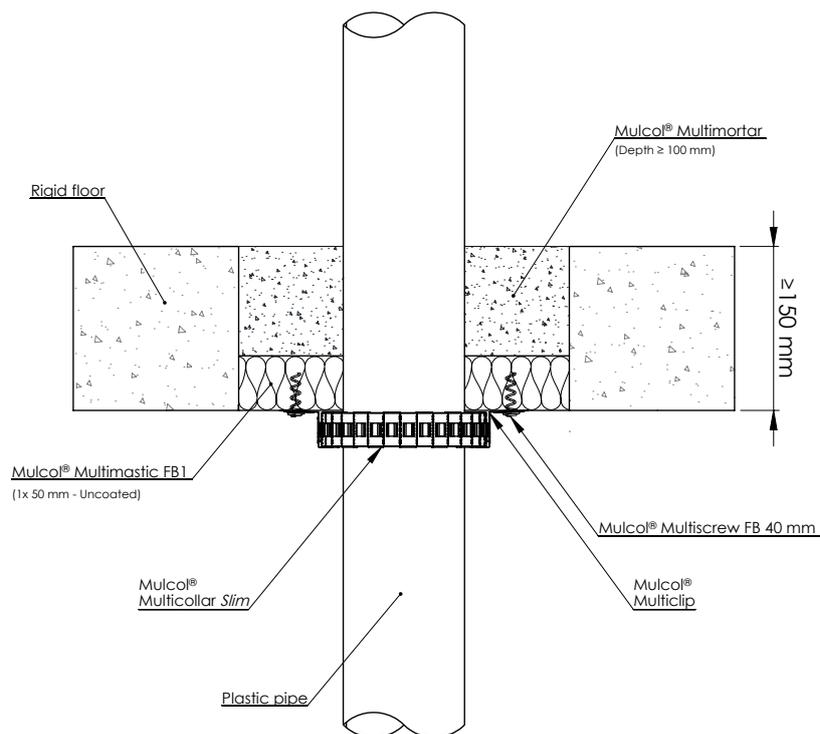
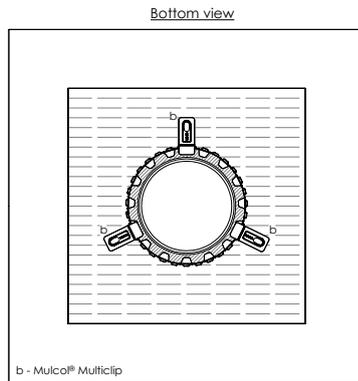


Drawing: RF.E-MC30-MLF-MM2.5.10

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

## B.1.9 Multimortar + Multimastic FB - $\geq 150$ mm - Combustible pipes

### B.1.9.1 Plastic pipes

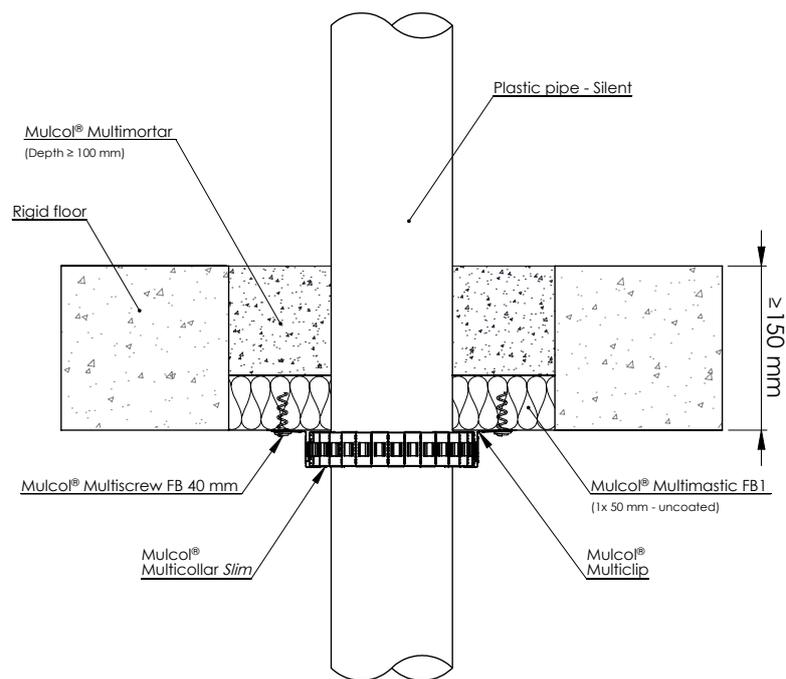
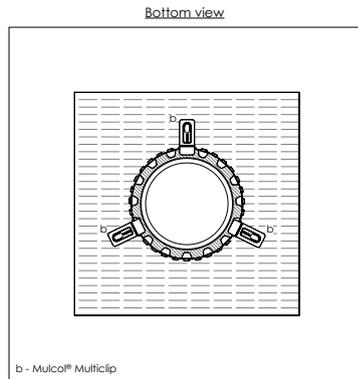


Drawing: RF.E-MC30-PP-MM2.7.10

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

## B.1.9 Multimortar + Multimastic FB - $\geq 150$ mm - Combustible pipes

### B.1.9.2 Plastic pipes (Silent)

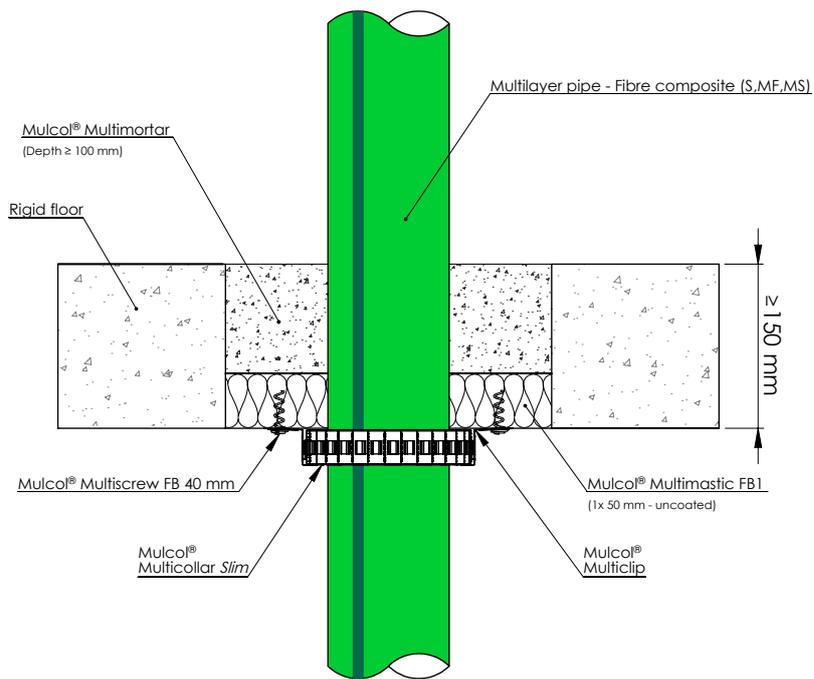
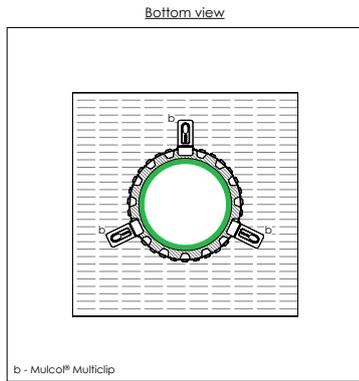


Drawing: RF.E-MC30-PPS-MM2.7.10

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

**B.1.9 Multimortar + Multimastic FB -  $\geq 150$  mm - Combustible pipes**

**B.1.9.3 PP-R Multilayer pipes**

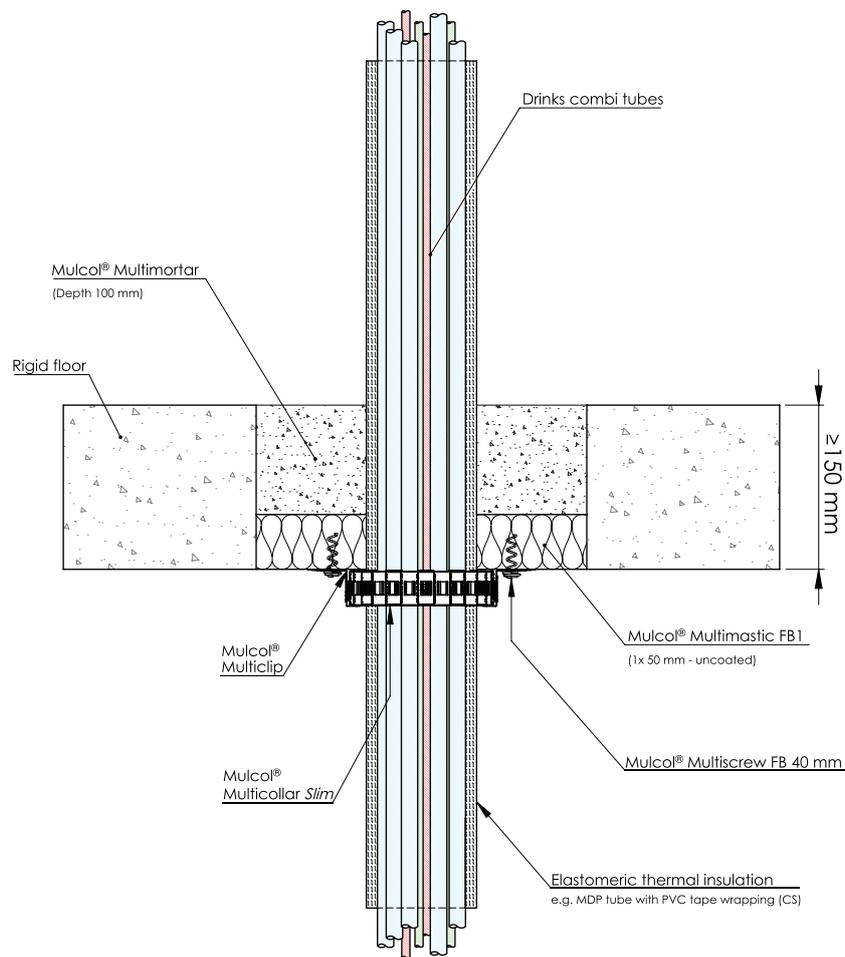
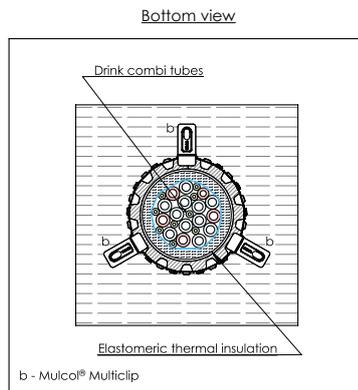


Drawing: RF.E-MC30-MLF-MM2.7.10

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

## B.1.9 Multimortar + Multimastic FB - $\geq 150$ mm - Combustible pipes

### B.1.9.4 Drinks tubing system

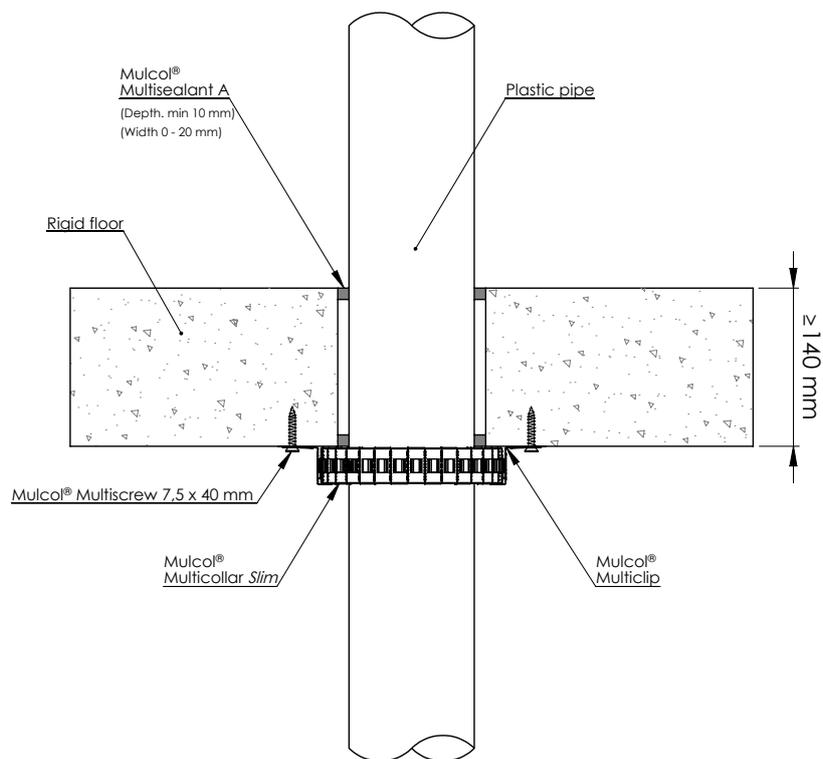
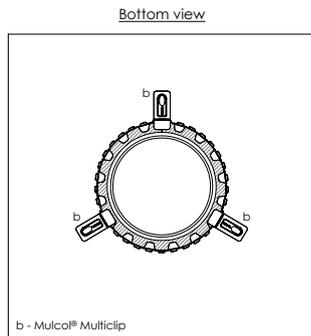


Drawing: RF.E-DCP25-MM2.2.10

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

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.1 Plastic pipes**



Drawing: RF.E-MC30-PP-11.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE-HD / PE-X / ABS / SAN+PVC	≤ Ø 40	2.4 - 6.6	Multicollor Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/U
	≤ Ø 110	2.7 - 6.6			EI 90 U/U
		6.6			EI 120 U/U
		6.6 - 14.6			EI 120 U/C
	≤ Ø 160	4.0			EI 60 U/U
		4.0 - 14.6			EI 60 U/C
	14.6	EI 120 U/C			

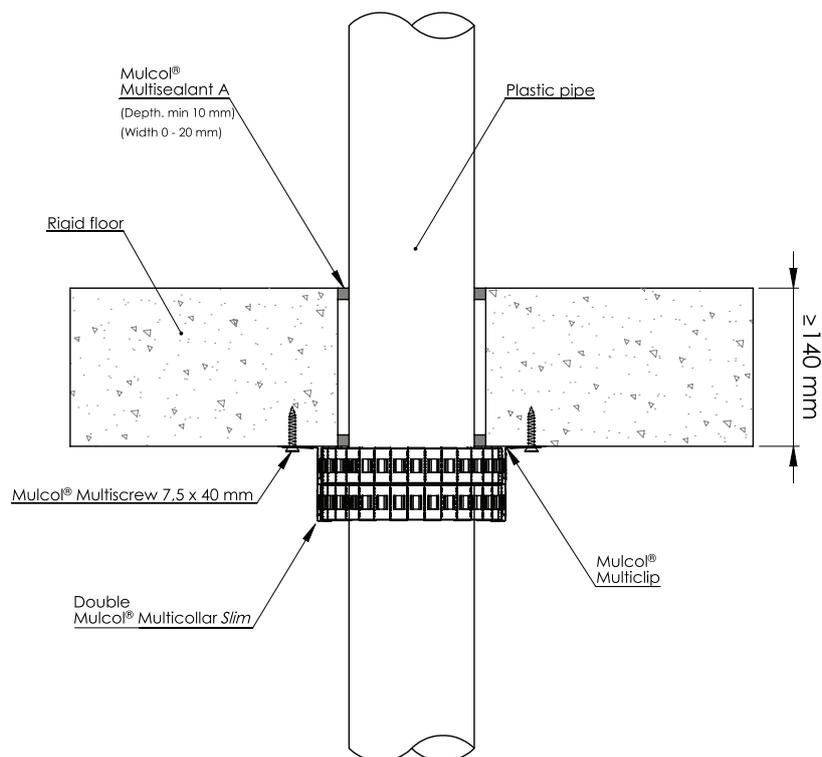
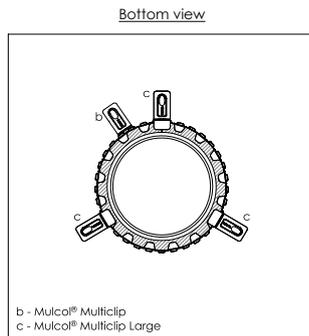
**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.1 Plastic pipes**

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PP	≤ Ø 40	1.8 - 6.3	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/U
		≤ Ø 110			2.7 - 6.3
	6.3 - 14.6				EI 90 U/C
	14.6				EI 120 U/C
	≤ Ø 125				3.1 - 4.0
		4.0 - 4.8			EI 60 U/U
		4.0 - 14.6			EI 90 U/C
		14.6			EI 120 U/C
	≤ Ø 160	4.0			EI 90 U/U
		4.0 - 14.6			EI 90 U/C
		14.6			EI 120 U/C
Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PVC(-U/-C)	≤ Ø 40	1.9 - 8.2	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/U
		≤ Ø 110			2.2 - 8.2
	8.2 - 14.6				EI 120 U/C
	≤ Ø 125	2.5 - 4.0			EI 60 U/U
		4.0 - 14.6			EI 60 U/C
	≤ Ø 160	1.8 - 4.0			EI 30 U/U
		4.0			EI 60 U/U
		4.0 - 14.6			EI 60 U/C
		14.6			EI 120 U/C

## B.1.10 Directly through floor - Combustible pipes

### B.1.10.2 Plastic pipes - double Multicollar *Slim*

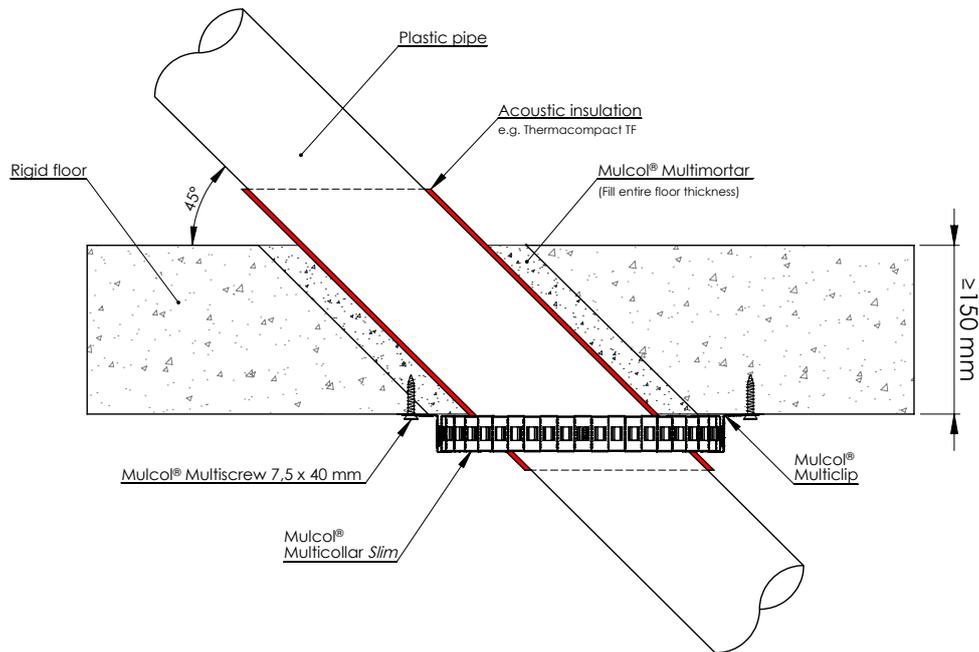
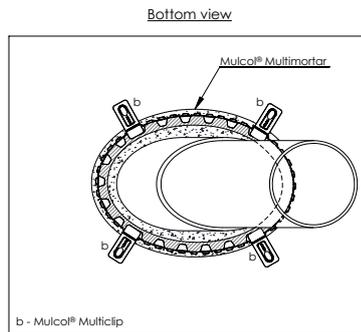


Drawing: RF.E-MC60-PP-11.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE-HD / PE-X / ABS / SAN+PVC	≤ Ø 160	4.0	Multicollar <i>Slim</i> double	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/U
		4.0 - 14.6			EI 90 U/C
≤ Ø 250	7.7	EI 90 U/U			
PVC(-U/-C)	≤ Ø 160	3.2 - 11.8			EI 90 U/U
		7.7 - 14.6			EI 120 U/C
	≤ Ø 315	7.7			

**B.1.10** Directly through floor - Combustible pipes

**B.1.10.3** Plastic pipes perpendicular to 45°

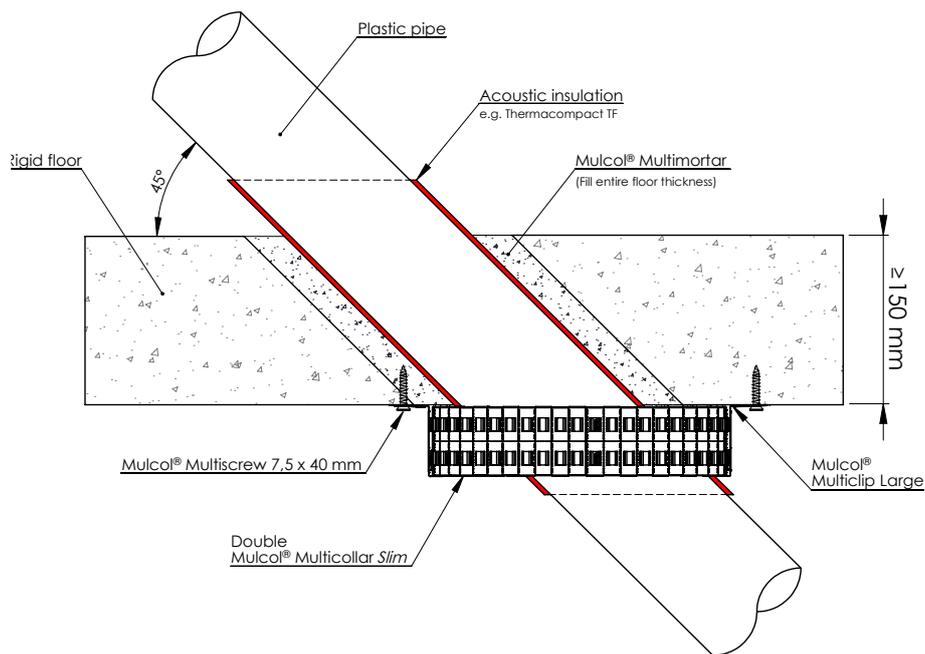
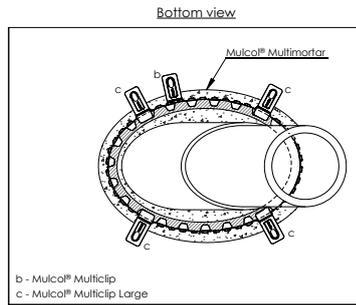


Drawing: RF.E-MC30o-PP-11.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE-HD / PE-X / ABS / SAN+PVC	≤ Ø 110	3.4	Multicollar Slim	Multimortar	EI 60 U/U

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.4 Plastic pipes perpendicular to 45° - double Multicollar *Slim***



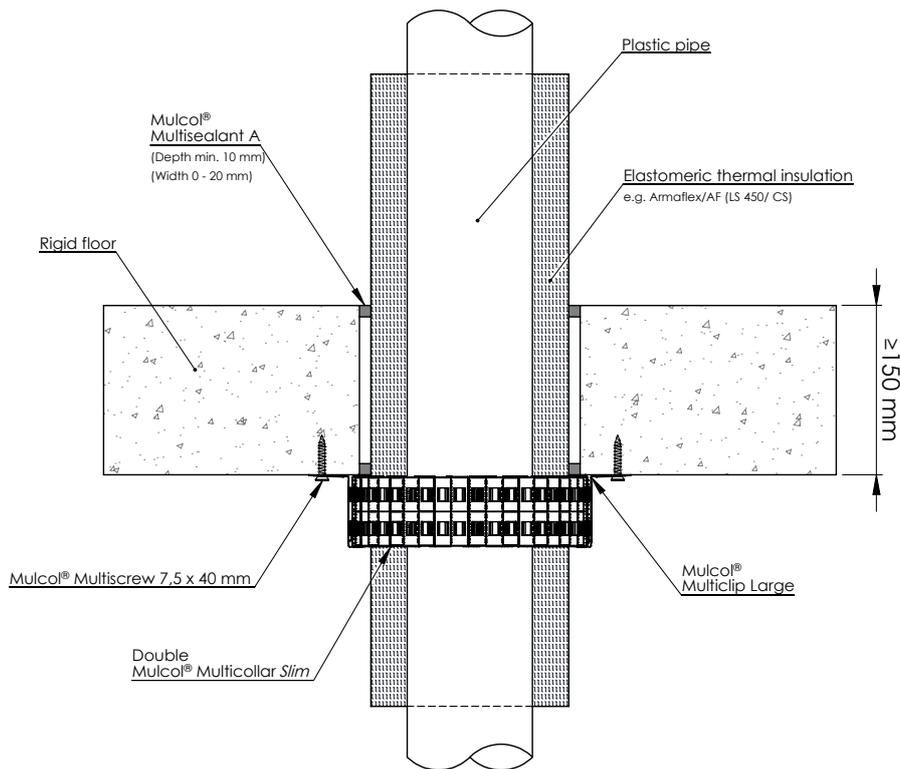
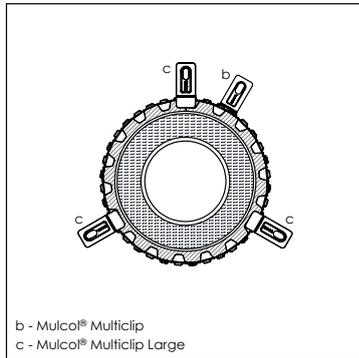
Drawing: RF.E-MC60o-PP-21.1.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE-HD / PE-X / ABS / SAN+PVC	≤ Ø 110	3.4 - 10.0	Multicollar <i>Slim</i> double	Multimortar	EI 60 U/U
		10.0			EI 90 U/U
PP		3.4			EI 120 U/U
		3.4 - 10.0			EI 90 U/U
PVC(-U/-C)		10.0			EI 60 U/U
					EI 90 U/U

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.5 Plastic pipes - Elastomer insulation LS-LI 450 / CS-CI**

Bottom view



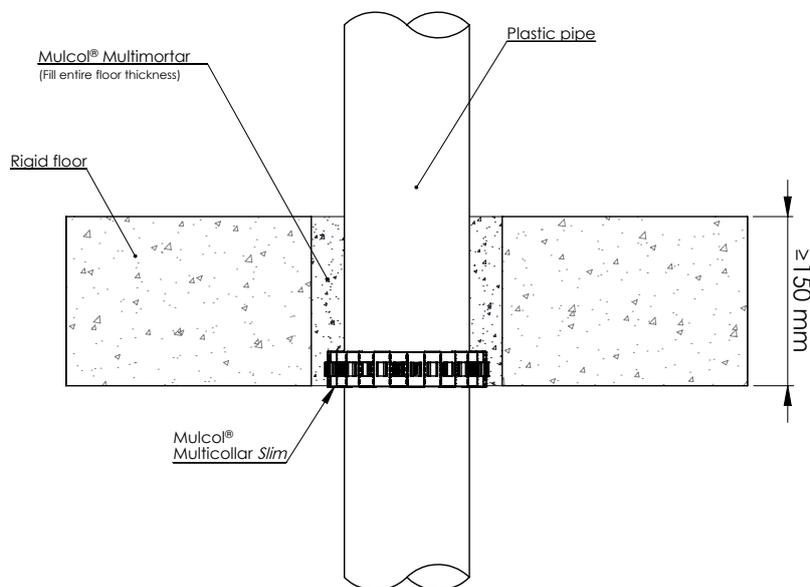
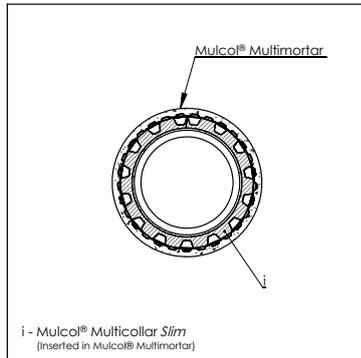
Drawing: RF.E-MC60-PP-21.0.22

