



Konstruktionsnachweis 718

Abschottung mit dem
PROMASTOP®-FP-Brandschutzstopfen

Bautechnischer Brandschutz

Stand 15.10.2024



Inhaltsverzeichnis zum Promat-Konstruktionsnachweis 718

- **Leistungserklärung Nr. 0761-CPR-22/0027-2022/3** vom 21.06.2022

- **ETA-22/0027** (OIB Wien) vom 22.04.2022

LEISTUNGSERKLÄRUNG

Datum der Ausstellung: 3/22/2022
Ersetzt: Nr. --- - CPR --/--- - JJJJ/# of: TT/MM/JJJ

Nr. 0761-CPR-22/0027-2022/3

1	Eindeutiger Kenncode des Produkttyps: PROMASTOP®-FP		
2	Typen- oder Chargennummer: wie auf der Verpackung des Produkts angegeben		
3	Vorgesehene Verwendungszwecke wie angegeben in der ETA-22/0027: 3.1 - PROMASTOP®-FP ist ein in unterschiedlichen Dimensionen vorgefertigter dauerelastischer Brandschutzstopfen welcher als Abschottung von Kabeln, Kabelbündeln und Rohren in feuerwiderstandsfähigen Decken und Wänden verwendet wird. 3.2 – Das Produkt ist bestimmt für: - Verwendung in Innenbereichen mit Luftfeuchte < 85 % RH, ohne Temperaturen unter 0°C und keine Exposition zu Regen oder UV (TR 024:2009, Typ Z ₂) - Verwendung in Innenbereichen mit Luftfeuchte ≥ 85 % RH, ohne Temperaturen unter 0°C und keine Exposition zu Regen oder UV (TR 024:2009, Typ Z ₁);		
4	Name und Kontaktanschrift des Herstellers: <div style="text-align: center;"> Etex Building Performance NV Bormstraat 24 B-2830 Tisselt Belgium Werk:134 www.etexgroup.com </div>		
5	Bevollmächtigte: nicht anwendbar.		
6	System oder Systeme zur Bewertung und Überprüfung der Leistungsbeständigkeit (BÜLB): siehe Tabelle unter Abschnitt 9.		
7	Das Bauprodukt ist nicht durch eine harmonisierte Produktnorm abgedeckt.		
8	Die Leistungserklärung betrifft ein Bauprodukt, für das eine Europäische Technische Bewertung (ETA) ausgestellt worden ist. Das Österreichische Institut für Bautechnik (OIB) hat eine Europäische Technische Bewertung mit der Nummer ETA-22/0027 für dieses Produkt auf Basis des EAD 350454-00-1104 ausgestellt. Notifizierte Zertifizierungsstelle: Nr. 0761 (MPA Braunschweig) Zertifikat / Bescheinigung der Leistungsbeständigkeit 0761 - CPR - 1062		
9	Erklärte Leistung		
	Wesentliche Merkmale	Wesentliche Merkmale	Wesentliche Merkmale
	Wesentliche Merkmale	Wesentliche Merkmale	Wesentliche Merkmale
	GA1: Mechanische Festigkeit und Standsicherheit.		
	GA2: Brandschutz:		
	Brandverhalten:	1	E
	Feuerwiderstand:	1	Diese Eigenschaft hängt vom geprüften System ab. Die Leistung des Produkts in jeder einzelnen geprüften Bauart wird vom Hersteller in Abhängigkeit von der geplanten Verwendung nach Abschnitt 3.1 dieser Leistungserklärung nachgewiesen und als Nachweis zur Verfügung gestellt. Die Leistungsklassen sind in einem Klassifizierungsbericht nach dem entsprechend anwendbaren Teil der EN 13501 angegeben und erklärt.
	GA3: Hygiene, Gesundheit und Umweltschutz:		
	Luftundurchlässigkeit:	-	KLB (Keine Leistung bewertet)
	Wasserundurchlässigkeit:	-	KLB (Keine Leistung bewertet)
	Freisetzung gefährlicher Stoffe:	-	Deklaration / Erklärung (eingereicht bei der Technischen Bewertungsstelle)
	GA4: Sicherheit und Barrierefreiheit bei der Nutzung:		
	Mechanische Festigkeit und		KLB (Keine Leistung bewertet)

Standsicherheit:			
Stoßfestigkeit und Bewegungswiderstand:	-	KLB (Keine Leistung bewertet)	ETA-22/0027 EAD 350454-00-1104
Adhäsion:		KLB (Keine Leistung bewertet)	
GA5: Schallschutz:			
Luftschalldämmung:		KLB (Keine Leistung bewertet)	ETA-22/0027 EAD 350454-00-1104
GA6: Energieeinsparung und Wärmeschutz:			
Wärmeleitfähigkeit:	-	KLB (Keine Leistung bewertet)	ETA-22/0027
Wasserdampfdurchlässigkeit (Transmissionskoeffizient):	-	KLB (Keine Leistung bewertet)	EAD 350454-00-1104
Dauerhaftigkeit:			
Grundlegender Nachweis der Dauerhaftigkeit:		Bei der vorgesehenen Anwendung, Klasse Z ₁ , Z ₂ nach EOTA TR024 und in Übereinstimmung mit EAD 350454-00-1104.	ETA-22/0027 EAD 350454-00-1104

Die Leistung des Produkts gemäß den Nummern 1 und 2 entspricht der erklärten Leistung nach Nummer 9.

Verantwortlich für die Erstellung dieser Leistungserklärung ist allein der Hersteller gemäß Nummer 4.

Die jeweils aktuellste Version dieser Leistungserklärung finden Sie unter "www.promat-ce.eu".

Die Produktinformation in Anlehnung an das Sicherheitsdatenblatt gem. VO (EG) 1907/2006 / GHS-VO (EG) 1272/2008 von PROMASTOP®-FP ist auf Anfrage erhältlich.

Unterzeichnet für den Hersteller und im Namen des Herstellers von:

Name: Ing. Matthias Wagner
Function: Approval Manager Fire Stopping

Linz, 6/21/2022

Signature:

i.A. Wagner.



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European Technical Assessment

ETA-22/0027
of 22.04.2022

General part

Technical Assessment Body issuing the European Technical Assessment

Österreichisches Institut für Bautechnik (OIB)
Austrian Institute of Construction Engineering

Trade name of the construction product

PROMASTOP®-FP

Product family to which the construction product belongs

Fire Stopping and Fire Sealing Products:
Penetration Seals

Manufacturer

Etex Building Performance NV
Bormstraat 24
2830 Tiselt
Belgium

Manufacturing plant

Production plant 134

This European Technical Assessment contains

24 pages including Annexes 1 to 4 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

European Assessment Document,
EAD 350454-00-1104, "Fire Stopping and Fire Sealing Products – Penetration Seals edition September 2017"

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Specific parts

1 Technical description of the product

“PROMASTOP®-FP” is permanently elastic plug cone-shaped construction product to be used as cable penetration seal to reinstate the fire resistance performance of floor and wall constructions, where they have been provided with apertures for the penetration of different cables.

“PROMASTOP®-FP” – type of penetration seal (acc. to EAD 350454-00-1104, cl. 1.1, table 1-1): Plugs.

The colour of “PROMASTOP®-FP” is red/brown and the plug is provided in different sizes.

