

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 24" x 24" 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, and the ends of the planks are unfinished. Edge banded ends are available upon request. FSC®-certified options are available (SW-C0C -003601).

All solid linear planks are constructed of solid poplar yellow or hybrid.

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 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.

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 available 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.

WoodWorks Linear planks are also available in solid wood colors: Grille White, Grille Light Cherry, Grille Dark Cherry, and Grille Walnut.

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

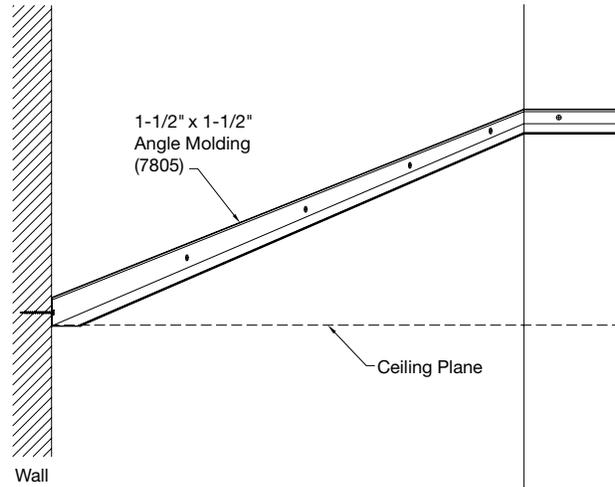
As with other architectural features located at the ceiling, WoodWorks Linear may obstruct or skew the planned fire sprinkler water distribution pattern, or possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from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

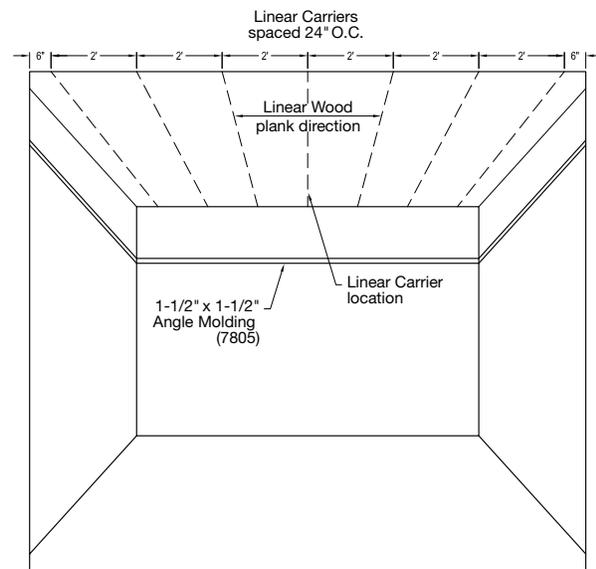
Determine the desired height of the new ceiling. Strike a level line around the perimeter of the area to indicate the height of the top of the molding to be installed. Determine the desired direction of the linear wood ceiling.

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. The natural expansion and contraction of wood products must be considered when planning the installation. Allow 1/4" for every 8' of length. This space can be at the moldings or by introducing expansion areas within the field of the ceiling. 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).



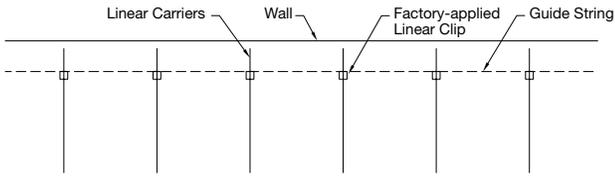
5.2 Secure 12 gauge hanger wires to the structure above. The Linear Carriers must be supported not more than 2 feet from the ends and then 4 feet on center along their length. Carriers are to be spaced not more than 6 inches from the walls and then 2 feet on center across the room. (**NOTE:** This is 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.



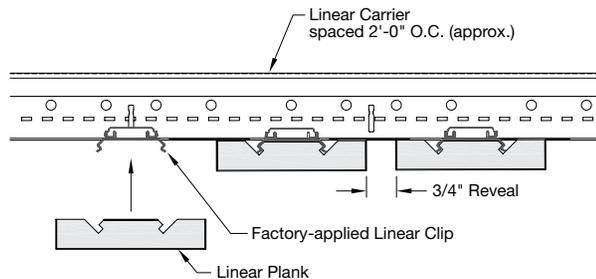
5.4.2 Cut the first row of planks to the correct width. If the result of this cut prevents the clip from engaging the grooves on the back of the plank, remove the clip from the carrier and attach the first row of planks by inserting 1/2" long screws through the flange of the main beam into the back of the plank. A 1/8" thick shim must be inserted between the plank and suspension system 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 installing 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. Position the starting end of each row of wood planks as described in section 5.4.2 (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 beam and into the back side of the plank.