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration			
PVC(-U/-C)	≤ Ø 110	3.2	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LS 450 / CS LI 450 / CI	Multicollar Slim double	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/U

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.6 Plastic pipes - Multicollar *Slim* recessed into soffit**

Bottom view



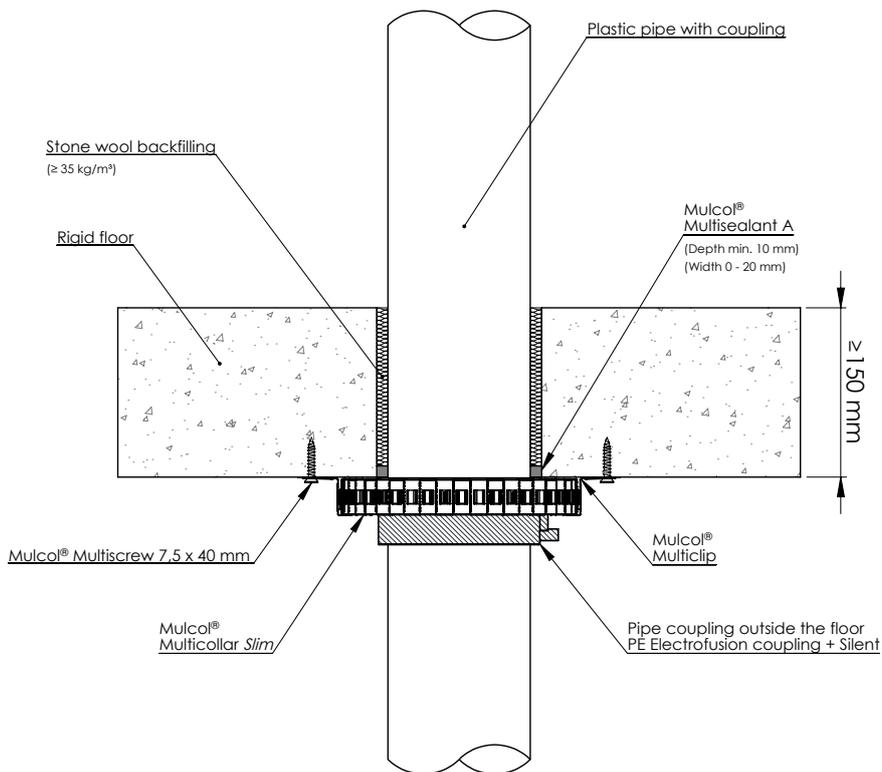
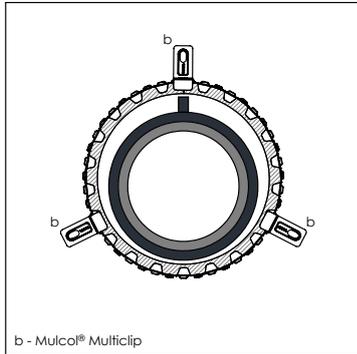
Drawing: RF.E-MC30i-PP-15.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PP	≤ Ø 110	6.3	Multicollar <i>Slim</i>	Multimortar	EI 30 U/U

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.7 Plastic pipes with socket**

Bottom view

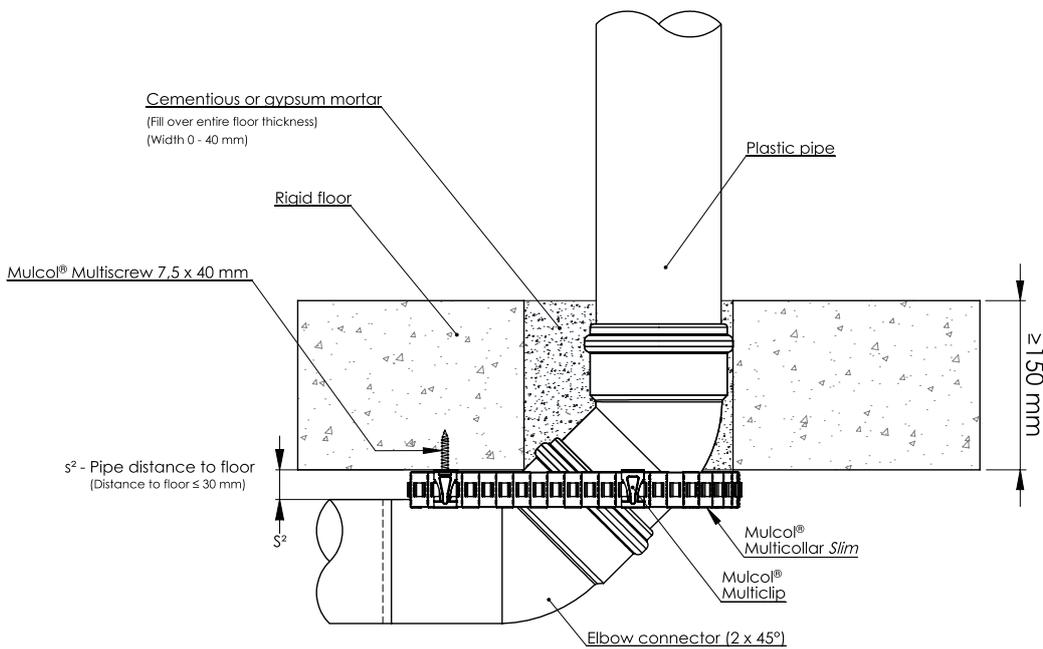
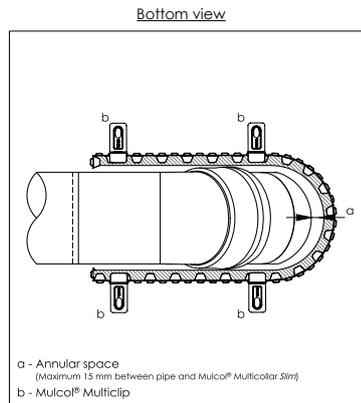


Drawing: RF.E-MC30-PP-11.0.60

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE-HD / PE-X / ABS / SAN+PVC	≤ Ø 110	4.3	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/C
	≤ Ø 125	7.4			EI 60 U/C

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.8 Plastic pipes with elbow and U-shape Multicollar *Slim***

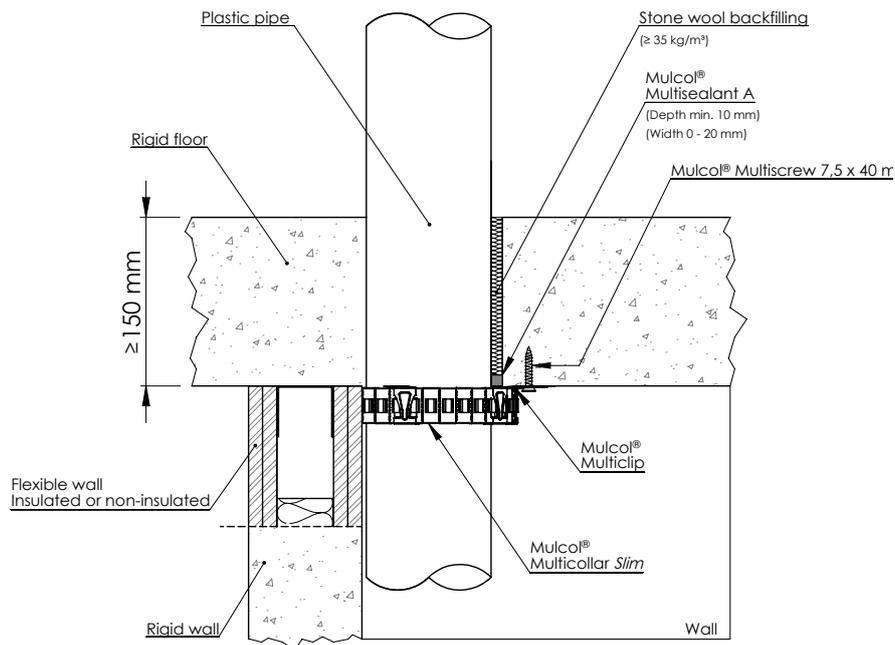
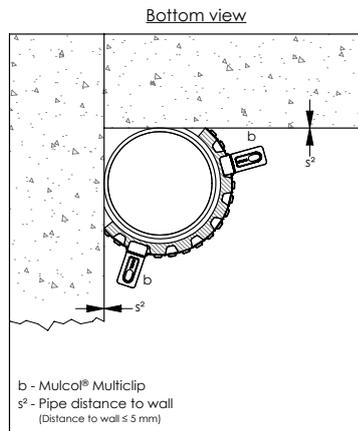


Drawing: RF.E-MC30u-MM1.3.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PVC(-U/-C)	$\leq \text{Ø } 50$	3.0	Multicollar <i>Slim</i>	Multimortar	EI 90 U/U
	$\leq \text{Ø } 110$	3.2			EI 45 U/U, E 60 U/U

## B.1.10 Directly through floor - Combustible pipes

### B.1.10.9 Plastic pipes in corner



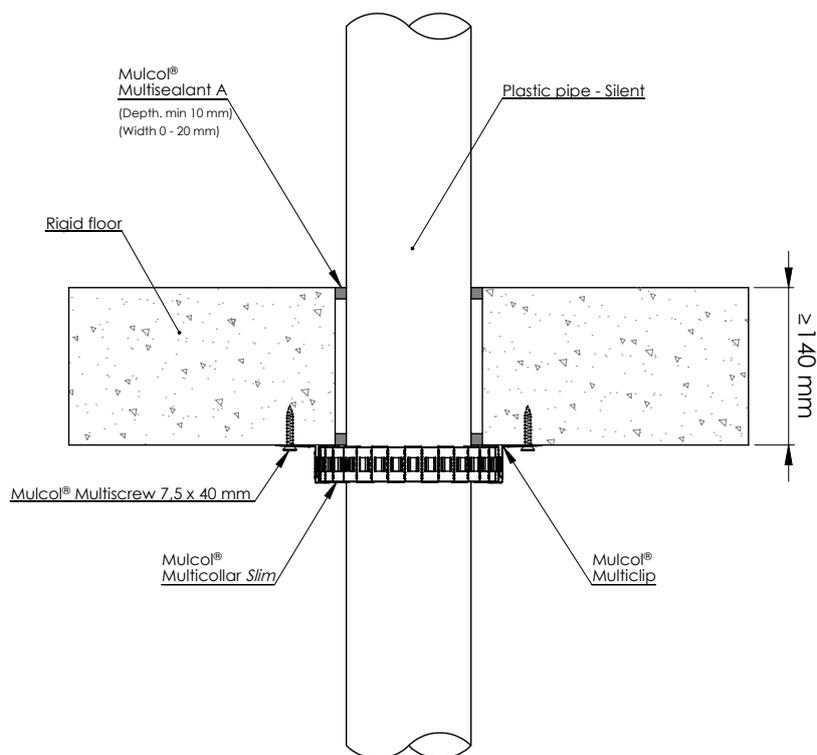
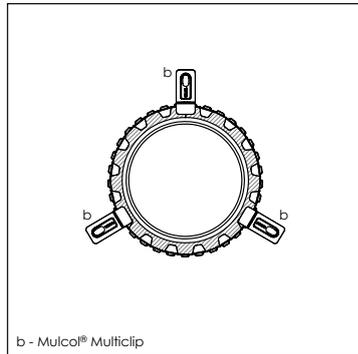
Drawing: RF.E-MC30c-PP-31.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE-HD / PE-X / ABS / SAN+PVC	$\leq \varnothing 110$	6.6	Multicollar <i>Slim</i>	Multimastic SP 0-30 x $\geq 10$ (wxd)	EI 120 U/U
PP		6.3			EI 90 U/U
PVC(-U/-C)	$\leq \varnothing 125$	7.4			EI 60 U/C

## B.1.10 Directly through floor - Combustible pipes

### B.1.10.10 Plastic pipes (Silent)

Bottom view

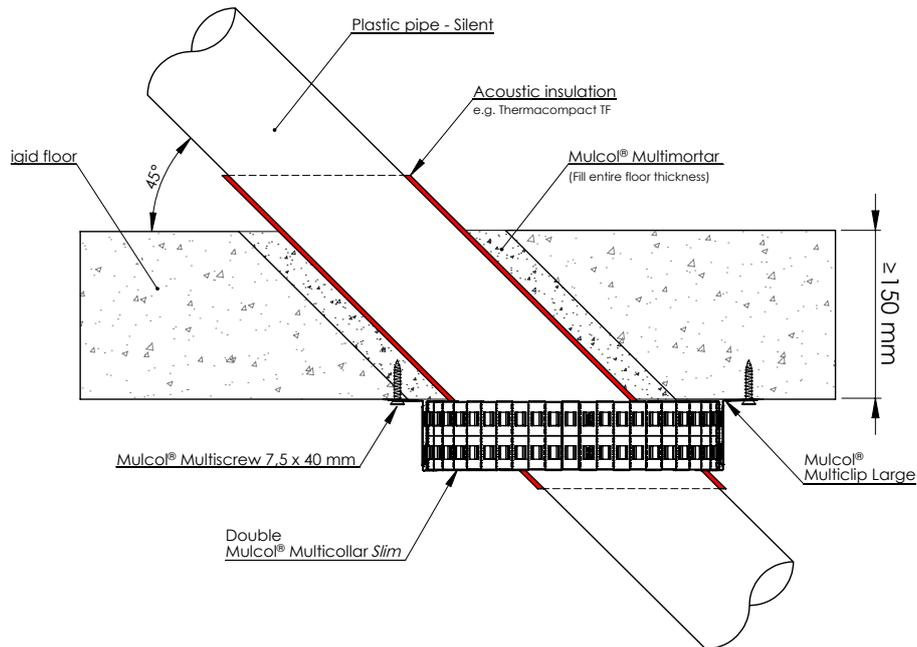
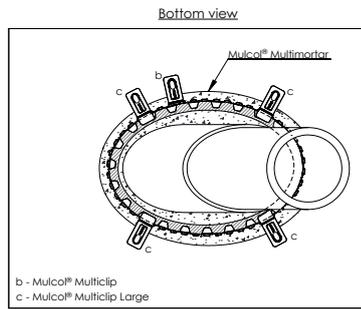


Drawing: RF.E-MC30-PPS-11.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB 20	≤ Ø 56	3.2 - 7.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/U
	≤ Ø 110	6.0 - 7.0			
	≤ Ø 160	7.0			
Raupiano Plus	≤ Ø 50	1.8 - 4.0			
	≤ Ø 110	2.7 - 4.0			
	≤ Ø 160	4.0			
Wavin SiTech+	≤ Ø 110	3.6			

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.11 Plastic pipes (Silent) perpendicular to 45° - double Multicollar *Slim***



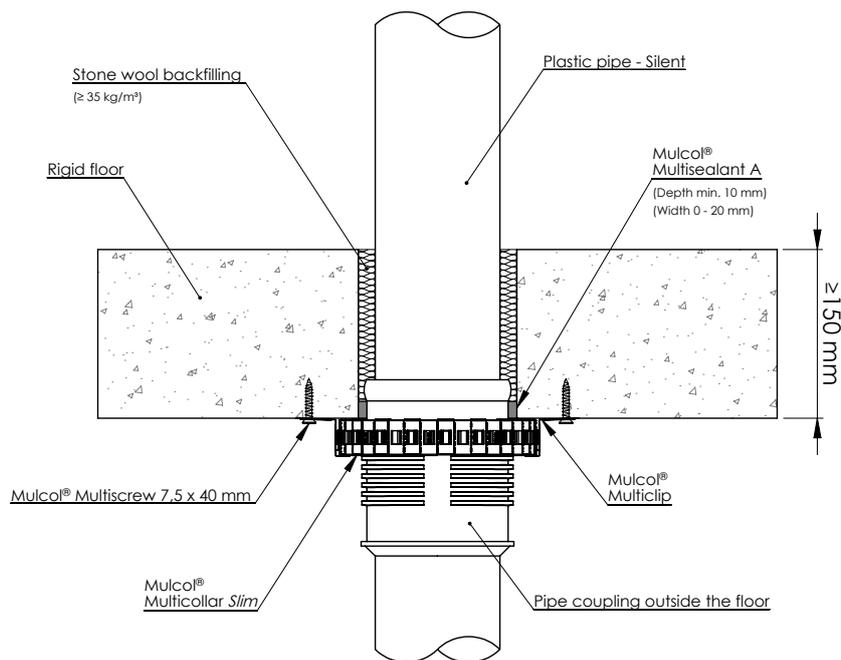
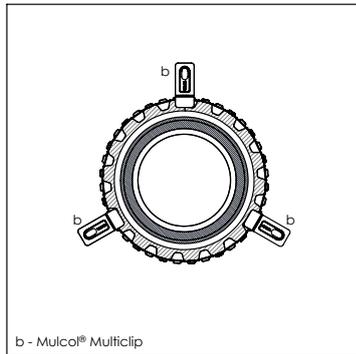
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Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB 20	≤ Ø 110	6.0	Multicollar <i>Slim</i> double	Multimortar	EI 120 U/U

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.12 Plastic pipes (Silent) with socket**

Bottom view

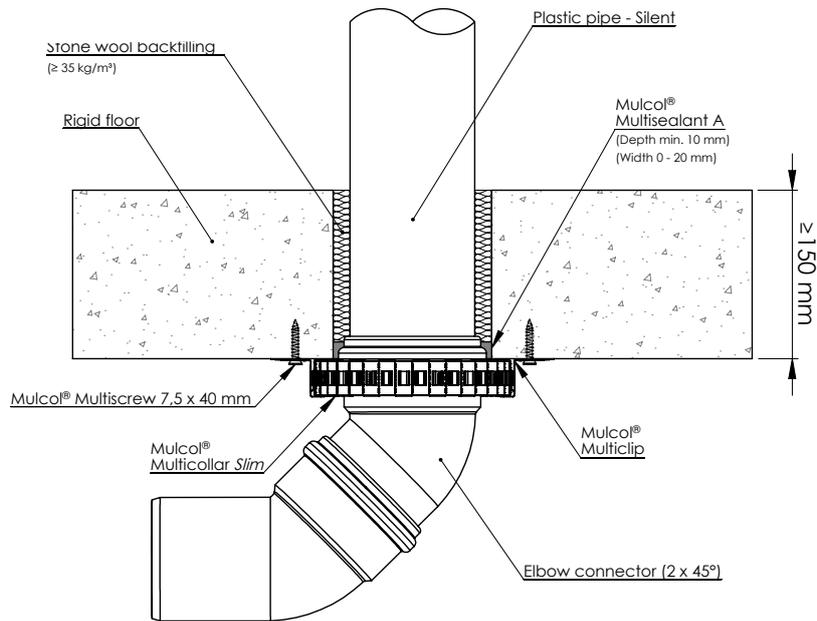
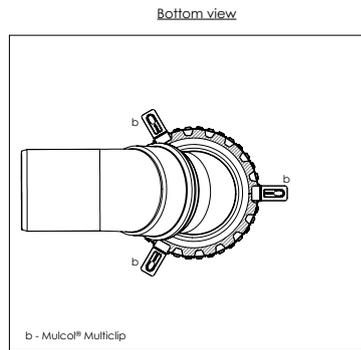


Drawing: RF.E-MC30-PPS-11.0.60

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB 20	≤ Ø 110	6.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/C
Raupiano Plus		2.7			
Wavin SiTech+		3.6			EI 90 U/U

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.13 Plastic pipes (Silent) with elbow**

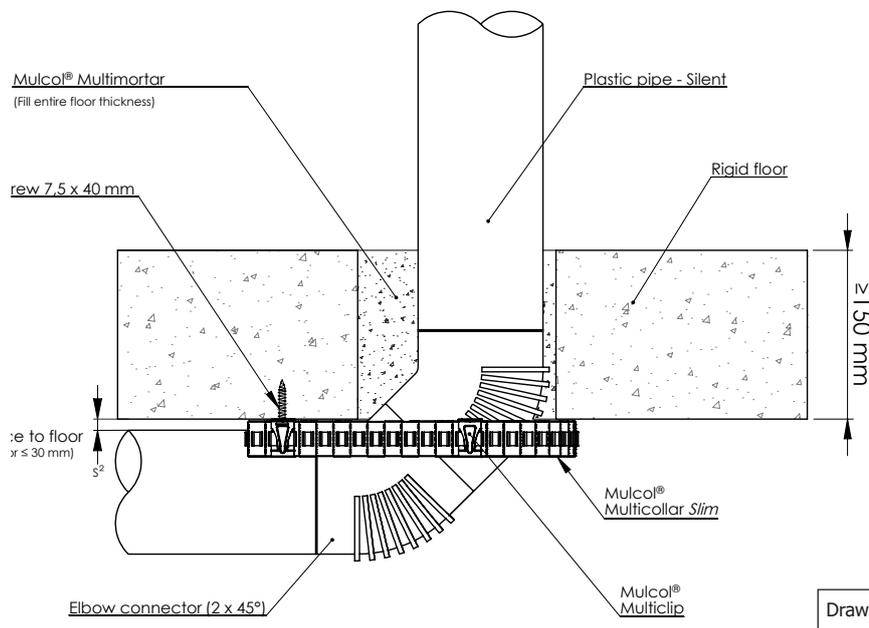
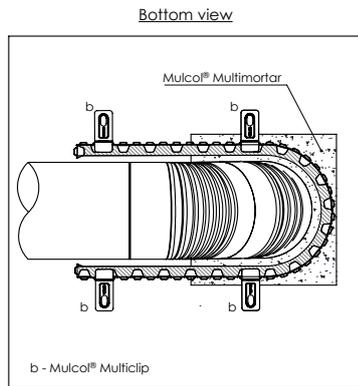


Drawing: RF.E-MC30-PPS-11.0.80

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB 20	≤ Ø 110	6.0	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/U
Wavin AS		5.3			EI 120 U/U

**B.1.10 Directly through floor - Combustible pipes**

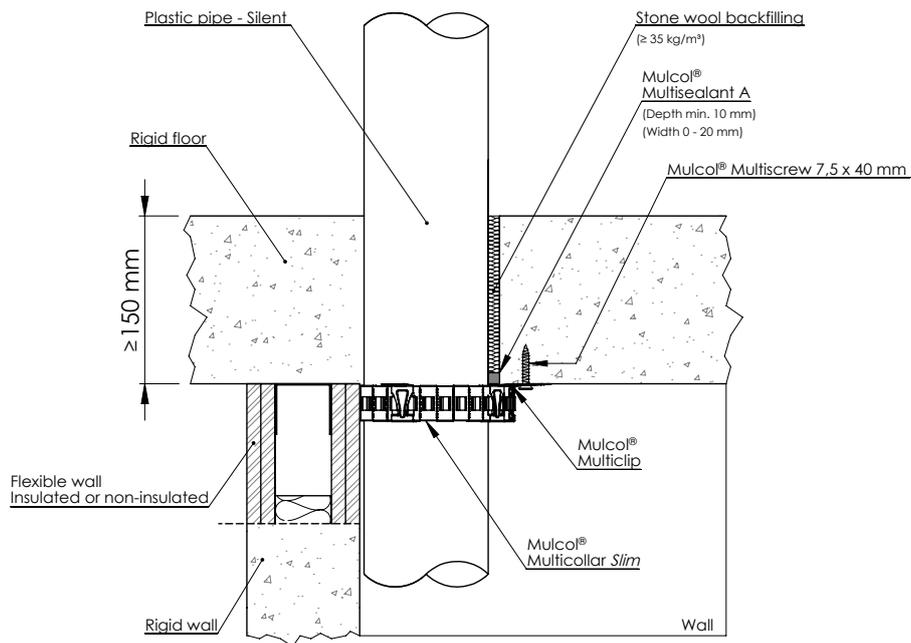
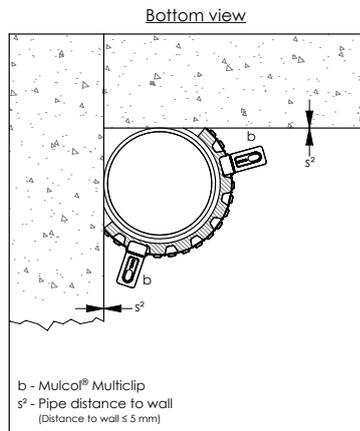
**B.1.10.14 Plastic pipes (Silent) with elbow and U-shape Multicollar *Slim***



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

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.15 Plastic pipes (Silent) in corner**



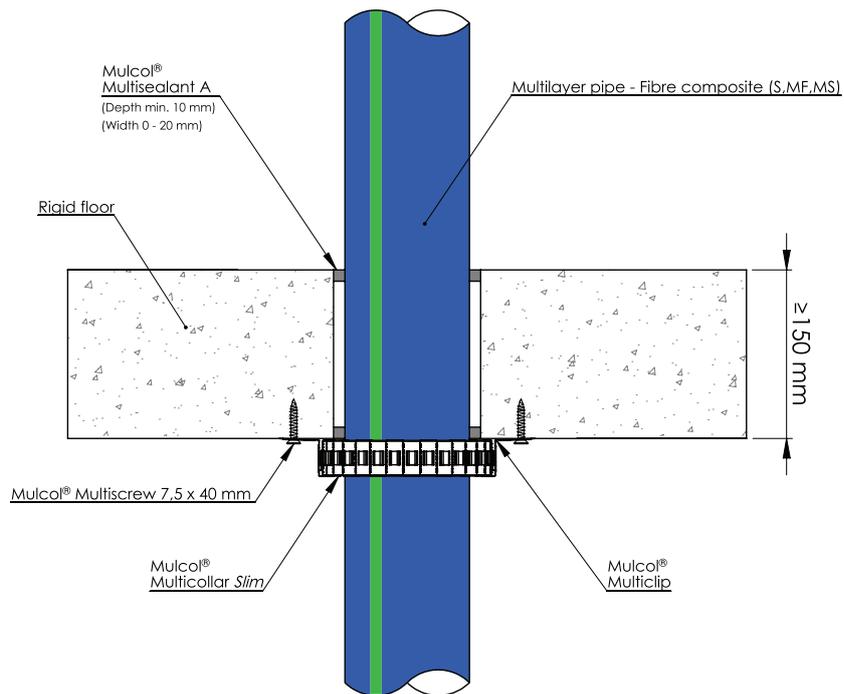
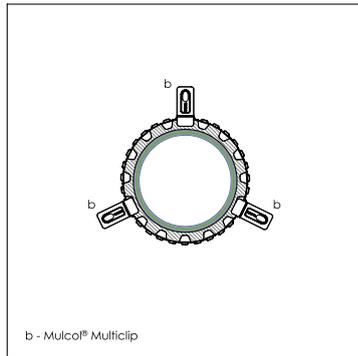
Drawing: RF.E-MC30c-PPS-31.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB 20	≤ Ø 110	6.0	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/C