Trade name	Diameter (mm) bottom / top	Height (mm) of the plug
PROMASTOP®-FP 65	67 / 74	85
PROMASTOP®-FP 78	80 / 85	85
PROMASTOP®-FP 104	109 / 115	85
PROMASTOP®-FP 118	122 / 129	85
PROMASTOP®-FP 128	134 / 140	85
PROMASTOP®-FP 160	168 / 175	85
PROMASTOP®-FP 194	204 / 212	85
PROMASTOP®-FP 250	248 / 254	85

Additional components of “PROMASTOP®-FP”	Characteristics
PROMASEAL®-AG	Intumescent pasty, brushable mastic on the basis of acrylate with intumescent fire protection additives
PROMASTOP®-TDW	Intumescent wrap on the basis of butyl rubber with intumescent fire protection additives and glass fabric reinforcement (fire protection wrap)

A detailed specification of “PROMASTOP®-FP” is a non-public part of this European Technical Assessment and deposited at the Österreichisches Institut für Bautechnik.

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

2.1 Intended use

“PROMASTOP®-FP” is intended to be used as a cable penetration seal to reinstate the fire resistance performance of flexible wall constructions, rigid wall constructions and rigid floor constructions where they have been provided with apertures which are penetrated by various cables, conduits / tubes and cable support constructions (perforated or non-perforated steel cable trays and steel ladders).

In the following specified constructions PROMASTOP®-FP is also used in conjunction with the intumescent firestop sealant PROMASEAL®-AG and intumescent firestop wrap PROMASTOP®-TDW, if applicable.

“PROMASTOP®-FP” can be installed only in the types of separating elements as specified in the following compartmentations.

- A) Flexible walls: The wall must have a minimum thickness of 94 mm and comprise timber or steel studs lined on both faces with minimum 2 layers of minimum 12,5 mm thick boards (with classification A2-s1,d0 or A1 according to EN 13501-1). For timber stud walls there must be a minimum distance of 100 mm of the seal to any stud and the cavity between stud and seal must be closed and minimum 100 mm insulation of class A1 or A2 (in accordance with EN 13501-1) in the cavity between stud and seal.

- B) Rigid walls: The wall must have a minimum thickness of 100 mm and consist of concrete, aerated concrete or masonry, with a minimum density of 450 kg/m³.
- C) Rigid floors: The floor must have a minimum thickness of 150 mm and consist of aerated concrete or concrete with a minimum density of 450 kg/m³.

Maximum opening size in the separating elements: Ø 250 mm

Minimum thickness of the cable penetration seal (depending on the fire resistance classification; see Annex 3, clause 3.5 of the ETA): 170 mm / 200 mm

This ETA does not cover the use of this product as a penetration seal in sandwich panel constructions and flexible walls where the lining does not cover studs on both sides.

Blank penetration seals with maximum opening sizes as specified have been tested, for details see Annex 3.

“PROMASTOP®-FP” may be used as a penetration seal with the following specific installations or as blank seal:

Cables	For further details see Annex 3, clause 3.5
Cable bundles	For further details see Annex 3, clause 3.5
Conduits/Tubes	For further details see Annex 3, clause 3.5
Cable support constructions	For further details see Annex 3, clause 3.5

The maximum seal sizes in the different compartments (see clause 2.1.) are given in Annex 3 of the ETA.

Other parts or service support constructions shall not penetrate the penetration seal.

Distances see below and Annex 3, clause 3.6:

Specimen, penetrating element	Minimum distance (mm)
Cables – Aperture opening	0
Conduits – Aperture opening	0
Cable bundle – Aperture opening	0
Cable tray – Aperture opening	0
Tubes – Aperture opening	0
Cables – Cables	0
PROMASTOP®-FP – PROMASTOP®-FP	100
Supporting distance on both sides of wall constructions	200
Supporting distance on the top side of floor constructions	200

2.2 Use category

“PROMASTOP®-FP” is intended for internal use with high humidity equal to or higher than 85 % RH, excluding temperatures below 0 °C¹, without exposure to rain or UV, and can therefore – according to EAD 350454-00-1104 clause 2.2.9.3.1 – be categorized as Type Z₁. Since the requirements for Type Z₁ are met, also the requirements for Type Z₂ are fulfilled².

Although a penetration seal is intended for indoor applications only, the construction process may result in it being subjected to more exposed conditions for a period before the building envelope is closed. For this case provisions shall be made to protect temporarily exposed penetration seals according to the ETA-holder’s installation instructions.

¹ These uses apply for internal humidity class 5 in accordance with EN ISO 13788

² Type Z₂: intended for use in internal conditions with humidity lower than 85% RH excluding temperatures below 0°C, without exposure to rain or UV

2.3 Working life

The provisions made in this European Technical Assessment are based on an assumed working life of “PROMASTOP®-FP” of 10 years, provided the conditions laid down in the technical literature of the manufacturer relating to packaging, transport, storage, installation, use and repair are met.

The indications given on the intended working life cannot be interpreted as a guarantee given by the producer or the Technical Assessment Body, but are to be regarded only as a means for selecting the appropriate product in relation to the expected economically reasonable working life of the works.

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

2.4 General assumptions

2.4.1 It is assumed that

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

This European Technical Assessment does not address any risks associated with the emission of dangerous liquids or gases caused by failure of the pipe(s) in case of fire nor does it prove the prevention of the transmission of fire through heat transfer via the medium in the pipes.

The mounting or hanging of the cables/pipes or the layout of the pipe work shall be implemented in such a way that the pipes and the fire resistant building elements shall remain functional within a period of time which corresponds to the fire resistance period required.

The risk of downward spread of fire caused by burning material which drips through a pipe to floors below is not considered in this European Technical Assessment.

2.5 Manufacturing

The European Technical Assessment is issued for the product on the basis of agreed data / information, deposited with the Österreichisches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data / information being incorrect, should be notified to the Österreichisches Institut für Bautechnik before the changes are introduced.

The Österreichisches Institut für Bautechnik will decide whether or not such changes affect the European Technical Assessment and consequently the validity of the CE marking on the basis of the European Technical Assessment and if so whether further assessment or alterations to the European Technical Assessment, shall be necessary.

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

Basic requirements for construction works	Essential characteristic	Method of verification	Performance
BWR 2	Reaction to fire	EN 13501-1:2007+A1:2009	See 3.1.1
	Resistance to fire	EN 13501-2:2007+A1:2009	See 3.1.2 and Annex 3
BWR 3	Air permeability (material property)	EN 1026:2016	See 3.2.1
	Water permeability (material property)	No performance assessed	
	Content and/or release of dangerous substances	European Council Directive 67/548/EEC and Regulation (EC) No 1272/2008 as well as EOTA TR 034, edition October 2015	Declaration of conformity by the manufacturer
BWR 4	Mechanical resistance and stability	No performance assessed	
	Resistance to impact / movement	No performance assessed	
	Adhesion	No performance assessed	
BWR 5	Airborne sound insulation	EN ISO 10140-1:2010	See 3.4.1
BWR 6	Thermal properties	EN 12667:2001	See 3.5.1
	Water vapour permeability	No performance assessed	

3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire

The components of "PROMASTOP®-FP" were assessed according to EAD 350454-00-1104 clause 2.2.1 and classified according to EN 13501-1:2007+A1:2009.

Component	Class according to EN 13501-1:2007+A1:2009
PROMASTOP®-FP	E
PROMASEAL®-AG (additional component)	B-s1, d0
PROMASTOP®-TDW (additional component)	E

3.1.2 Resistance to fire

"PROMASTOP®-FP" was tested according to EAD 350454-00-1104 clause 2.2.2, prEN 1366-3.2:N185:2007-07 and EN 1366-3:2009 in conjunction with EN 1363-1:1999.

