

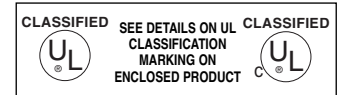


# 1½ hour curtain type, 3V and airfoil vertical mount dampers with 3-side retaining angle installation instructions

The following installation details apply to models **FD-120, FD-180, FSD-121, FSD-122, FSD-123, FSD-181, FSD-182, FSD-181V, FSD-182V, FD4, FD4D**

## Application

C&S Air Products 1½ hour fire and fire/smoke dampers installed vertically may use 3-sided retaining angles in lieu of conventional 2-sided or single sided mounting angles. 3-sided mounting angles may be field fabricated or factory supplied and may be installed in metal stud, wood stud, concrete, or masonry partitions. Specific requirements in these instructions are mandatory.



## Maximum Size

The maximum damper size for the side with the missing angle shall be no larger than 26" (660). The maximum size for the remaining sides shall be no larger than 48" (1219).

Note: Size shall not exceed damper model size limits.

## General Notes:

**A. Install dampers in accordance with the appropriate damper installation instructions sheet. Replace conventional 2-sided or single-sided mounting angles with 3-sided mounting angles as appropriate.**

### B. Mounting Angles

1. Mounting angles are only required on one side of the wall.
2. Size: 3-sided mounting angles shall be a minimum of ¾" x 1½" tall x 20 gauge (19 x 38 x 1.0) steel.
3. Mounting Angle-to-Sleeve Fasteners: #10 (M5) bolts or screws, 3/16" (4.8) diameter steel rivets, quick-lock joints, or welds. Attach mounting angles to the sleeve at 6" (152) o.c. maximum and 1" (25) maximum from the corners with a minimum of 2 fasteners per side.
4. Mounting Angle-to-Wall Fasteners: #10 (M5) screws for wood/steel stud, #10 (M5) self-tapping concrete screws for masonry wall. Attach mounting angles to the wall at 12" (305) o.c. and 1" (25) maximum from corners with a minimum of 2 fasteners per side.

### C. Firestop Material

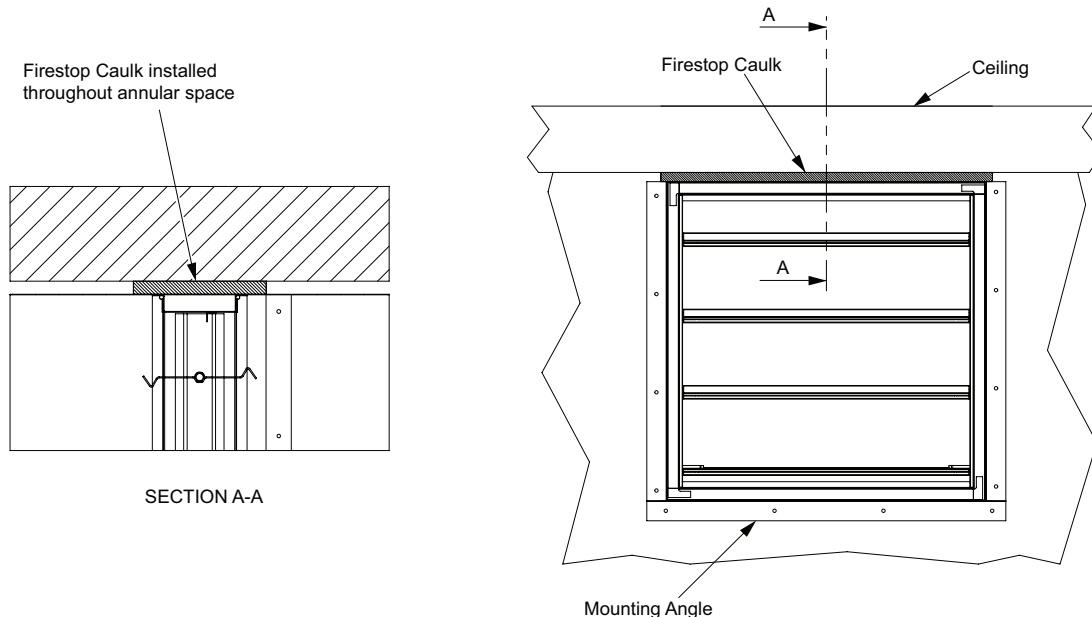
1. Fill Material - Firestop caulk applied throughout the missing angle annular space and flush with both surfaces of the wall. If the damper/sleeve assembly comes into contact with the wall, a minimum 3/8" (13) diameter bead shall be applied to the interface between the sleeve and contact surface on both sides of the wall as shown in Section B-B on page 2.

