

How to Install AcoustAffix™ Surface Mount Ceiling Panels

These instructions will install AcoustAffix™ Surface Mount panels (2012WH, 2012BL, 2012 field paintable) using any one of the following three methods:

- Armstrong All-in-one Self-stop Fastener (used for attaching panels direct to deck or to walls)
- Armstrong Truss Mounting Kit (used for attaching panels to an open truss system)
- Adhesive (used for attaching panels to concrete, plaster or drywall)

ADDITIONAL INSTALLATION COMPONENTS:

- 12' HD Drywall Main Beam
- QuickStix Uptight Clip (QSUTC)
- Steel Furring Channel (alternate suspension – not sold by Armstrong)
- Wood Furring (alternate suspension – not sold by Armstrong)

1. GENERAL INFORMATION

1.1 Product Description

AcoustAffix Surface Mount panels for ceilings are 3/4" thick, available in nominal size of 2' x 4', and offer acoustical absorption when installed in an exposed structure environment. Standard panels are available in Black, White, and a scrimmed panel with no finish. The scrimmed panel can be painted post installation to directly match the deck.

Field paintable panels have square edges on all four sides. On factory painted panels the long edges of the panel are square and the short edges are reverse tegular.

1.2 Safety

During the installation be certain that the work site is well ventilated, and avoid breathing dust. If high dust levels are anticipated during installation such as with the use of power tools, use appropriate NIOSH designated dust respirator. All power cutting tools must be equipped with dust collectors. Avoid contact with skin or eyes. Wear long-sleeve, loose-fitting clothes, gloves, and eye protection.

1.3 Warranty

Failure to follow the Armstrong Ceilings recommended installation instructions in effect at the time of installation will void the product and/or ceiling system warranty.

1.4 Surface Finish

AcoustAffix panels (Black and White only) feature a finished latex paint on the face and panel edges.

1.5 Storage & Handling

To avoid damage, the ceiling panels should be stored in a dry interior location in a flat position and should remain in cartons prior to installation.

1.6 Site Conditions

Building areas to receive ceilings shall be free of construction dust and debris.

AcoustAffix panels with factory paint finish can be installed in conditions between 32° F (0° C) and 120° F (49° C) and in spaces before the building is enclosed where HVAC systems are cycled or not operating.

AcoustAffix field paintable panels have standard humidity resistance and should be installed in areas where the building is enclosed and the HVAC is continuously functioning.

These products are not recommended for exterior applications where standing water is present (such as pools), or where moisture will come into direct contact with the ceiling.

1.7 HVAC Design & Operation, Temperature & Humidity Control

It is also necessary for the area to be enclosed and for the HVAC systems to be functioning and in continuous operations for the life of the product. All wet work (plastering, concrete, etc.) must be complete and dry. AcoustAffix panels cannot be used in exterior applications.

1.8 Cleaning/Maintenance

Use a clean, dry, soft, white cloth to wipe off any dust or fingerprints.

2. DESIGN AND INSTALLATION CONSIDERATIONS

2.1 Directionality

AcoustAffix™ panels have three different installation methods. For all installation methods, please note the following in regard to directionality. Panels are designed to be installed in single panel width rows. All panels can be butted edge-to-edge within each row in the case of all installation methods. Rows can have panels join short edge-to-short edge (23-3/4", nominal 2' wide) or long edge-to-long edge (47-3/4" nominal 4' wide). Due to the directional finish of the product, Armstrong Ceilings does not recommend butting short edges to long edges.

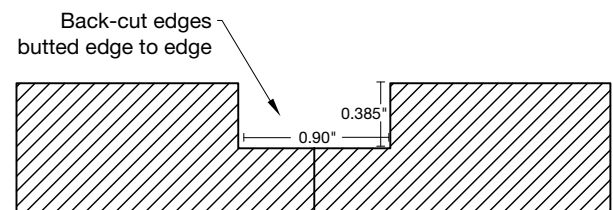
2.2 Edges

Field paint-able panels (item 2012) have square edges on all sides.