Based upon the gained test results and the field of application specified within prEN 1366-3.2:N185:2007-07 and EN 1366-3:2009 the cable penetration seal "PROMASTOP®-FP" has been classified according to EN 13501-2:2007+A1:2009. The individual fire resistance classes are listed in Annex 3 of the ETA.

The maximum fire resistance class of the penetration seal in vertical or horizontal separating element depends on the fire resistance class of the penetrating elements. The fire resistance class of the penetration seal is reduced to the fire resistance class of the penetrating element with the lowest fire resistance classification.

Appropriate wall and floor constructions for penetration seals see clause 2.1.

Information on ancillary products, which were tested within the framework of this European Technical Assessment for evaluating resistance to fire is given in Annex 2.

The resistance to fire classification listed in Annex 3 of the ETA is only valid if “PROMASTOP®-FP” is installed according to Annex 3 of the ETA.

3.2 Hygiene, health and environment (BWR 3)

3.2.1 Air permeability

The air permeability of “PROMASTOP®-FP” with a thickness of 150 mm was tested according to EN 1026:2016 in a flexible wall with a thickness of 100 mm. The diameter of the opening was 240 mm.

“PROMASTOP®-FP” was tested as blank penetration seal according to EAD 350454-00-1104 clause 2.2.3. The additional components “PROMASEAL®-AG” and “PROMASTOP®-TDW” were not included in these tests.

Up to a pressure difference of 600 Pa no air permeability was measured. The measurement accuracy was 0,01 m³/h. The air permeability at Δ p = 600 Pa is less than 0,2 m³/(h*m²).

3.2.2 Water permeability

No performance assessed.

3.2.3 Release of dangerous substances

The release of semi-volatile organic compounds (SVOC) and volatile organic compounds (VOC) has been determined according to EAD 350454-00-1104 clause 2.2.5.1 and EN 16516:2018. The loading factor used for emission testing was 0,007 m²/m³.

Component	Total emission of SVOC after 3 days in mg/m³	Total emission of SVOC after 28 days in mg/m³
PROMASTOP®-FP	< 0,005	< 0,005
PROMASEAL®-AG	< 0,005	< 0,005
PROMASTOP®-TDW	0,060	0,020

Component	Total emission of VOC after 3 days in mg/m³	Total emission of VOC after 28 days in mg/m³
PROMASTOP®-FP	0,008	0,006
PROMASEAL®-AG	0,009	< 0,005
PROMASTOP®-TDW	< 0,005	< 0,005

3.3 Safety in use (BWR 4)

3.3.1 Mechanical resistance and stability

No performance assessed.

3.3.2 Resistance to impact / movement

No performance assessed.

Provisions shall be taken to prevent a person from stepping onto a horizontal penetration seal or falling against a vertical penetration seal (e.g. by covering with a wire mesh).

3.3.3 Adhesion

No performance assessed.

3.4 Protection against noise (BWR 5)

3.4.1 Airborne sound insulation

The airborne sound insulation of “PROMASTOP®-FP” was tested according to EN ISO 10140-2:2010 in a flexible wall with a thickness of 200 mm. The diameter of the opening was 240 mm.

“PROMASTOP®-FP” was tested as blank penetration seal according to EAD 350454-00-1104 clause 2.2.10. The additional components “PROMASEAL®-AG” and “PROMASTOP®-TDW” were not included in these tests.

The reached values for the airborne sound insulation in accordance with EN ISO 717-1:2013 are given in the following table.

D _{n,e,w} in dB	C in dB	C _{tr} in dB	R _w in dB	C in dB	C _{tr} in dB
68	-2	-7	47	-2	-7

3.5 Energy economy and heat retention (BWR 6)

3.5.1 Thermal properties

The thermal properties of “PROMASTOP®-FP” were tested according to EN 12667:2001.

Component	λ _{10,23/50} in W/(m*K)
PROMASTOP®-FP	0,103

3.5.2 Water vapour permeability

No performance assessed.

3.6 General aspects relating to fitness for use

The construction product “PROMASTOP®-FP” and the additional components fulfil the requirements for the intended use category.

“PROMASTOP®-FP” is therefore appropriate for internal use with high humidity, excluding temperatures below 0 °C, and can – according to EAD 350454-00-1104 clause 2.2.9.3.1 – be categorized as Type Z₁. Since the requirements for Type Z₁ are met, also the requirements for Type Z₂ are fulfilled.

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

According to the Decision 1999/454/EC³, amended by Decision 2001/596/EC⁴ of the European Commission the system of assessment and verification of constancy of performance (see Annex V of Regulation (EU) No 305/2011) is given in the following table.

Product(s)	Intended use(s)	Level(s) or class(es) (resistance to fire)	System of assessment and verification of constancy of performance
Fire Stopping and Fire Sealing Products	for fire compartmentation and/or fire protection or fire performance	any	1

³ Official Journal of the European Communities no. L 178, 14.7.1999, p. 52

⁴ Official Journal of the European Communities no. L 209, 2.8.2001, p. 33

In addition, according to the Decision 1999/454/EC, amended by Decision 2001/596/EC of the European Commission the system(s) of assessment and verification of constancy of performance, with regard to reaction to fire, is given in the following table.

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

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with the Technical Assessment Body Österreichisches Institut für Bautechnik.

The notified product certification body shall visit the factory at least twice a year for surveillance of the manufacturer.

Issued in Vienna on 22.04.2022
by Österreichisches Institut für Bautechnik

The original document is signed by:

Rainer Mikulits
Managing Director

ANNEX 1

Reference documents and list of abbreviations

1.1 Reference to standards mentioned in this ETA:

prEN 1366-3.2:N185:2007-07	Fire resistance tests for service installations – Part 3: Penetration seals
EN 1366-3:2009	Fire resistance tests for service installations – Part 3: Penetration seals
EN 1363-1:1999	Fire resistance tests – Part 1: General requirements
EN 1026:2016	Windows and doors - Air permeability - Test method
EN 16516:2018	Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air
EN ISO 10140-2:2010	Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation
EN ISO 717-1:2013	Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation
EN 12667:2001	Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Products of high and medium thermal resistance
EN 13501-1:2007+A1:2009	Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests
EN 13501-2:2007+A1:2009	Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation

1.2 Other reference documents:

EAD 350454-00-1104	European Assessment Document for “Fire stopping and fire sealing products - Penetration Seals”
EOTA TR 024 (2009)	Characterization, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products
Technical documentation	Technical data sheet and manual of PROMASTOP®-FP

ANNEX 2**DESCRIPTION OF PRODUCT(S) & PRODUCT LITERATURE****2.1 Product:**

Product name	Description
PROMASTOP®-FP	Firestop plug
PROMASEAL®-AG (additional component)	Intumescent firestop sealant
PROMASTOP®-TDW (additional component)	Intumescent firestop wrap

2.2 Fixing details:

PROMASTOP®-FP are fixed by mean of friction in the compartmentation.

2.3 Technical product literature:

- Product data sheet of PROMASTOP®-FP
- Installation manual of PROMASTOP®-FP
- Detailed sketches of PROMASTOP®-FP

ANNEX 3

RESISTANCE TO FIRE CLASSIFICATION OF PROMASTOP®-FP

3.1 General and classification acc. to EN 13501-2 for PROMASTOP®-FP firestop plugs

The total cross section of the installations (including cable support constructions) must not be more than 60 % of the opening size of the penetration seal.

