

INTU FR MORTAR

Firestop mortar

TDS Technical Data Sheet



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INTUSEAL
passive fire protection manufacturer

→ PRODUCT DESCRIPTION

The **INTU FR MORTAR** is a firestop mortar gypsum based. The use of fire stop mortar is to reinstate the fire resistance performance of rigid wall and floor constructions where they are penetrated by multiple services - various type of cables and metallic pipes. The **INTU FR MORTAR** is supplied as a dry material, and is mixed with water to the required ratio prior to installation. When mixed is self-supporting in wall orientation, in floor orientation is needed support - mineral wool board. The mortar effectively fills the gaps around the service penetration, ensuring that the partition maintains the integrity and insulation up to EI240.

→ APPLICATION

The **INTU FR MORTAR** a firestop mortar is used for fire protection of multiple installation services, including: insulated and non- insulated metallic pipes, plastic conduits, electrical cables, bundle of cables, cable trays, cable ladders, non-sheathed wires, telecommunication cables, bundles of copper pipes for air conditioning. It is suitable for use in both small and large service openings and can be easily mixed to either a stiff or pourable consistency.

Flexible walls:

The wall must have a minimum thickness 100 mm, must comprise steel studs lined on both faces with minimum two layers (with overall board layer thickness on one side equal to or greater than 25 mm) of gypsum plasterboards.

Rigid walls:

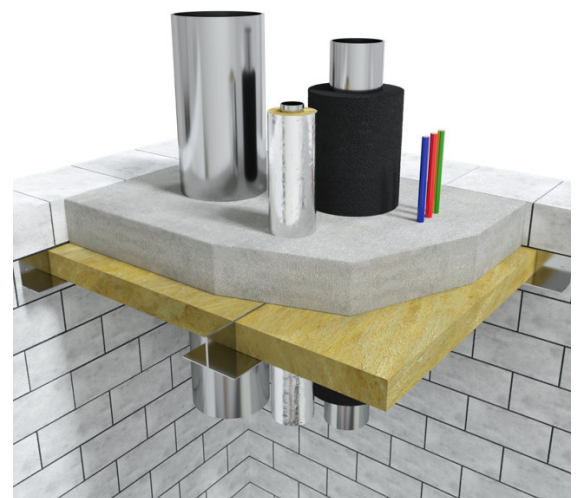
The wall must have a minimum thickness 100 mm, must comprise all type concrete or masonry elements, with a minimum density 650 kg/m³.

Rigid floor:

The floor must have a minimum thickness 150 mm, must comprise aerated or reinforced concrete, with a minimum density 550 kg/m³.

→ AVAILABILITY

Product	Contents	Packaging	Pallet	Article no.
INTU FR MORTAR	20 kg	bag	50 bags/ pallet	INFRMRT20
INSULWRAP	13,42 m ²	roll	20 pcs/ pallet	INSLWRP06



→ COMPLIANCE

- Test standard:
EN 1366-3 / EAD 350454-00-1104
- European Technical Assessment:
ETA 24/1229 of 16/12/2024
- Declaration of Performance:
DoP 9/2024

→ TRANSPORT AND STORAGE

Store in dry conditions clear of the ground.
Shelf life of an unopened bag is 12 months from date of manufacture.

➔ INSTALLATION METHOD

1. PREPARATION

Ensure contact surfaces within the opening and services are clean, and free of grease and loose material. Also, that mineral wool batts (where used) and clean water for mixing are available.

2. MIXING

Gradually add **INTU FR MORTAR** to clean water in a container while stirring manually or mechanically. Continue mixing until a smooth, lump-free consistency is obtained. Recommended mix ratios are as follows:

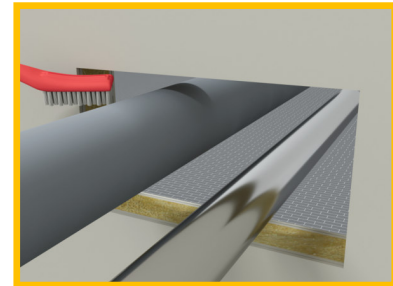
INTU FR MORTAR	Mortar / water ratio (by volume)	Compressive strength [N/mm ²]	Modulus of rupture [N/mm ²]
FLOOR openings	2,5 : 1	10,37	3,00
WALL openings	3,0 : 1	14,51	3,98

The pot life and setting time depends on the size of mix; the amount of water used and ambient/water temperatures. Typical set times are between 45 and 90 minutes.