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.16 PP-R Multilayer pipes**

Bottom view

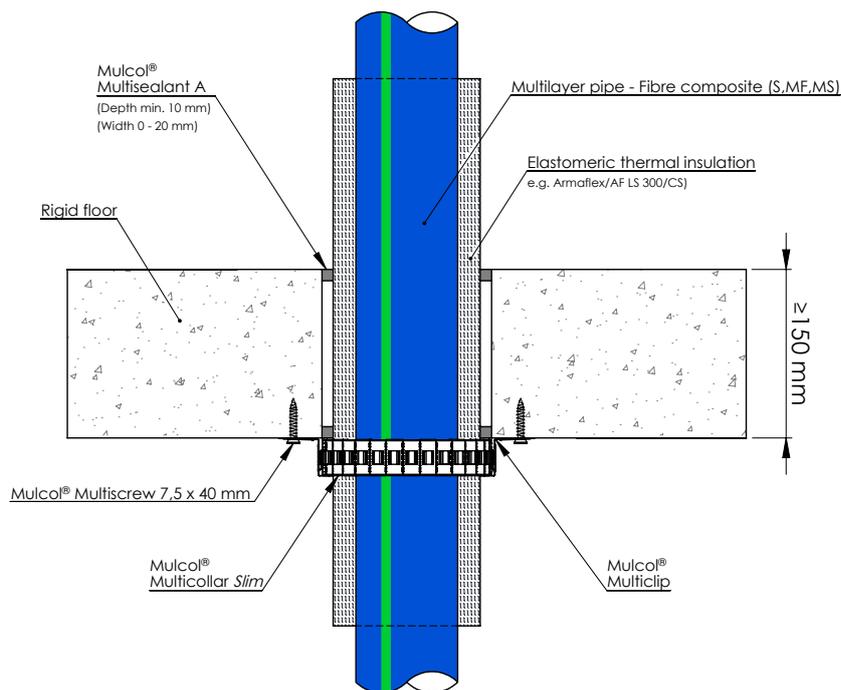
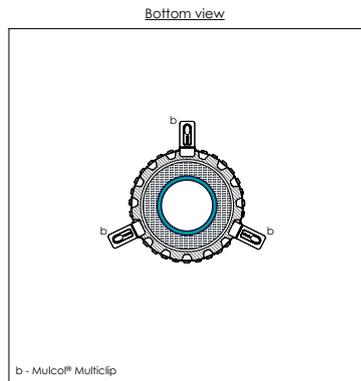


Drawing: RF.E-MC30-MLF-MM1.3.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Aquatherm Blue-MF	≤ Ø 20	2.8	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/C
	≤ Ø 110	10.0 - 14.6			EI 90 U/C
	≤ Ø 160	14.6			
Aquatherm Red-MF	≤ Ø 110	15.1			
Aquatherm Blue-MF	≤ Ø 250	22.7	Multicollar <i>Slim</i> double		EI 120 U/C

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.17 PP-R Multilayer pipes - Elastomer LS-LI 300 / CS-CI**

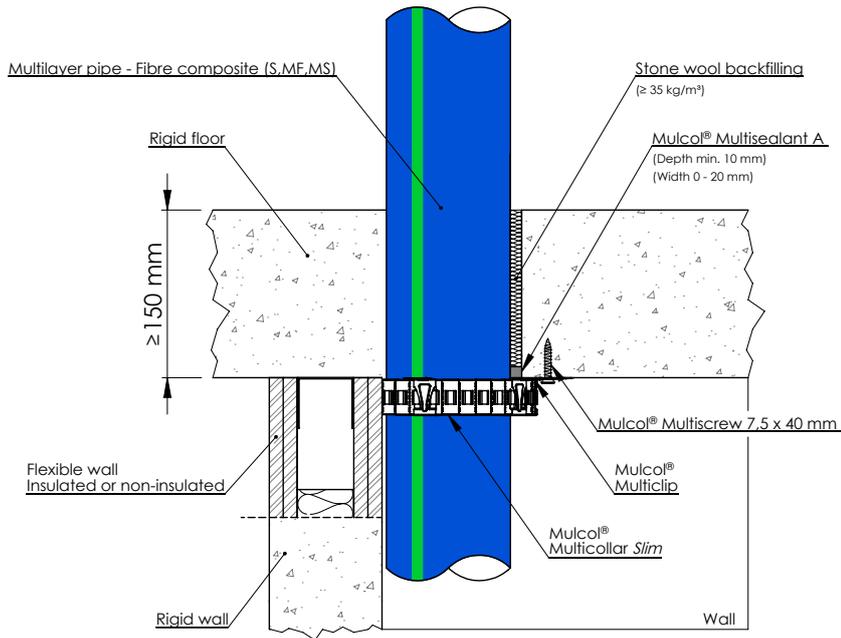
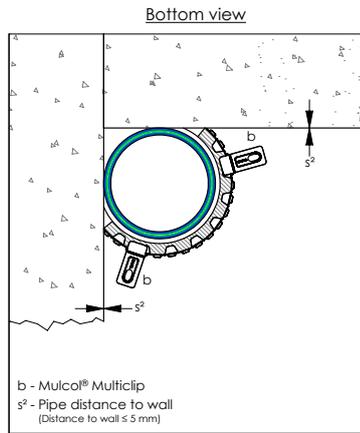


Drawing: RF.E-MC30-MLF-11.0.22

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration			
Aquatherm Green-MF	≤ Ø 110	18.3	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LS 300 / CS LI 300 / CI	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/C
		15.2						
		15.1						
Aquatherm Blue-MF	≤ Ø 20	2.8						
	≤ Ø 110	10.0						

**B.1.10 Directly through floor - Combustible pipes**

**B.1.10.18 PP-R Multilayer pipes in corner**

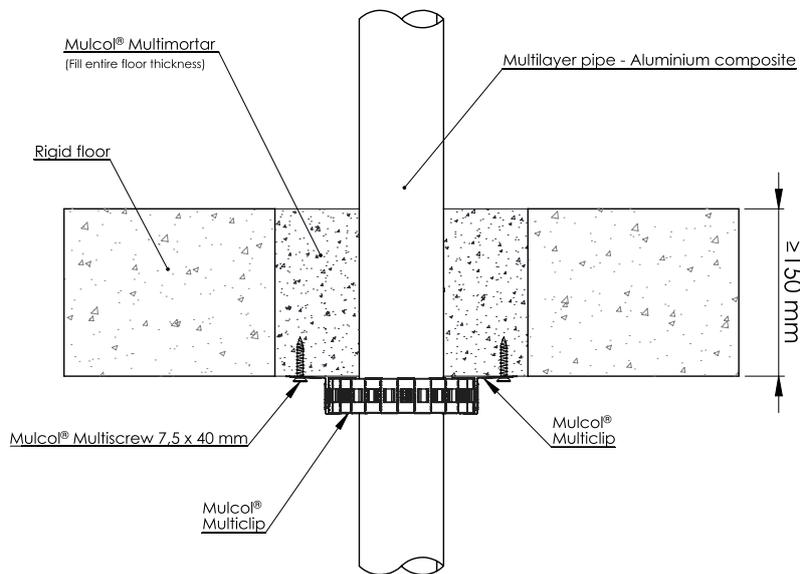
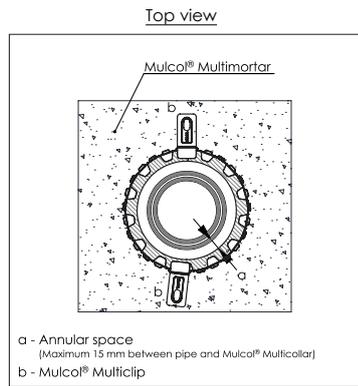


Drawing: RF.E-MC30c-MLF-31.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Aquatherm Blue-MF	$\leq \text{Ø } 110$	10.0	Multicollar Slim	Multimastic SP 0-20 x $\geq 10$ wxd)	EI 90 U/C

**B.1.11 Multimortar -  $\geq 150$  mm - Multilayer pipes (MLC)**

**B.1.11.1 Multilayer pipes (MLC)**

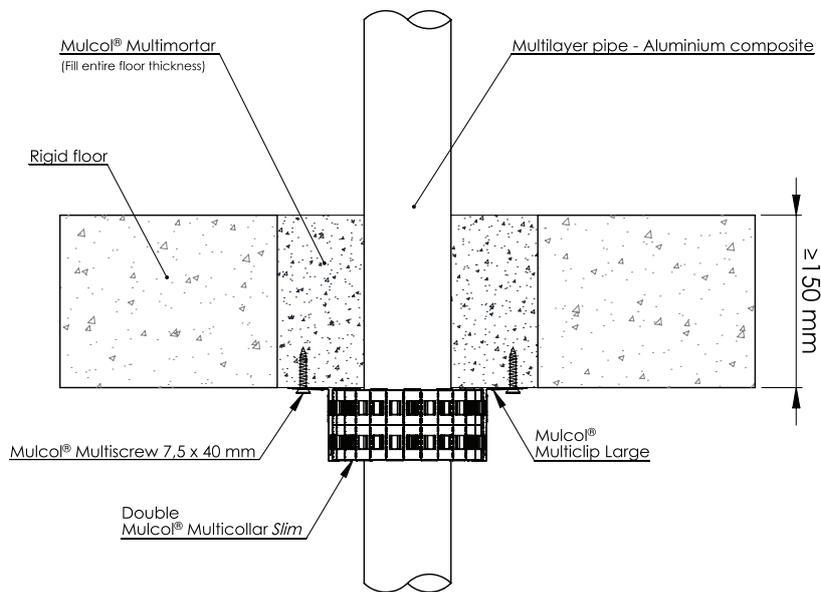
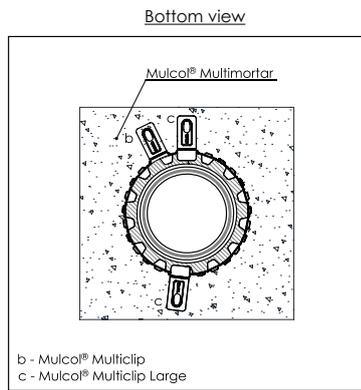


Drawing: RF.E-MC30-MLA-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \text{Ø } 20$	2.0	Multicollar <i>Slim</i>	EI 120 U/C
	$\leq \text{Ø } 25$	3.5		
	$\leq \text{Ø } 32$	3.0		
	$\leq \text{Ø } 50$	4.0		
	$\leq \text{Ø } 63$	4.5		
	$\leq \text{Ø } 75$	6.0		EI 60 U/C, E 120 U/C

**B.1.11 Multimortar -  $\geq 150$  mm - Multilayer pipes (MLC)**

**B.1.11.2 Multilayer pipes (MLC) - double Multicollar *Slim***

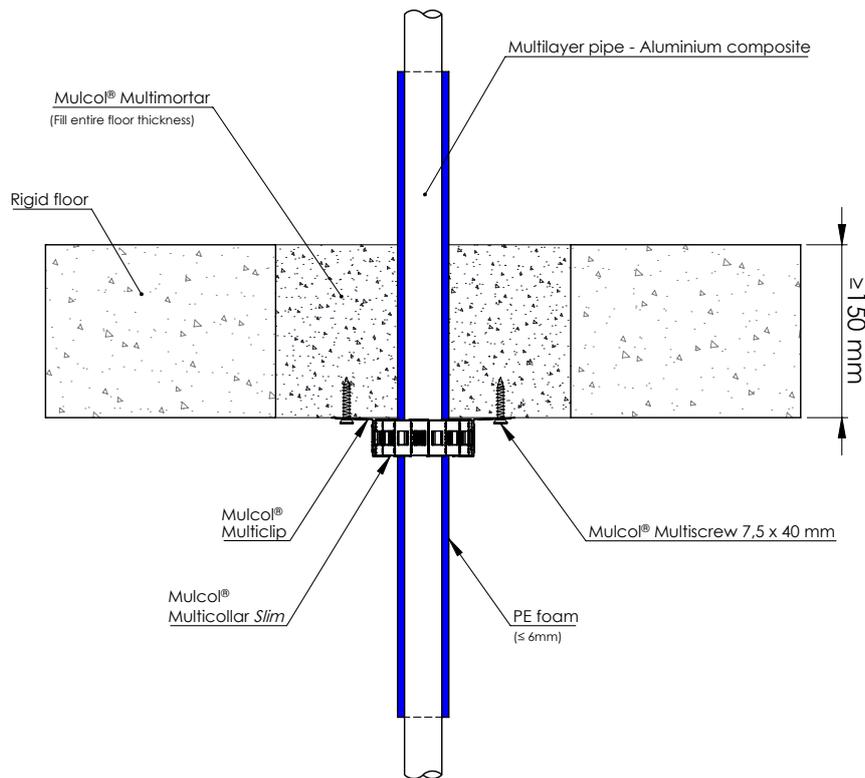
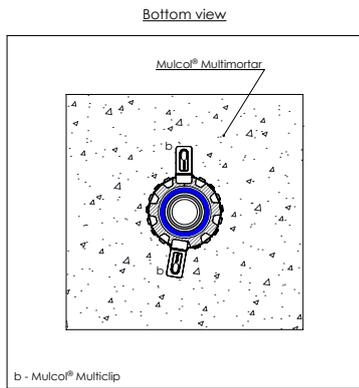


Drawing: RF.E-MC60-MLA-MM1.3.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Multilayer pipes (MLC)	$\leq \text{Ø } 63$	4.5	Multicollar <i>Slim</i> double	EI 90 U/C
	$\leq \text{Ø } 75$	6.0		

**B.1.11 Multimortar -  $\geq 150$  mm - Multilayer pipes (MLC)**

**B.1.11.3 Multilayer pipes (MLC) - PE foam LS-LI 300 / CS-CI**

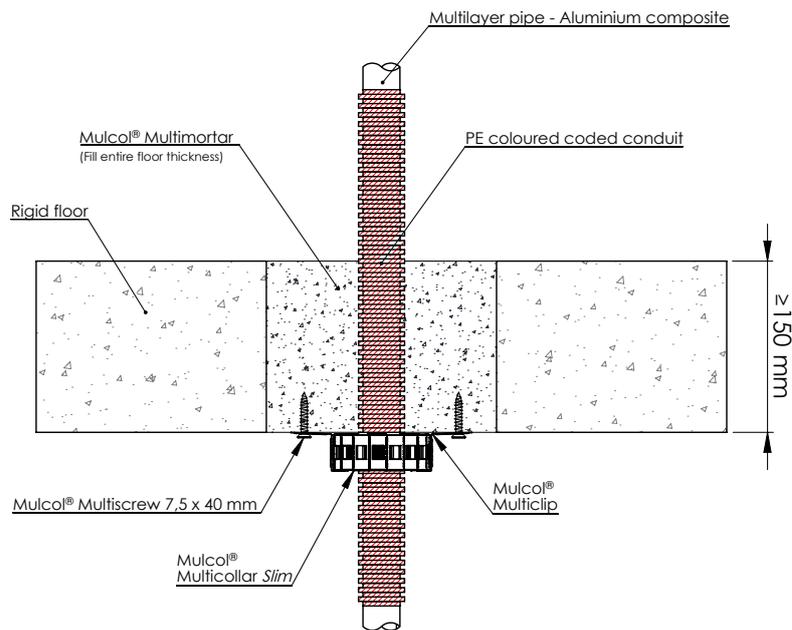
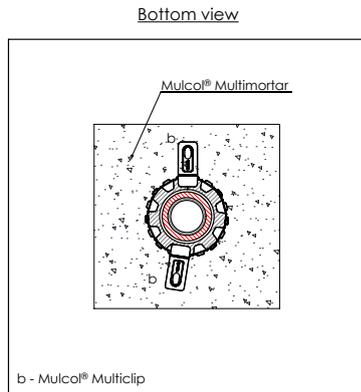


Drawing: RF-E-MC30-MLA\_pr-MM1.3.23

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \text{Ø } 32$	3.0	PE foam	6	LS 300 / CS LI 300 / CI	Multicollar <i>Slim</i>	EI 120 U/C

**B.1.11 Multimortar -  $\geq 150$  mm - Multilayer pipes (MLC)**

**B.1.11.4 Multilayer pipes (MLC) - PE conduit**



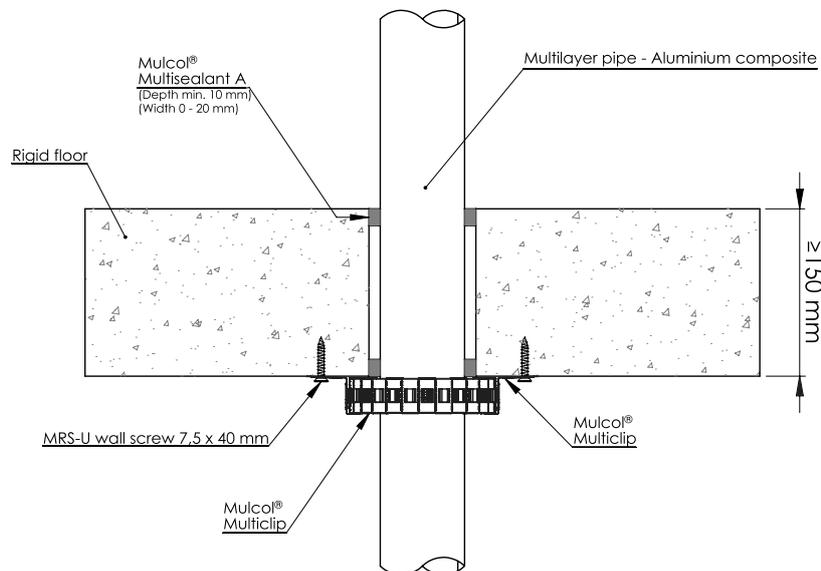
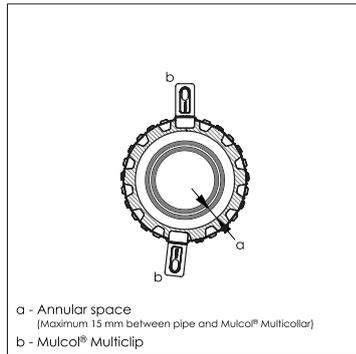
Drawing: RF.E-MC30-MLA-MM1.3.30

Services	Pipe dimensions (mm)		Conduit			Product	Classification
	Outer dimensions	Wall thickness	Type	Outer dimension (mm)	Configuration		
Multilayer pipes (MLC)	$\leq \text{Ø } 32$	3.0	PE-conduit ribbed	40	LS 50 / CS	Multicollar <i>Slim</i>	<b>EI 120 U/C</b>

## B.1.12 Directly through floor - Multilayer pipes (MLC)

### B.1.12.1 Multilayer pipes (MLC)

Bottom view

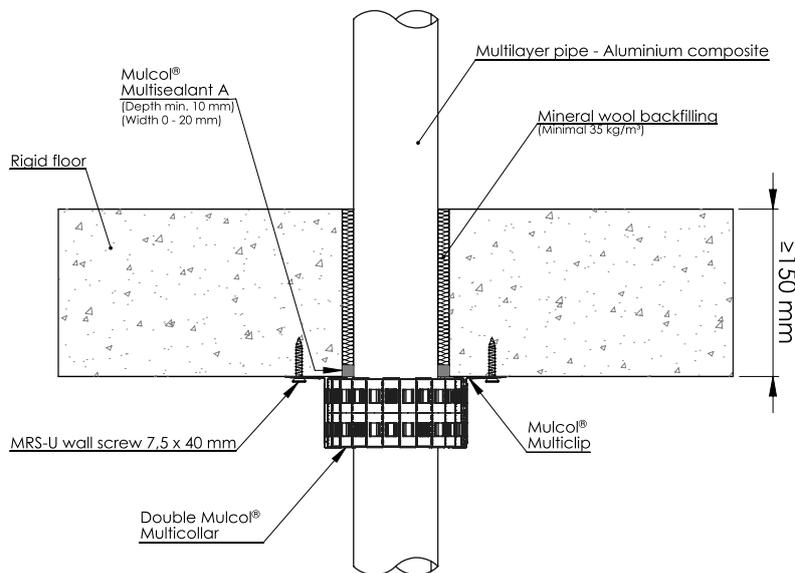
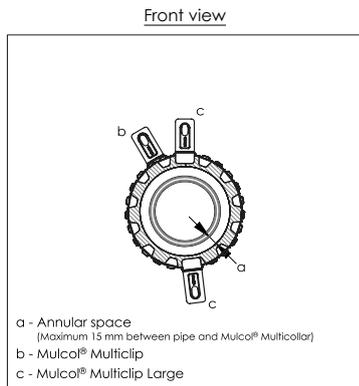


Drawing: RF.E-MLA-11.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 20	2.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 wxd)	EI 120 U/C
	≤ Ø 25	3.5			
	≤ Ø 32	3.0			
	≤ Ø 50	4.0			
	≤ Ø 63	4.5			
	≤ Ø 75	6.0			EI 60 U/C, E 120 U/C

**B.1.12 Directly through floor - Multilayer pipes (MLC)**

**B.1.12.2 Multilayer pipes (MLC) - double Multicollar *Slim***



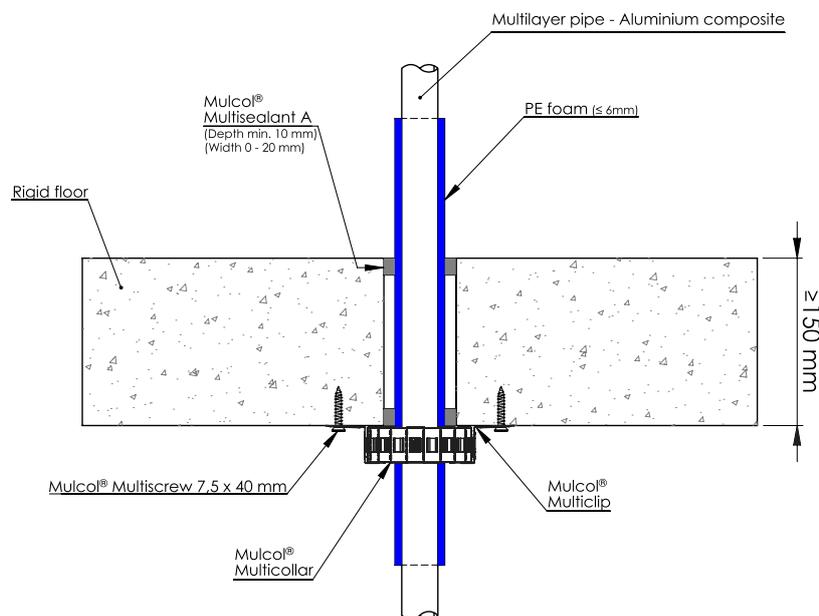
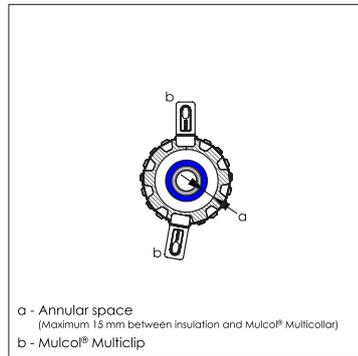
Drawing: RF.E-MLA-21.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Multilayer pipes (MLC)	≤ Ø 63	4.5	Multicollar <i>Slim</i> double	Multimastic SP 0-20 x ≥ 10 wxd)	EI 90 U/C
	≤ Ø 75	6.0			

## B.1.12 Directly through floor - Multilayer pipes (MLC)

### B.1.12.3 Multilayer pipes (MLC) - PE foam LS-LI 300 / CS-CI

Top view

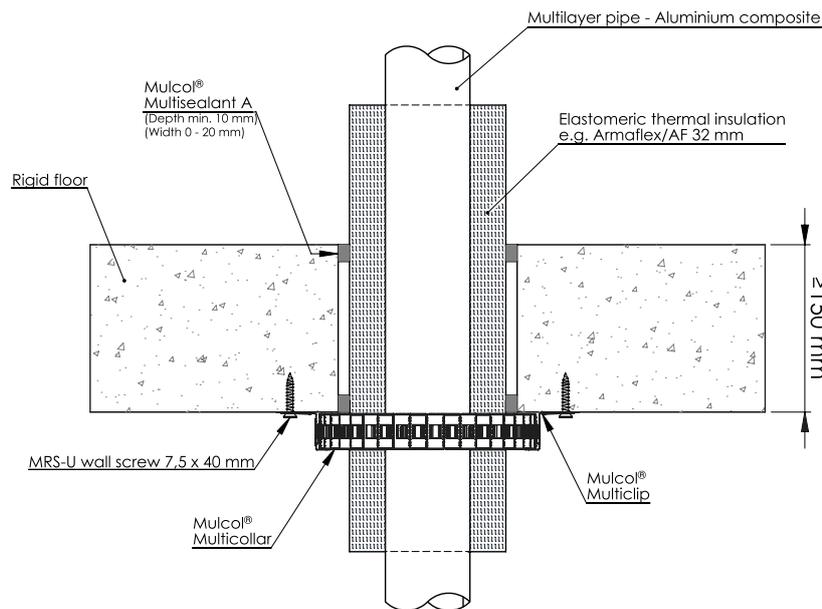
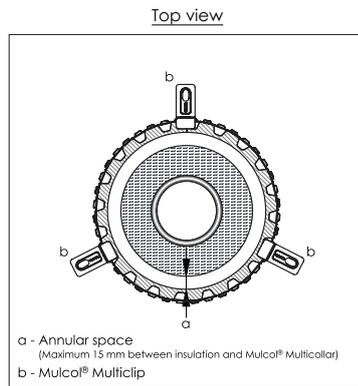


Drawing: RF.E-MLA\_pr-11.0.22

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipes (MLC)	≤ Ø 32	3.0	PE foam	6	LS 300 / CS LI 300 / CI	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/C

## B.1.12 Directly through floor - Multilayer pipes (MLC)

### B.1.12.4 Multilayer pipes (MLC) - Elastomer LS-LI 500 / CS-CI



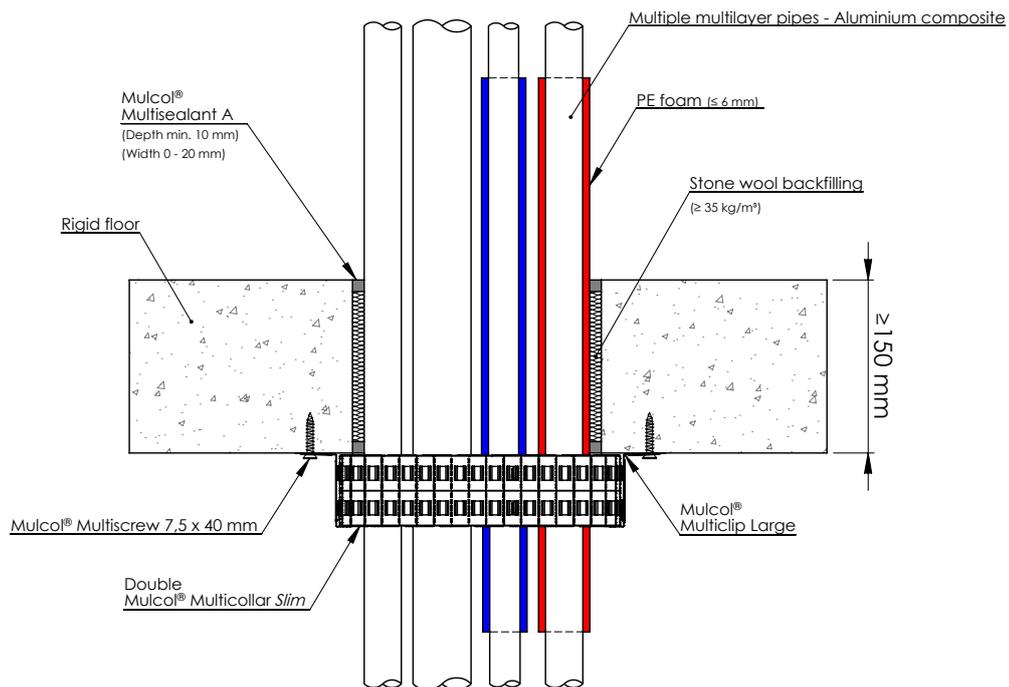
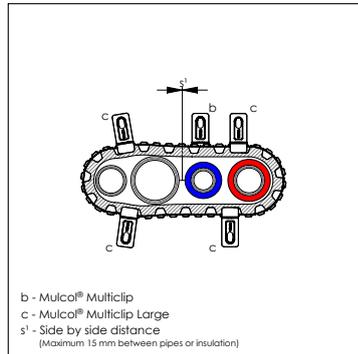
Drawing: RF-E-MC30-MLA\_pr-MM1.3.23

