



3M™ FireDam 240 and FireDam 2000

Fire-retardant Mineral Wool Board and Coating

Product description

FireDam 2000 is a fire-retardant coating, which in the event of fire (> 230 °C) expands up to ten times its own volume.

This expanding coating forms an insulating char, which protects the construction materials located underneath it against fire for a certain period. The thick coating forms a strong, flexible layer on curing.

The FireDam 2000 Coating is used in combination with the FireDam 240 mineral wool board. This mineral wool board is precoated on one side with FireDam 2000 and has a density of 200 kg/m³.

Thanks to its high density, the board exhibits optimum heat resistance and mechanical and acoustic properties. The board dimensions are (L x W x H) 120 x 60 x 5 cm.

FireDam 2000 is used in combination with the fire barrier sealant IC 15WB+ to seal smaller joints and apertures.

FireDam 2000, FireDam 240 mineral wool board and IC 15WB+ fire barrier sealant have been tested in accordance with EN 1366-3. See classification report 183457b and 183457d.

Applications

The system is suitable for cable through-penetrations, cable trays, metal pipes and insulated metal pipes (Armaflex 19 mm). It cannot be used for plastic pipes, but it can be used in combination with fire barrier collars suitable for plastic pipes. Not suitable for external application.

Advantages

- Water-based
- Strong, elastic coating
- Halogen-free
- Superb substrate adhesion
- High level of thermal and acoustic insulation
- Quick-drying, can be painted over
- Quick and easy to apply

Technical data

Property	Values
Colour	White
Smell	Low odour, non-irritating
Visible expansion from	230 °C
Expansion capacity	8 - 10-fold
Dust-dry after (23°C)	30 minutes, 1 mm layer thickness
Completely dry after (23°C)	2 - 8 hours, 1 mm layer thickness
Cured after	24 - 48 hours
Density	1.3 kg/l
Storage temperature	5 °C – 45 °C
Application temperature	5 °C – 45 °C
Shelf life	12 months

Fire resistance

Fire resistance is a combination of flame resistance (E) and temperature resistance (I). The fire resistance is dependent on the wall or floor, the design of the through-penetration, the pipe going through it and the manner in which the fire barrier product was applied. The table below shows, for example, that a metal pipe positioned on the wall has a lower temperature resistance in consequence than centred installation of the same pipe.

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Tests on the basis of EN 1366-3 produced the following results:

Through pipe	Double-layer plaster wall (at least 150 mm)		Concrete wall (at least 150 mm)	
	Flame resistance (E)	Temperature resistance (I)	Flame resistance (E)	Temperature resistance (I)
Cable conduit in contact with all tested cables	90 min	90 min	120 min	90 min
Through-penetration with no pipes	90 min	90 min	120 min	120 min
Telecom cable (single or several)	90 min	90 min	120 min	60 min
Electric cable (single or several)	90 min	90 min	120 min	90 min
Insulated copper pipe (15 mm) with Armaflex 19 mm	90 min	90 min	120 min	120 min
Non-insulated copper pipe (15 mm)	90 min	90 min	120 min	60 min
Insulated steel pipe (34 mm) with Armaflex 19 mm	90 min	90 min	120 min	120 min
Non-insulated steel pipe (34 mm)	90 min	90 min	120 min	90 min

3M™ FireDam 2000 Coating, 3M™ FireDam 240 coated mineral wool board and 3M™ Fire Barrier IC 15WB+ Sealant were tested by Evoxa Warringtonfire in accordance with EN 1366-3 2004 and classified by Evoxa Warringtonfire Certifire in accordance with EN 13501-2. In addition, the products were tested and listed by Underwriters Laboratory (UL), Intertek Testing Services (Omega Point Laboratory) and Factory Mutual (FM). They have over 750 listings in the USA.

Dimensions and measurements

Please take the following data into account when using 3M FireDam products.

Description		Values
Minimum thickness of substrate	Wall	150 mm
	Floor	150 mm
Maximum dimensions of through-penetration	Round	- mm
	Rectangular	1.2 m x 3 m
Minimum distance between several through-penetrations	Horizontal/vertical	200 mm
Distance between	Cable and wall	At least 40 mm
	Cables	0 mm
Sealing	Wall	Both sides
	Floor	On the underside. In the case of hazardous liquids, on both sides likewise.
Apply coating to		Front side, front face
Thickness of FireDam 2000 coating	Wet layer	2 mm
Mineral wool in FireDam 240	Density	200 kg/m³
	Thickness	50 mm

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Instructions for use

FireDam 2000 Coating

The coating can be applied using a paintbrush, round brush (for tricky corners), putty knife and industrial spray equipment operated at a minimum pressure of 4 bar.