Seal sizes in dependence with the supporting construction (see ETA 2.1):

Between Ø 65 mm and Ø 250 mm. Due to the prefabricated PROMASTOP®-FP firestop plugs, the seal size is fixed for each plug dimension.

Application of the PROMASTOP®-FP fire stop plugs in dependence with the supporting construction:

The PROMASTOP®-FP fire stop plugs shall be inserted on both sides in the wall and on the top and bottom side in the floor.

Classification of the PROMASTOP®-FP fire stop plugs used as blank seal in dependence with the supporting construction (see ETA clause 2.1):

Supporting construction	Classification
Flexible walls	EI 120
Rigid walls	EI 120
Rigid floors	EI 120

Service supports constructions may penetrate the penetration seal:

- All types of cables and conduits / tubes – in flexible walls and rigid walls – have to be supported on both sides of the separating element by steel cable trays (perforated or non-perforated), steel ladders or alternative service support constructions (e.g. pipe hangers) made of metal with a melting or decomposition point greater or equal than 1006 °C for EI 90 or 1049 °C for EI 120 (e.g. stainless steel or galvanized steel) according to the ETA-holder’s installation instructions.
- All types of cables and conduits / tubes – in rigid floors – have to be supported at least on the top side of the separating element by steel cable trays (perforated or non-perforated), steel ladders or alternative service support constructions (e.g. pipe hangers) made of metal with a melting or decomposition point greater or equal than 1006 °C for EI 90 or 1049 °C for EI 120 (e.g. stainless steel or galvanized steel) according to the ETA-holder’s installation instructions.
- Steel cable trays (perforated or non-perforated) or steel ladders can pass through or end at the surface of the penetration seal.
- Lidded cable trays / trunkings must not pass through the penetration seal.

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Supporting distances:

Supporting construction	Maximum distance (mm)
Flexible walls	200
Rigid walls	200
Rigid floors	200

Note: The maximum distance for the first service support is measured from the surface of the separating element resp. the board frame

Orientation of the penetrating elements:

- Conduits / tubes have to be installed perpendicular to the surface of the penetration seal.
- Cables have to be installed perpendicular to the surface of the penetration seal

Pipe end configuration:

Tested and classified for plastic conduits/tubes	Applicable
U/U	U/U, C/U, U/C, C/C

Tested and classified for steel conduits/tubes	Applicable
U/U	U/U, C/U, U/C, C/C

General installation of PROMASTOP®-FP:

- “PROMASTOP®-FP” has to be installed according to the ETA-holder’s installation manual.
- “PROMASTOP®-FP” will be formed by fitting the firestop plug tightly in the opening of the separating element (compartmentation) so that all interstices and voids are carefully sealed.
- The gap between the two plugs “PROMASTOP®-FP” in vertical separating elements and horizontal separating elements has to be minimum 30 mm or 60 mm (depending on the minimum thickness of the penetration seal; see Annex 3 of the ETA).
- Open joints and joints/gussets between the cables, conduits / tubes, cable support constructions and the penetration seal have to be filled according to the ETA-holder’s installation manual with “PROMASEAL®-AG” to a depth of minimum 20 mm.
- For tied cable bundles (see clause 2.1 of the ETA) the space between the cables needs not be filled with “PROMASEAL®-AG”.
- For some fire resistance classification periods it is required to wrap “PROMASTOP®-TDW” on both sides of the penetration seal according to the ETA-holder’s installation manual around the cables, conduits / tubes and cable support constructions (see Annex 3 of the ETA).

Subsequent addition (retrofitting) and removal:

- Subsequent addition (retrofitting) and removal of cables, conduits / tubes and cable support constructions according to the ETA holder’s installation manual is allowed.
- Retrofitting shall be done according to the ETA holder’s installation manual and the regulations of Annex 3, clause 3.1 of the ETA.
- After removal without addition of cables, conduits / tubes and cable support constructions the hole has to be closed according to the ETA-holder’s installation manual with a fitting piece of “PROMASTOP®-FP” and the joint has to be filled with “PROMASEAL®-AG” to a depth of 10 mm to 15 mm.

3.2 Details for installation of PROMASTOP®-FP firestop plugs in flexible wall constructions

- The thickness of the wall has to be increased to at least 170 mm or 200 mm (depending on the fire resistance classification period; see Annex 3 of the ETA) by fitting a board frame, minimum 50 mm wide, around the opening (see Annex 3 of the ETA). Minimum 1 layer of $\geq 12,5$ mm thick type F gypsum boards according to EN 520 (classification A2-s1,d0 according to EN 13501-1) or silicate- or calcium silicate boards (classification A1 according to EN 13501-1) with a minimum density of 450 kg/m^3 can be used. The overall thickness of the board frame and the lining of the wall has to be minimum 60 mm on both sides. The board frame has to be installed and fixed according to the ETA-holder's installation manual.
- Joints between the aperture framing and the aperture have to be filled with "PROMASEAL®-AG", plaster or mineral mortar on both sides of the penetration seal according to the ETA-holder's installation manual.
- Details are shown in Annex 4, drawings 718.01 and 718.04.

3.3 Details for installation of PROMASTOP®-FP firestop plugs in rigid wall constructions

- For walls thinner than the minimum thickness of the penetration seal (170 mm or 200 mm; depending on the fire resistance classification; see Annex D-1 of the ETA) the thickness of the wall has to be increased by fitting a board frame, minimum 50 mm wide, around the opening (see Annex B-3 of the ETA). Minimum 1 layer of $\geq 12,5$ mm thick type F gypsum boards according to EN 520 (classification A2-s1,d0 according to EN 13501-1) or silicate- or calcium silicate boards (classification A1 according to EN 13501-1) with a minimum density of 450 kg/m^3 can be used. The board frame has to be installed and fixed according to the ETA-holder's installation manual.
- Details are shown in Annex 4, drawings 718.02 and 718.05.

3.4 Details for installation of PROMASTOP®-FP firestop plugs in rigid floor constructions

- For floors thinner than the minimum thickness of the penetration seal (170 mm or 200 mm; depending on the fire resistance classification; see Annex D-1 of the ETA) the thickness of the floor has to be increased by fitting a board frame, minimum 50 mm wide, around the opening (see Annex B-5 of the ETA). Minimum 1 layer of $\geq 12,5$ mm thick type F gypsum boards according to EN 520 (classification A2-s1,d0 according to EN 13501-1) or silicate- or calcium silicate boards (classification A1 according to EN 13501-1) with a minimum density of 450 kg/m^3 can be used. The board frame has to be installed and fixed according to the ETA-holder's installation manual.
- It is possible to use "PROMASTOP®-FP" in permanent formwork made of PE-HD pipes according to EN 1519-1 (see below).
- Details are shown in Annex 4, drawings 718.03 and 718.06.

3.5 Classification acc. to EN 13501-2 for PROMASTOP®-FP firestop plugs for cables, cable bundles and tubes

All sheathed cables:

All types of sheathed cables⁵ (except waveguides) currently and commonly used in building practice in Europe (e.g. electrical / telecommunication / data / optical fibre cables) with a diameter ≤ 80 mm.

Tied bundles⁶ up to 100 mm overall diameter containing sheathed cables (except waveguides) currently and commonly used in building practice in Europe (e.g. electrical / telecommunication / data / optical fibre cables) with a diameter ≤ 21 mm.

All non-sheathed cables:

Non-sheathed electrical cables with a diameter ≤ 24 mm.