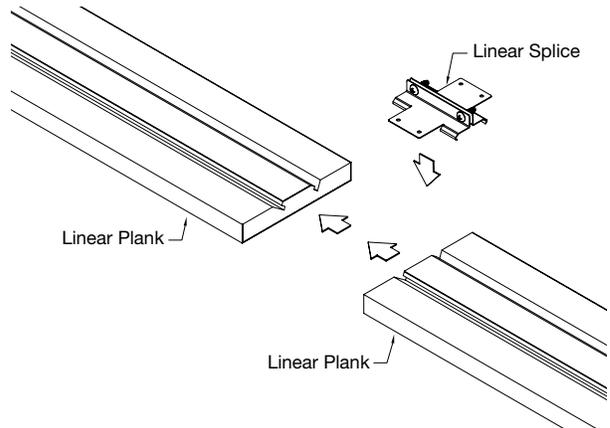


CAUTION: Be careful not to damage a clip. If a clip is damaged, a replacement clip can be put on from a spare piece of carrier.

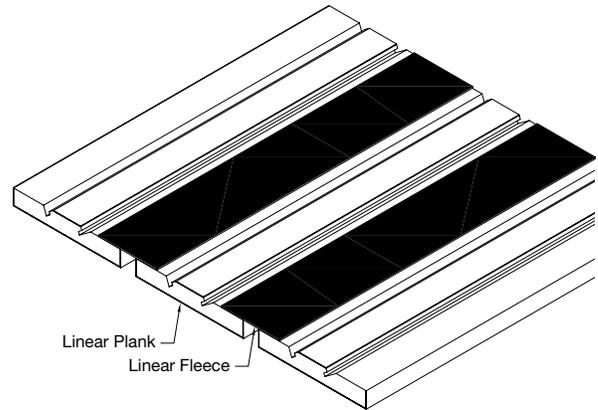
5.7 Work from one end of the strip to the other. Hand pressure should be enough to seat a clip into the kerfs fully.

NOTE: Install additional planks end to end to complete the row. Butt the ends tightly together and secure each joint with a splice (item #5843). Insert the splice into the grooves on the back of the planks and tighten the screws to secure the connection. Holes are provided in the splice for the insertion of screws into the back of the planks. Drill pilot holes in the wood. This is only required where warp or twist causes the plank ends to misalign, or in severe seismic applications (see section 10).

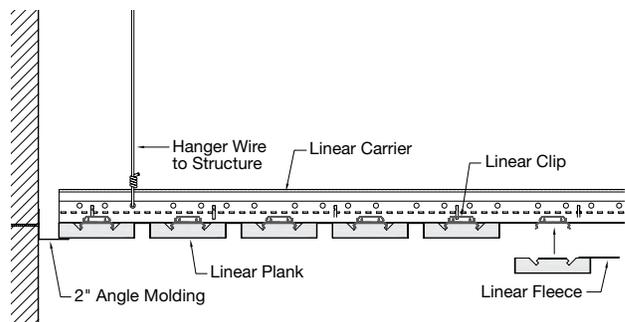
5.8 Cut the last wood plank to provide the required end clearance and install to complete the row.

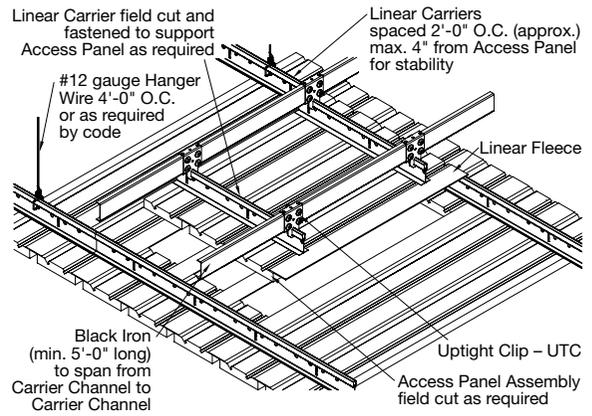
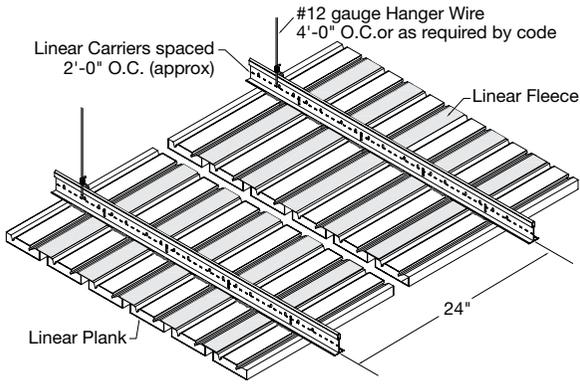