It can be diluted with water if it is to be poured between cables, for example.

FireDam 240 coated mineral wool board

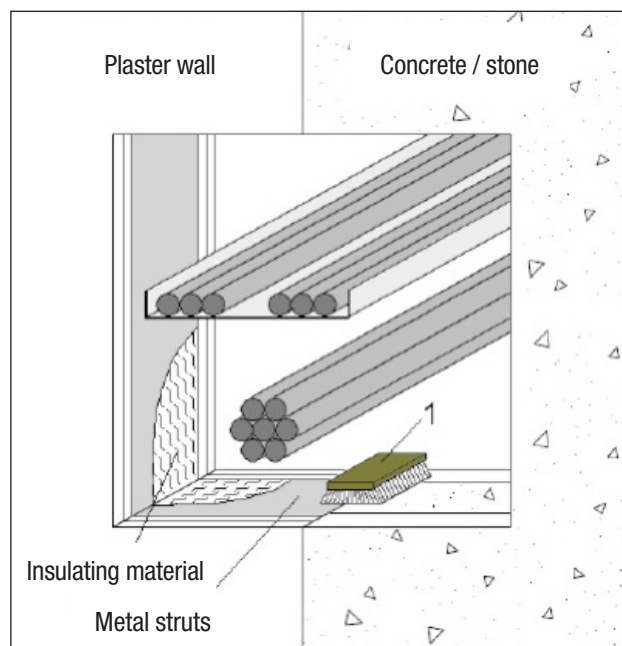
The precoated board can conveniently be marked on the precoated side. The board material can be cut to size using a long, thin saw blade or a knife. For optimum adhesion and impregnation you can prime the glass wool using FireDam 2000 coating diluted with water.

Fire Barrier IC 15WB+ Fire Barrier Sealant

The fire barrier sealant can be applied using a putty knife or trowel. For small openings, a mastic spray can be used to spray the caulk into the spaces between the cables. The sealant bonds to concrete, metal, wood, plastic cables etc. Any equipment used can be cleaned using water.

To measure up you need a folding rule (1 m), set square, dividers, tape measure, and a sliding caliper (also extended, for measuring pipe diameters). One simple method of measuring pipe diameters is to place a thread or tape measure around the pipe and then divide the measured circumference by 3.14 (Pi).

You can mask pipes and wall using Scotch® 2364 masking tape (25 mm x 50 m).



Step 2 - Examine the through-penetration and the pipes, cables and/or cable trays to be led through it carefully and then determine the most suitable fit of the FireDam 240 mineral wool board.

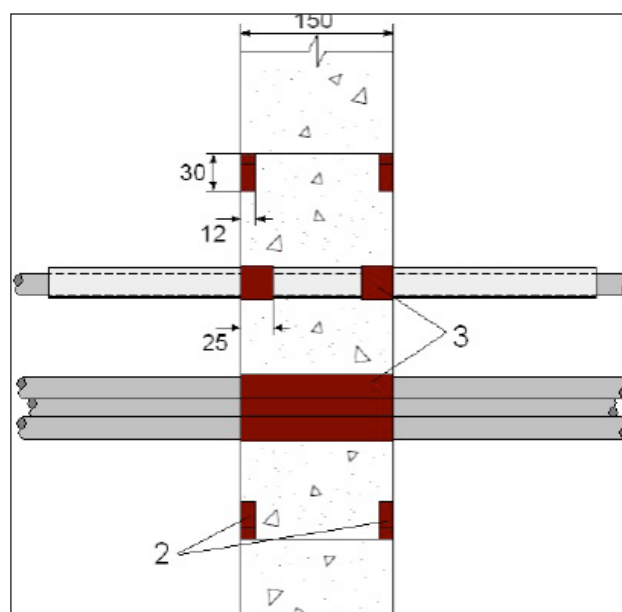
Ensure that the board sections are as large as possible to guarantee the stability of the through-penetration. Measure the through-penetration and the pipes carefully and draw the outlines onto the white layer of the mineral wool board. Add 5 mm to the measurements of the through-penetration to ensure a tight fit of the board.

Installation instructions

FireDam 2000 Coating in combination with FireDam 240 mineral wool board - installation in walls of concrete, stone or plasterboard with metal inserts

Step 1 - Clean wall through-penetration and pipes to remove dust, dirt and material residues.

Note: Before installing the FD-240 mineral wool board, take care to ensure that the plasterboard through-penetration is provided with sufficient metal sections to relieve the burden on the mineral wool board.



