

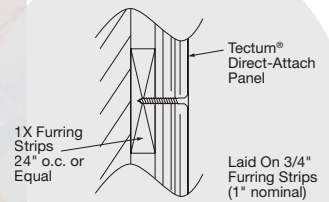
new TECTUM® Direct-Attach

Acoustical Ceiling
& Wall Panels
coarse texture

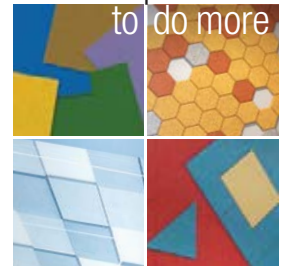


Tectum® Direct-Attach ceiling panels in White

CAD/Revit® drawings at:
armstrongceilings.com



plus...
capabilities
to do more



armstrongceilings.com/capabilities
See more photos at:
armstrongceilings.com/photogallery

Tectum® Direct-Attach ceiling and wall panels provide durable, sustainable, acoustical options for a wide variety of applications.

KEY SELECTION ATTRIBUTES

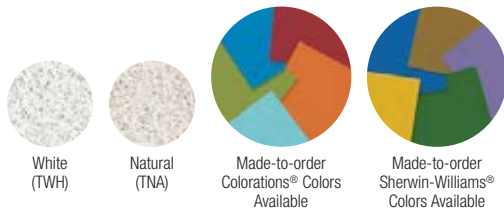
- Durable for heavy-use interiors
- Great retrofit solution for noise reduction
- Excellent noise absorption – NRC up to 0.85
- Tectum® 1" panels are part of the Sustain™ portfolio and meet the most stringent sustainability standards today
- Can be field painted up to six times without impacting acoustic or fire performance
- Wide variety of color options available, including made-to-order Colorations® colors and Sherwin-Williams® colors
- Can be mechanically fastened to a wide variety of surfaces including masonry, drywall, wood, and more

TYPICAL APPLICATIONS

- Gymsnasiums
- Auditoriums
- Multi-purpose Spaces
- Exposed Structures
- Acoustical Retrofits
- Education Spaces

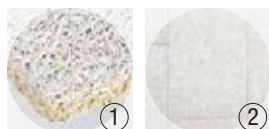
COLORS

Due to printing limitations, shade may vary from actual product.



Note: Colorations® colors and panels greater than 1" thick are not included in Sustain™ portfolio.

DETAILS

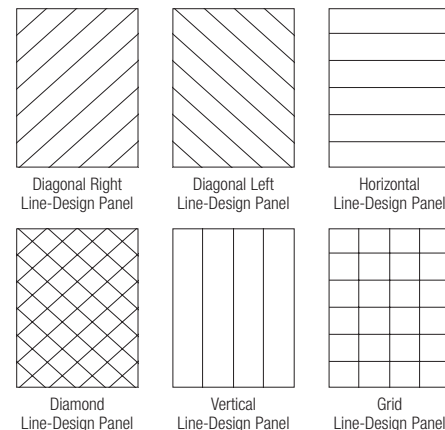


1. Tectum® Direct-Attach Panel in White
2. Tectum® Direct-Attach Panels in White

Note: Panel edges are unfinished.

LINE DESIGN CAPABILITIES

Available through special order.



DIRECT-TO-DECK & WALLS

TECTUM® Direct-Attach

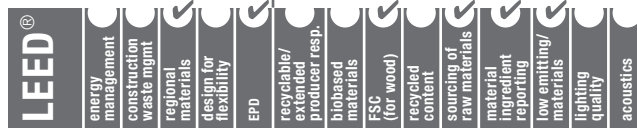
Acoustical Ceiling
& Wall Panels
coarse texture

DeclareSM
Living Building
Challenge Compliant

SUSTAINSM
High Performance
Sustainable
Ceiling Systems



For LEED contribution visit
armstrongceilings.com/greengenie



LOCATION DEPENDENT

VISUAL SELECTION

Edge Profile	Item No. ♦	Dimensions Nominal W x L x H (Inches)
TECTUM® Direct-Attach Ceiling & Wall Panels (FSC Certified Available Upon Request)		
Long Edges Beveled/Short Edges Square	8182T10 _ _ _	23-3/4 x 48 x 1"
	8181T10 _ _ _	23-3/4 x 96 x 1"
	8180T10 _ _ _	47-3/4 x 96 x 1"
Other Size Panels		W 23-3/4" – 48" L: 12" – 144" 1", 1-1/2", or 2" thickness

♦ When specifying or ordering, include the appropriate 3-digit color suffix TNA = Natural TWH = White (e.g. 8182T10 I W H)
For four-sided beveled edge panels, special sizes and colors, call TechLine at 1 877 276-7876.

FSC®-certified panels available upon request

Four-sided beveled edge panels are recommended in adjoining panel installation

PERFORMANCE SELECTION

Dots represent high level of performance.