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipes (MLC)	≤ Ø 20	2.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	9 - 32	LS 500 / CS LI 500 / CI	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/C
	≤ Ø 32	3.0						
	≤ Ø 40	3.5						
	≤ Ø 50	4.0						
	≤ Ø 63	4.5						
	≤ Ø 75	6.0						
	≤ Ø 90	7.0						
	≤ Ø 90	10.0		32				
		9 - 32	EI 90 U/C EI 120 U/C EI 120 U/C EI 90 U/C					

## B.1.12 Directly through floor - Multilayer pipes (MLC)

### B.1.12.5 Multiple Multilayer pipes (MLC) - PE foam LS-LI 300 / CS-CI

Bottom view

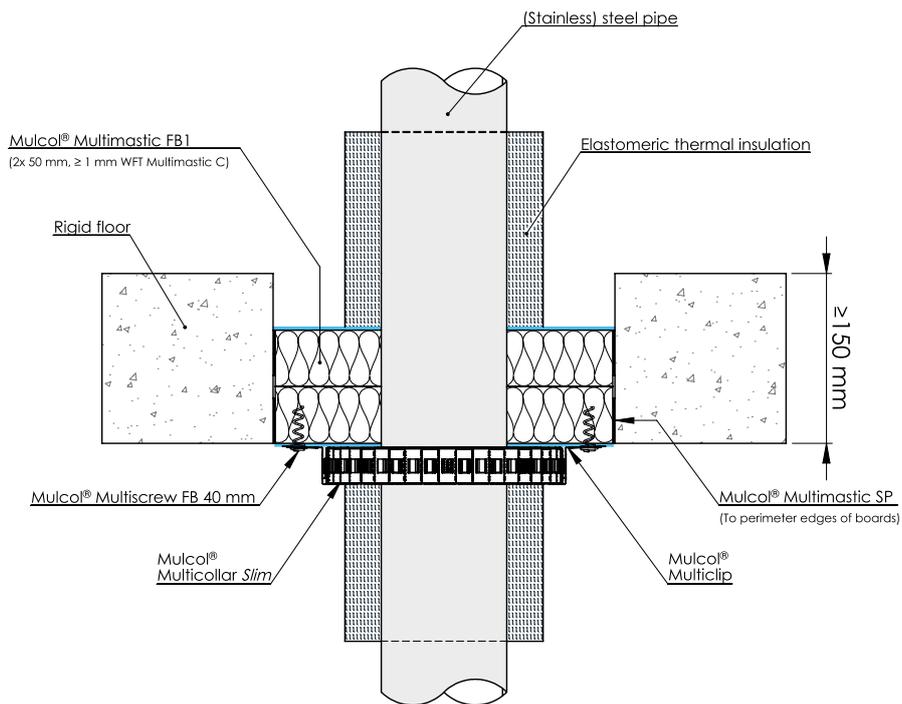
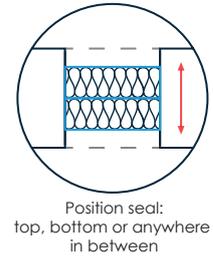
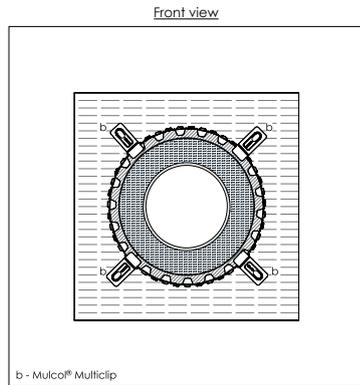


Drawing: RF.E-MC60-MLP4-21.0.40

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration			
Multilayer pipes (MLC)	≤ Ø 32	3.0	-	-	LS 300 / CS LI 300 / CI	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/C
	≤ Ø 50	4.0						EI 90 U/C E 120 U/C
	≤ Ø 26	3.0	PE foam	6				EI 120 U/C
	≤ Ø 32							EI 120 U/C

**B.1.13 Multimastic FB1 - 2x50 mm - Metal pipes**

**B.1.13.1 Steel pipes - Elastomer LI 300 / CI**

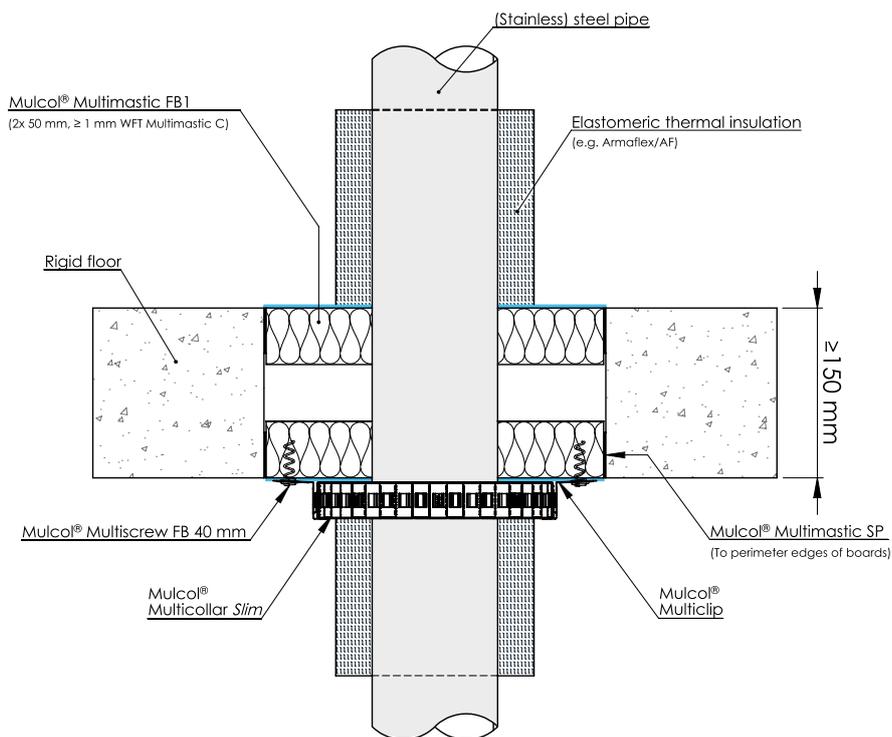
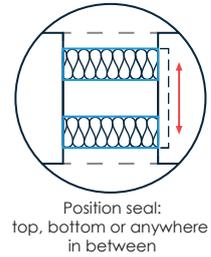
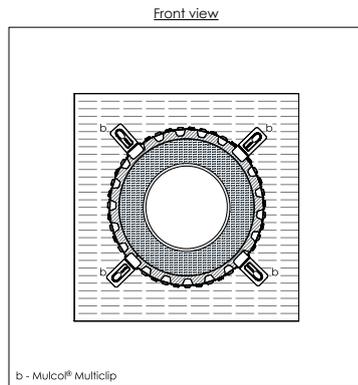


Drawing: PBrf.E-ST-11.0.22.LI

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

## B.1.14 Multimastic FB1 - 2x50 mm cavity 50 mm - Metal pipes

### B.1.14.1 Steel pipes - Elastomer LI 300 / CI

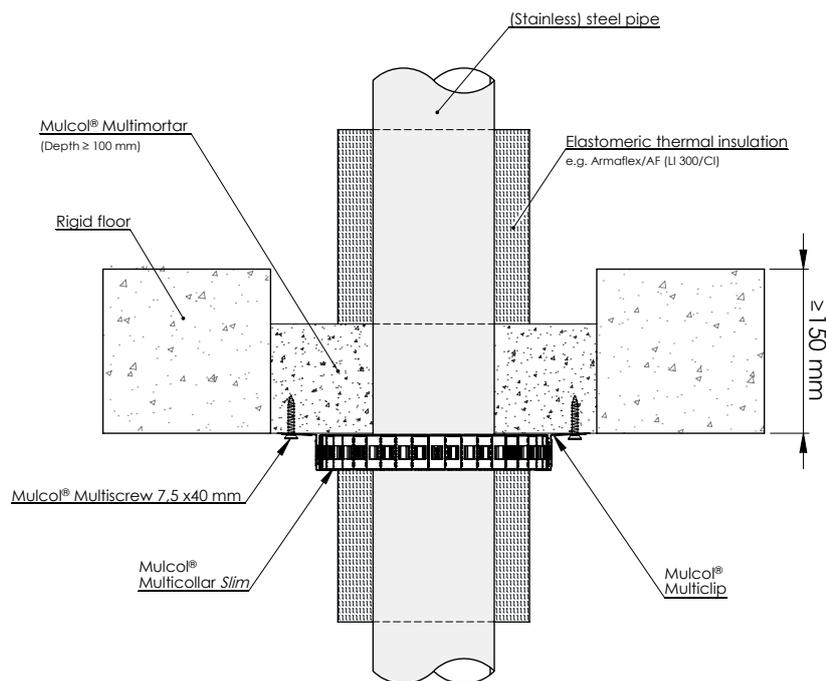
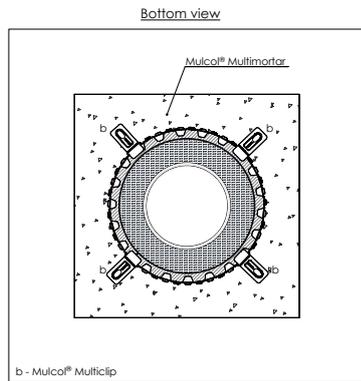


Drawing: PBrf.E-ST-11.0.22.LI.C

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

**B.1.15 Multimortar -  $\geq 100$  mm - Metal pipes**

**B.1.15.1 Steel pipes - Elastomer LI 300 / CI**

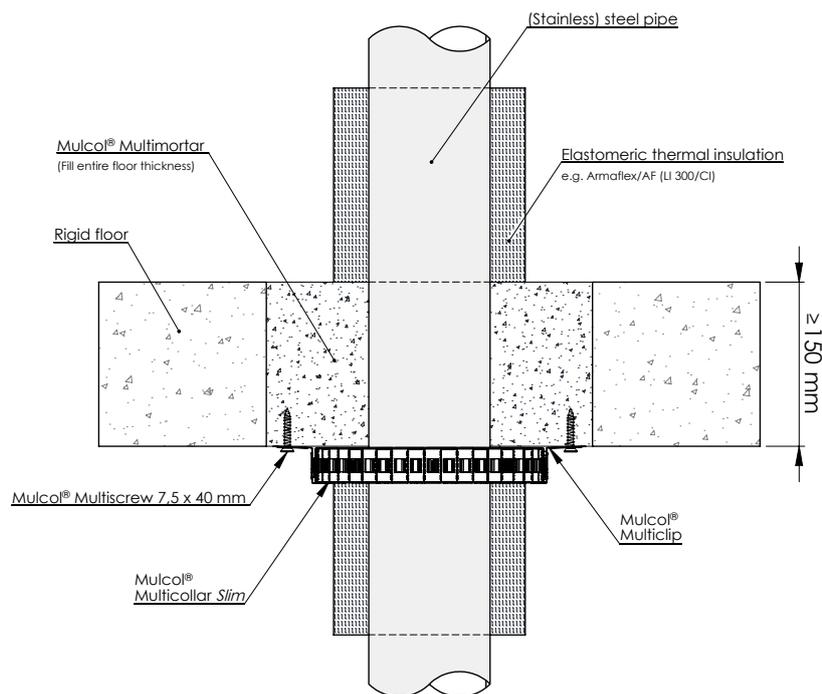
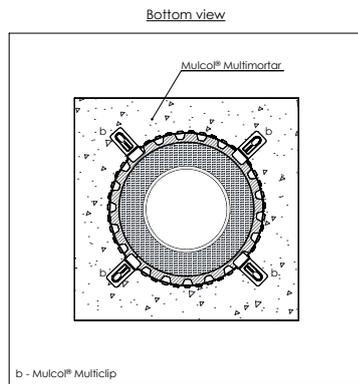


Drawing: RF.E-MC30-ST-MM1.2.22

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

**B.1.16 Multimortar -  $\geq 150$  mm - Metal pipes**

**B.1.16.1 Steel pipes - Elastomer LI 300 / CI**

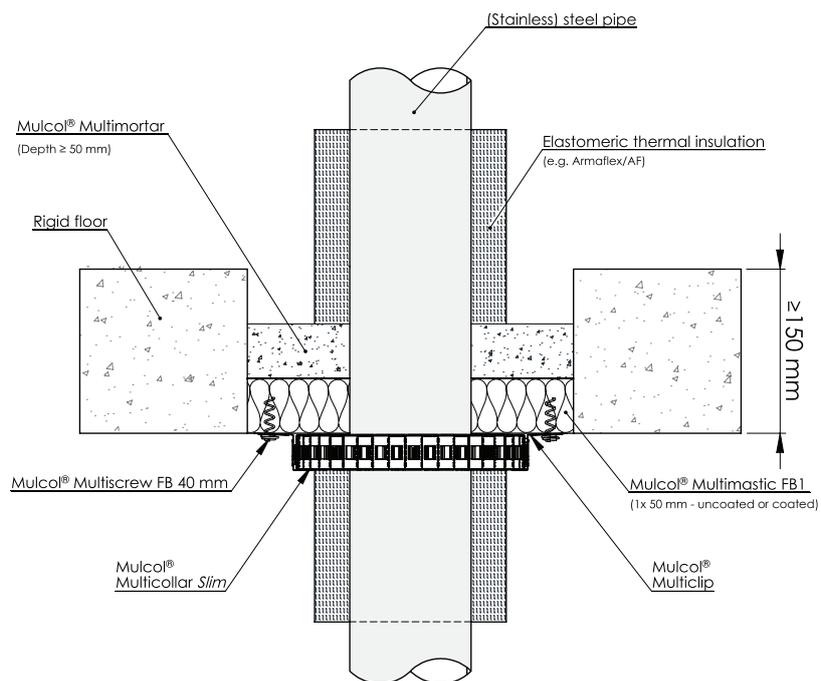
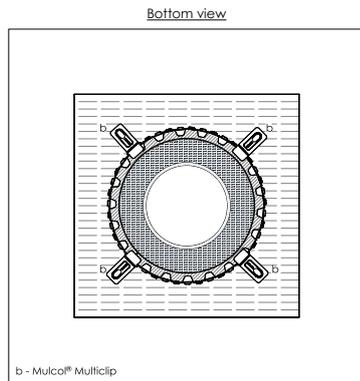


Drawing: RF.E-MC30-ST-MM1.3.22

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

**B.1.17 Multimortar + Multimastic FB -  $\geq 100$  mm - Metal pipes**

**B.1.17.1 Steel pipes - Elastomer LI 300 / CI**

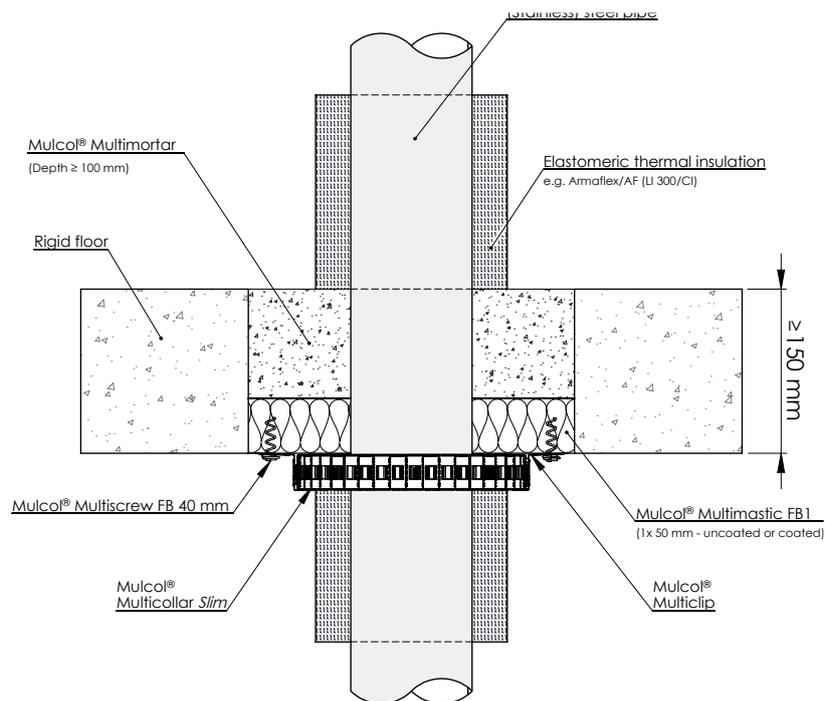
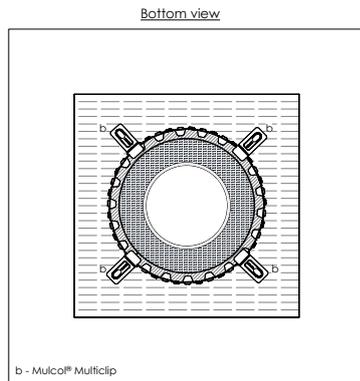


Drawing: RF.E-ST-MM2.5.22

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	$\leq \text{Ø } 114.3$	$\geq 3.6$	ArmaFlex (min. class B-s3, d0 B <sub>1</sub> -s3, d0)	32	LI 300 / CI	Multicollar <i>Slim</i>	EI 90 C/U

**B.1.18 Multimortar + Multimastic FB -  $\geq 150$  mm - Metal pipes**

**B.1.18.1 Steel pipes - Elastomer LI 300 / CI**



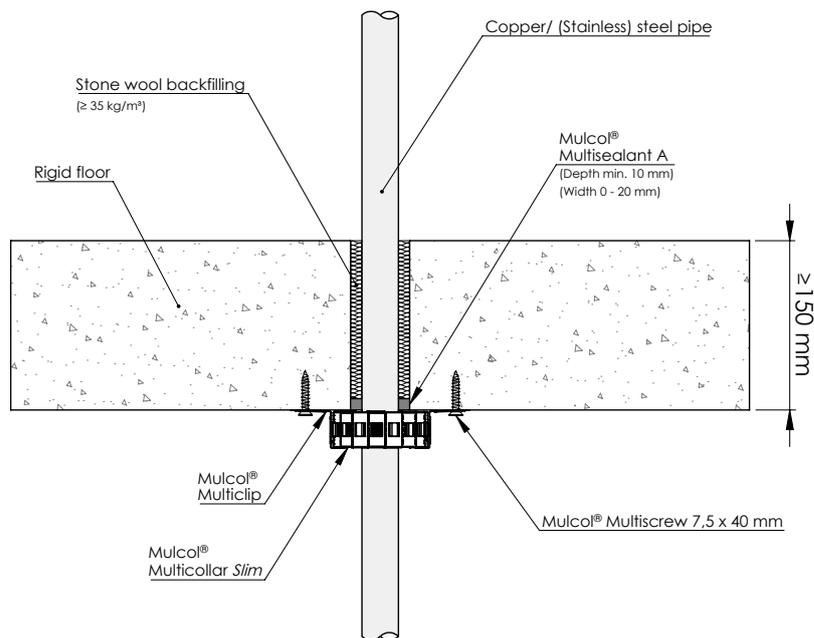
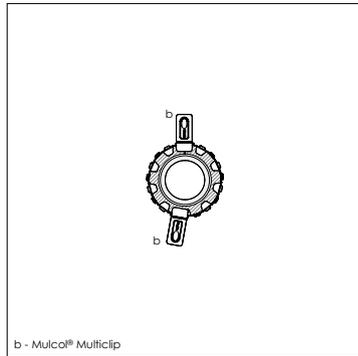
Drawing: RF.E-MC30-ST-MM2.7.22

Services	Dimensions (mm)		Insulation			Product	Classification
	Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) Steel / cast iron	$\leq \text{Ø } 114.3$	$\geq 3.6$	ArmaFlex (min. class B-s3, d0 B <sub>1</sub> -s3, d0)	32	LI 300 / CI	Multicollor <i>Slim</i>	EI 90 C/U

## B.1.19 Directly through floor - Metal pipes

### B.1.19.1 Copper and steel pipes

Bottom view



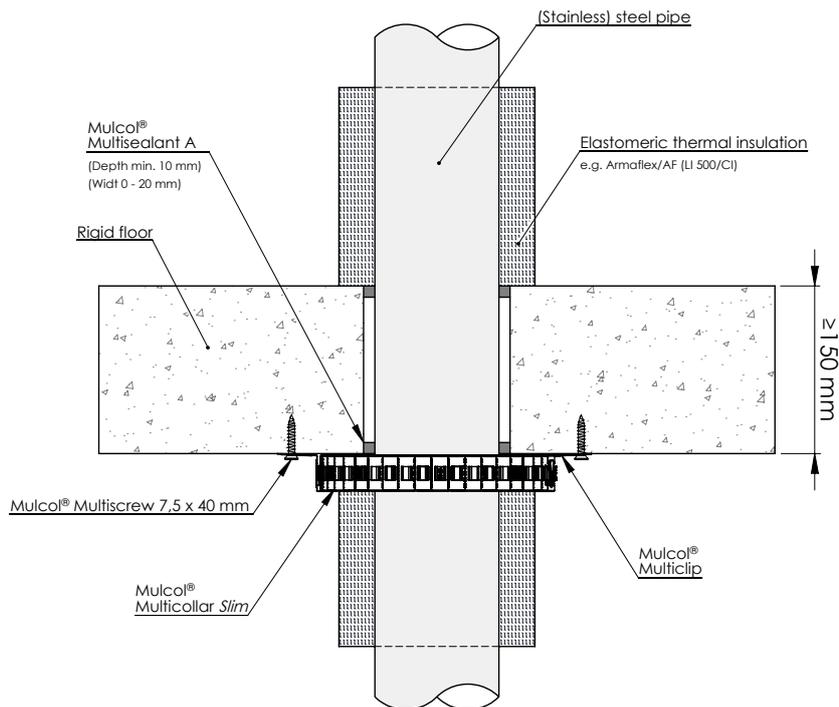
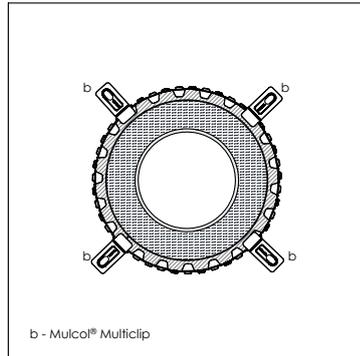
Drawing: RF.E-MC30-CU-11.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Backing	Classification
	Outer dimension	Wall thickness				
Copper / (stainless) steel / cast iron	$\leq \text{Ø } 35$	$\geq 1.5$	Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 10$ wxd)	Stone wool ( $\geq 35 \text{ kg/m}^3$ )	<b>EI 20 U/C</b> <b>E 120 U/C</b>

## B.1.19 Directly through floor - Metal pipes

### B.1.19.2 Steel pipes - Elastomer LI 500 / CI

Bottom view



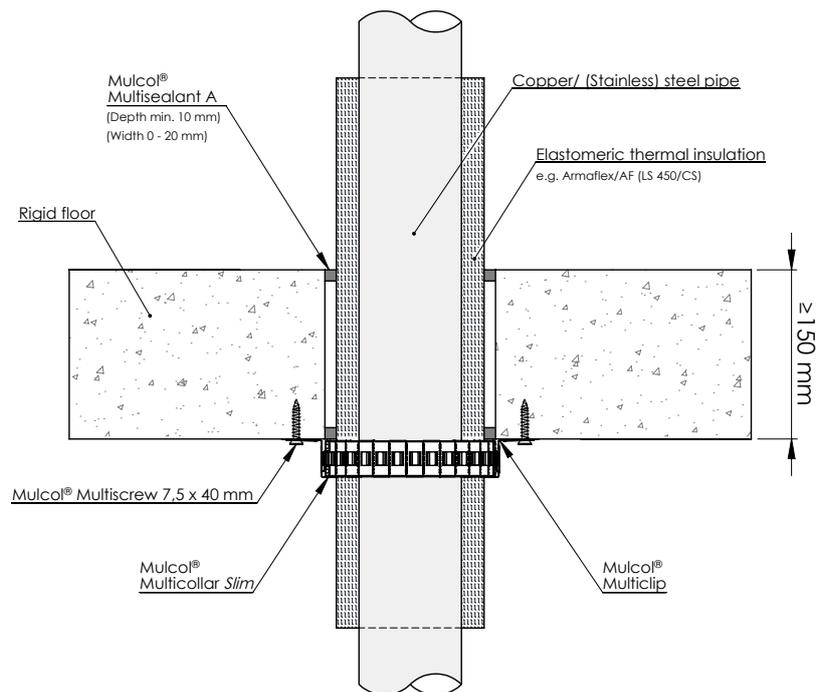
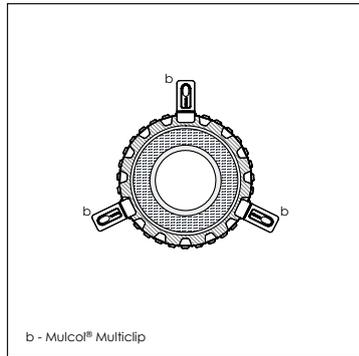
Drawing: RF.E-MC30-ST-11.0.22.LI

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration			
(stainless) Steel / cast iron	$\leq \text{Ø } 114.3$	$\geq 3.6$	ArmaFlex AF (min. class B-s3, d0)	9 - 32	LI 500 / CI	Multicollar <i>Slim</i>	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 60 U/C
	$\leq \text{Ø } 168.3$	$\geq 4.5$		32				EI 90 U/C
	$\leq \text{Ø } 114.3$	$\geq 3.6$	B <sub>L</sub> -s3, d0)	9 - 32				EI 60 U/C
	$\leq \text{Ø } 168.3$	$\geq 4.5$		32				EI 90 U/C

## B.1.19 Directly through floor - Metal pipes

### B.1.19.3 Copper and steel pipes - Elastomer LS 450 / CS

Bottom view

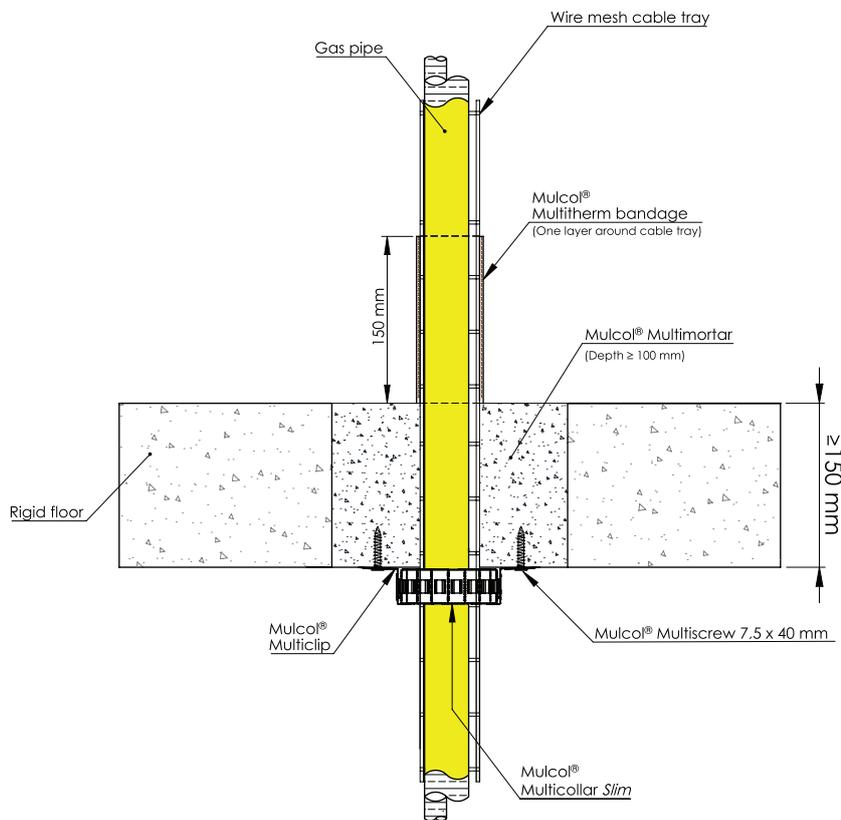
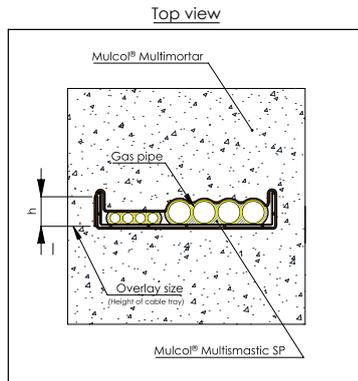


