

## Tools Needed:

- 9/16" drill bit
- Drill stop collar
- Phillips bit
- Pencil/pen
- Tape measure

## Parts Provided:

- Complete shutter with installation hardware
- 2x toggles per rail
- 2x hex cap screws per rail
- 2x extra plug buttons per rail
- 1x single washer plate per rail

## Introduction:

This document provides general instructions for the installation of the supplemental rail fasteners on storefront shutters. These instructions reference typical conditions and are not intended to cover every situation which will be encountered in the field. Installer's judgment will be needed to apply the following general concepts to varying conditions.

## Instructions:

Storefront shutter rail fasteners are to be supplemented with toggle connections in order to provide a stronger connection back to the structure. Following are general step-by-step instructions to assist in the installation of these connections:

1. Verify the shutter is mounted with #12 self-threading truss head screws in all the holes provided, 12" OC, besides the 1/2" holes at 19" and 21" from bottom for the toggles. Install any missing screws and use the plastic hole plugs.
2. Locate the 1/2" holes provided for the toggle connections and verify the layout of these hole locations are correct. Height of holes from the bottom of the rails should be as shown below in *figure 1*.

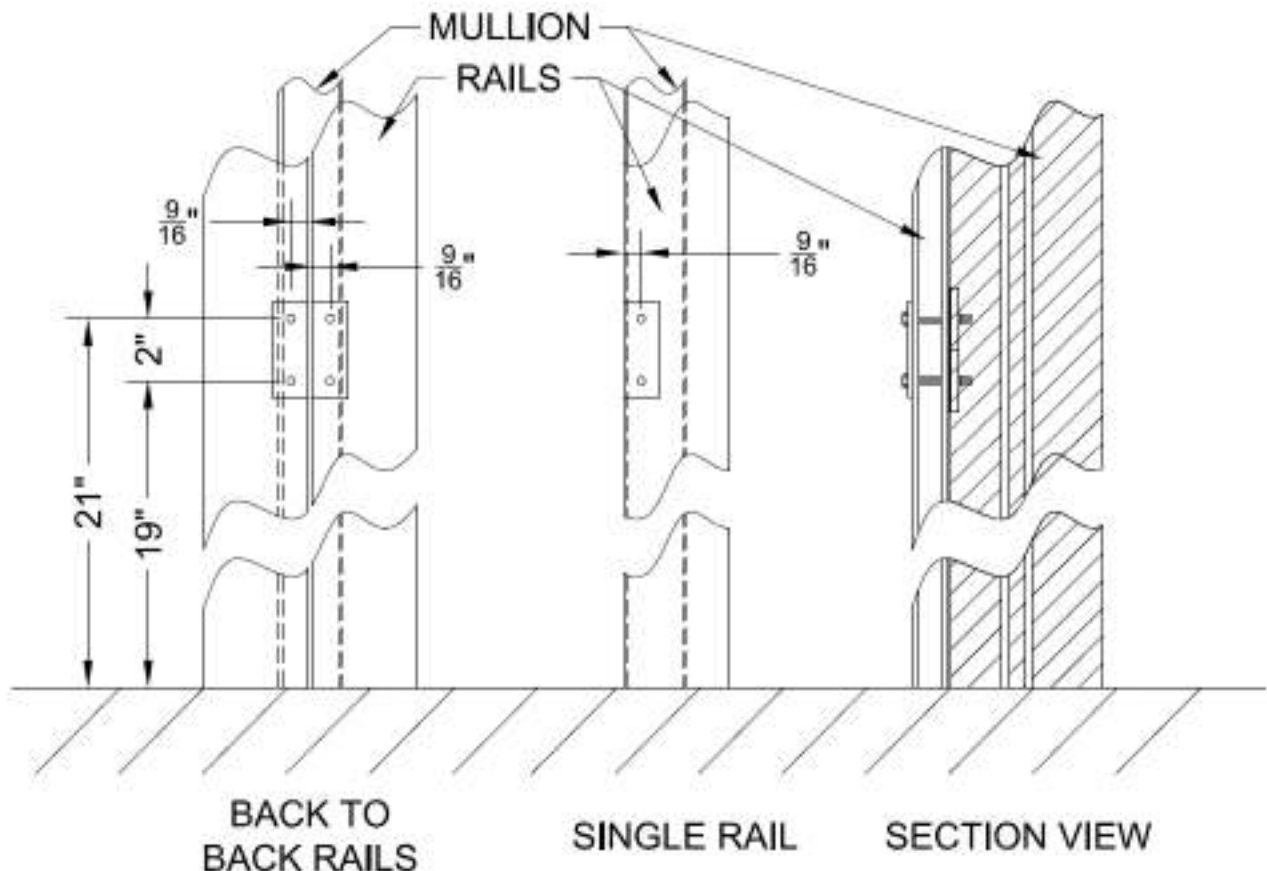


Figure 1: Hole layout

### 3. Notes regarding hole layout:

- a. If toggle holes are not present but an existing hole is less than 2" from where a toggle hole lays out, the toggle hole layout height should be adjusted to use the existing hole(s). Toggle hole to hole 2"oc dimensions are to remain as shown.
- b. Take note of where holes will fall on the structure behind the rails. Make sure holes will be completely within the mullion, and will not drill through the side. If required, holes may be shifted horizontally by no more than 3/16" either direction to accommodate the structure.

### 4. Drill 9/16" diameter holes through the rail, build out (if applicable), and into structure per the layout. Take careful note of the distance of any glass from the face of the rail. DO NOT allow the drill bit to go deeper than the face of the glass. Reference figures 3-8: rails light grey, buildout green, and structure royal blue with glass in light blue.

- a. Recommend the use of a drill stop collar or similar to help prevent hitting the glass.