Fire Rating	Light Reflect (White Only)	Anti-Mold & Mildew BioBlock	Sag Resist Humi-Guard+	Certified Low VOC Emissions	Wash	Impact	Scratch	30-Yr Warranty
Class A	Up to 0.75	•	•	•	•	•	•	•
Class A	Up to 0.75	•	•	•	•	•	•	•
Class A	Up to 0.75	•	•	•	•	•	•	•
Class A	Up to 0.75	–	–	–	•	•	•	•

ACOUSTICAL INFORMATION

Panel Thickness	NRC	Mounting Method
1"	0.40 0.45 0.80 • 0.85 •	A D-20 C-20 C-40
1-1/2"	0.55 0.60 0.90 • 0.95 •	A D-20 C-20 C-40
2"	0.60 0.70 • 0.95 1.00 •	A D-20 C-20 C-40

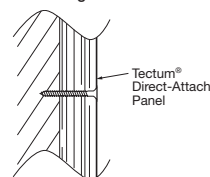
ACCESSORIES

Item No. ♦	Description	Quantity
8187L16 _ _ _	#6 x1-5/8" Painted Head – Sharp point Screws	1000/ctn
8188L16 _ _ _	#6 x1-5/8" Painted Head – Drill point Screws	1000/ctn
8189L22 _ _ _	2-1/4" Painted Head – CMU Screws	500/ctn

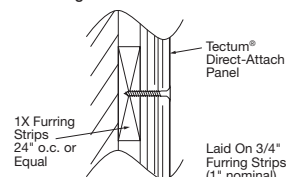
♦ When specifying or ordering, include the appropriate 3-digit color suffix TNA = Natural; TWH = White (e.g. 8187L16 I W H)
Consult installation instructions for fastener guidance.

ACOUSTICAL MOUNTING METHODS

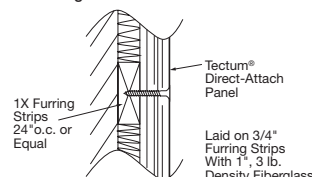
Mounting A



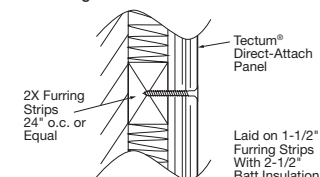
Mounting D-20



Mounting C-20



Mounting C-40



PHYSICAL DATA

Material

FSC Certified panels available upon request.

Cementitious Wood Fiber; FSC®-certified (COC-003601). For more information about FSC®-certified fire-retardant products, or to view our FSC®-certification letter, contact TechLine at 1 877 276 7876.

Surface Finish

Factory-applied latex paint with Silicate surface coating for abuse resistance. Natural is unpainted.

Fire Performance

Class A per IBC. Flame Spread Index 25 or less and Smoke Developed Index 50 or less when tested in accordance with ASTM E84.

CAN/ULC S102 surface burning characteristics. Flame Spread Index of 25 or less and Smoke Developed Index of 50 or less (painted, face only).

VOC Emissions

Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED®, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

Tectum® panels meet CDPH guidelines in enclosed office wall applications at 50% coverage. View certificate details at armstrongceilings.com/tectum.

Humidity/Sag Resistance

HumiGuard® Plus panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

Mold/Mildew Protection

Ceiling panels with BioBlock® performance resist the growth of mold and mildew.

Installation Considerations

Panels must be mechanically attached to approved substrate per installation instructions. To achieve proper finished visual panels should be installed in an ashlar pattern. Four-sided beveled edge panels are recommended in adjoining panel installations.

Use caution and wear appropriate hand, eye, and dust mask protection when cutting and installing Tectum® panels. Refer to installation instructions for complete details and cutting recommendations.

Primary (Embodied) Energy

See all LCA information on our EPDs.

Application Considerations

Color variation among panels is common due to the natural characteristics of the wood on White and Natural panels.

Wood fibers may appear orange on Natural colored panels due to the characteristics of the wood.

Design Considerations

For walls that may experience condensation or moisture, such as uninsulated exterior walls, D- or C- mounting is required to create a gap between the structure and the panel.

Design Support

Project management assistance is available by calling TechLine at 1 877 276 7876.

Specification Consideration

FSC Certified panels available upon request.

Attention: For FSC®-certified wood products to maintain their CoC certification, products must be sold to a CoC-certified distributor or directly to the installing contractor. Failure to do so breaks the CoC.

Seismic Restraint

Tectum Direct Attach panels are approved for application in all seismic areas when installed per Armstrong Ceilings Installation Instructions.

Warranty

30-Year Warranty. Details at armstrongceilings.com

Weight, Pcs and SF/Pallet

1" – 1.65 lbs/SF

8180T10 – 36 pcs/pallet; 1,152 SF/pallet

8181T10 – 72 pcs/pallet; 1,152 SF/pallet

8182T10 – 72 pcs/pallet; 576 SF/pallet

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BPCS-5599-118

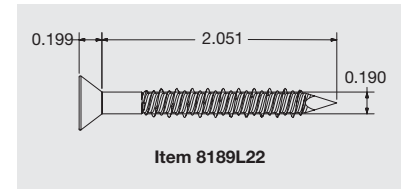
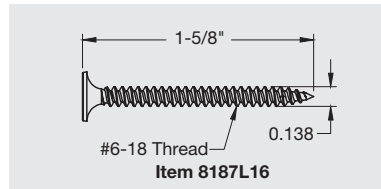
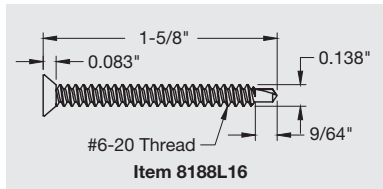
Armstrong®
CEILING & WALL SOLUTIONS

TECTUM® Direct-Attach Ceiling and Wall Panels

Assembly and Installation Instructions for 1-Inch Thick Direct-Attach Wall and Ceiling Panels

