



## Steel Sound Enclosure <sup>®</sup>

### INSTALLATION MANUAL

#### List of tools recommended for use during installation:

- vise grips
- 'c' clamp
- ladder
- electric drill
- drill bits / taps as req'd
- screw drivers
- hammer
- rubber mallet
- pipe clamps
- electric extension cord
- dollies
- pry bar
- shear pliers
- socket set
- saws - all

#### 1. Unloading of Materials

As the truck containing materials is being unloaded, and prior to commencing installation, the Shipping Lists (SL's) and Moduline® Order Sheets (MOS's) furnished by IAC should be used to check that all necessary material has been delivered. For multiple deliveries, the materials to be checked are those having a black dot or asterisk along side the item on the SL or MOS. Most trucks are delivered bulkheaded (panels stacked side to side on 4" sides) unless specified otherwise. Dollies and vise grips will be required for unloading bulkheaded materials.

Immediately report any missing or damaged materials to IAC making sure that these discrepancies are listed on the receipt you sign for the truck driver.

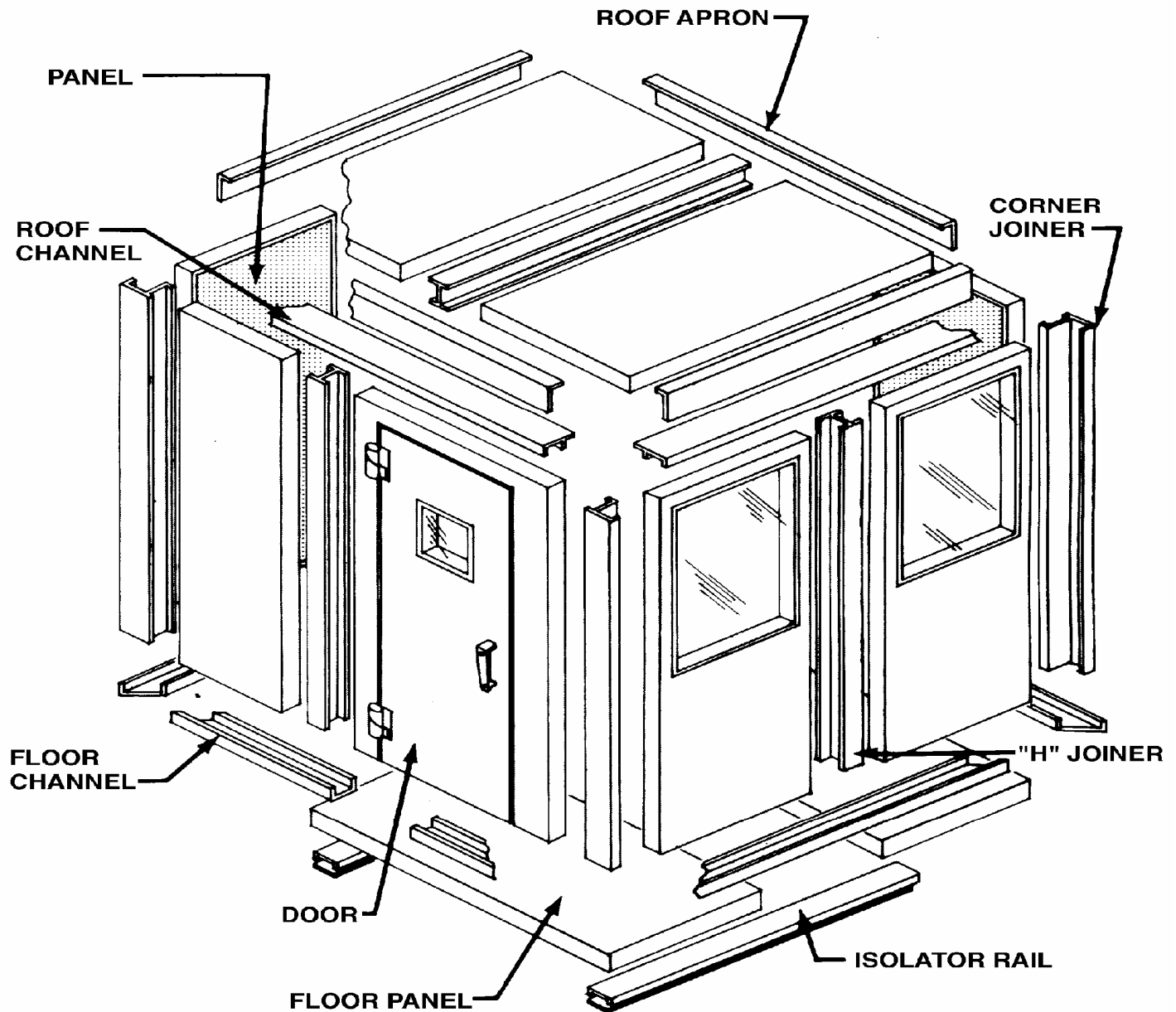
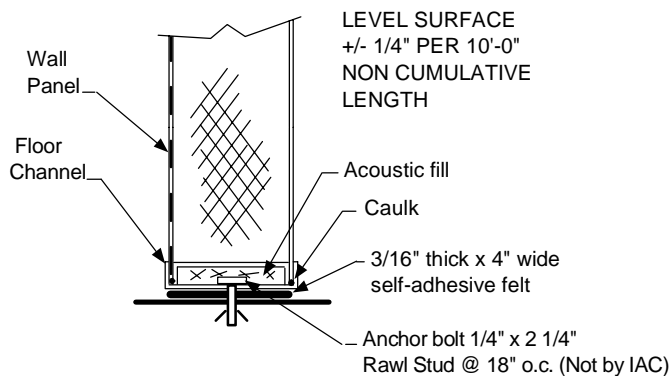