Cable supporting systems may penetrate the PROMASTOP®-FP seal:

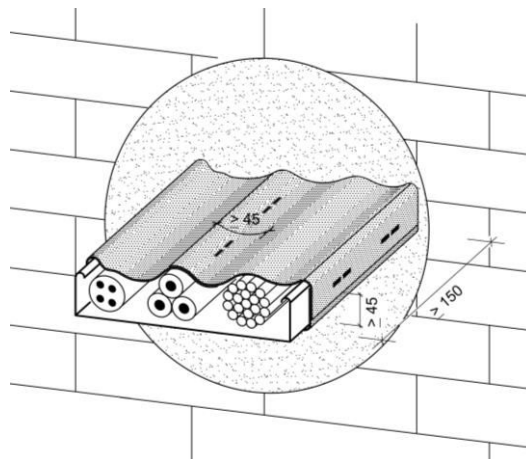
- Steel cable trays (perforated or non-perforated)
- Steel ladders
- Steel cable trays (perforated or non-perforated) and steel ladders with organic coatings shall at least be classified A2-s1,d0 according to EN 13501-1

Conduits and tubes:

- Steel conduits / tubes up to $\varnothing \leq 16$ mm (with / without cables): steel conduits according to EN 61386-21 and / or EN 10305-4 or -6
- Plastic conduits / tubes up to $\varnothing \leq 16$ mm (with / without cables) according to EN 61386-21

Arrangement of PROMASTOP®-TDW firestop wrap:

PROMASTOP®-TDW is needed for some fire resistance classification period. Applied around cables or cable with a minimum length of 150 mm. The glass fabric reinforcement fixed to one side of the wrap has to be on the outside. The ends of the wrap have to be fixed with two steel clips or steel wire acc. to the ETA-holder's installation manual. Overlapping of the strips shall be minimum 45 mm.



For details see the following tables.

⁵ Single or multicore cable with individual insulation of the cores and an additional protective covering of the assembly

⁶ Several cables running in the same direction, densely packed and bound tightly together by mechanical means

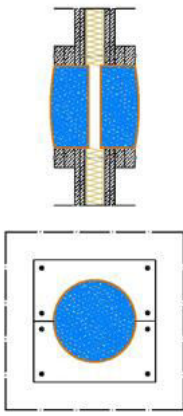
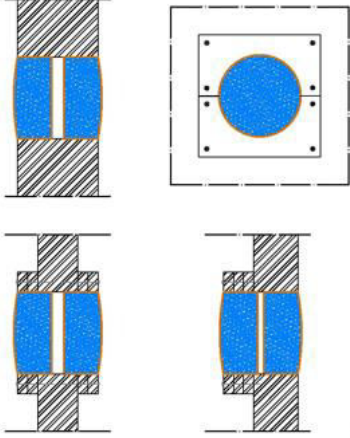
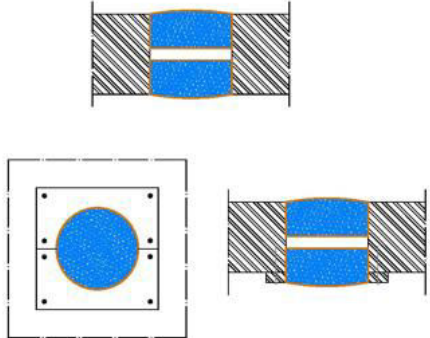
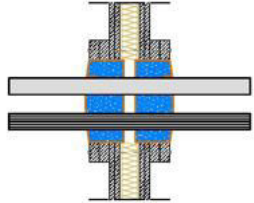
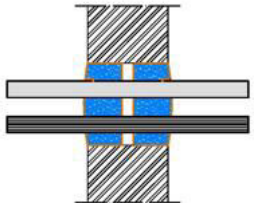
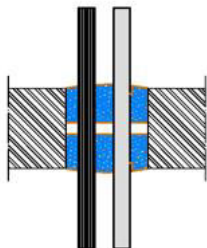
Classification of PROMASTOP®-FP without PROMASTOP®-TDW				
Penetrating element	Minimum thickness of the cable penetration seal			
	170 mm ≤ b ≤ 200 mm		b ≥ 200 mm	
	Wall	Floor	Wall	Floor
All sheathed cables Ø ≤ 21 mm	E 120 EI 90	EI 120	E 120 EI 90	EI 120
All sheathed cables 21 mm ≤ Ø ≤ 50 mm	E 120 EI 90	E 120 EI 90	E 120 EI 90	E 120 EI 90
All sheathed cables 50 mm ≤ Ø ≤ 80 mm	E 120 EI 60	E 120 EI 60	E 120 EI 90	E 120 EI 90
Tied cable bundles Ø ≤ 100 mm (max. Ø of cables up to 21 mm)	E 120 EI 90	E 120 EI 90	E 120 EI 90	E 120 EI 90
Non-sheathed cables Ø ≤ 17 mm	E 120 EI 90	E 120 EI 90	E 120 EI 90	E 120 EI 90
Non-sheathed cables Ø ≤ 24 mm	E 120 EI 60	E 120 EI 90	E 120 EI 60	E 120 EI 90
Steel conduits/tubes, with or without cables Ø ≤ 16 mm	EI 120	E 120 EI 90	EI 120	E 120 EI 90
Plastic conduits/tubes, with or without cables Ø ≤ 16 mm	EI 120	EI 120	EI 120	EI 120

Classification of PROMASTOP®-FP with PROMASTOP®-TDW				
Penetrating element	Minimum thickness of the cable penetration seal			
	170 mm ≤ b ≤ 200 mm		b ≥ 200 mm	
	Wall	Floor	Wall	Floor
All sheathed cables Ø ≤ 21 mm	EI 120	EI 120	EI 120	EI 120
All sheathed cables 21 mm ≤ Ø ≤ 50 mm	E 120 EI 90	EI 120	EI 120	EI 120
All sheathed cables 50 mm ≤ Ø ≤ 80 mm	E 120 EI 90	E 120 EI 60	E 120 EI 90	EI 120

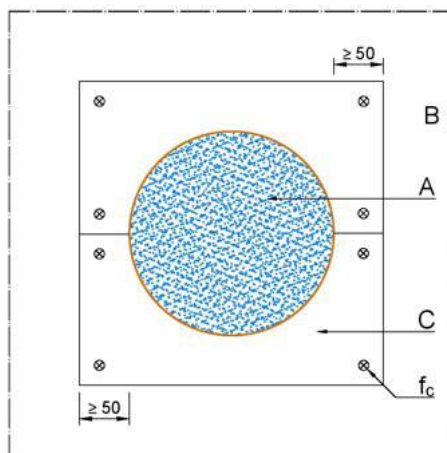
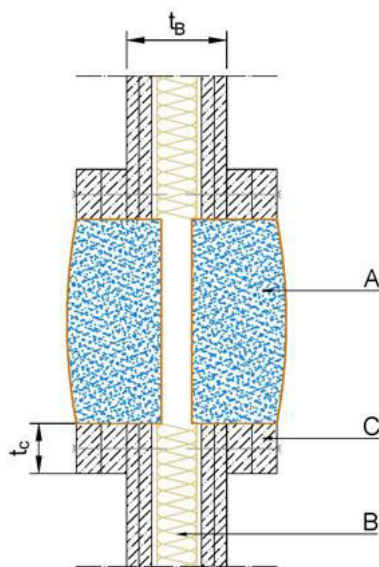
3.6 Distances for and in PROMASTOP®-FP firestop plugs