TECTUM DIRECT-ATTACH WALL AND CEILING PANELS – STANDARD ITEMS:				
Item No. ♦	Item Name	Included with panels	Sold by the:	SF per Pallet
8180T10_ _ _	47-3/4" x 96" x 1" Panel	–	Pallet	1,152
8181T10_ _ _	23-3/4" x 96" x 1" Panel	–	Pallet	1,152
8182T10_ _ _	23-3/4" x 48" x 1" Panel	–	Pallet	576
TECTUM DIRECT-ATTACH WALL AND CEILING PANELS – INSTALLATION ACCESSORIES				
*Note: Fasteners required vary based on project details. Reference Section 3.2 for guidance.				
Item No. ♦	Item Name	Included with panels	Sold by the:	Pcs per Ctn
8187L16_ _ _	Sharp Point Screw #6 x 1-5/8"	No	Carton	1000 pcs
8188L16_ _ _	Drill Point Screw #6 x 1-5/8"	No	Carton	1000 pcs
8189L22_ _ _	CMU Screw 1/4" x 2.2"	No	Carton	500 pcs
	Wood or Metal furring strips	Not sold by Armstrong Ceilings		

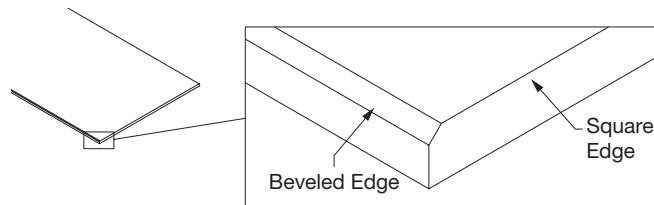
♦ When specifying or ordering, include the appropriate 3-digit color suffix TNA = Natural TWH = White (e.g. 8182T10 I W H) For four-sided beveled edge panels, special sizes and colors, call TechLine at 1 877 276 7876.



1. GENERAL

1.1 Product Description

Tectum® panels are highly impact-resistant panels made of Aspen wood fibers held together with a cementitious binder. Standard Tectum Direct-Attach panels for walls and ceilings are 1" thick and available in nominal sizes of 2 x 4', 2 x 8', and 4 x 8'. Standard panels are beveled on the two long sides.



Custom panels are available in additional sizes and thicknesses and with 4-sided beveled edges upon request (Contact TechLine).

Standard panels are available in two colors: White and Natural. Please note, Natural and White panels will show normal color variation due to the wood fibers.

Tectum Direct-Attach panels are installed using Tectum® screws on furring or other appropriate fasteners when attaching directly to the structure. See Sections 4 & 5 for more details on installation. Dependent on mounting method, standard ceiling and wall 1" thick Tectum panels provide an NRC (Sound Absorption) ranging from 0.40 to 0.85. Thicker custom options can provide an NRC of up to 1.0 (Contact your local Armstrong Ceilings distributor). Panels can be field cut and field painted up to 6 times without impacting acoustic or fire performance (see Section 7.5).

1.2 Safety

This product is made of wood fibers and cementitious binder. Sawing, sanding, or machining these products can produce wood dust and crystalline silica. Airborne dust can cause respiratory, eye and skin irritation. Respirable wood dust and crystalline silica are classified as carcinogens. Personal protective equipment includes safety glasses or goggles, and impervious gloves. Respiratory protection may be required and depends on how the product is being cut and handled. Job site environmental conditions must be evaluated in determining what type of respiratory protection is required. In all cases, cutting is to be performed in a well ventilated area and power tools must be equipped with a dust collection system. Refer to the Safety Data Sheet www.armstrongceilings.com/tectum for additional information.

1.3 Warranty

Failure to follow the Armstrong Ceilings recommended installation instructions in effect at the time of installation may void the product and/or ceiling system warranty.

1.4 Surface Finish

Tectum® panels are made of wood fibers within a cementitious binder. White panels are finished with a latex-based paint. Due to the unique porous composition of Tectum panels, they can be field painted up to six times without negatively impacting acoustic or fire performance.

NOTE: the edges of Tectum panels are not fully painted. For installations where finished painted edges are required see section 7.5 for field painting guidance.

1.5 Storage & Handling

Panels should be stored in a dry interior location and shall remain in cartons prior to installation to avoid damage. The cartons should be stored in a flat, horizontal position.

Proper care must be taken when handling to avoid damage and soiling. Do not store in unconditioned spaces with humidity greater than 85% or lower than 25% RH and temperatures lower than 32°F or greater than 120°F. Panels must not be exposed to extreme temperatures, for example, close to a heating source or near a window where there is direct sunlight.

1.6 Site Conditions

Tectum panels are required to reach room temperature and have stabilized moisture content for a minimum of 72 hours before installation. They should not, however, be installed in spaces where the temperature is lower than 32°F or greater than 120°F or humidity conditions are greater than 85% or lower than 25% RH. Panels must not be exposed to extreme temperatures, for example, close to a heating source or near a window where there is direct sunlight. All wet work (plastering, concrete, etc.) must be complete and dry.

1.7 HVAC Design & Operation, Temperature & Humidity Control

Real wood and wood composite products are natural building materials and they will react to changes in humidity. Spaces with installed product should be maintained with humidity in a range between 25% and 85% RH and temperatures in a range between 32°F and 120°F. (Wood tends to contract with lower humidity and expand with higher humidity.)

Cementitious Wood fiber panels 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 for the life of the product. All wet work (plastering, concrete, etc.) must be complete and dry. Standard 1" Tectum panels cannot be used in exterior applications. Contact TechLine for information on custom Tectum products available for exterior installations.

1.8 Colors

Standard Tectum panels are available in Natural and White finishes. Due to the natural variation of Tectum wood fibers, Natural and White panels will have normal color variation from panel-to-panel and within panels.

Panels can be field painted up to six times without losing their acoustical or fire performance. See section 7.5 for field painting guidelines. Factory-finished custom colors are also available (Contact TechLine).

