

# WOODWORKS® Linear

## Assembly and Installation Instructions

### 1. GENERAL

#### 1.1 Product Description

WoodWorks Linear ceilings consist of unperforated nominal 4-1/2" wide x 8' long or 6" wide by 8' long wood plank modules that are designed to install on Linear Carriers with factory-applied clips. Each type of linear plank module incorporates a 3/4" reveal between planks that is covered by black fleece applied to the back side of the planks at the top of the reveal. The linear wood planks are not accessible after installation.

#### 1.2 Surface Finish

All veneered linear planks are constructed of the same substrate as 2' x 2' WoodWorks Tegular and Vector panels – namely, fire retardant particle board with face-cut veneers and a semi-gloss coating. The exposed edges along the length of the planks are edge banded with a similar finish as the face. FSC-certified options are available (SW-C0C-003601).

#### 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 ceiling planks 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.) With this in mind, you must place expansion joints so there are no runs of plank longer than 24 feet. Linear Carriers must be installed within 4" of each side of the expansion joint.

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 operations. All wet work (plastering, concrete, etc.) must be complete and dry. These products cannot be used in exterior applications.

To ensure that the ceiling planks 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 planks are made with real wood Natural Variations™ veneers, Constants™ veneers or rapidly renewable Bamboo veneers. Nine standard veneer options are available. Natural variations in color and grain are characteristic of wood products. To maximize visual consistency, planks should be unpacked and examined collectively to determine the most desirable arrangement for installation. Consult the Hardwood Plywood and Veneer Association (HPVA) for additional information on veneers.

## 1.6 Ordering Considerations

Be sure to account for extra material that is normally needed for linear wood installations. Typical installations 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 and the dimensions of the nominal 8' long by 4-1/2" or 6" wide plank modules.

## 2. SUSPENSION SYSTEM

### 2.1 General

WoodWorks Linear planks are supported by Linear Carriers installed no more than 2' on center. The Heavy Duty Linear Carriers are supplied with factory-applied linear clips spaced to accommodate either the nominal 4-1/2" or 6" wide plank modules.

### 2.2 Load Capacity

WoodWorks Linear planks weigh 0.8 lbs/lf for 4-1/2" module and 1.2 lbs/lf for 6" module. The Heavy Duty Linear Carriers supplied as part of the system are capable of carrying the weight of the planks in the manner prescribed.

## 3. FIRE PERFORMANCE

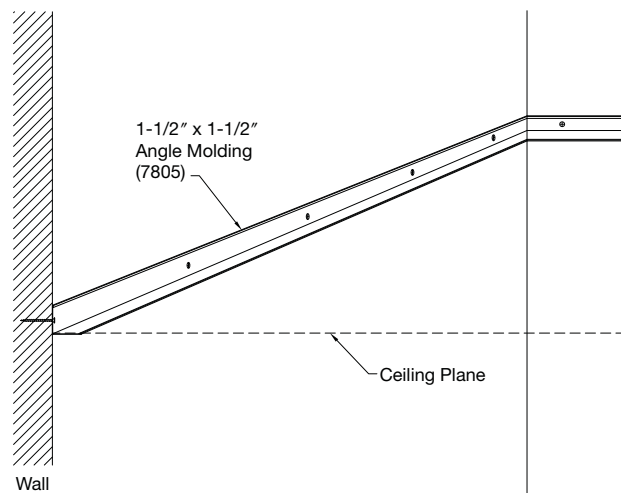
As with other architectural features located at the ceiling, WoodWorks Linear may obstruct or skew the planned fire sprinkler water distribution pattern, or possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from 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.