Efficiency: ~two 20 kg bags of **INTU FR MORTAR** are required to fill space of 1 m² area to a depth of 50 mm

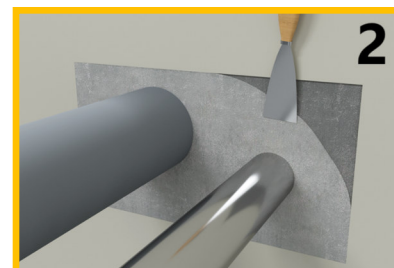
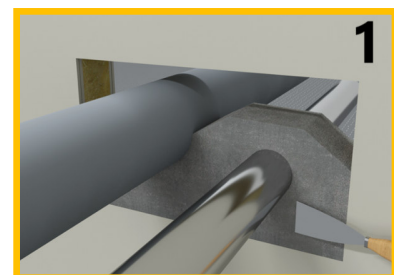
3. APPLICATION

Apply between +5°C and +40°C. Porous contact surfaces are best wetted to ensure a good bond with the **INTU FR MORTAR**. For small holes, shuttering may not be required and a stiff mix can be trowelled directly into the opening ensuring any gaps between services are fully filled. If required, apply protective paper masking tape around the opening and around the services in the plane of the wall surface. Application tools and mixing equipment should be cleaned with clean water immediately after use.



WALL seal installation

- In case of wall, you can immediately start applying mortar in the hole.
- 1) Starting at the bottom trowel the mix into the opening working it around and between services to form a complete seal. For larger opening repeat the mixing procedure and apply further layers of **INTU FR MORTAR** onto each previous layer to close the opening. Additional **INTU FR MORTAR** can be applied to both faces of the seal to achieve the required minimum depth of seal and a uniform finish.
 - 2) At the end smooth the mortar onto the surface of the hole with a suitable tool.



INTU FR MORTAR

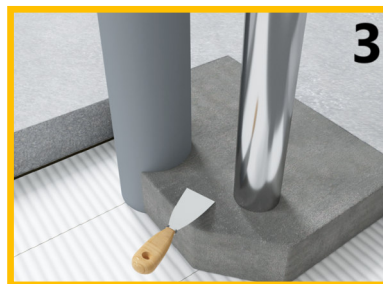
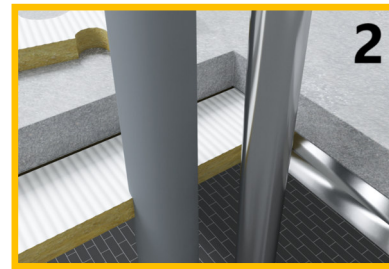
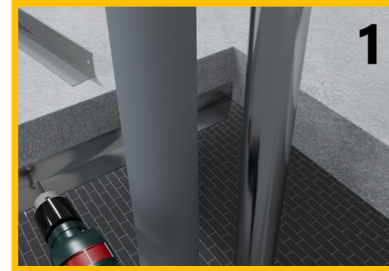
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FLOOR seal installation

- In the case of floor, you must prepare permanent formwork / shuttering in the form of a mineral wool board.
- Cut suitable lengths of 50 x 50 x 2 mm steel angle and fix around the inside face of the floor opening using steel fixings at 250 mm maximum centres. The angles should be positioned at a depth to permit one layer of 50 mm thick stone mineral wool board supported on the angle overlaid with minimum 90 mm thickness of **INTU FR MORTAR** to be contained within the floor depth.
 - Cut out the required pieces of board sections and install within the opening to form complete layer of permanent shuttering for the **INTU FR MORTAR**. Pour the mix into the opening working it around and between services to form a complete seal.
 - Pour the mixture into the hole, spreading it evenly around to completely seal the hole.
 - Smooth the mortar onto the surface of the hole with a suitable tool.



→ TECHNICAL DATA

Colour	Off-white powder	
Density	~660 kg/m ³ as untapped, free-flowing powder / ~860 kg/m ³ one month after application	
Reaction to fire	A1	
Sound insulation	57 dB	
Chloride content	Zero	
Shelf life	Shelf life of an unopened bag is 12 months	
Transportation storage temperature	Store in dry conditions in the original packaging	
Usage category	Type Y ₂ : intended for use at temperatures below 0°C, but with no exposure to rain nor UV. Includes lower use categories.	
Methods used for the assessment	EAD 350454-00-1104 "Fire Stopping and Fire Sealing Products. Penetration Seals"	
Approvals	ETA-24/1229 of 2024/12/16	
Function preservation	25 years	
Compatibility with services	Excellent adhesion to concrete, metals and cables	
Necessity of formwork	Wall	No, in wall orientation INTU FR MORTAR is self-supporting
	Floor	Yes, structure comprising 60 mm x 60 mm x 6 mm steel angle cassette system, which supports a 50 mm thick mineral fibre board (density ≥ 140 kg/m ³)

