

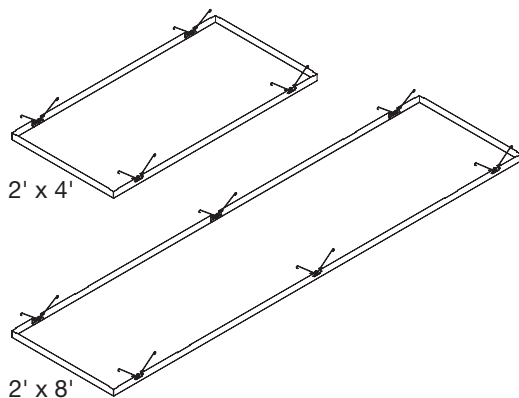
# METALWORKS™ Torsion Spring

## Installation Instructions

### 1. GENERAL

#### 1.1 Product Description

MetalWorks Torsion Spring is a downward accessible aluminum ceiling panel available in standard 2' x 2', 2' x 4', 2' x 6', 2' x 8', and 30" x 30" sizes. It is designed to install on a 15/16" Prelude® suspension system that includes items that are pre-slotted to accept the factory-applied panel springs. All non-cut panels are 100% downward accessible.



#### 1.2 Standard Installation

MetalWorks Torsion Spring uses a standard 15/16" suspension system. The elements of the system include pre-slotted Prelude XL® 15/16" main beams and cross tees along with standard Prelude XL cross tees. The installation shall in all cases conform to the requirements of the International Building Code and its referenced standards.

#### 1.3 Surface Finish

MetalWorks Torsion Spring panels are pre-coated aluminum and available in six standard perforations or unperforated in standard Whitelume (WHA), Silverlume (SLA), Gun Metal (GMA), Satin Anodized (SAA), Lacquer Mill (LMA), and

Brushalume (BMA) finishes. PureWood™ features veneers bonded to aluminum to provide rich, real wood finishes in Maple (NMP), Light Cherry (NLC), and Dark Cherry (NDC). Reflections™ is printed vinyl bonded to aluminum and provides wood-look finishes in Rock Maple (LRM), Light Cherry (LLC), and Wild Cherry (LWC). The perforated finishes have a black acoustical fleece factory-applied to the backside of the panel. Ceiltex finish (CLA) features painted fabric laminated to pre-perforated aluminum. Optional BioAcoustic™ (item 5823) and fiberglass (item 8200100) infill panels are available for increased sound absorption.

#### 1.4 Storage and Handling

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 vertical position. Proper care should be taken when handling to avoid damage or soiling.

**NOTE:** MetalWorks Torsion Spring panels may be packaged with the face of the panel toward the outside of the carton. Exercise care in moving and opening cartons to prevent damage to the panel face.

#### 1.5 Site Conditions – Painted Panels

Areas to receive ceilings shall be free of construction dust and debris. Panels should only be installed in closed and acclimatized buildings. Interior systems cannot be used in exterior applications where standing water is present or where moisture will come in direct contact with the ceiling.

#### 1.6 Site Conditions – Purewood Panels

MetalWorks Purewood ceiling materials should be permitted to reach room temperature and have a stabilized moisture content for minimum of 72 hours before installation. (Remove plastic wrap to allow panels to climatize.) They should not, however, be installed in spaces where the temperature or humidity conditions vary greatly from the temperatures and conditions that will be normal in the occupied space.

### 1.6.1 HVAC Design & Operation

Proper design for both supply air and return air, maintenance of the HVAC filters and building interior space are essential to minimize soiling. Before starting the HVAC system, make sure supply air is properly filtered and the building interior is free of construction dust.

### 1.6.2 Temperature & Humidity During Installation

MetalWorks Purewood panels are interior finish products designed for installation in temperature conditions between 50°F and 86°F, in spaces where the building is enclosed and HVAC systems are functioning and will be in continuous operation. Relative humidity shall not fall below 25% or exceed 55%. There shall be proper ventilation of the plenum in high moisture areas. All plastering, concrete, terrazzo, or any other wet work should be completely dry. All windows and doors should be in place. The heating, ventilating, and air-conditioning system should be installed and operable where necessary to maintain proper temperature and humidity conditions before, during, and after installation of the MetalWorks Purewood panels.