Factory painted panels (items 2012WH/BL) have square edges on the 4' sides but have back-cut edges along the 2' sides.

Because of this back-cut, butting the 2' sides of factory painted panels edge to edge will result in the visual of a notch that is 0.385" x 0.90" (**illus. 2.2**).

illus. 2.2



2.3 Exterior Installations

AcoustAffix panels are not intended for exterior use.

2.4 Direct Attachment to Deck, Structure or Wall

These panels can be installed on ceilings of any slope or on walls when following the suspension and fastening instructions in this document.

2.5 Plenum

Design limitations require relatively clear deck areas and are not suitable for plenum spaces with services or obstructions that interrupt the attachment surface.

2.6 Fire and Sprinklers

AcoustAffix panels, as with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern, or possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Please consult a fire protection engineer, NFPA 13, and the local codes for guidance where automatic fire detection and suppression systems are present.

2.7 Attachment Strength Requirements

Overall system weight will combine the panels and the suspension system.

- Panels weigh 1lb/SF
- HD8906 Drywall Grid weighs 0.3lbs/LF
- Metal or wood furring (refer to manufacturer)

Fastener connections of the suspension system to building structure are specified by the contractor and must follow the manufacturer's instructions and reference code.

2.8 Product Durability

AcoustAffix are soft mineral fiber panels and are not recommended for installations below 6' above the finished floor, or in high-impact locations such as gymnasiums.

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3. ACCESSORIES FOR USE WITH ACOUSTAFFIX™ PANELS

3.1 Fasteners

Armstrong Ceilings provides installers with two types of fasteners. Use the All-in-one Self-stop Fastener, described in Section 3.2, for direct mounting to furring or drywall grid. Use the Truss Mounting Kit, described in Section 3.3, for mounting to trusses.

System performance is based on using the appropriate fastener at the correct spacing. Armstrong Ceilings does not warrant the use of any other types of fasteners for AcoustAffix installations.

3.2 All-in-one Self-stop Fastener

All-in-one Self-stop fasteners (**illus. 3.2**) are designed to stop as soon as their collars come in contact with furring or drywall grid, thereby allowing the head of the screw to rest snug against the face of the panel without the risk of countersinking. The same fastener is used for Armstrong® Drywall Grid or 20- to 25-gauge furring channel, or wood furring. The screw's oversized head acts as a built-in washer once properly installed.

3.3 Truss Mounting Kit

The Truss Mounting Kit contains threaded rod and weld nuts (**illus. 3.3**). The threaded rod is designed to pierce panels and be capped on both ends by the weld nut. The weld nut's head acts as a washer once properly installed. Each kit contains 15 threaded rods and 30 weld nuts. See Section 7 for installation steps.

3.4 QSUTC (QuickStix Uptight Clip)

Installations using Armstrong Drywall Grid require the QSUTC for attachment to deck or wall (**illus. 3.4**). The minimum distance from the deck or wall to the face of grid when using the QSUTC is 1-3/4" and can adjust up to 5-1/2" to account for unevenness in the surface.

- Each QSUTC requires secure attachment to structure (specified by contractor based on deck material) and two framing screw attachments from the clip to the grid.

For Flat Installations:

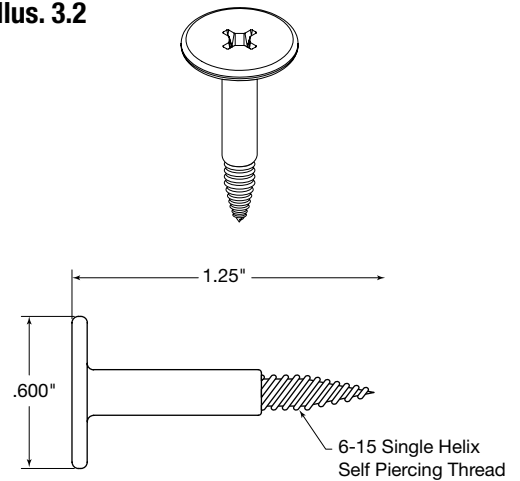
- Each 12' main beam requires 3 QSUTC attachments to deck spaced no further than 6' O.C.
- All drywall mains must have a QSUTC attachment within 12" of each and within 3" of the fire expansion notch

See Section 11.1 for attachment spacing requirements for sloped and wall installations.