2. DESIGN CONSIDERATIONS

2.1 Directionality

Tectum Direct-Attach panels are beveled on the two long edges with square ends. Panels should be installed bevel edge-to-bevel edge. In installation layouts where this is not possible, ashlar patterns are required. For increased design flexibility, custom panels can be ordered with a beveled edge on all four sides. Contact your local Armstrong Ceiling and Wall Systems distributor for a quote.

2.2 Edges

Exposed edges of an installation are not factory painted. See Section 7.5 for guidance on field painting.

2.3 Pool installations

1" Tectum Direct-Attach wall & ceiling panels are not to be used in pool areas or other high humidity areas where standing water is present. Contact TechLine for information on custom Tectum products available for pool installations.

2.4 Exterior installations

1" Tectum Direct-Attach wall and ceilings not intended for exterior use.

2.5 Direct Attachment

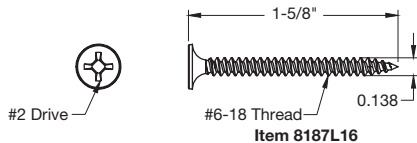
Tectum Direct-Attach panels are mechanically fastened to furring (metal or wood) or direct to structure using appropriate fasteners. See Installation Sections 4 & 5 for different mounting methods. Direct-Attach panels are approximately 1.65 lbs/SF. Correct fasteners should consider total system weight. For acoustical solutions, reference C-20 and C-40 mounting. **Do not countersink screws or fasteners into panel face.** The type and position of framing and furring will be specified by the contractor.

3. TECTUM® ACCESSORIES

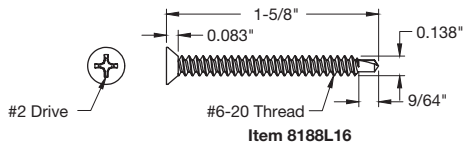
3.1 Screws

Armstrong Ceiling and Wall Systems offers three types of screws for many common installation methods. For specific installation instructions, including which screw for furring to structure connection and spacing, please see section 3.4.

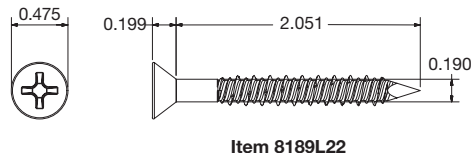
Sharp point screws (item 8187L16) are 1-5/8" long and are available in coordinating factory-finished White (suffix TWH) or Natural (suffix TNA). For 20- and 25-light gauge steel framing, wood furring, or Armstrong® Ceilings drywall grid use 1-5/8" sharp point drywall screws.



Drill Point Screws (item 8188L16) are 1-5/8" long and are available in coordinating factory-finished White (suffix TWH) or Natural (suffix TNA). For 20-gauge structural and heavier steel decking or framing, use 1-5/8" self-drilling drilling drywall screws.



CMU Screws (item 8189L22) are 2-1/4" long and are available in coordinating factory-finished White (suffix TWH) or Natural (suffix TNA). For hollow block CMU (Cement Masonry Unit or cinder block) structures, use 2-1/4" masonry screws. See specific installation guidance in section 4.1.



To attach Tectum® panels to structures or surfaces not listed in this section, please contact a fastener manufacturer, such as Hilti, Fastenal, or TapCon to obtain guidance and engineering data support.

4. INSTALLATION – WALL MOUNTING METHODS

For Tectum Direct-Attach panels, one of the most common application methods for Tectum interior panels is screw attachment to furring. The furring can be either wood or metal. Direct-Attach panels are approximately 1.65 lbs/SF. Consider total system weight when determining fasteners. The furring enables improved sound absorption and allows the installer to fasten in areas where there could otherwise be obstructions. The use of screw attachment for interior panels is widely accepted. The proper installation of the screws results in an installation where the heads are difficult to find even when viewed from a short distance. The Phillips flat head screws are painted to match either the painted White panels or the Natural panels. The screws are installed so that the screw head is flush with the surface of the Tectum panel. **Do not countersink the screw heads.** The texture of Tectum panels helps hide the screw head. This installation section will review the different mounting methods and fastener recommendations.

The NRC requirements will dictate what mounting method should be used. Verify specifications or drawings to determine project requirements. There are four direct mounting methods and each of them will have specific installation requirements so the Tectum system can meet project NRC specifications.

Please Note: Tectum panel edges are not factory painted. In installations where the sides of the panels are to be exposed may need to be addressed with trim or field painting, referenced in Section 7.

4.1 Mounting Method A

Mounting Method A requires installing panels directly to a wall structure with no furring or space behind the Tectum® panels. Please consult this section for type of screw (CMU/ Drill Point/Sharp Points) and sections 5.5 and 5.6 for spacing requirements (for both Standard Interior and High-Impact/ Abuse applications).

Because ceiling and wall structure materials vary greatly, Armstrong Ceiling and Wall Systems does not offer fasteners for all project applications, but does provide fasteners for the most common structures. Depending on what the substrate is, there are different recommendations for which fastener to use.

For one of the most common wall structures, CMU (hollow Cement Masonry Unit, or breeze/cinder block), use Tectum 2-1/4" CMU Screw (item 8189L22). While the CMU screw will work in a majority of concrete block applications, it is important to note that it will not work with all concrete. It is difficult or impossible to use this screw with some poured or precast concrete. Work with a fastener manufacturer to determine best fastener for your application and to acquire engineering reports regarding performance. Contact Armstrong Ceilings TechLine or Tapcon if specific guidance is needed related to drill bits, anchors, or general CMU screw installation.

