



FireDam 2000 Coating

Technical Data Sheet

Date: 17 June 2015

Supersedes: N/A, New Version

Product Description

3M™ FireDam 2000 is an intumescent coating, which in the event of a fire can expand approximately 5 times its own volume. The expanding coating forms an insulating char, which protects the construction materials located underneath it against fire for a certain period, depending on the applied thickness.

The 3M™ FireDam 2000 Coating is used to protect electrical cables against fire (tested according to IEC and FM Approvals). The FM Approvals guide indicates such *"coatings prevent flame spread in cables when exposed to a moderate fire source that might occur from arcs or sparks falling or occurring in the cable tray, or from fire exposure of combustible trash or foreign material around the cable(s) in grouped or trayed conditions."*

In a different application, 3M™ FireDam 2000 Coating can be used to produce coated mineral boards for construction aperture seals to reinstate the fire-resistant performance of wall & floor constructions where they have been penetrated by of single or multiple services, including cables, cables trays and metal pipes (tested according to EN 1366-3).

Key Features

- Water based
- Strong, elastic coating
- Good service and substrate adhesion
- Quick drying, can be painted over
- Quick and easy to apply
- Compatible with typical electrical cable jacketings such as PVC, XLPE and polychloroprene



Typical Physical Properties

Category	Description
Colour	<input type="checkbox"/> White
Reaction to fire in accordance with clause 8 of EN 13501-1: 2007+A1:2009	Classification : E
Intumescent expansion ratio (EOTA TR N° 024)	5.3 – 5.9
Application Temperature Range	4 ° to 40 °C
Curing Time	<p>Dry: Under typical conditions of 23°C and 50% R.H., coating becomes tack-free in about ten minutes and dry-to-touch in 30 to 60 minutes, 1 mm thickness</p> <p>Full dry depends upon ambient conditions and volume of coating and is generally 2-8 hours for 1 mm thickness</p> <p>Full cure after 24-48 hours</p>
Airborne Sound Insulation	$D_{n,e,w} (C;C_{tr}) = 49(-2;-7)$ dB in the configuration where applied to mineral wool board, such as 3M™ FireDam 240 Coated Mineral Board
Density	1,3 kg/l
Shelf Life	12 months in original unopened containers from date of packaging when stored above 4°C and below 35°C.
Definitions & Lot Number Interpretations	MM/DD/YY Format
Working Life	Assumed at 10 years in ETA-09/0333 Revision 1, clause 1.2, subject to the use in accordance with that clause.
Use Category	<p>Type Z₁ – Intended for use at internal conditions with high humidity, excluding temperatures below 0°C.</p> <p>Type Z₂ – Intended for use at internal conditions with humidity classes other than Z₁, excluding temperatures below 0°C.</p> <p>See ETA-09/0333 Revision 1, clause 1.2</p>
Durability and serviceability	Type Z ₁ – Intended for use at internal conditions with high humidity, excluding temperatures below 0°C. See ETA-09/0333 Revision 1, clause 2.4

Reference Documents

DoP N°	3M FD 2000 Coating 1121 – CPR – JA0008
ETA 09/0333 R1	European Technical Approval approved for the 3M™ FireDam 2000 Coating Validity: June 2013 – June 2018
ETA 09/0333	European Technical Approval approved for the 3M™ FireDam 2000 Coating Validity: May 2010 – May 2015
Underwriters Laboratories	Surface Burning Characteristics of General Purpose Coatings UL File: BNEV.R27158
FM Approvals	Class 3971 “Flame Retardant Coating For Grouped Electrical Cables” Project ID: 3044846

Application of 3M™ FireDam 2000 Coating – Coating thickness

The FireDam 2000 is used in different applications and coating thicknesses depending on the application and performance requirement

Cable Coating – Intumescent Flame retardant cable coating

The FireDam 2000 Coating is a white ready-mixed, water-based thixotropic coating and is applied with brush, trowel, or sprayer. There are several approvals including the FM Approvals report (according Class 3971 standard, Project ID 3044846) where the coating has been applied in a Minimum Dry Film Thickness (DFT) of 1,6 mm (1/16 in.). Other historic tests have been executed with different Film Thickness e.g. IEC 331, Part 3 (**WFT** is 3 mm) and IEC 332 (**DFT** is 1 mm).