Drawing: RF.E-MC30-ST-11.0.22.LI

Services	Pipe dimensions (mm)		Insulation			Product	Sealing (mm)	Classification
	Outer dimensions	Wall thickness	Type	Thickness (mm)	Configuration			
Copper / (stainless) steel / cast iron	≤ Ø 88.9	≥ 2.0	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	32	LS 450 / CS	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 45 U/C E 90 U/C
					CS			EI 60 U/C E 90 U/C
(Stainless) steel / cast iron	≤ Ø 114.3 ≤ Ø 168.3	≥ 3.6 ≥ 4.5		9 - 32	LS 450 / CS			EI 60 U/C

## B.1.20 Multimortar - $\geq 150$ mm - Gas pipes

### B.1.20.1 Corrugated stainless steel tube gas (CSST) pipes - Multitherm Bandage



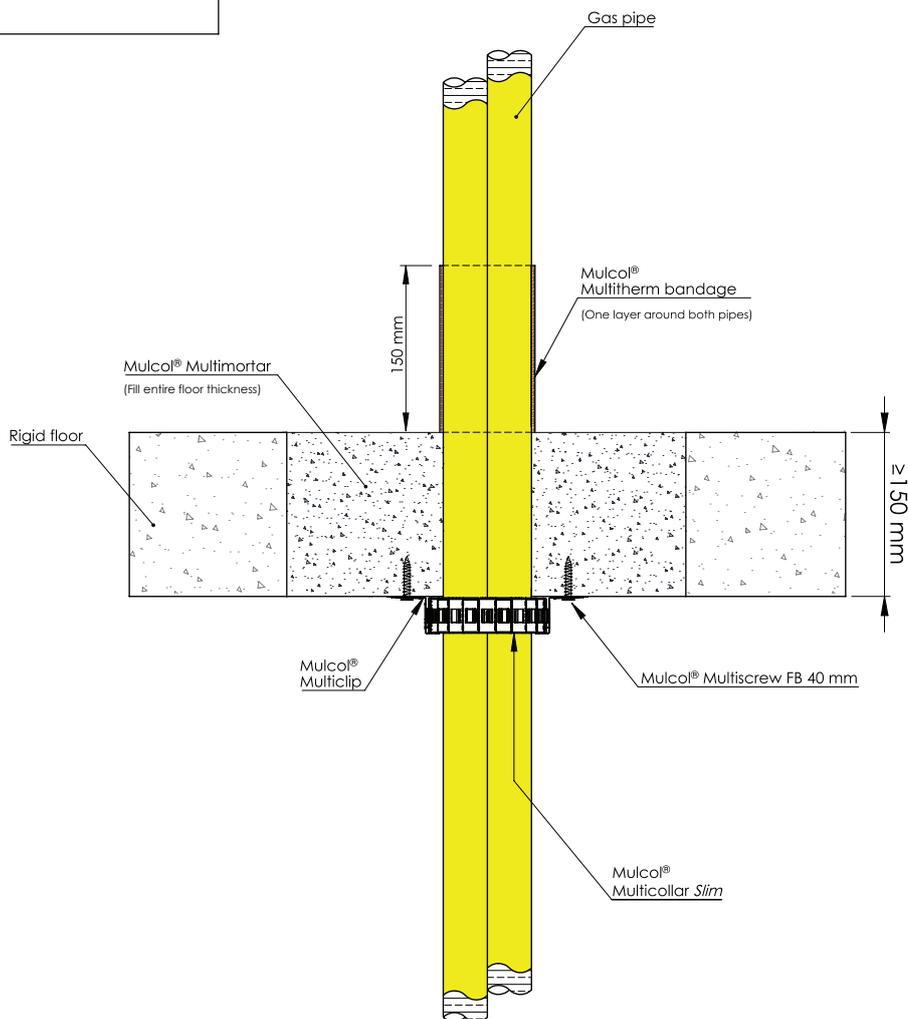
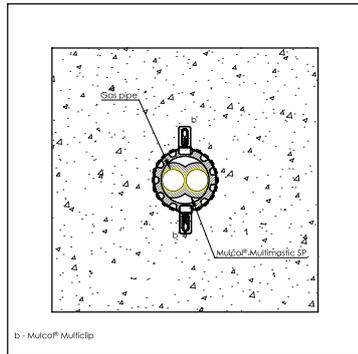
Drawing: RF.E-CT-GFS-MC30-MM1.3.10

Services	Number of pipes	Product	Sealing (mm)	Classification
CFS CSST gas pipe $\leq \varnothing 20$ mm in wire mesh cable tray	$\leq 4$	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	$\leq 4$			

**B.1.20 Multimortar -  $\geq 150$  mm - Gas pipes**

**B.1.20.2 Corrugated stainless steel tube gas (CSST) pipes - Multitherm Bandage**

Bottom view

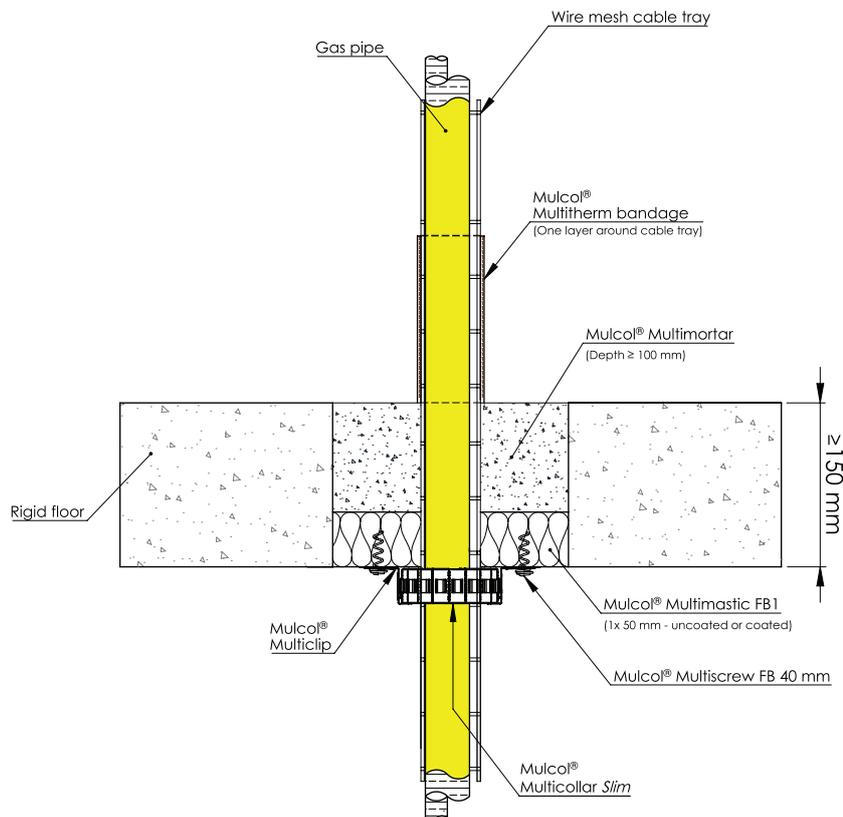
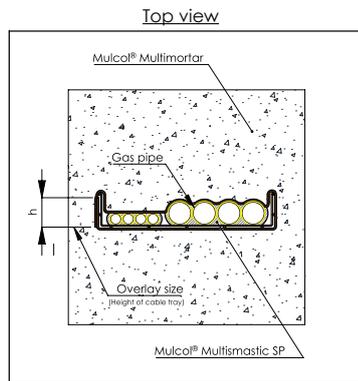


Drawing: RF.E-GFS2-MC30-MM1.3.10

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

**B.1.21 Multimortar + Multimastic FB - 150 mm - Gas pipes**

**B.1.21.1 Corrugated stainless steel tube gas (CSST) pipes - Multitherm Bandage**

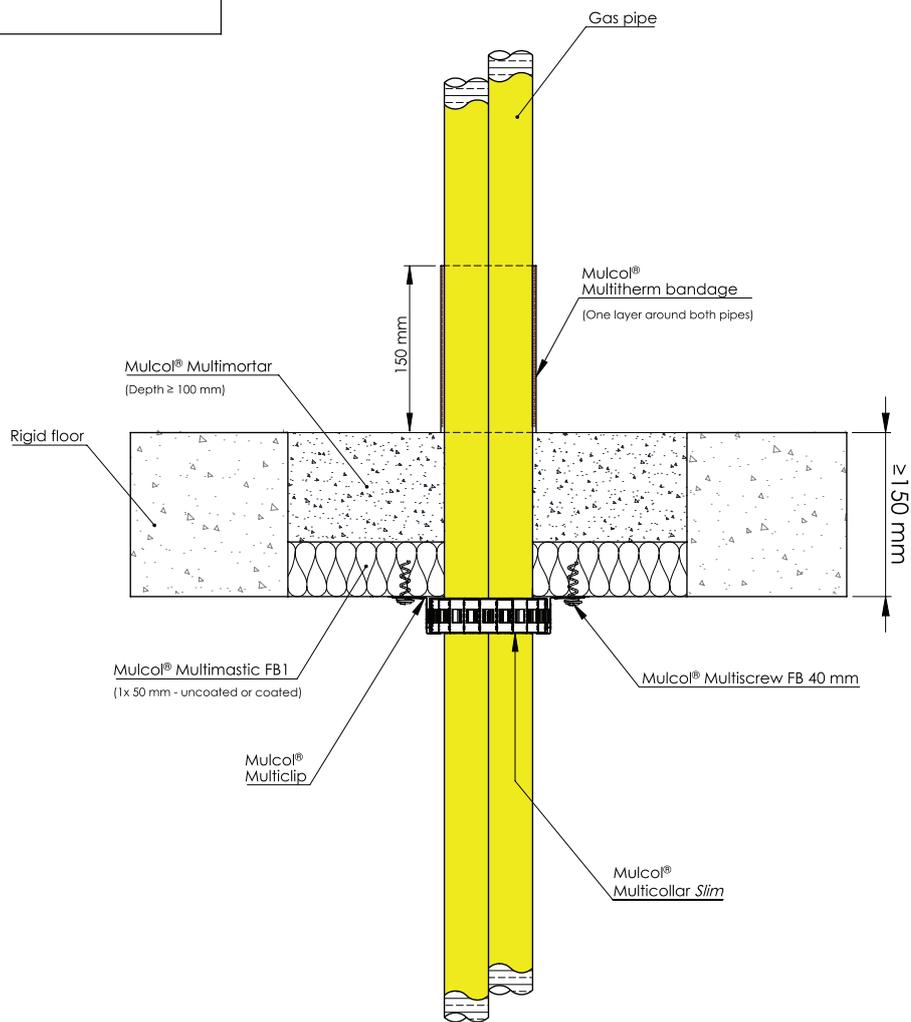
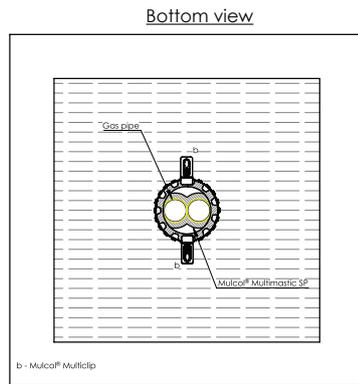


Drawing: RF.E-CT-GFS-MM2.2.10

Services	Number of pipes	Product	Sealing (mm)	Classification
CFS CSST gas pipe $\leq \varnothing 20$ mm in wire mesh cable tray	$\leq 4$	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	$\leq 4$			

**B.1.21 Multimortar + Multimastic FB - 150 mm - Gas pipes**

**B.1.21.2 Corrugated stainless steel tube gas (CSST) pipes - Multitherm Bandage**

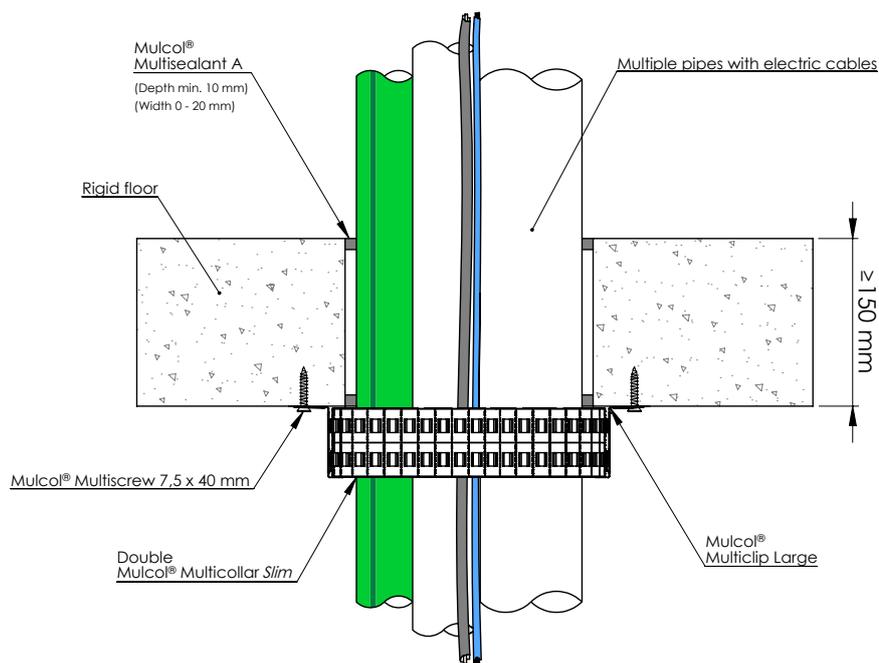
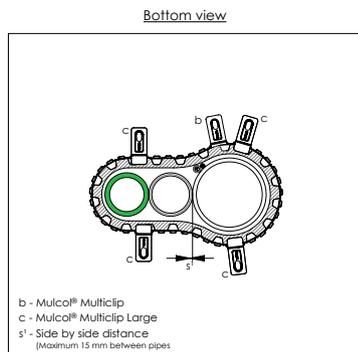


Drawing: RF.E-GFS2-MM2.2.1

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

## B.1.22 Directly through floor - Multiple services

### B.1.22.1 Multiple pipes and cables



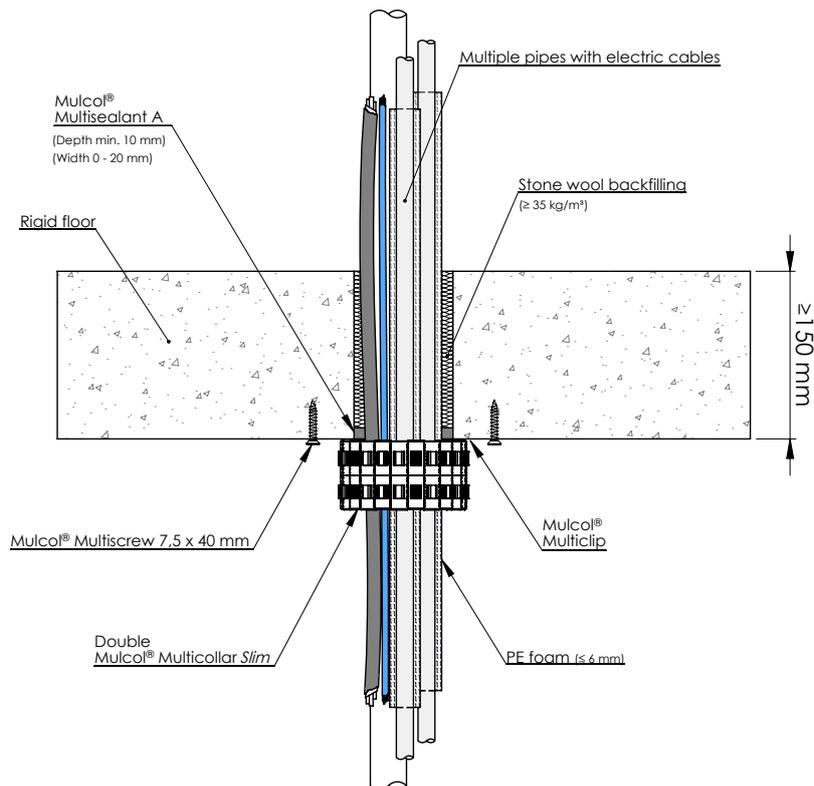
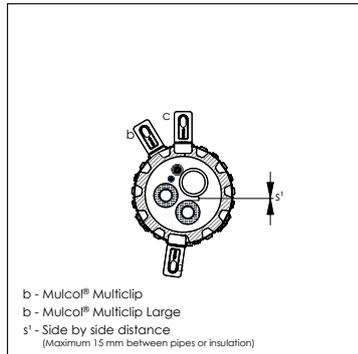
Drawing: RF.E-MC60-MLP3-21.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE(-HD) / PE-X / ABS / SAN+PVC	≤ Ø 90	2.8	Multicollar Slim	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/U
Multilayer pipes (MLC)	≤ Ø 50	4.0			EI 120 U/C
Aquatherm Green-MF		6.9			EI 120
Telecommunication cable	UTP Cat 5/6	-			
Sheathed cable	≤ 5 x 2.5 mm <sup>2</sup>	-			

## B.1.22 Directly through floor - Multiple services

### B.1.22.2 Airconditioning set

Bottom view



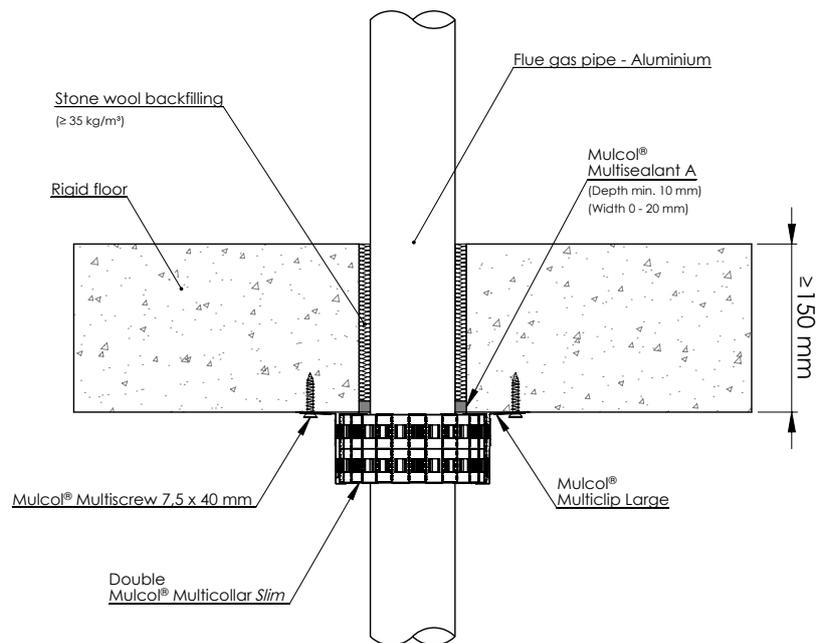
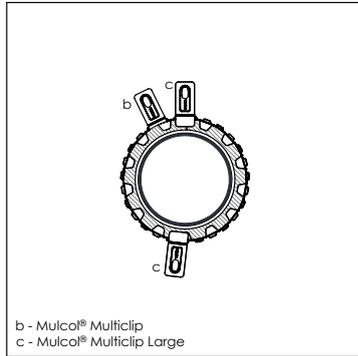
Drawing: RF.E-MC60-MLP5-21.0.40

Services	Pipe dimensions (mm)		Insulation			Product	Classification
	Outer diameter	Wall thickness	Type	Thickness (mm)	Configuration		
Set of airconditioning pipes	$2x \leq \varnothing 15$	1.5	PE foam	$\geq 6$	LS 400 / CS LI 400 / CI	Multicollar Slim	EI 120 C/U
PVC-U / PVC-C	$\leq \varnothing 32$	3.0	-	-	-		EI 120 U/U
Telecommunication cable	UTP Cat 5/6	-	-	-	-		EI 120
Sheathed cable	$\leq \text{YMKV } 5 \times 2.5 \text{ mm}^2$	-	-	-	-		

## B.1.23 Directly through floor - Flue gas pipes

### B.1.23.1 Aluminium flue gas pipes

Bottom view



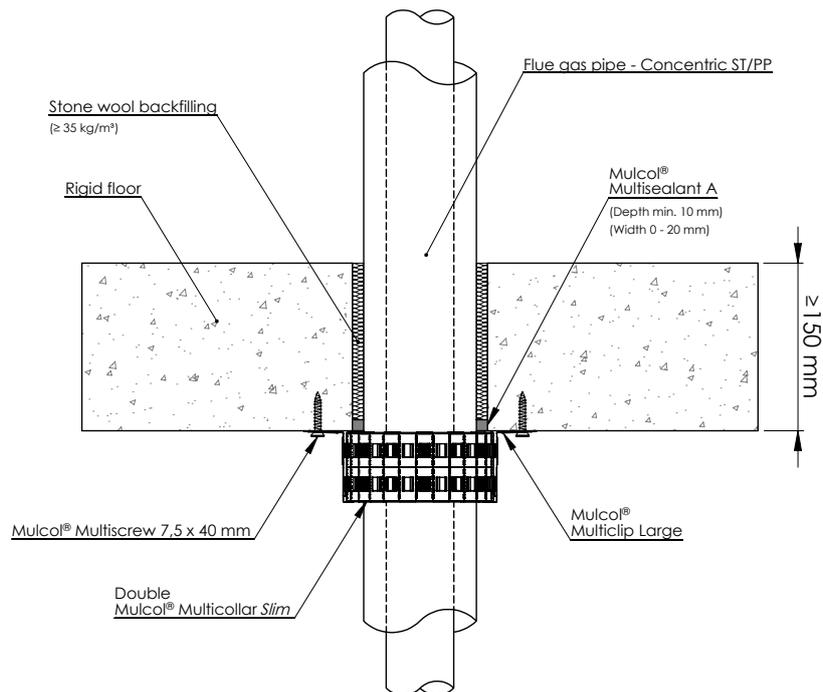
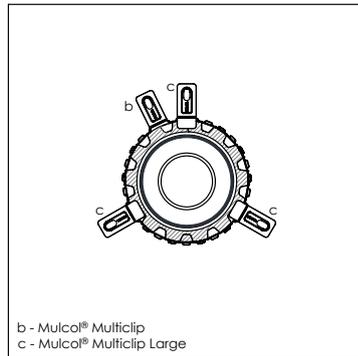
Drawing: RF.E-MC60-RGA-21.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Aluminium	$\leq \text{Ø } 80$	1.5	Multicollar Slim double	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 15 U/C, E 90 U/C
	$\leq \text{Ø } 130$				E 90 U/C

## B.1.23 Directly through floor - Flue gas pipes

### B.1.23.2 Concentric steel/PP flue gas pipes

Bottom view



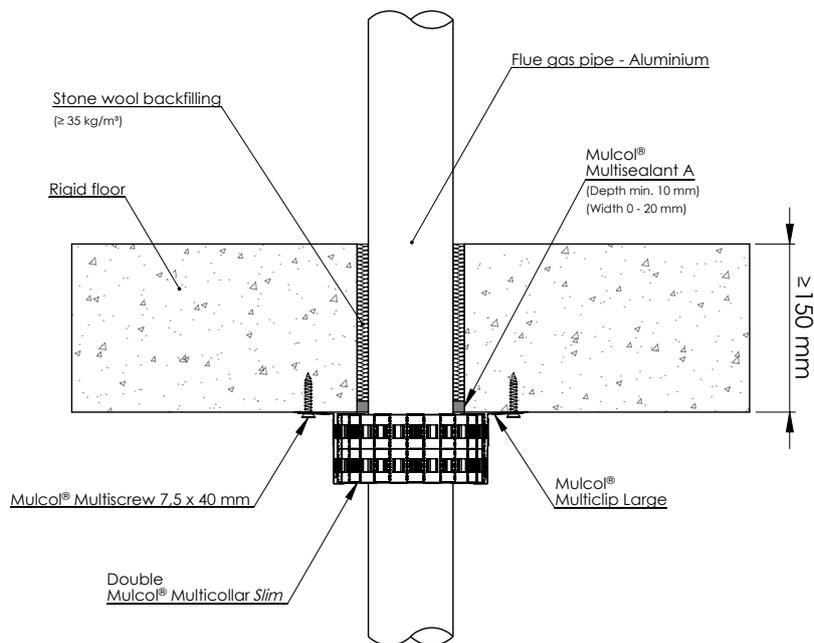
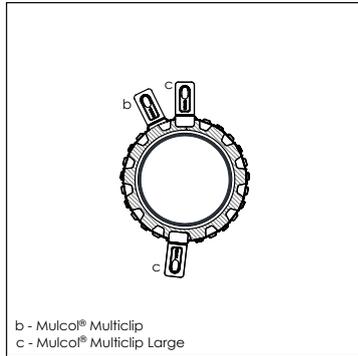
Drawing: RF.E-MC60-RGAT-21.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer pipe dimension	Inner pipe dimension			
Steel/PP flue gas system concentric	≤ Ø 110	≤ Ø 60	Multicollar Slim double	Multimastic SP 0-20 x ≥ 10 (wxd)	E 90 U/C
	≤ Ø 125	≤ Ø 80			
	≤ Ø 150	≤ Ø 100			
	≤ Ø 200	≤ Ø 130			