## 4. PREPARATION

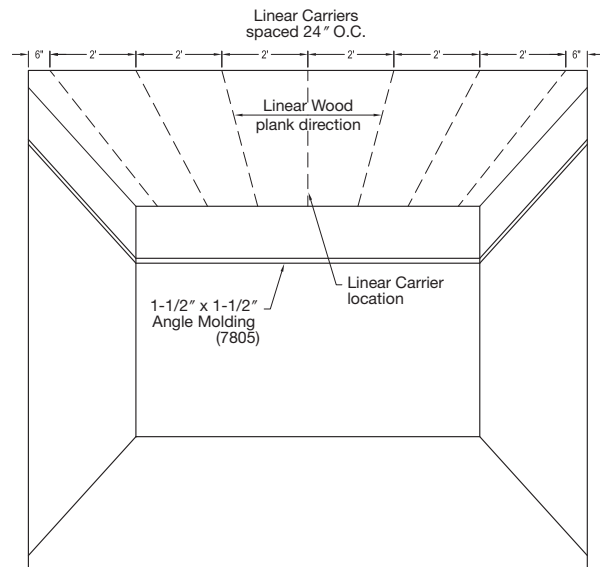
Determine desired height of new ceiling. Strike a level line around the perimeter of the area to indicate the height of the top of the molding to be installed. Determine the desired direction of the linear wood ceiling.

## 5. INSTALLATION

**5.1** If the installation is to run from wall to wall, install wall molding on a level line around the perimeter of the area. Available molding includes 1-1/2" Angle Molding (item 7805) and 2" Shadow Molding (item 7823). **NOTE:** Black is a special color that can be ordered with extended lead time. Fasten the molding with screws appropriate for the wall construction (supplied by others).



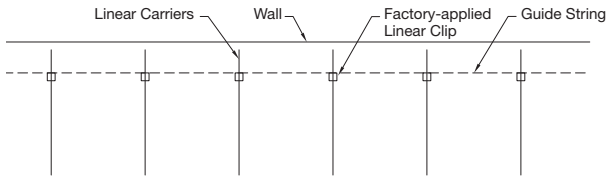
**5.2** Secure 12-gauge hanger wires to the structure above. The linear carriers must be supported not more than 2 feet from the ends and then 4 feet on center along their length. Carriers are to be spaced not more than 6 inches from the walls and then 2 feet on center across the room. (NOTE: This is for flat installations. For faceted grid, see section 7.) The carriers will run the opposite direction of the linear wood planks.



**5.3** Bend the hanger wires so the bottoms of the carriers are 7/8" above the bottom of the molding.

**5.4** Measure the width of the room in the direction perpendicular to the length of the planks. Divide this dimension by the width of the plank plus reveal, 4-1/2" for narrow planks or 6" for the wider version and determine the remainder in inches. Add the width of a single plank to the remainder and divide by two. This is the width of your border planks.

**5.4.1** Measure off of the starting wall the dimension determined in the previous section minus 1 inch for narrow planks or 1-3/4 inches for wide planks and stretch a guide string from one side of the room to the other. Cut the carriers so that the edge of the first clip on each carrier will align with the string line.



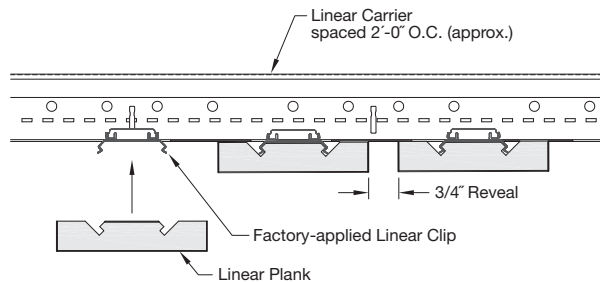
**5.4.2** Cut the first row of planks to the correct width. If the result of this cut prevents the clip from engaging the grooves on the back of the plank, remove the clip from the carrier and attach the first row of planks by inserting 1/2" long screws through the flange of the main into the back of the plank. A 1/8" thick shim must be inserted between the plank and grid at every location where the clip has been removed.

**5.5** Hang the carriers on the hanger wires, aligning the clips with the guide string at the starting end. Splice carriers together to reach the other end of the installation.

**CAUTION:** The exposed edges of the clips on the linear carriers are very sharp. Be cautious in handling and installation near the carriers.

**5.6** If the end of the first plank in any row ends directly under a carrier, cut one end of the plank so the other end of the plank falls between carriers. With the starting end of each row of wood planks 3/4" from the side wall (temporary spacers can be used for this), and the black fleece backer toward you, push the wood plank onto the clips on the carriers allowing the clip to enter the grooves on the back of the plank. Hold the carrier down while pushing up on the plank. Make sure the clip is fully entered into the grooves. You should hear an affirmative "snap" noise once the plank is in its proper position.

