

### Installation Instructions

Refer to the appropriate Greenheck installation instructions for:

- Document 481318 - FSD-xxx, DFD-xxx, SSFSD-xxx Series Fire and Combination Fire Smoke Dampers
- Document 481324 - Curtain Fire Dampers DFD, FD, DFD X series and FD X series

These instructions meet the requirements of UL 555 and apply to 1½ hour rated combination fire smoke dampers and fire dampers mounted in masonry, block, or metal stud walls. This installation method may also be utilized in wood stud walls in applications where the angle on the bottom side of the damper is omitted. Specific requirements in these instructions are mandatory.

The installation shall comply with the requirements of NFPA 90A (Standard for the Installation of Air Conditioning and Ventilating Systems) and UL File R13317.

### Damper Size Limitations

Dampers up to the following sizes may utilize this installation method:

Installations omitting the retaining angle from the top or either side of the damper

- 96 in. wide x 72 in. high (2438 mm x 1829 mm)

Installation omitting the retaining angle from the bottom of the damper:

- 80 in. wide x 50 in. high (2032 mm x 1270 mm)
- 50 in. wide x 80 in. high (1270 mm x 2032 mm)
- 40 in. wide x 100 in. high (1016 mm x 2540 mm)

### Annular Space Requirements

On the side of the damper without a retaining angle there shall be no annular space between the damper sleeve and wall opening. See the “Retaining Angle Requirements” section for fastening requirements.

On the three sides of the damper that do have a retaining angles there are no minimum clearance requirements between the wall opening and the damper sleeve. However, to facilitate installation, clearances between the wall opening and the damper sleeve are recommended.

### Retaining Angle Requirements

Installations utilizing this method only require retaining angles on one side of the wall.

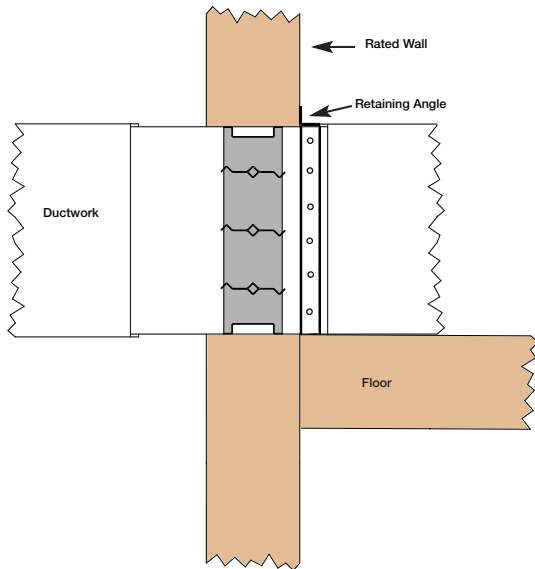
When using the installation method described in this supplement retaining angles are only required on three of the four sides of the damper.

### Requirements For Side Without Retaining Angle

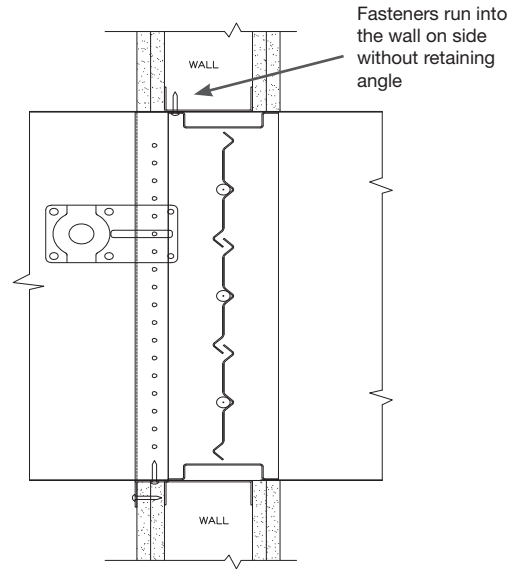
When the retaining angle is omitted from the bottom side of the damper the damper shall sit directly on the base of the wall opening, see **Figure 1**. In addition, the sleeve on the retaining angle side of the barrier shall not be more than 1 in. (25 mm) above the floor. No fasteners are required through the damper sleeve into the floor or base of the opening.

When the retaining angle is omitted from either side of the damper the following requirements apply:

- Damper shall be placed tight up against the side of the wall opening that has no retaining angle.
- On the side with no retaining angle, fasteners shall be run through the damper sleeve into the steel stud or block wall. For steel stud walls fasteners shall be #10 x 1½ in. (38 mm) sheet metal screws. See **Figure 2**. For masonry or block walls fasteners shall be ¼ in. x 1½ in. (6 mm x 38 mm) self-tapping concrete screws.
- Fasteners shall be no more than 2 in. (51 mm) from the corners and then every 3 in. (76 mm) on center.



