1. GENERAL

1.1 Product Description

InvisAcoustics™ direct-attach 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. 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.

Standard panels are available in Black, White, and a scrimmed panel with no finish. This panel can then be painted post installation to directly match the deck on which it’s being installed. InvisAcoustics panels are installed using the all-in-one fastener on Armstrong® Drywall Grid or furring (wood or metal).

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

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

1.5 Storage & Handling

The ceiling panels shall be stored in a dry interior location and shall remain in cartons prior to installation to avoid damage. The cartons shall be stored in a flat position. Proper care should be taken when handling to avoid damage or soiling.
1.6 Site Conditions
Building areas to receive ceilings shall be free of construction
dust and debris.
InvisAcoustics™ panels with factory paint finish feature
HumiGuard® Plus performance and 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.
InvisAcoustics 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, 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. Standard 3/4” InvisAcoustics
panels cannot be used in exterior applications.

1.8 Colors
Standard InvisAcoustics panels are available in black, white,
and no finish. Panels with no finish can be field-painted.

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

2. DESIGN AND INSTALLATION CONSIDERATIONS

2.1 Directionality
InvisAcoustics panels have three different installation methods.
For all installation methods, please note the following in regards
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 1212FP) have square edges on all
sides.
Factory painted panels (items 1212WH/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”.

2.3 Exterior installations
InvisAcoustics panels are not intended for exterior use.

2.4 Direct Attachment to Deck or Wall
InvisAcoustics panels are mechanically fastened to Armstrong®
Drywall Grid, or furring (metal or wood) using the all-in-one self-
stop fastener. These panels and fasteners can be installed on
ceilings of any slope or on walls when following the suspension
and fastening instructions in this document. InvisAcoustics
panels can also be adhered directly to drywall, plaster and
concrete. Refer to Direct Apply installation instructions (BPLA-
299100) for further information.

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
InvisAcoustics 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 to Deck
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 Wall Installations
InvisAcoustics panels can be installed on a wall or vertical
surface following the instructions in sections 4 and 5, however,
the panels are not intended to be installed where they may be
contacted. It is recommended that they be installed at least 6’
above the finished floor to avoid damage.

3. INVISACOUSTICS ACCESSORIES

3.1 Fasteners
Armstrong Ceiling Solutions provides installers with two types
of fasteners, one for direct mounting to furring or drywall grid,
and one for securing to steel trusses. For direct mounting to
furring or drywall grid, use the all-in-one self-stop fastener,
described in section 3.2. For mounting to trusses, use the
Truss Fastening Kit, described in section 3.3.

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
InvisAcoustics installations.
3.2 All-in-one Self-stop Fastener
Armstrong Ceiling Solutions provides installers with an all-in-one self-stop fastener for InvisAcoustics™ panel attachment to furring or drywall grid. This fastener is designed to stop as soon as the collar comes 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 Fastening Kit
The Truss Fastening Kit contains threaded rod and weld nuts. 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 20 threaded rod and 40 weld nuts. See section 6.2.2 for installation steps.

3.4 QSUTC (QuickStix Uptight Clip)
Installations using Armstrong® Drywall Grid require the QSUTC for attachment to deck or wall. 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 runner 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 8.1 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. Refer to Direct Apply installation instructions (BPLA-299100) for further information.

4. SUSPENSION SYSTEM
4.1 Installation Options
There are three different installation options for use with InvisAcoustics panels. These options are:

- Screw attached to furring or drywall grid that is secured to structure (ceiling or walls – sections 4 and 5)
- Direct Apply with recommended ceiling adhesive – refer to Direct Apply installation instructions
- Installed on an I-Beam – screw attached to furring that is secured to the I-Beam (see section 6.1)

- Installed on a steel truss with the Truss Fastening Kit (see section 6.2)

4.2 Suspension System Overview
InvisAcoustics panels are required to be screw-attached to Armstrong® Drywall Grid or furring, and are not intended for an A-mount installation. The use of drywall grid, metal furring (20- to 25-gauge), or wood furring is required for panel attachment and also helps in increasing the product’s overall NRC performance. The panels are installed in rows with the short edges or the long edges butted up against each other, or for stand alone acoustical treatment.
4.3 Armstrong® Drywall Grid Recommendations

Installations using Armstrong® Drywall Grid will require:
- 12’ Drywall Grid mains (HD8906)
- Uptight Clips (QSUTC)
- 4’ Drywall Grid cross tee (XL8945P) – dependent upon layout
- 40” Drywall Grid cross tee – dependent upon layout

The drywall grid spacing layout will be based on the panel orientation. See section 4.5 for layout information.

Attachments of the drywall grid to the deck are made with the QSUTC Uptight Clip. See section 3.4 for attachment rules and spacing.

4.4 Furring Recommendations

Furring for InvisAcoustics™ panels can be either wood or metal. For steel channel/hat channel, Armstrong Ceiling Solutions 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. See Section 4.5 for additional furring layout information.

The furring must be attached to the structure in a method that supports the full weight of the panels. Armstrong Ceiling Solutions 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.

4.5 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).

5. PANELS

5.1 First Panel and Alignment

InvisAcoustics 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 Armstrong® 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.

Once properly aligned, use Armstrong Ceiling Solutions all-in-one self-stop fastener 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.)

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.

Once properly aligned, use Armstrong Ceiling Solutions all-in-one 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.)

5.5 Panel Attachment – Stand Alone or Alternate Panel Spacing

InvisAcoustics™ 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.

5.6 Field Cutting

InvisAcoustics 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

InvisAcoustics 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.

6.1.1 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.
6.1.2 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.

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 all-in-one self-stop fastener. When installing InvisAcoustics 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.

6.2 Attachment to Truss
InvisAcoustics panels can be mounted to flat trusses using the Truss Fastening 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.

6.2.1 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).

- 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.

6.2.2 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.

It is recommended to have two installers for truss installations. Once the panels are cut to fit, pre-mark the locations for your truss fastening kit onto the panel.

Four fasteners are required per panel. It is required to have one fastener located near each corner of the panel, approximately 4” in from each edge.
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 hardware.

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.

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.

7. 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 Mils: 3.5 – 5.0
Dry Mils: 1.5 – 2.0

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

* If necessary, cross spray at a right angle

Armstrong Ceiling Solutions 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.

8. SPECIAL INSTALLATION CONSIDERATIONS

8.1 Sloped and Wall Installations
InvisAcoustics™ panels can be installed on any slope (up to vertical surfaces/wall) when following the rules below:
- The furring or DGS for panel attachment must be directly attached to structure (no suspension to create a slope)
- Panel fastener attachment to furring must follow the spacing rules in section 5.

8.1.1 Drywall Grid Attachments
- 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.

8.2 Pools/Auditoriums
3/4” InvisAcoustics direct-attach ceiling panels are not to be used in pool areas or other high-humidity areas where standing water is present.

8.3 Exterior Installation
3/4” thick standard InvisAcoustics panels are not intended for use in exterior applications.

9. SEISMIC INSTALLATIONS
Seismic installations of 3/4” thick InvisAcoustics panels are to be handled per building code.
For more information, or for an Armstrong Ceilings representative, call 1 877 276 7876.
For complete technical information, detail drawings, CAD design assistance, installation information, and many other technical services, call TechLine customer support at 1 877 276 7876 or FAX 1 800 572 TECH.
For the latest product selection and specification data, visit armstrongceilings.com/invisacoustics.

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