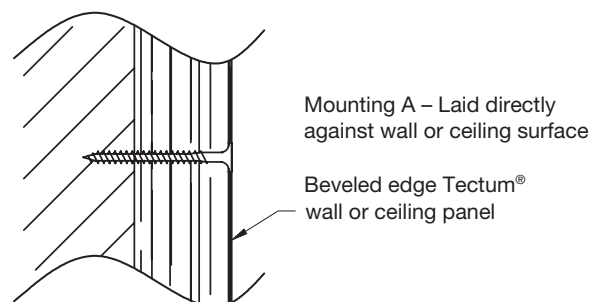
For structures other than hollow CMU, contact a fastener manufacturer, such as Hilti, Fastenal, or Tapcon to get guidance and engineering support data on the fastener type that will meet pull-out requirements for your building code.

IMPORTANT NOTES:

Power Actuated Fasteners: Do not use power actuated fasteners to directly attach Tectum panels to masonry surfaces. If power actuated fasteners are necessary they should be used on the furring/hat channel and panels screw attached to the furring as described in steel framing and wood furring section 5.2.

Exterior Masonry Walls: In the event that you encounter uninsulated exterior walls, or if you are uncertain of the insulation conditions of the wall, use furring strips to ensure an air gap between panels and the structure to minimize unwanted condensation-related issues.

For fastener spacing requirements for standard interior and high impact spaces, see sections 4.5 and 4.6.



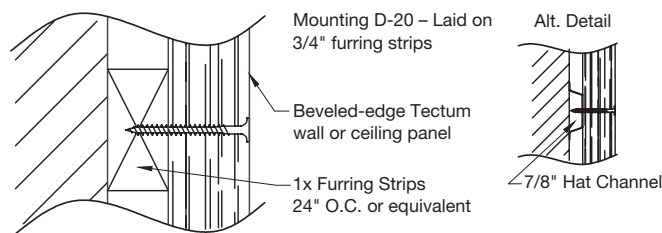
4.2 Mounting Method D-20

The D-20 Direct-Attach mounting method includes beveled edge wall panels laid on 3/4" furring strips or Drywall Grid (item 8906 main beam and XL8945 cross tees) to maintain air gap between structure and back of the Tectum® panels. The furring must be attached to structure in a method that supports the full weight of the panels **per the requirements specified in Section 4.5**. Contact a fastener manufacturer, such as Hilti, Fastenal, or TapCon to ensure the correct fastener for the structure type, since structure fastener requirements can vary. Due to joist/stud spacing in most jobs, to meet fastener layout requirements furring strips are recommended to ensure a secure fastening location for the panels. If you are attaching to existing drywall, all fasteners must go into a stud, drywall grid, or other structural component. It is the responsibility of the contractor to locate these elements in either ceiling or wall applications.

Please consult the following sections for attaching the Tectum panels to the type of furring selected (Drill Point/Sharp Points) and section 4.5 and 4.6 for spacing requirements (for Standard Interior or High-Impact/Abuse spaces):

Attach Tectum® panels directly to 3/4" wood or metal hat channel furring (see section 4.5 and 4.6 for screw spacing/guidance):

- Wood furring: In a D-20 mounting, to attach to wood furring, use Tectum 1-5/8" Sharp point screws (item 8187L15) with coordinating painted face
- Light Gauge (20-25 gauge) Metal furring/framing: In a D-20 mounting, attach to thin gauge metal furring with Tectum 1-5/8" sharp point screws (item 8187L15) with coordinating painted face
- Drywall Grid furring: In a D-20 mounting, attach to thin gauge metal furring with Tectum 1-5/8" sharp point screws (item 8187L15) with coordinating painted face
- Heavy gauge metal furring: In a D-20 mounting, attach to heavy gauge metal furring with Tectum 1-5/8" drill point screws (item 8188L15) with coordinating painted face



4.3 Mounting C-20

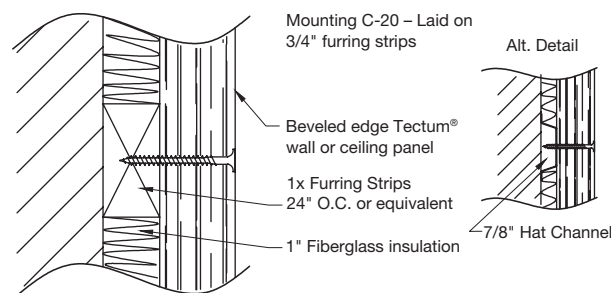
The C-20 Direct-Attach Mounting method includes beveled edge wall panels laid on 3/4" furring strips with 1", 3lb. density fiberglass batt insulation between the furring, which increases the acoustic absorption of the installed space (NRC). The furring must be attached to structure in a method that supports the full weight of the panels **per the requirements specified in Section 4.5**. Contact a fastener manufacturer, such as Hilti, Fastenal, or TapCon to ensure the correct fastener for the structure type, since structure fastener requirements can vary. Due to joist/stud spacing in most jobs, to meet fastener layout requirements furring strips are recommended to ensure a secure fastening location for the panels. If you are attaching to existing drywall, all fasteners must go into a stud, drywall grid, or other structural component. It is the responsibility of the contractor to locate these elements in either ceiling or wall applications.