Should a clip fail to hold for any reason, insert a 1/2" long sharp point screw through the dimple on the flange of the main and into the back side of the plank.



**CAUTION:** Be careful not to damage a clip. If a clip is damaged, a replacement clip can be put on from a spare piece of carrier.

**5.7** Work from one end of the strip to the other. Hand pressure should be enough to seat a clip into the kerfs fully.

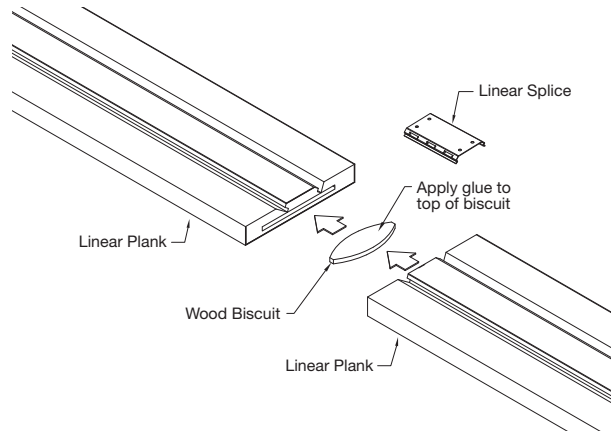
**5.8** Apply standard wood glue (supplied by others) to the top side of a #20 biscuit and insert it into the groove in the end of the first plank. Apply glue only to the top side of the biscuit (toward the back of the wood plank).

**5.9** Set the second wood plank onto the other side of the biscuit to continue the row of linear wood and push the wood plank up onto the clips on the carrier. If any glue is evident on the faces of the planks after engaging the end joints, wipe off the excess glue immediately with a damp cloth. Continue to the other side of the installation.

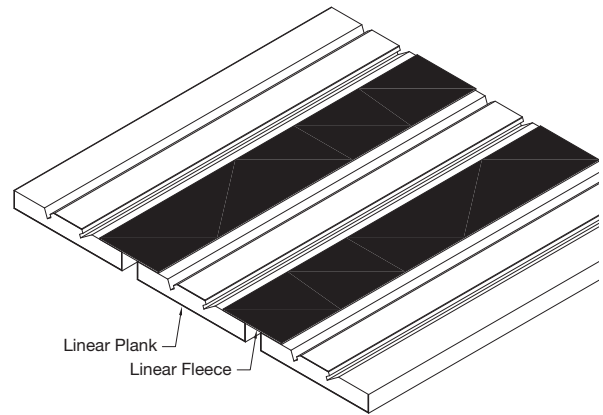
After the two wood planks are installed, insert linear splice into the kerfs across the back of the butt joint to align the planks laterally (see figure below). If the linear splice cannot be pressed on by hand, a standard clamp can be used.

**NOTE:** Due to the characteristics of linear wood planks, seams at plank ends may be uneven or slightly twisted.

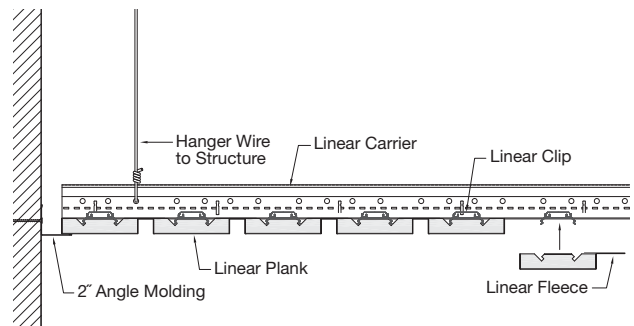
**5.10** Cut the last wood plank 3/4" short of the other side of the wall to complete the first row of planks in the progressive assembly.

