

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

European Technical Assessment

ETA 25/0237
of 30/04/2025

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 FIRESAFE / FSD

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

Manufacturer Firesafe AS
Robsrudskogen 15
1470 Lørenskog
Norway

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

This European Technical Assessment contains 37 pages including 2 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

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SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

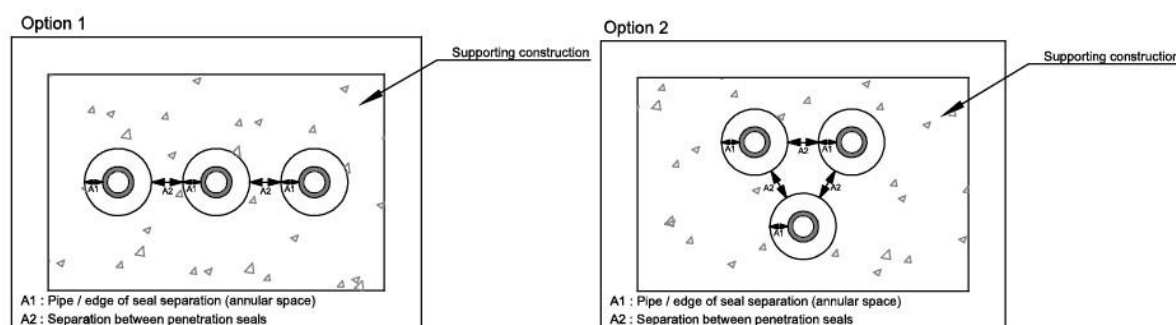
1. Technical description of the product

- 1) FIRESAFE / FSD is a surface mounted self-adhesive intumescent disc device used to form penetration seals where plastic pipes, aluminium composite pipes and cables penetrate walls and floors.
- 2) The FIRESAFE / FSD is supplied in boxes of 65 mm diameter x 3 mm disks, to be used single or in combination depending upon services.
- 3) Services penetrating the FIRESAFE / FSD are required to be supported at maximum 450 mm from both faces of walls and from the top face of floors.
- 4) The permitted separation between apertures and annular spaces for the services/seals are indicated in Annex A and B.

The following minimum distances between the apertures edges and between the pipes shall be applied (distance A₁ to A₂ according to Figure E.1 of EN 1366-3:2009):

- distance A₁ = 0 mm;
- distance A₂ = 20 mm;

Visualisation of annular space and separation between penetration seals



- 5) The following products are used in conjunction with FIRESAFE / FSD to form the penetration seal:
 - FIRESAFE / FSA;
 - FIRESAFE / FSP;
 - Mulcol® Multimortar
- 6) Pipe materials referred to in Annex A and B are as follows:

Generic Material	Specific Material	Standards
Plastic	PVC-U	DIN 8061 / DIN 8062 / DIN 19531-10 / EN 1329-1 / EN 1452-1 / EN 1453-1 / EN ISO 15493 EN ISO 15493
	PVC-C	
Aluminium Composite	Aluminium and PE	EN ISO 15494

- 7) The applicant has submitted a written declaration that the product and/or constituents of the product contains no substances which have been 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.

- 8) The use category of FIRESAFE / FSD in relation to BWR 3 (Hygiene, health and environment) is IA1, S/W2

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 and B.

The intended use of system FIRESAFE / FSD is to reinstate the fire resistance performance of flexible wall and rigid wall and floor constructions, where they are penetrated by services.

- 1) The specific elements of construction that the system FIRESAFE / FSD may be used to provide a penetration seal in, are as follows:

Flexible walls:	The wall must have a minimum thickness of 100 mm and comprise steel studs lined on both faces with minimum 2 layers of 12.5 mm thick boards.
Rigid walls:	The wall must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of $600 \pm 200 \text{ kg/m}^3$, class G4/600 or heavier.
Rigid floors:	The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of $600 \pm 200 \text{ kg/m}^3$, class G4/600 or heavier.

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

- 2) General conditions – Flexible wall

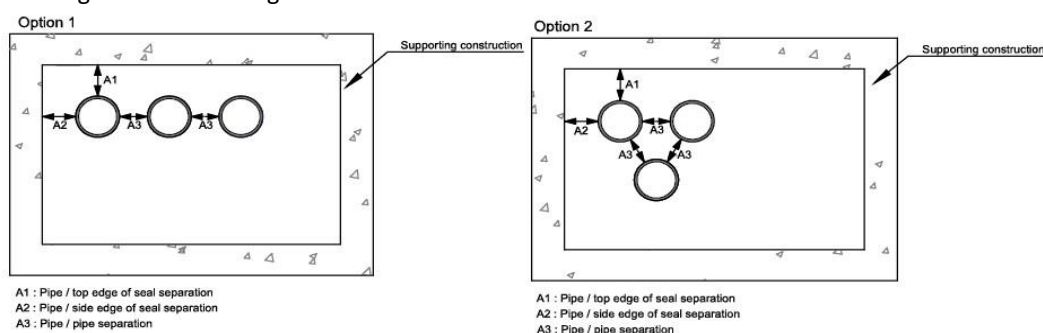
The pipe penetrations can be applied in any type of insulated or non insulated flexible all construction (partition) provided that the following conditions are met. The total thickness of the flexible wall (for example walls with wooden or steel framing) shall be at least 100 mm. The wall shall consist out of in total four board layers with a thickness of 12.5 mm each. A minimum distance of 100 mm to a stud shall be held. When wooden studs are used, at least 100 mm of insulation class A1 or A2 according to EN 13501-2 shall be present between the penetration seal and the stud(s).

- 3) General conditions – Mixed Penetration Seals – Multiple FIRESAFE / FSD devices with the same or different services, may be incorporated in coated firestop board system FIRESAFE / FSP subject to the conditions specified in Annex A. The performance of the seal is restricted to the contained service/FIRESAFE / FSD device with the lowest classification, as given in Annex A and B.

In the FIRESAFE / FSP system the following minimum distances between the apertures edges and between the pipes shall be applied (distance A₁ to A₃ according to Figure E.1 of EN 1366-3: 2009, See Figure 2):

- distance A₁ = 10 mm;
- distance A₂ = 10 mm;
- distance A₃ = 20 mm.

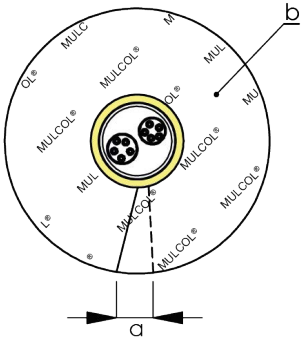
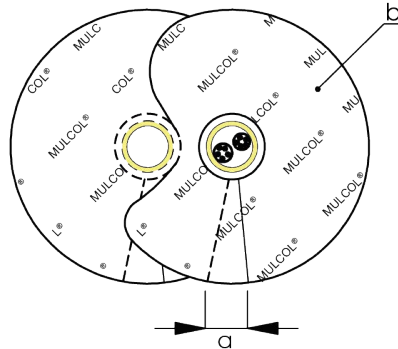
Figure 2 Figure E.1 of EN 1366-3: 2009



- 4) The system FIRESAFE / FSD may be used to provide a penetration seal with specific supporting constructions and substrates (for details see Annex A & B).
- 5) The provisions made in this European Technical Assessment are based on an assumed working life of the FIRESAFE / FSD of 25 years, provided that the conditions laid down in the manufacturers datasheet and instructions 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 or the Technical Assessment Body, 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 Z₁: intended for use at internal conditions with high humidity, excluding temperatures below 0°C.
- 7) General Conditions – The maximum aperture for the penetration seal should not exceed Ø 26 mm. The annular gap between the pipe and the wall or floor does not have to be filled. Optionally it can be filled with stone wool of at least 35 kg/m³, Mulcol® Multimortar or FIRESAFE / FSA.
- 8) General Conditions – Installation in coated firestop board system – FIRESAFE / FSP (2x50 mm) The aperture size in the floor may be up to 1200 mm wide and 2400 mm long and the wall may be up to 2400 mm wide and 1200 mm high. The FIRESAFE / FSP board system has a total thickness of 100 mm (2 x 50 mm) comprising FIRESAFE / FSB mineral wool board coated with waterborne FIRESAFE / FSP ablative firestop coating. The coating is applied with a thickness 1 mm on the outwards pointing faces of each panel (no coating between the boards). The coating shall also be applied circumferential over the opening of the rock wool with the adjacent construction (overlap minimal 25 mm). The joints between the different board elements and the aperture edge shall be glued together with FIRESAFE / FSA. A cavity between the rock wool panels may be present.
For further information regarding the placing instructions and the field of application of the FIRESAFE / FSP (2 x 50 mm) penetration seal system reference is made to the European Technical Assessment ETA 23/0050 dated August 29, 2023.
The system FIRESAFE / FSD may be used to provide a penetration seal with specific supporting constructions and substrates (for details see Annex A and B).
- 9) Pipe types
The follow aluminium composite pipe types 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).

10) General conditions for FIRESAFE / FSD installation

The FIRESAFE / FSD shall be over the aperture and around the services making sure that the sealing side overlaps.

 a - Overlay size (Minimum 10 mm overlay) FIRESAFE / FSD	 a - Overlay size (Minimum 10 mm overlay) FIRESAFE / FSD
Single Pipe Penetration	Multiple Pipe Penetration

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

Product-type: Pipe Closure		Intended use: Penetration Seal
Basic requirement for construction work	Basic Requirement	Performance
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	Class 'E'
EN 13501-2	Resistance to fire	Annex A
BWR 3 Hygiene, health and environment		
EN 1026:2000	Air permeability (material property)	No performance determined
EAD 350454-00-1104, Annex C	Water permeability (material property)	No performance determined
Declaration of manufacturer	Release of dangerous substances	Use categories: IA1, S/W2 Declaration of manufacturer
BWR 4 Safety in use		
EOTA TR 001:2003	Mechanical resistance and stability	No performance determined
EOTA TR 001:2003	Resistance to impact/movement	
EOTA TR 001:2003	Adhesion	
EOTA TR 024:2019	Durability	Z ₁
BWR 5 Protection against noise		
EN 10140-1-2/ EN ISO 717-1	Airborne sound insulation	No performance determined
BWR 6 Energy economy and heat retention		
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) SYSTEM 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 fire stopping, fire sealing and fire protective products, published in the Official Journal of the European Union (OJEU) L178/52 of 14/07/1999, see <http://eur-lex.europa.eu/JOIndex.do>) of the European Commission¹, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table(s) applies (apply).