Specimen, penetrating element	Minimum distance (mm)
Cables – Aperture opening	0
Conduits – Aperture opening	0
Cable bundle – Aperture opening	0
Cable tray – Aperture opening	0
Tubes – Aperture opening	0
Cables – Cables	0
PROMASTOP®-FP – PROMASTOP®-FP	100
Supporting distance on both sides of wall constructions	200
Supporting distance on the top side of floor constructions	200

ANNEX 4 INSTALLATION DRAWINGS

 <p style="text-align: right; margin-top: 10px;">718.01</p>	 <p style="text-align: right; margin-top: 10px;">718.02</p>															
 <p style="text-align: right; margin-top: 10px;">718.03</p>	 <p style="text-align: right; margin-top: 10px;">718.04</p>															
 <p style="text-align: right; margin-top: 10px;">718.05</p>	 <p style="text-align: right; margin-top: 10px;">718.06</p>															
<p style="font-size: small;">The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited.</p>		<p>Promat Research and Technology Centre</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 25%;">Date</th> <th style="width: 60%;">Name</th> </tr> </thead> <tbody> <tr> <td>As built</td> <td>30.03.2022</td> <td>Liesbeth Jacobs</td> </tr> <tr> <td>Drawing nr.</td> <td colspan="2">718.001</td> </tr> </tbody> </table>		Date	Name	As built	30.03.2022	Liesbeth Jacobs	Drawing nr.	718.001		<p style="text-align: center;">PROMASTOP®-FP FIRESTOP FOAM PLUGS</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <td style="width: 80%;">Overview of the constructions</td> <td style="width: 20%; text-align: center;">###</td> </tr> <tr> <td></td> <td style="text-align: center;">A4</td> </tr> </table>	Overview of the constructions	###		A4
	Date	Name														
As built	30.03.2022	Liesbeth Jacobs														
Drawing nr.	718.001															
Overview of the constructions	###															
	A4															

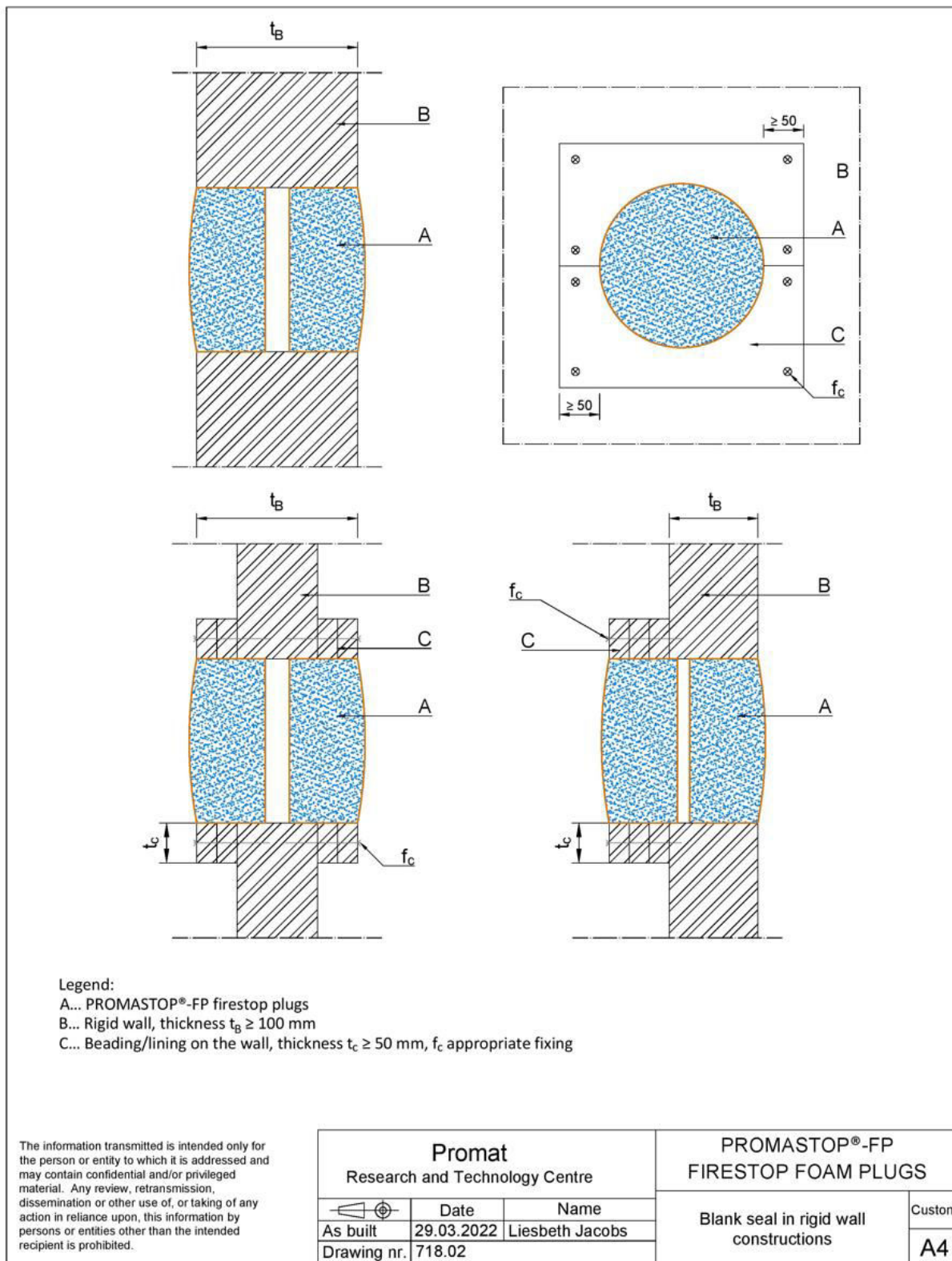
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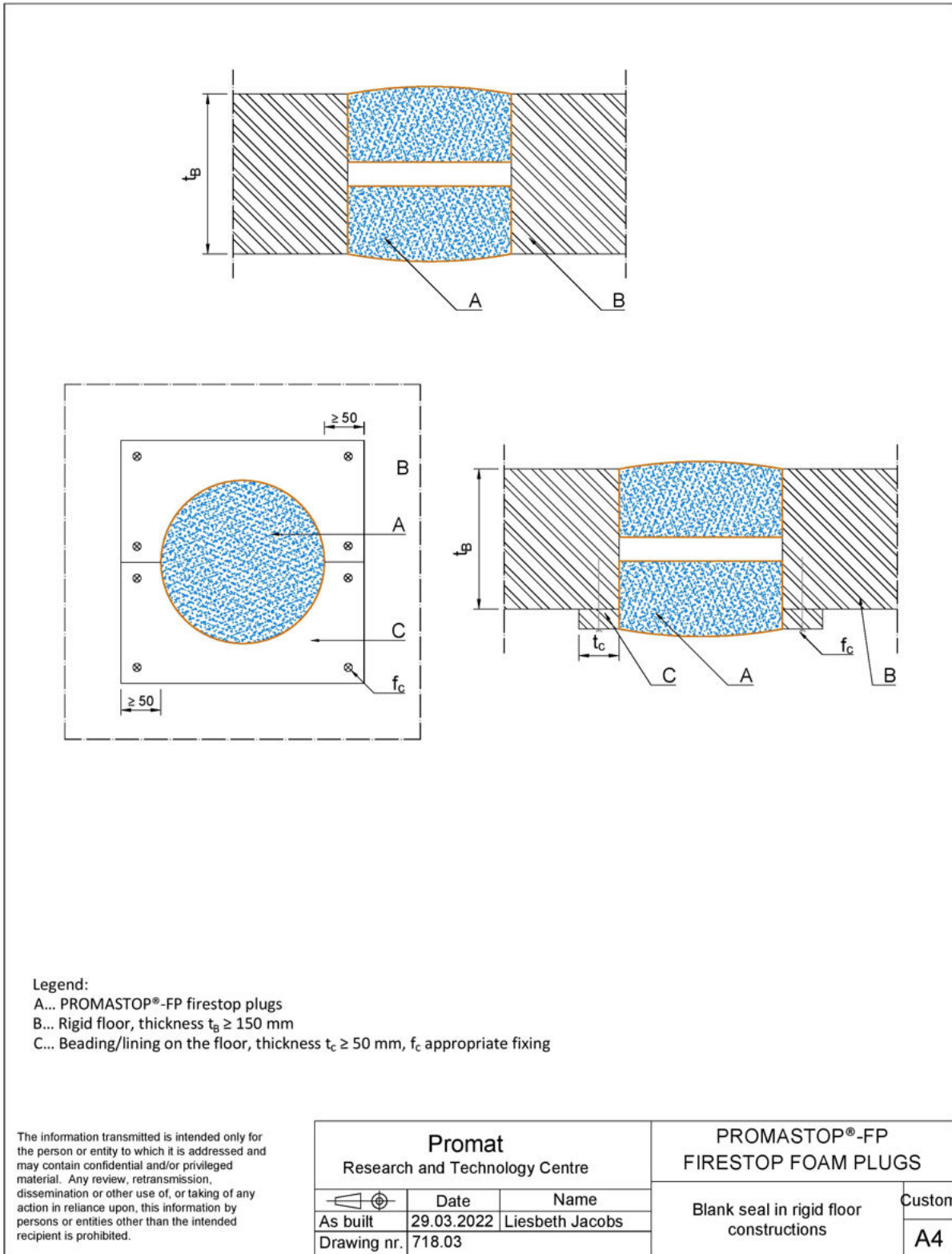