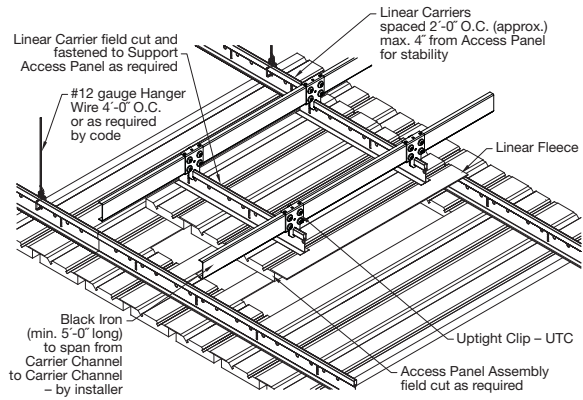
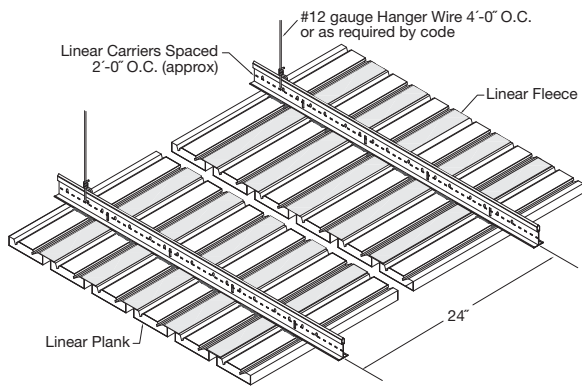


**5.11** As you start the second row of planks, make sure the black fleece from the first row lays over the back side of the adjacent planks in the second row.



If there are any gaps between the fleece at plank end joints, cut a scrap of fleece from a leftover plank, apply a drop of glue to it and apply the patch over the gap on the back of the fleece.





**5.12** Continue in this manner to the other end of the room. Do not install the last three rows of full width planks until after the final border row is completed. Cut and install the border row as described in section 5.4.2, then complete the installation of full width planks.

**NOTE:** Expansion joints must be placed so that the longest run of wood planks is no more than 24 feet long. These joints should not be less than 3/4" inch wide.

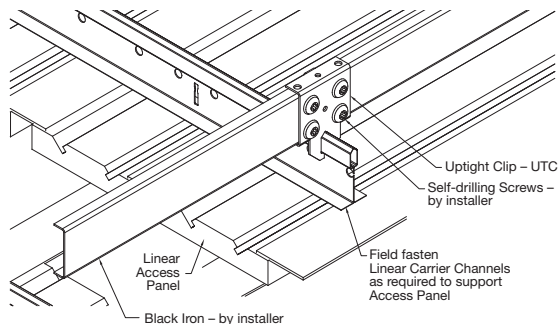
## 6. PERIMETER TREATMENT

When the installation is not slated to run from wall to wall, cut the ends of the planks before installing and paint or edge band exposed ends. (Caution: The fleece could jam the saw blade. Consider taping it down to the wood first.) Then stain or edge band the cut ends of the planks.

The first and last carriers must be no more than 4" from the sides of the floating installation.

## 7. ACCESS OPTIONS

To create an access door in the field, first attach several field cut planks together with field cut carriers. Then use two pieces of 1-1/2" channel at least 3' long to act as outriggers to support the access panel. The channels should be attached at the top to the linear carriers with UTC clips. The weight of the access door will rest on the adjacent carriers.



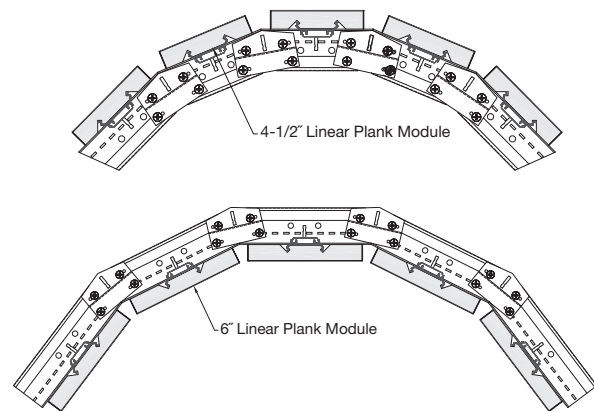
If the face of the access door rests slightly lower than the rest of the installation, fasten a metal shim to the top side of the grid where the 1-1/2" channel rests on it.