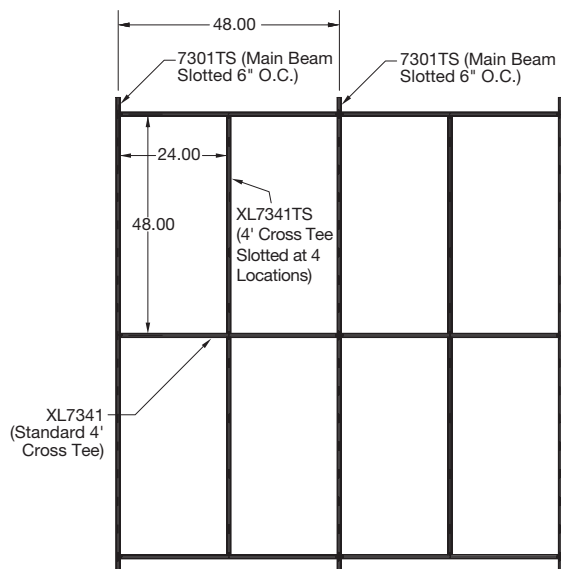
### 1.7 Plenum

Since panels are installed from below, MetalWorks Torsion Spring panels require minimal clearance above the suspension system. Panels never need to travel into the plenum space during installation or removal.

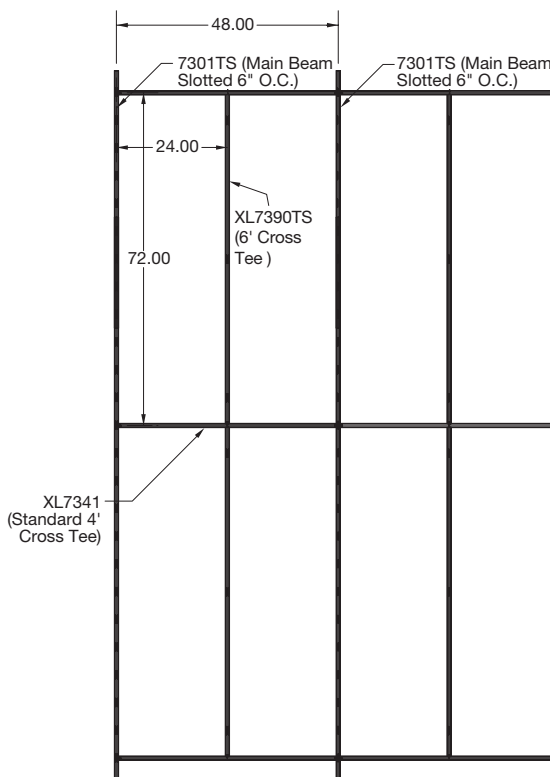
**NOTE:** Light fixtures and air handling systems require more space and will usually determine the minimum plenum height for the installation.

## 2. SUSPENSION SYSTEM

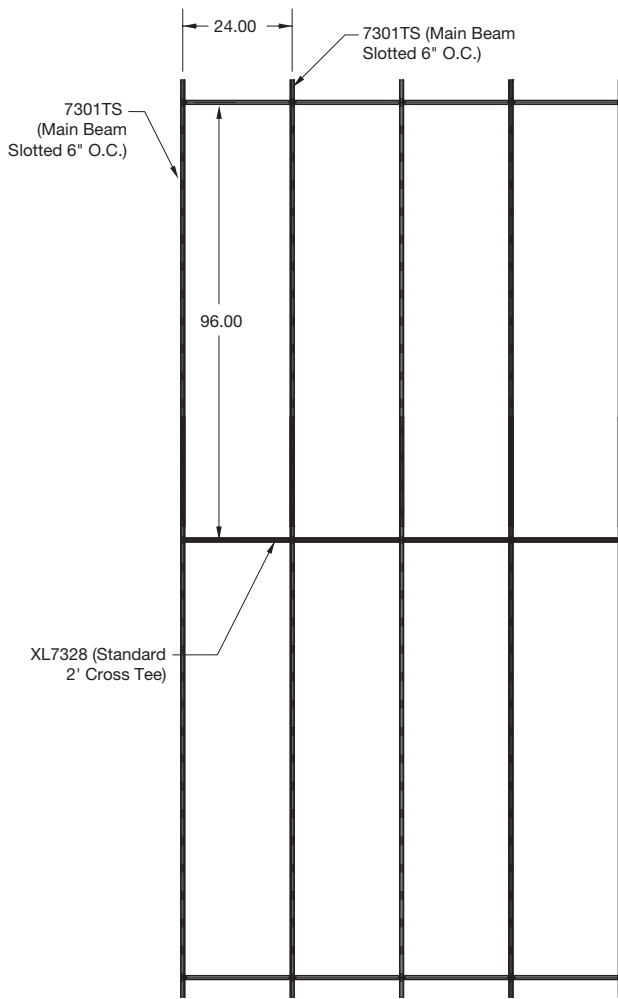
**2.1** For 2' x 2' and 2' x 4' panels: Prelude® XL® HD main beams that are pre-slotted 6" O.C. (item 7301TS) for Torsion Spring panels are installed every 48" O.C. Then 48" Prelude cross tees (item XL7341) shall intersect the main beams at 90 degrees every 48". Then a 48" Prelude cross tee that is slotted (item XL7341TS) at four locations shall be bridged in at the center of the 48" cross tees to run parallel with the main beams. Springs on the panel will be inserted into main beams and cross tee slots.



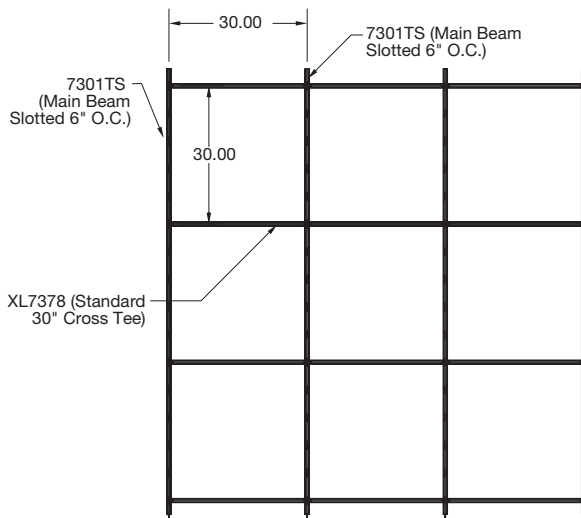
**2.2** For 2' x 6' panels: Prelude XL HD main beams that are pre-slotted 6" O.C. (item 7301TS) for Torsion Spring panels are installed every 48" O.C. Then 48" Prelude cross tees (item XL7341) shall intersect the main beams at 90 degrees every 72". Then a 72" Prelude cross tee that is slotted (item XL7390TS) at three locations shall be bridged in at the center of the 48" cross tees to run parallel with the main beams. Springs on the panel will be inserted into main beams and cross tees.



**2.3** For 2' x 8' panels: Prelude XL HD main beams that are pre-slotted 6" O.C. (item 7301TS) for Torsion Spring panels are installed every 24" O.C. Then 24" Prelude cross tees (item XL7328) shall intersect the main beams at 90 degrees every 96". Springs on the panel will be inserted into main beams only.



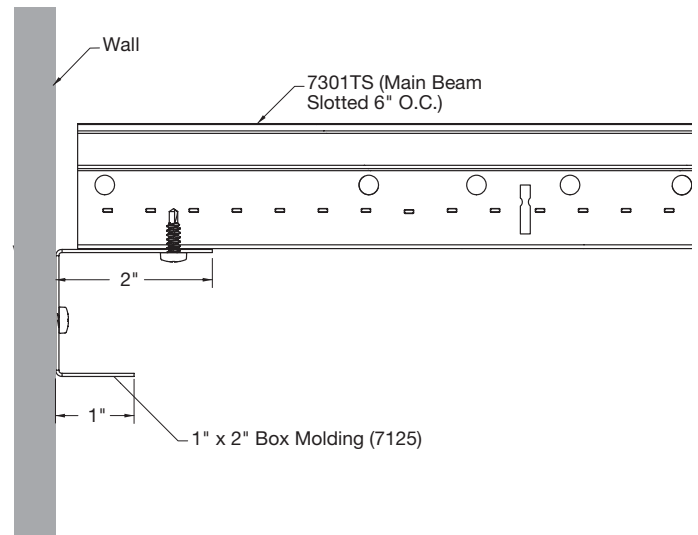
**2.4** For 30" x 30" panels: Prelude XL HD main beams that are pre-slotted 6" O.C. (item 7301TS) for Torsion Spring panels are installed every 30" O.C. Then 30" Prelude cross tees (item XL7378) shall intersect the main beams at 90 degrees every 30". Springs on the panel will be inserted into main beams only.



