



Fire Barrier Expantrol Flexible Intumescent Strip (E-FIS)

Product Data

1. Product Description

3M Fire Barrier E-FIS has been designed to seal the air space between doors and frames and for glazing fire resistant glass to help prevent the passage of smoke and flames in the event of a fire. When exposed to heat such as would occur in a fire, the material expands to seal the gap and forms a char to deter the spread of a fire. This expansion or intumescence of the material helps prevent noxious gases, flames, or other by-products that may be produced in a fire from penetrating into adjacent areas.

Product Features Are:

- Intumescent: Expands when heated to seal around objects consumed by fire.
- Smoke seal: Retards spread of toxic by-products of combustion.
- Superior, documented aging properties.
- Excellent flexibility. Easy, cost-effective installation.
- Low flame spread and smoke development.
- Normal disposal procedures.
- Versatile. Can be cut to fit irregular shapes.
- Re-enterable. No special tools required.
- Non-flame supporting.
- Low odor.

2. Applications

3M Fire Barrier E-FIS strips provide a cost effective means of sealing doors, frames, and glass where fire resistance is necessary. Its unique intumescent action expands in a fire to seal doors, frames, and glazing applications to prevent the passage of flame and smoke. Its excellent flexibility provides a means of conforming to the specific applications, providing exceptional ease of installation.

3. Specifications

Strip Size: Check for available sizes with your 3M representative.

4. Performance Tests

A. Physical & Electrical Properties

Hardness:

81 Shore A average, 3M/TP-75

Tensile Strength (psi)/Elongation (%):

289/903, ASTM D 412-83

Color:

Red-Brown (Black Char)

Intumescent Activation:

Expansion sequence begins 392°F (200°C), 3M/TP-74

Significant expansion

536°F (280°C), 3M/TP-74

Multi-directional free expansion

6-15 X (10 times average) 3M/TP-74

Weight Loss (TGA)

14% @ 662°F (350°C)

25% @ 932°F (500°C)

43% @ 1832°F (1000°C)

Thermal Conductivity ASTM C 518

(0.125" (3mm) thick sheet):

0.42 W/m°C @ 47°C (2.9 BTU-in/hr/ft²°F @ 117°F)

0.41 W/m°C @ 66°C (2.8 BTU-in/hr/ft²°F @ 151°F)

0.41 W/m°C @ 86°C (2.8 BTU-in/hr/ft²°F @ 187°F)

B. Weatherability

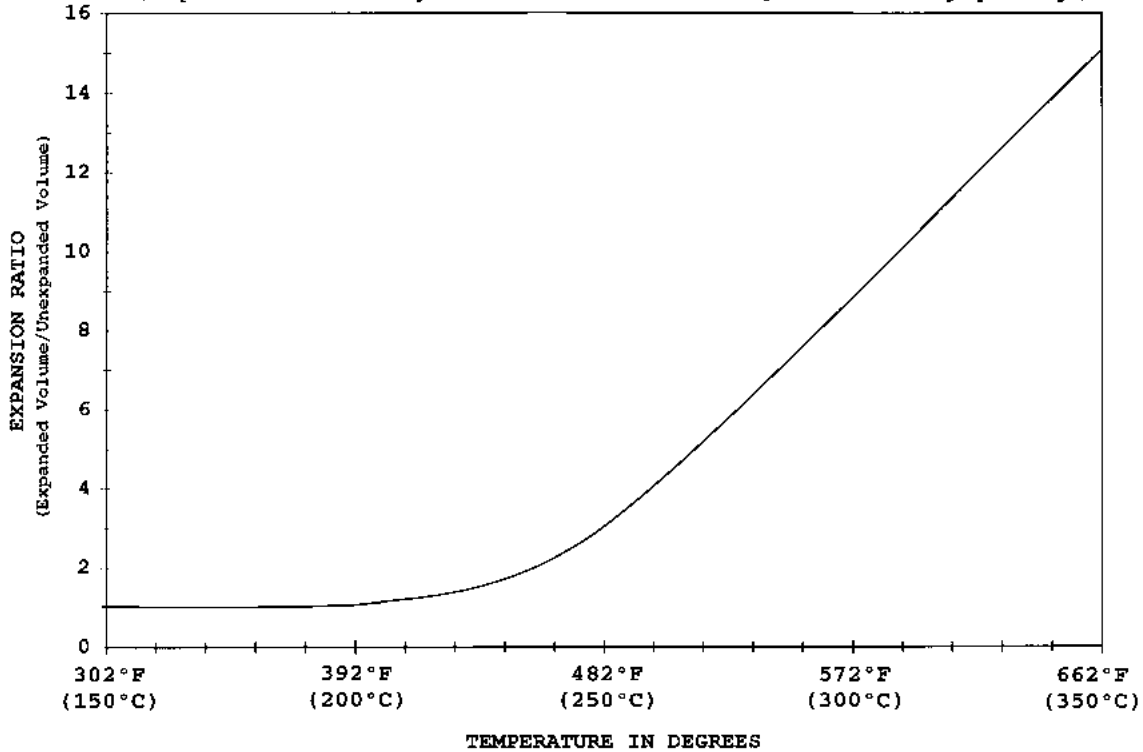
Test Condition	Temperature	Time	After Exposure
Circulating hot air oven	212°F(100°C)	60 Days	8 Times Nominal Expansion 3M/TP-74

C. Fire Performance Tests

Test	Result
Flame Spread Index	0, ASTM E 84-95
Smoke Development Index	25, ASTM E 84-95

EXPANSION OF E-FIS VERSUS TEMPERATURE

(Samples of E-FIS were exposed for 15 minutes to the temperatures shown graphically.)



Warranty and Limited Remedy. This product will be free from defects in material and manufacture for a period of ninety (90) days from date of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. If this 3M product is proved to be defective within the warranty period stated above, your exclusive remedy and 3M's sole obligation shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product.

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