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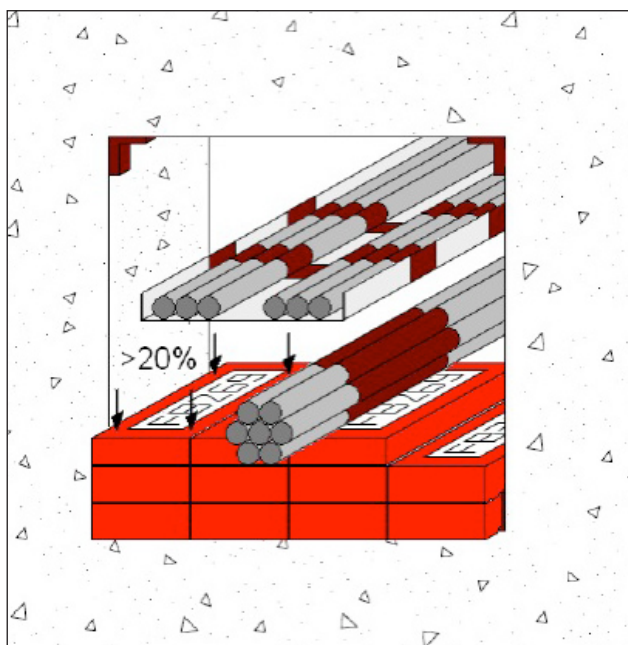
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Step 3 - Apply FireDam 2000 in the through-penetration 50 mm deep to the pipes, cables or cable trays passing through, on both sides of the wall, with a wet layer thickness of 2 mm. Apply the layer flush with the wall surface.

Step 4 - Apply a layer of FireDam 2000 with a wet layer thickness of 2 mm all around to the edges of the through-penetration, 50 mm deep, on both sides of the wall.

Note with reference to the FireDam 2000 layer:

- For systems with a required resistance duration of 90 and 120 minutes, you should use FireDam 2000.
- For a required resistance duration of 240 minutes, use IC 15WB+.



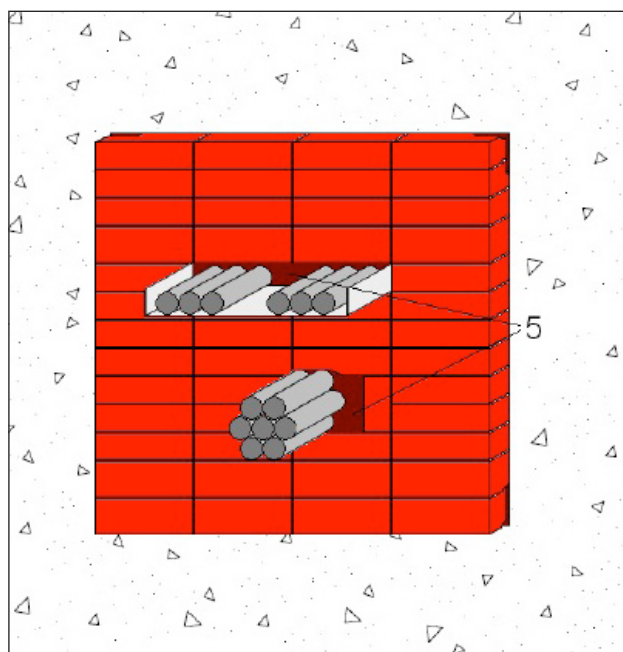
Step 5 - Press the FireDam 240 mineral wool board(s) firmly into the through-penetration. Take care to ensure that the different board sections lie close to one another in the through-penetration. The front face of the mineral wool board should have a coating 2 mm thick.

Note: On walls that are more than 10 cm thick, you should affix a FireDam 240 mineral wool board to both sides of the wall. The white layer should be visible on the front side of the through-penetration.

On walls that are less than 10 cm thick, one FireDam 240 mineral wool board coated on both sides is sufficient. You should then centre this in the wall. A description is given below of how to produce the double-sided pre-coating using FireDam 240 yourself.

On plaster walls, you should use FireDam 240 on both sides in principle and allow the mineral wool board to protrude if applicable.