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

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

Tasks of the manufacturer:

Factory production control

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

The factory production control shall be in accordance with the Control Plan of 14 September 2023 relating to the European Technical Assessment ETA 25/0237 issued on 30/04/2025 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:

30 April 2025

Report by:

Verified by:

Validated by:



P. Foster

Project Engineer Associate

Built Environment



C. Johnson

Senior Staff Engineer

Built Environment



R. Qaradeh

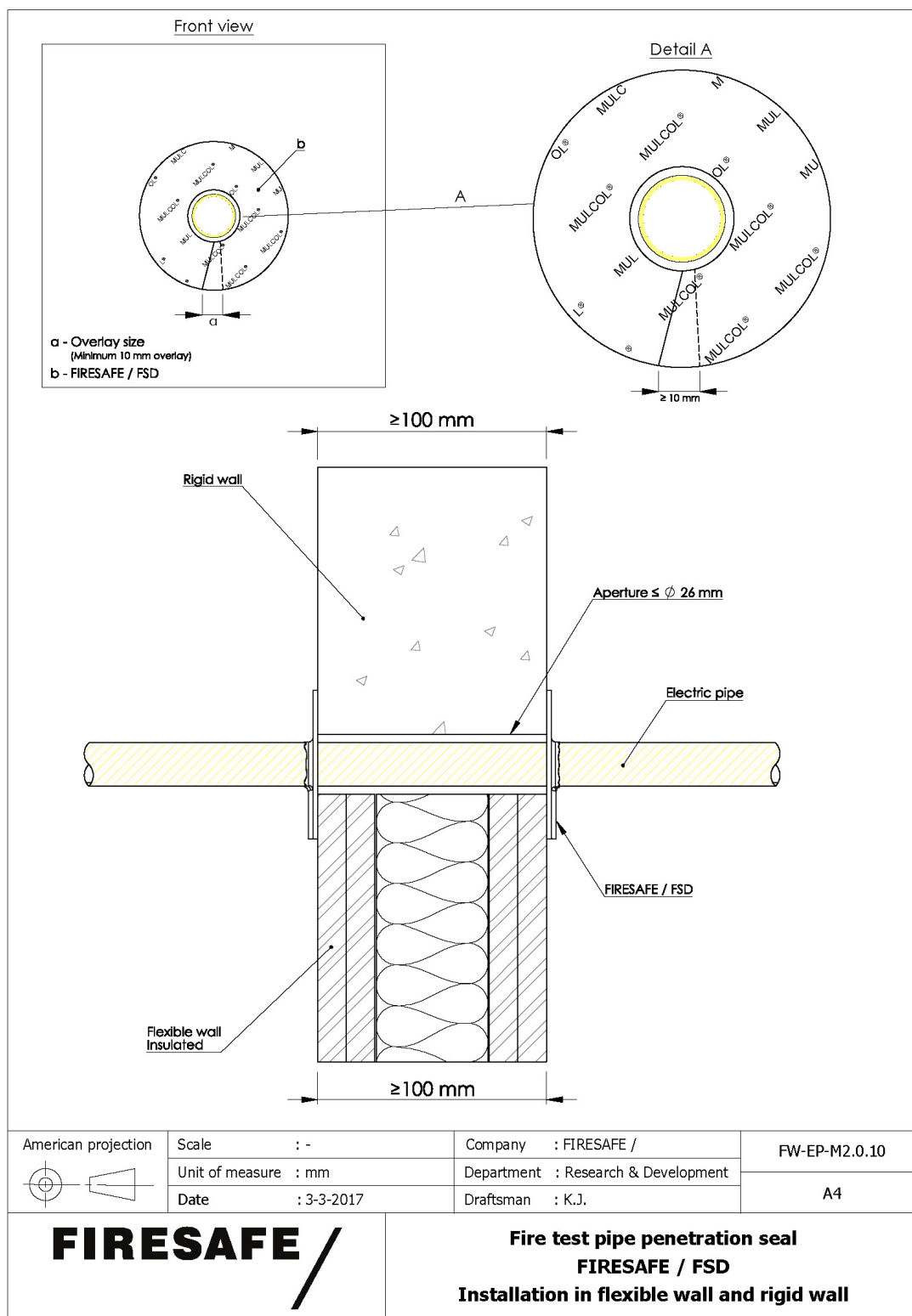
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For and on behalf of UL International (Netherlands) B.V.

ANNEX A – Resistance to Fire Classification – FIRESAFE / FSD - Flexible or rigid wall constructions according to Section 2 1) with wall thickness of minimum 100 mm

A.1 FIRESAFE / FSD with PVC-ET conduits

A.1.1 Single PVC-ET conduits, with one FIRESAFE / FSD to both sides of the wall



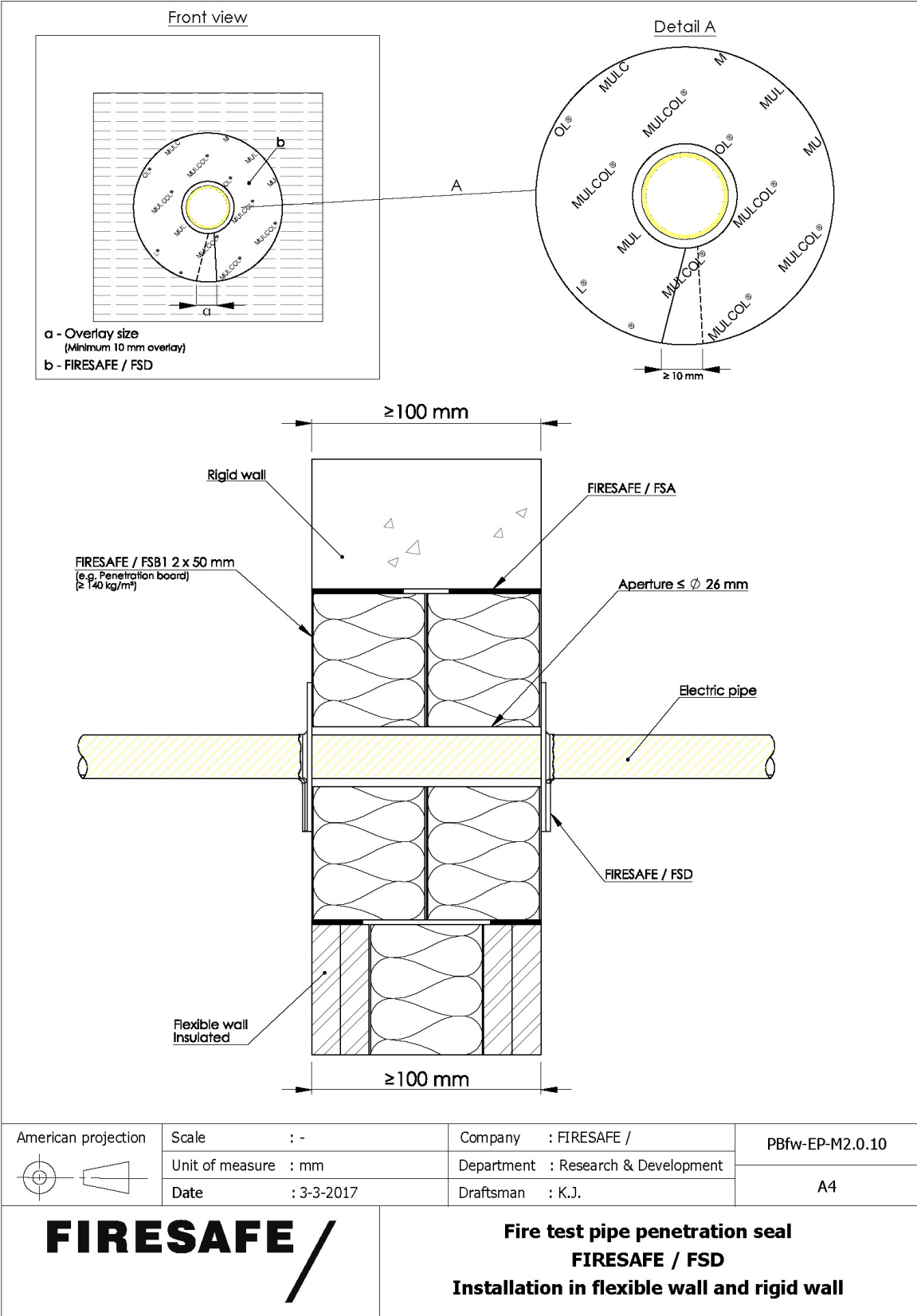
Pipe/conduit material	Outer diameter pipe (inch or mm)	Distance A ₂ (mm)	Classification*
PVC-ET	≤ 3/4"	≤ 20 mm (according to Section I.1.4)	EI 120 U/U
	≤ 25 mm		

* U/U pipe end configuration applies to C/U, U/C and C/C also

Permitted telecommunication cables		One sheathed cable allowed for each pipe*			Empty pipe
UPT Cat. 5	UPT Cat. 6	YMKV 3 x 2.5 mm ²	YMKV 5 x 1.5 mm ²	YMKV 5 x 2.5 mm ²	
Yes	Yes	Yes	Yes	Yes	Yes

* Electric cable, Copper content ≤ 12,5 mm²

A.1.2 Single PVC-ET conduits, with one FIRESAFE / FSD to both sides of FIRESAFE / FSP system in wall



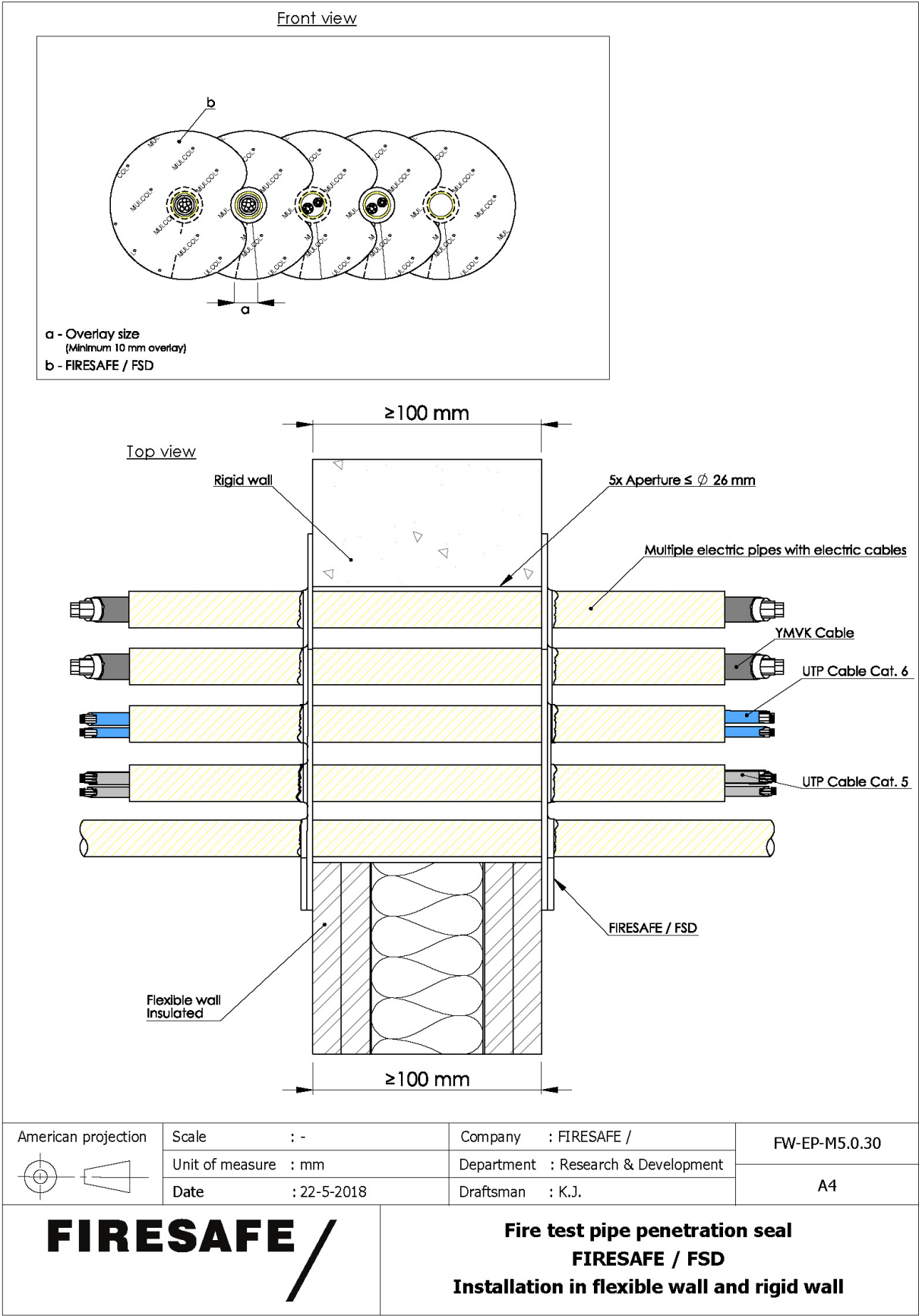
Pipe/conduit material	Outer diameter pipe (inch or mm)	Distance A ₂ (mm)	Classification*
PVC-ET	≤ 3/4"	≤ 20 mm (see fig.2 according to Section I.2.3)	E 120 U/U EI 90 U/U
	≤ 25 mm		

* U/U pipe end configuration applies to C/U, U/C and C/C also

Permitted telecommunication cables		One sheathed cable allowed for each pipe*			Empty pipe
UPT Cat. 5	UPT Cat. 6	YMKV 3 x 2.5 mm ²	YMKV 5 x 1.5 mm ²	YMKV 5 x 2.5 mm ²	
Yes	Yes	Yes	Yes	Yes	Yes