The FM Approvals examination of the product includes study of the product’s di-electric strength, effect on ampacity, reaction to salt water immersion, simulating aging, and the behaviour in a fire exposure.

Observed Wet-Film to Dry-Film relationship

Wet Film Thickness (WFT), mm	Dry Film Thickness (DFT), mm
2.6	1.6
2.4	1.5
2.2	1.2

Penetration Seals - Coating for and in combination of 3M™ FireDam 240 Coated Mineral Board

The coating is applied by brush or with an airless sprayer; consult your local technical service specialist for details including pump type, pressure, tip size, distance, and layering process. A minimum 2mm Wet Film Thickness (WFT) is required. After installation of the 3M FireDam Coated mineral board the coating is applied over the edges and a minimum 100 mm ‘back coated’ on the penetrants to with a minimum a Dry Film Thickness of 1.0 mm.

Consult European Technical Approval 09/0331 R1 and 09/0334 for classifications.

Coating – Surface Burning Characteristics

The surface burning characteristics of 3M™ FireDam 2000 have been established according to UL 723 (ASTM E 84).

When applied at rate of 12.3 m²/litre (500 ft²/gallon) over inorganic board, the values are:

Flame Spread	0
Smoke Developed	15

Observed Wet-Film to Dry-Film relationship

Wet Film Thickness (WFT), mm	Dry Film Thickness (DFT), mm
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2.6	1.6
2.4	1.5
2.2	1.2

Application techniques

Surface preparation: Surface to be coated must be free from oil, grease, visible moisture, dust, dirt or other materials likely to impair adhesion.

Coating preparation: Stir contents if necessary.

Temperature during application: Substrate and air temperature to be above 4°C and below 40°C.

Brush: For small applications: standard paint brushes suitable.

Airless Sprayer: Most industrial pumps : e.g. Graco, Wagner, Volumeair, DeVillois... Remove the strainer if necessary.

Trowel: To coat surfaces with a defined thickness, a trowel can be used.

Packaging & Availability

3M™ FireDam 2000 Coating is packed in 20 litre pails.

Handling

3M™ FireDam 2000 Coating requires no special measures for safe handling or protection against explosion fires.

Not for use

- In outdoor environments.

Storage

3M™ FireDam 2000 Coating is packaged in 20 litre pails. The product is stable under normal storage conditions. Normal stock and stock rotation practices are recommended.

- Store dry in a cool place
- Storage temperature: not under 4°C and not over 35°C
- Take care of sufficient ventilation
- Keep out of reach of children

Shelf Life

3M™ FireDam 2000 Coating shelf life is 12 months in original unopened containers from date of packaging when stored above 4°C and below 35°C.

Maintenance

3M™ FireDam 2000 Coating does not required maintenance when installed in accordance with the applicable European Technical Approval (ETA - 09/0333 Rev. 1 and the 3M™ Technical Data Sheet.

Repair

Once installed, if any section of the 3M™ FireDam 2000 Coating is damaged, the following procedure will apply:

- Remove and reinstall the damaged section in accordance with the applicable ETA - 09/0333 Rev. 1 or with 3M™ Technical Data Sheet and re apply with brush, trowel or spatula in the required thickness.

Precautionary Information

Refer to product label and Material Safety Data Sheet for health and safety information before using the product.
For information please contact your local 3M Office.
www.3M.com

For Additional Information

To request additional product information or to arrange for sales assistance, call:

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Important Notice

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Values presented have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications. This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations

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