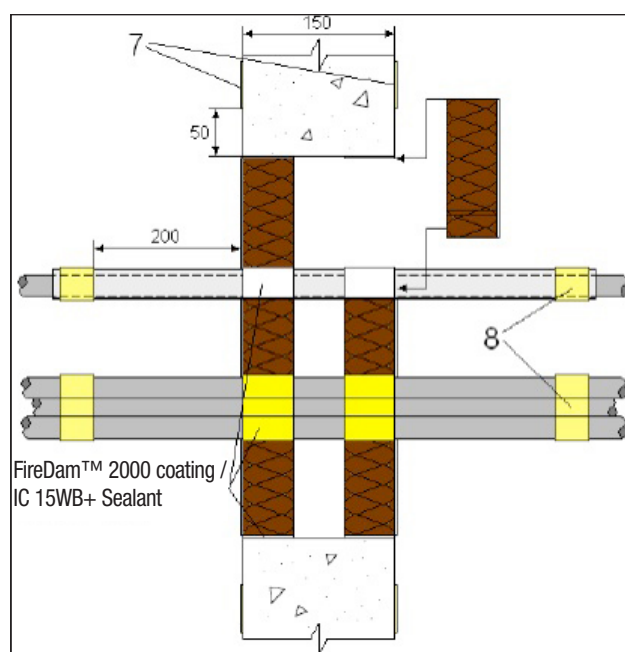
This is important with a view to the heat conductivity of the wall and the cavity in the plaster wall.



Step 6 - Seal any joints at the edge of the mineral wool board or around the pipes that pass through either with FireDam 2000 or with IC-15WB+ Sealant in the case of wider joints.

- For systems with a required resistance duration of 90 and 120 minutes, you should use FireDam 2000.
- For a required resistance duration of 240 minutes, use IC 15WB+.

Step 7 - Stick masking tape (for example Scotch Tape 2364, 25 mm x 50 m) to both sides of the wall, 50 mm away from the edge of the through-penetration.



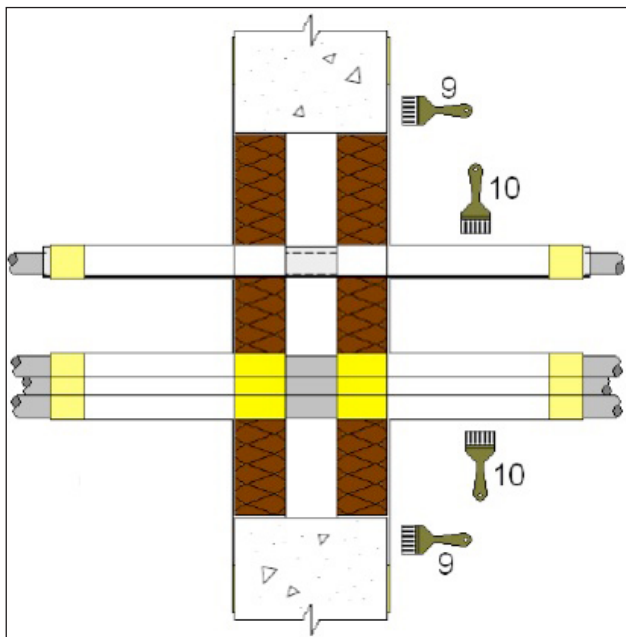
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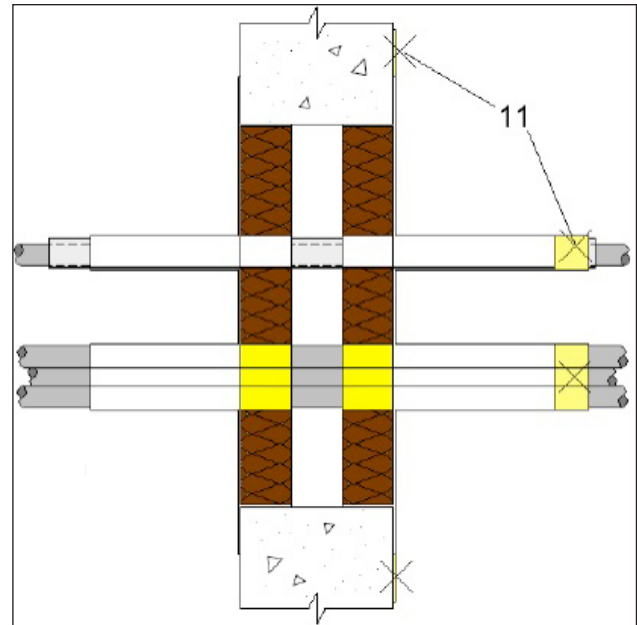
Step 8 - Stick masking tape (for example Scotch Tape 2364, 25 mm x 50 m) around the pipes that pass through, 200 mm away from the through-penetration.

Step 9 - Apply a thick layer of FireDam 2000 around the through-penetration in a 50 mm wide strip, covering the transition between wall and coated mineral wool board as you do so.



Step 10 - Coat the pipes that pass through likewise with FireDam 2000. The layer thickness should be 2 mm in the wet state. Coat the pipes over a length of 200 mm on both sides of the wall. If possible apply two coats of FireDam 2000, with a minimum drying time in between of 1 hour.