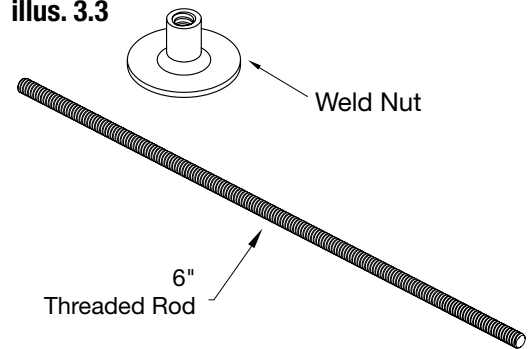
3.5 Direct Apply Accessories

The recommended adhesive for direct apply panel installations is Titebond® GREENchoice Acoustical Ceiling Tile Adhesive. See Section 8 for further information.

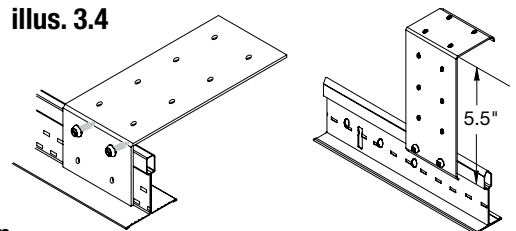
illus. 3.2



illus. 3.3



illus. 3.4



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4. INSTALLING SUSPENSION SYSTEM FOR ALL-IN-ONE SELF-STOP FASTENERS

4.1 Suspension System Overview

AcoustAffix™ panels are required to be screw-attached to Furring or Armstrong® Drywall Grid. The use of furring or grid helps to increase the product's overall NRC performance.

4.2 Furring Recommendations

Furring for AcoustAffix panels can be either metal or wood. For steel channel/hat channel, Armstrong Ceilings recommends 25-gauge 7/8" furring, however, ranges of 20- to 25-gauge metal furring can be used. For wood furring, 3/4" x 1-1/2" or 3/4" x 2-1/2" is recommended. Furring layout will be based on panel orientation.

The furring must be attached to the structure in a method that supports the full weight of the panels. Armstrong Ceilings does not provide guidance regarding the attachment of furring to structure and is therefore not liable for any damage or installation complications that may occur from an improper installation of furring. For guidance on the attachment of the furring to structure please refer to the manufacturer's instructions.

4.3 Armstrong Drywall Grid Recommendations

All installations using Armstrong Drywall Grid will require 12' Drywall Grid mains (HD8906) and Uptight Clips (QSUTC). For side-by-side installations, you will also need 40" Drywall Grid cross tees spaced 48" on center between the two main beams. A row of 48" Drywall Grid cross tees (XL8945P) will be installed at the midpoint of the 40" cross tees to provide attachment points for the center row of hardware. End-to-end installations will only require Drywall Grid main beams spaced 16" apart, and Uptight Clips.

4.4 Drywall Grid or Furring Layout

The layout of the suspension is dependent upon the desired panel layout. Panels are installed in single panel width rows with the edges butting together long edge-to-long edge (nominally 4' wide) or short edge-to-short edge (nominally 2' wide).

NOTE: The spacing and straightness of structural components in the deck may vary so it is recommended to use an alignment method that can operate independently from these components (e.g. laser, chalk line). The drywall grid or furring should be leveled to within 1/4" over 10' (ASTM C636) to ensure a satisfactory visual.