* Electric cable, Copper content ≤ 12,5 mm²

A.1.3 Multiple PVC-ET conduits, with FIRESAFE / FSD to both sides of the wall



Pipe/conduit material	Outer diameter pipe	Distance A ₂ (mm)	Classification*
PVC-ET	≤ 5/8"	≤ 20 mm (according to Section I.1.4)	E 120 U/U EI 90 U/U

* U/U pipe end configuration applies to C/U, U/C and C/C also

Permitted telecommunication cables		One sheathed cable allowed for each pipe*			Empty pipe
UPT Cat. 5	UPT Cat. 6	YMKV 3 x 2.5 mm ²	YMKV 5 x 1.5 mm ²	YMKV 5 x 2.5 mm ²	
Yes	Yes	Yes	Yes	Yes	Yes

* Electric cable, Copper content ≤ 12,5 mm²

Front view

a - Overlay size
(Minimum 10 mm overlay)

b - FIRESAFE / FSD

Top view

≥ 100 mm

Rigid wall

FIRESAFE / FSB1 2 x 50 mm
(e.g. Penetration board)
(≥ 140 kg/m³)

5x Aperture ≤ Ø 26 mm

Multiple electric pipes with electric cables

YMKV Cable

UTP Cable Cat. 6

UTP Cable Cat. 5

FIRESAFE / FSD

FIRESAFE / FSA

Flexible wall
insulated or non-insulated

≥ 100 mm

	Scale : -	Company : FIRESAFE /	PBfw-EP-M5.0.30
	Unit of measure : mm	Department : Research & Development	
	Date : 23-5-2018	Draftsman : K.J.	A4

FIRESAFE

Fire test pipe penetration seal

FIRESAFE / FSD

Installation in flexible wall and rigid wall

Pipe/conduit material	Outer diameter pipe	Distance A ₃ (mm)	Classification*
PVC-ET	≤ 5/8"	≤ 20 mm (see fig.2 according to Section I.2.3)	E 120 U/U EI 90 U/U

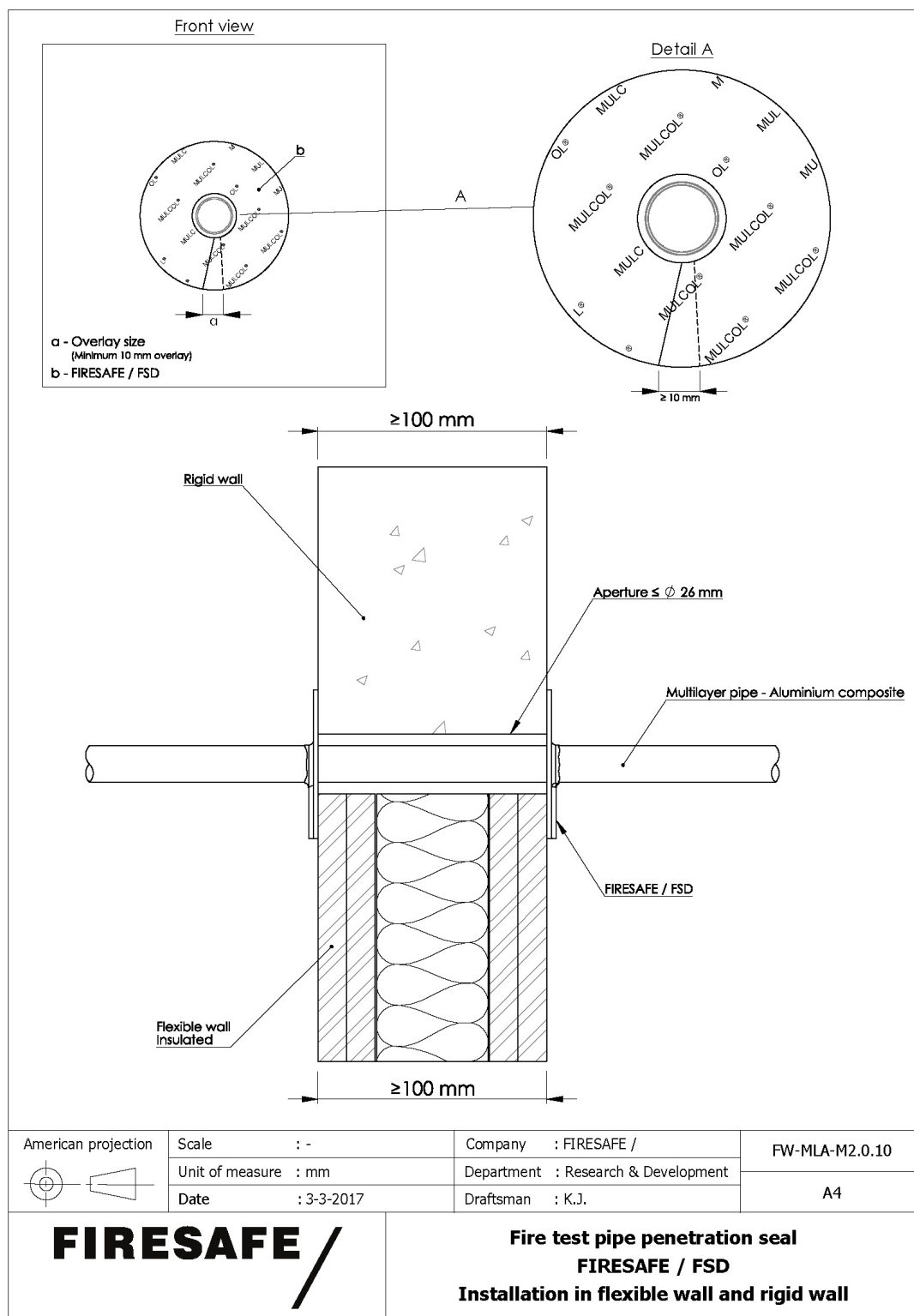
* U/U pipe end configuration applies to C/U, U/C and C/C also

Permitted telecommunication cables		One sheathed cable allowed for each pipe*			Empty pipe
UPT Cat. 5	UPT Cat. 6	YMKV 3 x 2.5 mm ²	YMKV 5 x 1.5 mm ²	YMKV 5 x 2.5 mm ²	
Yes	Yes	Yes	Yes	Yes	Yes

* Electric cable, Copper content ≤ 12,5 mm²

A.2 FIRESAFE /FSD with Aluminium composite pipes

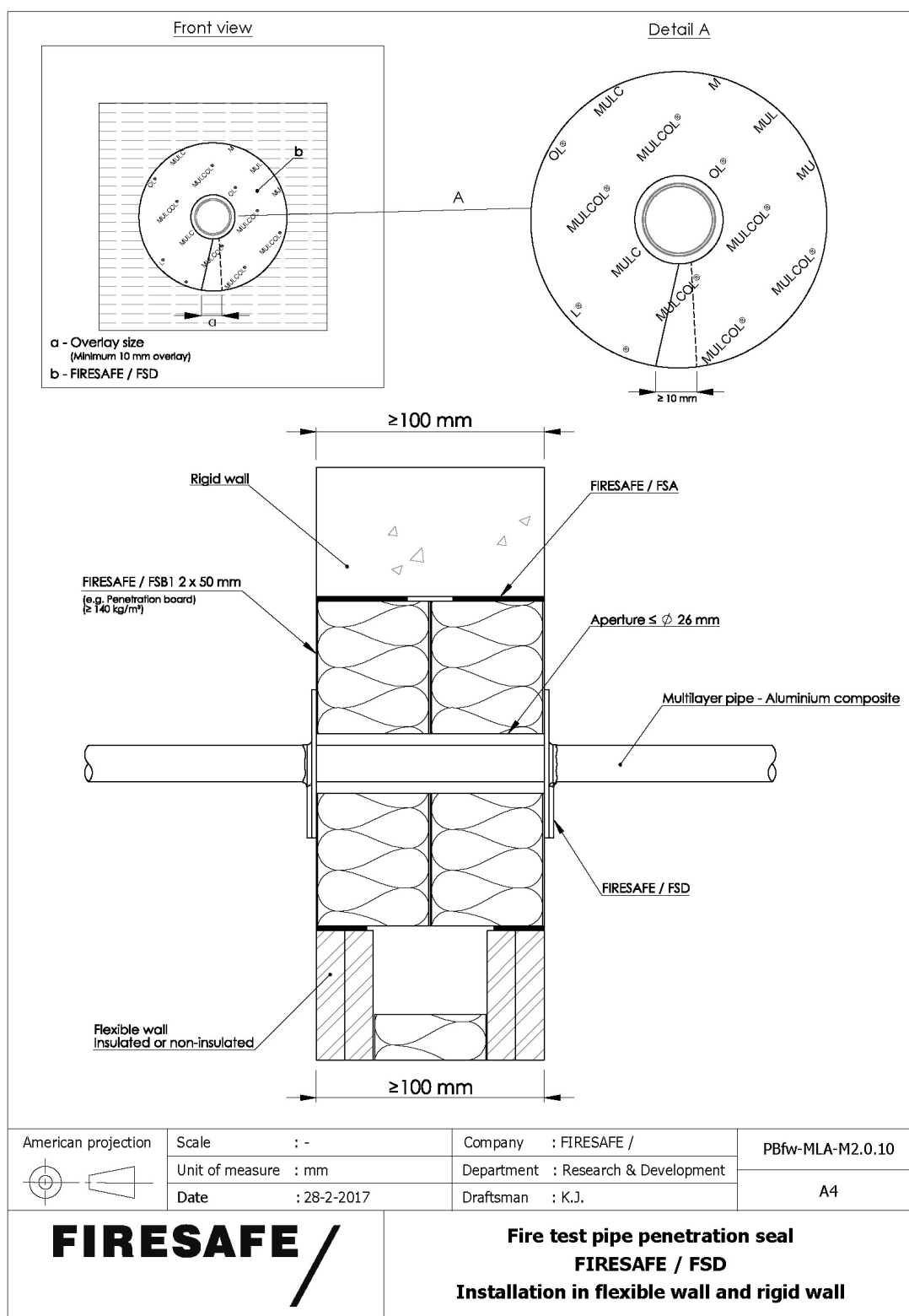
A.2.1 Single Aluminium composite pipes, with FIRESAFE / FSD to both sides of the wall



Pipe material	Pipe diameter (mm)	Pipe wall (mm)	Distance A ₂ (mm)	Classification*
Aluminium composite	≤ 16	2.0	≤ 20 mm (according to Section I.1.4)	E 120 U/C EI 90 U/C

* U/C pipe end configuration applies to C/C also

A.2.2 Single Aluminium composite pipes, with FIRESAFE / FSD to both sides of FIRESAFE / FSP system in the wall