FIGURE 1

## 2. Installation Site Area

- A. All materials should be stored in a dry area. Wall and ceiling panels should be stored on the 4" edge of the panel with a space between panels, and mark number on the edge of the panel readily visible. By storing the panels on edge, scratching of panel surfaces will be minimized during handling.
- B. Customer shall check that all debris and interference's, if any, are removed from the area where the enclosure will be located.
- C. The building floor area should be checked to see that it is within  $\pm 1/4"$  of level in 10'-0" non-cumulative over the area to be covered by the acoustic enclosure. **Figure (2A)** below is a standard detail of floor channel attachment without shims. If the floor is not level, shimming will be required. Please refer to the detail sheet of your drawings for specific details referring to your project.



**FIGURE 2A**

## 3. Floor Panel Assembly

### A. With Isolator Rails

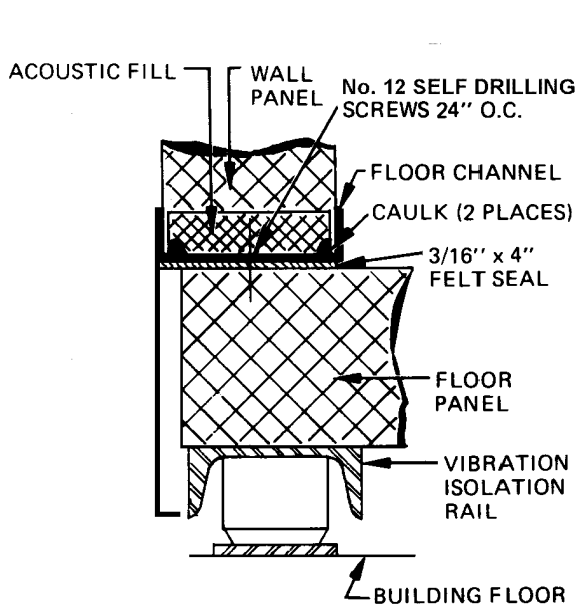
1. Chalk off outside perimeter of room on customer's floor.
2. Place isolators as indicated by the drawings – rechecking for levelness after placement.
3. Position floor panels at right angles to isolators, starting first with outermost floor panel (Figs. 1 and 2). The floor panel will rest on the isolators and not be attached directly to it.
4. The second panel will be positioned along side the first panel and result in the top floor plate overlapping the adjoining peripheral channel (See Fig. 3).
5. Using  $1/4$  in. flat-head screws (1 in. long) attached two floor panels using pre-drilled 18 in. on-center holes.