- b. NEVER mount strap toggles to buildout. If buildout is present, go completely through the buildout and into the structural mullion.

### 5. Install the strap toggles in the holes per the instructions shown in figure 2. Toggles shown yellow in figure 5, 6, 7, and 8 for reference. Verify the ends of the straps are even when the channel is pulled against the structure indicating the toggle is installed properly before pushing cap into place (second image on right).

- a. For rails directly on structure and build out up to 2 1/2" deep, use 6" long strap toggles.
- b. For rails on build out deeper than 2 1/2" use 12" long strap toggles. Toggles may be difficult to install through deep build out. If necessary, holes in rails and rail side only of build out may be widened to 5/8" to aid installation. DO NOT widen holes in far side of build out or structure.

### 6. Install 1/4"-20 hex head screws and plate washer. Plate washer is red on figures 3-8.

- a. Back to back rail conditions are to use the rectangular 2 hole plate washer on both rails in the vertical orientation, as shown in figure 1. Also shown on figure 3 and 6 in red.
- b. Single rail conditions are to use a 2 hole plate washer, as shown in figure 1.



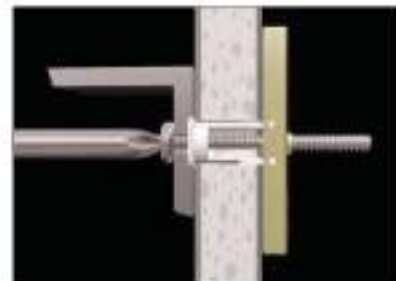
Drill appropriate size hole. Hold metal channel flat alongside plastic straps & slide channel through the hole. Minimum clearance behind wall: only 1/4".



Hold ends of straps together between thumb & forefinger and pull toward you until channel rests behind wall. Ratchet cap along straps with other hand until flange of cap is flush with wall.



Place thumb between straps at wall. Push thumb side to side, snapping off straps level with flange of cap.



Place item over flange. Insert bolt and tighten until snug against item, then stop. Use machine screw or bolt to match thread in metal channel.

Figure 2: Strap toggle installation

# Toggle Bolt Instructions

- c. Rails mounted directly to structure will require 2" long screws.
- d. Rails mounted on build out will require longer screws, see the chart below. Screw length should be roughly 2" + build out depth. If glass is present, screws should not be long enough to reach the face of the glass.

Connection	Length of screw
Direct to Structure	2"
1 x 2 buildout	2.5"
2 x 2 buildout	4"
2 x 4 buildout	6"
2 x 6 buildout	8"

- e. Tighten screws snug but do not over torque.
- f. Push decorative caps onto screw heads. Caps are light purple in *figures 3-8*.