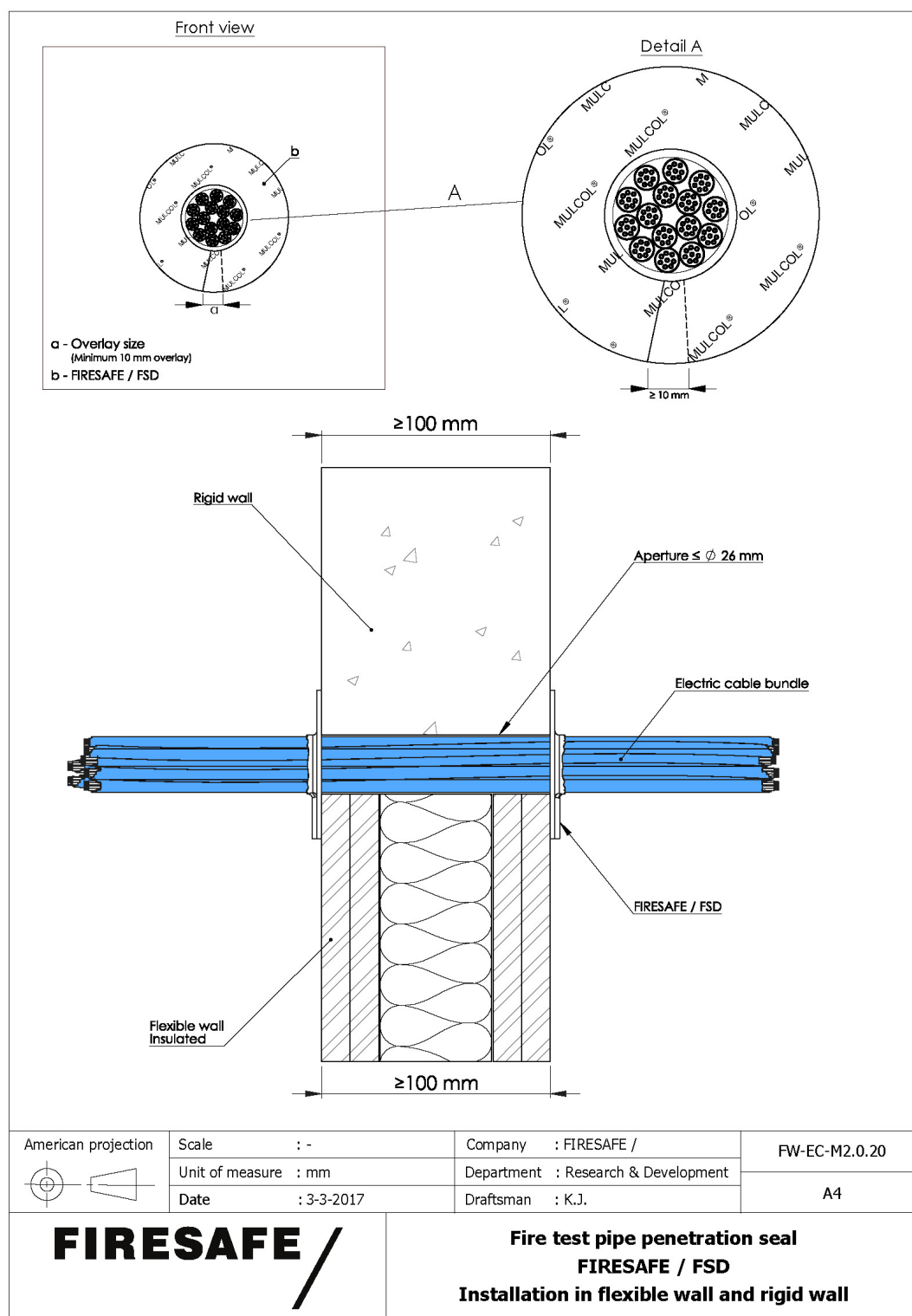


Pipe material	Pipe diameter (mm)	Pipe wall (mm)	Distance A ₃ (mm)	Classification*
Aluminium composite	≤ 16	2.0	≤ 20 mm (see fig. 2 according to Section I.2.3)	E 120 U/C EI 90 U/C

* U/C pipe end configuration applies to C/C also

A.3 FIRESAFE / FSD with cables

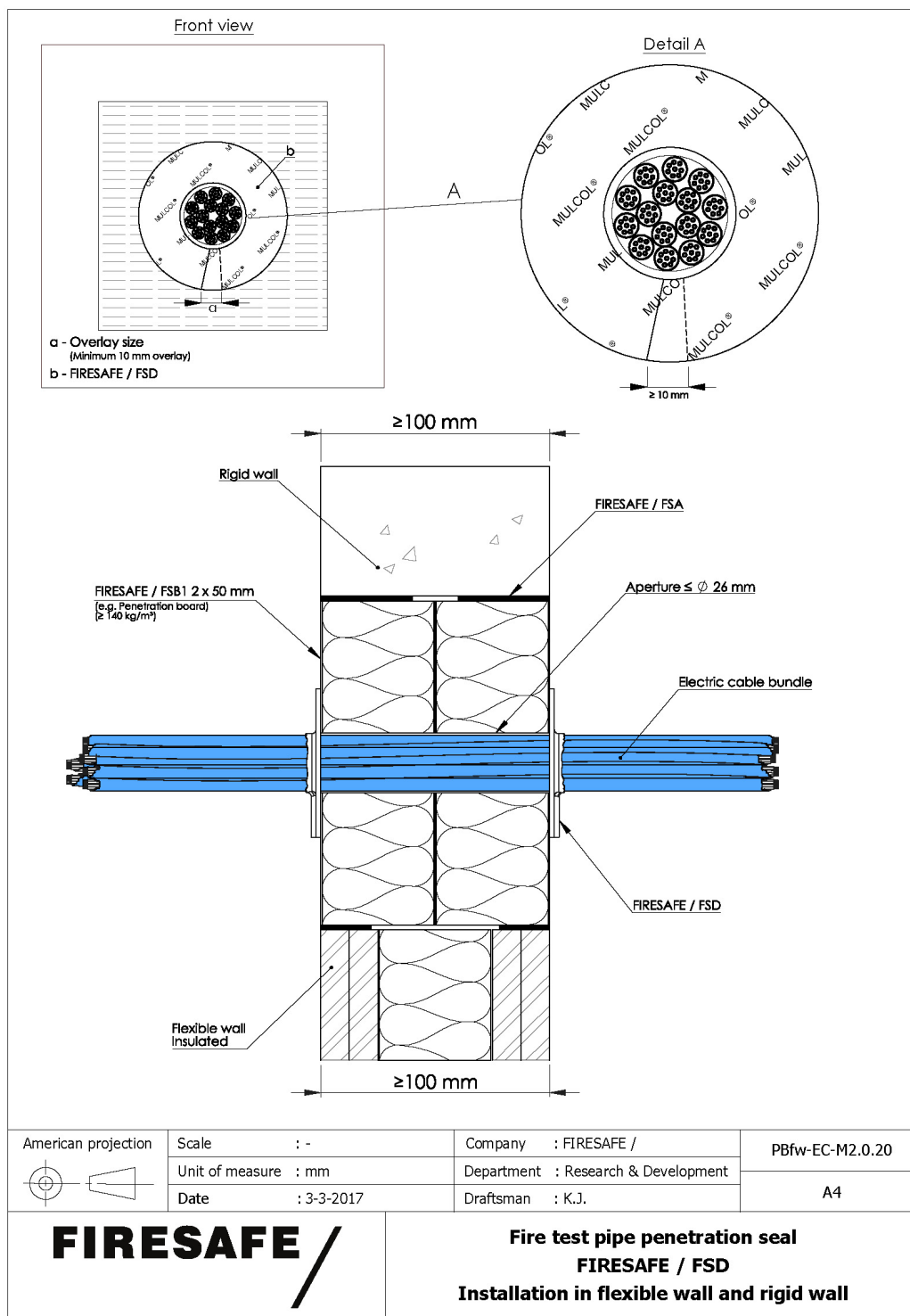
A.3.1 Multiple cables, with FIRESAFE / FSD to both sides of the wall



Cable		Number of cables allowed*	Distance A ₂ (mm)	Performance class
Generic type	Type			
Telecommunication cable	UTP Cat. 5 and/or UTP Cat. 6	≤ 15	≤ 20 mm (according to Section I.1.4)	EI 120

* Electric cable bundle, Copper content ≤ 60 mm²

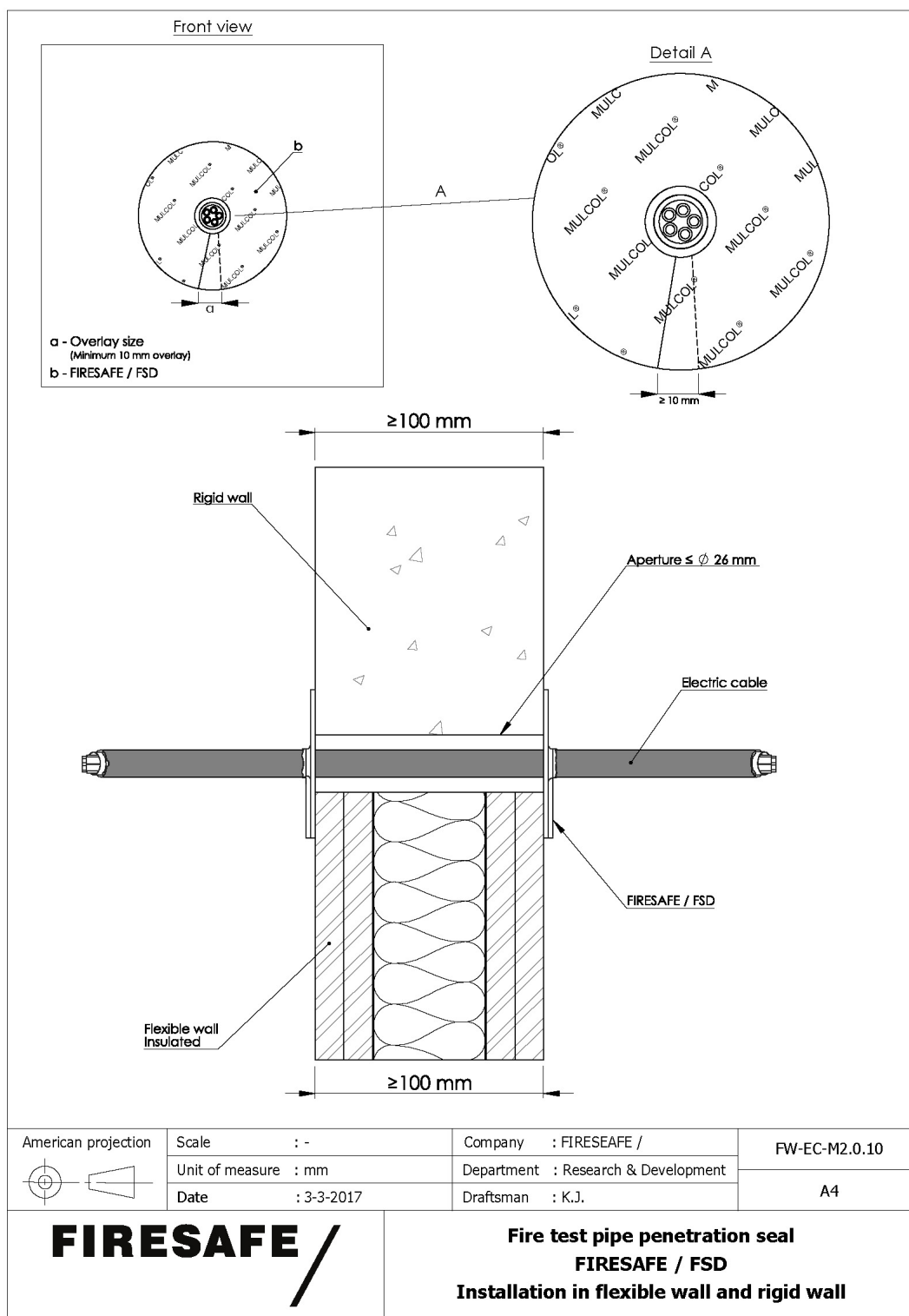
A.3.2 Multiple cables, with FIRESAFE / FSD to both sides of FIRESAFE / FSP system in the wall



Cable		Number of cables allowed*	Distance A ₃ (mm)	Performance class
Generic type	Type			
Telecommunication cable	UTP Cat. 5 and/or UTP Cat. 6	≤ 15	≤ 20 mm (see fig. 2 according to Section I.1.4)	E 120 EI 60