Please consult the following sections for attaching the Tectum

panels to the type of furring selected (Drill Point/Sharp Points) and section 4.5 and 4.6 for spacing requirements (for Standard Interior or High-Impact/Abuse spaces):

Attach Tectum panels directly to 3/4" wood or metal furring (see section 4.5 and 4.6 for screw spacing/guidance):

- Wood furring: In a D-20 mounting, to attach to wood furring, use Tectum 1-5/8" sharp point screws (item 8187L15) with coordinating painted face
- Light Gauge (20-25 gauge) Metal furring/framing: In a D-20 mounting, attach to light gauge metal furring with Tectum 1-5/8" sharp point screws (item 8187L15) with coordinating painted face
- Drywall Grid furring: In a D-20 mounting, attach to thin gauge metal furring with Tectum 1-5/8" sharp point screws (item 8187L15) with coordinating painted face
- Heavy gauge metal or structural steel: In a D-20 mounting, attach to heavy gauge metal furring with Tectum 1-5/8" drill point screws (item 8188L15) with coordinating painted face



4.4 Mounting C-40

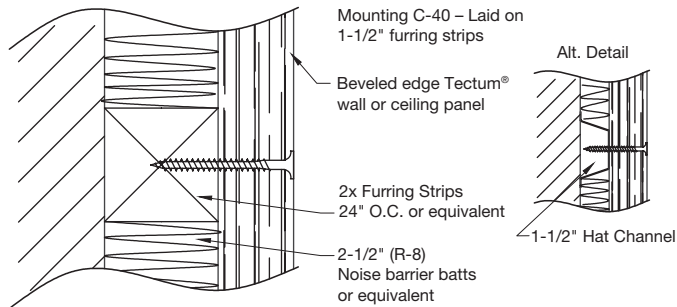
The C-40 Direct-Attach mounting method includes beveled edge wall panels laid on 1-1/2" furring strips with 2 1/2" batt insulation between the furring, which increases the acoustic absorption of the installed space (NRC). The furring must be attached to structure in a method that supports the full weight of the panels **per the requirements specified in Section 4.5**. Contact a fastener manufacturer, such as Hilti, Fastenal, or TapCon to ensure the correct fastener for the structure type, since structure fastener requirements can vary. Due to joist/stud spacing in most jobs, to meet fastener layout requirements furring strips are recommended to ensure a secure fastening location for the panels. If you are attaching to existing drywall, all fasteners must go into a stud, drywall grid, or other structural component. It is the responsibility of the contractor to locate these elements in either ceiling or wall applications.

Please consult the following sections for attaching the Tectum panels to the type of furring selected (Self-drilling/Sharp Points) and section 4.5 and 4.6 for spacing requirements (for Standard Interior or High-Impact/Abuse spaces):

Attach Tectum panels directly to 3/4" wood or metal furring (see section 4.5 and 4.6 for screw spacing/guidance):

- Wood furring: In a D-20 mounting, to attach to wood furring, use Tectum 1-5/8" sharp point screws (item 8187L15) with coordinating painted face
- Light Gauge (20-25 gauge) Metal furring/framing: In a D-20 mounting, attach to thin gauge metal furring with Tectum 1-5/8" sharp point screws (item 8187L15) with coordinating painted face

- Drywall Grid furring: In a D-20 mounting, attach to thin gauge metal furring with Tectum® 1-5/8" sharp point screws (item 8187L15) with coordinating painted face
- Heavy gauge metal furring or structural steel: In a D-20 mounting, attach to heavy gauge metal furring with Tectum 1-5/8" drill point screws (item 8188L15) with coordinating painted face



4.5 Panel Direction & Fastener Layout

Recommended screw spacing is such that one screw supports one to three square feet of panel. The 1" thick standard Direct-Attach ceiling and wall panel has a weight of 1.65 lbs/SF. It is the contractor/installer's responsibility to ensure type of fastener and placement is able to carry the system weight. Additionally, the Tectum® panel surface is not intended to support additional weight. Because the pull-through resistance of the screw head is adequate no washers or adhesive application is required.

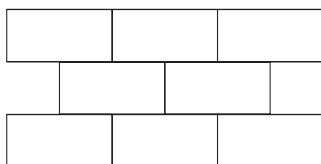
Horizontal Wall Panel Installation

Tectum panels should be fastened a minimum of 24" O.C. starting at the edge of the panels. When furring is used it should be installed perpendicular to the long side of the panel. Tectum panels are required to be installed in an ashlar pattern (staggered end joints). Furring is required at the ends of the panels.

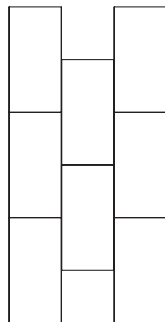
Vertical Wall Panel Installation

Tectum panels should be attached at a maximum 24" O.C. on the vertical dimension and 23-3/4" on the horizontal dimension.

Horizontal Panel Layout - Staggered End Joints



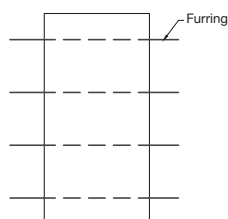
Vertical Panel Layout - Staggered End Joints



Horizontal Panel



Vertical Panel



4.6 Screw Placement for ALL mounting methods

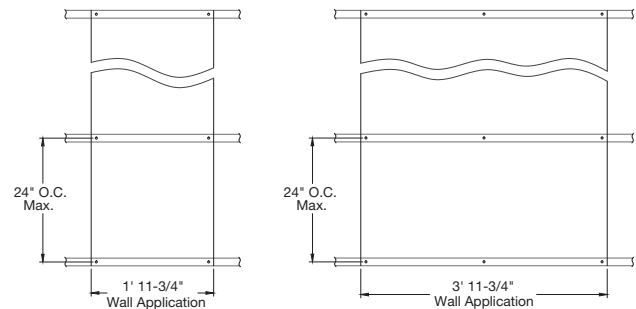
Tectum interior panels are typically installed over furring but the same screw pattern should be used for a Type A direct mounting. The recommended method is for the furring to be spaced not over 24" o.c. and perpendicular to the panel direction in standard use spaces. Please see section 4.9 for screw spacing recommendations for high impact areas. Furring is required at the panel ends. The attachment of the furring and the furring must be designed to support the weight of the panels. If furring must be installed parallel to the panel direction, the spacing must match the panel width.