**7. Completed retrofit connection for back to back rails mounted directly to a mullion should look as shown in *figures 3, 4, and 5*. For connection to buildout see *figures 6, 7, and 8*.**

- a. Rails = light grey      b. mullion/structure = royal blue      c. glass = light blue
- d. buildout = green      e. plate washer = red      f. toggle = yellow      g. decorative cap = light purple

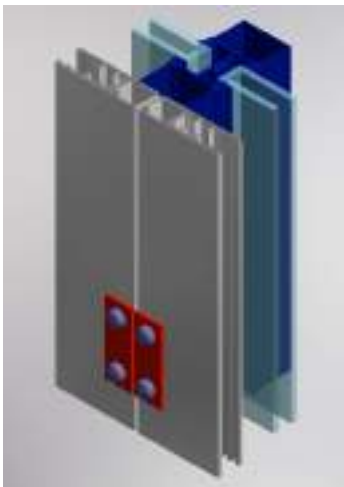


Figure 3: Completed overview

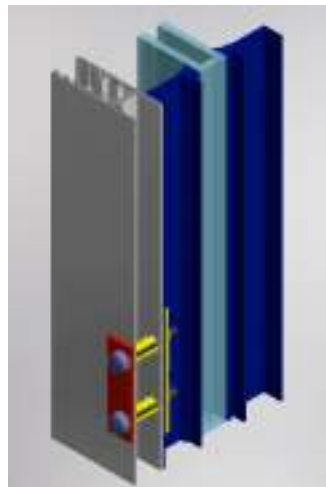


Figure 4: Completed section view

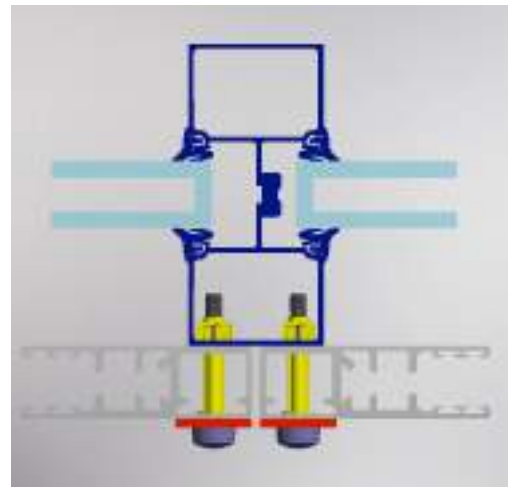


Figure 5: Completed end view

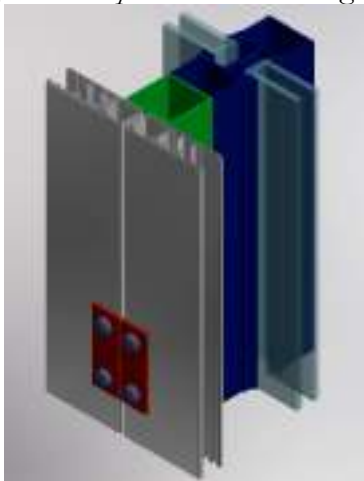


Figure 6: Completed overview with buildout

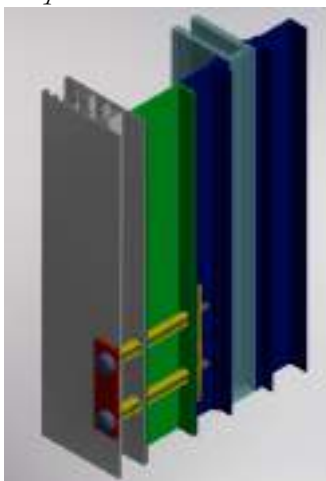


Figure 7: Completed section view with buildout

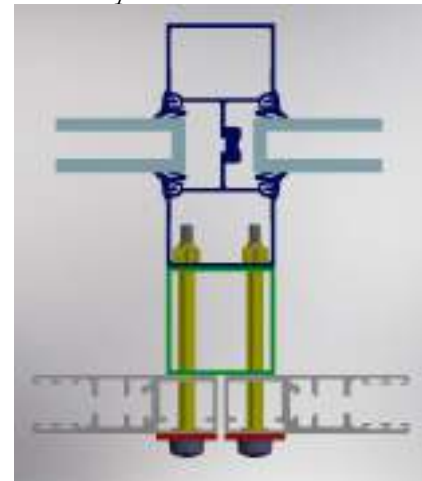


Figure 8: Completed end view with buildout



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