5.9 As you start the second row of planks, make sure the black fleece from the first row lays over the back side of the adjacent planks in the second row.



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.





5.10 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.

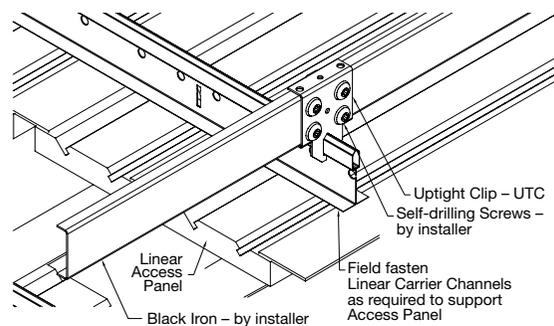
6. PERIMETER TREATMENT

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. An alternate method is to cap the end of the installation using WoodWorks® trim (aluminum substrated), which has a veneer wrapped around the visual side of the trim. Follow the separate set of instructions included with that product (LA 297580).

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 feet 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.



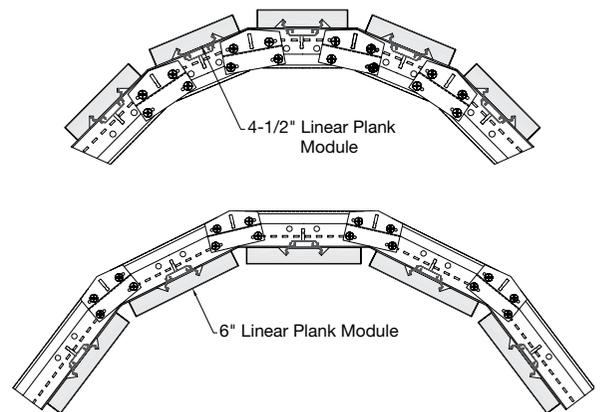
If the face of the access door rests slightly lower than the rest of the installation, fasten a metal shim to the top side of the suspension system where the 1-1/2" channel rests on it.

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.

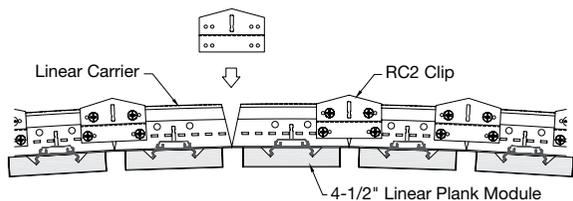
To facet the Linear Carriers, field cuts must first be made to the suspension system. Cuts should be centered exactly between the linear clips.

8.2 Bend the suspension system 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 suspension system 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 – two screws each on either side of the cut suspension system.



8.5 Install the newly faceted Linear Carriers. Space the hanger wires every eight planks (or clips) for 8" 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 installing near the carriers.

8.7 Add a strut (brace) to structure every 8 feet along the first row of main beams. 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.

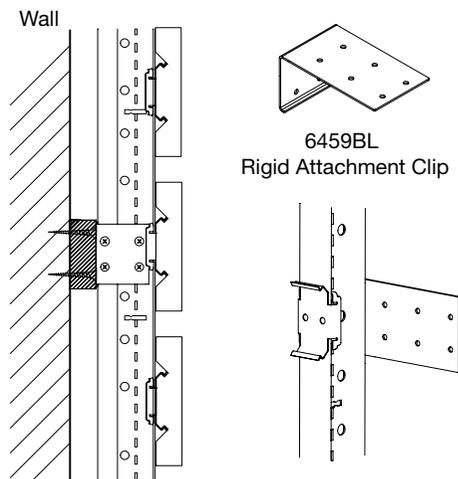
9. WALL INSTALLATION

Determine plank orientation – horizontal or vertical. Install wood furring strips horizontally, securing them to wall studs or a solid wall with appropriate fasteners for the substrate. Spacing between furring should not be more than 24". The first furring strip at the bottom should be elevated from the floor by no more than 8". The last furring strip at the top should be 8" from the existing ceiling.

