

STANDARD FACETED Ceiling

Installation Guidelines

ARMSTRONG CEILING PANELS ACCEPTABLE IN FACETED INSTALLATIONS INCLUDE:

All Mineral Fiber Lay-in, Tegular Ceiling Panels
 All Fiberglass Lay-in, Tegular Ceiling Panels
 MetalWorks™ Tegular and Vector® Ceiling Panels
 Infusions® Lay-in Ceiling Panels

Note: Mineral Fiber Vector, Fiberglass Vector Ceiling Panels, and WoodWorks® Ceiling Panels are not acceptable in faceted designs.

SUSPENSION SYSTEMS ACCEPTABLE IN FACETED INSTALLATIONS INCLUDE:

Suprafine® XL®
 Prelude® XL

1.0 GENERAL

Faceted ceiling systems are non-flat ceiling systems composed of panels with Prelude XL or Suprafine XL Armstrong suspension systems.

Generally, a faceted suspended ceiling is built with standard parts and pieces that are customized on the job site. Current building code states that suspended ceiling main beams must be leveled to within 1/4" in 10'; faceted installations are not addressed. The International Building Code (IBC), as well as its antecedents, permits alternate designs, materials, and methods of construction so long as any such alternate is approved by the Authority Having Jurisdiction (AHJ).

Actual construction of a faceted suspended ceiling may require engineering documents by code officials/ authorities having jurisdiction in your area; a strict interpretation of the code may rule out faceted designs.

Since each faceted ceiling design is unique, general detail drawings accompany these guidelines. Shop drawings are the responsibility of the contractor. The structural engineer of record is responsible for verifying and approving the use of Armstrong components in these unique installations.

2.0 FACETED CEILING INSTALLATION GUIDELINES

The following guidelines are in addition to the requirements set forth in ASTM C636 and ASCE 7.

2.1 Panel Guidelines

- Reveals between panels will NOT be consistent on all sides. This difference is slight, and is dependent on the radius of the installation.
 - On “hill” installations, the spacing between panels on adjacent facets will be slightly less.
 - On “valley” installations, the spacing between panels on adjacent facets will be slightly more.
 - Staggered or running bond patterns should not be used in faceted installations.

2.2 Suspension System Guidelines

- Only Prelude XL or Suprafine XL suspension systems are recommended for use in faceted designs.
- When installing faceted (broken) main beams with the RC2 clip, cross tees must be physically attached to the main beams with the Single Tee Adapter Clip (STAC), the Cross Tee Adapter Clip (XTAC), or maintain a tee-to-tee connection.
- Installations requiring seismic restraint shall have splayed wire and rigid lateral force bracing/compression posts applied as prescribed by local building code for flat ceilings.

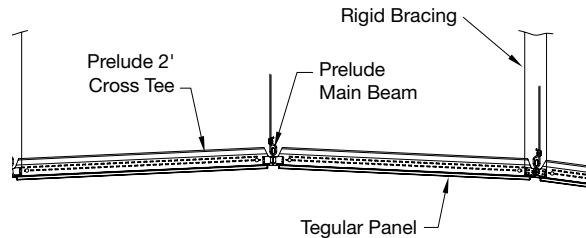
2.2.1 Hanger Wire Guidelines

- 12 gauge hanger wire must comply with ASTM C636 requirements.
- Hanger wires should be suspended vertically and plumb.
- If rigid bracing is used, it shall remain vertical and the splay wires shall be installed at maximum 45° to the horizontal.

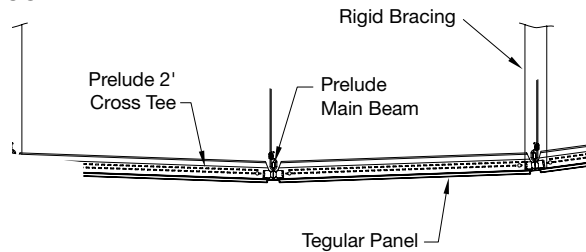
2.2.2 Main Beams at Different Elevations

- When installing main beams at different elevations:
 - Main beams may not be spaced any greater than 2' O.C.
 - Minimum concave radius limitation is 22-1/2'; there is no maximum concave radius limitation.
 - Maximum convex radius limitation is 5° between facets.
 - Both hills and valleys may be created and connected together to create waves.

