
Technical Data

➤ Product Description

Nelson Firestop Pillow (PLW™) is a compressible firestop device that is well suited for installations where frequent changes may be required. PLW™ consists of a mineral fiber treated with a highly intumescent material enclosed in a strong polyethylene bag. When exposed to fire, the pillows expand to lock the seal in place. Even though PLW™ is classified as a permanent firestop system for several applications including steel and aluminum cable trays, PLW™ also is an excellent temporary seal.

➤ Application

Nelson Firestop Pillow (PLW™) is ideally suited for applications for cable tray penetrations or temporary closures requiring fire rating integrity. Install Nelson PLW™ into areas where the surfaces are clean and free of dust, grease, oil, loose materials, rust or other substances. Pillows may be coated with cable pulling lubricant for ease of installation. Tightly pack the pillows and insert lengthwise into openings. Actual installation should be in accordance with the appropriate Nelson application system drawing.

➤ Approvals

Underwriters Laboratories Inc., Fill, Void or Cavity Material (XHHW) and (XHHW7), Factory Mutual (FM)

➤ Features

- Up to 3-Hour Ratings
- Unlimited Shelf Life
- Easy to Install
- Highly Intumescent
- Highly Compressible
- No Disagreeable Toxic or Hazardous Fumes
- Easily Repenetrated

➤ Physical Properties

- ColorSafety Orange
- Asbestos FillerNone
- SolventsNone
- Hazardous IngredientsNone
- Activation Temp.....Initial >275°F (135°C)
- k - Value0.25 BTU in./hr. sq. ft. °F
- Polyethylene Thickness ...4 mils

➤ Test Compliance

- ASTM E119 and UL263, Fire Tests of Building Construction and Materials
- ASTM E814 and UL1479, Test method for through stop fire penetrations.

➤ Testing Data

For specific test criteria, refer to the UL Fire Resistance Directory.

➤ Storage & Handling

Nelson PLW™ should be stored in dry, covered locations at no greater temperature than 120°F (49°C). There is no indication of shelf life limitations.

➤ Limitations

Nelson PLW™ should not be exposed to chemicals harmful to polyethylene. Service temperature shall not exceed 275°F (135°C).

➤ Related References

Underwriters Laboratories Inc. "Fire Resistance Directory". Application details are available in AutoCAD® format on request.

➤ INSTALLATION INSTRUCTIONS

GENERAL: Areas to be protected must be clean and free of oil, loose dirt or rust.

APPLICATION SYSTEM SELECTION: Selection of an appropriate firestop application system design is critical to the fire protection process. Please consult the Nelson Firestop directory and application guide as well as the UL® Fire Resistance Directory for additional information.

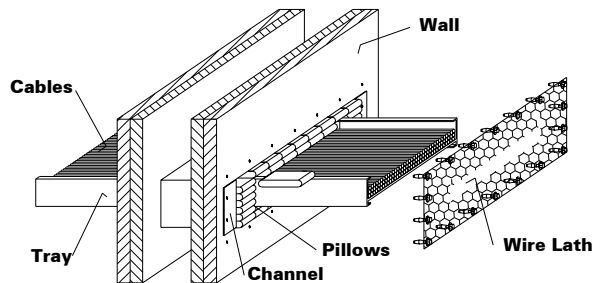
PILLOW: Install Nelson Firestop Pillows (PLW™) so the 9.6" dimension travels through the wall, or floor. Start with the bottom corners and tightly pack pillows vertically so that the large faces of the pillows are facing the framing. Install tightly packed pillows horizontally in rows between the space of vertically installed pillows. Apply a min. depth of 1" of (FSP™) putty in all four corners between the vertical pillows and framing. Any voids between pillows and pillows and penetrating items must be filled with (FSP™) putty at a min. depth of 1".

WIRE LATH: Nominal 2", 19awg galv steel wire lath, cut to fit the contour of the opening with a min. 3" lap (2" lap for concrete) beyond the periphery of the opening. Wire lath secured to both surfaces of gypsum wall assembly with 2-1/4" long Type S self drilling, self tapping bugle head steel screws and 1/4" by 1-1/2" diameter steel fender washers, spaced 6" OC. Wire lath secured to both surfaces of concrete floor or wall assembly with 1/4" diameter by 1-3/4" long concrete anchors in conjunction with 1/4" by 1-1/2" diameter steel fender washers, spaced 6" OC.