Install Rigid Attachment Clips (item 6459BL) to the furring strips, flush, going up the wall and 24" O.C. The first and last carriers must be no more than 4" from the end of the plank. You must place a 3/4" expansion joint at every 24 foot run of plank. Splice plate installations will be blind and will need a Phillips screwdriver.

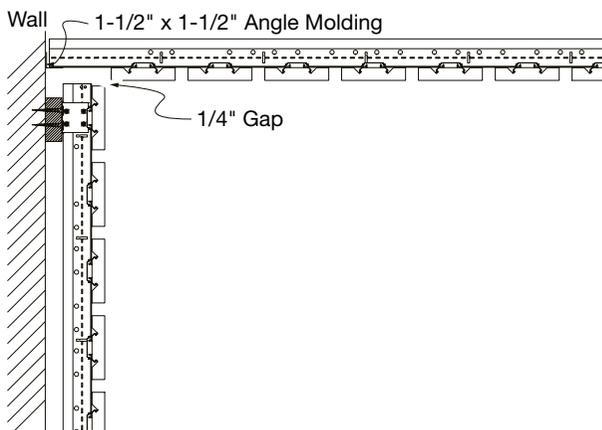
Install panels from the bottom up with felt down.

For receptacle cutouts or other wall fixtures, trim or finish edges with the appropriate molding or tape (fastcap).



9.1 Straight Ceiling-to-Wall Transitions

Use 1-1/2" angle molding. Install the ceiling and wall planks per instructions given leaving a 1/4" gap between the ceiling planks and the last wall plank. If installing adjacent walls, leave 1/4" gap between the end of the plank and the face of the adjacent plank. For exposed plank ends, use fastcap edge banding matching the wood veneer.



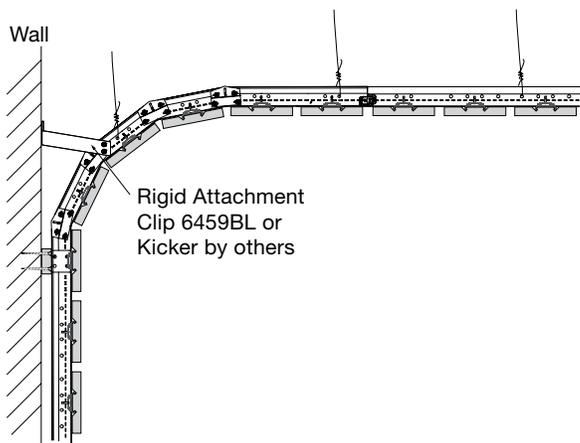
9.2 Curved Ceiling-to-Wall Transitions

9.2.1 WoodWorks® Linear can be installed to create a curved transition from ceiling to wall by faceting the suspension system. (See section 8. FACETED APPLICATIONS to correctly facet the suspension system.) If possible, make the transition from ceiling to wall from one WoodWorks Linear Carrier. Attach the curved transition to the wall as stated in section 9.0.1. Use Rigid Attachment Clips (item 6459BL) or a rigid kicker (by others) to stabilize the curved section of the transition. Attach hanger wire to the deck starting 6" from the wall and then use 24" spacing going up the curved carrier.

9.2.2 Use of WoodWorks Linear accessories for curved installations is not recommended. When trim accessories are required, the installer must field miter, join, and attach the trim to exactly match the faceted panels.

9.2.3 If installation is not wall to wall, treat the exposed ends with fastcap edge banding matching the wood veneer or build a curved bulkhead to hide untreated ends.

WoodWorks® Linear curved transitions are single wall only.



10. 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.

11. 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, and F. For applications in seismic zones, review the following guidelines.

The suspension system is to be hung using soft annealed galvanized #12 gage steel suspension wires at 4 ft. on center. Additional perimeter wires should be installed within 8 in. of all walls and installed 2 ft. on center to support the perimeter grid members. All of the vertical wires were attached to the ceiling suspension member and to structure with a minimum of 3 turns within 3 inches of each connection.

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.

12. CLEANING RECOMMENDATIONS

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

MORE INFORMATION

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

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

For the latest product selection and specification data, visit armstrong.com/woodworks.

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CEILING & WALL SYSTEMS