* Electric cable bundle, Copper content ≤ 60 mm²

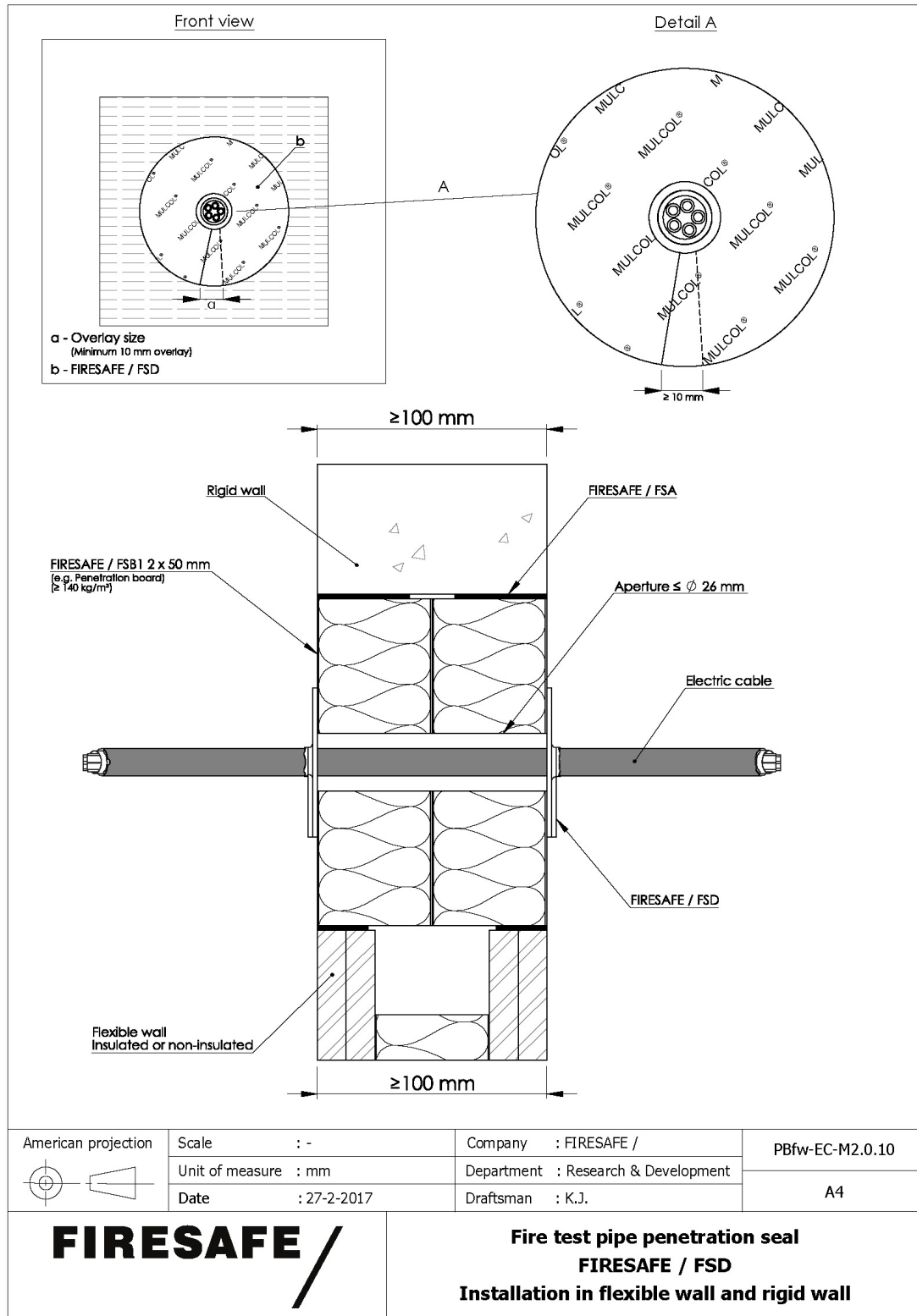
A.3.3 Single cables, with FIRESAFE / FSD to both sides of the wall



Cable		Number of cables allowed*	Distance A ₂ (mm)	Performance class
Generic type	Type			
Sheathed cable	YMKV 3 x 2.5 mm ² or YMKV 5 x 1.5 mm ² or YMKV 5 x 2.5 mm ²	1	≤ 20 mm (according to Section I.1.4)	EI 120

* Electric cable, Copper content ≤ 12,5 mm²

A.3.4 Single cables, with FIRESAFE / FSD to both sides of FIRESAFE / FSP system in the wall



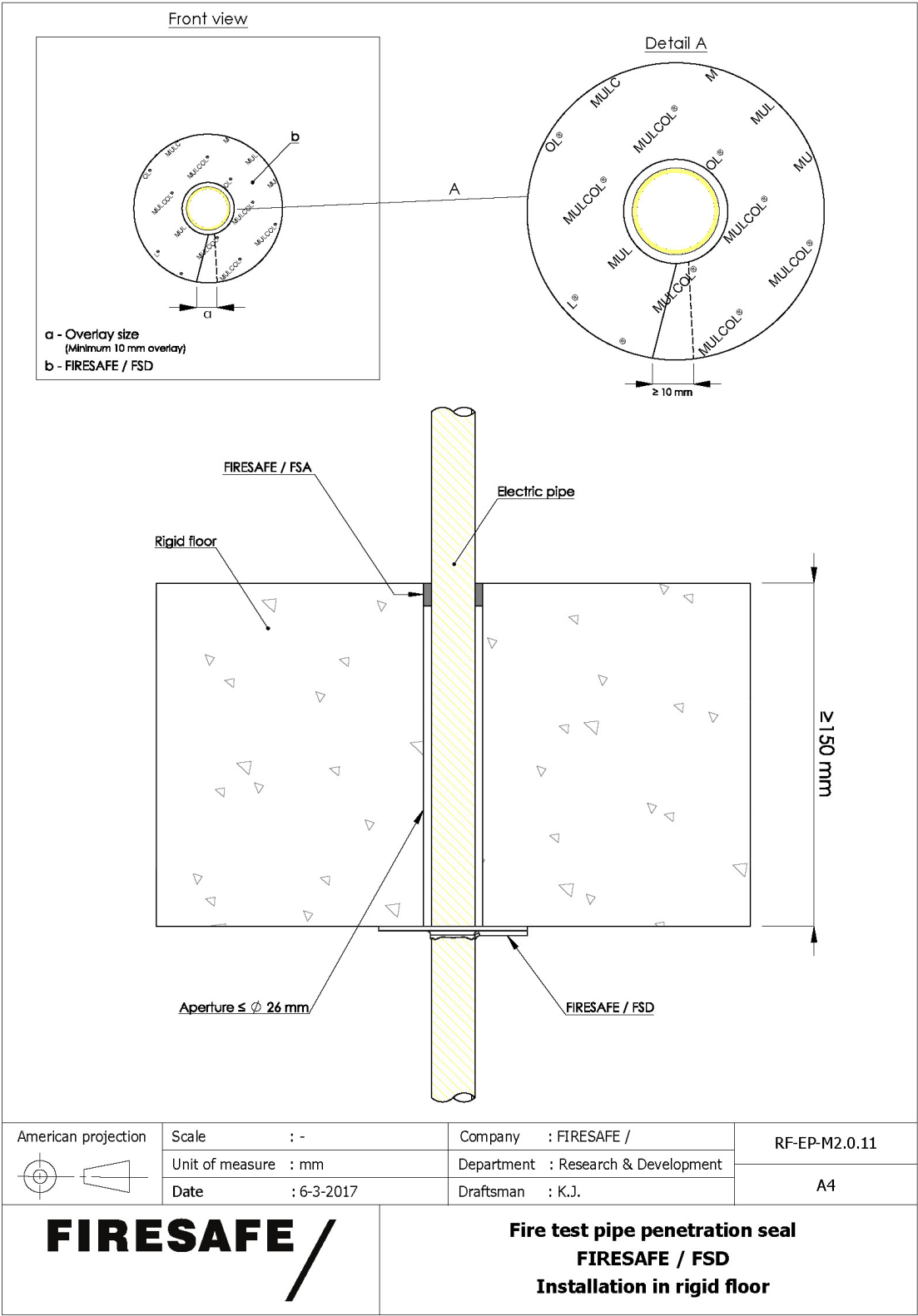
Cable		Number of cables allowed*	Distance A ₃ (mm)	Performance class
Generic type	Type			
Sheathed cable	YMKV 3 x 2.5 mm ² or YMKV 5 x 1.5 mm ² or YMKV 5 x 2.5 mm ²	1	≤ 20 mm (see fig. 2 according to Section I.2.3)	EI 90

*Electric cable, Copper content ≤ 12,5 mm²

Annex B - Resistance to Fire Classification – FIRESAFE / FSD - Rigid floor constructions according to Section 2 1) with floor thickness of minimum 150 mm

B.1 FIRESAFE / FSD with PVC-ET conduits

B.1.1 Single PVC-ET conduits, with one FIRESAFE / FSD to the underside of the floor



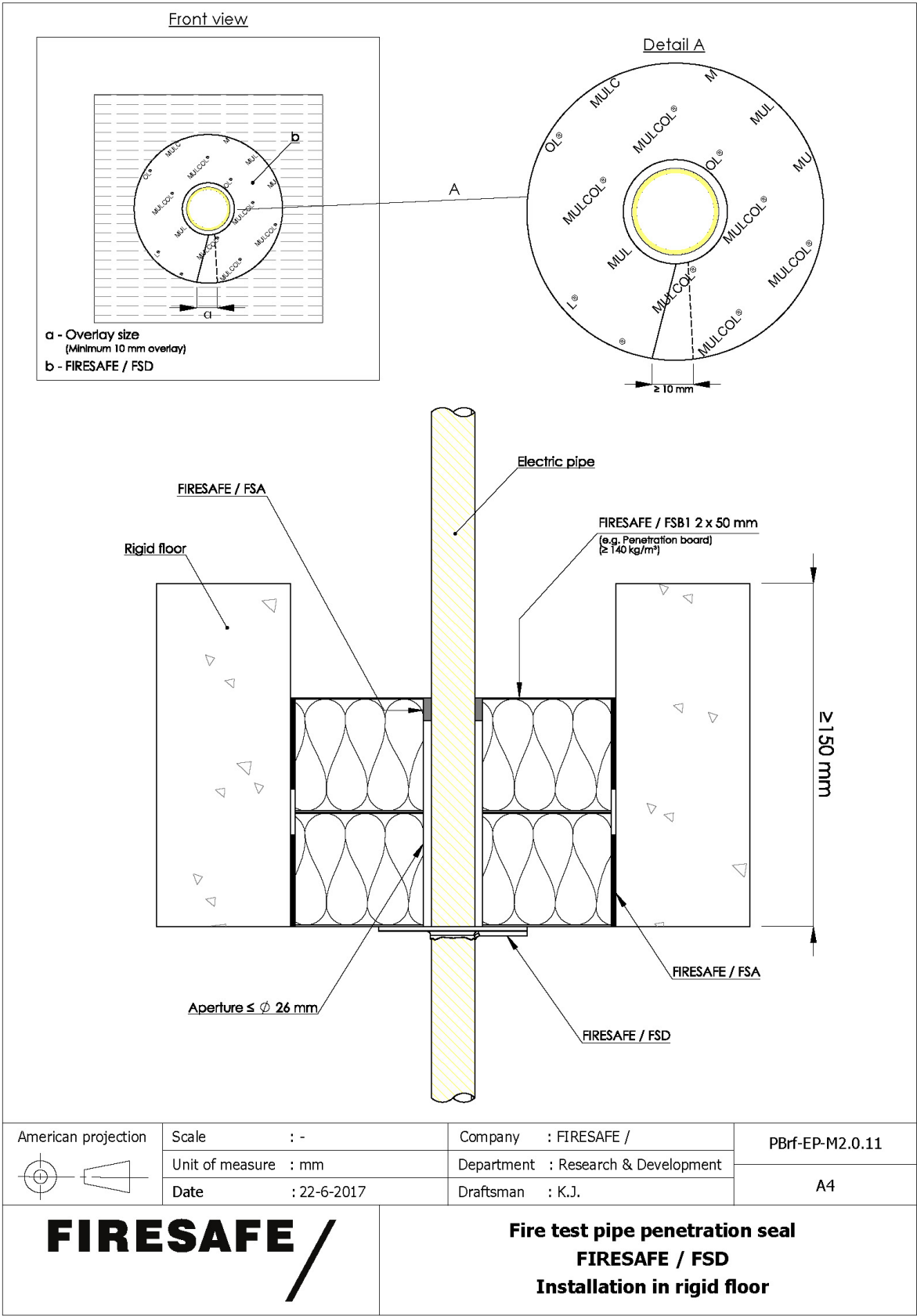
Pipe/conduit material	Outer diameter pipe (inch or mm)	Distance A ₂ (mm)	Classification*
PVC-ET	≤ 3/4"	≤ 20 mm (according to Section I.1.4)	EI 120 U/U
	≤ 25 mm		