Minimum thickness of INTU FR MORTAR in partition	Supporting construction	Maximum size penetration seals
		Maximum seal size
100 mm	Wall	Unlimited - in wall orientation INTU FR MORTAR is self-supporting
150 mm		
90 mm	Floor	1400 x 1200 mm
50 mm		700 x 600 mm

→ COMPLEMENTARY PRODUCT

The **INSULWRAP** is aluminium foil face insulation. This addition system product combines the excellent thermal insulation properties of the mat with the additional advantages of aluminium foil. This makes it an effective, lightweight and easy-to-install insulation resistant to high temperatures.

The **INSULWRAP** is used to increase the fire resistance of cables that have been protected with **INTU FR MORTAR** mortar.



→ FIRE RESISTANCE CLASSIFICATION

NON-COMBUSTIBLE PIPES WITH / WITHOUT INSULATION

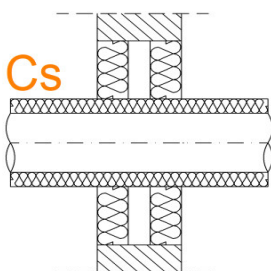
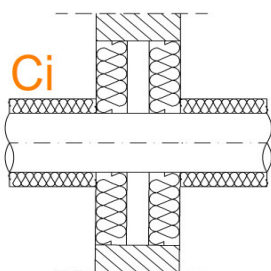
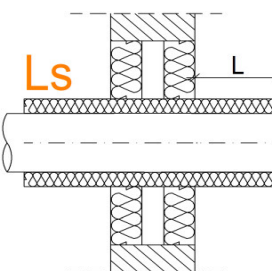
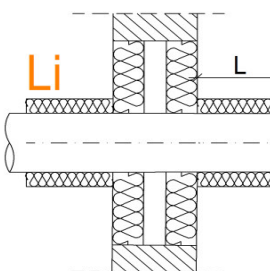
Pipe material	Minimum thickness of INTU FR MORTAR in partition	Pipe diameter Ø [mm]	RIGID WALLS with thickness ≥ 150 mm				Fire resistance C/U and C/C
			Pipe wall thickness [mm]	Pipe insulation type	Pipe isolation thickness [mm]	Isolation configuration	
Copper	≥ 150 mm	Ø ≤ 22,0	≥ 1,0	-	-	-	EI 90
		22,0 < Ø ≤ 93,0	≥ 1,6	-	-	-	EI 30
		Ø ≤ 22,0	≥ 1,0	FEF	20	Ci, Li	EI 240
		22 < Ø ≤ 38,0	≥ 1,0	FEF	19		EI 120
		38,0 < Ø ≤ 93,0	≥ 1,6	FEF	25	Cs, Ls	EI 120
		Ø ≤ 93,0	≥ 1,0	Mineral wool	25		EI 120
Steel	≥ 150 mm	Ø ≤ 38,0	≥ 1,9	-	-	-	EI 180
		Ø ≤ 19,0	≥ 1,2	FEF	20	Ci, Li	EI 240
		19,0 < Ø ≤ 38,0	≥ 1,9	FEF	25	Ci, Li	EI 240
		38,0 < Ø ≤ 193,7	≥ 5,0	FEF	25	Ci	EI 240
			≥ 1,2	FEF	25	Ci, Li	EI 90

