

**Specified Technologies, Inc.**  
**Design No. STI/PF 120-01**



Through Penetration  
 SpecSeal® SSW BLU2 Wrap Strip  
 SpecSeal® LCI Intumescent Firestop Sealant  
 ASTM E814, CAN/ULC-S115  
 Rating: See Table 1

Pressure Differential: Positive, 0.01 in. w.g. (2.5 Pa)

TABLE 1. RATINGS		
	ASTM E814	CAN/ULC-S115
F-Rating	2 Hr	2 Hr
T-Rating	3/4 Hr*	NA
FT-Rating	NA	3/4 Hr*
FH-Rating	NA	2 Hr
FTH Rating	NA	3/4 Hr*

\*T, FT, and FTH Ratings apply only to 4 in. (102 mm) nominal diameter Schedule 40 PVC pipe. Smaller pipe sizes have not been evaluated for these ratings.

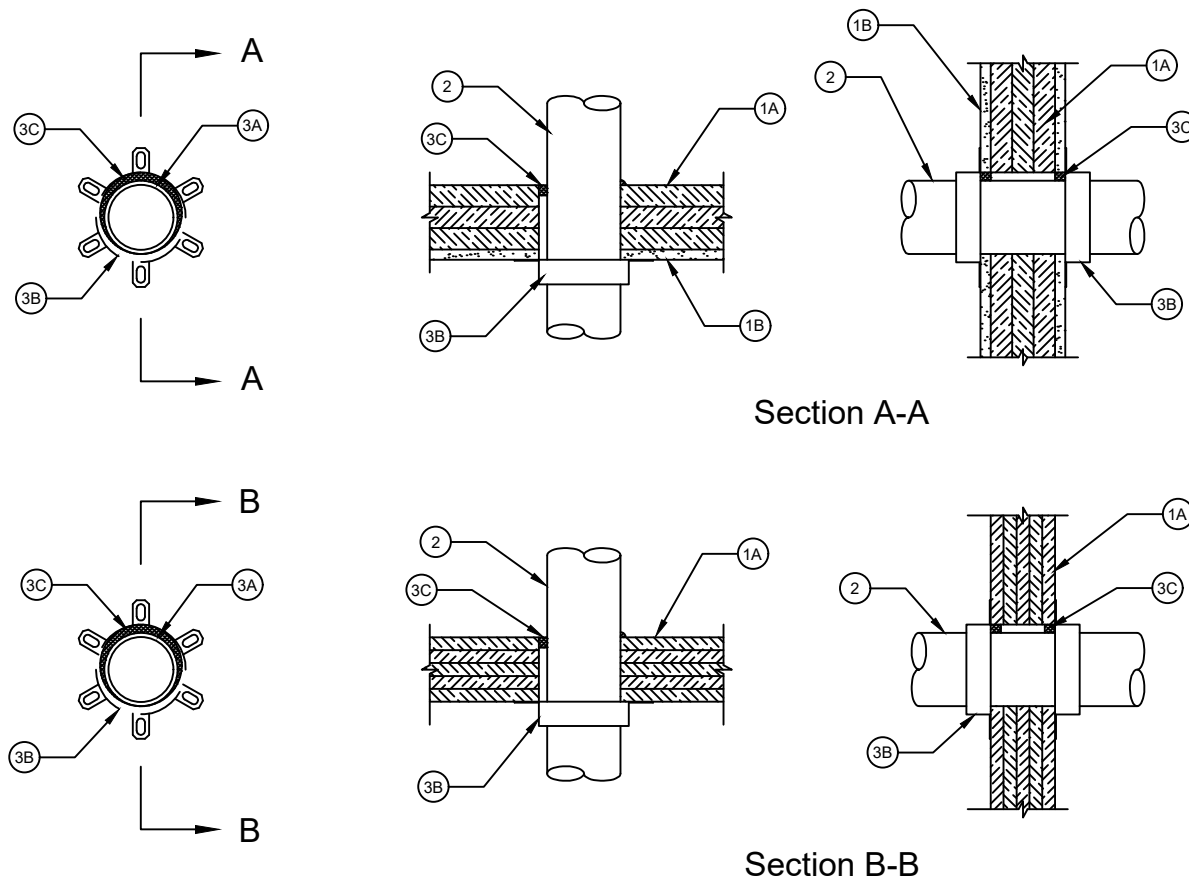


Figure 1. Through Penetration Detail



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(800)992-1180 • (908)526-8000 • FAX (908)231-8415 • E-Mail:techserv@stifirestop.com • Website:www.stifirestop.com



**1. SUPPORTING CONSTRUCTION:** Use Cross-laminated timber (CLT) certified in accordance with ANSI/APA PRG 320 (2018 or later). Use a min. 2 hour fire-rated floor/ceiling assembly or wall assembly constructed in accordance with its listed or prescribed fire-rated design requirements that has a maximum through opening diameter of 5 in. (127 mm) and meets the following minimum construction requirements:

- A. Cross Laminated Timber (CLT): Use min. 3- 15/16 in. (100 mm) thick CLT with a min. of 3 plies when gypsum board (Item 1B) is applied. As an option use a min. 5-15/16 in. (132 mm) thick CLT with a minimum of 5 plies when gypsum board (Item 1B) protection is not applied. A min. individual ply thickness of 1-3/16 in. (30 mm) applies in all cases.
- B. Gypsum Board: For all CLT having a thickness less than 5-15/16 in. (132 mm), use min. one layer of 5/8 in. (16 mm) thick Type X gypsum board applied directly to the underside of CLT floor/ceiling assemblies or on both sides of CLT wall assemblies. For CLT thickness 5-15/16 in. (132 mm) or greater, and minimum of 5 plies, gypsum wallboard application is optional. Use min. #8 Type S drywall screws, spaced max. 12 in. on center. Screw length shall be as required for min. of 2-3/8 in. penetration into CLT. Increase the fastening requirements if needed to comply with local code requirements.
- C. Floor Topping (For floor configuration only, Optional, Not Shown) - Use a code compliant floor topping when acceptable for use in the listed or prescribed fire rated floor/ceiling design.

**2. PENETRATING ITEM:** Install penetrating item centered or offset within the opening. The annular space and offset shall range from min. 0 in. (0 mm) to max. 9/16 in. (14 mm) within the opening.

- A. NON-METALLIC PIPE: Install a max. 4 in. (102 mm) nominal diameter, Schedule 40 PVC pipe.

**3. FILL, VOID, OR CAVITY MATERIAL:** Apply the following materials in accordance with manufacturer's instructions and in compliance with the requirements below:

**A. Certified Product: Specified Technologies, Inc. SpecSeal® BLU2 Wrap Strip**

Install one stack of 3 layers of nominal 1/8 in. thick by 2 in. wide SpecSeal® BLU2 Wrap Strip around the pipe flush with the underside of the CLT floor/ceiling assembly, or to both sides of the CLT wall assembly.

**B. Specified Technologies, Inc. SpecSeal® SSWRC Restraining Collar**

Install min. 30 GA, galvanized steel Spec Seal® SSWRC restraining collar around the wrap strip layers. Refer to Figure 2 for restraining collar dimensions. Use a nominal 2 in. (51 mm) deep collar with 1 in. (25 mm) wide by 2 in. (51 mm) long anchor tabs for attachment to floor/ceiling assembly or wall assembly (Item 1) and min. 1/4 in. (6 mm) wide retaining tabs located opposite the anchor tabs. Bend anchor tabs outward 90 degree and wrap collar tightly around wrap strip layers with min. 1 in. (25 mm) overlap at seam. Retainer tabs to be bent 90 degrees toward penetrating item to lock wrap strips in position.

Secured collar with one 1/2 in. (13mm) wide by min. 0.028 in. (0.7mm) thick stainless steel hose clamp. Anchor the collar tabs to the CLT at a max. spacing of every other tab, using min. 3 in. (76 mm) long, No. 10 steel wood screws and fender washers. Increase screw length if needed to ensure a min. of 2-1/4 in. penetration into the CLT when protected with gypsum board and min. 4-1/4 in. penetration into the CLT without gypsum board protection. Bend the tabs of the collar over the wrap strip so they are positioned to restrain the intumescent wrap strip.



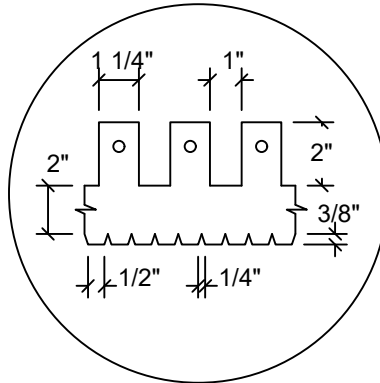


Figure 2. SSWRC Restraining Collar

**C. Certified Product: Specified Technologies, Inc. SpecSeal® LCI Intumescent Firestop Sealant**

Apply SpecSeal® LCI Intumescent Firestop Sealant using a min. 1/4 in. (6 mm) bead at point contact location or a min. 1/2 in. (13 mm) depth elsewhere to fill the annular space so that it is flush with the top side of the CLT floor/ceiling assembly, or on both sides of the CLT wall assembly. Use open or closed cell backer rod, or tightly packed 4 pcf (64 kg/m<sup>3</sup>) mineral wool to control the depth of the sealant application. For wall penetrations, apply the sealant prior to installation of the wrap strip (Item 3A) and restraining collar (Item 3B).

Consult the listing report on the Directory of Building Products (<https://bpdirectory.intertek.com>) for the edition of the standard(s) evaluated.

Compliance of the assembly described in this Design Listing with the referenced standard relies on verification that the assembly constructed in the field is consistent with that described herein. Intertek certified products may be verified by the approved Intertek label; other products must be verified by the Authority Having Jurisdiction as meeting the specifications stated herein.