* U/U pipe end configuration applies to C/U, U/C and C/C also

Permitted telecommunication cables		One sheathed cable allowed for each pipe*			Empty pipe
UPT Cat. 5	UPT Cat. 6	YMKV 3 x 2.5 mm ²	YMKV 5 x 1.5 mm ²	YMKV 5 x 2.5 mm ²	
Yes	Yes	Yes	Yes	Yes	Yes

* Electric cable, Copper content ≤ 12,5 mm²

B.1.2 Single PVC-ET conduits, with one FIRESAFE / FSD to the underside of FIRESAFE / FSP system in wall



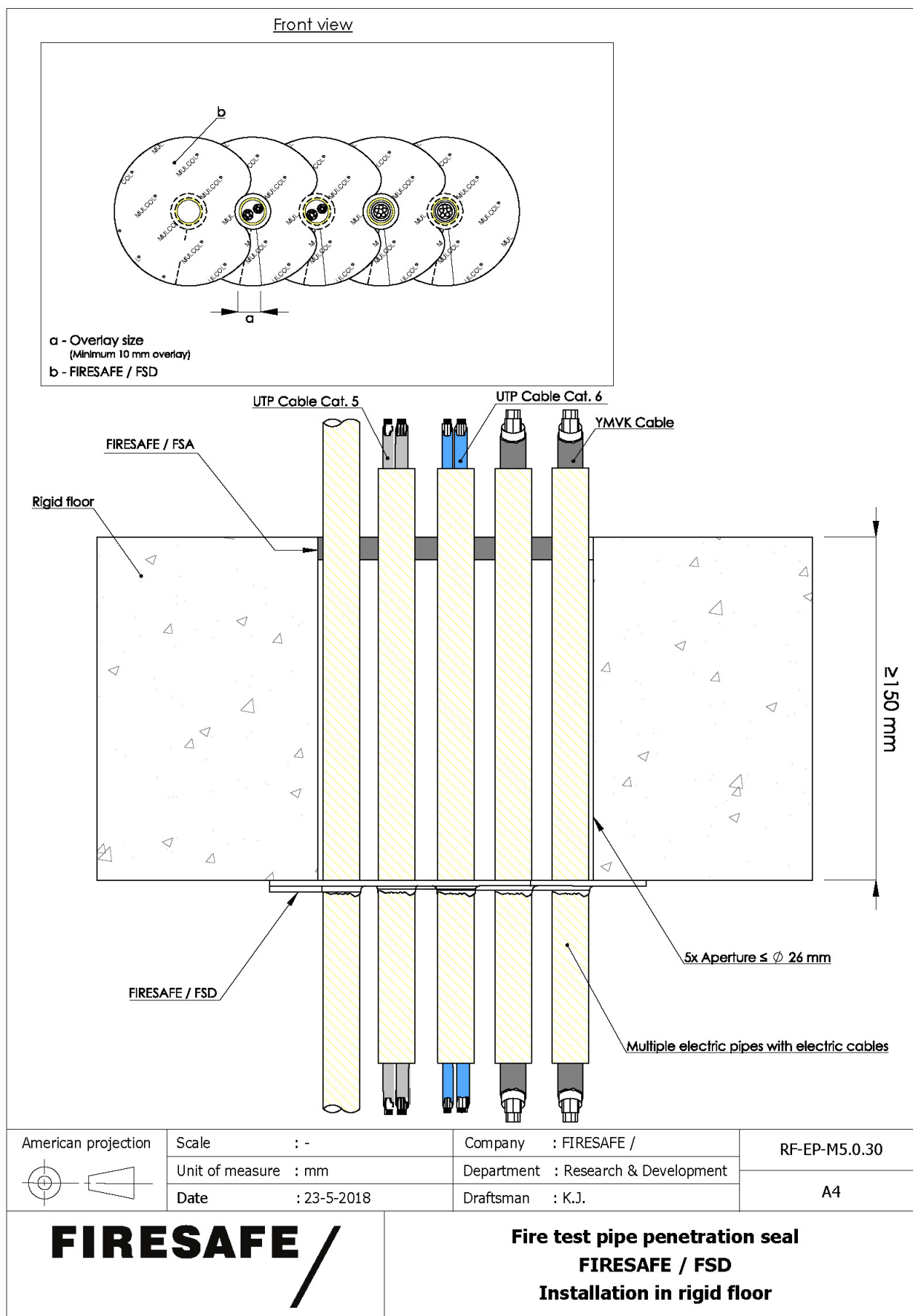
Pipe/conduit material	Outer diameter pipe (inch or mm)	Distance A ₂ (mm)	Classification*
PVC-ET	≤ 3/4"	≤ 20 mm (see fig.2 according to Section I.2.3)	E 120 U/U EI 90 U/U
	≤ 25 mm		

* U/U pipe end configuration applies to C/U, U/C and C/C also

Permitted telecommunication cables		One sheathed cable allowed for each pipe*			Empty pipe
UPT Cat. 5	UPT Cat. 6	YMKV 3 x 2.5 mm ²	YMKV 5 x 1.5 mm ²	YMKV 5 x 2.5 mm ²	
Yes	Yes	Yes	Yes	Yes	Yes

* Electric cable, Copper content ≤ 12,5 mm²

B.1.3 Multiple PVC-ET conduits, with FIRESAFE / FSD to the underside of the floor



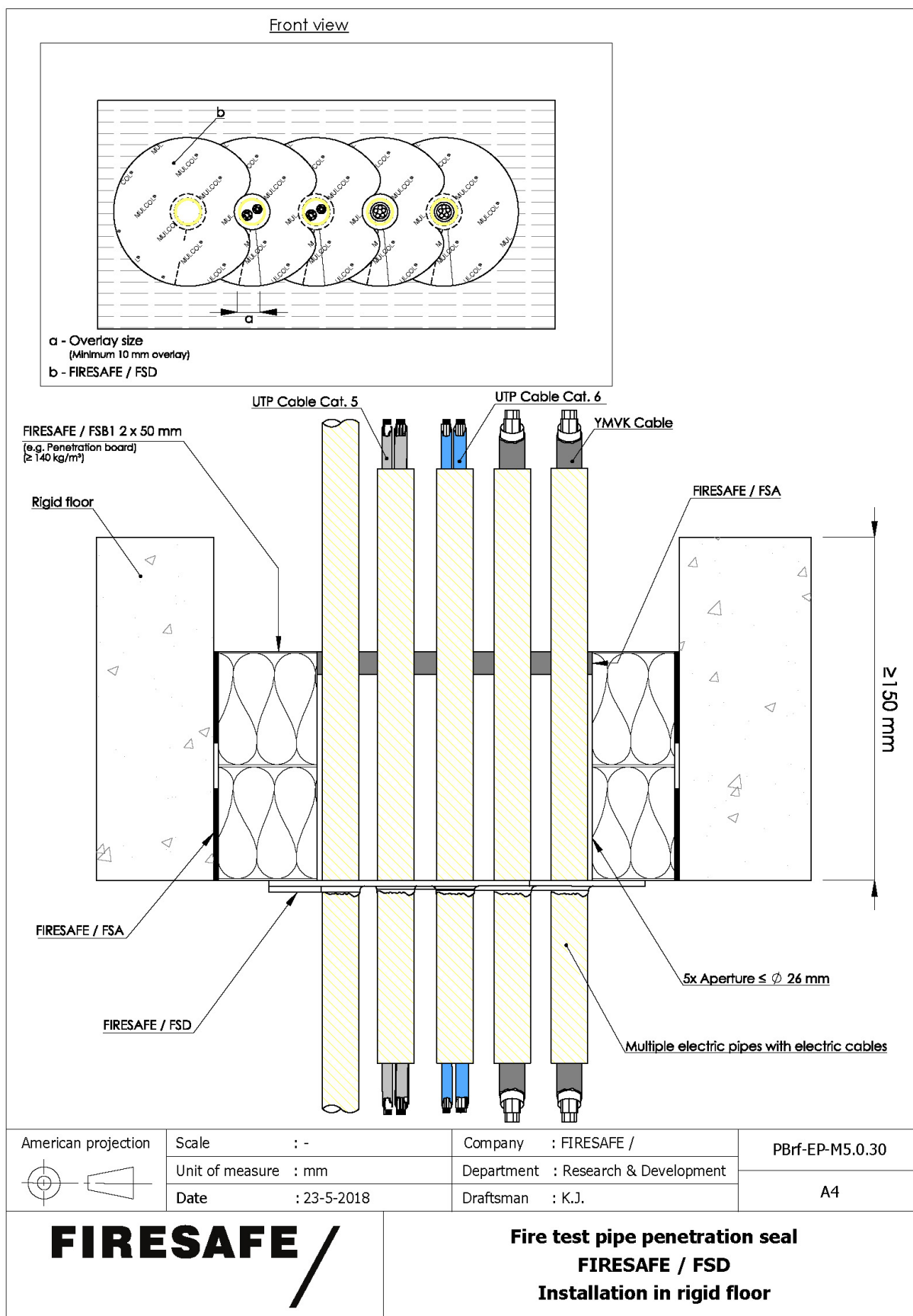
Pipe/conduit material	Outer diameter pipe	Distance A ₂ (mm)	Classification*
PVC-ET	≤ 5/8"	≤ 20 mm (according to Section I.1.4)	E 120 U/U EI 90 U/U

* U/U pipe end configuration applies to C/U, U/C and C/C also

Permitted telecommunication cables		One sheathed cable allowed for each pipe*			Empty pipe
UPT Cat. 5	UPT Cat. 6	YMKV 3 x 2.5 mm ²	YMKV 5 x 1.5 mm ²	YMKV 5 x 2.5 mm ²	
Yes	Yes	Yes	Yes	Yes	Yes

* Electric cable, Copper content ≤ 12,5 mm²

B.1.4 Multiple PVC-ET conduits, with FIRESAFE / FSD to the underside of FIRESAFE / FSP system in the floor



Pipe/conduit material	Outer diameter pipe	Distance A3 (mm)	Classification*
PVC-ET	≤ 5/8"	≤ 20 mm (see fig.2 according to Section I.2.3)	E 120 U/U EI 90 U/U

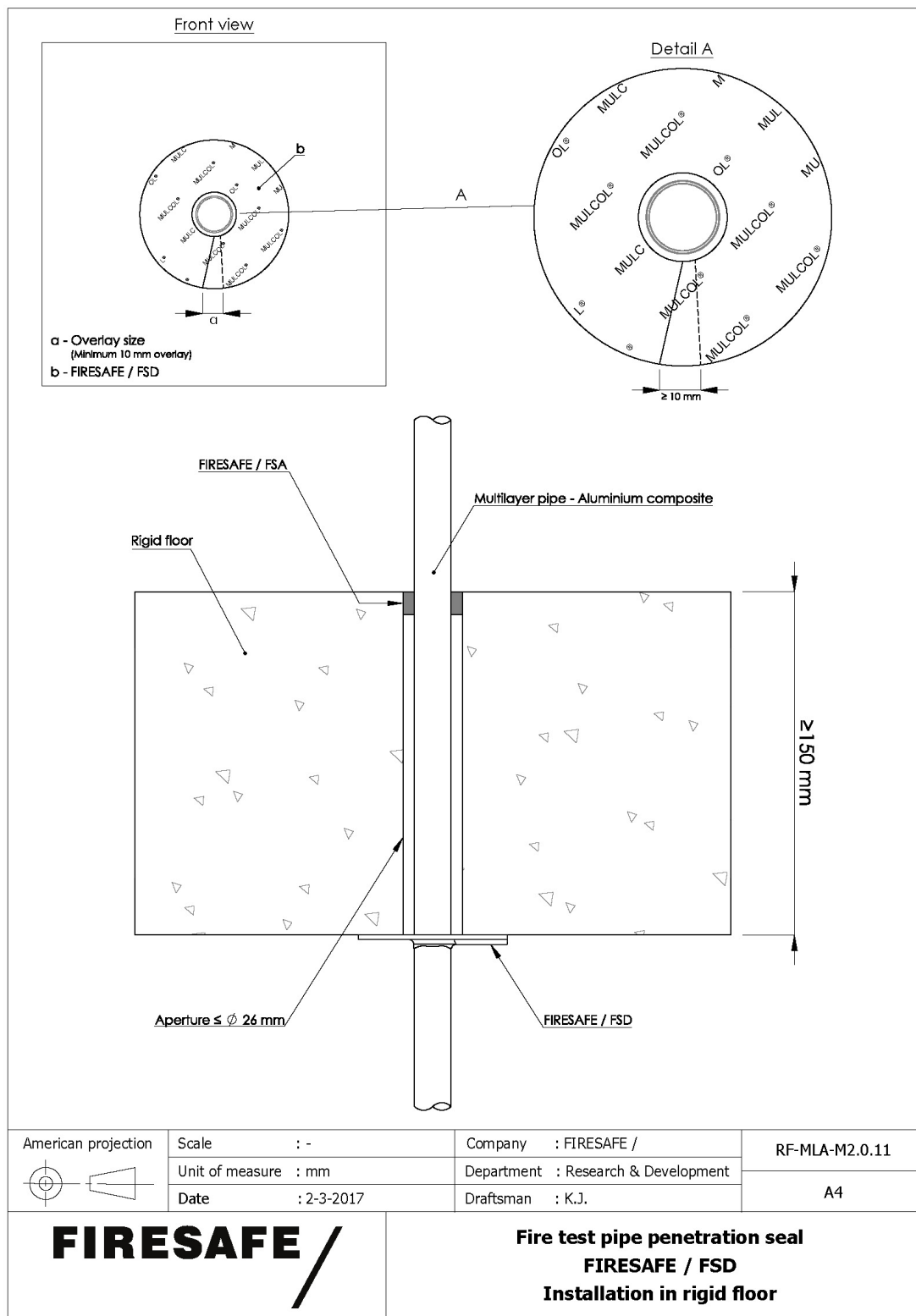
* U/U pipe end configuration applies to C/U, U/C and C/C also