Make sure at least 6" of clearance is given between the outside edges of the and the nearest possible obstruction as the panels, when installed, will extend 4" beyond the edge of the suspension and may interfere with obstructions if sufficient clearance is not given.

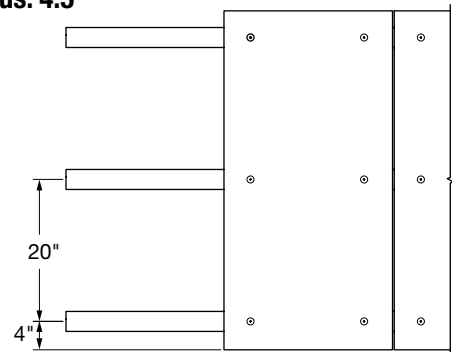
4.5 4' (nominal) Wide Rows

Rows with panels butting long edge-to-long edge require three rows of suspension. Suspension is installed perpendicular to the length of the panels. Suspension must be spaced 4" On Center (O.C.) in from the desired short edges of the panels, with a center row of suspension installed at the midpoint of the panels, leaving 20" O.C. spacing between the three rows. Where the rows start and end, the suspension should be cut 1" - 2" short of the desired panel edges to avoid visibility of the suspension (**illus. 4.5**).

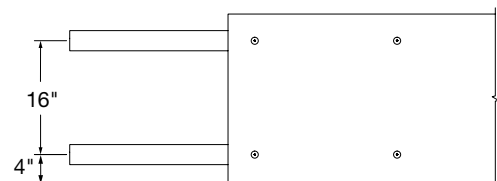
4.6 2' (nominal) Wide Rows

Rows with panels butting short edge-to-short edge require two rows of suspension. Suspension is installed parallel to the length of the panels. Suspension must be spaced 4" O.C. in from the desired long edges of the panels, leaving 16" O.C. spacing between the two rows. Where the rows start and end, the suspension should be cut 1" - 2" short of the desired panel edges to avoid visibility of the suspension (**illus. 4.6**).

illus. 4.5



illus. 4.6



5. INSTALLING PANELS WITH ALL-IN-ONE SELF-STOP FASTENERS

5.1 First Panel and Alignment

AcoustAffix™ panels are installed in single panel width rows, butted against each other with no reveal. Because panel edges are butted against each other, the alignment of the first panel determines the straightness of the rest of the panels within the row. Alignment and even spacing in relation to the suspension is critical. The spacing and straightness of structural components in the deck may vary so it is recommended to use an alignment method that can operate independently from these components (e.g. laser, chalk line).

5.2 Panel Attachment

For all panel layouts, the same spacing and fastener attachment rules apply:

- Each full-size panel requires six All-in-one Self-stop Fasteners
- Exact fastener spacing is based on alignment with suspension but should target 20" O.C. between fasteners along the length of the panel and 16" O.C. between fasteners across the width of the panel
- Each fastener is placed roughly 4" in from the nearest panel edge (between 3" and 5" is acceptable)
- There must be at least 2" of space between panel ends of separate rows

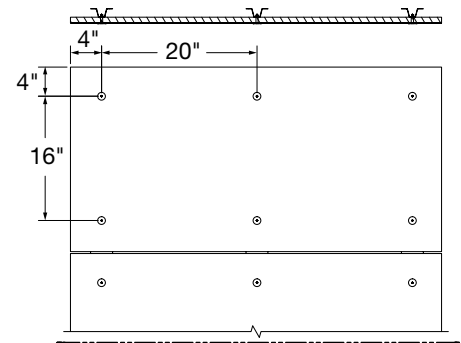
5.3 Panel Attachment – 4' (nominal) Wide Rows

If panels are being butted up long edge-to-long edge, three rows of suspension attached to the deck 20" (O.C.) is required. This arrangement creates the least amount of net sag, and alternative spacing of the suspension is not recommended (**illus. 5.3**).

Once properly aligned, use self-stop fasteners to attach the first panel to suspension. The proper installation of the fasteners results in an installation where the heads of the fasteners are tight against the panel.