## 8. FACETED APPLICATIONS

**8.1** Linear wood can be installed to show a curved look by faceting the suspension system, i.e. the linear carriers. Follow these guidelines for faceted applications.

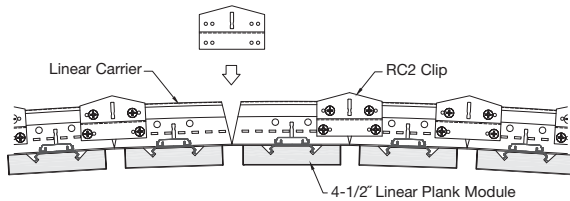
To facet the linear carriers, field cuts must first be made to the grid. Cuts should be centered exactly between the linear clips.

**8.2** Bend the grid at the cuts to the specified curve. A 12" radius is the tightest recommended radius for these applications. See examples of convex and concave curves below. The reveal will vary according to the tightness of the curve.



**8.3** To bend the grid correctly, it is recommended to draw the specified curve first on an appropriate background material, like plywood. Then, screw a flexible drywall track to the backer to match the curve. Take the field-cut linear carrier and match it to the flex curve and clamp it into place.

**8.4** Position an RC2 radius clip (typically used in drywall grid installations) over each cut in the carrier to stabilize the curve. Screw the RC2 clip over each cut with four #6 x 7/16" sharp point screws per clip – 2 screws each on either side of the cut grid.



**8.5** Install the newly faceted linear carriers. Space the hanger wires every 8 planks (or clips) for 6" modules or every 11 planks (or clips) for the 4-1/2" modules.

**8.6** Proceed with the linear plank installation by installing planks to the faceted carriers.

**CAUTION:** The exposed edges of the clips on the linear carriers are very sharp. Be cautious in handling and installation near the carriers.

**8.7** Add a strut (brace) to structure every 8 feet along the first row of mains. Repeat on additional rows at 12 foot centers.

**8.8** For perimeter wall trim on curved applications, use the 1-1/2" angle molding (item 7805). (NOTE: Black is recommended. This is a special order color with extended lead time.) Cut and install the angle molding progressively with the cuts centered between the planks after each plank is installed. Curve the molding by cutting the back leg with a straight cut and bending it to the specified shape.

**NOTE:** Each flat face of molding will have a plank resting on it. The cut or joint of the wall molding should match the cut in the faceted linear carrier.

## 9. CUTTING

When you cut a plank to length, first tape the fleece to the wood and then cut the plank with normal woodworking tools of your choice.

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.

## 10. SEISMIC RESTRAINT

WoodWorks Linear has been engineered for application in seismic areas. This system has been successfully tested in applications simulating seismic design categories D, E & F. For applications in seismic zones, review the following guidelines.

Secure the ceiling to the wall on two adjacent sides using XTAC clips. On the "end" wall, apply XTAC clips to secure the ends of the carriers to the wall. Every four feet a row of planks is to be screwed at every carrier. One end of this row is to be attached to the wall. Use two #6 x 7/16" sharp point screws to attach the XTAC clip to the back of the plank. Use screws appropriate for the wall construction to secure the other leg of the clip to the wall. Join the ends of the planks in these rows by inserting four (4) #6 x 7/16" screws through the holes in the splice plates and into the back of the wood. The other two sides must not be attached to the walls and must have 3/4" clearance from the wall.


Check local code for the need for lateral bracing and/or compression posts/splay wires, perimeter wires and for additional installation requirements for faceted or curved ceiling installations.

## 11. CLEANING RECOMMENDATIONS

WoodWorks Linear planks can be cleaned with a soft, dry cloth.



Product group from well-managed forests, controlled sources and recycled wood or fiber.  
www.fsc.org Cert. no. SW-COC-003348  
© 1996 Forest Stewardship Council

Printed on recyclable paper  
with vegetable-based inks.  
Please Recycle. 

## MORE INFORMATION

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

For complete technical information, installation information and many other technical services, call Architectural Specialties at 1 877 ARMSTRONG, and select options 1-1-4.

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