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Pipe material	Minimum thickness of INTU FR MORTAR in partition	Pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS with thickness ≥ 100 mm				
			Pipe wall thickness [mm]	Pipe insulation type	Pipe isolation thickness [mm]	Isolation configuration	Fire resistance C/U and C/C
Copper	≥ 100 mm	Ø ≤ 22,0	≥ 1,0	-	-	-	EI 90
		22,0 < Ø ≤ 93,0	≥ 1,6				EI 30
		Ø ≤ 38,0	≥ 1,0	FEF	19	Ci, Li	EI 120
		38,0 < Ø ≤ 93,0	≥ 1,6	FEF	25		
		Ø ≤ 93,0	≥ 1,0	Mineral wool	25	Cs, Ls	
Steel	≥ 100 mm	Ø ≤ 19,0	≥ 1,2	-	-	-	EI 120
		19,0 < Ø ≤ 38,0					EI 60
		Ø ≤ 19,0		FEF	19	Ci, Li	EI 120
		19,0 < Ø ≤ 38,0			25	Ci, Li	EI 120
		38,0 < Ø ≤ 193,7			25	Ci, Li	EI 90
Pipe material	Minimum thickness of INTU FR MORTAR in partition	Pipe diameter Ø [mm]	RIGID FLOORS with thickness ≥ 150 mm				
			Pipe wall thickness [mm]	Pipe insulation type	Pipe isolation thickness [mm]	Isolation configuration	Fire resistance C/U and C/C
Copper	≥ 90 mm	Ø ≤ 22,0	≥ 1,0	-	-	-	EI 240
		22,0 < Ø ≤ 42,0	≥ 1,6				EI 90
		Ø ≤ 22,0	≥ 1,0	FEF	20	Ci	EI 240
		22,0 < Ø ≤ 42,0	≥ 1,6	FEF	25	Ci, Li	EI 240
		42,0 < Ø ≤ 89,0	≥ 1,6	FEF	25	Ci	EI 240
Steel	≥ 90 mm	Ø ≤ 19,0	≥ 1,2	FEF	19	Ci, Li	EI 180
		19,0 < Ø ≤ 38,0	≥ 1,9		25	Ci, Li	EI 180
		38,0 < Ø ≤ 193,7	≥ 5,0		25	Ci, Li	EI 60
Pipe material	Minimum thickness of INTU FR MORTAR in partition	Pipe diameter Ø [mm]	RIGID FLOORS with thickness ≥ 150 mm				
			Pipe wall thickness [mm]	Pipe insulation type	Pipe isolation thickness [mm]	Isolation configuration	Fire resistance C/U and C/C
Copper	≥ 50 mm	Ø ≤ 22,0	≥ 1,0	FEF	19	Ci, Li	EI 120
		22,0 < Ø ≤ 42,0	≥ 1,2	FEF	25	Ci, Li	EI 120
		42,0 < Ø ≤ 89,0	≥ 1,6	FEF	25	Ci	EI 120
Steel	≥ 50 mm	Ø ≤ 19,0	≥ 1,2	-	-	-	EI 60
		19 < Ø ≤ 40,0	≥ 1,2				EI 30
		Ø ≤ 19,0	≥ 1,0	FEF	19	Ci, Li	EI 120
		19,0 < Ø ≤ 40,0	≥ 1,2		25	Ci, Li	EI 120
		40,0 < Ø ≤ 193,7	≥ 8,0		25	Ci, Li	EI 30
Pipe insulation configuration							
Continuous				Local			
 <p>Cs</p>		 <p>Ci</p>		 <p>Ls</p>		 <p>Li</p>	
Continued sustained		Continued interrupted		Local sustained		Local interrupted	

CABLES

Services	FLEXIBLE/RIGID WALLS		RIGID WALLS	
	Min thick of mortar in partition ≥ 100 mm		Min thick of mortar in partition ≥ 150 mm	
	INSULWRAP width [mm]	Fire resistance	INSULWRAP width [mm]	Fire resistance
Electrical cables $\varnothing \leq 21$ mm	-	EI 60	-	EI 60
Electrical cables $\varnothing \leq 80$ mm	-	EI 45	-	EI 45
	300 mm	EI 120	300 mm	EI 120
Steel cable trays up to 150 x 50 x 1,5 mm	-	EI 60	-	EI 60
Steel cable trays up to 300 x 25 x 1,5 mm	-	EI 120	-	EI 120
Telecomm cables in bundles $\varnothing_{\text{BUNDLE}} \leq 100$ mm, $\varnothing_{\text{CABLE}} \leq 21$ mm	-	EI 120	-	EI 120
Non-sheathed wire $\varnothing \leq 24$ mm	-	EI 90	-	EI 90
	300 mm	EI 120	300 mm	EI 180
Electrical cables: C1, C2, C3	-	EI 60	-	EI 60
Electrical cables: A1, A2, A3	-	EI 90	-	EI 90
Electrical cables: D1, D2	-	EI 120	-	EI 120

Services	RIGID FLOOR			
	Min thick of mortar in partition ≥ 90 mm		Min thick of mortar in partition ≥ 50 mm	
	INSULWRAP width [mm]	Fire resistance	INSULWRAP width [mm]	Fire resistance
Electrical cables $\varnothing \leq 21$ mm	-	EI 30	-	EI 30
Telecomm cables in bundles $\varnothing_{\text{BUNDLE}} \leq 100$ mm, $\varnothing_{\text{CABLE}} \leq 21$ mm				
Steel ladders and non-perforated trays up to 500 x 60 x 1,5 mm	-	EI 120	-	EI 120
Steel perforated trays up to 500 x 60 x 1,5 mm	-	EI 120	-	EI 120
Electrical cables $\varnothing \leq 21$ mm	300 mm	EI 120	300 mm	EI 90
Electrical cables $\varnothing \leq 80$ mm		EI 90		EI 60
Non-sheathed wire $\varnothing \leq 24$ mm		EI 90		EI 90
Telecomm cables in bundles $\varnothing_{\text{BUNDLE}} \leq 100$ mm, $\varnothing_{\text{CABLE}} \leq 21$ mm		EI 90		EI 90
Electrical cables: A2	-	EI 120	-	EI 120
Electrical cables: A1, A2, A3, D2	300 mm	EI 120	300 mm	EI 120