CALCULATION: Measure the opening, in inches, and multiply length by width, which gives you the total area in sq. in. (TA). Estimate the penetrating item area and subtract it from the total area of the opening (TA) to get the area to be firestopped (FA). Take the area of the pillows and divide into the firestopped area (FA) to get number of pillows needed.

Example: Opening size is 8" x 40" (320 sq. in.) (Total area) (TA). Cable tray is 36" x 6" @ 40% cable fill. Total Area(TA) is 320 sq. in. and penetrating item area is .4" x 6" x 36" (86.4) sq. in. Take total area (TA) and subtract penetrating item area to get firestopped area (FA) (320 – 86.4 = 233.6 sq. in.). Area of pillows (PA) is 3" x 4" x 20% compression or 3" x 8" x 20% compression. Take (FA)/(PA) = number of pillows needed.

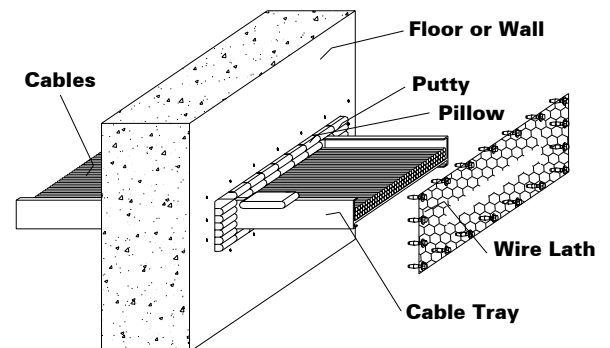
UL System No. W-L-4003 F Rating 1 or 2 Hr. T Rating 1/2 Hr.



- WALL ASSEMBLY - Constructed in the manner specified in the U300 or U400 series designs as showing the UL Fire Resistance Directory. The max. area of opening is 160 sq. in. with a max. dimension of 20". The annular space between the cable tray and top and bottom of the opening shall range from 0" (point of contact) to 2".
- CABLE TRAY - Max. 18" wide x 4" deep aluminum or 18" x 6" steel, open ladder type cable tray. The annular space is 1".
- CABLES - Max. 18-30% aggregate cross-sectional fill of power, control or communications cable (300 MCM), 7C-12 awg and 100 pr. 24 awg.
- STEEL CHANNEL - Fabricated from 30 ga. galv. steel. Channel is to bridge the stud cavity on both sides of the opening with a min. 3" flange on both sides of wall.
- NELSON PLW PILLOWS - Pillows to be installed horizontally through the wall and centered within the opening of the wall.
- NELSON FSP PUTTY - After installation of the pillows, apply FSP putty to seal any voids between the cables, cable tray and the pillows.
- WIRE LATH - Nominal 2", 19awg. galv. steel wire lath, cut to fit the contour of the opening with a min. 3" lap beyond the periphery of the opening.

DWG NO. **FS-0097 R4**

UL System No. C-AJ-4032 F Rating 2 Hr. T Rating 0 Hr.



- FLOOR or WALL - Min. 4-1/2" concrete floor or wall or CMU block wall. The max. area is 320 sq. in. with max. dimension of 40". The annular space is 0" (point of contact) to 2".
- CABLE TRAY - Max. 36" x 6" steel, open ladder type cable tray.
- CABLES - Max. 40% fill of comm. cable (100pr. 24awg. and 72 fiber-optic cable).
- NELSON PLW PILLOW - Pillows to be installed horizontally or vertically within the opening in such a manner that the ends project a min. of 2-1/2" beyond each surface of floor or wall.
- NELSON FSP PUTTY - Putty applied to seal any voids between the cables, and the pillows and between the cable tray and the pillows on both sides of the floor or wall assembly.
- WIRE LATH - Nominal 2", 19awg. galv. steel wire lath, cut to fit the contour of the opening with a min. 2" lap beyond the periphery of the opening.

DWG NO. **FS-0147 R3**