The Essentials of Louver Installation

Frames, fasteners, and angles smooth installation

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In many cases, installation is just as important to louver function as design is. Specifying the correct frame style and option can improve installation substantially. In many cases, louver manufacturers have specific models and accessories to make installation faster and easier. This article explores the most common louver-installation methods and some labor-saving products to help streamline the installation process.

Louvers generally connect to surrounding structures through their perimeter frames. The two most common types of frames are channel and flange (Figure 1).

Channel frames, sometimes referred to as "box frames," provide a consistent outside dimension around a louver's perimeter. They usually are in a channel shape, with the channel legs oriented out (away from the louver's interior). They do not extend beyond the overall width and height of a louver. For installation flexibility, they are the most versatile. They can be installed flush with the face of a wall, inset from a face, or slid inside a sleeve.

Flange frames are channel frames with one flange longer than the other. Flange lengths usually are 1 to 1½ in. Front flanges are the most common style; however, rear flanges also are available. The installation of flange frames is limited to flush mounts (front flange) and surface mounts (a louver mounted outside of a wall with a rear flange). Front-flange frames help hide inconsistent gaps between louvers and the opening caused by uneven sizes or out-of-square conditions. There are other specialty frames designed to integrate louvers into various wall systems. These will be discussed later in this article.

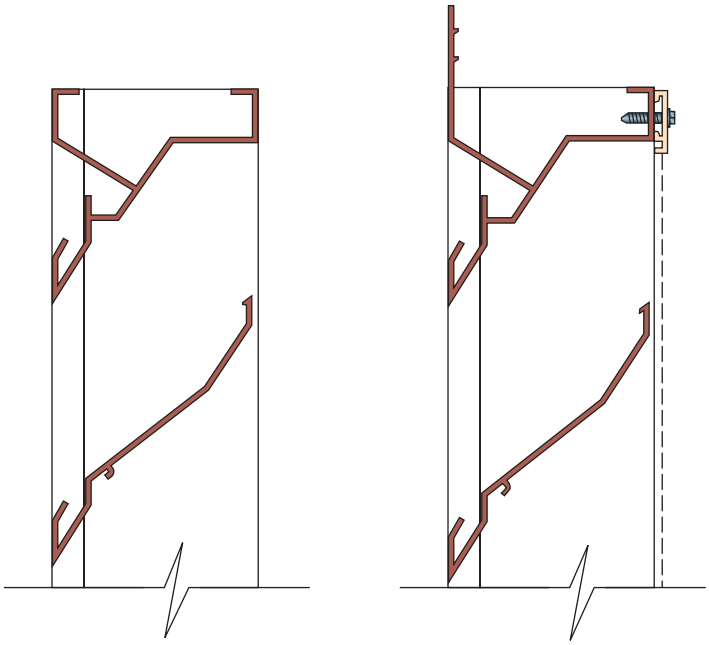

FIGURE 1. Channel frame (left) and front-flange frame (right).

The most common louver-installation method uses fasteners in surrounding walls or structures. In masonry walls, wedge or tapcon anchors often are used. For metal structures, self-drilling metal screws are common. If a metal structure is too thick for self-drilling screws, thread-cutting screws or even bolts may be required. Lag bolts are used for wood-frame installations. While manufacturers' installation instructions always should be followed, a common fastener-location pattern is 6 in. from corners and 12 in. center to center on all sides.

If a louver is small and the blade spacing wide enough, fasteners can be installed directly through the web of a jamb frame into a wall. However, if blade spacing is too narrow or a frame has downspouts that channel rain water, the installation of fasteners directly through a jamb should be avoided. This is the case with most wind-driven-rain-resistant louvers. In such instances, installation angles can be utilized to connect the rear

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of a frame to an opening (Figure 2). For louvers with blade supports, angles should connect the tops and bottoms of the supports to a structure. Commonly, angles are 1½-in.-by-1½-in.-by-⅛-in. thick and made of aluminum. Some applications may require special angle sizes. Angles typically are provided as clip angles, which are 2 to 4 in. in length. They also can be supplied in full lengths for each side of a louver. These are known as continuous angles. Continuous angles cost more because of the material, but are faster to install. Installation angles can be used with channel or flange frames.