## B.1.23 Directly through floor - Flue gas pipes

### B.1.23.3 Plastic flue gas pipes

Bottom view



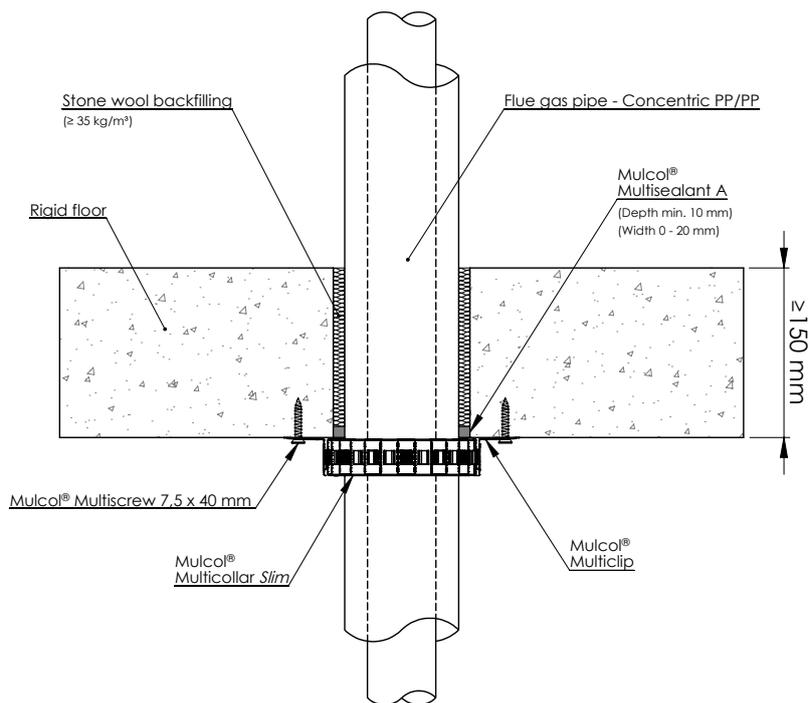
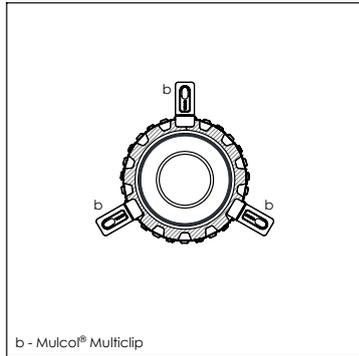
Drawing: RF.E-MC60-RGA-21.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PP	$\leq \text{Ø } 40$	1.8 - 4.0	Multicollar Slim	Multimastic SP 0-20 x $\geq 10$ (wxd)	EI 90 U/U
	$\leq \text{Ø } 125$	3.1 - 4.0			

**B.1.23 Directly through floor - Flue gas pipes**

**B.1.23.4 Concentric plastic flue gas pipes**

Bottom view

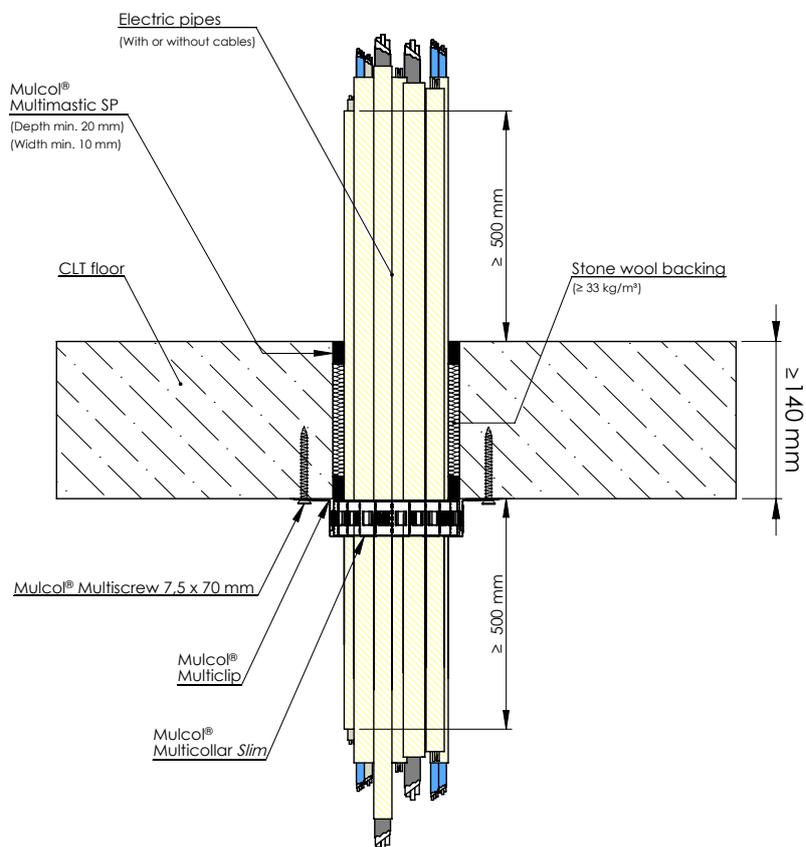
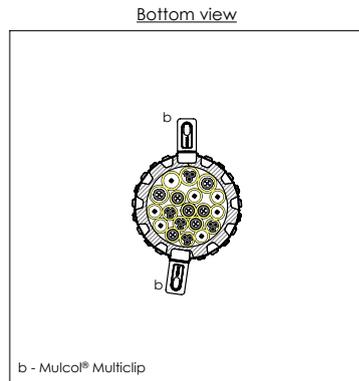


Drawing: RF-E-MC30-RGAT\_PP-11.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PP / PP	≤ Ø 40	1.8 - 4.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/U
	≤ Ø 125	3.1 - 4.0			

## B.2.1 Directly through floor - Cables, trays and conduits

### B.2.1.1 Multiple plastic conduits



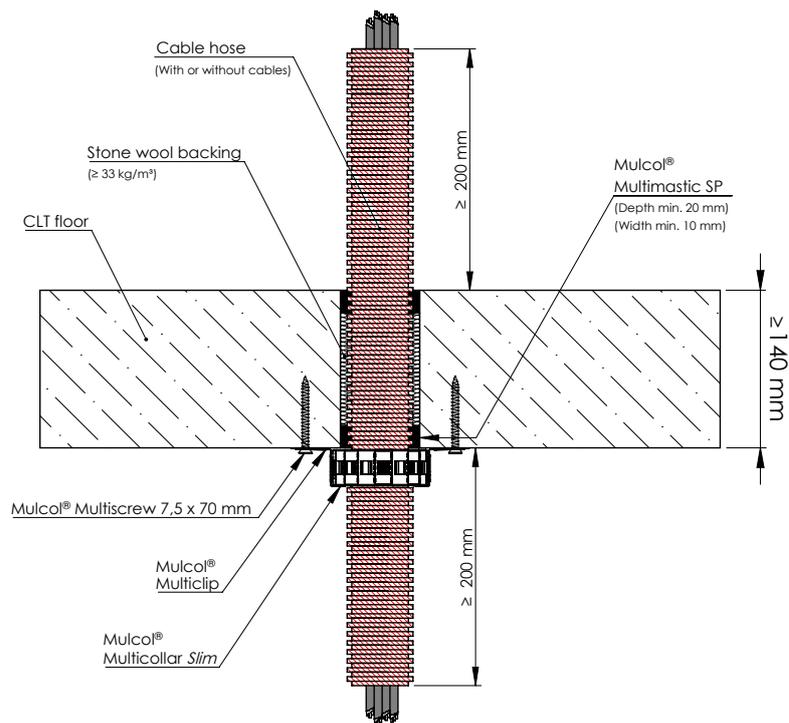
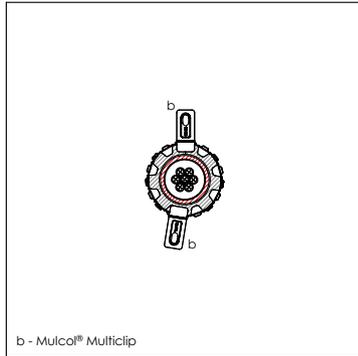
Drawing: FCLT.E-MC30-EPB-11.0.40

Services	Length of conduit	Product	Allowed cables	Classification
Multiple PVC conduits max. $\leq \varnothing 80$ mm max. $\leq \varnothing 19$ mm each with or without cables	$\geq 500$ mm	Multicollar Slim	Sheathed cables $\leq \varnothing 10.2$ mm Unsheathed cables $\leq \varnothing 5$ mm	EI 90 U/U, E 120 U/U

## B.2.1 Directly through floor - Cables, trays and conduits

### B.2.1.2 Flexible conduits with cables

Bottom view



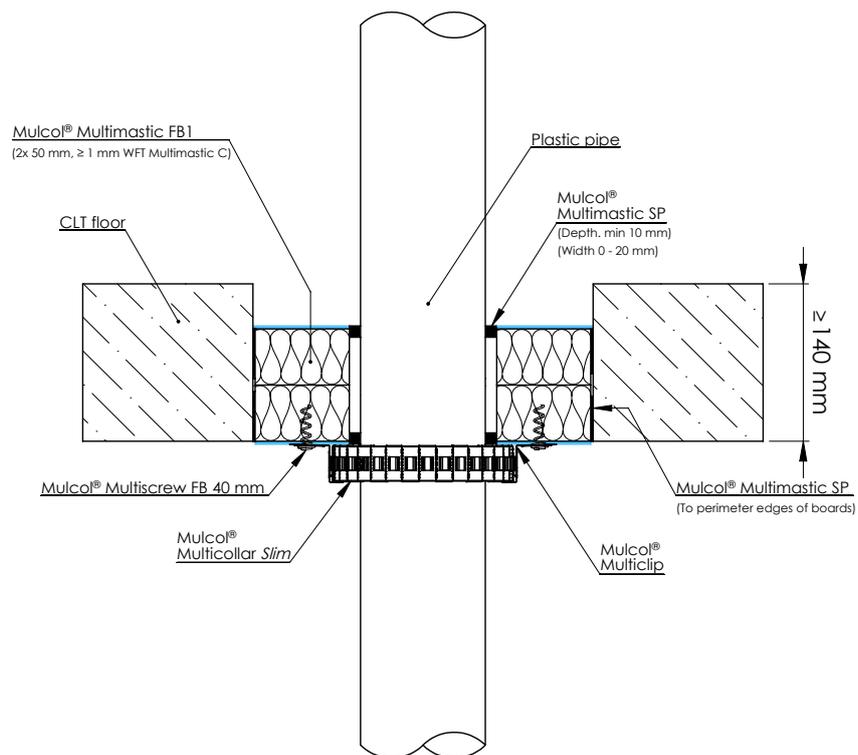
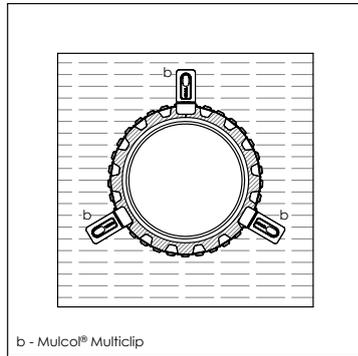
Drawing: FCLT.E-MC30-ECH-11.0.30

Services	Length of conduit	Product	Allowed cables	Classification
Ribbed PE-sleeve conduit ≤ Ø 63 mm, with or without cables	≥ 200 mm	Multicollar <i>Slim</i>	Sheathed cables ≤ Ø 60 mm (single or bundled) Telecommunication cables ≤ Ø 21 mm in a tied bundle ≤ Ø 60 mm	<b>EI 90 U/U, E 120 U/U</b>

## B.2.2 Multimastic FB1 - 2x50 mm - Combustible pipes

### B.2.2.1 Plastic pipes

Bottom view



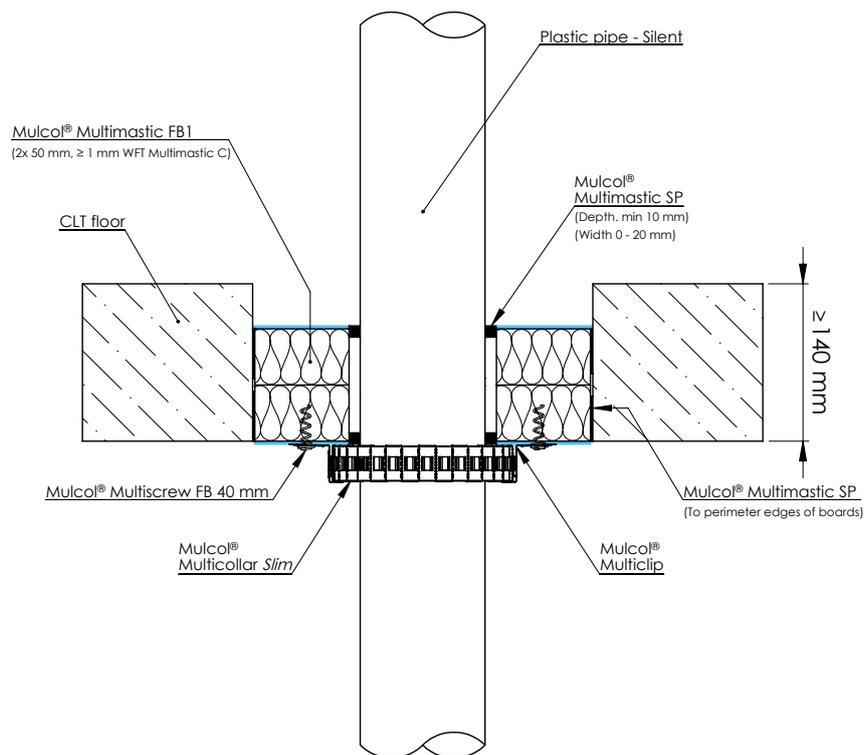
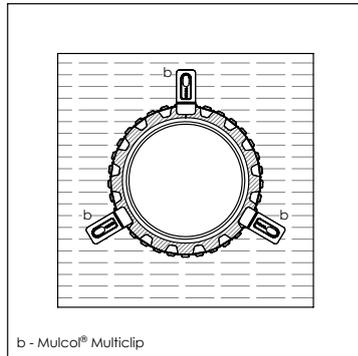
Drawing: FCLT.E-MC30-PP-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE-HD/ PE / ABS / SAN+PVC	≤ Ø 110	2.7	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 45 U/U
		2.7 - 6.6			
PP		2.7			
		2.7 - 6.3			
PVC-U / PVC-C		2.7			
		2.7 - 6.3			

## B.2.2 Multimastic FB1 - 2x50 mm - Combustible pipes

### B.2.2.2 Plastic pipes (Silent)

Bottom view

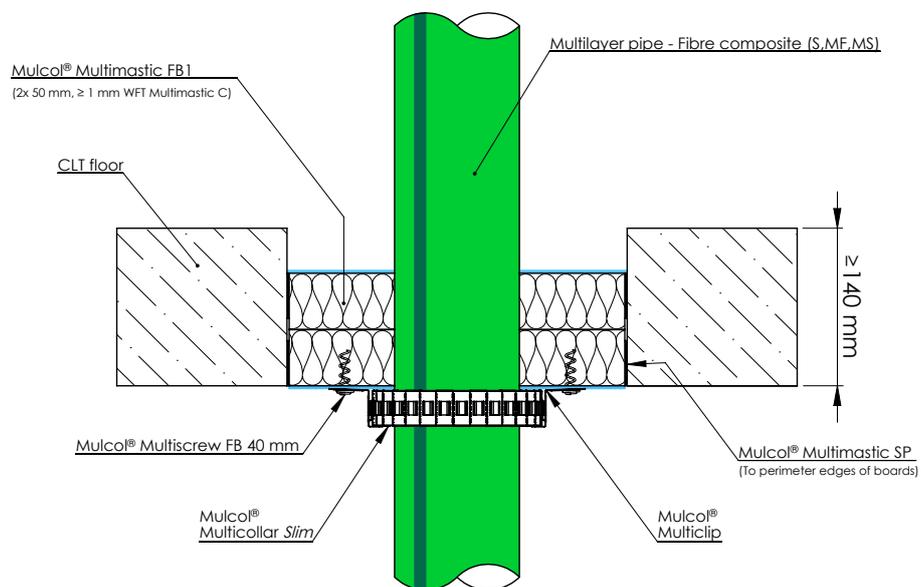
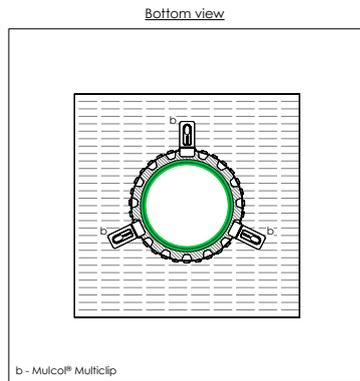


Drawing: FCLT.E-MC30-PPS-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB 20	≤ Ø 110	6.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	<b>EI 45 U/U</b>

## B.2.2 Multimastic FB1 - 2x50 mm - Combustible pipes

### B.2.2.3 PP-R Multilayer pipes



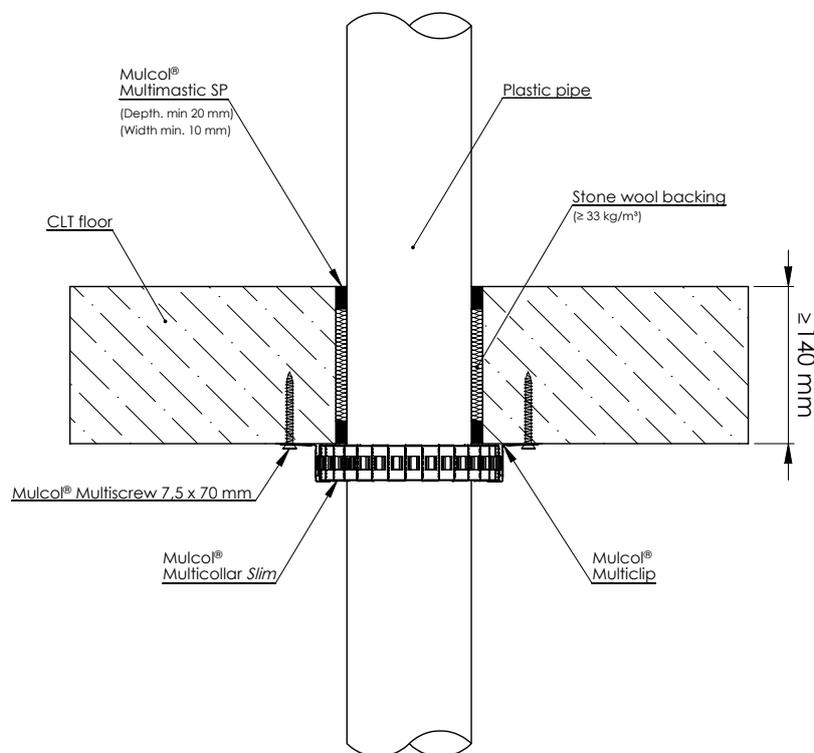
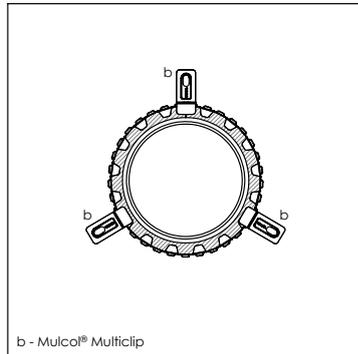
Drawing: FCLT.E-MC30-MLF-MFB1.2.10

Services	Pipe dimensions (mm)		Product	Classification
	Outer dimension	Wall thickness		
Aquatherm Green-MF	≤ Ø 50	6.9	Multicollar Slim	EI 45 U/C
Aquatherm Blue-MF	≤ Ø 110	10.0		

## B.2.3 Directly through the floor - Combustible pipes

### B.2.3.1 Plastic pipes

Bottom view



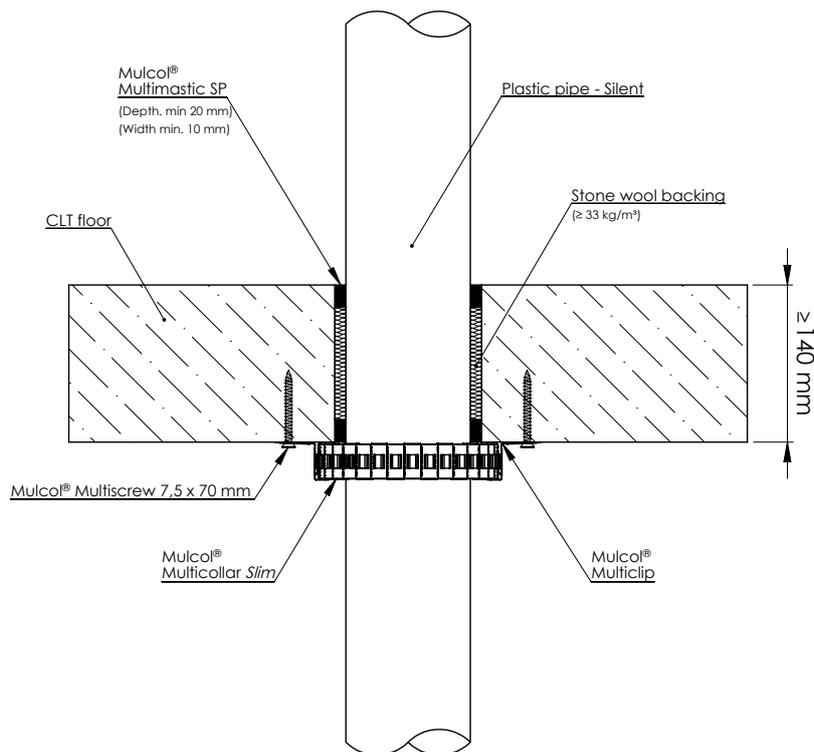
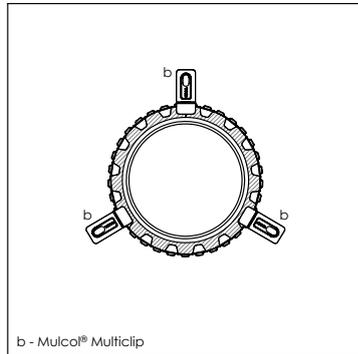
Drawing: FCLT.E-MC30-PP-11.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
PE-HD/ PE / ABS / SAN+PVC	≤ Ø 40	2.3 - 10.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 90 U/U
	≤ Ø 110	2.7 - 10.0			EI 120 U/C
	≤ Ø 125	3.9			EI 120 U/U
PP	≤ Ø 40	2.3			EI 90 U/U
		2.3 - 10.0			EI 120 U/C
	≤ Ø 110	2.7 - 10.0			EI 120 U/C
PVC-U / PVC-C	≤ Ø 125	3.1			EI 90 U/U
	≤ Ø 40	2.3 - 10.0			EI 120 U/C
		2.7 - 10.0			EI 90 U/U
		3.2 - 8.1	EI 120 U/U		

## B.2.3 Directly through the floor - Combustible pipes

### B.2.3.2 Plastic pipes (Silent)

Bottom view



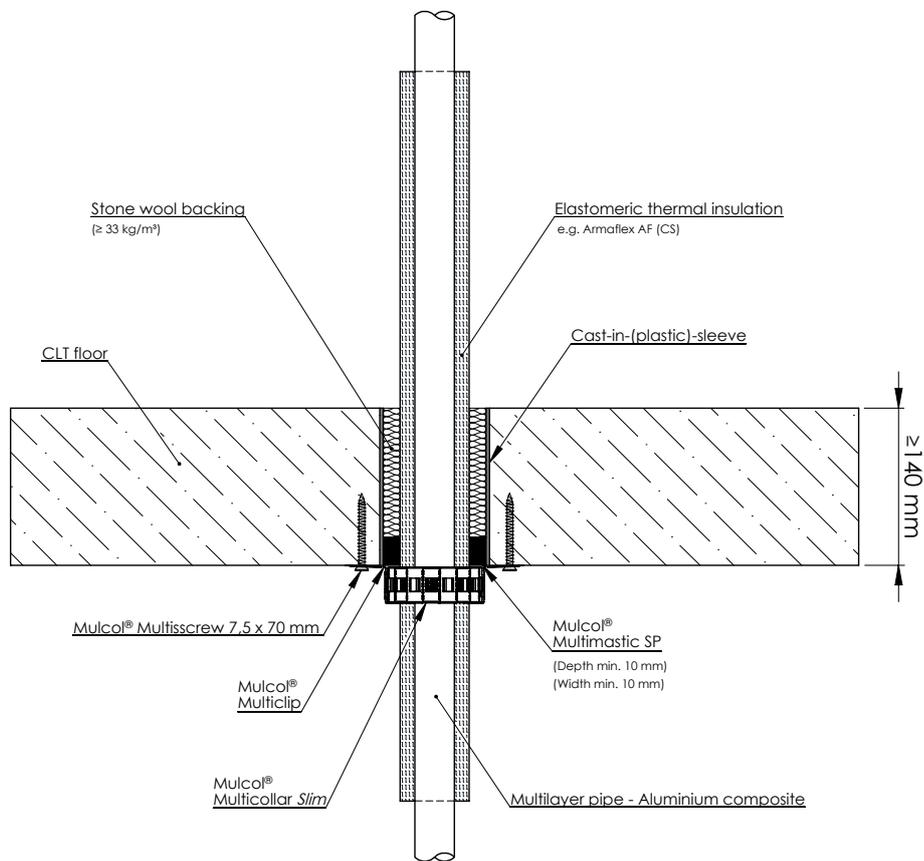
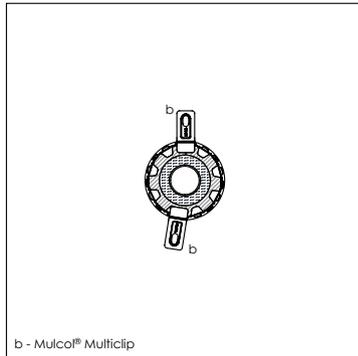
Drawing: FCLT.E-MC30-PPS-11.0.10

Services	Pipe dimensions (mm)		Product	Sealing (mm)	Classification
	Outer dimension	Wall thickness			
Geberit Silent dB 20	≤ Ø 110	6.0	Multicollar <i>Slim</i>	Multimastic SP 0-20 x ≥ 10 (wxd)	EI 120 U/U
Raupiano Plus		2.7			
	≤ Ø 160	4.0			EI 60 U/C

## B.2.4 Directly through the floor - Cast-in sleeve

### B.2.4.1 Multilayer pipes (MLC) - Elastomer CS

Bottom view



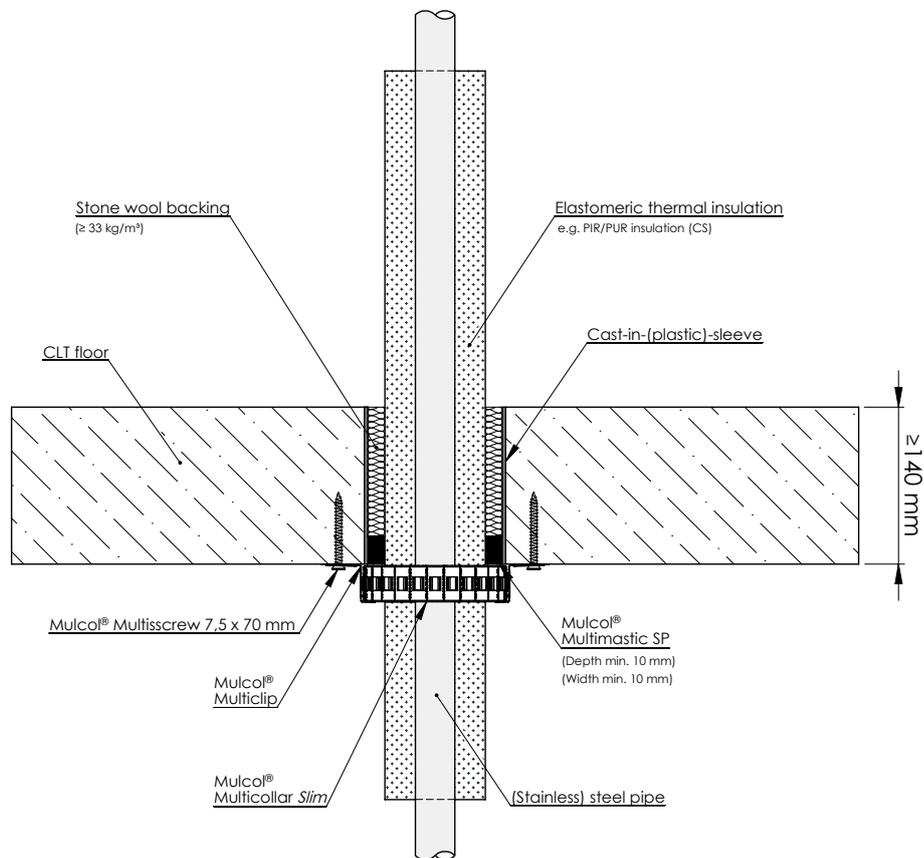
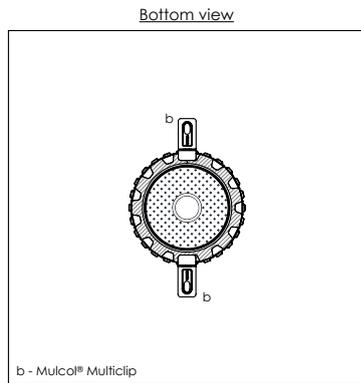
Drawing: FCLTmk.E-MC30-MLA-MSP1.1.22