## B. With Corner Isolators

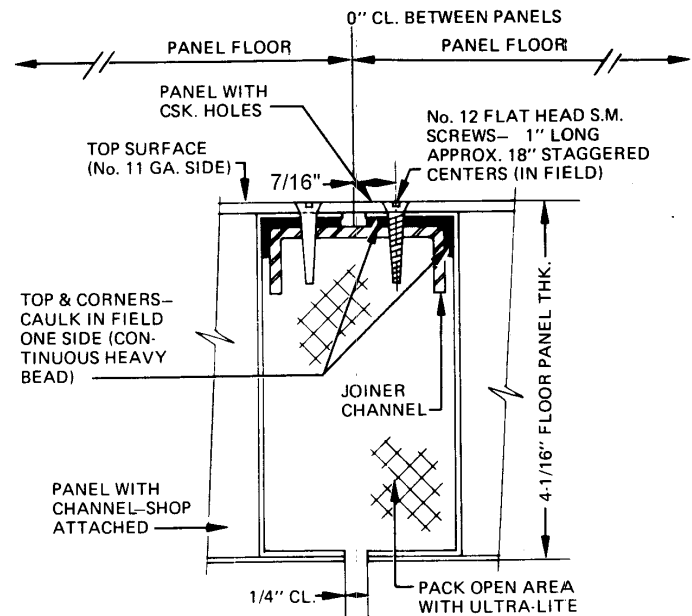
1. Floor panels incorporating corner isolators have the isolators factory-welded at each corner to the underside of the panel.
2. Chalk off the outside perimeter of the room on the customer's floor.
3. Place the floor panel containing the joiner channel in place.
4. Referring to **Fig. 3**, use a heavy bead of caulking as indicated.
5. Install second floor panel butting same to first floor panel so zero clearance exists between panels.
6. Referring to **Fig. 3**, attach panels as indicated with No. 12 flat head sheet metal screws.

## C. Floor Channels With Floor Using Isolator Rails

1. Floor channels per Fig. 2 are to have 3/16 in. x 4 in. felt seal.
2. Place floor channels around the floor assembly perimeter – and using a No. 7 drill bit, drill through floor channel holes into the floor panel. **Check** to see that the floor channels are properly squared off before drilling.



**Figure 2** – Floor and Wall to Floor Panel Joints (Ref MDS 2013 Detail 14).



**Figure 3** – Joiner Channel at Panel to Panel Intermediate Joint.

#### 4. Floor Channel Assembly (See Figure 2A)

- A. Chalk off outside perimeter of room on host facility floor.
- B. Start at a corner and set the floor channel within the perimeter marking in accordance with detail shown and layout provided on installation drawings.
- C. Using a No. 7 drill bit, drill into the concrete foundation. Please refer to the detail sheet of your drawings for specific details referring to your project. Standard spacing is 18" center to center of the anchor bolt, with a depth of 2 ¼". Check to see that the floor channels are properly squared off before drilling.

#### 5. Wall Panel and Joiners Installation

- A. The starting point for assembly of wall panels is predicated on analysis of the existing site condition and in particular, the proximity of building walls to the IAC enclosure. Start at a corner of the enclosure, which will allow all walls to be installed without interference from nearby obstructions (building walls etc.).

Read Section 7 -Installation of last panel, before installing wall panels.

- B. The recessed channels on all four panel edges are to be stuffed with acoustic fill (ultra-lite). Alternatively, this filler can be placed into the H-joiner if found more convenient. Joiners and floor channels must also be caulked as shown prior to panel placement. See **Figure (4)** following:

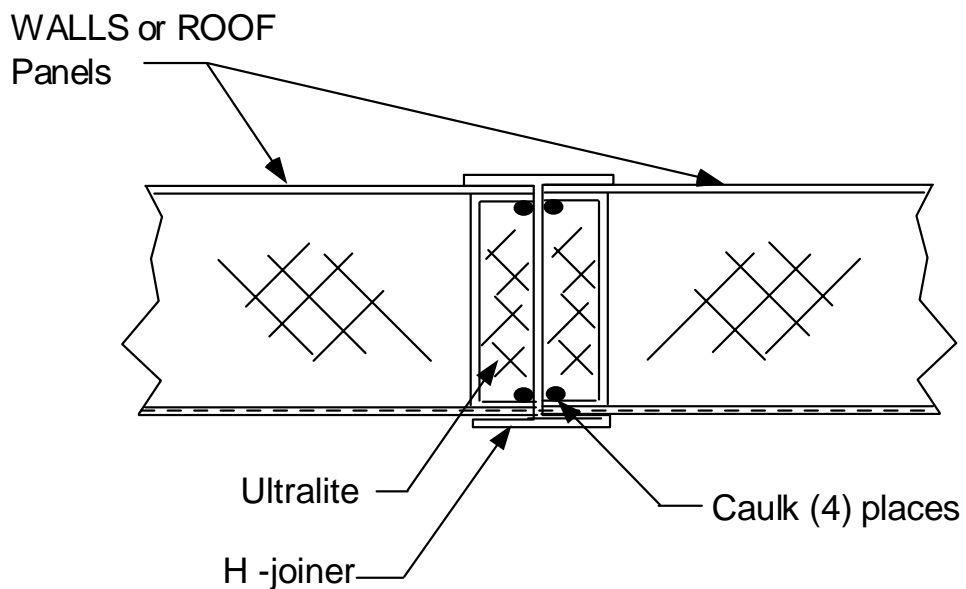
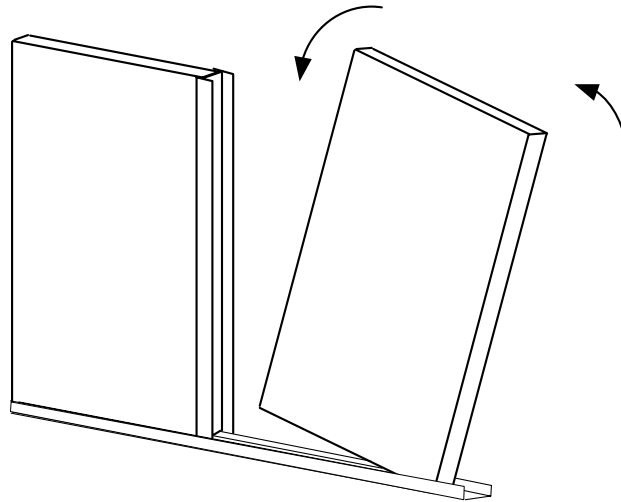