Each panel requires six fasteners. Each fastener is to be placed roughly 4" inwards from the closest edge (a range of 3" to 5" is acceptable.)

illus. 5.3



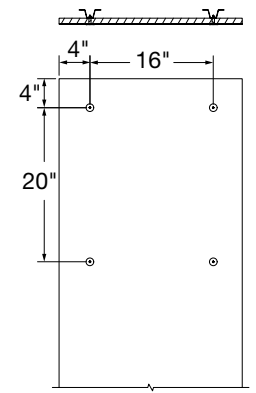
5.4 Panel Attachment – 2' (nominal) Wide Rows

If panels are being butted up short edge-to-short edge, two rows of suspension attached to the deck 16" O.C. is required. This arrangement creates the least amount of net sag, and alternative spacing of the suspension is not recommended (**illus. 5.4**).

Once properly aligned, use self-stop fasteners to attach the first panel to suspension. The proper installation of the fasteners results in an installation where the heads of the fasteners are tight against the panel.

Each panel requires six fasteners. Each fastener is to be placed roughly 4" inwards from the closest edge (a range of 3" to 5" is acceptable.)

illus. 5.4

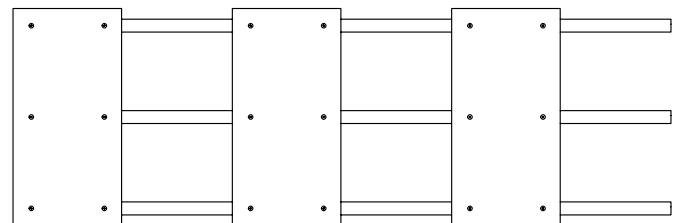


5.5 Panel Attachment – Stand Alone or Alternate Panel Spacing

AcoustAffix panels can also be used for spot acoustical treatment. This type of installation would be similar to those described in Sections 5.3 and 5.4 but with the rows in short sections (**illus. 5.5**).

Additionally, spacing between panel edges within a row can vary, but will require individual alignment of each panel or the use of a temporary spacer before attachment.

illus. 5.5



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For all panel layouts, the same spacing and fastener attachment rules apply:

- Each full-size panel requires six self-stop fasteners
- Exact fastener spacing is based on alignment with furring but should target 20" O.C. between fasteners along the length of the panel and 16" O.C. between fasteners across the width of the panel
- Each fastener is placed roughly 4" in from panel edges (between 3" and 5" is acceptable)
- For parallel rows, there must be at least 2" of space between panel ends of separate rows

Make sure at least 6" of clearance is given between the outside edge of the last suspension and the nearest possible obstruction as the panels, when installed, will extend 4" beyond the edge of the suspension and may interfere with obstructions if sufficient clearance is not given.

5.6 Field Cutting

AcoustAffix™ panels can be cut to length, as long as the panels follow the same attachment rules, and the panels are supported within 4" of the edges.

If the field-cut edge is placed against a factory painted edge then the bottom of the cut edge should be painted.

5.7 Touch-up Paint Recommendations

All field-cut edges should be colored to match the factory finish.

6. ALTERNATE INSTALLATION OPTIONS:

6.1 Attachment to I-Beam

AcoustAffix is mounted to I-beams using metal furring channel and the All-in-one Self-stop Fastener. Panels must be installed in single panel height rows, with the 2' edges of each panel end to end. Panels can be installed with ends butted up or installed with a reveal between ends.

6.2 I-Beam Requirements

- The I-beam web must be tall enough to accommodate two rows of furring spaced at least 4" O.C. up to a maximum of 16" O.C. running the same direction as the beam.
- Fastener connections of the furring channel to the I-beam structure are specified by the contractor and must follow the manufacturer's instructions and reference code.