Services		Pipe dimensions (mm)		Insulation			Product	Classification
		Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
Multilayer pipes (MLC)	with or without plastic cast-in sleeve $\leq \varnothing 75$	$\leq \varnothing 32$	$\geq 3.0$	ArmaFlex AF (min. class B-s3, d0 B <sub>L</sub> -s3, d0)	13	CS	Multicollar <i>Slim</i>	<b>EI 120 C/U</b>



## B.2.4 Directly through the floor - Cast-in sleeve

### B.2.4.3 Steel pipes - PUR-PE CS

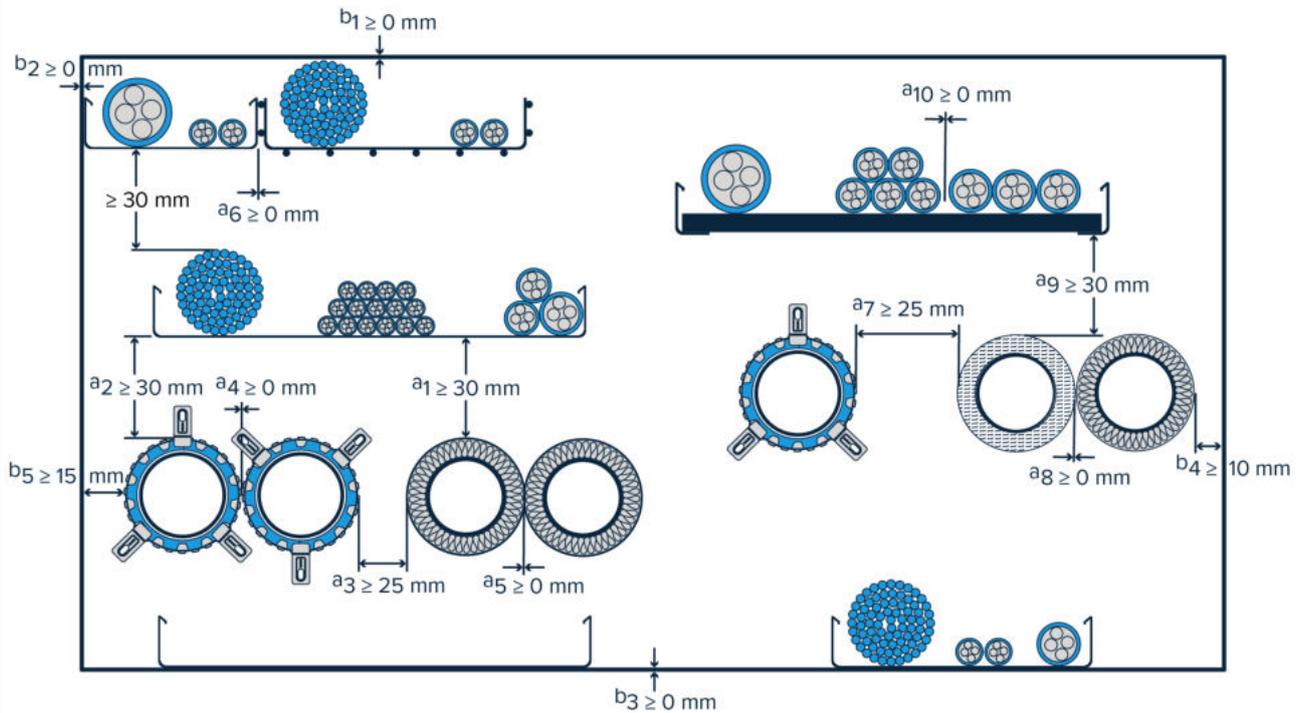


Drawing: FCLTmk.E-MC30-ST-MSP1.1.22

Services		Pipe dimensions (mm)		Insulation			Product	Classification
		Outer dimension	Wall thickness	Type	Thickness (mm)	Configuration		
(Stainless) steel / cast iron	with or without plastic cast-in sleeve ≤ Ø 125	≤ Ø 32	≥ 2.0	PUR-PE	30	CS	Multicollar Slim	EI 120 C/U

## C.1 Wall constructions - General

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



#### Mutual distances Mixed Penetration Seal

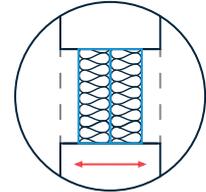
- a<sub>1</sub> Distance between cables/cable trays and metal pipes
- a<sub>2</sub> Distance between cables/cable trays and plastic pipes
- a<sub>3</sub> Distance between metal pipes and plastic pipes
- a<sub>4</sub> Distance between plastic pipes
- a<sub>5</sub> Distance between metal pipes with non-combustible insulation
- a<sub>6</sub> Distance between cable trays
- a<sub>7</sub> Distance between plastic pipes and pipes with combustible insulation
- a<sub>8</sub> Distance between pipes with non-combustible insulation and pipes with combustible insulation
- a<sub>9</sub> Distance between cables/cable trays and pipes with combustible insulation
- a<sub>10</sub> Distance between cables stacked together or in a row
- b<sub>1</sub> Distance between cables/cable trays and the upper seal edge
- b<sub>2</sub> Distance between cables/cable trays and the side seal edge
- b<sub>3</sub> Distance between cables/cable tray and the lower seal edge
- b<sub>4</sub> Distance between metal pipes and all seal edges
- b<sub>5</sub> Distance between plastic pipes and all seal edges

#### Service support construction

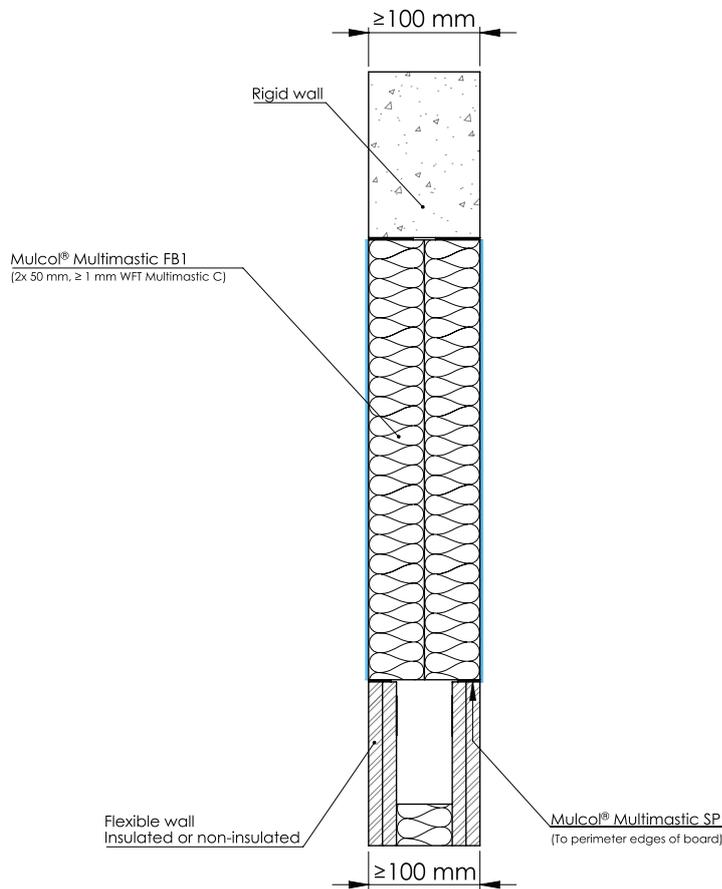
First support for all services at 450 mm, except cable trays at 250 mm.

**C.1.2 Wall constructions - Maximum seal dimensions flexible or rigid wall**

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



Position seal:  
right, left or anywhere  
in between

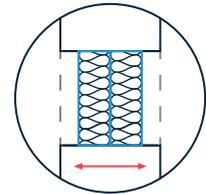


Drawing: PBfw.E-BS-MFB1.2.10

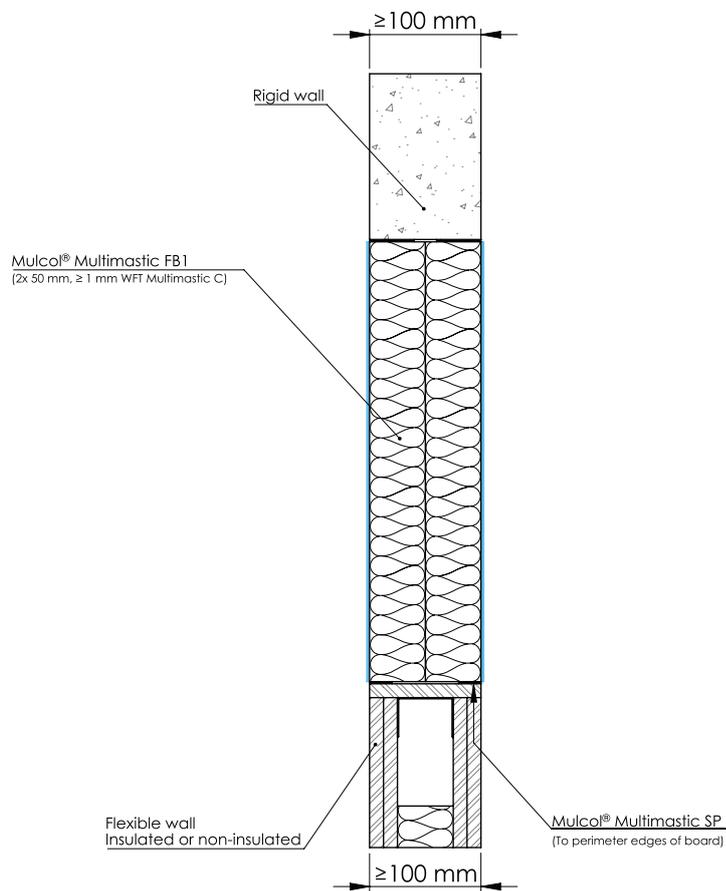
Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3 m <sup>2</sup>	EI 60
Maximum circular seal size Ø 1954 mm	
Maximum seal size 1200 x 1200 mm With a maximum surface of 1.44 m <sup>2</sup>	EI 60, E 90
Maximum circular seal size Ø 1354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

**C.1.2 Wall constructions - Maximum seal dimensions flexible or rigid wall**

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



Position seal:  
right, left or anywhere  
in between

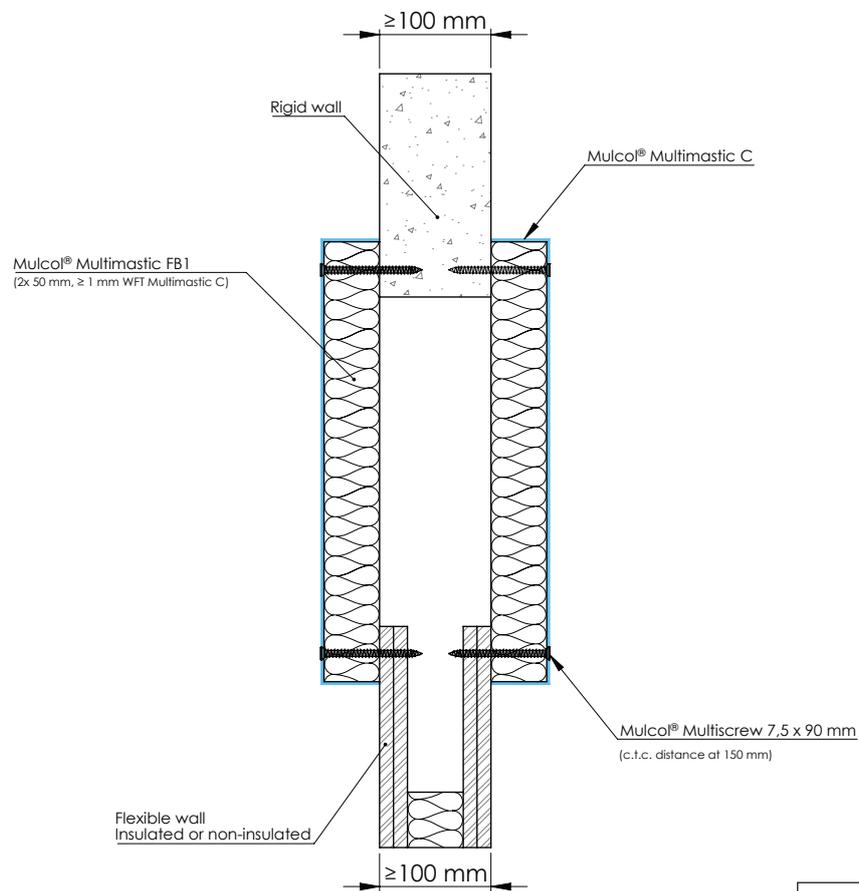


Drawing: PBfw.E-BS-A-MFB1.2.10

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

**C.1.2 Wall constructions - Maximum seal dimensions flexible or rigid wall**

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

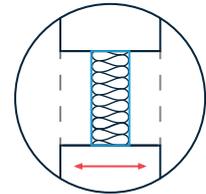


Drawing: PBPfw-BS-MFB1.2.10

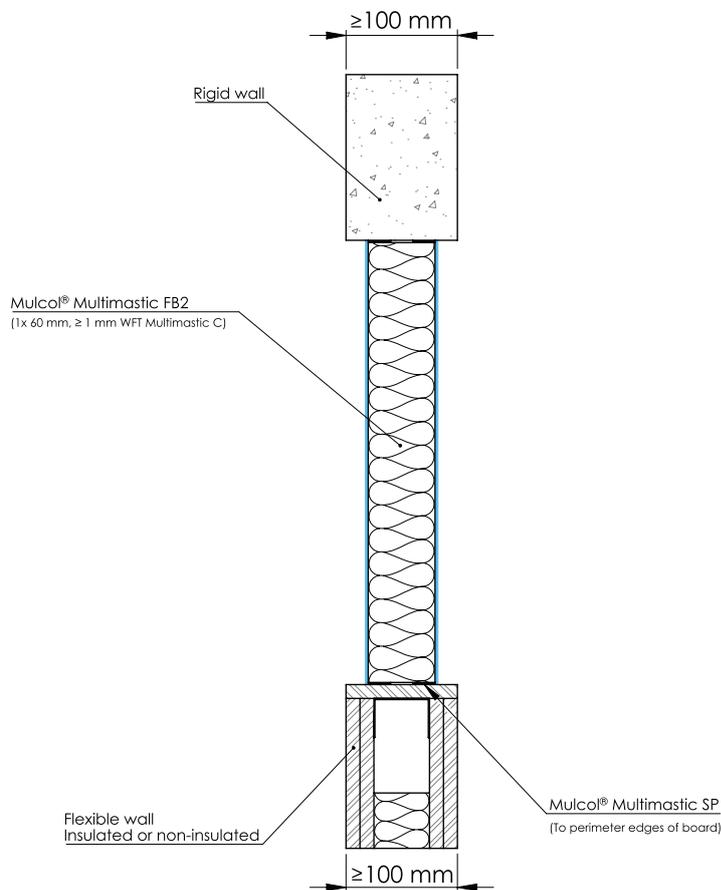
Services	Classification
Maximum seal size 750 x 1250 mm (width x height or height x width) With a maximum surface of 0.75 m <sup>2</sup>	<b>EI 120</b>
Maximum circular seal size Ø 1093 mm	

**C.1.2 Wall constructions - Maximum seal dimensions flexible or rigid wall**

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



Position seal:  
right, left or anywhere  
in between

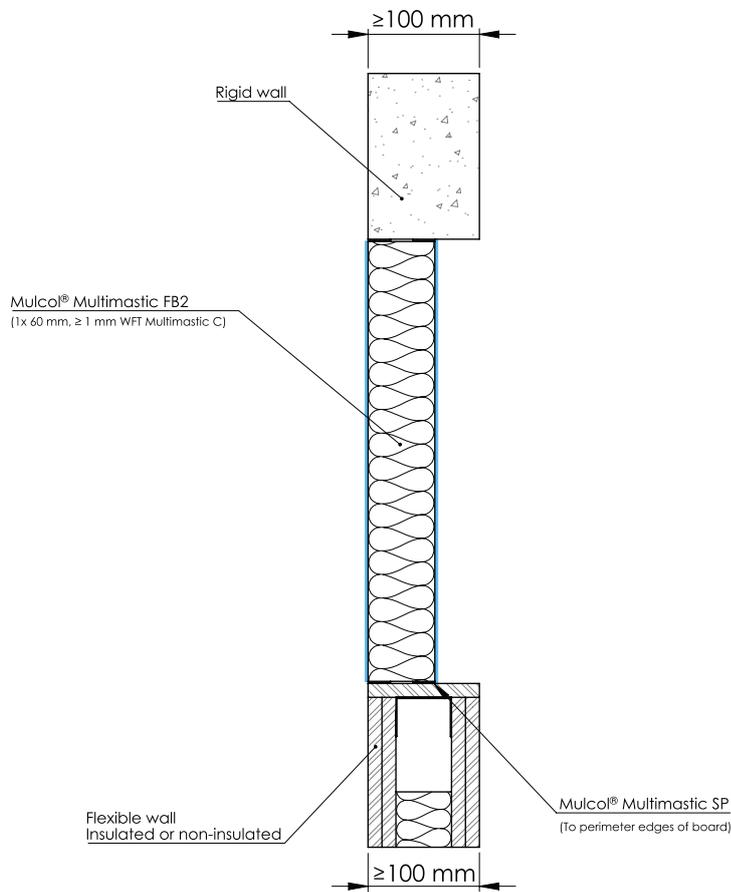


Drawing: PBfw.E-BS-MFB2.1.10

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

**C.1.2 Wall constructions - Maximum seal dimensions flexible or rigid wall**

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



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

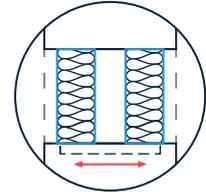
Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3.0 m <sup>2</sup>	<b>EI 60</b>
Maximum circular seal size Ø 1954 mm	
Maximum seal size 1200 x 1200 mm With a maximum surface of 1.44 m <sup>2</sup>	<b>EI 60, E 90</b>
Maximum circular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

**C.1.3**

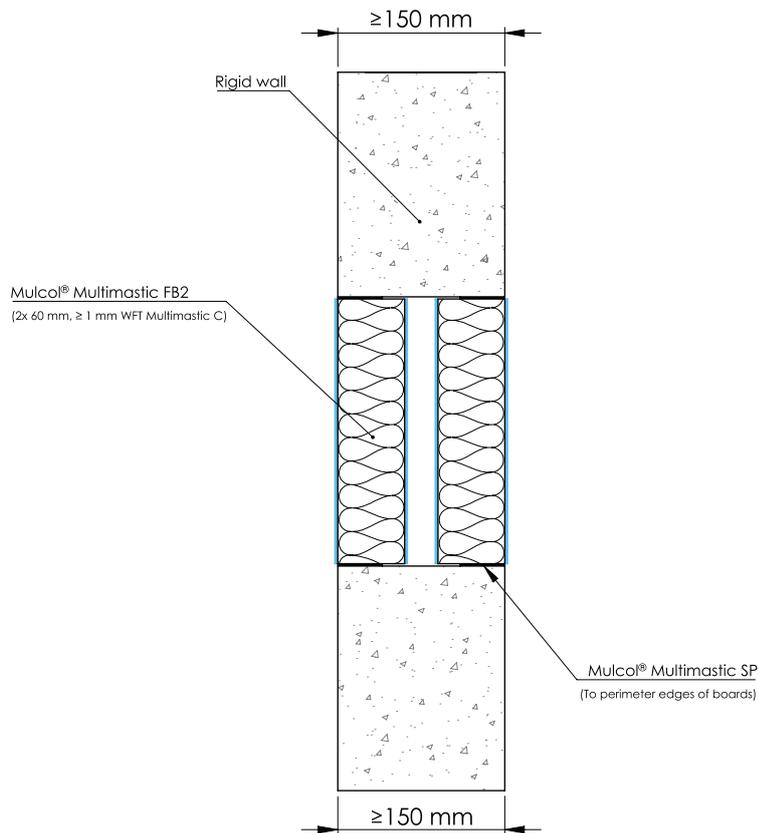
**Wall constructions - Maximum seal dimensions rigid wall**

**C.1.3.1**

**Multimastic FB2 - 2x 60 mm with cavity  $\leq 30$  mm**



Position seal:  
right, left or any in between

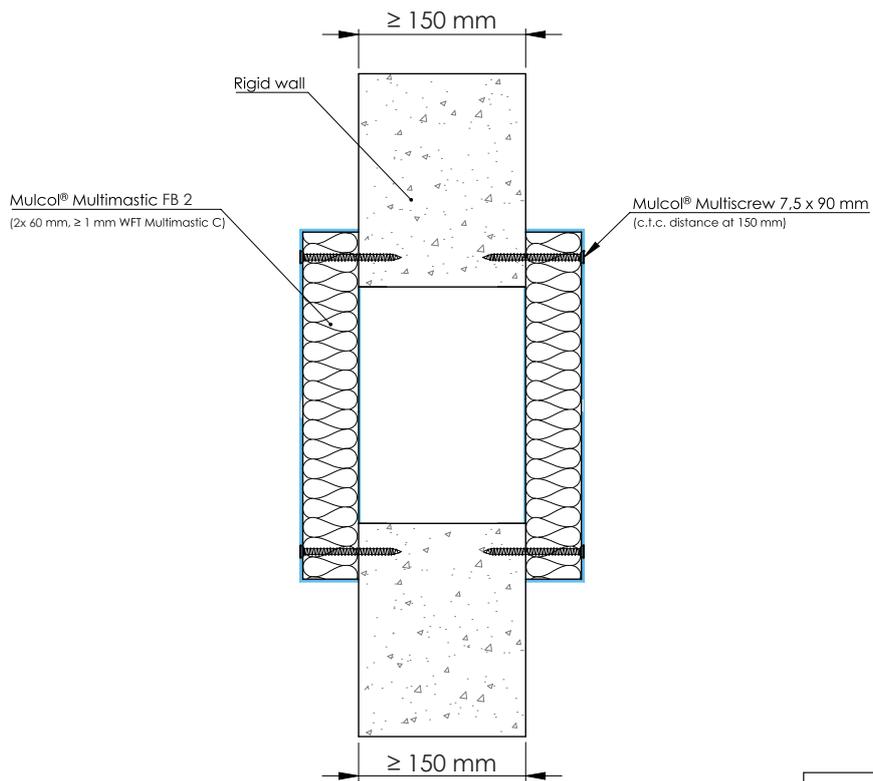


Drawing: RW150.E-BS-MFB2.2.10

Services	Classification
Maximum seal size 1500 x 1500 mm With a maximum surface of 1.8 m <sup>2</sup>	<b>EI 240</b>
Maximum circular seal size $\varnothing$ 1354 mm	

**C.1.3 Wall constructions - Maximum seal dimensions rigid wall**

**C.1.3.2 Multimastic FB2 - 2x 60 mm - Pattress fixed to wall**

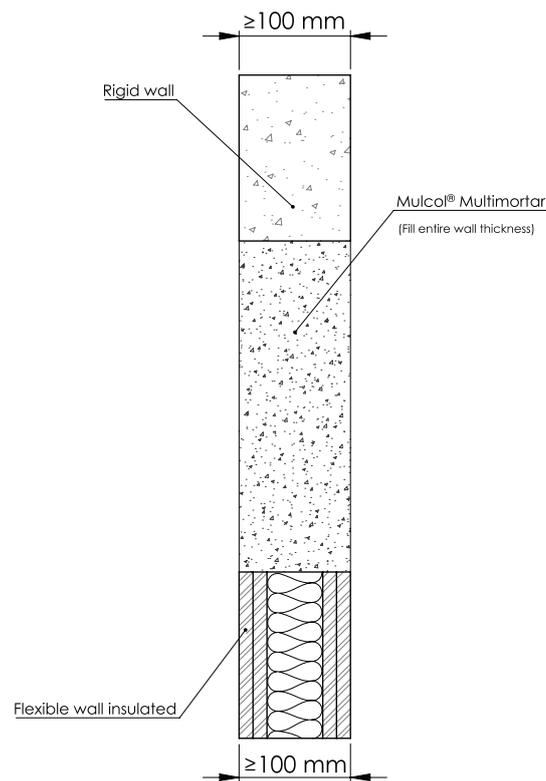


Drawing: PBPrw150.E-BS-MFB2.2.10

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

**C.1.4 Wall constructions - Maximum seal dimensions flexible or rigid wall**

**C.1.4.1 Multimortar -  $\geq 100$  mm**

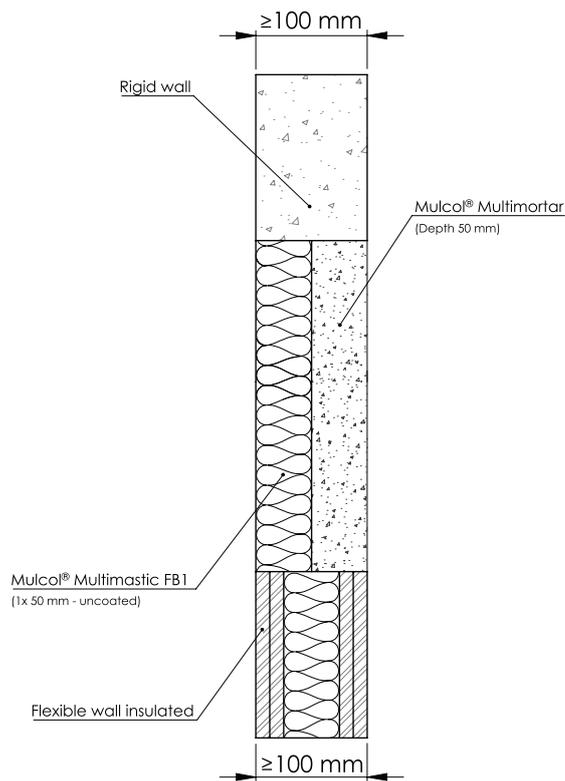


Drawing: FW.E-BS-MM1.2.10

Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3 m <sup>2</sup>	EI 120
Maximum circular seal size $\varnothing$ 1954 mm	
Maximum seal size 1200 x 2000 mm (width x height or height x width) With a maximum surface of 2.4 m <sup>2</sup>	EI 180
Maximum circular seal size $\varnothing$ 1748 mm	

