



Fire Barrier Self-Locking Pillows

Product Data & Installation Instructions



Fill, Void, and Cavity Material Classified by Underwriters Laboratory, Inc.® For Use In Through-Penetration Firestop Systems (XHEZ). See Current UL Fire Resistance Directory.

1. Product Description

3M™ Fire Barrier Self-Locking Pillows are a self-contained, highly intumescent firestop product for use in through-penetration firestops. Simple to use, these interlocking strips lock pillows together. Compressing pillows prior to insertion secures them in the opening.

The 3M Fire Barrier Self-Locking Pillows achieve up to 3 hour fire ratings when tested by Underwriters Laboratory, Inc. in accordance with ASTM E 814 (UL1479).

Features

- Interlocking strips lock pillows together.
- Graphite free composition.
- Available in three sizes.
- Easy to install.
- Easy retrofit - remove and reuse pillows as needed.
- Easy to inspect.

2. Applications

- 3M Fire Barrier Self-Locking Pillows are ideal for firestopping medium to large openings with Power or Communication Cables, Conduits and Cable Trays.
- No wire mesh required. Consult UL Fire Resistance Directory for specific systems.
- Gypsum Wall, Block Wall, and Concrete Floors.
- Blank openings up to 540 sq. in. (3483 sq. cm).
- 1 or 2 Cable Trays per penetration.
- Conduit Bank, Innerduct Cable and Cable Tray applications.

See the 3M Application and Specifiers Guide for complete details.

3. Product Offerings

Product	Unit	Size	Units/ ctn.	Wt./ ctn.
3M Fire Barrier Self-Locking Pillow, Small	each	2 in. x 4 in. x 9 in. (51 mm x 10,2 cm x 22,8 cm)	24	12.5 lbs. 5,6 kg
3M Fire Barrier Self-Locking Pillow, Medium	each	2 in. x 6 in. x 9 in. (51 mm x 15,2 cm x 22,8 cm)	16	11.0 lbs. 4,9 kg
3M Fire Barrier Self-Locking Pillow, Large	each	3 in. x 6 in. x 9 in. (76 mm x 15,2 cm x 22,8 cm)	20	17.5 lbs. 7,8 kg

4. Typical Physical Properties

Density: 6 PCF (nominal)

5. Performance

3M Fire Barrier Self-Locking Pillows have been tested in accordance with ASTM E 84.

- Heat Expansion Begins: 392°F (200°C)
- Significant Expansion Begins: 536°F (280°C)
- Volume Expansion: 18% (calculated)

L Rating: See UL Listing.

Installation shall be in strict accordance with manufacturer's written instructions. The product shall be classified by Underwriter's Laboratory, Inc. as a Fill, Void and Cavity Material. When installed in accordance with systems outlined in the current UL Fire Resistance Directory and tested in accordance with ASTM E 814 (UL 1479), up to a 3 hour rating is achieved.

6. Installation Techniques

- Apply a minimum 1" (25,4 mm) depth of 3M Moldable Putty+ in all four corners of the framed opening. Also apply a minimum of 1/4" wide by 2" deep around and between cables and conduits before pillows are installed.
- Install 3M Fire Barrier Self-Locking Pillows so the 9" (22,8 cm) dimension travels through the wall or floor.
- The large surface (side with label) of the 3M Fire Barrier Self-Locking Pillow must face the framing of the penetration. The 3M logo should face the installer.
- Starting in the bottom corners of the penetration, combine the 3M Fire Barrier Self-Locking Pillows at the interlocking strips. Compress the combined pillows up to 33% and insert units in the opening. A combination of small, medium and large self-locking pillows may be required to complete the correct firestop through-penetration.
- Repeat the procedure until the penetration is completely full.
- Check for any openings between pillows, framing and penetrating items greater than 1/16". Fill any visible openings with a minimum 1/2" depth of 3M Moldable Putty+.
- To remove the 3M Fire Protection Self-Locking Pillows from the opening, remove the putty using fingers or a straight edge. Gently loosen the self-locking bond between the desired pillows. Gently pull pillow(s) out and place on a clean surface. Add wires or cables and replace the pillow(s) making sure the self-locking portion of the pillow(s) are aligned.
- Repeat 3M Moldable Putty+ installation in voids.

7. Calculating Pillow Requirement

Measure the opening, in inches, and multiply the length by the width to get the total area. Estimate the area occupied by the penetrating items and subtract it from the area of the opening. This is the amount of area to be firestopped.

8. Calculating Pillow Requirement (examples)

Example 1: An opening through a gypsum wall measuring 30" x 18" with a 24" x 6" filled cable tray.