6.3 Installation Steps:

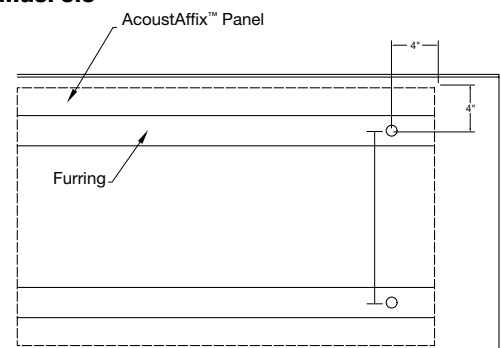
Spacing of the furring will be based on the panel size and necessary fastener locations. All panels require four fasteners, one in each corner, within 4" of each edge. Furring must be installed accordingly so that it is behind each fastener location (**illus. 6.3**).

Once your furring is installed, make sure you have sufficient clearance to install your panel between the flanges of the I-beam. Measure the space between the flanges of the I-beam to determine if the panels need to be cut to size. It is recommended that the panel have at least 1" of clearance at the top since I-beam flanges taper inwards in most cases. If cuts are required the panels can be cut with a utility knife.

Once your panels fit, you can install them using the self-stop fasteners. When installing AcoustAffix panels for this application, only four fasteners are needed for each panel when following the spacing detailed above.

When panels are cut, they still must be supported with a fastener located near each corner of the panel, approximately 4" in from each edge. You can either rest the panels on the bottom flange of the I-beam as a method of aligning panels end to end, or, if installing the panels up off the flange, use a laser or string line to ensure a level installation. Panel ends are intended to be butted up against each other for the most pleasing visual.

illus. 6.3



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7. INSTALLING PANELS WITH TRUSS MOUNTING KIT

7.1 Attachment to Truss

It is recommended to have two installers for truss installations. AcoustAffix™ panels can be mounted to flat trusses using the Truss Mounting Kit. The panels must be installed in pairs and cover both sides of the truss. Panels must be installed in single panel height rows, with the 2' edges of each panel end to end. Panels can be installed with ends butted up or installed with a reveal between ends.

7.2 Truss Requirements:

- The truss must have a horizontal flange on the bottom edge greater than the width of the panel.
- It must be no smaller than 6" in height between top and bottom flanges.
- Webs/Braces of the truss can be no more than 4" (max dimension of air gap between panels that truss fastening kit will accommodate) (**illus. 7.2**).
- It must have a sufficient number of webs or braces for the panels to be fastened against. It is recommended that there are at least two webs or braces contacting each pair of panels when installed, thereby eliminating any risk of movement (**illus. 7.2-1**).

7.3 Installation Steps:

Make sure you have sufficient clearance to install your panels between the flanges of the truss. The panels should rest on the bottom flange of the truss and have at least 1/2" of clearance between the panel and the top flange of the truss when pressed up against the webs or braces. If your panel does not fit, you must cut it down to size.

Once the panels are cut to fit, pre-mark the locations for your truss mounting kit onto the panel.

Four mounting kit assemblies (2 weld nuts, 1 threaded rod) are required per panel. It is required to have one assembly located near each corner of the panel, approximately 4" in from each edge (**illus. 7.3**).

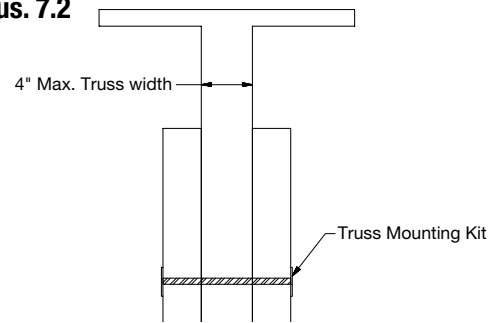
With your holes marked, screw one weld nut onto the threaded rod such that it sits flush with the end of the rod.

Once in place, crimp the base of the weld nut so it cannot be unscrewed. Do this for all needed assemblies.