➔ SOLUTION DETAILS

Fig.1-3

NON-COMBUSTIBLE PIPES AND CABLES

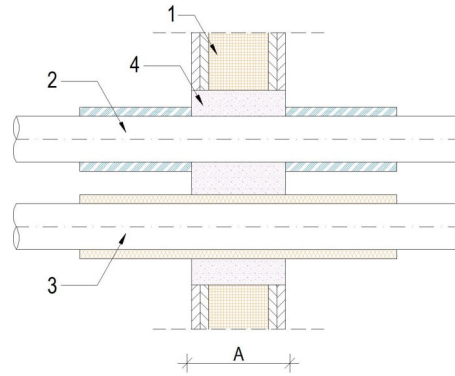
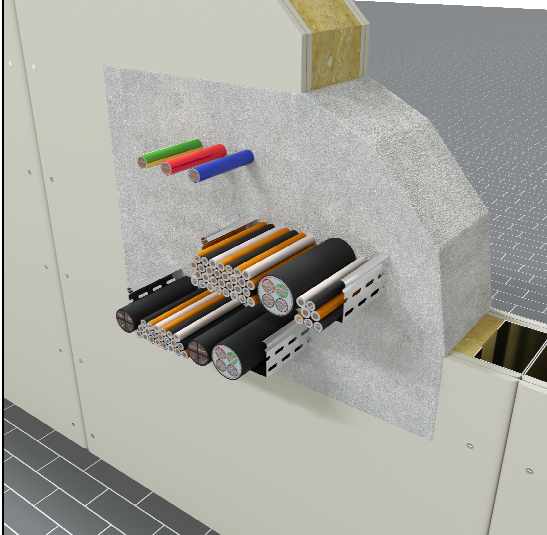


Fig. 1 Isolated non-combustible pipes in flexible / rigid wall

- 1 – flexible / rigid wall $A \geq 100$ mm
- 2 – metal pipe in FEF insulation
- 3 – metal pipe in mineral wool insulation
- 4 – INTU FR MORTAR with minimum thickness 100 mm

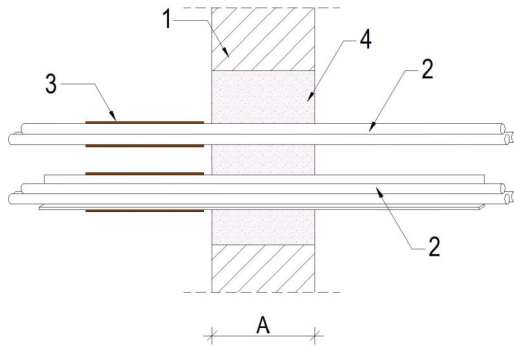


Fig. 2 Cables / , cable trays or ladders in rigid wall

- 1 – rigid wall $A \geq 150$ mm
- 2 – electrical cables, bundle of cables, cable trays, cable ladders, non-sheathed wires, telecommunication cables
- 3 – INSULWRAP
- 4 – INTU FR MORTAR with minimum thickness 150 mm

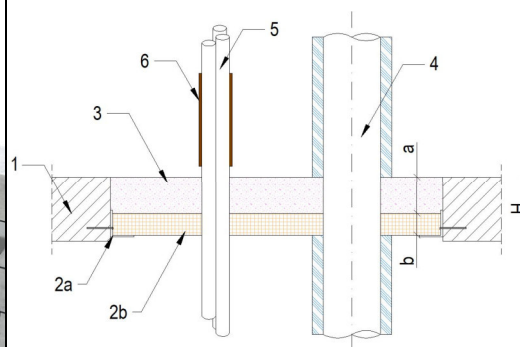


Fig. 3 Isolated non-combustible pipes and cable bundles in floor

- 1 – rigid floor $H \geq 150$ mm
- 2a – steel angle
- 2b – mineral wool board
- 3 – INTU FR MORTAR
- 4 – metal pipe in FEF insulation
- 5 – electrical cables, bundle of cables, cable trays, cable ladders, wires, telecommunication cables
- 6 – INSULWRAP