



PCS™ Pipe Choke System

Technical Data

➤ Product Description

Nelson pipe choke system (PCS™) is a prefabricated device used to seal penetrations and maintain the rating of fire rated floors and walls. The pipe choke is designed for penetrations of non-metallic pipes. When exposed to fire, the intumescent material expands to seal voids created from fire exposure on deteriorating penetrating items. The PCS™ consists of a heavy gauge metallic collar filled with a highly intumescent, pliable material.

➤ Application

Nelson PCS™ is intended for use on combustible pipe firestopping penetration applications for pipe sizes up to 4 inches outside diameter. PCS™ requires no special skills or tools for installation. Choose the appropriate size of PCS™ to fit the penetrating pipe O.D. Flush mount to the wall or floor surface using the mounting ears on the device. Actual installation should be in accordance with the appropriate Nelson application system drawing.

➤ Availability

PCS 1.5	1-1/2" nominal O.D.Pipe
PCS 2	2" nominal O.D.Pipe
PCS 3	3" nominal O.D.Pipe
PCS 4	4" nominal O.D.Pipe

➤ Approvals

Underwriters Laboratories Inc., Firestop Device For Use in Through-Penetration Firestop Systems (XHJI) , Factory Mutual (FM), City of New York, New York, Department of Buildings

- MEA 173-99-M
 - MEA 196-84-M Vol. 3
- MEA 236-87-M Vol. 2

➤ Features

- Up to 3-Hour Ratings
- Unlimited Shelf Life
- Easy to Install
- Highly Intumescent
- VOC Compliant
- Non Toxic
- Retrofittable
- Does not Require Additional Caulking

➤ Physical Properties

- | | |
|--|---------------------------|
| • Color | Silver |
| • Asbestos Filler | None |
| • Solvents | None |
| • Hazardous Ingredients | None |
| • Intumescent Expansion Activation Temp. | Initial 300°F |
| • VOC Content | Negligible |
| • Volume Increase | > 300% |
| • Density | 1.4 lbs / cu. in. |
| • Application Temp | 40°F (4°C) to 90°F (32°C) |

➤ 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.

➤ Limitations

Nelson PCS™ should not be heavily exposed or come in direct contact with chemicals. Service temperature shall not exceed 180°F (82°C).

➤ Related References

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

➤ INSTALLATION INSTRUCTIONS

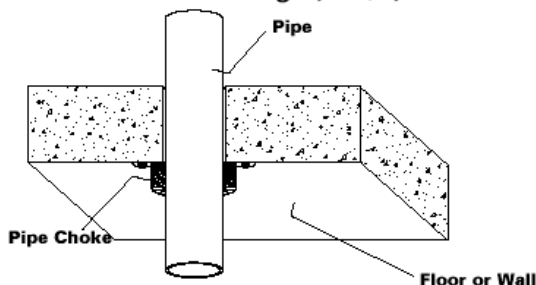
GENERAL: Areas to be protected must be clean and free of oil, loose dirt or rust. Installation temperatures must be 40°F (4°C) and above.

APPLICATION SYSTEM SELECTION: Selection of an appropriate firestop 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.

INSPECTION: Determine if the PCS will fit the pipe application and determine the number of required anchors. Determine if the annular space between the pipe and the edge of the opening is between 1/8" and 1/4". The annular space must be 1/8" minimum to allow the PCS to slide through. If the annular space is greater than 5/16", the PCS cannot be used.

INSTALLATION: PCS device incorporates anchor tabs for securement to both surfaces of gypsum wall by means of 1/8" diameter by 1-3/4" long steel toggle bolts in conjunction with 1/4" by 3/4" diameter and 1/4" by 1-1/4" diameter steel fender washers. PCS device incorporates anchor tabs for securement to bottom surface of concrete floor or both surfaces of concrete wall by means of 1/4" diameter by 1-3/4" long steel sleeved concrete anchors in conjunction with 1/4" by 3/4" diameter and 1/4" by 1-1/4" diameter steel washers. PCS device incorporates anchor tabs for securement to finished gypsum wallboard ceiling by means of 1/8" diameter by 3" long toggle bolts in conjunction with 1/4" by 1" diameter steel fender washers.