FIGURE 4

- C. Place panel into position by recessing it into the floor channel. By doing so, the panel edge will bite into the caulking previously inserted into the floor channel thus creating an acoustic seal. See **Figure (5)** below.
- D. To expedite installation, it is suggested that joiners be pre-caulked so they are available when required during installation.



**FIGURE 5**

- E. Place corner joint into position over the first panel. **NOTE: All connecting corner joints and H-joiners rest on and are not recessed into the floor channel**
- F. The next panel to be installed should be the panel that runs perpendicular to the first panel thereby, forming a corner of the wall from which the other panels and joiners can be added, repeating the previously outlined procedure.
- G. To stabilize the wall, 'c' clamp or vise grips are used on the top of the panel holding each corner panel to the corner joint.

## **6. Door Assembly**

- A. Please reference attached (2) page **Installation Instructions for IAC Noise-Lock® Cam Seal Doors.**

## 7. Installation of Last Panel

To install the last panel on a room, be sure to use a panel that overlaps the adjacent panel as per **Figure (6)** below. This will enable you to knife the last panel into place. The corner section is left off at this time. To install the corner section, lean out the “last panel” wall about 30 degrees with at least one or two men supporting the wall at this angle. One man then takes the corner section and after lifting it approximately two feet above the bottom of the panel, inserts it on the last panel. Then, start pulling the corner section down making sure that the section is on the adjacent panel. Pull the corner section down all the way to the floor channel or as far as it can be pulled down by hand. Push the wall back into position. If the corner section is not down all the way, it can be tapped down at the top using a mallet and wood block.