Measure opening size = 30" x 18" = 540 in²

Subtract cable tray size = 24" x 6" = 144 in²

Total area to be firestopped = 396 in²

To allow for the required 30-33% compression of the 3M Fire Barrier Self-Locking Pillows, multiply the total net area to be firestopped by a factor of 1.5.

i.e. 396 in² x 1.5 = 594 in² to be filled by self-locking pillows

Estimate Table

(Cross-sectioned Area of Self-Locking Pillows)

Fire Barrier Self-Locking Pillow	Small	Medium	Large
Dimensions	2" x 4"	2" x 6"	3" x 6"
Nominal Area (in ²)	8	12	18
Compressed Cross-Section Area (in ²)	5.3	8	12

Total Area to fill ÷ nominal area of pillow = # of pillows needed

i.e. For large pillows: 594 in² ÷ 18 = 33 large pillows

i.e. For medium pillows: 594 in² ÷ 12 = 50 medium pillows

Compression: These numbers are estimates and will vary depending on the exact configuration and size of the self-locking pillows being utilized. Most installations will utilize a combination of self-locking pillows based on the layout of the cable tray in the opening.

Example 2: An opening through a concrete floor measuring 30" x 12" with a 24" x 6" filled cable tray.

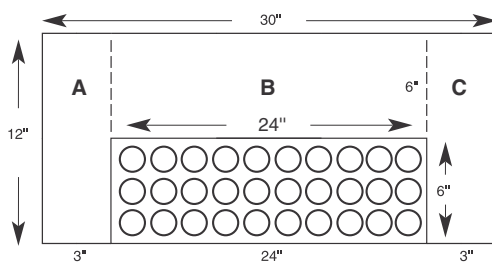


Illustration A

Measure opening size = 30" x 12" = 360 in²

Subtract cable tray size = 24" x 6" = 144 in²

Total area to be firestopped = 216 in²

216 in² x 1.5 = 324 in² → 324 in² ÷ 18 = 18 Large pillows

OR

216 in² x 1.5 = 324 in² → 324 in² ÷ 12 = 27 Med. pillows

Example 2 (cont.): Another method of estimating is to follow this simple rule of thumb.

a. 3" large pillows compress in up to a 2" space

b. 2" medium pillows compress in up to a 1.5" space

c. 2" small pillows compress in up to a 1.5" space

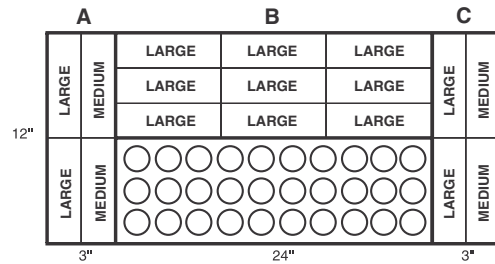


Illustration B

Section A = 3" x 12"

Combine and interlock one 3" large pillow + one 2" medium pillow (compresses in up to a 3.5" space). Repeat process with another large and medium self-locking pillow combination.

Section B = 6" x 24"

Combine and interlock three 3" large self-locking pillows (compress in up to a 6" space). Repeat process with additional combinations of 3" large self-locking pillows.

Section C = 3" x 12" (same dimensions as Section A)

Combine and interlock one 3" large pillow + one 2" medium pillow (compresses in up to a 3.5" space). Repeat process with another large and medium self-locking pillow combination.

9. Storage

The 3M Fire Barrier Self-Locking Pillows must be stored in a dry warehouse environment. Pallets should not be stacked.

10. Maintenance

Inspection: Installations should be inspected periodically for subsequent damage. Replace any damaged pillows.

Retrofit: Cables may be added or replaced by simply removing and replacing pillows and putty as required. Remove by inserting fingers to both sides of the pillow at the 3M logo and squeeze to release the self-locking bond and gently pull pillow out. 3M Fire Barrier Self-Locking Pillows are reusable.

11. Purchase Information

3M Fire Barrier products are available through a network of nationwide distributors. For information on where to buy go to:

www.3m.com/firestop

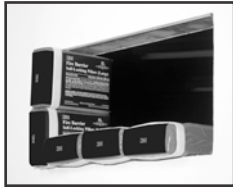
12. Safe Handling Information

Consult Material Safety Data Sheet prior to handling and disposing of 3M Fire Barrier Self-Locking Pillow(s).

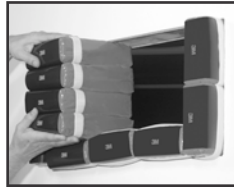
Installation Steps for 3M™ Fire Barrier Self-Locking Pillows



Apply 3M Moldable Putty+ in all corners.



Install pillows lengthwise through the opening, make sure that the large surface (label side) is placed directly against the framed opening.



Combine self-locking pillows at interlocking strips. Compress pillows up to 33%. Insert and install in groups into the opening.



Completely fill the penetration opening. The 3M Red logo must be visible to the installer on all pillows.



The smaller-sized self-locking pillows are used for smaller voids and spaces created by the cable tray. 3M Moldable Putty+ is used to seal any small openings greater than 1/16" between the pillows, cables, cable trays and pillows within the frame.



3M Fire Protection Self-Locking Pillows are completely reusable. Simply remove the desired pillow(s) by inserting fingers on both sides. Squeeze gently to release the interlocking bond and remove the pillow. No wire mesh required.

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 OR 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 product.

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