CONCAVE:

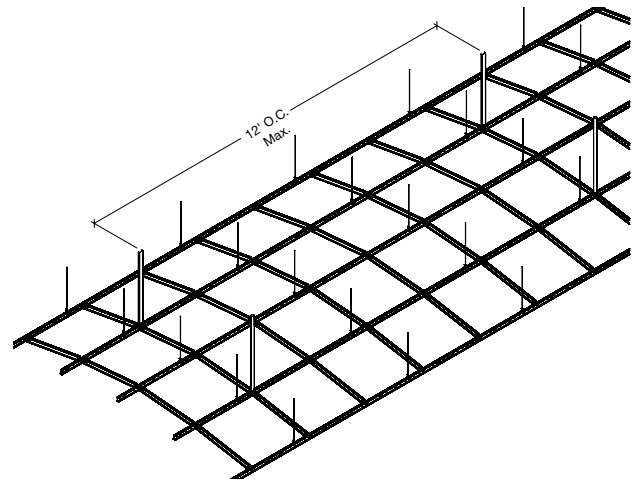


CONVEX:



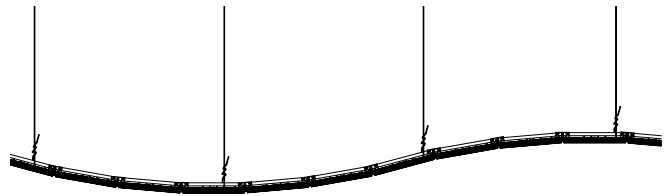
- MetalWorks™ Vector® panels must be positioned so that all kerfed edges engage cross tees.
- Every other main beam must be held in position by rigid bracing that extends from the main beam to the structure above.
 - Acceptable material for this bracing is #16 gauge, steel, cold rolled channels measuring 1/2" x 1-1/2" or 1/2" diameter EMT. Or 2-1/2", 20 gauge steel studs may be used (same as for exterior wind uplift installations).
 - Bracing is to be attached to the suspension system by means of two pan head framing screws, and to the structure by means of hardware appropriate for the materials encountered.
 - Attachments to the structure must be capable of withstanding a minimum of 100 pounds of force in both tension and compression.
 - The function of the bracing is to overcome the suspension system's natural tendency to flatten out.
 - This bracing is necessary to maintain the desired curve.

- Bracing must be spaced not more than 12' apart along the length of the main beams.



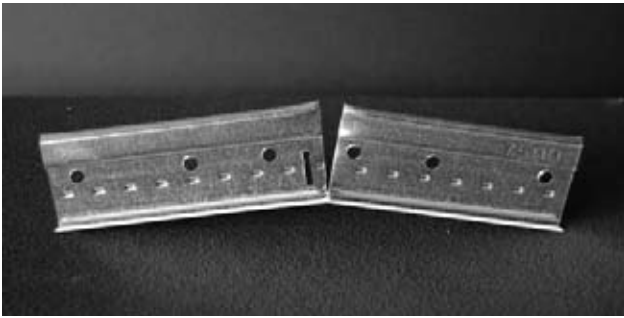
2.2.3 Faceted/Broken Main Beams

- When faceting or breaking main beams to form the curve:
 - For radiuses tighter than 22-1/2', a narrow panel is recommended (12" or 6").
 - Both hills and valleys may be created and connected together to create waves.

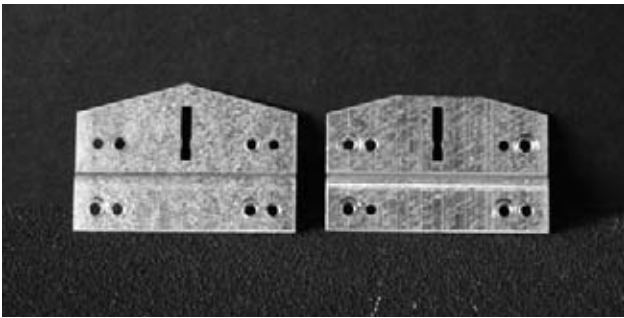


- Only lay-in or Tegular panels may be used. Vector® panels will not work.
- Every main beam must be held in position by rigid bracing that extends from the main beam to the structure above at 4'-0" O.C. along the broken main beam.
 - Acceptable material for this bracing is #16 gauge, steel, cold rolled channels measuring 1/2" x 1-1/2" or 1/2" diameter EMT. Or 2-1/2", 20 gauge steel studs (same as for exterior wind uplift installations).
 - Bracing is to be attached to the broken main beams by means of two pan head framing screws, and to the structure by means of hardware appropriate for the materials encountered.
 - Attachments to the structure must be capable of withstanding a minimum of 100 pounds of force in both tension and compression.
 - The function of this bracing is to solidify the suspension system.