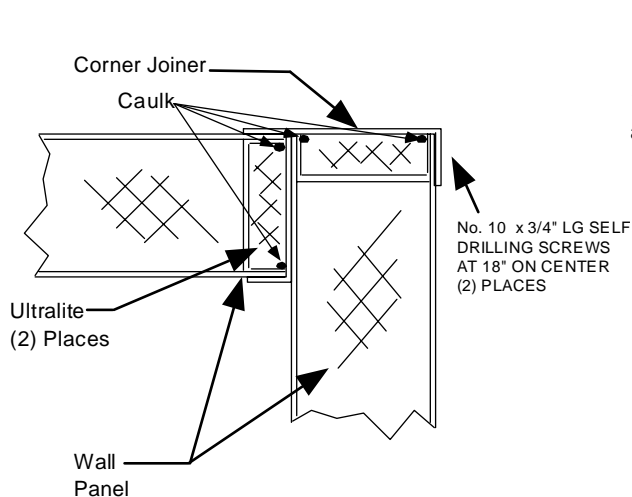


Figure 6

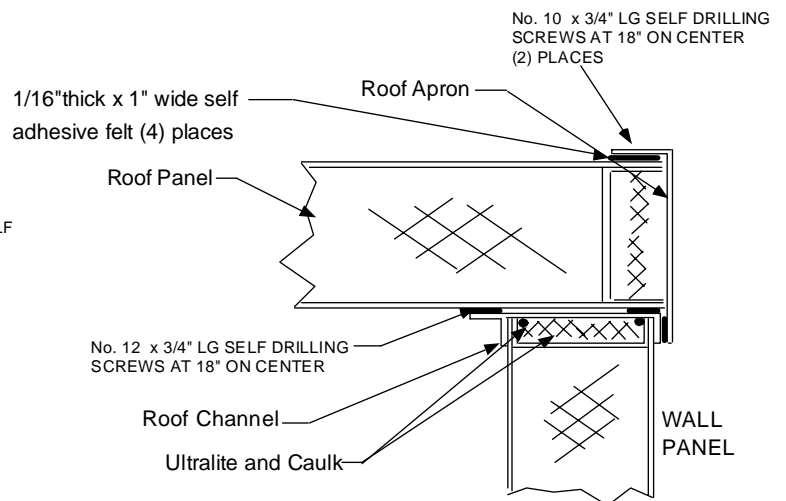


Figure 7

## 8. Roof Panel and Joiners

- A. Place side wall roof channels over entire perimeter of walls. See **Figure (7)** above. Make sure caulking has been applied in two corners and 2 strips of 3/16" x 1" self-adhesive felt has been attached to the upper surface.
- B. Place roof panels on top of the side wall roof channels
- C. After all roof panels and H-Joiners are in place, attach the side wall roof channel to the ceiling panels with # 12 self drilling- 18" o.c. At this time, the corner joiners are to be attached to the adjoining wall panels using #10 self-drilling screws at six places (3 at the top and 3 at the bottom.)
- D. The roof apron with 2 strips of 1/16" x 1" self-adhesive felt attached and corner caps (angle) can now be attached. See **Figure (7)** above.

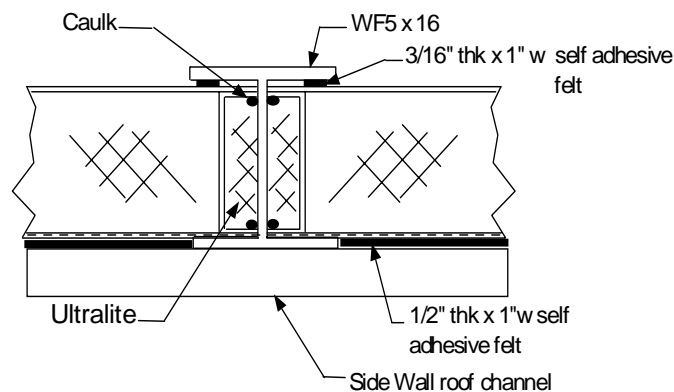
## 9. Long Span Installations

The procedure described earlier depicted the techniques for installing a room ceiling in which the span was 12'-0" or smaller and required only one panel length to bridge the span. As a result, the basic structural integrity of the panel itself spanning across the two room walls provides the necessary support.

Many times the ceiling span is such that two panels or more panel bays are required. For most cases, WF5 x 16 Beams are adequate to accommodate the structural loading.

Please refer to the installation drawings concerning specific project requirements when larger beam sections are required to accommodate loadings. Three items that require special attention in WF5 x 16 installations:

1. Use of a thicker felt on the roof channel in lieu of 1/16" thick previously depicted. Following **Figure (8)** below, 1/2" thick x 1" wide self-adhesive felt should be attached to two sides of the wall roof channel except in the area where the WF5 x 16 beam will rest.
2. 3/16" thick x 1" wide self-adhesive felt must also be installed at two places as shown, full length under the top flanges of the beam.
3. The roof apron is installed between the beams and not over the beam.



**FIGURE 8**

## 10. Field Cutting of Panels

The cutting of panels in the field may be necessary due to field conditions or to avoid pipe or duct penetrations. Field cutting also allows standard panels to be supplied without having to predetermine the exact location of openings or notches. IT IS HIGHLY RECOMMENDED THAT PIPES, CONDUITS, AND OTHER PENETRATIONS BE INSTALLED **AFTER** THE INSTALLATION OF THE ACOUSTIC ENCLOSURE. IT IS ACOUSTICALLY SUPERIOR, AND EASIER, TO DRILL A HOLE THROUGH THE PANEL FOR PENETRATIONS THAN TO NOTCH A PANEL AROUND A PENETRATION IF IT'S BEEN PREVIOUSLY INSTALLED.