**REQUIRED FIRESTOP MATERIAL: 3M - CP25WB+ (INSTALL PER 3M'S INSTRUCTIONS)**

### D. Wall Opening

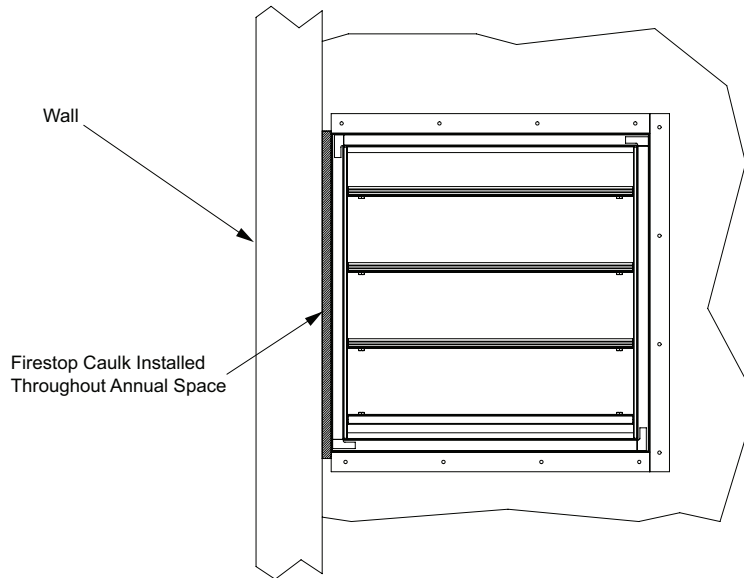
The opening shall be a minimum of ¼" (6) and a maximum of ½" (13) larger than the overall damper assembly. The maximum gap for the annular space filled by firestop caulk shall be no larger than ½" (13).

1. For applications requiring a missing angle on the bottom of the damper where the opening is 1" (25) or less above the floor, firestop material is not necessary.
2. For applications requiring a missing angle on one of either the top, a side, or the bottom of the damper where the opening is more than 1" (25) above the floor, firestop material shall be used on remaining side between sleeve and opening in wall.

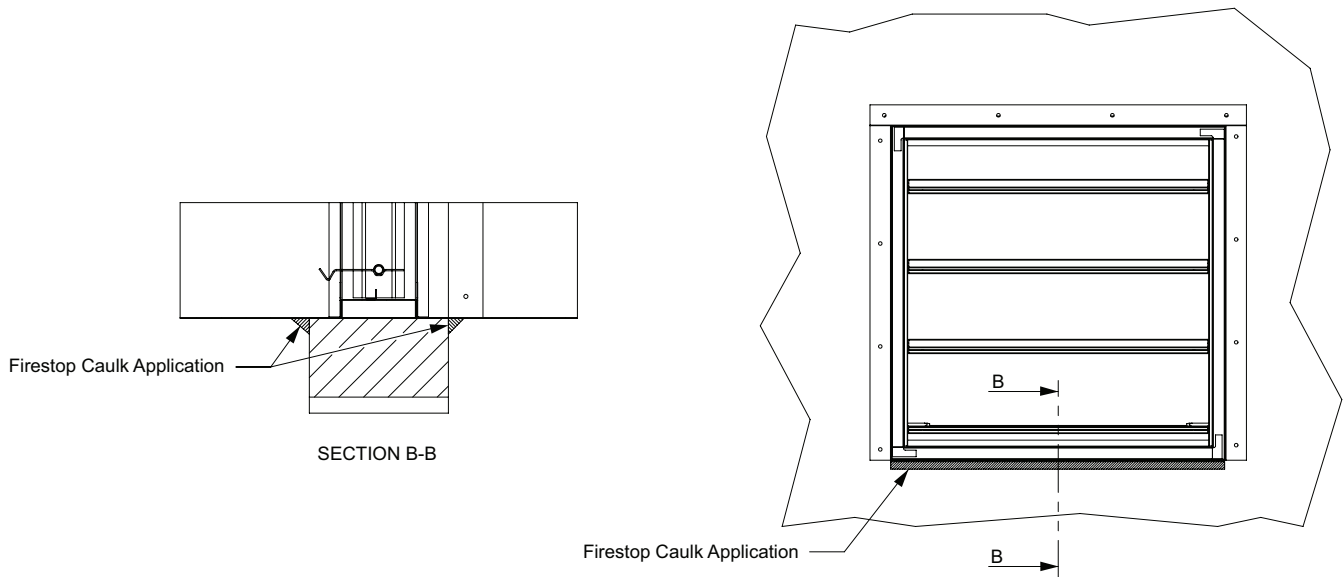


**Angles Installed Bottom, Both Sides**

The following installation details apply to models **FD-120, FD-180, FSD-121, FSD-122, FSD-123, FSD-181, FSD-182, FSD-181V, FSD-182V, FD4, FD4D**



**Angles Installed Top, Bottom, and One Side**



**Damper Resting on Bottom of Wall Opening**

Underwriters Laboratories file #R14981

The product is also listed by CSFM file #3225-1404:0101, #3225-1404:0105, #3225-1404:0108, #3230-1404:0106, #3230-1404:0107 and conforms to NFPA 90A and NFPA 92A.