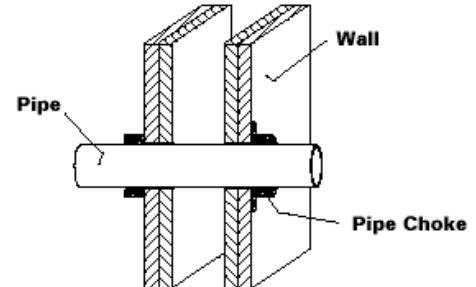
UL System No. C-AJ-2086 F Rating 2 or 3 Hr. T Rating 0, 1-1/2, or 2 Hr.



- FLOOR or WALL ASSEMBLY - Min. 4-1/2" thick concrete floor or wall, or CMU block wall. The max. annular space is 1/4". Max. diameter of opening is 5".
- NONMETALLIC PIPE or CONDUIT - Nominal 4" diameter, Sch 40 PVC solid core SDR11 Polybutylene(PB) or SDR17 CPVC pipe.
- NELSON PCS PIPECHOKE - Apply the appropriate sized pipechoke around the pipe on the underside of the floor, or on both sides of the wall. Secure to the concrete with steel masonry anchors and fender washers.

DWG NO. FS-0111 R8

UL System No. W-L-2071 F Rating 1 or 2 Hr. T Rating 1/2, 1 or 2 Hr.



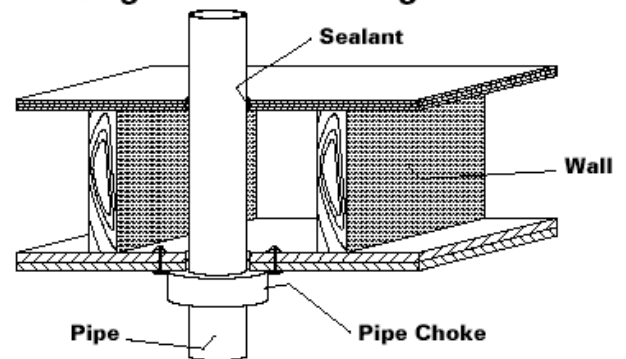
- WALL ASSEMBLY - Constructed in the manner specified in the U300 or U400 series designs as shown in the UL Fire Resistance Directory. The nom annular space is 1/4" to 5/16" for 2" diameter or less pipes or conduits and the annular space is 1/4" for pipes or conduits greater than 2".
- NONMETALLIC PIPE - Nominal 4" diameter, or smaller, Sch. 40 PVC or RNC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems or SDR13.5 CPVC pipe for use in closed piping systems. F and T ratings are as follows:

Pipe Size	F Rating (Hr.)	T Rating (Hr.)
4"	1	1
4"	2	2
3"	1	1
3"	2	2
2"	1	1/2
2"	2	2

- NELSON PCS PIPECHOKE - Install the appropriate sized pipechoke around the pipe on both sides of the wall and secure the choke to the wall with 1/8" diameter by 1-3/4" toggle bolts in conjunction with 1/4" by 3/4" diameter and 1/4" by 1-1/4" diameter steel fender washers.

DWG NO. FS-0110 R4

UL System No. F-C-2031 F Rating 2 Hr. T Rating 0 Hr.



- WOOD FLOOR ASSEMBLY - Constructed in the manner specified in individual L500 series floor-ceiling designs in the UL Fire Resistance Directory. Annular space is 1/2".
- NONMETALLIC PIPE - Max. nominal 4" diameter, Sch. 40 PVC, SDR17 CPVC pipe or Rigid Nonmetallic Conduit for closed or vented systems.
- NELSON PCS PIPECHOKE - Apply appropriate sized pipechoke around pipe and secure to underside of gypsum ceiling with toggle bolts and fender washers.
- NELSON CLK SEALANT - Apply CLK to fill the annular space where the pipe penetrates the floor to the max. extent possible with an additional 1/4" bead around pipe above the floor.

DWG NO. FS-0137 R2