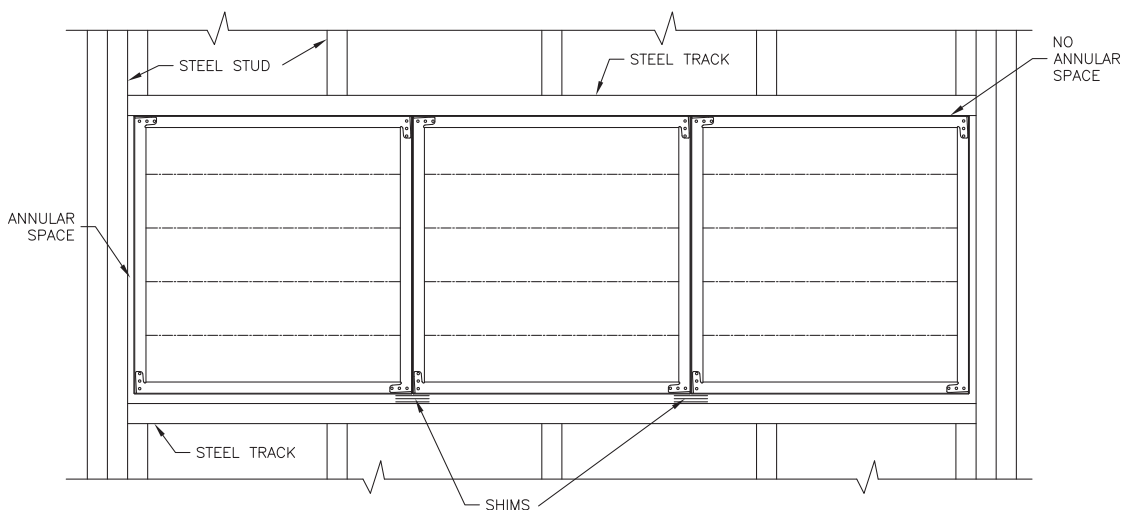
**Figure 1 - Retaining angle omitted from bottom side of the damper**



**Figure 2: Fastening of damper on the side without retaining angles**

When the retaining angle is omitted from the top of the damper the following requirements apply:

- The damper shall be shimmed tight up against the top of the wall opening.
- On the top side of the damper sleeve fasteners shall be run up through the sleeve into the steel stud or block wall. For steel stud walls fasteners shall be #10 x 1½ in. (38 mm) sheet metal screws. See **Figure 2**. For masonry or block walls fasteners shall be ¼ in. x 1½ in. (6 mm x 38 mm) self-tapping concrete screws.
- Fasteners shall be no more than 2 in. (51 mm) from the corners a then every 3 in. (76 mm) on center.
- On single section wide dampers the shims may be removed once the top fasteners and side retaining angles are installed. On multiple section wide dampers the shims shall be left in place under the location where the frame members join. See **Figure 3**. The shims that are left under the center frame members shall be steel.



**Figure 3: Steel shims left in place where center frame members meet on multiple section wide dampers when the retaining angle is omitted from the top of the damper sleeve.**

## Requirements For Sides With Retaining Angles

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Retaining angles for dampers with a width and height 48 in. (1219 mm) or less must be a minimum of 20 ga. (1 mm). Retaining angles for all dampers with a width or height greater than 48 in. (1219 mm) must be a minimum of 16 gauge (1.5 mm).

The leg of the retaining angle on the damper sleeve shall be a minimum of 1¼ in. (32 mm). It is acceptable for the retaining angles to be installed either such that the leg on the sleeve goes away from the wall or in towards the wall. The leg of the retaining angle on the wall shall be long enough to cover the annular space and overlap the wall by at least 1 in. (25 mm).

Retaining angles must be attached to both the sleeve and the partition.

- Attachment to the sleeve shall be made with: tack or spot welds, #10 (¾ in. [19 mm] max.) sheet metal screws, or ¼ in (6 mm) nuts and bolts.
- Attachments to the partition shall be made using one of the following methods:
  - #10 screws of a length such that the screw engages the steel stud/track by ½ in. (13 mm) (steel framing). On metal stud partitions the retaining angle may be attached directly to the metal stud prior to the installation of the drywall.
  - #10 screws of a length such that the screw engages the wood stud by 1¾ in. (44 mm) (wood framing).
  - Steel anchors or ¼ in. (6 mm) self-tapping concrete screws of a length such that the screw penetrates the masonry or block 1¼ in. (31 mm).
- The following applies to the attachment of the retaining angles to both the sleeve and the partition:
  - There shall be a minimum of two attachments per side
  - There shall be an attachment no more than 2 in. (51 mm) from each corner and then a maximum of every 6 in. (152 mm) on center.