Permitted telecommunication cables		One sheathed cable allowed for each pipe*			Empty pipe
UPT Cat. 5	UPT Cat. 6	YMKV 3 x 2.5 mm ²	YMKV 5 x 1.5 mm ²	YMKV 5 x 2.5 mm ²	
Yes	Yes	Yes	Yes	Yes	Yes

* Electric cable, Copper content ≤ 12,5 mm²

B.2 FIRESAFE / FSD with Aluminium composite pipes

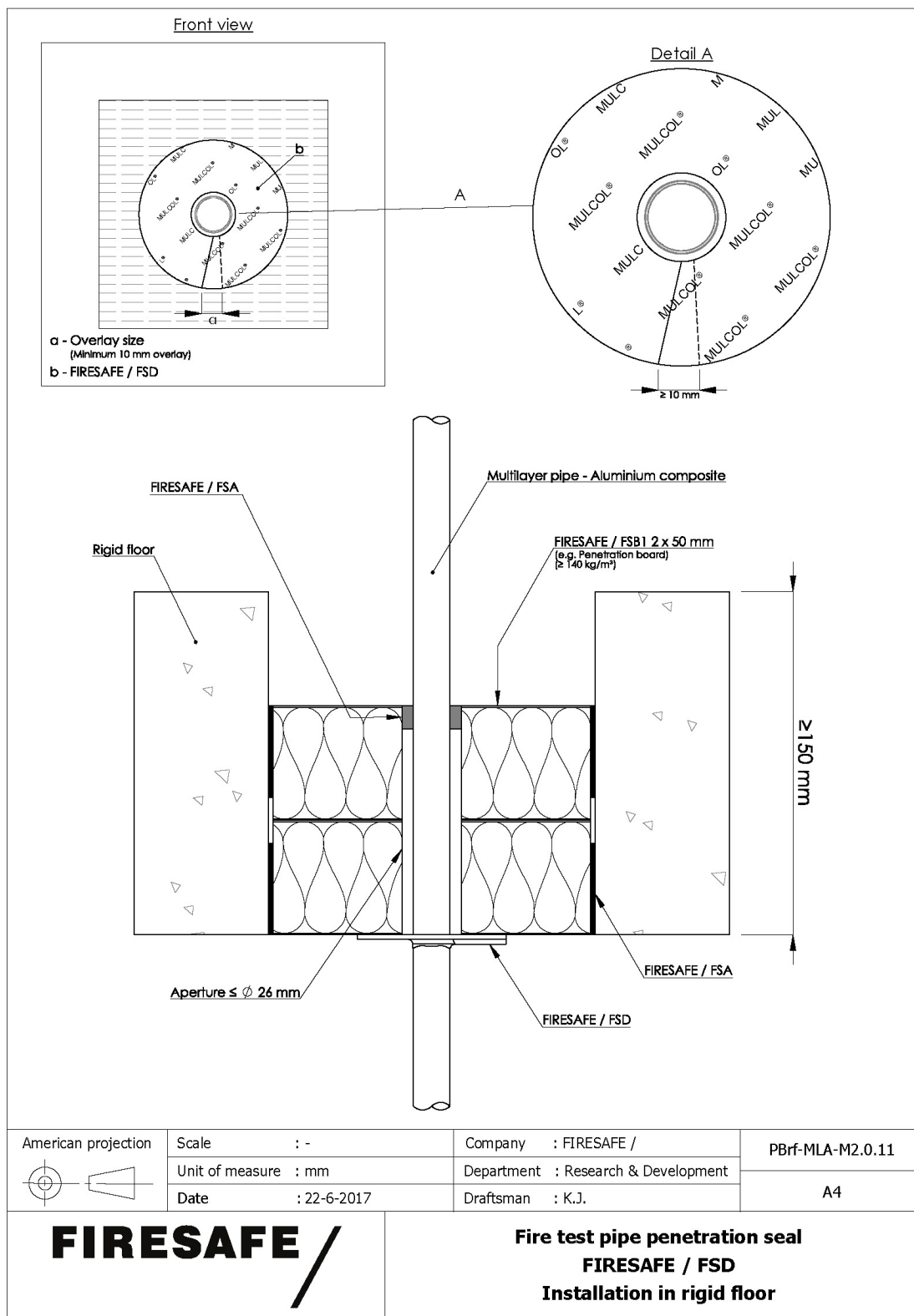
B.2.1 Single Aluminium composite pipes, with FIRESAFE / FSD to the underside of the floor



Pipe material	Pipe diameter (mm)	Pipe wall (mm)	Distance A ₂ (mm)	Classification*
Aluminium composite	≤ 16	2.0	$\leq 20 \text{ mm}$ (according to Section I.1.4)	E 120 U/C EI 90 U/C

* U/C pipe end configuration applies to C/C also

B.2.2 Single Aluminium composite pipes, with FIRESAFE / FSD to the underside of FIRESAFE / FSP system in the floor

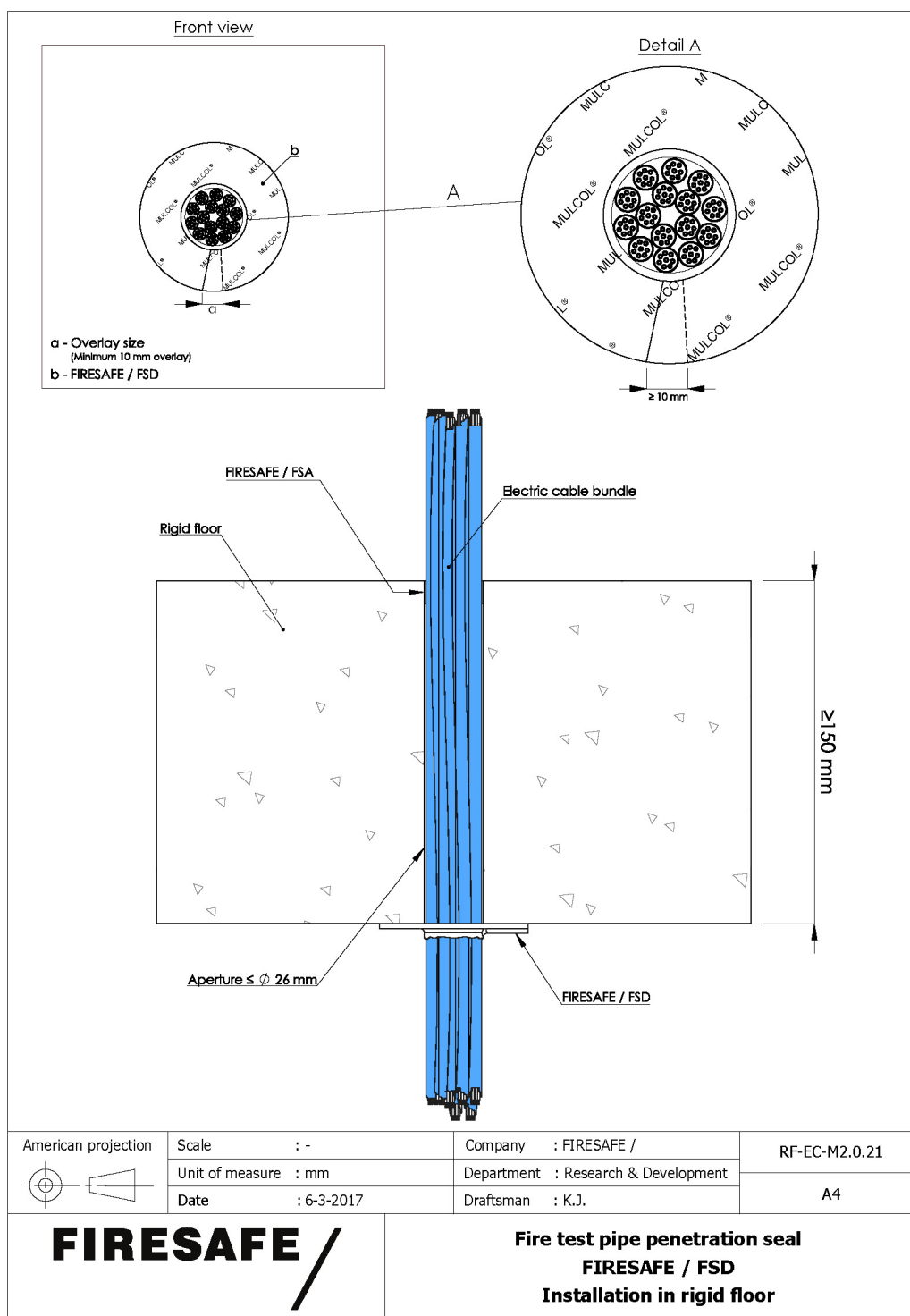


Pipe material	Pipe diameter (mm)	Pipe wall (mm)	Distance A ₃ (mm)	Classification*
Aluminium composite	≤ 16	2.0	≤ 20 mm (see fig. 2 according to Section I.2.3)	E 120 U/C EI 90 U/C