**C.1.4 Wall constructions - Maximum seal dimensions flexible or rigid wall**

**C.1.4.2 Multimortar + Mulcol Multimastic FB system -  $\geq 100$  mm**

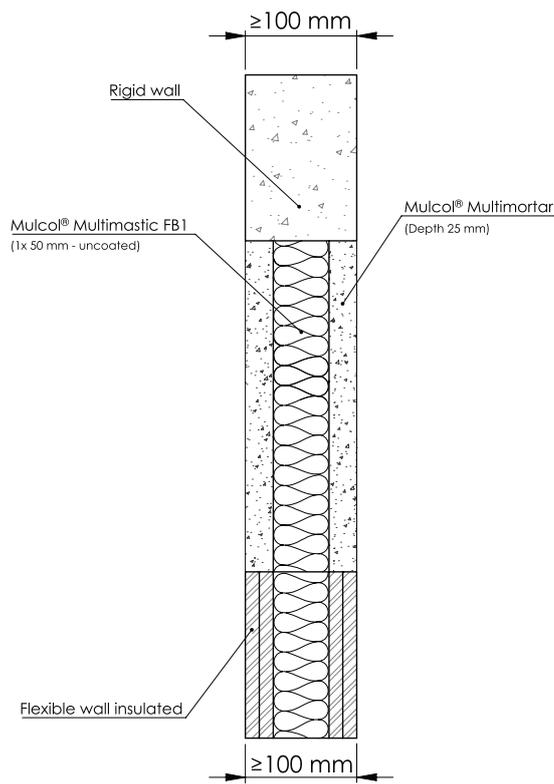


Drawing: FW.E-BS-MM2.5.10

Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3 m <sup>2</sup>	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 <sup>2</sup>	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 <sup>2</sup>	EI 120
Maximum circular seal size Ø 691 mm	

**C.1.4 Wall constructions - Maximum seal dimensions flexible or rigid wall**

**C.1.4.3 Multimortar 25 mm + Multimastic FB + Multimortar 25 mm -  $\geq 100$  mm**

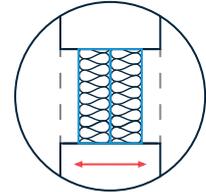


Drawing: FW.E-BS-MM3.4.10

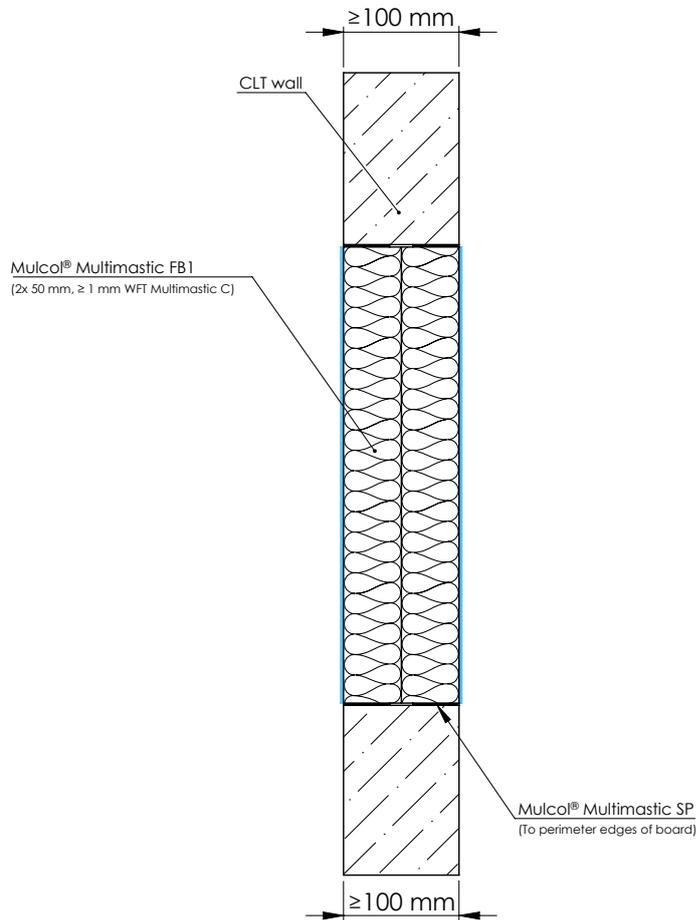
Services	Classification
Maximum seal size 1500 x 2500 mm (width x height or height x width) With a maximum surface of 3 m <sup>2</sup>	<b>EI 60</b>
Maximum circular seal size Ø 1954 mm	
Maximum seal size 1200 x 1200 mm (width x height or height x width) With a maximum surface of 1.44 m <sup>2</sup>	<b>EI 60, E 90</b>
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 <sup>2</sup>	<b>EI 120</b>
Maximum circular seal size Ø 691 mm	

**C.1.5 Wall constructions - Maximum seal dimensions CLT wall**

**C.1.5.1 Multimastic FB1 - 2x 50 mm no aperture framing**



Position seal:  
right, left or anywhere  
in between

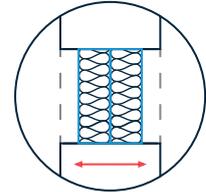


Drawing: WCLT.E-BS-MFB1.2.10

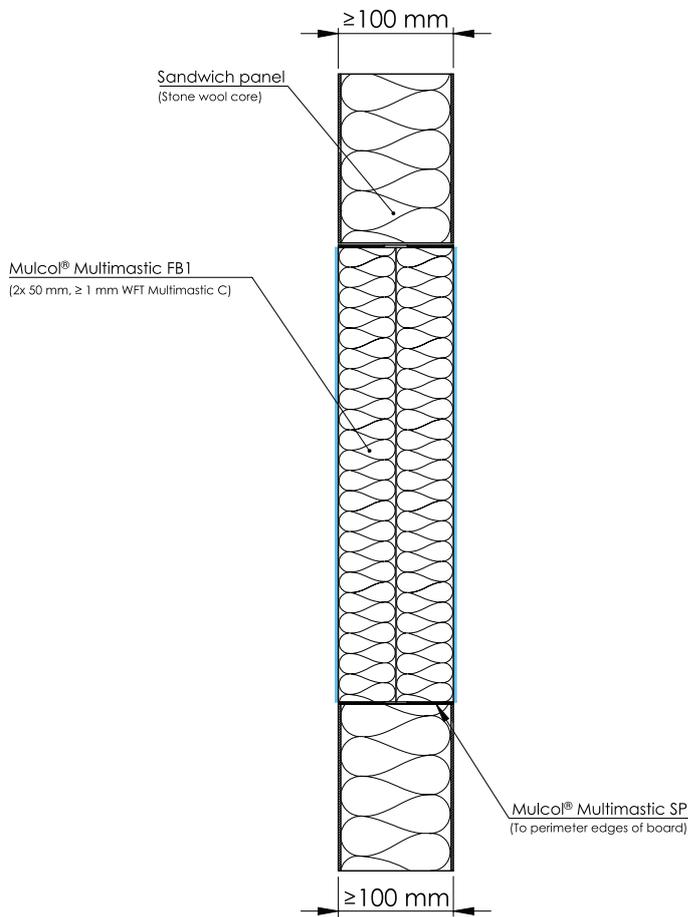
Services	Classification
Maximum seal size 500 x 500 mm With a maximum surface of 0.25 m <sup>2</sup>	<b>EI 90</b>
Maximum circular seal size Ø 564 mm	

**C.1.6 Wall constructions - Maximum seal dimensions Sandwich panel**

**C.1.6.1 Maximum seal dimensions - Multimastic FB1 - 2x 50 mm no aperture framing**



Position seal:  
right, left or anywhere  
in between

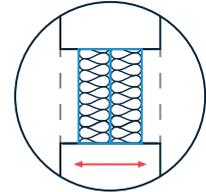


Drawing: SW.E-BS\_B-MFB1.2.10

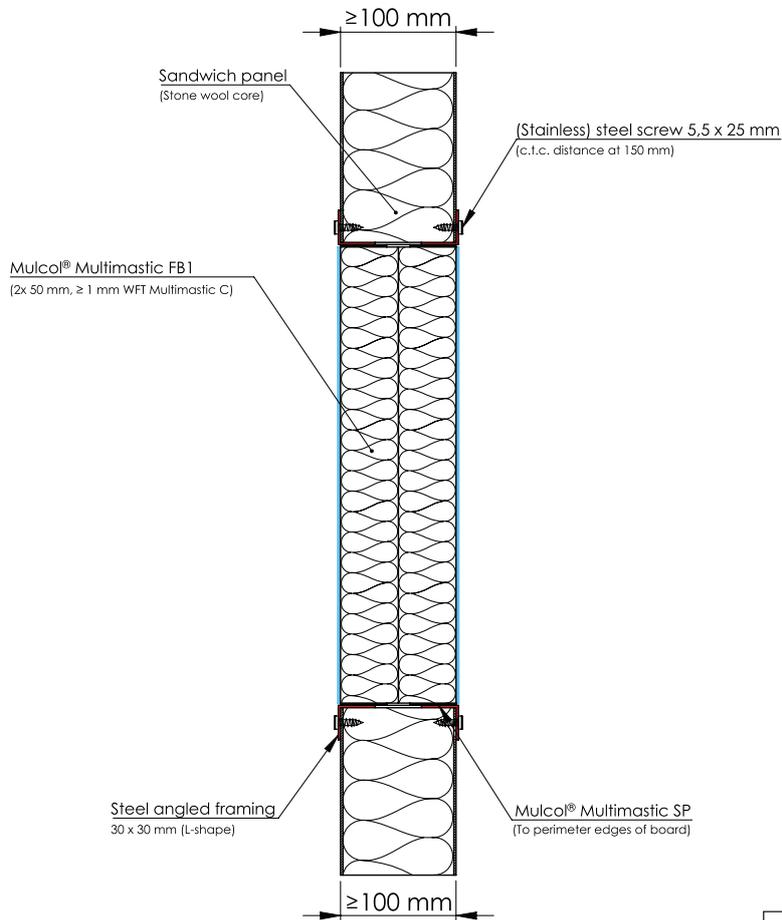
Services	Classification
Maximum seal size 500 x 600 mm (width x height or height x width) With a maximum surface of 0.3 m <sup>2</sup>	<b>EI 90</b>
Maximum circular seal size Ø 618 mm	

**C.1.6 Wall constructions - Maximum seal dimensions Sandwich panel**

**C.1.6.2 Maximum seal dimensions - Multimastic FB1 - 2x 50 mm with aperture framing**



Position seal:  
right, left or anywhere  
in between

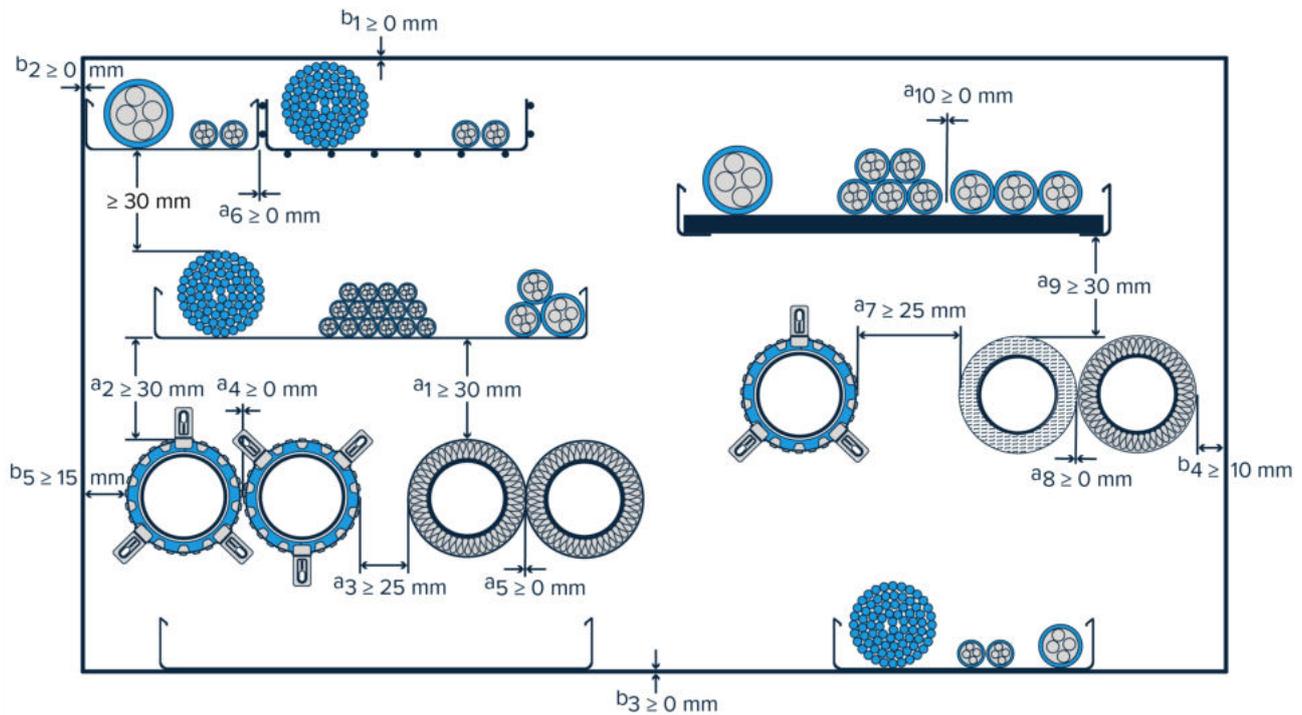


Drawing: SW.E-BS-MFB1.2.10

Services	Classification
Maximum seal size 1200 x 1000 mm (width x height or height x width) With a maximum surface of 1.2 m <sup>2</sup>	<b>EI 120</b>
Maximum circular seal size Ø 1236 mm	

## C.2 Rigid floor - General

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



#### Mutual distances Mixed Penetration Seal

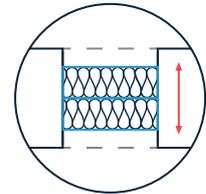
- a<sub>1</sub> Distance between cables/cable trays and metal pipes
- a<sub>2</sub> Distance between cables/cable trays and plastic pipes
- a<sub>3</sub> Distance between metal pipes and plastic pipes
- a<sub>4</sub> Distance between plastic pipes
- a<sub>5</sub> Distance between metal pipes with non-combustible insulation
- a<sub>6</sub> Distance between cable trays
- a<sub>7</sub> Distance between plastic pipes and pipes with combustible insulation
- a<sub>8</sub> Distance between pipes with non-combustible insulation and pipes with combustible insulation
- a<sub>9</sub> Distance between cables/cable trays and pipes with combustible insulation
- a<sub>10</sub> Distance between cables stacked together or in a row
- b<sub>1</sub> Distance between cables/cable trays and the upper seal edge
- b<sub>2</sub> Distance between cables/cable trays and the side seal edge
- b<sub>3</sub> Distance between cables/cable tray and the lower seal edge
- b<sub>4</sub> Distance between metal pipes and all seal edges
- b<sub>5</sub> Distance between plastic pipes and all seal edges

#### Service support construction

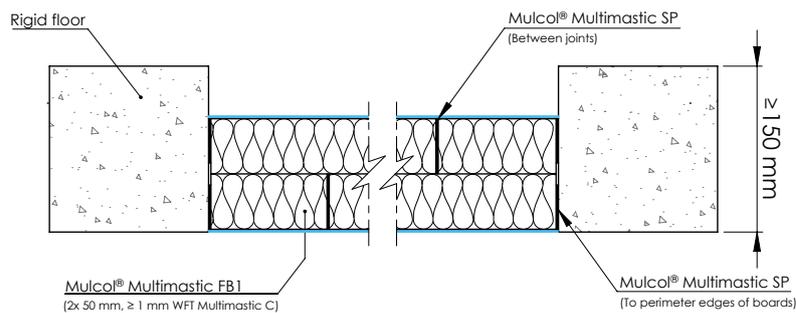
First support for all services at 450 mm, except cable trays at 250 mm.

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

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



Position seal:  
top, bottom or anywhere  
in between

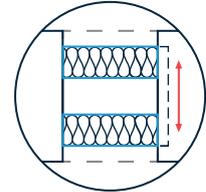


Drawing: PBrf.E-BS-MFB1.2.10

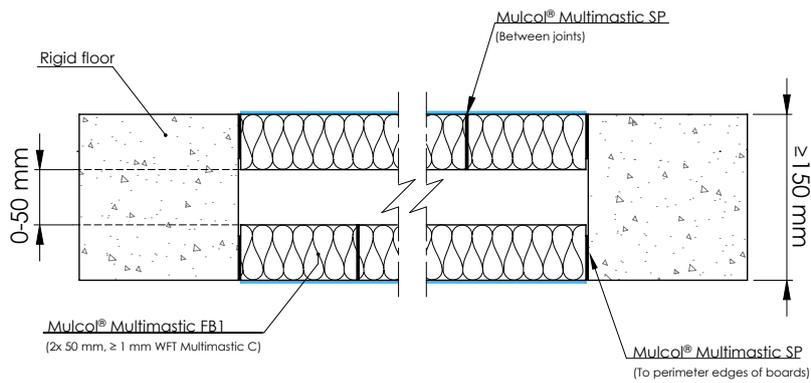
Services	Classification
Maximum seal size 1200 x 1200 mm	<b>EI 90, E 120</b>
Maximum seal size 9000 x 900 mm	
Maximum circular seal size Ø 1354 mm	
Maximum seal size 600 x 400 mm	<b>EI 120</b>
Maximum circular seal size Ø 553 mm	
Maximum seal size 450 x 450 mm	<b>EI 240</b>
Maximum circular seal size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

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

**C.2.2.2 Multimastic FB1 - 2x 50 mm cavity ≤ 50 mm**



Position seal:  
top, bottom or anywhere  
in between

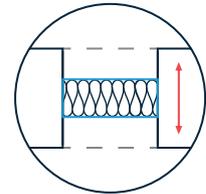


Drawing: PBrf.E-BS-MFB1.2.10.C

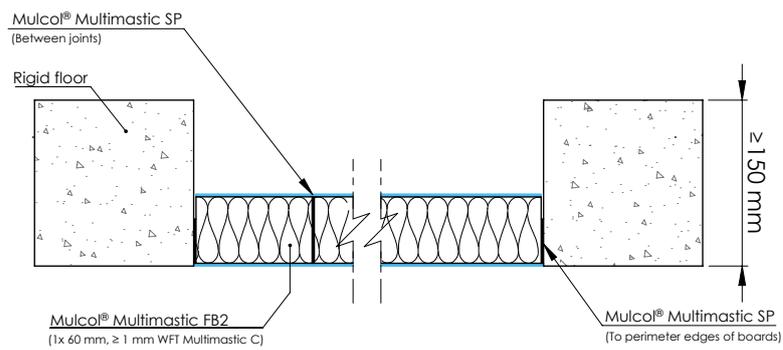
Services	Classification
Maximum seal size 1200 x 1200 mm Maximum seal size 9000 x 900 mm	<b>EI 90, E 120</b>
Maximum circular seal size Ø 1354 mm	
Maximum seal size 1200 x 600 mm Maximum seal size 9000 x 600 mm	<b>EI 120</b>
Maximum circular seal size Ø 957 mm	
Maximum seal size 450 x 450 mm Maximum circular seal size Ø 508 mm	<b>EI 240</b>

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

**C.2.2.3 Multimastic FB2 - 1x 60 mm**



Position seal:  
top, bottom or anywhere  
in between

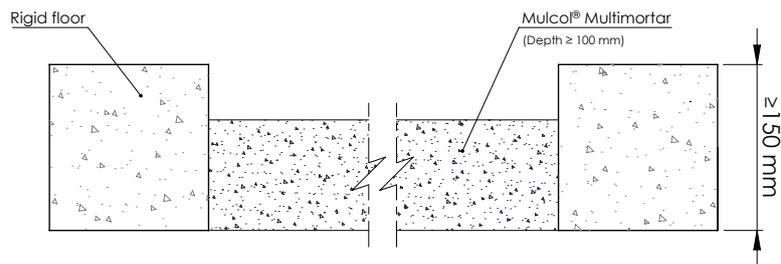


Drawing: PBrf.E-BS-MFB2.1.10

Services	Classification
Maximum seal size 1200 x 1200 mm Maximum seal size 9000 x 900 mm	<b>EI 90, E 120</b>
Maximum circular seal size Ø 1354 mm	

**C.2.3 Rigid floor - Multimortar - Maximum seal dimensions**

**C.2.3.1 Multimortar -  $\geq 100$  mm**

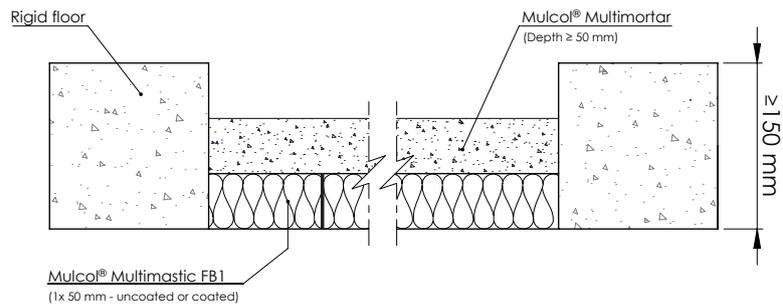


Drawing: RF.E-BS-MM1.3.10

Services	Classification
Maximum seal size 1200 x 1000 mm	<b>EI 180</b>
Maximum seal size 8800 x 880 mm	
Maximum circular seal size $\varnothing$ 1236 mm	
Maximum seal size 1000 x 750 mm	<b>EI 240</b>
Maximum circular seal size $\varnothing$ 977 mm	

**C.2.3 Rigid floor - Multimortar - Maximum seal dimensions**

**C.2.3.2 Multimortar + Mulcol Multimastic FB system -  $\geq 100$  mm**

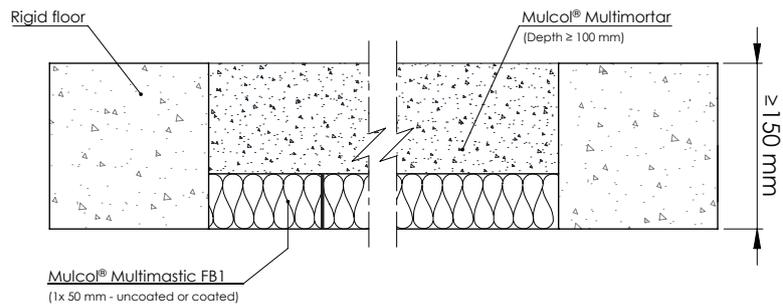


Drawing: RF.E-BS-MM2.5.10

Services	Classification
Maximum seal size 1200 x 1000 mm	EI 180
Maximum seal size 8800 x 880 mm	
Maximum circular seal size $\varnothing$ 1236 mm	

**C.2.3 Rigid floor - Multimortar - Maximum seal dimensions**

**C.2.3.3 Multimortar + Mulcol Multimastic FB system -  $\geq 150$  mm**

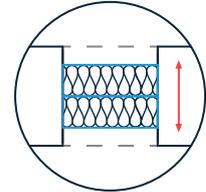


Drawing: RF.E-BS-MM2.2.10

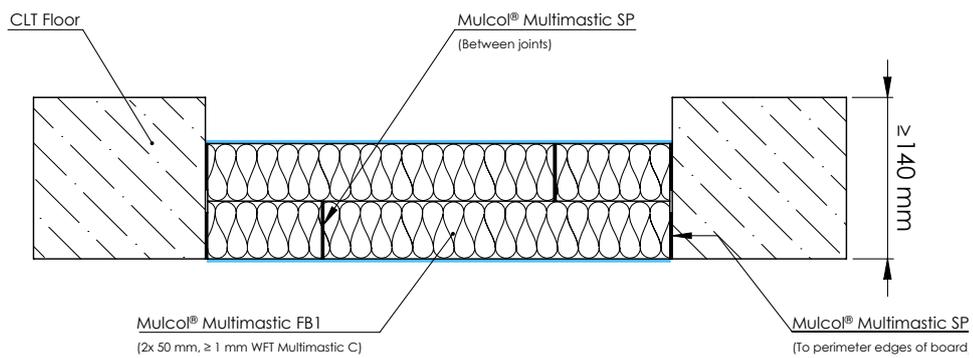
Services	Classification
Maximum seal size 1200 x 1000 mm	<b>EI 180</b>
Maximum seal size 8800 x 8800 mm	
Maximum circular seal size $\varnothing$ 1236 mm	
Maximum seal size 450 x 450 mm	<b>EI 240</b>
Maximum circular seal size $\varnothing$ 508 mm	

**C.2.4 CLT floor - Multimastic C - Maximum seal dimensions**

**C.2.4.1 Multimastic FB1 - 2x 50 mm no cavity**



Position seal:  
top, bottom or anywhere  
in between



Drawing: FCLT.E-BS-MFB1.2.10

Services	Classification
Maximum seal size 500 x 800 mm	EI 120
Maximum circular seal size Ø 713 mm	

## C.3 Wall configurations

### C.3.1 Allowed wall configurations

The use of Mulcol® Multimastic C is allowed in all double sided flexible wall constructions (with or without insulation) of the same or higher fire resistance classification in accordance with EN 13501-2, with a lining made of gypsum boards (EN 520) or Calcium Silicate boards which are CE marked for the application as lining of flexible wall, if their construction is in accordance with the rules given below.

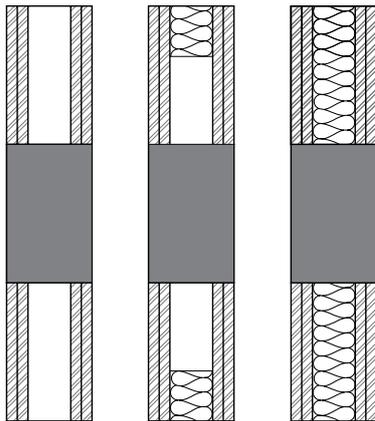
Field of direct application rules for double-sided flexible wall constructions:

- flexible wall constructions as shown in solutions given in Annex A of this document;
- flexible wall constructions with the same or higher number of board layers of the same or higher board thickness on each side of the wall, with insulation of any type or without insulation;
- flexible wall constructions with a reduced number of board layers but the same or higher board thickness on each side of the wall as tested, with insulation of any type or without insulation;
- flexible wall constructions with timber studs, no part of the penetration seal closer than 100 mm to any stud or nogging piece, the cavity closed between the penetration seal and the stud/nogging piece with minimum 100 mm of insulation of class A1 or A2 in accordance with EN 13501-1;
- rigid constructions of an overall thickness equal to or greater than that given in the solutions in Annex A and a minimum density of 350 kg/m<sup>3</sup>. In case of hollow brick wall the same rules regarding aperture framing apply as for double-sided flexible walls.

Allowed constructions (not limited by):

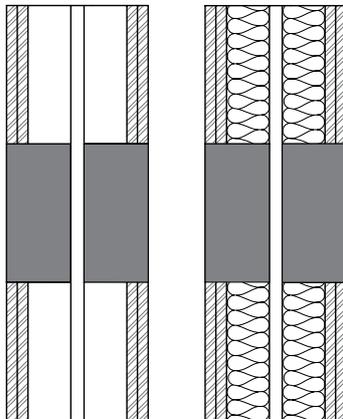
Flexible walls, not insulated, partially removed insulation or fully insulated with any type of insulation.

e.g.:



Double stud walls, separated by  $\geq 0$  mm, not insulated, partially insulated or fully insulated with any type of insulation.

e.g.:



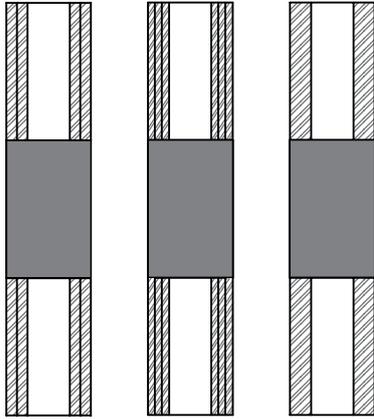
## C.3 Wall configurations

### C.3.1 Allowed wall configurations

Walls with a reduced number of board layers but the same or higher overall lining thickness on each side of the wall as shown in the solutions in Annex A.

Walls with a higher number of board layers, where individual boards are thinner yet the overall lining thickness is at least that of shown in the solutions in Annex A.

e.g.:



Rigid walls with a density of  $\geq 350 \text{ kg/m}^3$

e.g.:

