WoodWorks® Grille – Forté

Assembly and Installation Instructions

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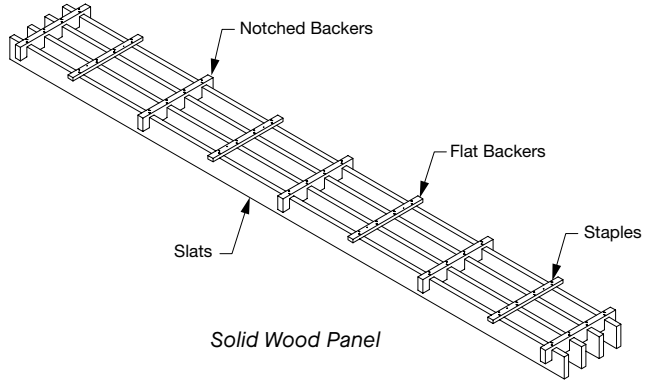
Torsion Spring Access Door
Scan the QR code below with your smartphone camera to view the installation video.

Armstrong®
World Industries

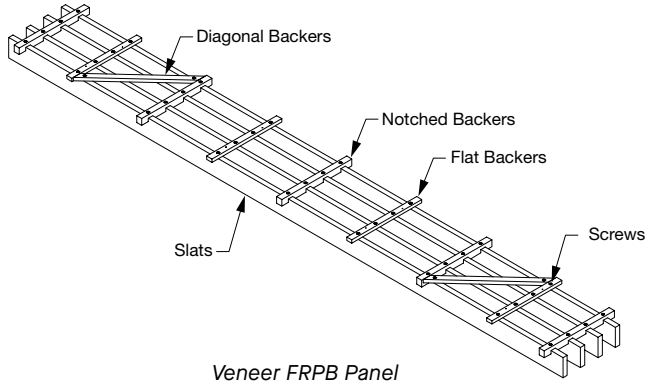
1. GENERAL

1.1 Product Description

WoodWorks® Grille – Forté is a wood-slat ceiling system offered in two substrates; a solid poplar and a veneered fire-retardant particle board. These are available in a variety of standard slat widths, depths, and finishes. Panels are offered in nominal sizes of 1' × 4', 1' × 6', and 1' × 8' lengths. Both the panels and installation system are provided by Armstrong. Panels must be installed with Prelude® XL® Heavy-Duty 15/16" suspension system with screws ***(Fig 1)***.



Solid Wood Panel



Veneer FRPB Panel

(Fig 1)

1.2 Storage and Handling

WoodWorks Grille – Forté is a made-to-order product produced and shipped on demand with proper dimensions and conditions similar to how they should be installed in as per our warranty conditions. All ceiling components should be stored in a dry interior location and must remain in the original packaging prior to acclimation to avoid damage. The materials must 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. WoodWorks Grille – Forté panels can be cleaned with a soft dry cloth.

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

1.3 Site Conditions

Building areas that will receive a ceiling must be free of construction dust and debris. Installation of the products must 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 and temperature. (Wood tends to contract with lower humidity and expand with higher humidity.) Wood may 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 and suitability of this product in your space. 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, before their installation, Armstrong recommends uncrating and keeping panels on the skid, and placing panels in an environmentally stable building location for a minimum of 72 hours.

1.4 Material and Surface Finish

WoodWorks® Grille – Forté is a wood-slat ceiling system offered in two substrates; a solid poplar and a veneered fire-retardant particle board.

Solid Wood
Panels are constructed from solid poplar. Slats have a semi-gloss coating finish. Backers are constructed from solid poplar and have a black factory finish.

Veneer
Panels are constructed of fire-retardant particle board with real-wood veneer. All visible exposed edges when installed are banded with the same finish as the face. FSC® certified core options are also available as a premium. Backers are constructed from solid poplar and have a black factory finish.

1.5 Color

WoodWorks Grille – Forté panels are available in a variety of standard finishes. Custom finish options are also available.

Solid Wood
The solid wood grille panels are offered in 12 finish options: Bleached Grey (GBG), Classic Grey (GCG), Carbon Grey (GCB), Antique Oak (GAO), Golden Maple (GGM), Natural Walnut (GWN), Warm Oak (GWO), Forest Walnut (GFW), Red Oak (GRK), English Chestnut (GEC), Rich Mahogany (GRY), and White (GWH).

Veneer
The veneer grille panels are offered in 10 options:
Plain Slice White Maple (NWM), Plain Slice White Ash (NWA), Plain Slice White Oak (NOK), Plain Slice Cherry (NPC), Plain Slice Walnut (NWN), Vertical Grain Fir (NVF), Rift White Oak (NRO), Quartered Walnut (NQW), Quartered Sapele (NQS), and Quartered Mahogany (NQM).

Natural variations in color and grain are characteristic of wood products. To maximize visual consistency, panels should be unpacked and examined collectively to determine the most desirable arrangement for installation.

IMPORTANT NOTE: For phase projects or large orders, it is recommended to work with your local rep to give advance notice prior to placing an order. This will allow the manufacturing facility to secure the quantity of material needed for your project and have the best chance to produce coordinating grilles for a selected finish.

1.6 Ordering Considerations

Be sure to account for extra material that is normally needed for wood installations. When installing WoodWorks Grille – Forté panels, you should consider ordering at least 5% extra material. Up to 10% more may be needed for odd size or unique 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. If extra material is ordered after the first batch of material has been placed, panels will be produced to best coordinate with the finish of the first order, refer to Section 1.5 for important notes for phase projects or large orders. WoodWorks Grille – Forté panels will have a 1" reveal between panel ends. You will need to account for this 1" spacing when designing your space and determining the quantity required for installation.

1.7 Design Considerations

WoodWorks Grille – Forté panels can be installed on ceilings and walls and can be mixed within a space in varying slat heights and panel lengths to create visual patterns. As you design your space consider the following:

1.7.1 Visibility of Notched Backers
When mixing different slat heights with solid wood panels, slats deeper than 3" have deeper notched alignment backers than slats under 3". The deeper notched alignment backers may be visible when transitioning between these slat depths.

1.7.2 Faceted or Wall Installations
The suspension system may be visible from the sides in these types of installations. Consider your design and visibility of the suspension system as you lay out your space. Having panels capped or end against a wall is recommended in the cases where seeing the suspension system is not desired.

1.7.3 Reveal Between Panel Ends
WoodWorks Grille – Forté panels will have a 1" reveal between panel ends; consider this when designing and laying out the ceiling and where this reveal will fall within the ceiling plane. The 1" spacing between panel ends must be maintained. Any modifications done to the panel or suspension system to eliminate this spacing will not be covered by warranty.

1.7.4 Armstrong Integrated Lighting
For installations incorporating Armstrong Integrated Lighting, refer to the Armstrong Integrated Lighting for WoodWorks Grille – Classics and WoodWorks Grille – Forté supplemental installation instructions for additional details and requirements.

1.8 Fire Performance and Sprinklers

WoodWorks® Grille – Forté panels have been tested based on E-84 testing. Panels may obstruct or skew the existing or planned fire sprinkler water distribution pattern, possibly delaying the activation of the fire sprinkler or fire detection system, or accelerating the activation of the sprinkler by channeling heat from the 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 on the proper installation techniques where fire detection or suppression systems are present. Refer to the Percent Open Area column on the panel property table located on the last page of the installation instructions to determine if you can install sprinklers above the WoodWorks Grille – Forté panel and confirm with your local code official. A hole may be cut through the panel to allow for sprinkler head and other penetrations, refer to Section 6.

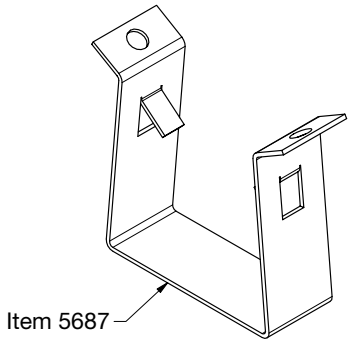
1.9 Plenum

WoodWorks Grille – Forté panels are clipped or screw-attached to the suspension system. The panel does not travel into the plenum for installation, so minimal plenum spacing is required.

2. PANEL ACCESSORIES

2.1 Clips

Backer Clips: Metal Backer spring clips are used to attach panels to 15/16" Black Prelude® T-Bar suspension system and help with panel alignment before panels are screwed in place ***(Fig 2)***.



(Fig 2)

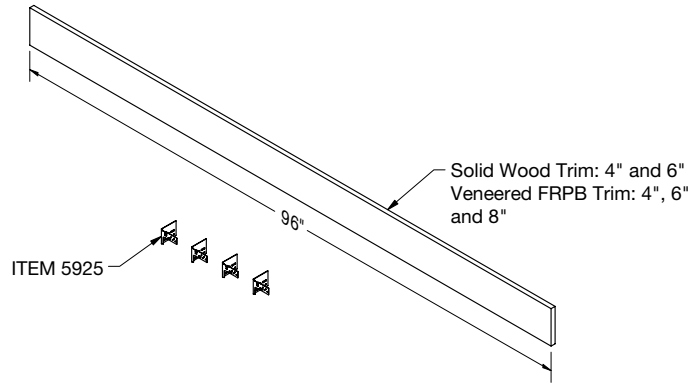
2.2 Screws *(Fig 3)*

RECOMMENDED SCREW USE	
Use	**Screw**
To direct-attach solid wood and veneer panels to the suspension system	#6 × 1-1/4" bugle head hi-lo drywall screw
To direct-attach a field-modified panel to suspension system using a shallow notched backer • Solid panels (slats under 3") • Veneer panels (all slat sizes)	#6 × 1-5/8" bugle head hi-lo drywall screw
To direct-attach a field-modified panel to suspension system using a deep notched backer • Solid panels (slats over 3")	#8 × 2-1/2" bugle head hi-lo drywall screw
To fasten field-applied backer to solid wood panels when panels have been field modified	#6 × 1-1/4" bugle head hi-lo drywall screw
To fasten field-applied backers to veneer panels when panels are field modified (if factory-applied backer and screw cannot be re-used)	#8 × 2" flat head screw
To attach 5925 clip to solid wood and veneer trim	#8 × 1/2" pointed truss head screw

2.3 Trim Accessories

Wood trim options are available in coordinating slat finishes. Trims come in 8' lengths with clip, Item 5925 (use to fasten trim to the grid) included with the trim ***(Fig 4)***:

- 7146H4L96_ _ _: 4" Solid Wood Trim
- 7146H6L96_ _ _: 6" Solid Wood Trim
- 6481F07W1H4_ _ _: 4" Veneer Trim
- 6481F07W1H6_ _ _: 6" Veneer Trim
- 6481F07W1H8_ _ _: 8" Veneer Trim



(Fig 4)

2.4 Finish Options for Cut Ends

- 5457GAL1_ _ _: Gallon-size stain to finish cut ends of solid wood panels
- 5457QT1_ _ _: Quart-size stain to finish cut ends of solid wood panels
- 6408D5_ _ _: 1-1/4" Edge banding to finish cut ends of veneer panels

2.5 Touch-Up Kit

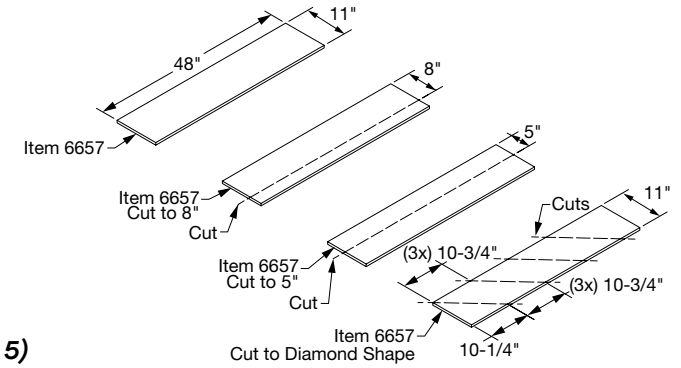
Touch-up markers and fill sticks (by others): These are recommended for dings or scratches on the slat face.

2.6 Acoustical Infill Panel Options

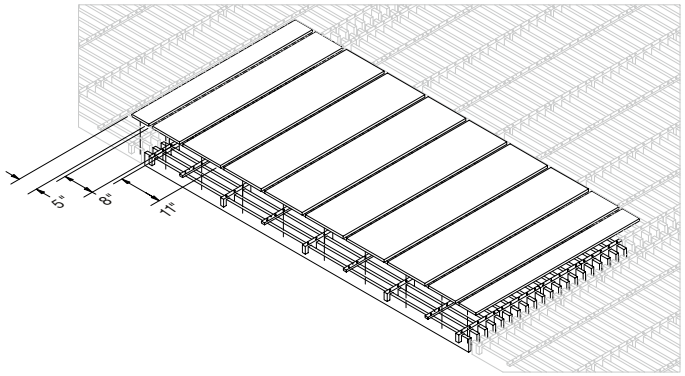
BioAcoustic™ infill panels, Item 5823 (24" × 24"), and Black Calla® panels, Item 2820BK (24" × 24"), provide Total Acoustics® performance and hide the plenum. When clips are used to help with panel installation, it is important to note that clips must be removed after panels have been screwed in place; clip tabs that engage to the suspension system will not allow the panels to sit flat on the suspension system flange.

11" × 48" BioAcoustic infill panel, Item 6657, will need to be field cut to fit between certain backer spacing. The sizes should be as follows ***(Figs 5-7)***:

- Full size 11" × 48" infill panel will fit between backers spaced 12" O.C.
- An 8" × 48" cut infill panel will be needed to fit between the first hanging backer and end alignment notched backers
- A 5" × 48" cut infill panel will be needed to fit between slat spacing between two panel ends
- For veneer panels, a diamond-shaped cut infill panel will be needed to fit between the diagonal backers between neighboring panels. Due to the placement of the diagonal backers, these diamond-shaped panels will need to install progressively as panels install.

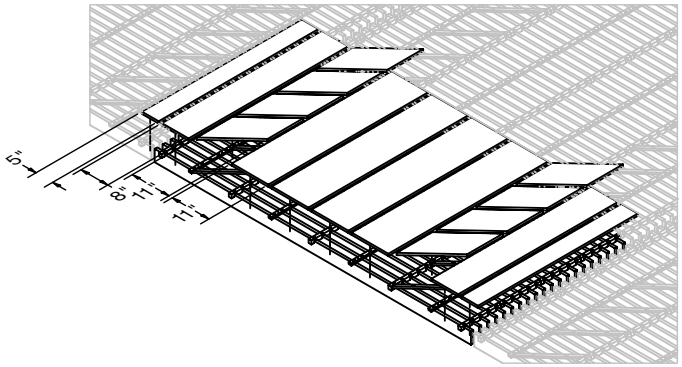


(Fig 5)



(Fig 6)

Solid Wood with cut-to-size BioAcoustic infill panels



(Fig 7)

Veneer with cut-to-size BioAcoustic infill panels

2.7 Flat Backer Kits

7290GBL: Additional backers can be ordered. Backers are recommended for modifications done to the panel in the field where the manufactured applied backers are removed but a new backer is required for panel installation, refer to Section 6.0.

3. INSTALLATION

Before starting any WoodWorks® Grille – Forté panel ceiling installation, be sure to confirm any seismic requirements that need to be met for your project and follow the recommended installation instructions.

3.1 Non-Seismic Installation

3.1.1 Suspension System Wall-to-Wall
Use heavy-duty 15/16" Prelude® XL® T-Bar suspension system, main beams, cross tees, and wall molding to support the WoodWorks Grille – Forté panels. All installations should follow ASTM C636. All references to suspension component duty ratings are per ASTM C636.

The suspension system is directional, WoodWorks Grille – Forté slats install perpendicular to the main beams. Refer to the reflected ceiling plan to determine the suspension system layout to ensure main beams run perpendicular to the panel length.

Hangers and bracing are to comply with all local code requirements. The suspension system shall be properly installed and leveled using no less than 12-gauge galvanized steel wire. The suspension system must be leveled to within 1/4" of 10' and must be square to within 1/16" of 2'. Installation on suspension systems that do not meet this tolerance will produce unacceptable panel alignment.

3.1.1.1 For Installation Weighing Less Than 3 lbs/SF

- 7301 12' main beams are installed 48" O.C. with hanger wires supporting at no more than 48" O.C. along the mains
- XL7341 4' cross tees installed at 24" O.C., intersecting the main beam at 90° every 24", creating a 24" × 48" module
- XL8320 2' cross tees shall install parallel to the main, at the midpoints on the 4' cross tee, creating a 24" × 24" module

3.1.1.2 For Installation Weighing Greater Than or Equal to 3 lbs/SF

- 7301 12' main beams are installed 24" O.C. with hanger wires supporting at no more than 48" O.C. along the mains
- XL8320 2' cross tees shall install perpendicular to the main, every 24" creating a 24" × 24" module

3.1.2 The 24" × 24" suspension system module is required to keep the WoodWorks Grille – Forté panels perpendicular to the main beams and backers aligned along the suspension system for screw attachment. See page 24 of this document for a grid ceiling layout example, Section 9.

3.1.3 Refer to the reflected ceiling plan for the finished height of the ceiling. Add the overall height of the WoodWorks Grille – Forté panel to determine the elevation of the suspension system. Remember to account for any infill panel weight in addition to panel weight to determine total system weight. The WoodWorks Grille – Forté panel height and weight are listed on the data sheet as well as the panel property table included in these installation instructions.

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

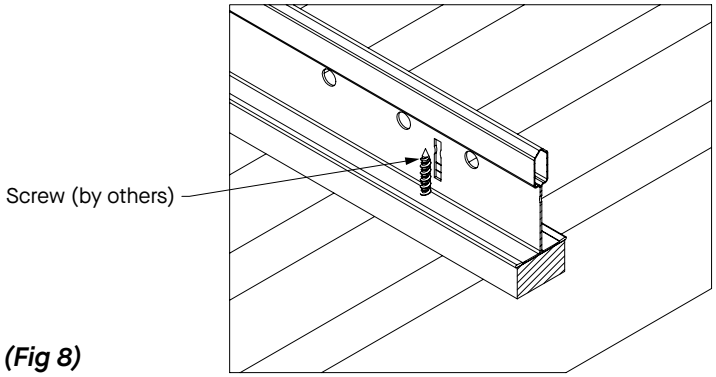
3.1.5 Refer to the reflected ceiling plan to determine the panel orientation and size. Backers must be aligned with the main beams or cross tees. The first main beam should be no more than 12-1/2" off the wall and 24" or 48" O.C. across the installation. In addition to the above requirements, also follow ASTM C636 requirements.

3.1.6 Additional cross tees can be installed in the system as needed for mechanical fixtures such as lights and speakers. Additional wires may also be required for support.

3.2 Panel Installation

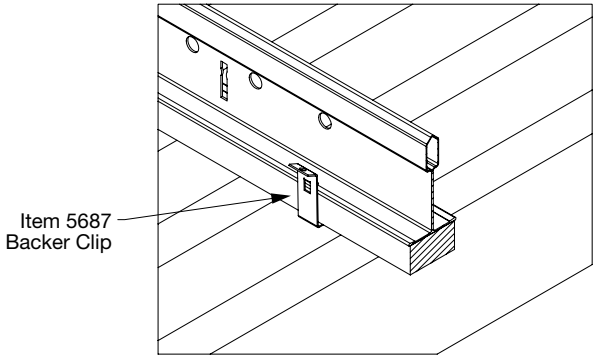
Use heavy-duty 15/16" Prelude® XL® T-Bar suspension system, main beams, cross tees, and wall molding to support the WoodWorks® Grille – Forté panels. WoodWorks Grille – Forté panels require at least two people to handle each panel safely, minimize damage, and provide panel support during installation.

3.2.1 WoodWorks Grille – Forté panels are recommended to install in sequence across the room. Panel and backers can be trimmed to adjust for any perimeter spacing. The WoodWorks Grille – Forté panels direct attach to the suspension system with screws ***(Fig 8)***.



(Fig 8)

When screw-attaching the panel to the suspension system, the use of backer clips can be helpful for panel alignment and can be removed once panels have been screwed in place. Be aware that the clips may scratch the sides of the slats and backers during removal. A touch-up kit is recommended to touch up any scratches or dings on the slats, while a flat black paint or black marker can be used to touch up any scratches on the backers ***(Fig 9)***.

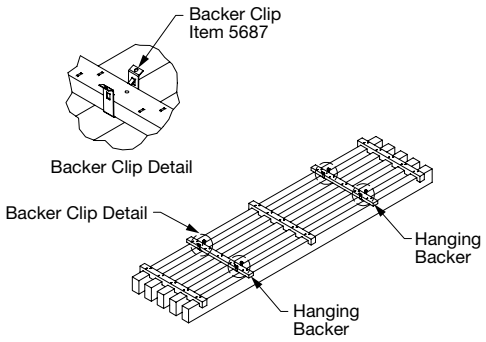


(Fig 9)

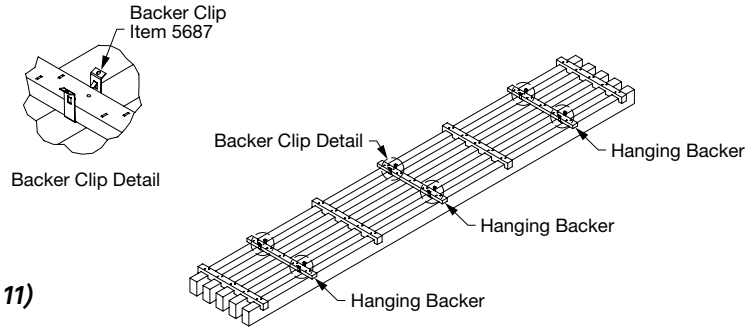
Refer to Section 3.2.1.1 for backer clip installation recommendation prior to screw attaching panels in place. Refer to Section 3.2.1.2 for screw installation instructions.

3.2.1.1 Step 1: Backer Clip Installation Before Screw Attaching

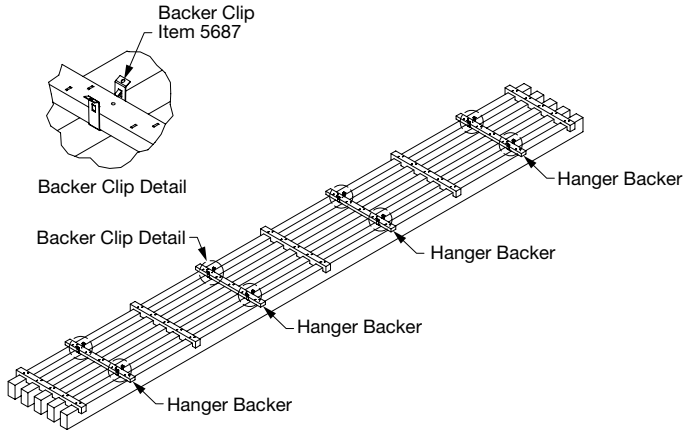
The use of clips can assist with panel alignment prior to screwing panels in place. Using backer clip, attach two clips on every hanging backer (backer that aligns with the suspension system, every 24" O.C.), the total number of clips required for installation will depend on the panel size ***(Figs 10-12)***.



(Fig 10)



(Fig 11)



(Fig 12)

Hardware Layout

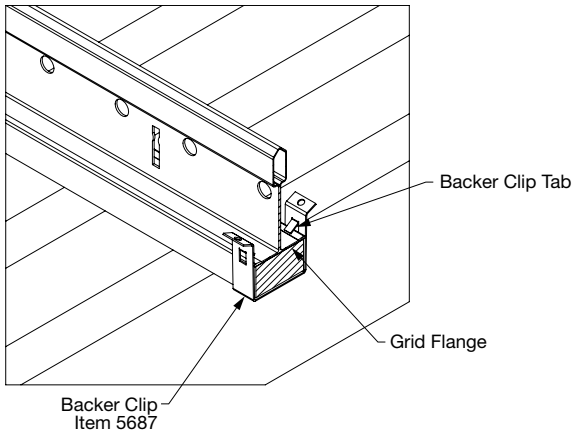
4' Panel will require 4 Backer Clips

6' Panel will require 6 Backer Clips

8' Panel will require 8 Backer Clips

When adding the clips to the panel, ensure that the clips do not cover pre-drilled pilot holes. This will avoid the clips getting in the way when it is time to screw the panel to the suspension system.

Begin at one wall, raise the panel and align the backers up against the suspension system, ensure your panels are running perpendicular to the main beams. Once backers are aligned with suspension, push upwards on the clip to engage the clip tabs onto the suspension system flange. Make sure both clip tabs engage the suspension system flange ***(Fig 13)***.

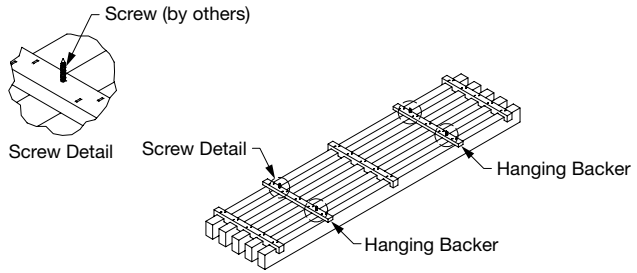


(Fig 13)

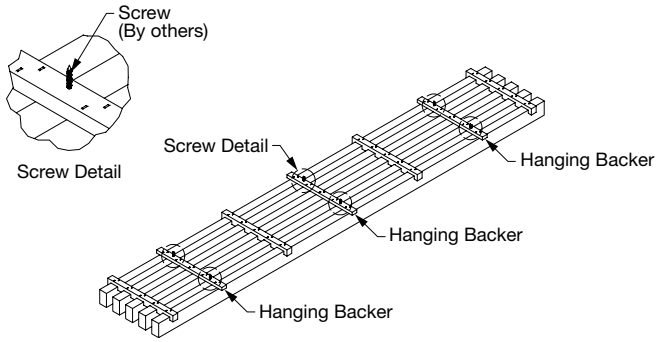
Continue installing WoodWorks® Grille – Forté panels across the room. Refer to section 3.2.1.2 for screw installation instructions.

3.2.1.2 Step 2: Screw Installation

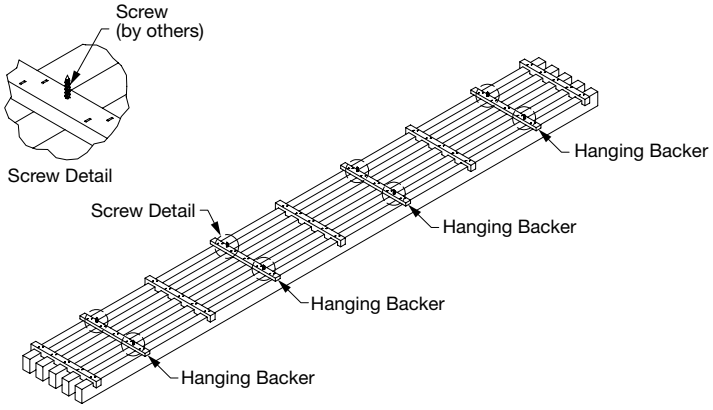
Use two #6 × 1-1/4" bugle head hi-lo drywall screws (by others) per hanging backer (backer that aligns with the suspension system) to fasten to the grid. The total number of screws required per panel will be determined by the panel size ***(Figs 14-16)***.



(Fig 14)



(Fig 15)



(Fig 16)

Hardware Layout

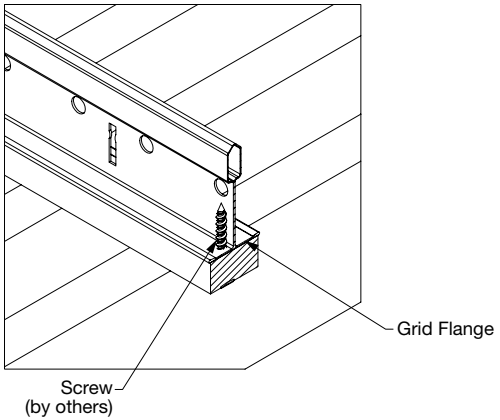
4' Panel will require 4 Screws

6' Panel will require 6 Screws

8' Panel will require 8 Screws

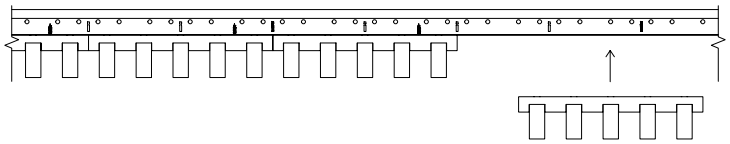
If clips are not used, it is recommended to establish a square line and re-snap every 4' to maintain squareness and ensure panel alignment throughout the installation.

Begin at one wall, raise the panel and align the backers up against the suspension system, ensure the panels are running perpendicular to the main beams. The hanging backers have factory drilled pilot holes to ease attachment to the suspension system. Once you have confirmed panel alignment, screw the panel in place to the suspension system. Make sure the screw creates a flush attachment of the hanging backer to the suspension system flange ***(Fig 17)***.

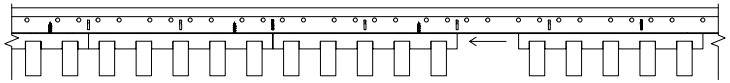


(Fig 17)

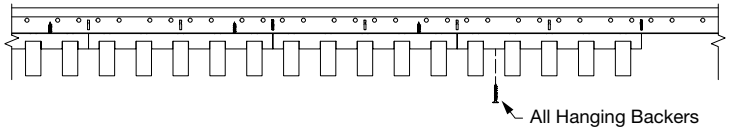
As the WoodWorks® Grille – Forté panels continue to install across the room, ensure these steps are followed ***(Fig 18)***.



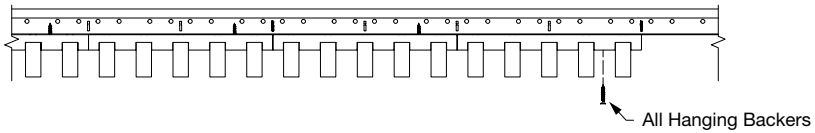
1. Raise panel to the grid and align hanging brackets to main beams/cross tees



2. Slide the panel against the previously installed panel, being sure to close the gap between backer end



3. While holding the panel against the previously installed panel without space between backers, fasten all hanging backers to the grid using the pre-drilled pilot holes closest to the prior panel first



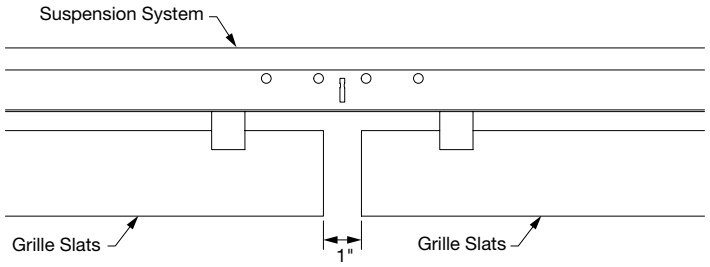
4. After fasteners closest to the previous installed panel have been attached, follow up by fastening the panel via the remaining pre-drilled pilot holes

(Fig 18)

- Raise the panel to the grid and ensure hanging backers are aligned with grid members
- The hanging backers of the panel being installed must be tightly butted against the hanging backers of the previously installed panel in that row
- Screws must be fastened in the pre-drilled hole locations closest to the previously installed panel first
- Fasten the remaining pre-drilled hole locations of the panel being installed

3.3 Panel Reveal

WoodWorks Grille – Forté panels will have a 1" reveal between panel ends. This uniform spacing and alignment are maintained by the 15/16" 24" × 24" grid layout ***(Fig 19)***.

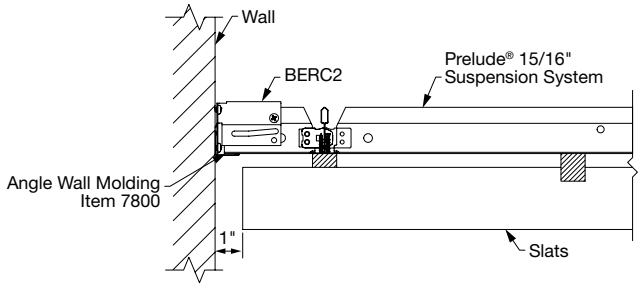


(Fig 19)

3.4 Borders

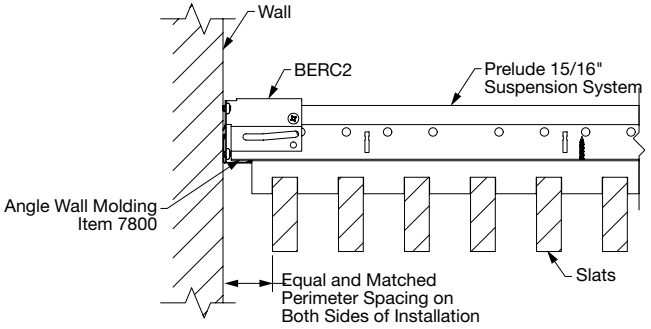
3.4.1 Refer to the ceiling plan for border panel size and spacing.

3.4.2 The border where the panel ends meet the wall should have allowance for a 1" border in the ceiling plan ***(Fig 20)***.



(Fig 20)

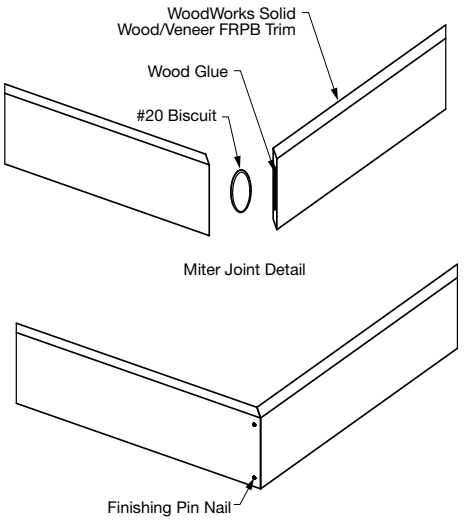
3.4.3 The border where panel sides meet the wall is determined by the first and last slat that is installed. These panels should be mechanically fastened in place to maintain the border ***(Fig 21)***.



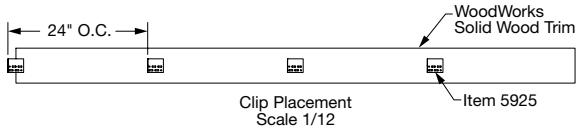
(Fig 21)

3.5 Panel Floating Trim

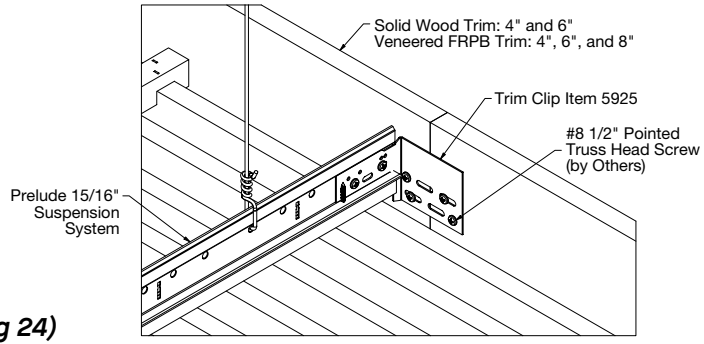
3.5.1 For discontinuous or cloud installations, 4" and 6" solid wood trims are available for the solid wood grille panels, and 4", 6", and 8" veneer trims are available for the veneer grille panels in coordinating finishes. These trim pieces are to be used in clouds with straight perimeter borders only, no curves. Refer to Section 3.5.2 for curved conditions. Cut the trim to fit as required and join the pieces with a biscuit joint. Use a #20 biscuit and wood glue to join two pieces of trim together on a straight run or at a mitered corner. Use one biscuit for 4" and two biscuits with 6" and 8" trims. A finishing pin nail can be used to hold your mitered corners together while your biscuit joint dries ***(Fig 22)***. The 5925 Clip (included with trim) is used to fasten trim to the suspension system every 2' O.C. aligning with 24" × 24" grid module ***(Fig 23)***. The 5925 clip can also be used to attach straight pieces of trim together at the joint once biscuit and glue have been applied ***(Fig 24)***.



(Fig 22)

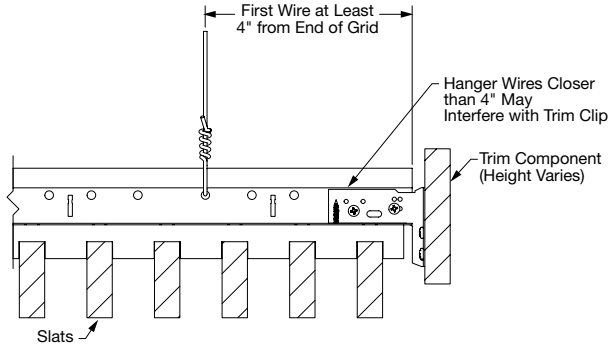


(Fig 23)



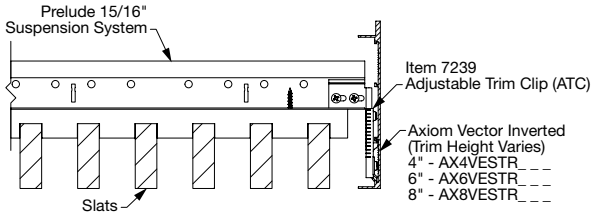
(Fig 24)

Use #8 × 1/2" pointed truss-head screws (by others) to attach 5925 to trim. It is recommended that hanger wires are no less than 4" from the perimeter. This will allow the 5925 clip to fasten to the grid without interference ***(Fig 25)***.



(Fig 25)

3.5.2 Axiom® inverted trim can be used for straight or curved cloud installations with grille panels. The use of the adjustable trim clip, Item 7239, will fasten trim to the suspension system and allow for trim height adjustments as needed. For the best visual it is recommended to have a black finish on the trim ***(Fig 26)***.



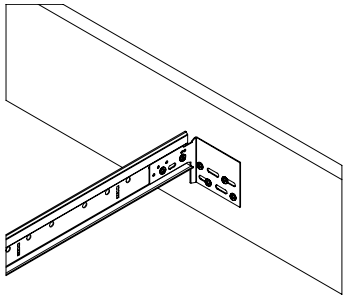
(Fig 26)

3.5.3 WoodWorks® and Axiom Trim Height Recommendations
Using the dimensions found in the table, a flush or a 1" tegular reveal can be achieved with WoodWorks or Axiom trim ***(Figs 25 & 26)***.

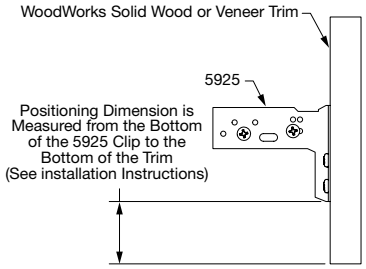
			WOODWORKS® AND AXIOM® TRIM DIMENSION FOR A FLUSH OR 1" TEGULAR REVEAL					
			Solid and Veneered Wood Trim ***(Figs 27 - 30)***					
			4" Wood Trim		**6" Wood Trim**		**8" Wood Trim***	
			1" Tegular	**Flush**	**1" Tegular**	**Flush**	**1" Tegular**	**Flush**
Slat Depths	**Solid**	1-3/8"	B: 7/8"	A: 5/8"	B: 7/8"	B: 1-7/8"	B: 7/8"	B: 1-7/8"
		2-1/4"	A: 1/2"	X	B: 1-3/4"	A: 1-1/2"	B: 1-3/4"	B: 2-3/4"
		3-1/4"	X	X	A: 1-1/2	A: 2-1/2"	B: 2-3/4"	A: 2-1/2"
		4-1/4"	X	X	A: 2-1/2"	X	A: 2-1/2"	A: 3-1/2"
		5-1/4"	X	X	X	X	A: 3-1/2"	A: 4-1/2"
	Veneered	2-1/2"	A: 3/4"	X	B: 2"	1-3/4"	B: 2"	B: 3"
		3"	X	X	A: 1-1/4"	A: 2-1/4"	B: 2-1/2"	A: 2-1/4"
		3-1/2"	X	X	A: 1-3/4"	A: 2-3/4"	B: 3"	A: 2-3/4"
		4"	X	X	A: 2-1/4"	X	B: 3-1/2"	A: 3-1/4"
			Axiom Vector Inverted Trim ***(Figs 31 - 36)***					
			4" Axiom Trim		**6" Axiom Trim**		**8" Axiom Trim**	
			1" Tegular	**Flush**	**1" Tegular**	**Flush****	**1" Tegular**	**Flush****
Slat Depths	**Solid**	1-3/8"	X	X	B: 15/16"	X	B: 15/16"	X
		2-1/4"	X	X	B: 1-13/16"	A: 2-13/16"	B: 1-13/16"	A: 2-13/16"
		3-1/4"	X	X	A: 2-13/16"	X	A: 2-13/16"	A: 3-13/16"
		4-1/4"	X	X	X	X	A: 3-13/16"	X
		5-1/4"	X	X	X	X	X	X
	Veneered	2-1/2"	X	X	X	A: 3-1/16"	X	A: 3-1/16"
		3"	X	X	A: 2-9/16"	A: 3-9/16"	A: 2-9/16"	A: 3-9/16"
		3-1/2"	X	X	A: 3-1/16"	X	A: 3-1/16"	X
		4"	X	X	X	X	A: 3-9/16"	X

Table Key:
(A) = Bracket position down
(B) = Bracket position up
(*) = Custom in solid wood
(**) = Dimensions shown are for panel ends not resting on Axiom flange. If panel ends resting on Axiom flange is desired, add 1/16" for a 6" Axiom trim and 1/8" for 8" Axiom trim to these dimensions.
(X) = Trim will not fully cover the grid with a flush or 1" tegular reveal, has interference between the suspension system and hardware or provide different reveal than flush or 1" tegular (dimensions will need to be assessed at job site).

Wood Trim *(Figs 27 - 30)*

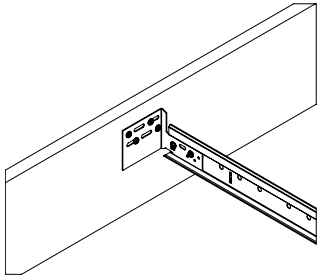


(Fig 27)

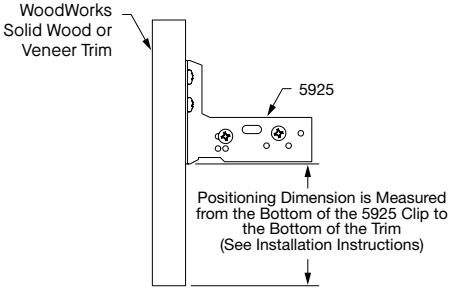


Installation Dimension Detail (Position A)

(Fig 28)



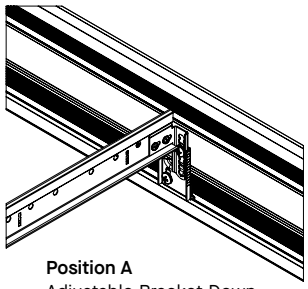
(Fig 29)



Installation Dimension Detail (Position B)

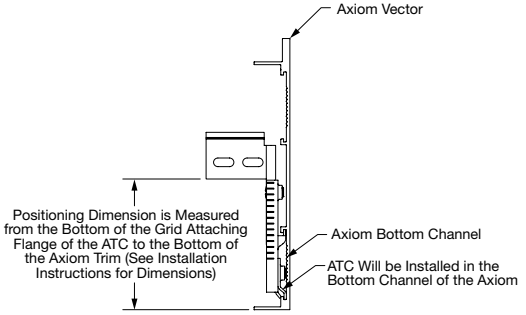
(Fig 30)

Axiom® Trim *(Figs 31 - 36)*



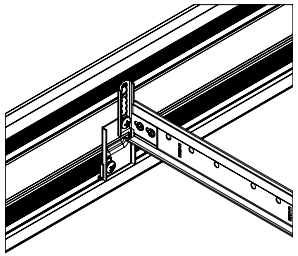
Position A
- Adjustable Bracket Down
- Mounting Plate Down
- Axiom Bottom Channel

(Fig 31)



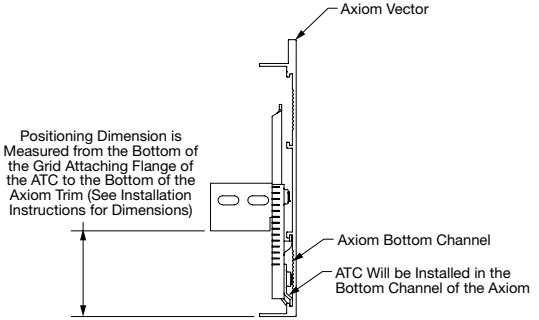
Installation Dimension Detail (Position A)

(Fig 32)



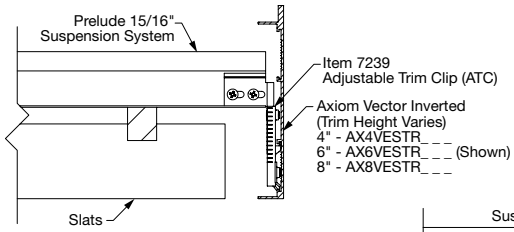
Position B
- Adjustable Bracket Down
- Mounting Plate Down
- Axiom Bottom Channel

(Fig 33)



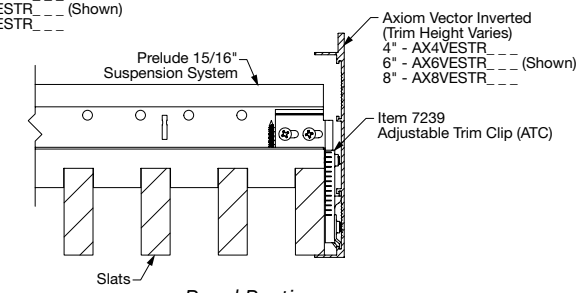
Installation Dimension Detail (Position B)

(Fig 34)



Panel Not Resting on Axiom Flange

(Fig 35)



Panel Resting on Axiom Flange

(Fig 36)

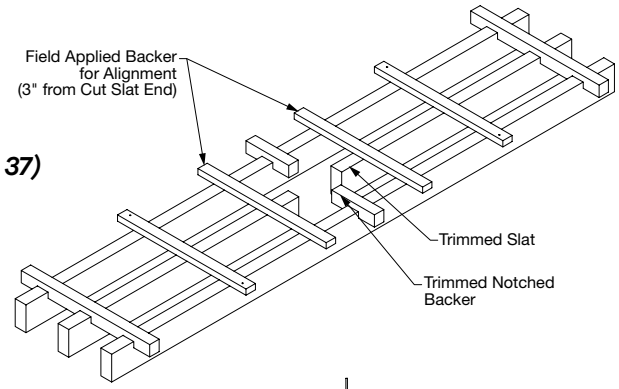
3.6 Mechanical Fixtures

Mechanical fixtures such as lights, speakers, sprinklers, and other MEP should be installed into the acoustical suspension system before installing the WoodWorks® Grille – Forté panels. Cuts on the panel to allow for fixtures penetration should not compromise the integrity of the panel construction. Refer to Section 6.

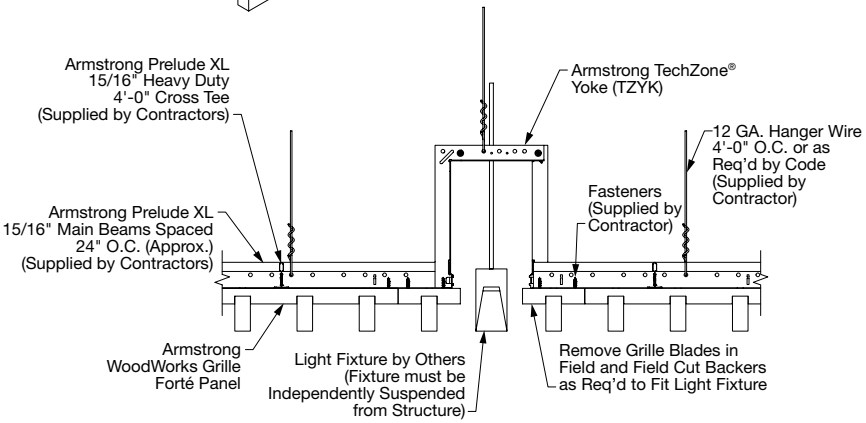
3.6.1 Lighting

For installations incorporating Armstrong Integrated Lighting, refer to the Armstrong Integrated Lighting for WoodWorks Grille – Classics and WoodWorks Grille – Forté supplemental installation instructions for additional details and requirements. Tested and approved lighting fixture weight or housing can be supported by acoustical suspension system. Other light fixtures not tested or approved should be independently supported to the structure.

Figs 37 & 38 are examples of lighting integration details. Integration can vary from project to project, refer to Section 6 for additional instructions on cutting the WoodWorks Grille – Forté panels.



(Fig 37)



(Fig 38)

3.6.2 Diffuser/Air Return

WoodWorks® Grille – Forté panels are natural wood products so air diffusers/air return should be installed in a way where it sits level or below the bottom of the slats so, as cooled or heated air is discharged, air will exit below and not make direct contact with the slats. Installing diffuser/air return above the panel or not meeting these requirements could have an adverse effect on the WoodWorks Grille – Forté panels and would not be covered by warranty.

3.6.3 Sprinkler

See Fire Performance and Sprinklers Section 1.8.

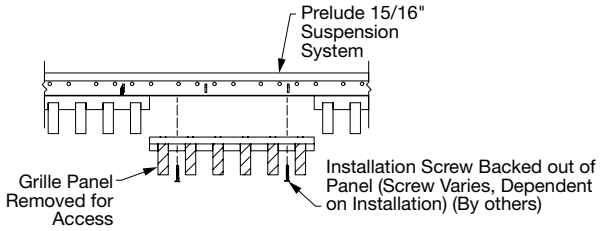
3.6.4 Other mechanical fixtures should be independently supported to structure. Fixtures can be installed between slats or flush with the bottom of the panel (Air Diffusers/Air Returns should not be installed higher than the bottom of the slat). Height adjustment of the fixture may need to be done depending on the height of the blade of your Grille panel. Install additional cross tees for support as needed. Refer to the ceiling plans for specific details. WoodWorks® Grille – Forté panels can be cut to fit around fixture openings, refer to Section 6, for additional information on panel cuts and modification recommendations. Use the WoodWorks Grille – Forté recommended stain to finish exposed field cut edges and coordinate with the panel finish.

3.7 Access Options

Plenum can be accessible with either screws or by creating an access door in the field. If needed, backers can be trimmed up to 1/8".

3.7.1 Access with Screw Installation

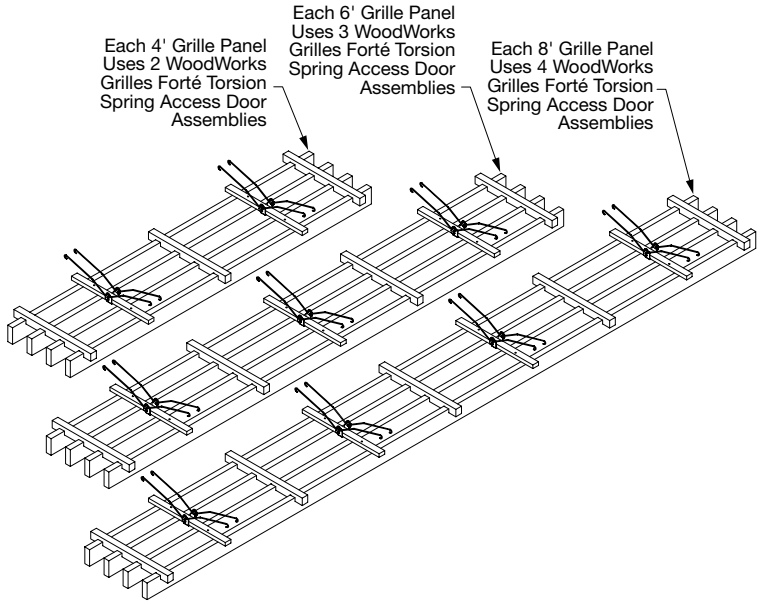
Access to the plenum can be achieved by simply unscrewing panels where access is needed. Refer to Section 3.2.1.2 for instructions on screw attaching the panel to the suspension system ***(Fig 39)***. If frequent access will be required, a field-created access door is recommended in lieu of screws.



(Fig 39)

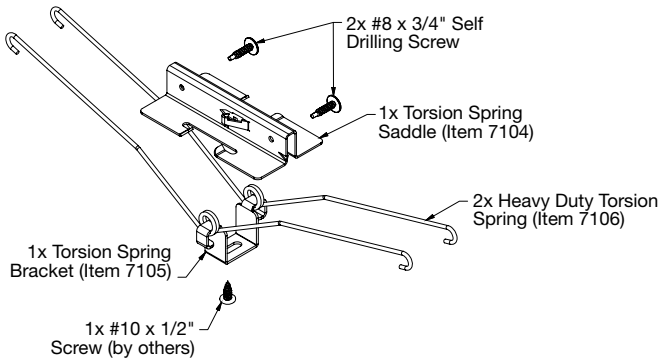
3.7.2 Field Created Torsion Spring Access Door

Access can be created by converting a standard WoodWorks® Grille – Forté panel into an access door in the field. With the components and tools listed in Section 3.7.1.1, installers can field-modify a standard WoodWorks Grille – Forté panel into a torsion spring access door ***(Fig 40)***.



(Fig 40)

3.7.2.1 Accessories and Tools Needed *(Figs 41 & 42)*



(Fig 41)

ACCESSORIES AND QUANTIES NEEDED PER PANEL SIZE (All components to be ordered separately)					
PANELS SIZES	**Torsion Spring Saddles (Item #7104)**	**Torsion Spring Bracket (Item #7105)**	**Torsion Springs (Item #7106)**	**#10 × 1/2" Wood Screw (By others - to fasten torsion spring bracket to backer)**	**#8 × 3/4" Self-tapping Screw (By others - to fasten saddles to suspension system)**
1' × 4'	2	2	4	2	2
1' × 6'	3	3	6	3	3
1' × 8'	4	4	8	4	4
OTHER TOOLS NEEDED					
A drill and a size 1/8" drill bit will be needed to pre-drill backers prior to fastening the spring bracket to backers. This will minimize splitting or damage to backers. Drill extender with a magnetic tip may be required depending on the depth of the blades.					

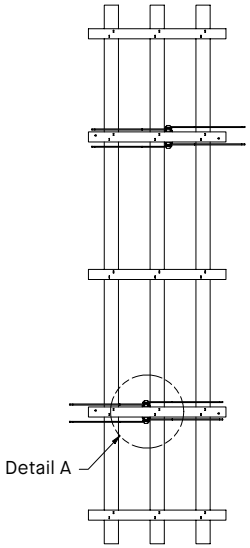
(Fig 42)

3.7.2.2 Access Door Limitations

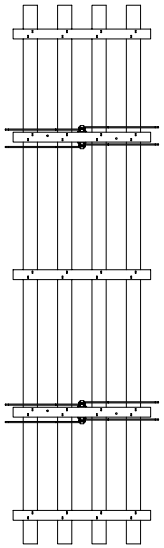
- Two consecutive access door panels can be installed in the 1 ft direction
- There are no limitations for consecutive access door panels in the panel length direction
- Consecutive access door sections must be full panels with direct-attached panels on both sides of 1 ft direction
- One direct-attached panel must be between a new access door section in the 1 ft panel direction
- Perimeter panels cannot be access door panels

3.7.2.3 Placement of Clips on Panel

It is recommended to stagger the placement of the torsion spring brackets (Item #7105) on panels with an odd number of slats ***(Fig 43)*** and to center them on panels with even slats ***(Fig 44)***. Placing spring brackets as recommended will help balance the spring connection to the suspension system.



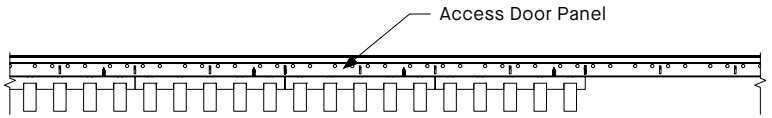
(Fig 43)



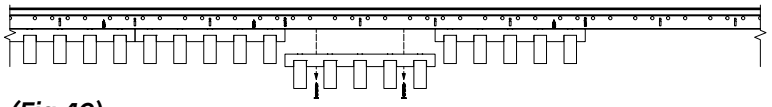
(Fig 44)

3.7.2.4 Steps for Creating the Access Door

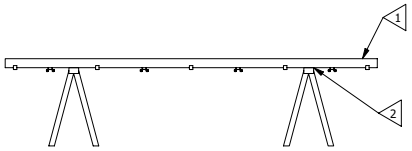
- All panels should be installed as per standard installation instructions, including the panel identified as the access door and at least one panel after the access door area ***(Fig 45)***
- Once panels have been fastened in place, unfasten the panel that will be converted into the access door ***(Fig 46)***
- Place the panel on a sawhorse with the blades facing up. Ensure the back of the blades are the ones resting on the sawhorse between backers instead of the backers ***(Fig 47)***. Locate the hanging backers and the location where the torsion spring bracket will be attached based on your slat number (odd slat vs. even slats). For panels with an odd number of blades, ensure that the torsion spring bracket is up against the middle blade, refer to Section 3.7.3.
- Using a 5/32 drill bit, pre-drill the backers to minimize backer splitting. Screw the torsion spring brackets (Item 7105) with #10 × 1/2" wood screw (by others) ***(Figs 48 & 49)***.



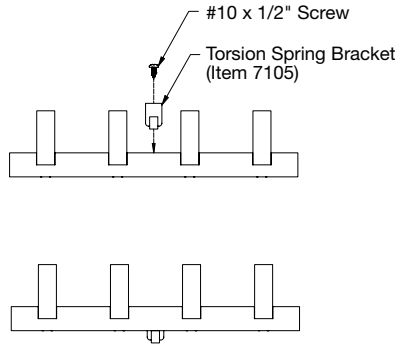
(Fig 45)



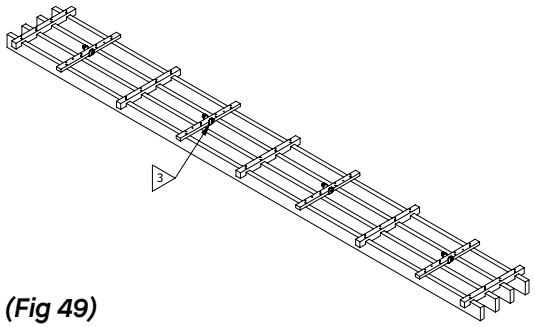
(Fig 46)



(Fig 47)

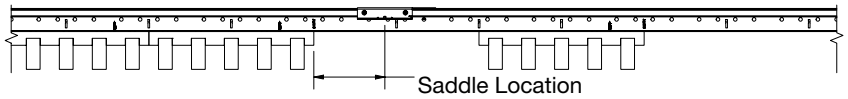


(Fig 48)



(Fig 49)

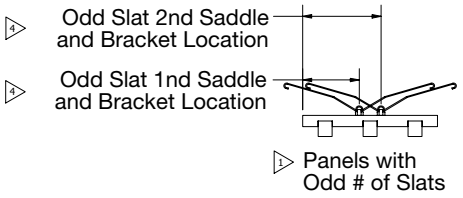
- Torsion spring saddles can now be installed on the grid ***(Fig 50)***. Use the table provided to find the dimension where all spring mounting saddles should install along the suspension system ***(Fig 51)***. These dimensions will aid in saddle placement, so they coordinate with each spring location based on blade thickness and the number of slats on the panel ***(Fig 52)***. The saddles will snap into place and can slide along main beams and tees until the final attachment. Crimp or clamp suspension system locking detail for temporary positioning. Once the final saddle position is verified, screw the mounting saddle to the suspension system using a #8 × 3/4" self-tapping screw (by others) ***(Fig 53)***.
- Add springs (Item 7106) to torsion spring brackets ***(Fig 54)***

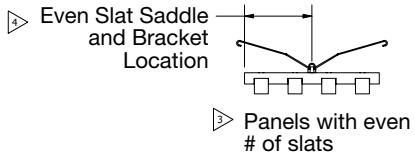


(Fig 50)

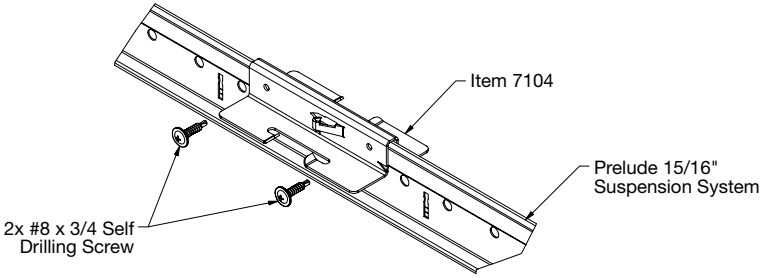
TORSION SPRING BRACKET AND SADDLE LOCATION				
	Even # of Slats (All Thickness)	**Odd # of Slats**		
		3/4"	**1"**	**1-1/4"**
1st Bracket Location	6"	5-5/16"	5-3/16"	5-1/16"
2nd Bracket Location	–	26-11/16"	6-13/16"	6-15/16"

(Fig 51)

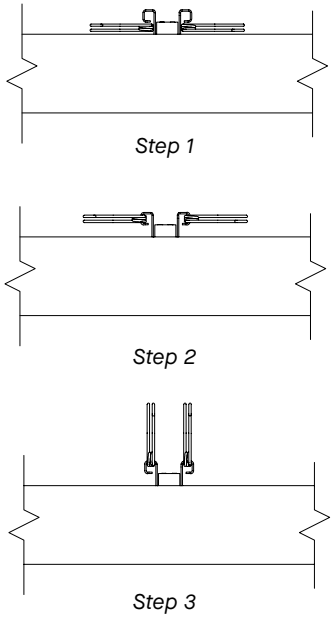




(Fig 52)

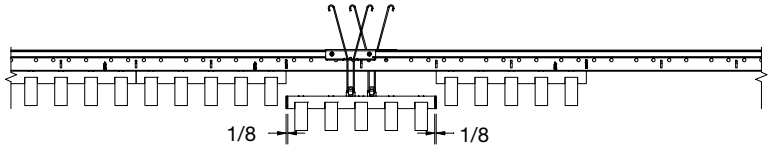


(Fig 53)

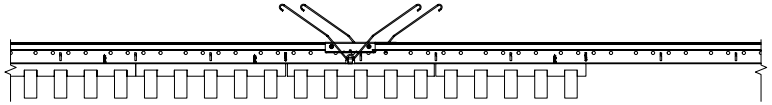


(Fig 54)

- Hold the panel in the horizontal position; panels should **NEVER** be allowed to swing down when installing. Starting on one end of the panel, align the springs with the corresponding saddles on the suspension system. Compress the springs and insert them into the corresponding slots. Continue down the panel length, position, and engage the remaining springs into the saddles. When all springs are engaged in saddles, gently press the panel up into place with the palm of the hand. The springs will spread apart in the slots of the suspension system and seat the panel into place ***(Figs 55 & 56)***.
- Backers can be trimmed up to 1/8" in cases where panels are too snug to ease removal and installation of panels
- For removal of the panels, it will require at least two people to handle each panel safely, minimize damage, and provide panel support during removal and reinstallation. The panel should **NEVER** be left in the swing-down position; it should always be fully removed from the space for access.



(Fig 55)

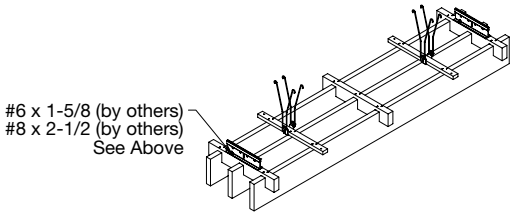


(Fig 56)

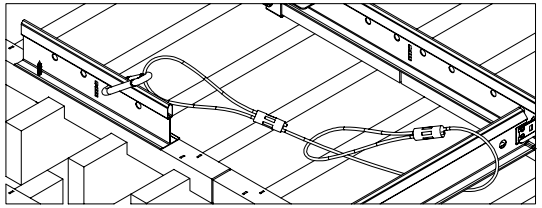
OPTIONAL: An optional safety cable can be used using Prelude® XL® 15/16" grid. Attach a 6" – 8" piece of Prelude XL main beam or Prelude XL cross tee to the last notched backer on each end of the access door ***(Figs 57 - 59)***.

- Use two #6 × 1-5/8" screw for slats under 3" with solid wood and all veneered grilles
- Use two #8 × 2-1/2" screw for slats over 3" with solid wood grilles
- Pre-drill 1/8" hole through the notched backer
- Two screws are required for each grid connection
- If no hanger hole is present on the piece of grid being used, drill a new 1/4" hole to attach the safety cable to

IMPORTANT NOTE: If misalignment of the panels is noted, ensure proper alignment of the springs inside of the saddles to correct any visual issues. Any unwanted gaps between backers caused by trimming of backers to ease installation and removal of access panels can be covered by using black gaffer tape (by others). Contact Techline for any questions or additional support.

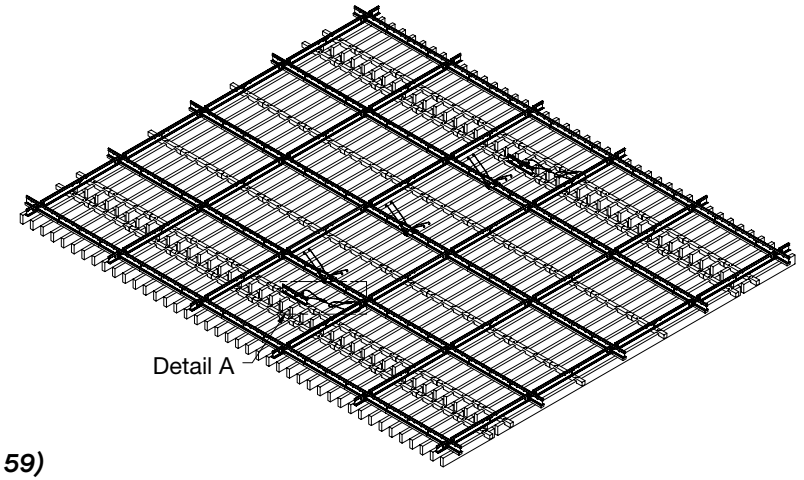


(Fig 57)



Detail A
Scales 1/4

(Fig 58)



(Fig 59)

4. NON-SEISMIC FACETED, WALLS AND SLOPED INSTALLATIONS

The following instructions for faceted, wall and slope installations are only for panels with slat heights 2-1/2" and under, and weighing less than 3 lbs/SF.

4.1 Faceted Installations

Standard WoodWorks® Grille – Forté panels can be installed to create a faceted ceiling vault or wall-to-ceiling transition. As the radius of the arc gets smaller or the slat gets deeper, slat spacing between panels gets tighter ***(Figs 60 & 61)***. Extra consideration is recommended when planning for faceted installations. Panels with 2-1/2" slats and under 3 lbs/SF, can be installed in these applications. Refer to panel property table found towards the end of the installation instructions to confirm which panels fall within these parameters and to find minimum radius recommendations. For any radius requiring less than 12" main beam intervals or smoother curve transitions, refer to Section 9.1.

4.1.1 Faceting a Main Beam

4.1.1.1 To facet the main beam, field cuts must first be made to the suspension system.

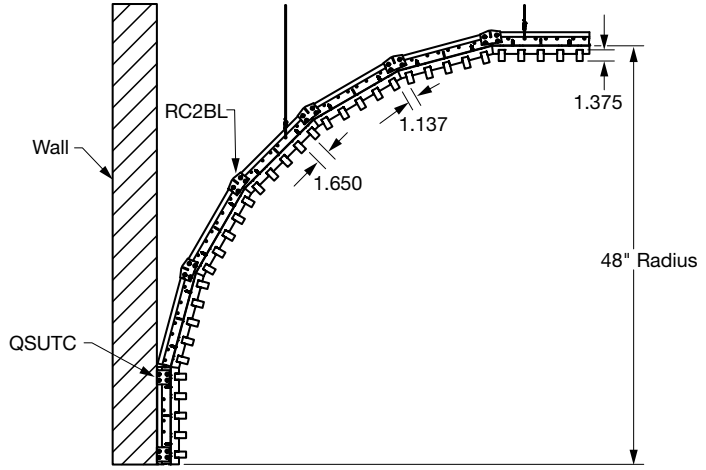
Cut the bulb and web of the main beam at 12" intervals. Use every other cross tee route for reference.

4.1.1.2 Use a curved template of the appropriate radius to hold the main beam in position as you attach RC2 clips.

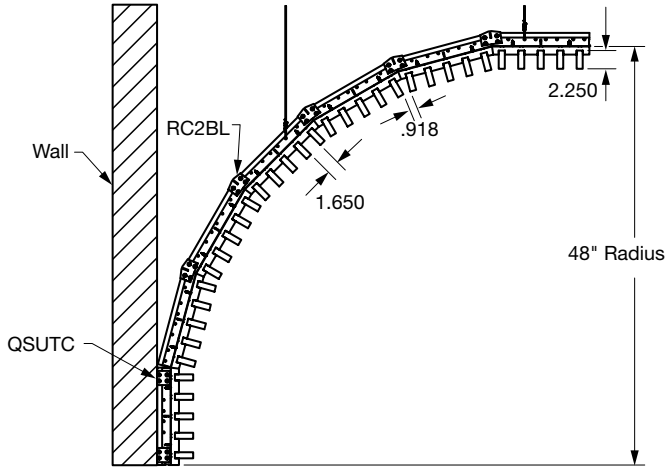
4.1.1.3 Bend the main beam at the field cuts and clamp it to the template.

4.1.1.4 Position an RC2 radius clip over each cut in the main beam. Screw the RC2 clip over each cut with four #8 × 1/2" pointed truss-head screws per clip — one screw at each corner of the RC2 clip.

For tips on creating a faceted curved suspension system, see the Drywall Grid Technical Guide, BPCS-3540. A copy is available on the web at www.armstrong.com/drywall



(Fig 60)



(Fig 61)

4.1.2 Faceted Suspension Systems
Faceted main beams are 24" O.C. and cross tees are 24" O.C.

4.1.2.1 Refer to the reflected ceiling plan and elevation view to determine the suspension system layout and height.

4.1.2.2 Install wall molding along the perimeter at the determined suspension system elevation. **NOTE:** Molding along the curved side must be cut, faceted, and fastened to the wall to match the faceted main beams.

4.1.2.3 Refer to the reflected ceiling plan to determine the panel orientation and size.

4.1.2.4 Use 12-gauge hanger wire recommended every 36" O.C. on the main, and wires recommended at the start of the arch and midpoint to support the main beams. Consider adding more wires for panels over 3 lbs.

4.1.2.5 For installations where the view of the suspension system is not desired from the sides, it is recommended to have panels capped or end against a wall to avoid seeing the suspension system.

4.1.3 WoodWorks® Grille – Forté Panel Faceted Installations
4.1.3.1 All panels must be direct screw-attached to every faceted main beam.

4.1.3.2 12" long backers must be aligned with the 12" facet on the main beam. Two screws per backer into each main beam facet are required ***(Fig 62)***.

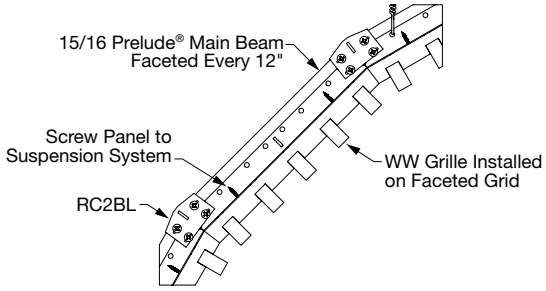
4.1.4 WoodWorks Grille – Forté Trim with Faceted Installations
Use of WoodWorks Grille – Forté trim for faceted installations is not recommended. When trim is required, the installer must field miter, join, and attach the trim to exactly match the faceted panels.

4.2 Wall Installations *(Fig 63)*

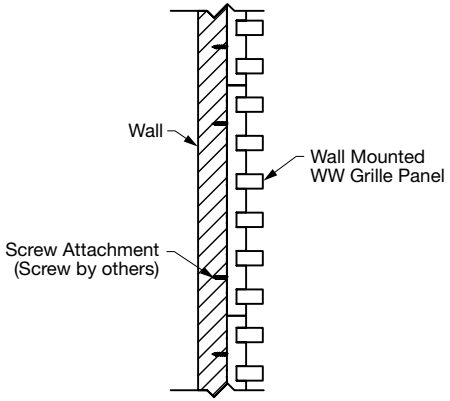
4.2.1 Panel orientation can be horizontal or vertical. Only panels with 2-1/2" slat heights and under and less then 3 lbs/SF are recommended for wall applications.

4.2.2 It is recommended to use 3/4" furring strips to be attached to the wall structure and then the WoodWorks Grille – Forté panels should be attached to the furring. The use of 3/4" plywood is recommended for wall installation where stud spacing is not ideal. Plywood should be attached to the structure, followed with WoodWorks Grille – Forté panels attaching to plywood.

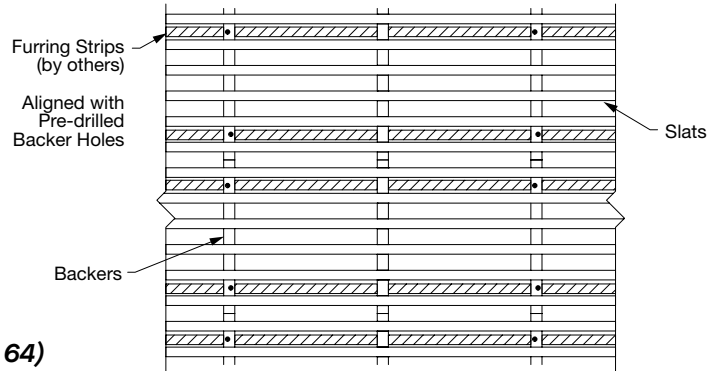
4.2.3 Furring spacing will depend on the panel. There are factory-drilled pilot holes on the backer, use these pilot holes as your guide. Be sure to measure the location of these pre-drill holes on the panel to determine the O.C. spacing of your furring. Regardless of which direction you run your furring, the backer should always fall on a furring for screw attaching ***(Fig 64)***.



(Fig 62)



(Fig 63)



(Fig 64)

4.2.4 For panel attachment, use two screws per hanging backer, use the factory pre-drilled hole for ease of installation. For best visual, furring strips are recommended to be painted black so it blends with the backer black painted finish.

4.2.5 WoodWorks® Grille – Forté panels can be cut to fit receptacles or other wall fixtures. Use normal woodworking tools to achieve the desired opening. Attach additional backers for extra support as needed. Use recommended stain or veneer edge banding to finish exposed field cut edges to coordinate with slat finish.

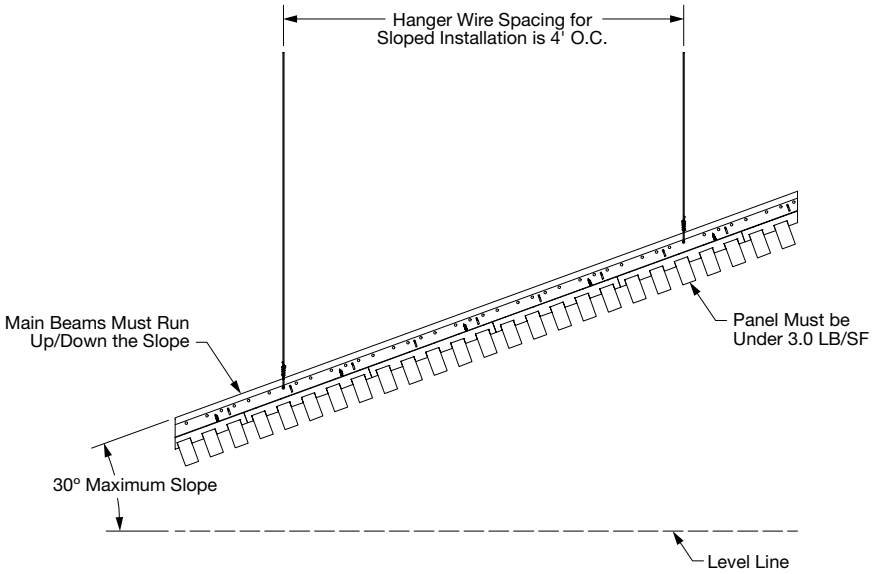
4.3 Sloped Ceiling Installation

Safe installation of a sloped ceiling requires project-specific evaluation for compliance with building codes. Sloped ceilings are not addressed in current building codes, but the current building code states that suspended ceiling main beams must be leveled to within 1/4" on a 10' span. Alternate designs are acceptable when approved by the authority having jurisdiction. This responsibility, as well as the final design and installation parameters, is the responsibility of the project design team.

When considering WoodWorks Grille – Forté panels for sloped ceilings, below are the minimum requirements that must be met. Panels in sloped installations will install with screws only ***(Fig 65)***:

- Only panels with slats 2-1/2" and under and less than 3 lbs/SF are recommended for sloped applications
- The maximum ceiling slope shall not exceed 30°
- Main beams install parallel (up/down the incline) of the slope, they **MUST NOT** be installed perpendicular to the slope as this may result in suspension system failure
- Main beams must be spaced 2' O.C.
- 12-gauge hanger wire must comply with ASTM C636 requirements and should be suspended vertically and plumb. Wires are spaced 4' O.C.
- Maintenance personnel who may be removing and replacing specific panels must be trained on how to properly replace the panel with proper fastener and orientation

Actual construction of a sloped suspended ceiling may require engineering documents by code officials/authorities having jurisdiction in your area. The structural engineer of record is responsible for verifying and approving the use of Armstrong Ceilings components in these unique installations. For additional information, refer to our sloped ceilings technical guide, BPCS-5618.



(Fig 65)

5. CUTTING

When cutting WoodWorks® Grille – Forté panels, normal woodworking tools (e.g., jigsaw, circular saws, saber saws, coping saws, etc.) can be used along with 80 tooth blades (the more teeth the blade has the better). Penetrations for sprinklers (or other fixtures) can be accomplished by simple interruption of the wood slats at those locations or by using normal woodworking tools to cut access in the slats. Refer to Section 6 for instructions on special considerations that may need to be taken when field cutting panels.

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: flush eyes or skin with water for at least 15 minutes.

6. PANEL FIELD MODIFICATIONS

The following instructions provide guidance for our standard WoodWorks Grille – Forté panels requiring field modification where either panel width or length needs to be cut in the field. WoodWorks Grille – Forté panels are offered in 4', 6', and 8' lengths; please consider these sizes when laying out your ceiling. Some of these size panels may be able to address, minimize, or eliminate the need for any field modifications in certain conditions. Custom size panels are also available when field modifications are not possible or to help speed installation.

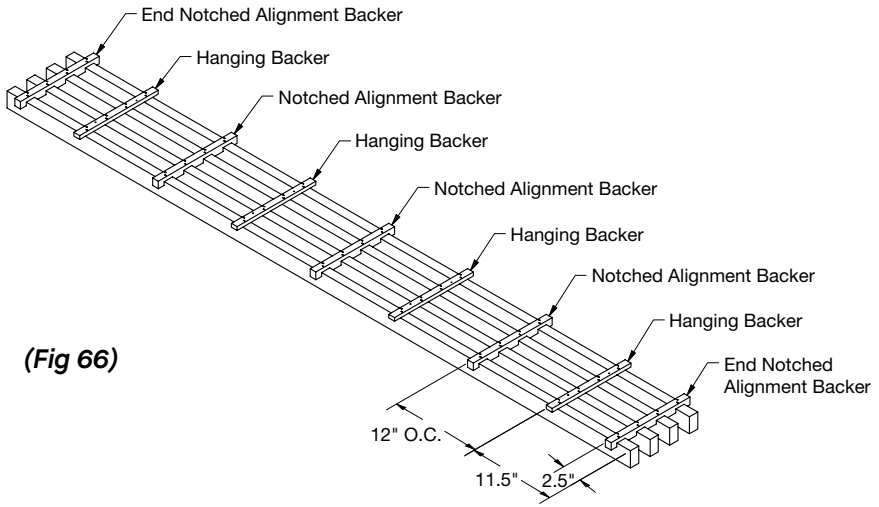
In modifications where panel width is cut, those sections will be susceptible to movement and misalignment, refer to Section 6.4.

6.1 Understanding Panel Construction and Components Needed Prior to Field Modification

6.1.1 Panel Constructions

WoodWorks Grille – Forté panels are comprised of different types of backers. The panel construction details are found below for solid and veneer panels. Ensure you have the necessary tools and accessories needed for field modifications.

Solid Wood Panels: Comprised of end notched alignment backers, hanging backers and notched alignment backers ***(Fig 66)***. All backers are stapled to the slats, therefore, re-using original backers is not possible. Flat backers are available to be purchased separately for field modifications requiring new backers for hanging or alignment.



(Fig 66)

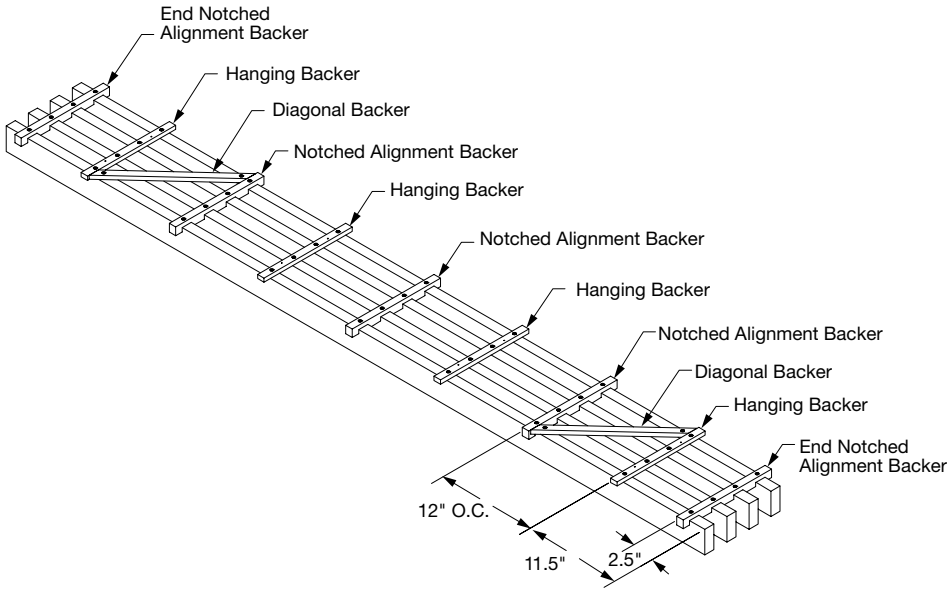
Veneer Panels: Are comprised of of end notched alignment backers, hanging backers, notched alignment backers, and diagonal backers ***(Fig 67)***. All backers are screwed to the slats, therefore hanging backers and diagonal backers can be re-used by simply unscrewing backers and repositioning them where needed as per our instructions. Refer to Sections 6.2 and 6.3. Flat backers are available to be purchased separately for field modifications requiring new backers for hanging or alignment.

End Notched Alignment Backers: Are located at 2-1/2" from the panel end. These help with alignment of slats between panel ends.

Hanging Backers: Are backers that attach to the suspension. These start 11-1/2" O.C. of the panel end, then spaced 24" O.C. This spacing will meet the 24" × 24" grid module.

Notched Alignment Backers: Are spaced 12" from hanging backers. They are important for panel alignment.

Diagonal Backers: These backers are found on veneer panels only. They are located on the first full 12" backer bay at the ends of the panel and help with dimensional stability.



(Fig 67)

6.1.2 Accessories and Tools Needed

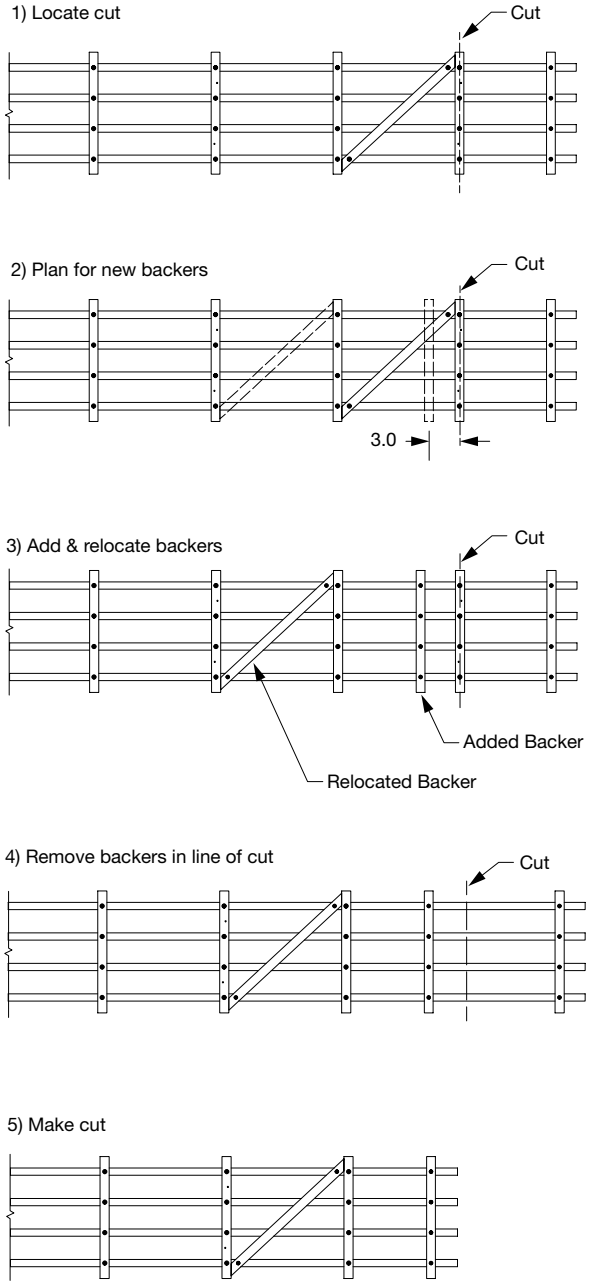
- **OPTIONAL:** Staple gun to receive 1/4" crown and 1-1/4" leg staples (for solid wood panels only)
- **OPTIONAL:** 1/4" Flat crown staples with 1-1/4" legs (for solid wood panels only)
- **Additional tees:** To create additional attachment points to hang panel
- Backers Kit (Item 7290GBL): To be used when a replacement backer is needed. These backers do not have the factory pre-drilled pilot holes for screw attaching to the suspension system. Pre-drilling is recommended to prevent splitting and facilitate installation. If screwing the backer to slats, pre-drill 3/32" into the slat to avoid splitting.
- Screws (by others), refer to Section 2.2 for screw chart
- Stain: To treat exposed edges of solid wood panels
- Edge banding: To treat exposed edges of veneer panels

6.2 BEFORE CUTTING

Plan and solve for panel modifications and make those changes before cutting any panels. Use a flat surface or sawhorse to lay your panel and keep it leveled ***(Fig 68 – 5 steps)***.

- Add new field-applied backers for hanging or alignment
- Move diagonal backer (found on veneer panels only)
- Add additional tees to suspension to create attachment points
- In the absence of factory pre-drilled pilot holes to suspend a panel, new 3/32" pilot holes are recommended at the attachment locations
- If cut needs to be made through a factory-applied backer, add your new backers where needed, then remove the entire factory-applied backer prior to cutting. Once the factory-applied backer is removed, proceed with cutting panel slats.

Removing or repositioning of existing factory-applied backers (notched or unnotched) should only occur within the area of the panel where the cut will need to be made. No other factory-applied backers should be removed or repositioned on the rest of the panel, doing so will void the warranty.



(Fig 68) *Veneer Panel Shown, but same steps should be followed for Solid*

6.3 Overall Rules for Cutting Standard Panels to Length

If the end alignment backer is removed, a field-applied backer must be added within 3" of the cut, unless one already exists 3" from the cut end ***(Fig 69)***.

If the hanging backer is removed, a field-applied backer (Item 7290GBL) must be added for hanging within 12" from the cut, unless a backer already exists within 12" from the cut end. As long as the above two steps are met, a field-applied or factory-applied backer can be both a hanging backer and an alignment backer ***(Fig 70)***. Add tee as needed to the suspension system to create an attachment point. Refer to Section 2.2 for recommended fastener.

Notched alignment backers and new field-applied backers are not pre-drilled, it is advised to pre-drill 3/32" to facilitate installation and prevent splitting.

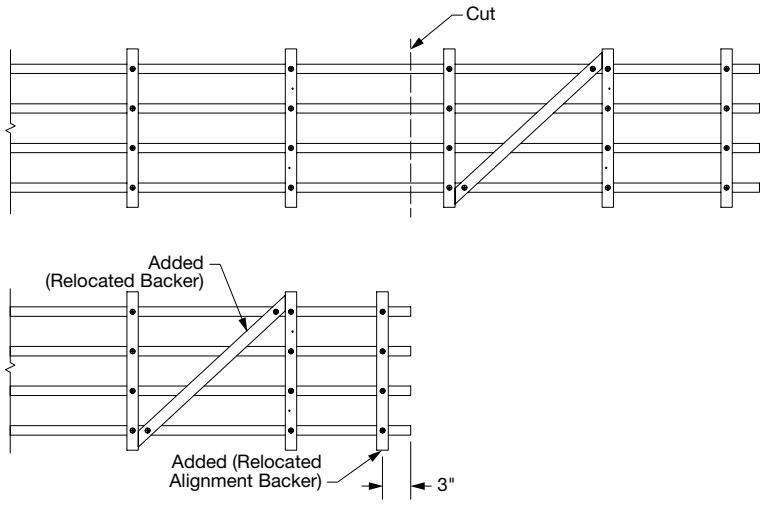
If the panel is cut to less than 3' in nominal length, special consideration is needed to reinforce and install the panel, with the following 2 methods:

- Custom place tees as needed
- Add extra backers as needed to ease attachments to the suspension system

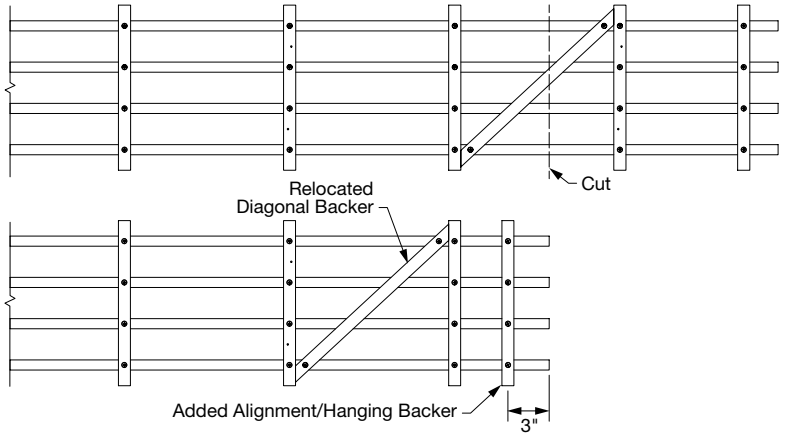
Exposed field-cut slats can be finished in coordinating stain. (for solid wood panels) or veneer edge banding (for veneer panels), refer to Section 2.4. **NOTE:** Edge banding is supplied in 1-1/4" widths, which are intended to cover 90° slat cuts.

Additional Rule for Veneer Panels

- If a cut needs to be made through a diagonal backer or a backer that the diagonal backer touches, unscrew and remove that diagonal backer, then move it to the next closest full 12" backer bay (pre-drill 3/32" into the slat to avoid splitting). Follow the instructions below to determine the placement of diagonal backers:
- If two full 12" diagonal backer bays are available to use, use two diagonal backers
- If one full 12" diagonal backer bay is available to use, use one diagonal backer and the other may be discarded
- If cuts result in zero full 12" diagonal backer bays, zero diagonal backers are permitted, however, this section of the panel is susceptible to movement and misalignment



(Fig 69) *Veneer Panel Shown, but same steps should be followed for Solid Wood Panel*



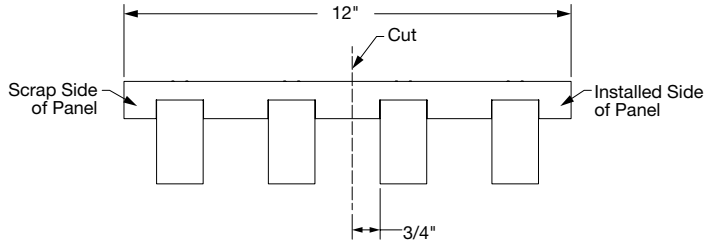
(Fig 70) *Veneer Panel Shown, but same steps should be followed for Solid Wood Panel*

6.4 Overall Rules for Cutting Standard Panels to Width

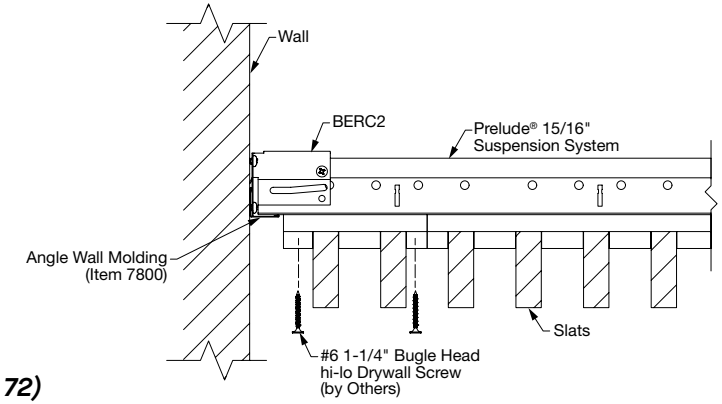
- Ends of backers can be trimmed to address perimeter conditions. When panels are cut to width, it is recommended to leave a minimum 3/4" of backer length past the side of the slat to minimize backer damage and have room for attachment point if needed ***(Fig 71)***.
- When trimming or cutting panel width, it is recommended to keep at least two slats on the panel for structural integrity of the panel. Consider the placement of screws for fastening of the panel and be sure to balance the weight of the panel ***(Fig 72)***.
- **Example:** Screws may need to be on the outside of the two-slat structure rather than between the two slats for heavier panels.
- If one slat remains after cutting a panel, there must be enough space on the backer on both sides of the slat to attach the panel with screws to the suspension system. Ensure that the backers remain perpendicular to the slat during installation.

Additional Rule for Veneer Panels

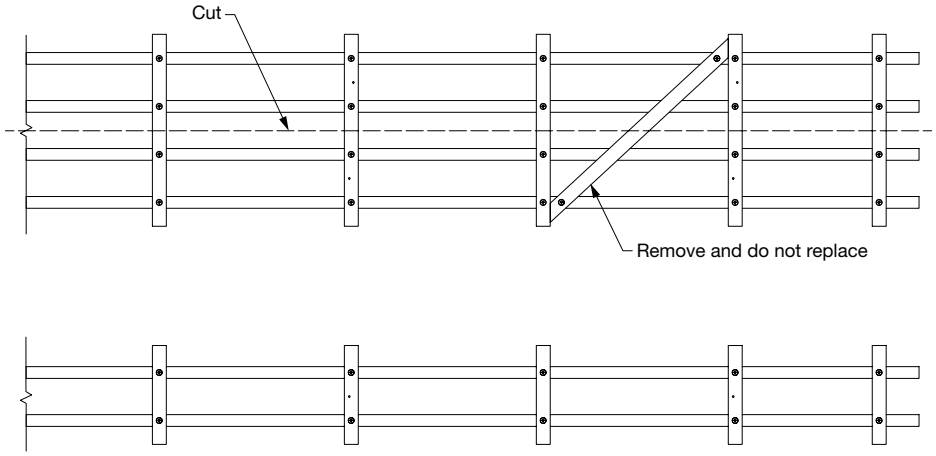
- Cutting panel width on veneer panels will eliminate the ability to use diagonal backers. Special consideration will need to be taken with the remaining slats; however, those sections will be susceptible to movement and misalignment ***(Fig 73)***.



(Fig 71)



(Fig 72)



(Fig 73)

6.5 Angled and Complex Cuts

Angled and complex cuts will require each slat of a panel to be assessed individually using the rules and recommendations mentioned above to cut in lengths and widths. If a cut does not yield enough panel to construct proper support for the remaining panel assembly, the following method can be considered:

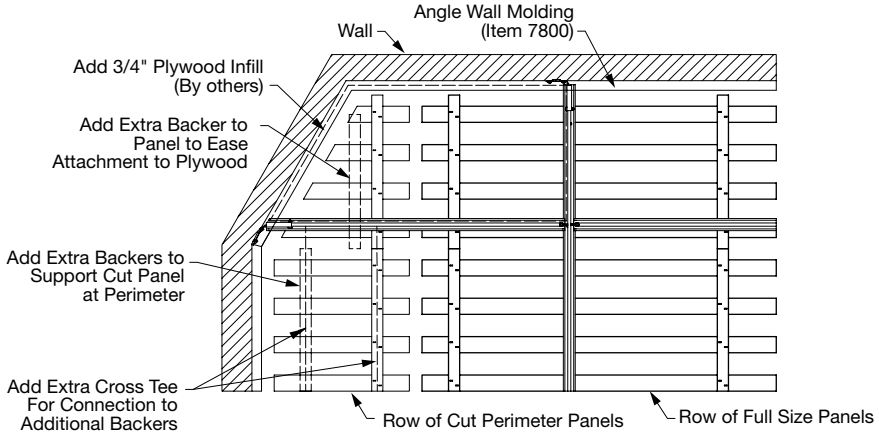
- Adding 3/4" plywood to backfill grid opening and using extra backers to ease attachment to the backfill piece ***(Fig 74)***.
- When using any type of backfill in the grid, screws will be required for installing perimeter cut panels. The assistance of backer clips before fastening with screws will not be possible.

7. SEISMIC INSTALLATION

WoodWorks® Grille – Forté 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.

7.1 Suspension System Installation

Use a heavy-duty 15/16" Prelude® XL® T-Bar suspension system to support the WoodWorks Grille – Forté panels as listed in Section 3.2. The installation should, in all cases, conform to the International Building Code Seismic Design Category D, E, and F. Refer to Armstrong Seismic Ceiling Installation Guide BPCS-4141 for more details. Refer to the reflected ceiling plan to determine the panel orientation and size. Panel weight will determine the suspension system layout (refer to the product data page for panel weights). Remember to account for any infill panel weight in addition to panel weight to determine total system weight. Backers must be aligned with the main beams and/or cross tees. The first main beam should be no more than 12-1/2" off the wall and then follow the spacing requirements below. In addition to the above requirements, also follow ASTM C636 requirements. 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.



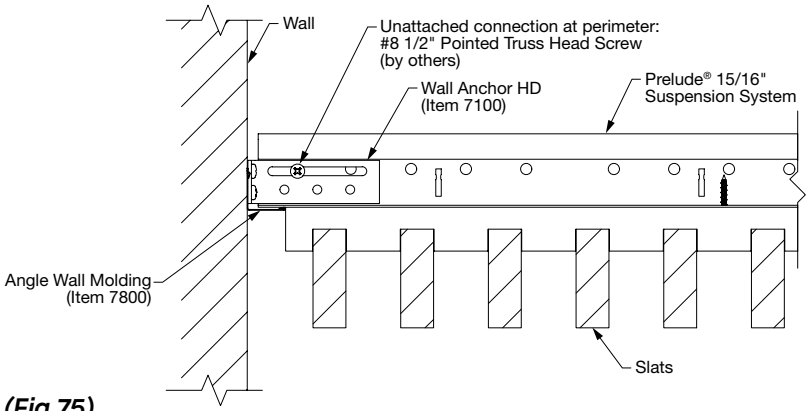
(Fig 74)

7.1.1 For installation weighing less than 3 lbs/SF:

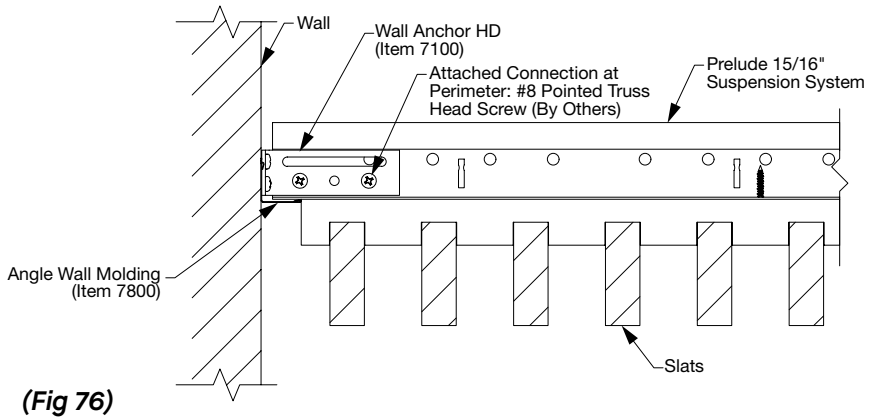
- Main beams are installed at 48" O.C. with hanger wires supporting at no more than 48" O.C. along the mains
- XL7341 4' cross tees installed at 24" O.C. between the main beams
- XL8320 2' cross tees installed at the midpoints of the 4' cross tees, creating a 2' × 2' module
- All grid connections to the wall are required to use the WoodWorks® Heavy Duty Wall Anchor (Item 7100) in lieu of the BERC2 to meet the attached and unattached wall requirements ***(Figs 75 & 76)***

7.1.2 For installation weighing greater than or equal to 3 lbs/SF:

- Main beams are installed at 24" O.C. with hanger wires supporting at no more than 48" O.C. along the mains
- XL8320 2' cross tees installed at 24" O.C. between the main beams, creating a 2' × 2' module
- All grid connections to the wall are required to use the WoodWorks Heavy Duty Wall Anchor (Item 7100) in lieu of the BERC2 to meet the attached and unattached wall requirements ***(Figs 75 & 76)***



(Fig 75)



(Fig 76)

7.2 Panel Installation

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

7.2.1 Direct Screw Attachment

Position the WoodWorks Grille – Forté panels on the suspension system and direct screw attach to the suspension system using standard #6 × 1-1/4" bugle head hi-lo drywall screws. Backers have factory pre-drilled pilot holes to facilitate installation. Use two screws in each backer that aligns with the suspension system. See Section 3.2.1.2 for screw attachment instructions and the minimum number of screws required per panel size. Panels are accessible with this option. For ceilings requiring repeated access, refer to Section 3.7.2.

7.2.2 Seismic Rx®

Ceiling installation should conform to basic minimums established in ASTM C636.

- Minimum 7/8" wall molding
- Suspension system must be attached on two adjacent walls
- HD Wall Anchor maintains main beam and cross tee spacing; no other components required
- Heavy-duty systems as identified in ICC-ESR-1308
- Safety wires required on light fixtures
- Perimeter support wires within 8"
- Ceiling areas over 1,000 SF must have horizontal restraint wire or rigid bracing
- Ceiling areas over 2,500 SF must have seismic separation joints or full height partitions

- Ceilings without rigid bracing must have 2" oversized trim rings for sprinklers and other penetrations
- Changes in ceiling plane must have positive bracing
- Cable trays and electrical conduits must be independently supported and braced
- Suspended ceilings will be subject to special inspection
- Suspension layouts are the same as described in Section 4: Suspension System
- Connection to wall – See BPCS-4141 Seismic Design: What You Need to Know – Code Requirements Seismic Rx® Tested Solutions – Seismic Rx® Approaches to Category C and D, E, and F Installations
- Special bracing required – See BPCS-4141 Seismic Design: What You Need to Know – Code Requirements Seismic Rx Tested Solutions – Bracing and Restraint for Seismic Installations
- Seismic separation joints – See BPCS-4141 Seismic Design: What You Need to Know – Code Requirements Seismic Rx Tested Solutions – Seismic Separation Joints

8. TYPICAL GRID PLAN *(Figs 77 & 78)*

(Refer to Section 7.1 for grid layout requirements for seismic installations)

9. PANEL UPGRADE OPTIONS

9.1 Curved Installations

For curved installation requiring less than 12" main beam intervals or where a smoother curved transition is desired, a flexible backer is recommended and available as a premium option.

9.2 Non-Acoustical Black Fleece

For installation where blocking the view of the plenum is desired, and acoustics is not needed or required, a non-acoustical black fleece is available as a premium option. Panels with non-acoustical fleece will install with screws only.

9.3 Diagonal Backers

Diagonal backers are also available as a custom option for more dimensional stability.

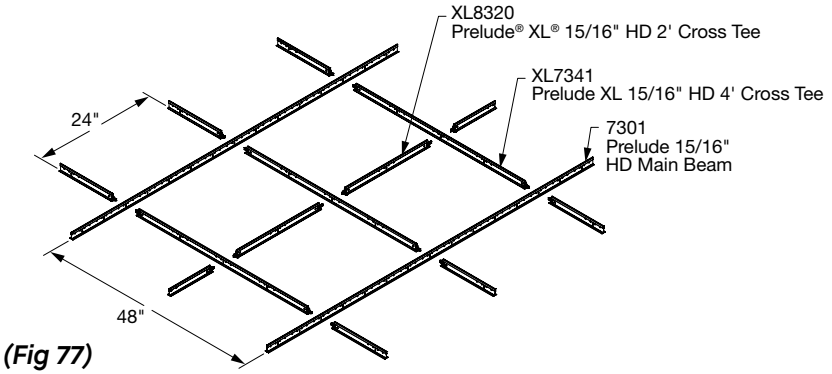
10. LEGACY PRODUCT (BACKER AND DOWEL)

For installation instructions for our WoodWorks® Grille – Classics legacy product (backer and dowel) refer to BPLA-297530.

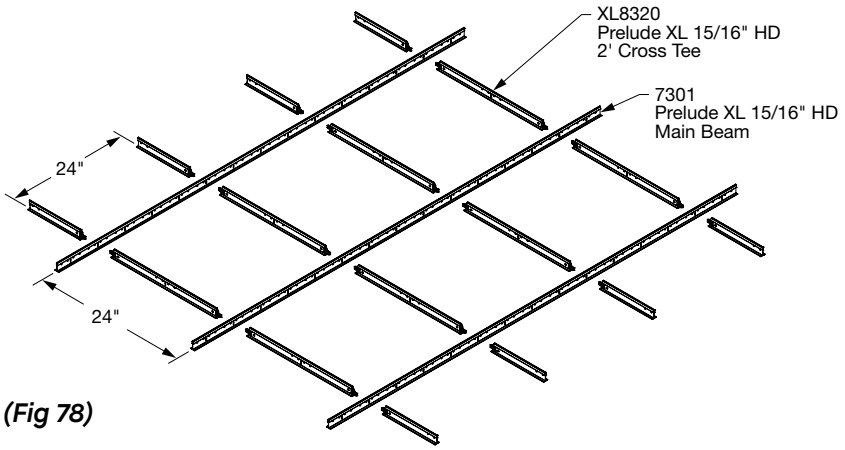
11. CLEANING RECOMMENDATIONS

There are three methods that we recommend for cleaning a WoodWorks® Grille – Forté panel. First, the panels can be vacuumed to remove any dust or dirt that may accumulate on the slats or backers. Second, use a clean, dry, soft cloth to wipe off any dirt or greasy fingerprints. If this does not clean the panel, use a damp, clean, soft white cloth, or sponge with a mild detergent to wipe the panel. Third, for scuff marks that may have transferred from the backers to the slats; use a clean, soft white cloth with either Naphtha or Mineral Spirits to clean scuff marks on slats. We recommend wiping the slats with normal pressure, and do not recommend scrubbing the slats with the cloth.

For additional questions or support, please contact Techline.



(Fig 77)



(Fig 78)

WOODWORKS® GRILLE – FORTÉ SOLID WOOD PANELS									
Item No.	**Description**	**Number of Slats Per Panel**	**Ordered Separately/ Included with**	**Required for Install**	**% Open Area**	**Spacing Between Slats**	**LBS/SF**	**Faceted, Walls & Slope**	**Minimum Radius for Inside & Outside Facets/Curves**
6328_ _S01_ _ _	3/4" W × 1-3/8" H - Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	8	Ordered Separately	Based on Design	50%	0.75"	2.09 LBS	Yes	114"
6328_ _S02_ _ _	3/4" W × 2-1/4" H - Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	8	Ordered Separately	Based on Design	50%	0.75"	1.75 LBS	No	-
6326_ _S01_ _ _	3/4" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	6	Ordered Separately	Based on Design	63%	1.25"	1.62 LBS	Yes	72"
6326_ _S02_ _ _	3/4" W × 2-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	6	Ordered Separately	Based on Design	63%	1.25"	2.52 LBS	Yes	114"
6325_ _S01_ _ _	3/4" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	69%	1.65"	1.38 LBS	Yes	54"
6325_ _S02_ _ _	3/4" W × 2-1/4" H - Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	69%	1.65"	2.13 LBS	Yes	84"
6324_ _S01_ _ _	3/4" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	75%	2.25"	1.15 LBS	Yes	42"
6324_ _S02_ _ _	3/4" W × 2-1/4" H - Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	75%	2.25"	1.75 LBS	Yes	66"
6324_ _S03_ _ _	3/4" W × 3-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	75%	2.25"	2.58 LBS	No	-
6324_ _S04_ _ _	3/4" W × 4-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	75%	2.25"	3.27 LBS	No	-
6323_ _S03_ _ _	3/4" W × 3-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	81%	3.25"	2.02 LBS	No	-
6323_ _S04_ _ _	3/4" W × 4-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	81%	3.25"	2.54 LBS	No	-
6326_ _S05_ _ _	1" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	6	Ordered Separately	Based on Design	50%	1"	2.09 LBS	Yes	84"
6325_ _S05_ _ _	1" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	58%	1.4"	1.78 LBS	Yes	66"
6325_ _S06_ _ _	1" W × 2-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	58%	1.4"	2.78 LBS	Yes	102"
6324_ _S05_ _ _	1" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	67%	2"	1.46 LBS	Yes	48"
6324_ _S06_ _ _	1" W × 2-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	67%	2"	2.26 LBS	Yes	72"

WOODWORKS® GRILLE – FORTÉ SOLID WOOD PANELS (CONT.)									
Item No.	**Description**	**Number of Slats Per Panel**	**Ordered Separately/ Included with**	**Required for Install**	**% Open Area**	**Spacing Between Slats**	**LBS/SF**	**Faceted, Walls & Slope**	**Minimum Radius for Inside & Outside Facets/Curves**
6324_ _S07_ _ _	1" W × 3-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	67%	2"	3.32 LBS	No	-
6324_ _S08_ _ _	1" W × 4-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	67%	2"	4.24 LBS	No	-
6323_ _S05_ _ _	1" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	75%	3"	1.15 LBS	Yes	36"
6323_ _S06_ _ _	1" W × 2-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	75%	3"	1.75 LBS	Yes	48"
6323_ _S07_ _ _	1" W × 3-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	75%	3"	2.58 LBS	No	-
6323_ _S08_ _ _	1" W × 4-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	75%	3"	3.27 LBS	No	-
6325_ _S09_ _ _	1-1/4" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	48%	1.15"	2.17 LBS	Yes	78"
6325_ _S10_ _ _	1-1/4" W × 2-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	48%	1.15"	3.42 LBS	No	-
6324_ _S09_ _ _	1-1/4" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	58%	1.75"	1.78 LBS	Yes	54"
6324_ _S10_ _ _	1-1/4" W × 2-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	58%	1.75"	2.78 LBS	Yes	84"
6324_ _S11_ _ _	1-1/4" W × 3-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	58%	1.75"	4.07 LBS	No	-
6323_ _S09_ _ _	1-1/4" W × 1-3/8" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	69%	2.75"	1.38 LBS	Yes	36"
6323_ _S10_ _ _	1-1/4" W × 2-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	69%	2.75"	2.13 LBS	Yes	54"
6323_ _S11_ _ _	1-1/4" W × 3-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	69%	2.75"	3.14 LBS	No	-
6323_ _S12_ _ _	1-1/4" W × 4-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	69%	2.75"	4 LBS	No	-
6323_ _S13_ _ _	1-1/4" W × 5-1/4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	69%	2.75"	4.86 LBS	No	-

WOODWORKS® GRILLE – FORTÉ VENEERED PANELS									
Item No.	**Description**	**Number of Slats Per Panel**	**Ordered Separately/ Included with**	**Required for Install**	**% Open Area**	**Spacing Between Slats**	**LBS/SF**	**Faceted, Walls & Slope**	**Minimum Radius for Inside & Outside Facets/Curves**
6336_ _S14_ _ _	3/4" W × 2-1/2" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	6	Ordered Separately	Based on Design	63%	1.25"	3.95 LBS	No	-
6336_ _S15_ _ _	3/4" W × 3" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	6	Ordered Separately	Based on Design	63%	1.25"	4.7 LBS	No	-
6336_ _S16_ _ _	3/4" W × 3-1/2" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	6	Ordered Separately	Based on Design	63%	1.25"	5.45 LBS	No	-
6335_ _S14_ _ _	3/4" W × 2-1/2" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	69%	1.65"	3.33 LBS	No	-
6335_ _S15_ _ _	3/4" W × 3" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	69%	1.65"	3.95 LBS	No	-
6335_ _S16_ _ _	3/4" W × 3-1/2" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	69%	1.65"	4.58 LBS	No	-
6335_ _S17_ _ _	3/4" W × 4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	5	Ordered Separately	Based on Design	69%	1.65"	5.2 LBS	No	-
6334_ _S14_ _ _	3/4" W × 2-1/2" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	75%	2.25"	2.7 LBS	Yes	108"
6334_ _S15_ _ _	3/4" W × 3" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	75%	2.25"	3.2 LBS	No	-
6334_ _S16_ _ _	3/4" W × 3-1/2" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	75%	2.25"	3.7 LBS	No	-
6334_ _S17_ _ _	3/4" W × 4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	4	Ordered Separately	Based on Design	75%	2.25"	4.2 LBS	No	-
6333_ _S14_ _ _	3/4" W × 2-1/2" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	81%	3.25"	2.08 LBS	Yes	78"
6333_ _S15_ _ _	3/4" W × 3" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	81%	3.25"	2.45 LBS	Yes	66"
6333_ _S16_ _ _	3/4" W × 3-1/2" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	81%	3.25"	2.83 LBS	Yes	60"
6333_ _S17_ _ _	3/4" W × 4" H- Available in 4' (L4), 6' (L6) & 8' (L8) Lengths	3	Ordered Separately	Based on Design	81%	3.25"	3.2 LBS	No	-

SUSPENSION SYSTEM			
Item No.	**Description**	**Ordered Separately/Included with**	**Required for Install**
7301	Prelude® XL® 12' HD Main Beam	Ordered Separately	Yes
XL7341	Prelude XL 4' Cross Tee	Ordered Separately	For Panel Under 3 lbs
XL8320BL	Prelude XL 2' Cross Tee	Ordered Separately	Yes
7891	12-gauge Hanger Wire	Ordered Separately	Yes
PERIMETER TRIM			
Item No.	**Description**	**Ordered Separately/Included with**	**Required for Install**
7800	Angle Wall Molding	Ordered Separately	Based on Design
7146H4L96_ _ _	4" Solid Wood Trim – For Solid Wood Panels/Clips included	Ordered Separately	Based on Design
7146H6L96_ _ _	6" Solid Wood Trim – For Solid Wood Panels/Clips included	Ordered Separately	Based on Design
6481F07W1H4_ _ _	4" Veneer Trim – For Veneer Panels/Clips included	Ordered Separately	Based on Design
6481F07W1H6_ _ _	6" Veneer Trim – For Veneer Panels/Clips included	Ordered Separately	Based on Design
6481F07W1H8_ _ _	8" Veneer Trim – For Veneer Panels/Clips included	Ordered Separately	Based on Design
AX_VESTR_ _ _	Axiom® Vector Straight Trim – Recommend in Black 6" and up	Ordered Separately	Based on Design
AX_VECUR_ _ _	Axiom Vector Curved Trim – Recommend in Black 6" and up	Ordered Separately	Based on Design
ACCESSORIES			
Item No.	**Description**	**Ordered Separately/Included with**	**Required for Install**
5687	Backer Clip	Ordered Separately	Based on Design
7290GBL	Flat Backer Kit	Ordered Separately	Based on Design
RC2BL	RC2 Radius Clip	Ordered Separately	Based on Design
By Others	#6 – 1-1/4" Bugle head hi-lo drywall Screw	Ordered Separately	Based on Design
By Others	#6 – 1-5/8" Bugle head hi-lo drywall Screw	Ordered Separately	Based on Design
By Others	#8 – 2-1/4" Bugle head hi-lo drywall Screw	Ordered Separately	Based on Design
By Others	#8 – 2" flat head screw	Ordered Separately	Based on Design
By Others	#8 × 1/2" Pointed truss head screw – For use with 5925	Ordered Separately	Based on Design
6408D5_ _ _	Edge Banding for Veneer Panels	Ordered Separately	Based on Design
5457GAL1_ _ _	Gallon Size Stain can for Solid Wood Panels	Ordered Separately	Based on Design
5457QT1_ _ _	Quart Size Stain can for Solid Wood Panels	Ordered Separately	Based on Design
By Others	Touch-Up Markers & Fill Stick In Coordinating Panel Finish	Ordered Separately	Based on Design
5925	Trim Clip to Fastened Wood Trim to Suspension System	4 Included with Trim	Based on Design
7239	Adjustable Trim Clip (ATC)	Ordered Separately	Based on Design
BERC2	2" Beam End Retaining Clip	Ordered Separately	Based on Design
7100	Heavy Duty Wall Anchor	Ordered Separately	Based on Design

ACCESS DOOR ACCESSORIES				
Item No.	**Description**	**Ordered Separately/Included with**	**Required for Install**	**LBS/SF**
7104	Spring Saddles	Ordered Separately	Based on Design	-
7105	Torsion Spring Bracket	Ordered Separately	Based on Design	-
7106	Springs	Ordered Separately	Based on Design	-
By Others	#8 × 3/4" Self-Tapping Screw	Ordered Separately	Based on Design	-
By Others	#10 × 1/2" Wood Screw	Ordered Separately	Based on Design	-
INFILL PANELS				
Item No.	**Description**	**Ordered Separately/Included with**	**Required for Install**	
2820BK	Calla® Square Lay–in Panel – 24" × 24" in Black Finish	Ordered Separately	Based on Design	1.2 LBS
1713BL	School Zone® Fine Fissured™ Square Lay-in Panel 24 × 24 × 3/4" in Black Finish	Ordered Separately	Based on Design	0.22 LBS
1318	Backstage Noir® Square Lay-in Panel 24 × 24 × 3/4" in Black Finish	Ordered Separately	Based on Design	0.22 LBS
5823	BioAcoustic™ Infill Panel – 24" × 24" in Black Matte Finish	Ordered Separately	Based on Design	1.0 LBS
6657	BioAcoustic Infill Panel – 11" × 48" in Black Matte Finish	Ordered Separately	Based on Design	1.2 LBS

MORE INFORMATION

For more information, or for an Armstrong Ceilings representative, call 877 276-7876.
For complete technical information, detail drawings, CAD design assistance, installation information, and many other technical services, call TechLine customer support at 877 276-7876 or FAX 800 572-TECH.

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