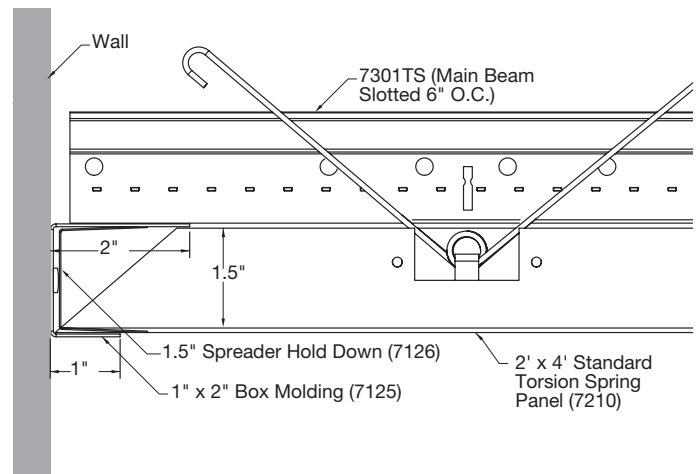
Hangers and bracing are to comply with all local code requirements. The suspension system shall be properly installed and leveled using not less than 12 gauge galvanized steel wire. Suspension system installation shall conform to ASTM C636 requirements. **The suspension system for all panel sizes must be leveled to within 1/4" in 10' and must be square to within 1/16" in 2'.** 90° Alignment Clips (item 7134) can be used to assure the grid system meets the squareness requirement.

**2.5** Location of the first main beam shall be as detailed on the reflected ceiling plan, so as to provide borders that are equal in size and greater than 1/2 of the full panel width. Pay close attention when cutting this first main beam to length; make sure that the slots in the main beam are in the correct position to accept the springs attached to the panel size being installed.

**2.6** Perimeters are trimmed with item 7125 Box Molding attached with appropriate fasteners. The suspension system will rest on the upper 2" flange of the box molding and the panel edges will rest on the bottom 1" flange.



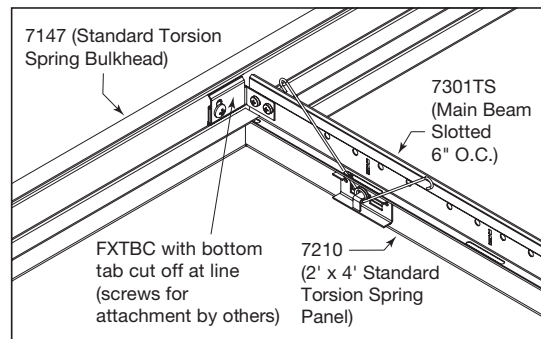
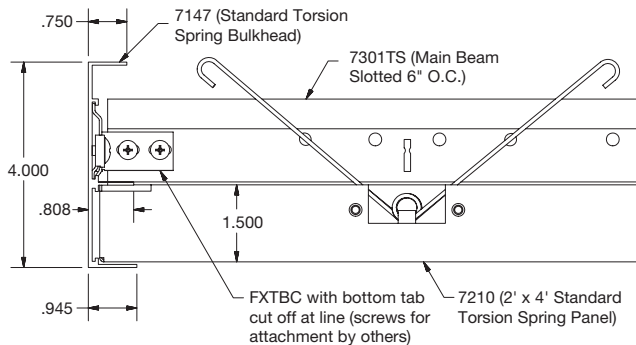
**2.7** Cut edges are held down against the molding by inserting a 7126 Spreader Hold Down into the molding, between the upper and lower flanges, over each cut panel. The 7126 Spreader Hold Down is 10.625" long, so use the appropriate amount of hold downs for the panel edge dimension.



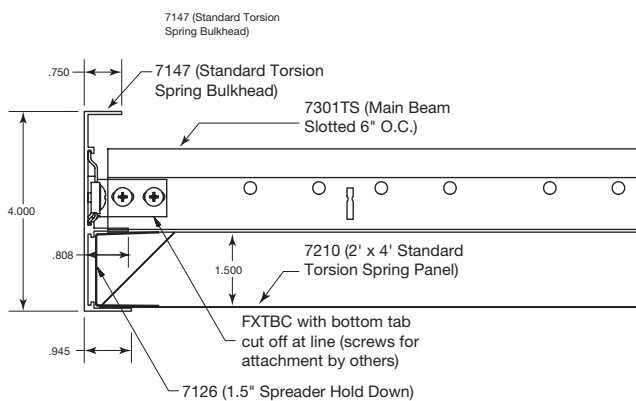
**2.8 Floating Perimeters:** The suspension layout for floating perimeters or cloud applications should be the same as what is detailed in Sections 2.1 - 2.4 for the specific panel sizes. Please note that main beams and cross tees need to be in place around the entire perimeter so perimeter trim can be attached to the suspension system. Item 7147 is an extruded perimeter trim available in PureWood™ finishes as well as White, Silver, Gun Metal, Satin Anodized, and Black. Item 7131 is a formed perimeter trim available in Lacquer Mill and Brushalume finishes. The perimeter trim is designed for straight perimeters and should not be curved. Refer to the drawings below and contact the Architectural Specialties project management team (1 877 ARMSTRONG, select options 1-1-4) for additional questions.