A panel 47-3/4" must have mid-width furring. Spacing should be as follows for furring parallel to Tectum panels:

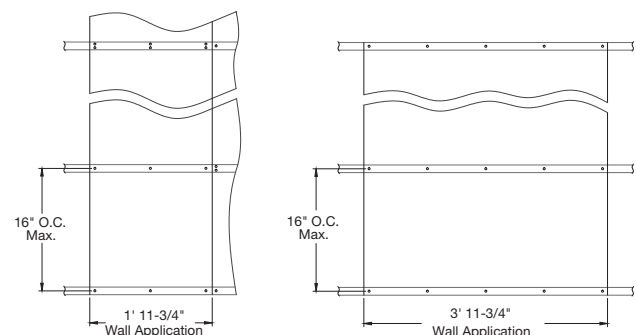
- 23-3/4" width 23-3/4" center-to-center spacing
- 47-3/4" width 23-7/8" center-to-center spacing

When attaching to furring use painted head drywall screws. For wall applications on 23-3/4" wide panels, two screws per furring crossing are required; for 47-3/4" wide panels, three screws per furring crossing are required. The screws are to be spaced 1" from the panel edges and where three is required, the third screw is centered. For ceiling applications using 23-3/4" wide panels, three screws per furring crossing are required. For ceiling applications using 47-3/4" wide panels, five screws per furring crossing are required.

Standard Wall Panel Attachment



High Impact Wall Panel Attachment



NOTE: Panels are only 23-3/4" x 47-3/4" or 47-3/4" x 95-3/4" wide in long side of the panels for estimating and layout purposes.

4.7 Staggered End Joints (Ashlar Pattern)

All Tectum® wall panels are required to have staggered end joints if more than one panel is installed.

4.8 Field Cutting

Tectum panels are easily cut using standard wood cutting tools. The short ends of panels (23-3/4" side for 2' x 4' and 47-3/4" side for 4' x 8' panels) will be square edges from the plant and will require a hand router with a 1/4" bevel bit to replicate the 1/4" bevel in the field, if required.

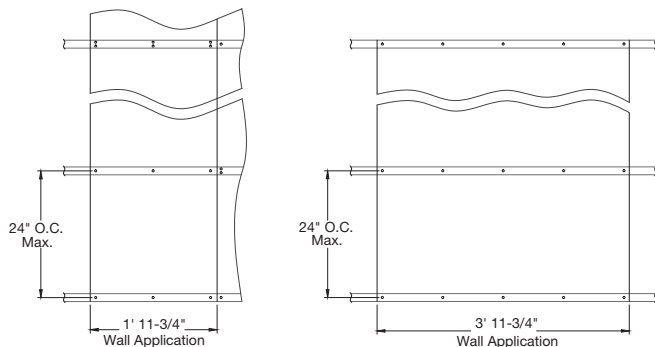
4.9 High Impact areas

Furring or fastener attachment is required at 16" O.C. in lieu of 24" O.C. as described above in section 4.6 for all 1" panels.

5. DIRECT-ATTACH – CEILING MOUNTING METHODS

Mounting Tectum Direct-Attach panels to the ceiling follows the same fastener and mounting methods that are listed for walls in Section 4, however, the screw layout for any direct-attached ceiling panel should be mechanically fastened every 12" O.C. no matter what mounting method (A, D-20, C-20, or C-40). Metal or wood furring or Armstrong Ceilings drywall grid should be installed perpendicular to panel direction no more than 24" O.C. Once furring or grid is installed, place panel on furring, making sure panel ends fall over furring strips or grid members. Tectum panels must be installed in an ashlar pattern (Staggered Panel Ends).

Mechanically attach panels every 12" O.C. to furring placing screw heads flush with the face of the Tectum panel. **Do not countersink screws.** Place the next panel against the furring, butting the end to the previously installed panel. Anytime a Tectum panel touches another Tectum panel, the end should be beveled. Mechanically fasten the second panel every 12" O.C.

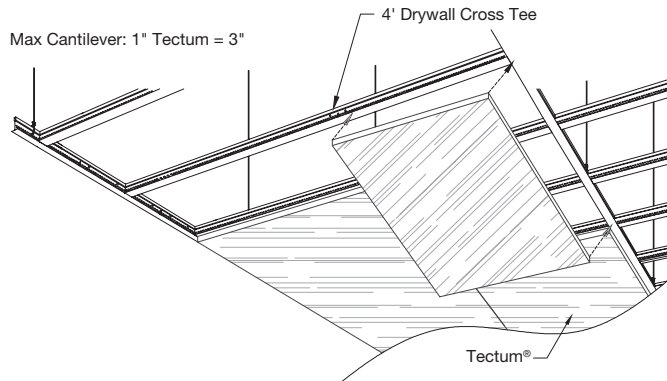
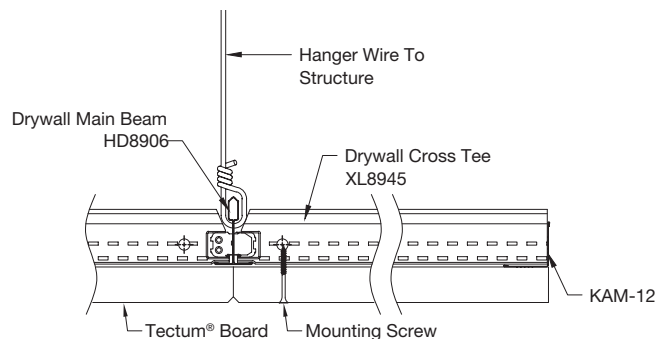


5.1 Direct-Attach to Armstrong Ceilings Drywall grid system

The requirements listed here represent the manufacturer's minimum acceptable installation recommendations, and may be subject to additional requirements established by the local authority having jurisdiction.