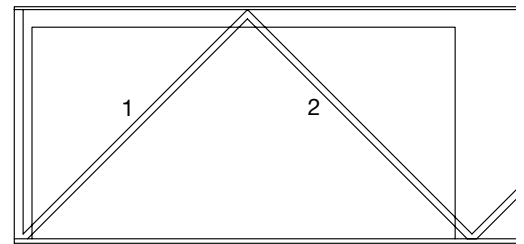
Next, move your panels into the truss (one on each side of the web) and align your two panels together. With the marked side of the panel facing you, take your threaded rod/crimped weld nut and tap the uncapped side through the panel, the air gap between panels, and out through the panel on the other side (**illus. 7.3-1**).

Once through, cap off the other side with a weld nut by hand tightening it against the panel. Use pliers to cut off the excess threaded rod (**illus. 7.3-2**).

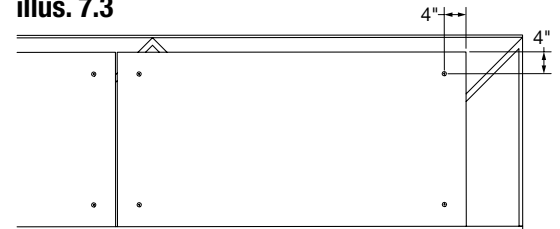
illus. 7.2



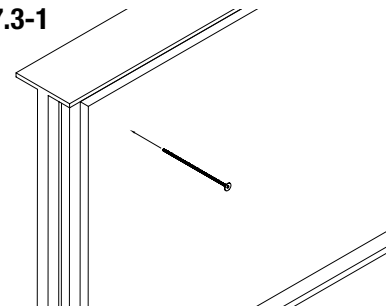
illus. 7.2-1



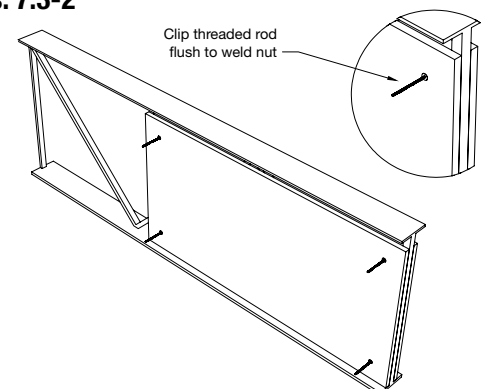
illus. 7.3



illus. 7.3-1



illus. 7.3-2



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8. ADHESIVE INSTALLATION CONSIDERATIONS

8.1 Area Preparation:

Surfaces must be dry and free of dust, grease, oil, dirt or any other material that may deter adhesion. If the paint is flaking or peeling it must be removed. Existing finish paint must be well-bonded and not flaking or peeling.

8.2 Painted Surfaces:

Avoid applying to a newly painted ceiling. Glossy painted surfaces must be abraded. For painted or sealed surfaces, install a small test area and observe after 12 hours. For plaster ceilings, plaster must be painted, non-chipping, and smooth.

8.3 Surface Flatness:

To ensure a finished installation that is level, it is recommended that the ceiling surface for attachment be free of irregularities and be level within 1/4" in 12'.

9. INSTALLING PANELS WITH ADHESIVE TO DRYWALL/CONCRETE/PLASTER

9.1 For drywall, concrete, and plaster installations with AcoustAffix™ panels, reference the follow sections. The Titebond® GREENchoice Acoustical Ceiling Tile Adhesive provides a secure bond and does not require any supplemental mechanical attachment as long as these instructions are followed.

9.2 Panels should have at least a 1/4"-3/8" reveal between edges. This will help alleviate slight differences in the levelness of adjacent panel faces.