#### Extruded Perimeter Trim (Item #7147)

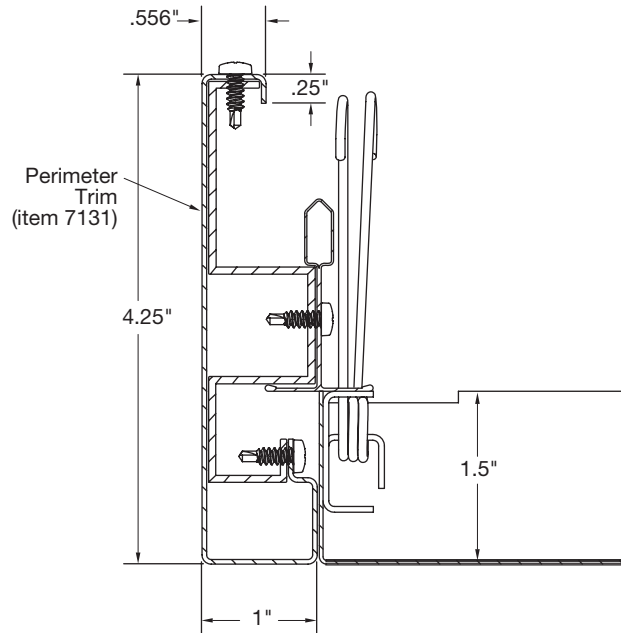
Detail for Full Size Panels



#### Detail for Field Cut Panels



#### Formed Perimeter Trim (Item #7131)

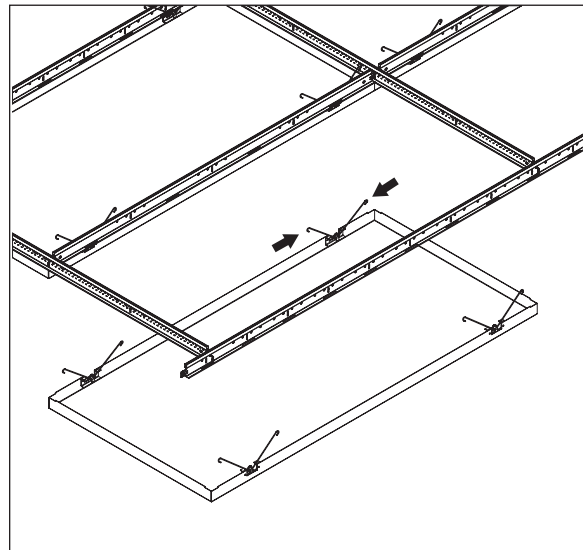


### 3.0 PANEL INSTALLATION

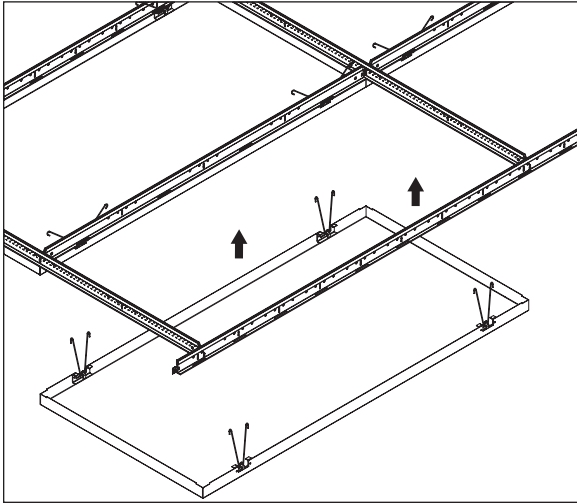
Panels are mechanically directional. Two opposite sides feature a set amount of springs that engage the main beam and retain the panel.

**3.1** Align the springs with the slots in the flange of the main beam or cross tee. Compress the spring and insert it into the corresponding slot. Follow this same process for each spring on the panel. Then press up into place with the palm of the hand. The springs should spread apart in the slots of the grid and seat the panel into place.

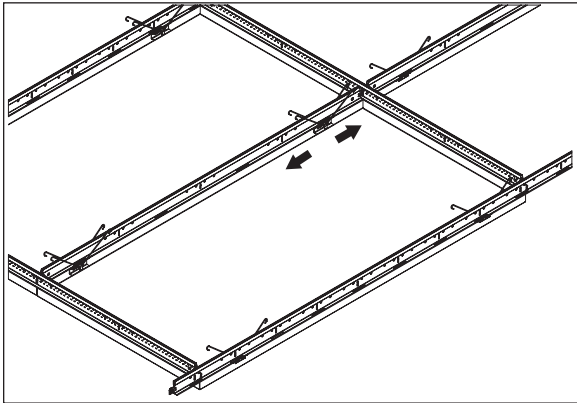
#### STEP 1



#### STEP 2



#### STEP 3



### 3.2 Cut Panels

Cut panels should never occur within the field of the ceiling. All ceiling mounted services must either replace a full panel, install into a hole that is cut into a panel, or be mounted through the face of a panel.

**3.2.1** See MetalWorks™ Cutting Instructions LA-295518 for detailed information about cutting Armstrong metal ceilings. This document discusses the advantages and disadvantages of several types of equipment and how they are used when cutting our products.

**3.2.2** When BioAcoustic™ (item 5823) or fiberglass (item 8200100) infill is used, it also must be cut to size. This is best done with a large pair of shears or scissors. Reseal the poly bag with packing tape prior to installation.

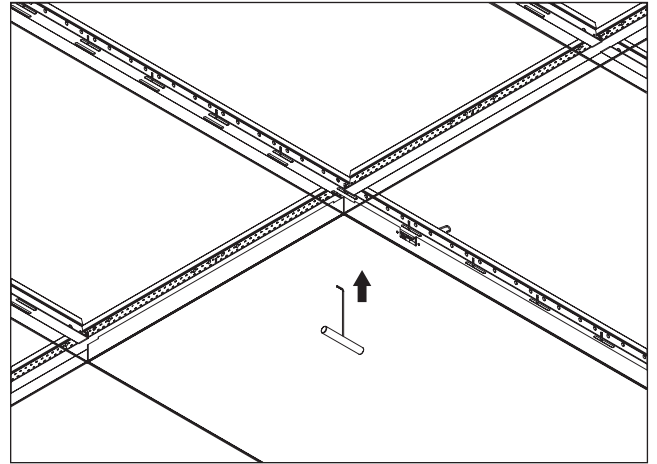
### 3.3 Panel Removal

All panels are removable without moving up into the plenum.