- All installations shall follow ASTM C636.
- Suspension components should be tested per ASTM E3090 with duty ratings per ASTM C635

Use Armstrong Ceilings drywall grid main beam (Item HD8906) along with drywall grid cross tees (item XL8945) and (KAM 12) Angle Molding. The panel length should run parallel with the main runners and screw layout should be 12" O.C. as shown for direct to furring application.



6. DISCONTINUOUS/FLOATING INSTALLATION

6.1 Clouds with Axiom® Trim

Due to slight surface-to-surface variation, Armstrong® Tectum® 1" Direct-Attach panels are not recommended in discontinuous/floating ceiling installation with trim. See our Lay-In and Tegular ceiling panels for discontinuous ceiling options using Prelude® XL® suspension system along with Axiom® Trim.

7. PANELS

7.1 Edge Detail/Interface

1"-thick standard Tectum Direct-Attach panels are available in nominal sizes of 2 x 4', 2 x 8', and 4 x 8'. Actual width and length sizes are approximately 1/4" below nominal size (e.g.: 23-3/4" x 47-3/4"). Only the 2 long sides of the panel are beveled, however the panels are field machinable.

7.2 Cutting of Panels

Cut the panel using standard woodworking tools and techniques. A table saw is recommended for straight cuts and a band saw for curved cuts. In both cases, panels should be cut face up to minimize chipping of the face veneer. To replicate the 1/4" factory bevel, a hand router with a 1/4" bevel bit can be used. Fine-toothed blades recommended for finish cuts will yield the best results.

7.3 Directionality

Tectum panels are beveled on the two long edges. Panels should be mounted bevel edge-to-bevel edge. In installation layouts where this is not possible, ashlar patterns (staggered end-to-end) are required. For increased design flexibility, custom panels can be ordered with a bevel on all four sides. Contact your local Armstrong Ceilings distributor for a quote.

7.4 Acoustic Infill for Direct-Attach Panels

Sound Absorption (NRC) of up to 0.85 can be achieved with 1"-thick standard Tectum® Direct-Attach panels. See Section 4, C-20 and C-40 mounting methods.

7.5 Field Painting

Field Painting Specification Recommendation:

Sherwin-Williams® Product: Waterborne Acrylic Dry Fall (B42W1) 50 GAL. Drums MPI# 118

(or substitute Alkali based, flat latex paints with similar properties)

*Tests have shown that six coats of spray-applied paint have no negative impact on the acoustical and fire properties of the Tectum panels.

Recommended Spread Rate per Coat

Wet Mills: 3.5 - 5.0

Dry Mills: 1.5 - 2.0

Coverage: 336-450 sq. ft./gallon approximate (based on flat surface)

** If necessary, cross spray at a right angle*

Surface Preparation

Surface must be clean, dry, and in sound condition. Remove all oil, dirt, grease, and other foreign material to ensure adequate adhesion.

Application Condition

Temperature: 50 deg. F minimum, 110 deg. F maximum (air, surface, and material) ; At least 5 deg. F above dew point

Relative Humidity: 75% maximum

Dry Time: 20 minutes

Recoat: 1 hour *

During the early stages of drying, the coating is sensitive to rain, dew, high humidity, and moisture condensation. Plan painting schedules to avoid these influences during the first 16-24 hours of curing.

Dryfall characteristics will be adversely affected at temperatures below 77 deg. F or above 50% relative humidity.

Application Equipment

The following is a guide. Changes in pressure and tip sizes may be needed for proper spray characteristics.

Airless Spray:

Pressure: 2800

Hose: 1/4" ID

Tip: 0.013"

Reduction: As needed up to 10% by volume.

Conventional Spray:

Gun: Binks 95

Fluid Nozzle: 63C

Air Nozzle: 63PB

Atomization Pressure: 60 psi

Fluid Pressure: 50 psi

Reduction: As needed up to 20% by volume

Brush and Roller: Not recommended

Field Touch Up and Color Match:

Standard White Color Match: Sherwin-Williams® #SW7005

Standard Natural Color Match: Sherwin-Williams #SW6126

**** Tectum panels should be fastened in place prior to field painting.***

8. SPECIAL INSTALLATION CONSIDERATIONS

8.1 Sloped

Sloped ceiling installations should follow standard ceiling installation with screws 12" o.c. per section 5.0.

8.2 Pools/Natatoriums

1"-Thick standard Tectum panels are not intended for use in rooms with standing water. Contact TechLine for details on swimming pool options.

8.3 Exterior Installation

1"-Thick standard Tectum panels are not intended for use in exterior applications.

9. SEISMIC INSTALLATIONS

Seismic installations of Direct-Attach 1" thick Tectum panels are to be handled per building code.

MORE INFORMATION

For more information, or for an Armstrong Ceilings representative, call 1 877 276 7876.

For complete technical information, detail drawings, CAD design assistance, installation information, and many other technical services, call TechLine customer support at 1 877 276 7876 or FAX 1 800 572 TECH.

For the latest product selection and specification data, visit armstrongceilings.com/tectum.

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