

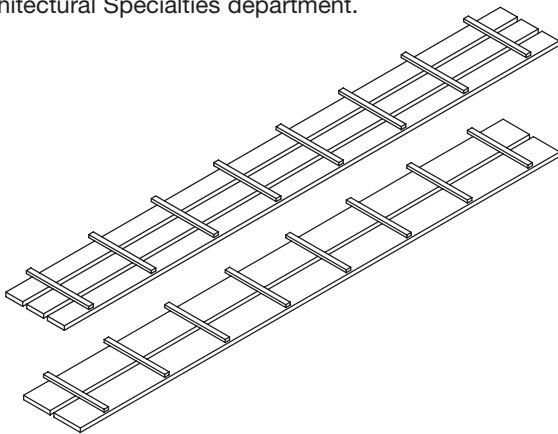
# WOODWORKS® Linear – Solid Panels

## Installation Instructions

### 1. GENERAL

#### 1.1 Product Description

WoodWorks Linear features a solid wood ceiling system in 1' x 8' panels and available with two plank widths and four warm wood finishes – Maple, Light Cherry, Dark Cherry, and Walnut. Both the 1' x 8' panels and installation system are provided by Armstrong. Panels can be installed on standard Prelude® 15/16" suspension system with a Backer. Custom finishes and plank widths are offered through the Architectural Specialties department.



#### 1.2 Material and Surface Finish

Planks and Backers are constructed from solid Pacific Albus. Blades have a clear or semigloss coating. Backers have a black factory finish.

#### 1.3 Storage and Handling

All ceiling components should be stored in a dry interior location and shall remain in the original packaging prior to installation to avoid damage. The materials shall be

stored off the floor in a flat, level condition. Do not store in unconditioned spaces with humidity greater than 55% or lower than 25% or with temperatures above 86°F or lower than 50°F. Use proper care when handling to avoid damage or soiling.

**CAUTION:** Use proper care and caution when handling suspension systems due to the sharp edges on all exposed clips.

#### 1.4 Site Conditions

Building areas that will receive a ceiling shall be free of construction dust and debris. Installation of the products shall be carried out where the temperature is between 50°F and 86°F and relative humidity levels maintained between 25% RH and 55% RH. These temperature and humidity conditions must be met throughout the lifetime of the ceiling.

Real wood and wood composite products are natural building materials and they will react to changes in humidity. (Wood tends to contract with lower humidity and expand with higher humidity.)

Wood could also have a tendency to warp, twist, or bow, due to the natural stresses in the components and these humidity changes. Be aware of these natural tendencies when evaluating the products.

It is also necessary for the area to be enclosed and for the HVAC systems to be functioning and in continuous operation. All wet work (plastering, concrete, etc.) must be complete and dry. These products cannot be used in exterior applications.

To ensure that the ceiling panels have stabilized to the current building conditions, prior to their installation, the planks must be placed in an environmentally stable building location for a minimum of 72 hours.

### 1.5 Color

WoodWorks® Linear Solid Wood panels are made of solid wood and are available in four standard finishes; custom options available. Natural variations in color and grain are characteristic of wood products. Knots of up to 1/2" in diameter can be expected in this product. To maximize visual consistency, panels should be unpacked and examined collectively to determine the most desirable arrangement for installation.

### 1.6 Ordering Considerations

Be sure to account for extra material that is normally needed for wood installations. When installing WoodWorks Linear Solid Wood panels, you should consider ordering at least 5% extra material.

Up to 10% more may be needed for odd size or diagonal installations. It is the customer's responsibility to plan each layout and order the correct amount of installation material needed, taking into account their design.

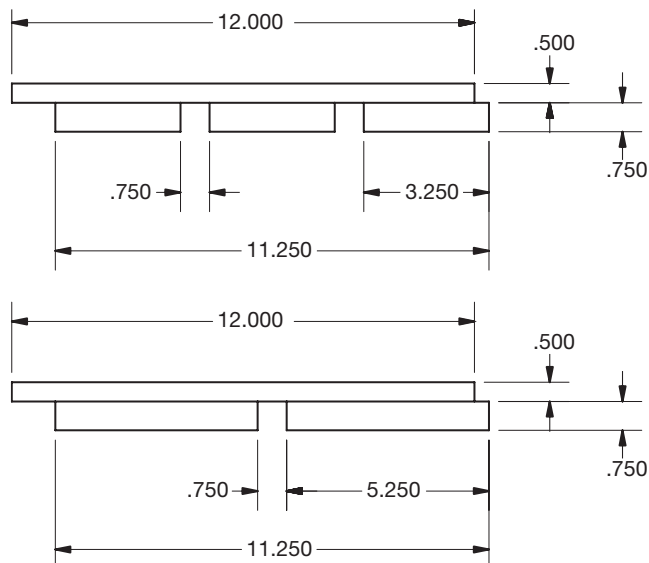
### 1.7 Fire Performance

As with other architectural features located at the ceiling, WoodWorks Linear 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. Designers and installers are advised to consult a fire protection engineer, NFPA 13, and their local codes for guidance where automatic fire detection and suppression systems are present.

## 2. WOODWORKS LINEAR SOLID WOOD PANELS AND ACCESSORIES

### 2.0.1 Wood Planks

Two standard plank widths: 3-1/4" and 5-1/4" (height is 3/4")



### 2.0.2 Backer Clips

Metal spring clips to attach panels to 15/16" T-Bar suspension system.

### 2.0.3 Trim Accessories

Wood trim available in matching finishes (Item #7146). Ledgers for wall molding trim. Junctions for panel joints.

### 2.0.4 BioAcoustic™ Infill Panel

11" w x 48" l x 1" black BioAcoustic infill panel to improve acoustical performance.

### 2.1 Suspension System

Use standard 15/16" T-Bar suspension system, main beams, cross tees, and wall molding to support the WoodWorks Linear panels. Use black 360° Painted suspension system for the best overall visual in installations where the suspension system may be visible or in line of sight.

## 3. INSTALLATION

### 3.1 General

The suspension system shall be standard 15/16" exposed tee grid. The installation shall, in all cases, conform to ASTM C636 requirements and the International Building Code.

If WoodWorks Linear panels weigh in excess of 2.5 lbs/SF, the ceilings shall be installed per CISCA Seismic Zones 3-4, as modified by the IBC.

WoodWorks Linear panels install perpendicular to the main beams. The main beams shall be spaced 48" O.C. The 48" cross tees shall intersect the main beams at 90° every 48", creating a 4' x 4' module. Then 48" cross tees shall be installed parallel to the main beam as required for panel attachment. (Extra route holes in 48" 360° Painted cross tees may need to be ordered.)

The suspension system must be leveled to within 1/4" in 10' and must be square to within 1/16" in 2'. Installation on suspension systems that do not meet this tolerance will produce unacceptable panel alignment.

WoodWorks Linear panels require two people to handle each panel safely, minimize damage, and provide panel support during installation.

See the last page of this document for ceiling layout example.

### 3.2 Suspension System

**3.2.1** Refer to the reflected ceiling plan to determine the suspension system layout. Main beams must run perpendicular to the panel length.

**3.2.2** Refer to the reflected ceiling plan for the finished height of the ceiling. Add the overall height of the WoodWorks Linear panel to determine the elevation of the suspension system. Linear panel height and weight is listed on the data sheet.

**3.2.3** Install wall molding along the perimeter at the established suspension system elevation.

**3.2.4** Refer to the reflected ceiling plan to determine the panel orientation and size. Main beams must be installed directly under a backer location. The first main beam should be no more than 36" off the wall and then 48" on center across the installation. Use 12 gauge hanger wire 48" on center to support the main beams. Follow ASTM C636 requirements.

**3.2.5** Install 4' cross tees at 48" on center between the main beams. This will create a 4' x 4' grid module.

**3.2.6** Next insert 4' cross tees at the midpoints of the cross tees in Section 3.2.5. You should now have a 2' x 4' suspension system module that is called bridged or "H". This is required to keep the WoodWorks® Linear panels perpendicular to the main beams and backers/dowels aligned along the suspension system for clip attachment.

**3.2.7** The end backers/dowels of the panel must be secured to the suspension system. These are 7 feet apart. You will need to install an additional 4' cross tee at the 7' location for each row of panels.

**3.2.8** Additional cross tees can be installed in the system as needed to support mechanical fixtures such as lights and speakers.

### 3.3 WoodWorks Linear Panels

**3.3.1** WoodWorks Linear panels are installed in sequence across the room. The first row of panels will have the male side towards the wall. Backer may need to be trimmed for proper panel alignment

**3.3.2** Begin at one wall, raise the panel up against the suspension system, and align the backers with the suspension system.

**3.3.3** The WoodWorks Linear Solid Wood panel is attached to the suspension system by screwing through the backer directly into the suspension system using #6 x 1-1/4" fine thread drywall screws. It is recommended that pilot holes are drilled in the backers before installing the panel.

**3.3.4** If the WoodWorks Linear Solid Wood panel is ordered without a felt backing, a backer clip installation method can be used. Insert a clip around the appropriate backer and push upwards to engage the clip tabs onto the suspension system flange. Make sure both clip tabs engage the suspension system flange.

**3.3.5** Insert two backer clips at the four corners of the panel, then insert two clips on each backer that align with the suspension system.

**3.3.6** Continue installing WoodWorks Linear Solid Wood panels — male to female — across the room.

### 3.4 WoodWorks Linear Reveal

**3.4.1** WoodWorks Linear Solid Wood panels will have a 1" reveal between panel ends. This uniform spacing and alignment is maintained by the 15/16" suspension system assembly.

### 3.5 WoodWorks Linear Solid Wood Panel Borders

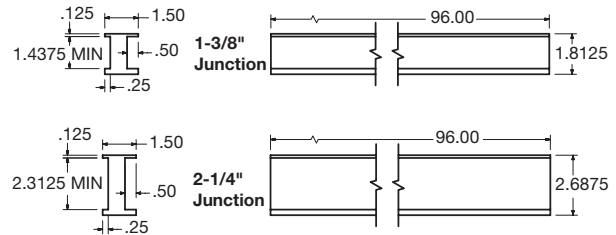
**3.5.1** Refer to the ceiling plan for border panel size and spacing.

**3.5.2** The border at panel ends, perpendicular to the suspension system, will be controlled by the suspension system location. The border size was used in Section 3.2.4 when determining the suspension system layout.

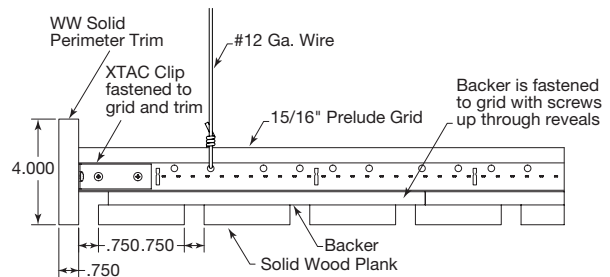
**3.5.3** The border at panel sides, parallel to the suspension system, must be maintained at the specified dimension by using a mechanical fastener to secure the clip or panel to the suspension system. This can be a direct screw attachment or a wire tie attachment to the clip.

### 3.6 WoodWorks Linear Solid Wood Panel Accessories

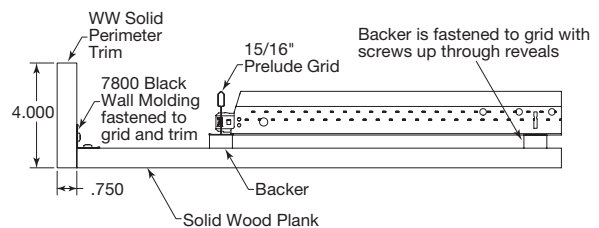
**3.6.1** Ledger trim can be used to cover the wall molding with the same finish as the WoodWorks Linear Solid Wood panel when required. The ledger can be fastened to the molding with adhesive or screwed from above with 1/4" long screws.



**3.6.2** Perimeter trim installed on the border at panel sides, parallel to the suspension system, should be installed by using a mechanical fastener to secure an XTAC clip to the suspension system and the trim.



Perimeter trim installed on the border at panel ends, perpendicular to the suspension system, should be installed by using a mechanical fastener to secure 7800 wall molding to the suspension system and trim.



### 3.7 Mechanical Fixtures

**3.7.1** Mechanical fixtures such as lights, speakers, and sprinklers should be installed into the acoustical suspension system before installing the WoodWorks Linear Solid Wood panels. Fixtures can be installed at the suspension system height or flush with the bottom of the panel. Fixture weight or housing must be supported by the acoustical suspension system. Install additional cross tees for support as needed. Refer to the ceiling plans for specific details.

WoodWorks® Grille panels can be cut to fit around fixture openings. Use the WoodWorks Linear Solid Wood end cap to trim the cut blades or sand and stain exposed field cut edges to match the panel finish.

### 3.8 Acoustical Blankets

**3.8.1** Acoustical blankets will add acoustical performance to the WoodWorks Linear Solid Wood panels. See CS-4172 Acoustical Infill Panels data sheet for specific data. The acoustical blanket is placed on top of the panel and must be installed progressively with the panel installation.

## 4.0 CUTTING

When you cut a panel to length, you can use normal woodworking tools, (e.g., circular saws, saber saws, coping saws, etc.).

Penetrations for sprinklers (or other fixtures) can be accomplished by simple interruption of the wood planks at those locations or by using normal woodworking tools to cut access in the planks.

**▲ CAUTION! WOOD DUST.** Sawing, sanding, and machining wood products can produce dust. Airborne wood dust can cause respiratory, eye, and skin irritation. The International Agency for Research on Cancer (IARC) has classified wood dust as a nasal carcinogen in humans.

**Precautionary measures:** If power tools are used, they should be equipped with a dust collector. If high dust levels are encountered, use an appropriate NIOSH-designed dust mask. Avoid dust contact with eyes and skin.

**First Aid measure in case of irritation:** In case of irritation, flush eyes or skin with water for at least 15 minutes.

## 5.0 SEISMIC INSTALLATION

WoodWorks Linear Solid Wood panel systems have been engineered and tested for application in all seismic areas based on these installation procedures. The following installation guidelines are required in areas where anticipated seismic activity will be moderate to severe (IBC Seismic Design Categories C, D, E, and F). Consult the local building department to ensure compliance with their unique requirements.

### 5.1 Suspension System Installation

The suspension system shall be standard 15/16" exposed tee grid. The installation shall, in all cases, conform to ASTM C636 requirements and the International Building Code. When using WoodWorks Linear Solid Wood panels weighing in excess of 2.5 lbs/SF, the ceilings must be installed per Seismic Design Categories D, E, and F. The requirements listed here represent the manufacturer's minimum acceptable installation recommendation, and may be subject to additional requirements established by the local authority having jurisdiction.

## 5.2 WoodWorks Linear Solid Wood Panel Installation

WoodWorks Linear Solid Wood panels must be mechanically secured to the suspension system for installations in IBC Seismic Design Categories C, D, E, and F.

### 5.2.1 Option 1 – Direct Screw Attachment

Position the WoodWorks Linear Solid Wood panels on the suspension system and direct screw attach to the suspension system using #6 x 1-1/4" fine thread drywall screws. See detail in Section 3.3.5. For best results, drill clearance holes in the backer to prevent splitting. Use two screws in each backer that aligns with the suspension system, typically 10 fasteners per 8' panel. Panels are accessible with this option.

### 5.2.2 Option 2 – Clip Attachment

Attach the panel to the suspension system as described in Section 3.3 with the backer clip. Next, use an 18 gauge wire tie to securely tie the clip to the suspension system. This is a progressive installation and the wire ties should be done in sequence for ease of installation.

- Bend an 8" to 10" piece of wire tie into a V
- Slip the wire over the suspension system and insert the wire ends into the holes of the clip
- Next, pull the wire ends up over the bulb of the suspension system and twist to secure the clip to the suspension system
- Wire ties are required on a minimum of eight clips per 8' panel

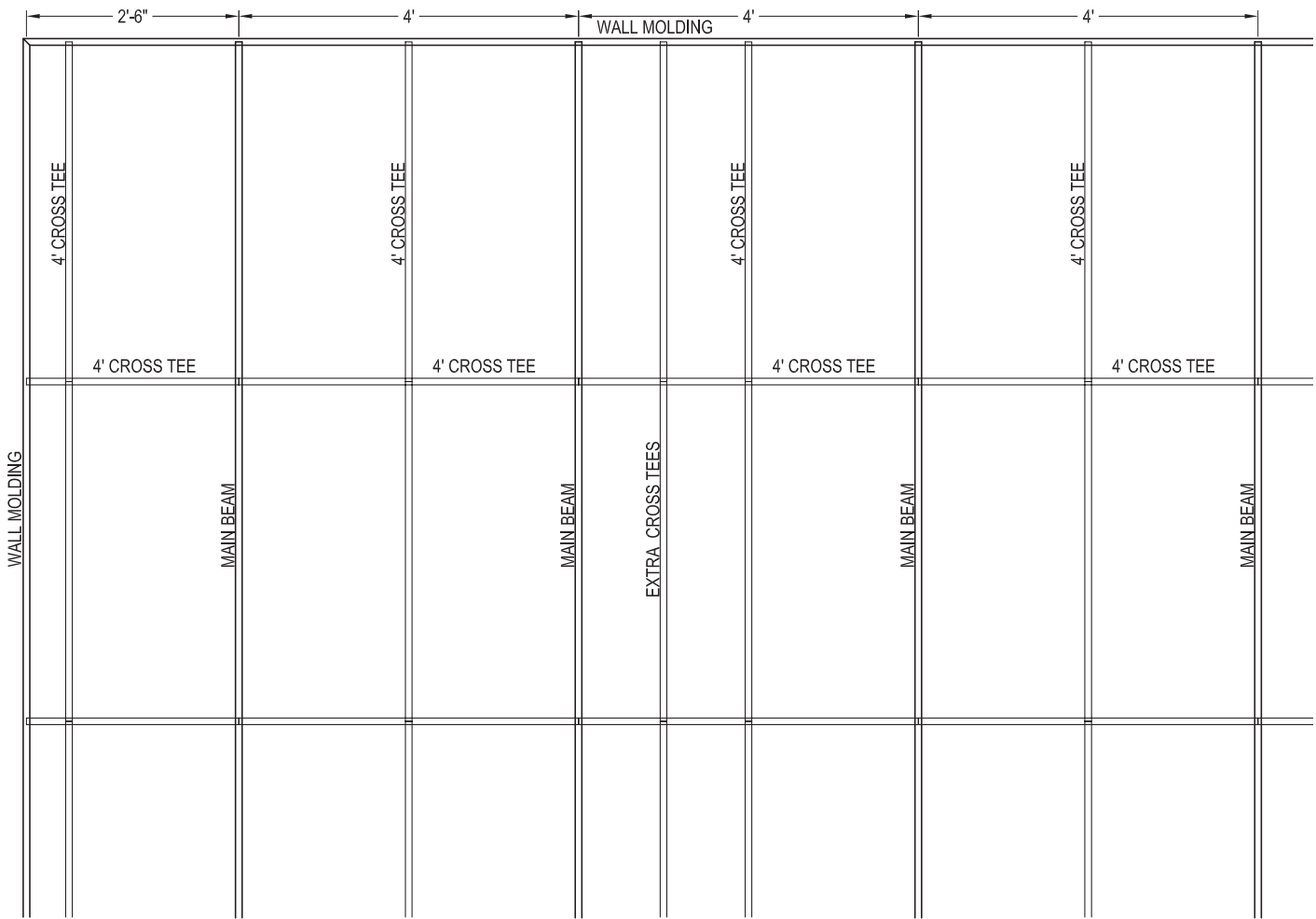
WoodWorks Linear Solid Wood panels installed with this option are not easily accessible. Use screw attachment option for last panel or accessible panels.

Testing conducted at the Structural Engineering Earthquake Simulation Laboratory, located at the State University of New York - Buffalo campus, produced satisfactory results with the guidelines listed above.

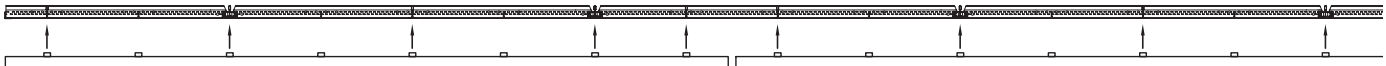
## 6.0 CLEANING RECOMMENDATIONS

WoodWorks® Linear Solid Wood panels can be cleaned with a soft, dry cloth.

**CEILING LAYOUT**



**SECTION DETAIL**



**MORE INFORMATION**

For more information, or for an Armstrong representative, call 1 877 ARMSTRONG.  
 For complete technical information, detail drawings, CAD design assistance, installation information, and many other technical services, call TechLine<sup>SM</sup> services at 1 877 ARMSTRONG or FAX 1 800 572 TECH.  
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