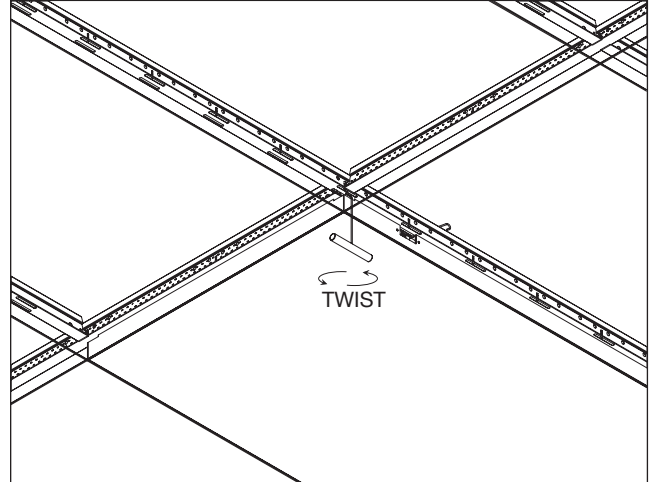
**3.3.1** The Hook Panel Removal Tool, item 7129, for perforated or unperforated panels, is inserted into the joint between two panels. Make sure you insert the tool within 1" from a panel intersection to grab the correct part of the panel. Twist the tool 90 degrees to hook the top of the panel. Then pull the tool downward, slowly, until the spring

catches on the flange of the grid and can be seen. Now that the spring has become accessible, push the spring together, slide it down through the slot, and pull down gently to release the panel from the main beam.

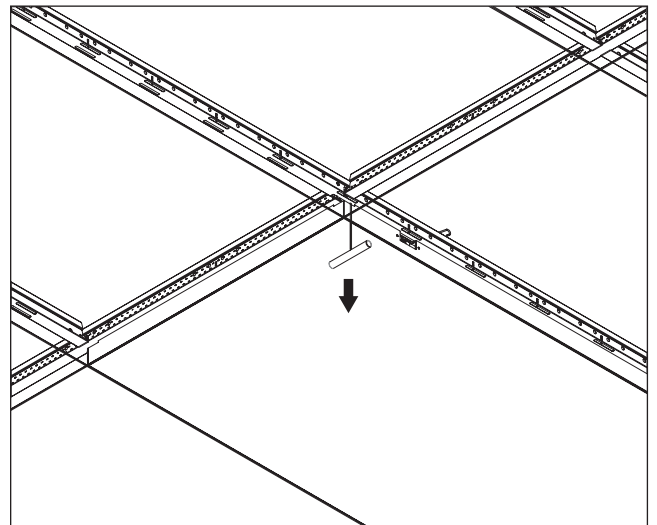
#### STEP 1



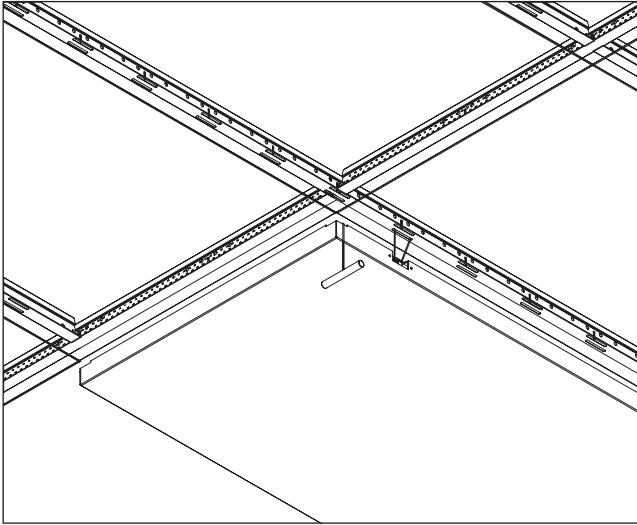
#### STEP 2



#### STEP 3



#### STEP 4



The Suction Panel Removal Tool (item 7130) is for unperforated panels only. Place the device on the corner edge of the panel and gently pull down until the spring is accessible. Push the spring together and pull down gently to release the panel from the main beam.

**3.3.2** Adjacent panels may be removed from the same row of main beams without further use of the tool.

#### 4.0 SEISMIC INSTALLATION

MetalWorks™ Torsion Spring has been engineered and tested for application in all seismic areas.

#### 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 TechLine™ services at 1 877 276-7876 or FAX 1 800 572 TECH.

For the latest product selection and specification data, visit [armstrongceilings.com/metalworks](http://armstrongceilings.com/metalworks).

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BPLA-297833-313

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