* U/C pipe end configuration applies to C/C also

B.3 FIRESAFE / FSD with cables

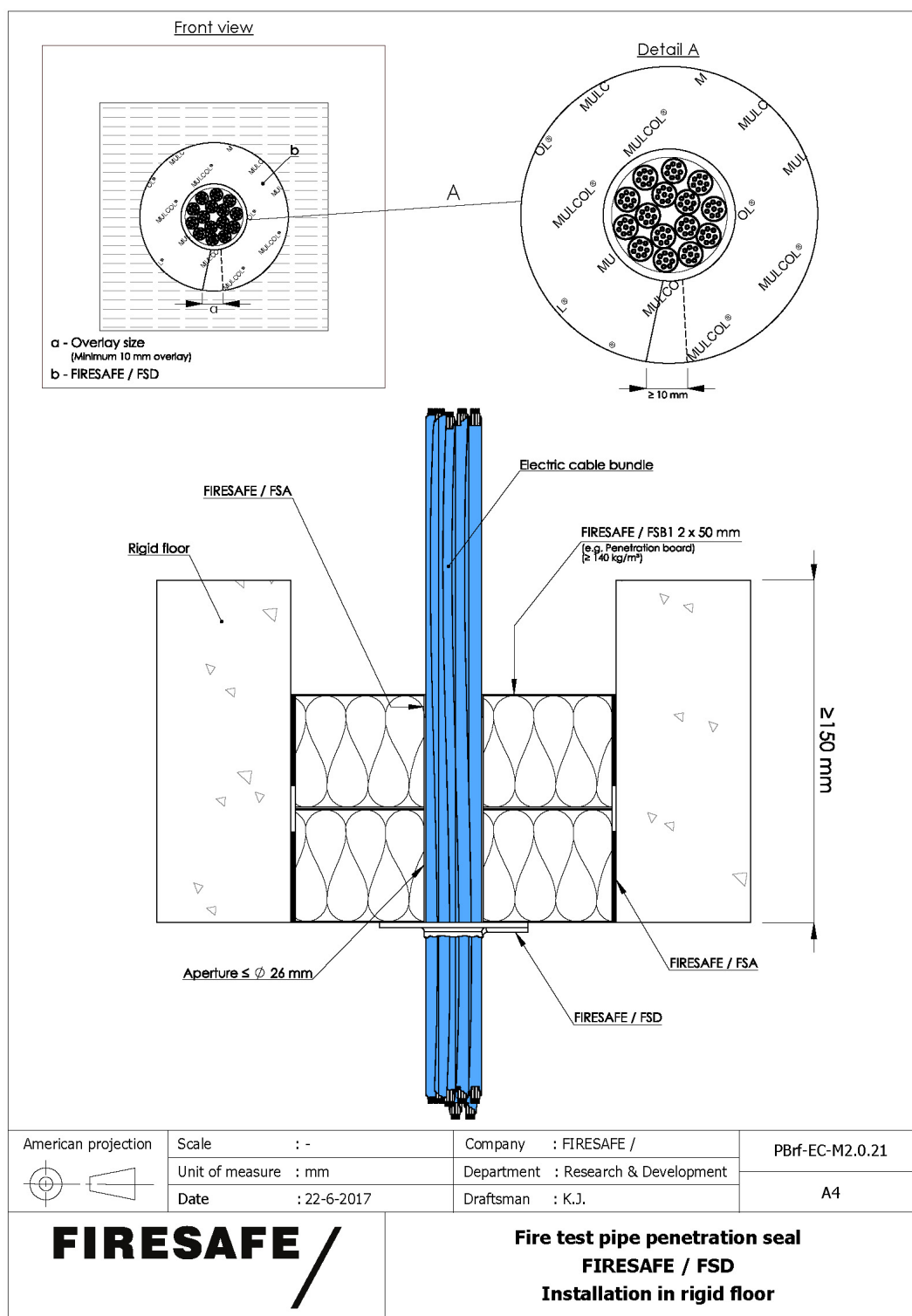
B.3.1 Multiple cables, with FIRESAFE / FSD to the underside of the floor



Cable		Number of cables allowed*	Distance A ₂ (mm)	Performance class
Generic type	Type			
Telecommunication cable	UTP Cat. 5 and/or UTP Cat. 6	≤ 15	≤ 20 mm (according to Section I.1.4)	EI 120

* Electric cable bundle, Copper content $\leq 60 \text{ mm}^2$

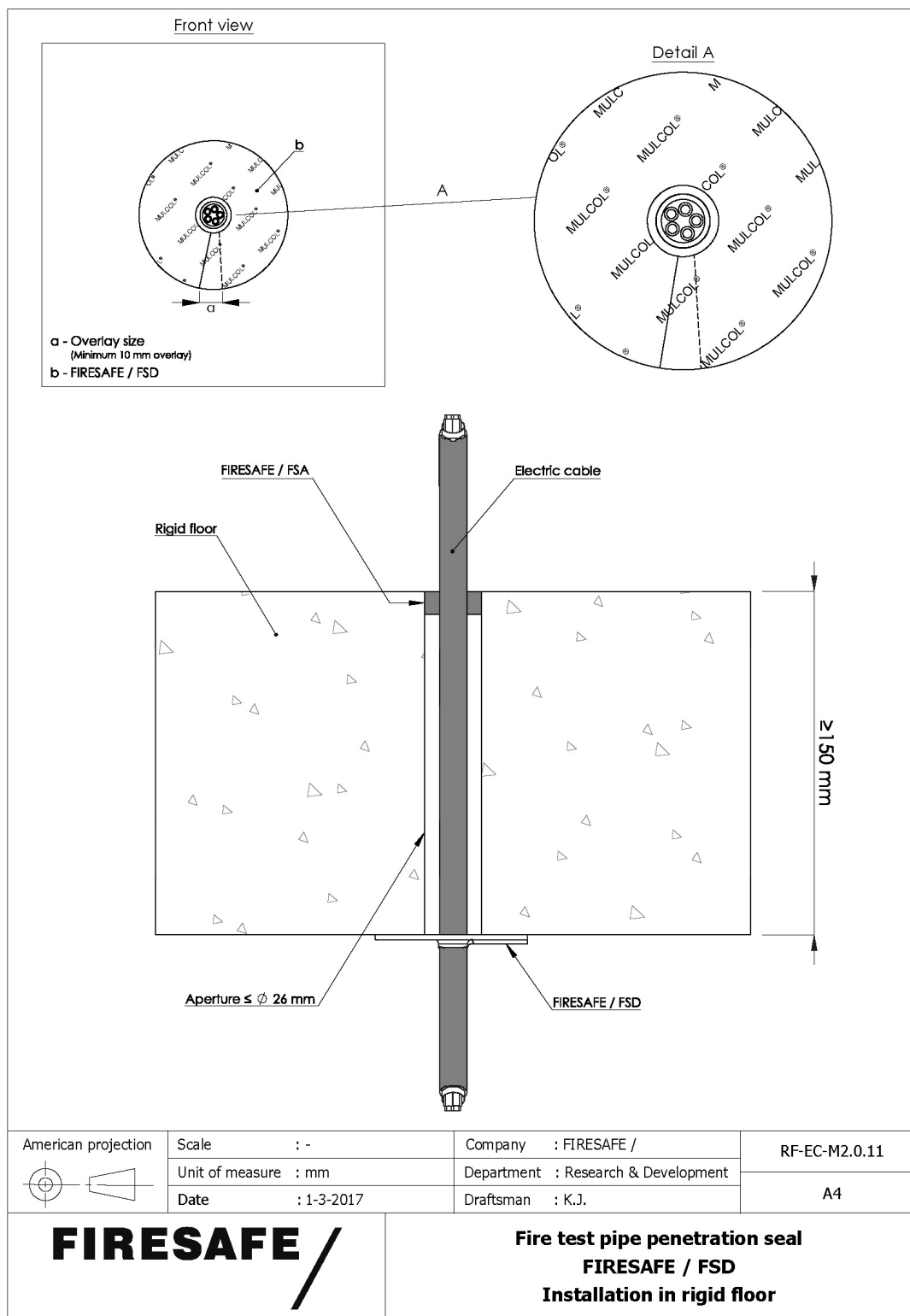
B.3.2 Multiple cables, with FIRESAFE / FSD to the underside of FIRESAFE / FSP system in the floor



Cable		Number of cables allowed*	Distance A ₃ (mm)	Performance class
Generic type	Type			
Telecommunication cable	UTP Cat. 5 and/or UTP Cat. 6	≤ 15	≤ 20 mm (see fig. 2 according to Section I.1.4)	E 120 EI 60

* Electric cable bundle, Copper content ≤ 60 mm²

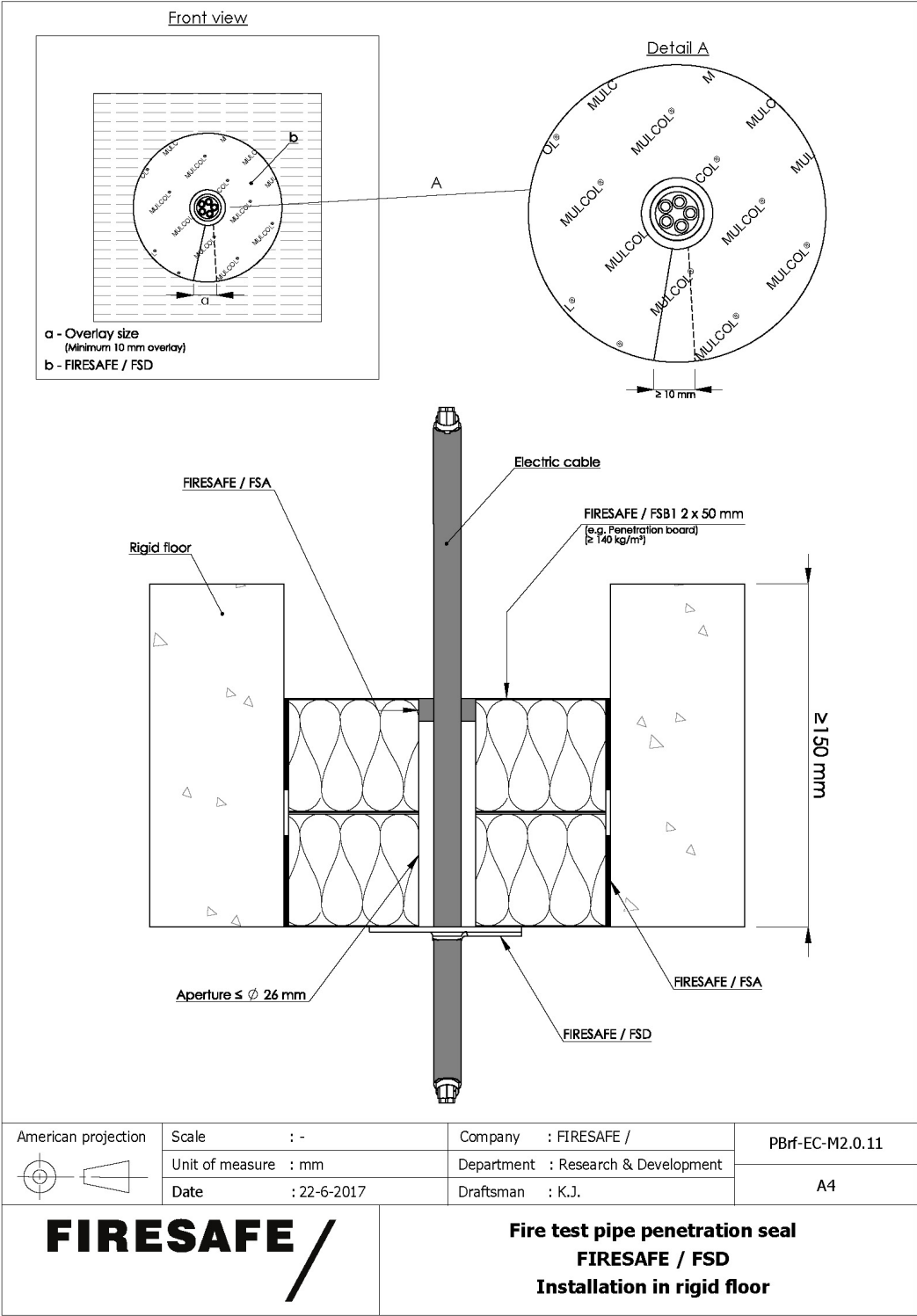
B.3.3 Single cables, with FIRESAFE / FSD to the underside of the floor



Cable		Number of cables allowed*	Distance A ₂ (mm)	Performance class
Generic type	Type			
Sheathed cable	YMKV 3 x 2.5 mm ² or YMKV 5 x 1.5 mm ² or YMKV 5 x 2.5 mm ²	1	≤ 20 mm (according to Section I.1.4)	EI 120

*Electric cable bundle, Copper content ≤ 60 mm²

B.3.4 Single cables, with FIRESAFE / FSD to the underside of FIRESAFE / FSP system in the floor



Cable			Distance	
		Number of cables allowed*	A ₃ (mm)	Performance class
Generic type	Type			
Sheathed cable	YMKV 3 x 2.5 mm ² or YMKV 5 x 1.5 mm ² or YMKV 5 x 2.5 mm ²	1	≤ 20 mm (see fig. 2 according to Section I.2.3)	EI 90

* Electric cable, Copper content ≤ 12,5 mm²