Some louver-installation methods do not require the use of fasteners in walls. These methods often are time savers for contractors. One example is a sleeve with a retaining angle. This installation style utilizes front-flange frames, perimeter sleeves, and continuous angles for the rear. The sleeved louver is slid into the opening from the front. Then, angles are installed to the rear of the sleeve with one leg against the wall. The other leg is fastened to the sleeve with screws. The flange and angle secure the louver tightly to the wall without the need for anchors, saving substantial installation time. Other time-saving installation features include special frames that install directly into various wall systems. One frame of this type is a glazing frame. These frames feature ¼-in.- or 1-in.-thick extensions that are glazed directly into glass framing (Figure 3). No installation angles or fasteners are required. This can be a tremendous time saver in curtain-wall applications.

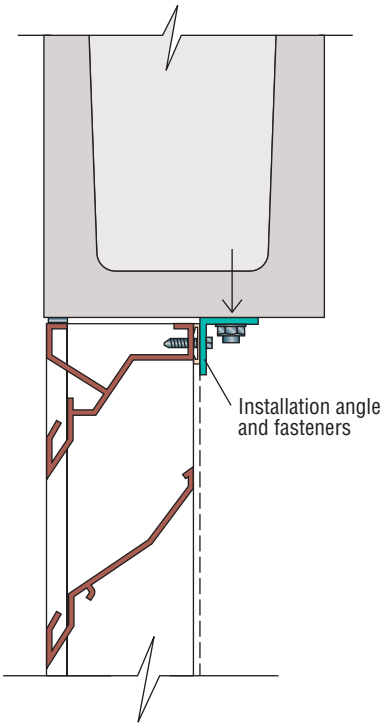

FIGURE 2. Installation-angle attachment.

A louver-installation method is responsible for more than just holding a louver's dead weight in a surrounding structure. It also must secure a louver during high-wind conditions in severe storms. In applications with particularly

high wind loads, it is a good idea to specify the submittal of structural calculations stamped by a registered professional engineer that verify that the installation method is sufficient for the wind-load requirements of the project. Another way to ensure an appropriate installation procedure is to select a louver that bears a third-party certification for wind-load resistance, such as that of Underwriters Laboratories. To earn a listing or approval through such entities, manufacturers must submit structural-test reports and calculations for review. Listings/approvals are for both louver construction and installation. The advantage to specifiers and contractors in using listed or approved louvers is that the strength of the installation is proven by testing, not just mathematical calculations. Also, the installations are standard, which eliminates the need for structural calculations on each project.

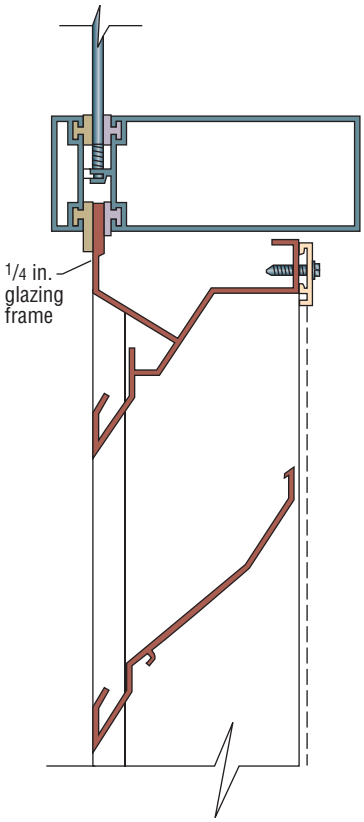

FIGURE 3. Louver installation with a ¼-in. glazing frame.

No matter how effective a louver is in preventing rain penetration, water will find its way into a building if the installation is not properly caulked. First, the joint between the perimeter frame and opening must be sealed with backer rod and caulk. Most louver frames feature a caulking lip that holds backer rods for ⅛- to ¼-in. caulk joints. For wider joints, frame caps around perimeter frames may be required to hold backer rods with larger diameters. In flange-frame applications, apply caulk around the flange perimeter and the wall. In addition to perimeter frames, any other joints in a louver, such as where intermediate frames of multiple-section units meet, should be caulked.

By incorporating the louver features and installation practices mentioned in this article, designers and installers can benefit from easier installation and better performance of their louvers.