#### **A. Notching of Panels**

- Locate and mark off exactly where a notch is to be provided.
- using a saws-all or other metal cutting tool cut through the panel channel and solid side of the panel face sheet.
- Complete cut through perforated face sheet and panel channel.
- Using internal panel channels, (which are slightly narrower than floor channels) frame out the notch, if required. Panel channels can be attached to the panel using self-drilling screws, pop rivets or other means available at the site.

#### **B. Cutting Rectangular openings in the middle of the panel**

- locate and mark off exactly where the opening is to be provided in the panel
- use a large drill bit; drill through the solid side of the panel face
- cut the remainder of the opening using a saws-all or other metal cutting tool.
- repeat the procedure above on the perforated face.
- Frame out the opening as previously described above for notched panels.

#### **C. Cutting for Circular Openings**

- for circular openings, a drill can be used for small openings, a saws-all or other metal cutting tool for larger holes using the same procedure as outlined above.
- to frame out a circular opening, if desired but not necessary, a perforated or solid collar can be used. This collar should be slightly longer than the panel thickness and the flange panned over on both sides. Caulk as required.

#### **D. Flashing of Cutouts**

In cases where the field cut opening is larger than or does not match the profile of the penetration, (i.e. - wide flange beams), light gauge sheet metal closure pieces should be trimmed to fit and be screwed to each side of the panel. Voids between penetrations must be filled with insulation. Caulk all seams when completed.

**\*\*\*\*NOTE: Penetrations must always be caulked at all seams**

## CAUTION

PROPER AND PRECISE INSTALLATION IS CRITICAL TO THE PERFORMANCE OF HIGH PERFORMANCE ACOUSTICAL DOORS AND FRAMES. THESE INSTALLATION INSTRUCTIONS SHOULD BE STUDIED AND CLOSELY FOLLOWED. **DO NOT** ATTEMPT TO INSTALL WITHOUT REFERING TO THE SPECIFIC INSTRUCTIONS FOLLOWED HEREIN.

- If doors are fully assembled in the factory and tested operationally before shipment to insure quality and performance.
- As thousands of others, the door will function smoothly and trouble-free while providing high acoustic performance provided it is properly installed. Installation procedures and drawings are included in this manual and must be followed precisely to ensure an effective door installation.

## INSTALLATION PROCEDURES

- 1. Preparation** - Clear all debris and foreign matter from around the opening in the wall and floor. Prior to uncrating, check the rough opening size for height, width, square and wall thickness. Door is designed to be installed on a smooth finished floor.
- 2. Pre Hung Assembly** - Each leaf and frame is factory fitted and match marked to insure proper alignment, seal and operation. **DO NOT MIX - MATCH ASSEMBLIES.**
- 3. Uncrating** - Carefully open crate and or box. Check swing. If correct remove banding. Open leaf approximately 120 degrees, lift off hinge and set aside. Remove plug buttons and temporary fasteners and "separate" frame sections. (see Isometric) The assembly is now in (3) pieces, the leaf, male frame, and female frame.
- 4. Setting Frame in Moduline® Enclosure-** Plumb and align female and male frame sections. When together, the width dimension should be approximately 3 13/16" wide all around. Place the frame in the H-Joiner as you would a panel. **Do Not Screw In.** Carefully, replace the door leaf onto the cam lift hinges. Verify and check that all seals on door contact seals on frame. It is very critical that the wall which the door is installed in is plumb and level. Shim frame if required. Begin with a light gauge metal strip and place

between H-Joiner and frame on one side only. Increase or decrease thickness as required until a positive seal connection is made. Once a plumb and level door is obtained, check swing of door to make sure that hinge movement occurs without restraint. Using self-tapping screws; screw H-Joiner to frame @ 18" o.c. Follow directions below concerning final adjustment. Replace plug buttons.

**5. Setting Frame in Building Rough Opening** Plumb and align female frame section hinge side in opening in accordance with tolerances shown. Fasten with one fastener at each hinge, careful not to dimple frame. **DO NOT INSTALL MALE FRAME AT THIS TIME** Carefully mount leaf and close. Check seal and shim frame as required to obtain a complete seal at head and jambs. You now have simulated the factory pre-hung position. Mark accordingly. Carefully remove door leaf; fasten latch side of frame using one fastener at top and bottom opposite hinge location.

**6. Final Adjustment** - Mount leaf, open and close to insure proper seal. If okay, mount additional hardware. Adjust bottom seal by opening leaf and loosening the two screws on the door edge allowing seal to drop (see detail 1 below) Open and close door two or three times. Open and tighten 2 screws as required. If operation is satisfactory, replace plug button and caulk exterior joint where frame meets wall.