Step 11 - Following coating, remove the masking tape.



Precoating FireDam 240 mineral wool boards

Place the mineral wool boards on a horizontal surface in a dust-free, well ventilated environment. Try to keep the board free from dust if possible.

For a wet layer thickness of 2 mm on a board measuring 60 x 120 cm, use roughly 1.45 l of FireDam 2000. Pour the complete quantity onto the board and spread it using a wide putty knife (30 - 40 cm). Try to ensure it is distributed as evenly as possible. The board will take a minimum of 48 hours to dry.

Repairs

Repair holes using FireDam 240 mineral wool boards and FireDam 2000 Coating. In the case of larger holes, enlarge them to a square shape and proceed as with the installation of FireDam 240 as described in steps 1 - 11.

Close smaller holes of up to 25 mm in diameter using fire barrier caulk (Fire Barrier IC 15WB+). Make sure you close the complete cavity in the mineral wool board, 25 mm minimum in depth.

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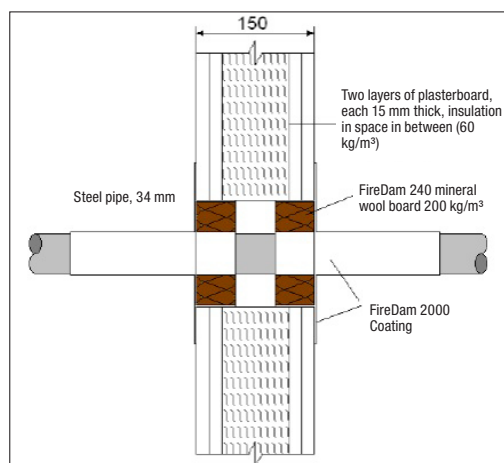
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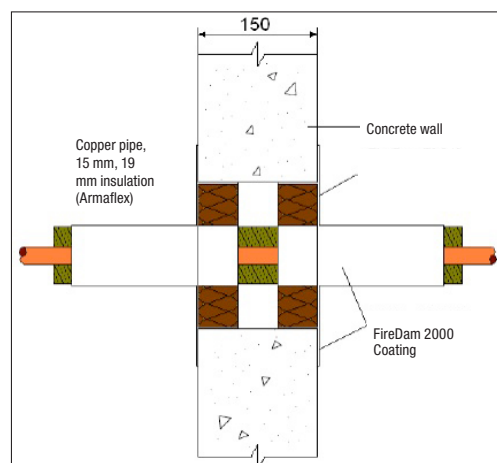


Application examples

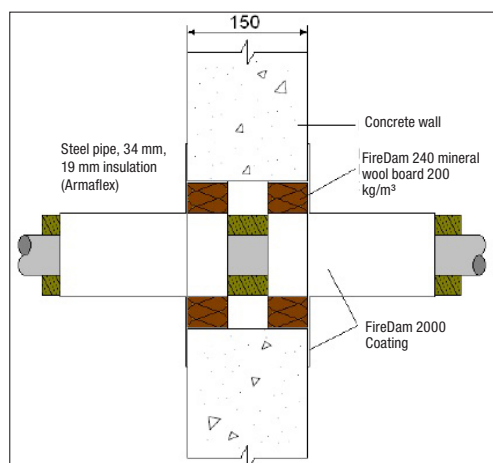
Through-penetration with metal pipe



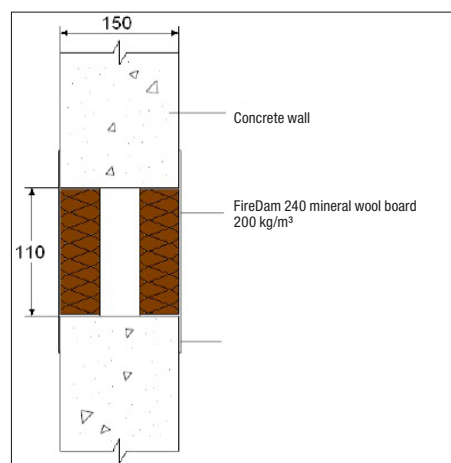
Through-penetration with insulated copper pipe



Through-penetration with insulated metal pipe



Empty through-penetration



General note:

All the information and/or recommendations featured here are empirical values. We make no claims as to the completeness of this information. It is incumbent on the customer/publisher to check for himself prior to using the product whether it is suitable for the proposed application, taking any influences that may affect the application into account. Unless otherwise stipulated in statutory regulations, all questions relating to any warranty and liability for our product are determined according to the respective purchase agreement regulations.



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