9.3 Adhesive should be applied per the following guidelines:

- Your glue lines should be 20" long and 4" wide (**illus. 9.3**).
- Maximum distance from glue line end to panel edge: 2"
- Maximum distance from glue center line to panel edge: 6"
- Maximum distance between center line of the glue rows: 18"

9.4 Utilizing the trowel, ensure that the adhesive is uniformly spread to cover your specified area.

9.5 Once in position, push the panel against the ceiling applying even hand pressure to the board where the adhesive is located in the center first, followed immediately by the edges of the panel. By attaching the center first, you can still pivot the panel slightly left or right before adhering the edges. This ensures that the panel can be aligned correctly first before the edges are solidified into place. Avoid excessive pressure to minimize panel flexing that will disturb the previously pressed areas of adhesive and result in release of the adhesive.

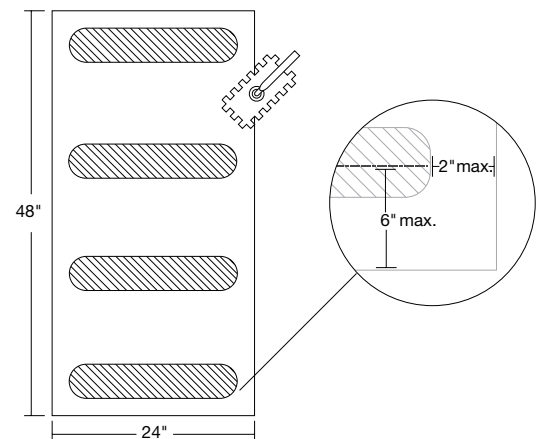
9.6 Any slight adjustments to the panel placement should be done immediately to not weaken the adhesive bond once it has started to set. Once the panel is evenly pressed into position, the adhesive should provide an immediate bond to hold the panel in place while the adhesive sets.

9.7 Press a sponge float across all areas of the panel where glue was applied to ensure all glue spots and lines are properly compressed and adhere to the deck. Lastly, measure adjacent panel edges to check levelness as panels are installed; the levelness of the finish face of adjacent panels should be within 1/8" to ensure a satisfactory visual

9.8 For wall installations, follow steps **9.1** – **9.6** and apply the same methods in the vertical. Use a square or straight edge to confirm that the face of the panels are flush within 1/8" to ensure a satisfactory visual. The bottom edge of the panel should be at least 6' from the floor to avoid damage.

NOTE: Panel creep may occur as the glue is setting. Panels should creep no more than 1/8" during installations.

illus. 9.3



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10. FIELD PAINTING

Field Painting Specification Recommendation:

Sherwin-Williams® Product – Waterborne Acrylic Dryfall (B42W1) 50 GAL. Drums MPI# 118 (or substitute Alkali-based, flat latex paints with similar properties)

Recommended Spread Rate per Coat –

Wet Mills: 3.5 – 5.0

Dry Mills: 1.5 – 2.0

Coverage: 336-450 sq. ft./gallon approximate (based on flat surface)

* If necessary, cross spray at a right angle. Armstrong Ceilings recommends post painting once the install is complete. Do not paint panels prior to installation in the ceiling as damage/markings during installation may be visible once installed. Field painting may alter acoustical and fire performance.

Surface Preparation

Surface must be clean, dry, and in sound condition. Remove all oil, dirt, grease, and other foreign material to ensure adequate adhesion.

Application Conditions and Equipment

Consult paint manufacturer.

11. SPECIAL INSTALLATION CONSIDERATIONS

11.1 Sloped and Wall Installations

AcoustAffix™ panels can be installed on any slope (up to vertical surfaces/wall) when following the rules below:

- When DGS mains are installed on a wall, it is recommended that the mains run vertical up the wall.
- When DGS mains are installed on a slope, it is recommended that the mains run parallel with the slope. If the panel layout requires the DGS mains to run horizontally across a wall or perpendicular to a slope, the spacing of the support attachments of the DGS to structure (QSUTC) must be no more than 48" O.C.

12. Seismic Installations

Seismic installations of 3/4" thick AcoustAffix panels are to be handled per building code.

For additional information on installing suspended ceilings, please visit our website at ceilings.com or call Techline at 1-877-ARMSTRONG (276-7876).

Limited Warranty

For warranty information, please visit ceilings.com/warranty.