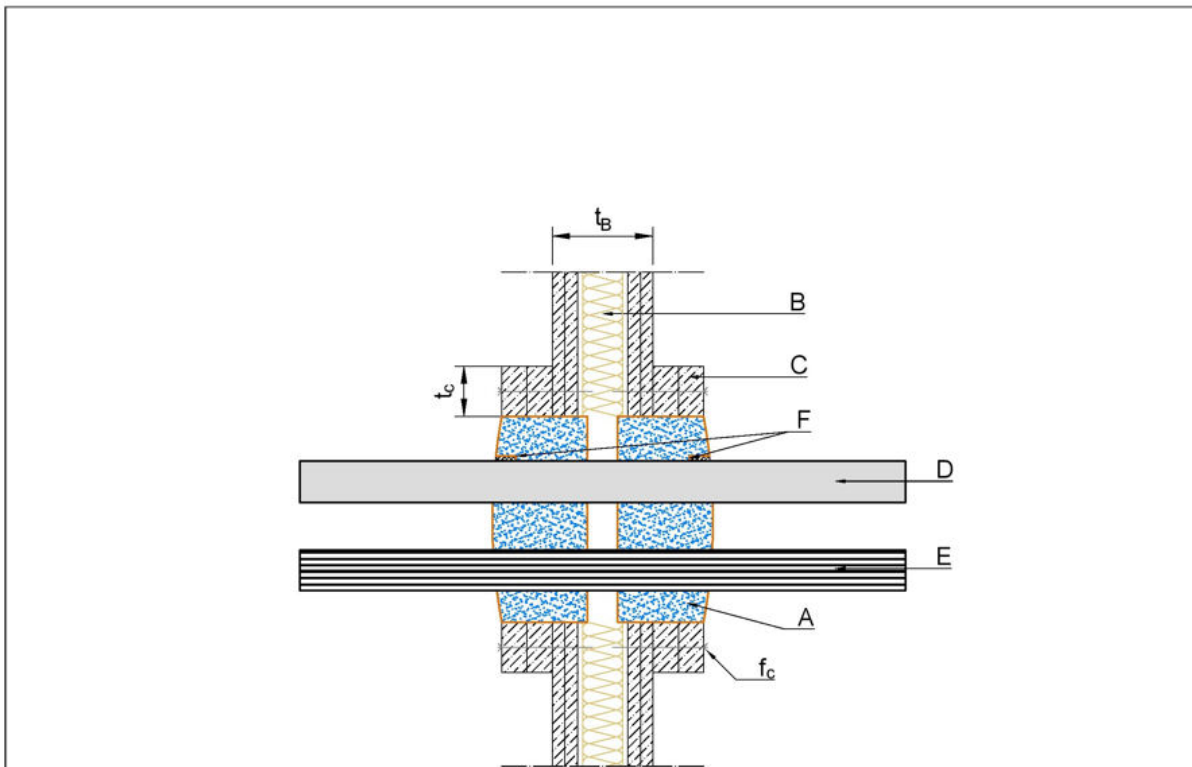
- Legend:
- A... PROMASTOP®-FP firestop plugs
 - B... Flexible wall, thickness $t_b \geq 94$ mm
 - C... Beading/lining on the wall, thickness $t_c \geq 50$ mm, f_c appropriate fixing

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Promat Research and Technology Centre		PROMASTOP®-FP FIRESTOP FOAM PLUGS	
	Date	Name	Blank seal in flexible wall constructions
As built	29.03.2022	Liesbeth Jacobs	
Drawing nr.	718.01		
			Custom A4





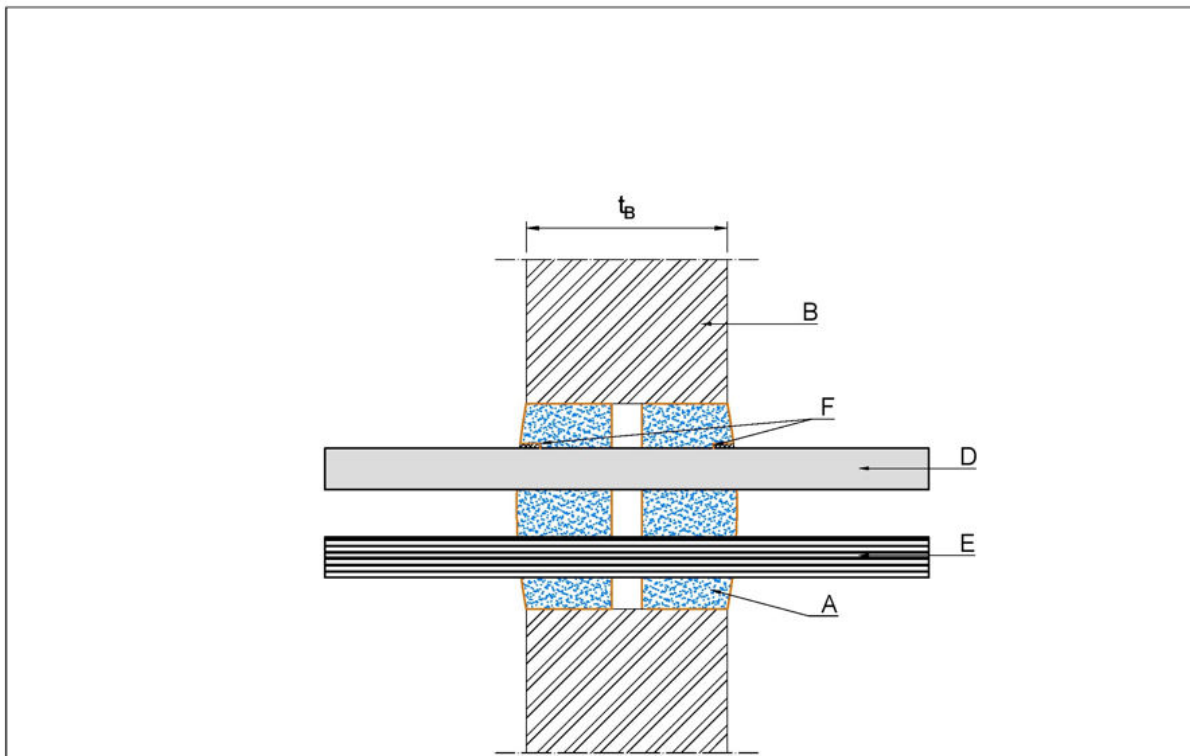


Legend:

- A... PROMASTOP®-FP firestop plugs
- B... Flexible wall, thickness $t_b \geq 94$ mm
- C... Beading/lining on the wall, thickness $t_c \geq 50$ mm, f_c appropriate fixing
- D... Cable trays and ladders with or without cables, conduits, tubes
- E... Cables, conduits, tubes
- F... PROMASEAL®-AG intumescent firestop sealant


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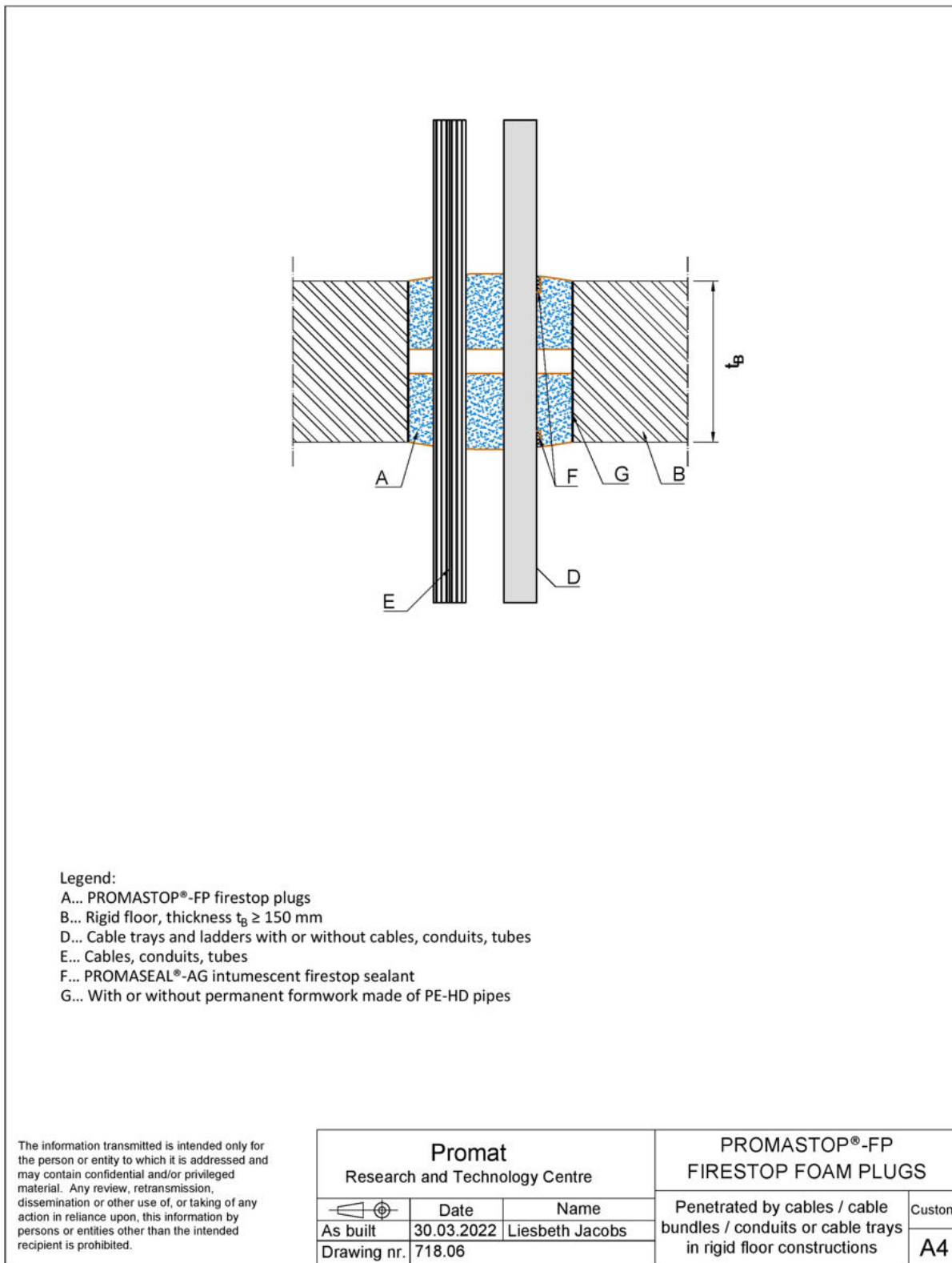
Promat Research and Technology Centre			PROMASTOP®-FP FIRESTOP FOAM PLUGS	
	Date	Name	Penetrated by cables / cable bundles / conduits or cable trays in flexible wall constructions	Custom
As built	30.03.2022	Liesbeth Jacobs		A4
Drawing nr.	718.04			



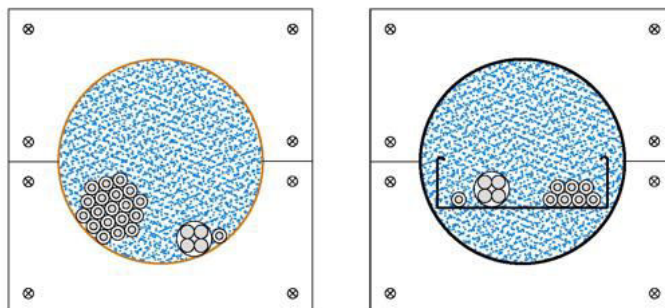
- Legend:
- A... PROMASTOP®-FP firestop plugs
 - B... Rigid wall, thickness $t_B \geq 100$ mm
 - D... Cable trays and ladders with or without cables, conduits, tubes
 - E... Cables, conduits, tubes
 - F... PROMASEAL®-AG intumescent firestop sealant

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Promat Research and Technology Centre		PROMASTOP®-FP FIRESTOP FOAM PLUGS	
	Date	Name	Penetrated by cables / cable bundles / conduits or cable trays in rigid wall constructions
As built	30.03.2022	Liesbeth Jacobs	Custom
Drawing nr.	718.05		A4




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Specimen, penetrating element	Minimum distance (mm)
Cables – Aperture opening	0
Conduits – Aperture opening	0
Cable bundle – Aperture opening	0
Cable tray – Aperture opening	0
Tubes – Aperture opening	0
Cables – Cables	0
PROMASTOP®-FP – PROMASTOP®-FP	100
Supporting distance on both sides of wall constructions	200
Supporting distance on the top side of floor constructions	200

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Promat Research and Technology Centre			PROMASTOP®-FP FIRESTOP FOAM PLUGS	
	Date	Name	Distances	Custom
As built	29.03.2022	Liesbeth Jacobs		A4
Drawing nr.	718.A			

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