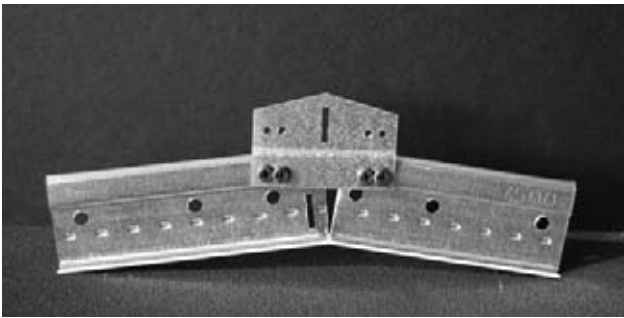
There are two options when faceting main beams:



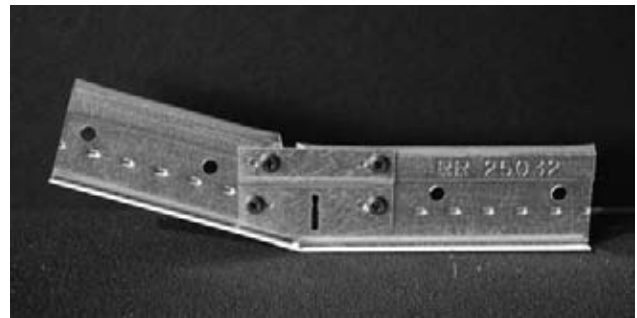
1. Cut the bulb and web of the main beam to form the facet.
 - For 9/16" cross tees – 1/4" strong from the center of the route hole
 - For 15/16" cross tees – 1/2" lite from the center of the route hole



2. If needed, cut off the point on the RC2 clip.
3. Line up the RC2 clip at radius desired.
- 3.a. If positioning the RC2 clip on bulb, hold it in place with a clamp at the desired radius and attach it to the main beam bulb with four pointed screws.



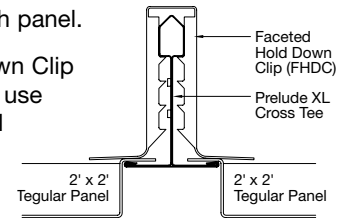
- 3.b. If positioning the RC2 clip with route holes, line up the route holes on the RC2 clip and the main beam. Make sure the clip is placed on the smooth side of the rotary stitching. Use a clamp to hold down the RC2 clip and attach it to the main beam bulb and web with four pointed mini screws.



4. Insert the cross tees and click them into place. If the RC2 clip is aligned with the route hole (3.b.), you may need to modify the XL tab by cutting approximately 1/8" off of the bottom.
5. Brace as recommended in the architect's structural drawings.

2.3 Hold Down Clip Guidelines

- Hold down clips are required for all faceted ceiling applications (except MetalWorks™ Vector® ceiling panels).
- At least two hold down clips should be used on each side of each panel.
- Armstrong Faceted Hold Down Clip Item FHDC is acceptable for use on lay-in and Tegular mineral fiber, fiberglass, metal, and Infusions® ceiling panels in faceted installations.



- Hold down clips reduce accessibility.

2.4 Perimeter Guidelines

- Tying to a wall or drywall bulkhead:
 - Moldings will need to be bent to match the angle of the ceiling where it contacts the walls at the straight sides, and will need to be cut to align with the panel segments on the faceted sides.
 - If using broken main beams, the wall angle will need to be field faceted to match the curvature of the main beam.
- Floating ceiling conditions:
 - Serpentina® Trim may be used, but is limited in radius options. See Serpentina literature CS-3622 for radius options offered as standard trim.
 - Where the panel meets the Serpentina curved trim, it is meeting a true radius, while the opposing side of the panel rests on a flat section of suspension system. Extra hold down clips, Item AX-SPT-HDC, will be needed to force the panel to the shape of the curved Serpentina Perimeter Trim.

MORE INFORMATION

For more information, or for an Armstrong representative, call 1 877 276 7876.

For complete technical information, detail drawings, CAD design assistance, installation information, and many other technical services, call TechLineSM services at 1 877 276 7876 or FAX 1 800 572 TECH.

For the latest product selection and specification data, visit armstrongceilings.com/ceilings
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