SoundScapes® Shapes Acoustical Clouds

Assembly and Installation Instructions for Ceilings and Walls

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Armstrong®
World Industries

DO NOT REMOVE PANELS FROM THE CARTON UNTIL THESE INSTRUCTIONS HAVE BEEN READ IN THEIR ENTIRETY.
LOCATE HARDWARE ACCESSORY KITS THAT SHIPPED SEPARATELY.

1. GENERAL

1.1 Product Description

SoundScapes® Shapes Acoustical Clouds are flat fiberglass panels designed to be installed in one of four types of suspension system options. There are 9 standard panel options that come in a variety of 60° and 90° shapes.

SoundScapes Shapes are designed to be suspended with Armstrong® Ceilings Accessory Kits and are engineered for use in seismic areas only when installed in accordance with these installation instructions.

1.2 Materials and Finishes

SoundScapes Shapes panels are made from fiberglass and finished on the front surface and all sides with acoustically transparent membrane. The back of the panel is unfinished with an embedded metal extrusion for use with four Armstrong® Ceilings Suspension Systems. If the back of the panel will be visible, 360° panel finishing capability is available. Refer to Section 6 for details on installing 360° panels.

There are multiple standard nature-inspired colors and wood-look visuals for the finished panels. See Section 1.8 for panel touch-up options. Field painting will void the product warranty.

1.3 Design Consideration for Sag

SoundScapes Shapes maintain a natural sag that may be noticeable when installed 6" or less apart. Minimal deflection may occur.

1.4 Safety

1.4.1 Working with Fiberglass Products

WARNING: This product contains man-made vitreous fibers. Possible cancer and respiratory tract hazards. Can cause temporary respiratory, skin, and eye irritation.

1.4.2 Precautionary Measures

Be certain that the work site is well ventilated during the installation, and avoid breathing dust. If high dust levels are anticipated during installation, such as with the use of power tools, use appropriate NIOSH designated dust respirator. All power cutting tools must be equipped with dust collectors. Avoid contact with skin or eyes. Wear long-sleeve, loose-fitting clothes, gloves, and eye protection.

1.4.3 First Aid Measures

If contact occurs, flush eyes and skin irritation with plenty of water for at least 15 minutes, and remove contaminated clothes. After installing material, wash with warm water and mild soap. Wash work clothes separately from other clothing. Rinse washer thoroughly. Refer to the SoundScapes SDS for information on established occupational exposure limits.

1.5 Storage and Handling

The ceiling and wall panel components must be stored in a dry interior location and must remain in the original cartons prior to installation to avoid damage and soiling. The cartons must be stored in a flat, horizontal position. Save the carton cardboard insert for potential use during installation as a guide for hanging panels. The panels should not be removed from their carton until the suspension system is ready. Proper care should be taken when handling panels to avoid damage and soiling, particularly with panel edges and the surface of color panels. Proper care should be taken to locate the hardware accessory kits shipped separately from the panels.

1.6 Temperature During Installation

This product can be installed where the temperature is between 40°F (4°C) and 120°F (49°C). It cannot be used in exterior applications, where standing water is present, or where moisture can come in direct contact with the panel.

1.7 Fire Performance

SoundScapes® Shapes, as with other architectural features located in the ceiling plane, may obstruct or skew the existing or planned fire sprinkler water distribution pattern, or possibly delay the activation of the fire sprinkler or fire detection system. 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.

1.8 Field Touch Up and Color Match

Panels should be removed from the suspension system prior to touch-up painting and be allowed to fully dry before being returned. All paints are interior flat latex paints.

Paint Type: Sherwin-Williams Pro Mar 200 Zero VOC – Flat		
Armstrong Color Name	**Sherwin-Williams Color #**	**Sherwin-Williams Color Name**
White (DWH)	N/A	N/A
Black (DBL)	SW6990	Caviar
Riverstone (DRV)	SW7047	Porpoise
Stone (DSE)	SW7642	Pavestone
Light Grey (DLG)	SW7044	Amazing Gray
Sandstone (DSS)	SW6119	Antique White
Oat (DOT)	SW7038	Tony Taupe
Boxwood (DBW)	SW9132	Acacia Haze
Fern (DFN)	SW6193	Privilege Green
Ivy (DIV)	SW6468	Hunt Club
Ocean (DOC)	SW6244	Naval
Twilight (DTT)	SW6250	Granite Peak
Rainstorm (DRS)	SW6516	Down Pour
Mist (DMT)	SW9138	Stardew
Topaz (DTZ)	SW7701	Cavern Clay

1.9 Cleaning

Use a melamine eraser sponge to wipe off any dirt or greasy fingerprints. If this does not clean the panel, cover the spot with touch-up paint as described below. Make sure to dab the touch-up paint onto the panel to match the existing texture rather than smearing or painting.

For minor surface and edge scratches on white panels, use Armstrong® SuperCoat™ Touch-up Paint (Item 5761). This paint provides an excellent one-coat edge treatment that will blend with the original panel. For minor surface and edge scuffing, or scratches on colored panels, use matching Sherwin-Williams® paint that can be purchased from your local Sherwin-Williams store. For minor scratches and scuffs on wood looks panels, contact TechLine for support.

2. COMPONENTS

2.1 Panel Shapes

Panels come in nine standard shapes with various size options available. See the product data sheet for exact product dimensions. Panels are flat but may exhibit some natural deflection based on installation details.

2.2 Wood Look Grain Directionality

All wood-look panels are produced with wood grain running in a specific direction along the panel. Refer to data page to find grain direction details for each panel shape. Grain direction may impact the overall aesthetic of some group installations. Wood-look visuals are not dye-lotted, but are designed to mimic slight color variations as seen in real wood.

2.3 Suspension Systems

There are four types of suspension system options for use with SoundScapes Shapes. All panels can be suspended individually from the deck with aircraft cable; individually direct-attached to ceilings or walls with clips; or suspended as a group from grouping frames. Only 90° panels can be suspended from traditional 15/16" suspension grid system with Grid Hook Kits (Item 5632). It is not recommended to install 4' × 8' panels as a group from grouping frames; only independent suspension is recommended. See Section 3 for a description of each suspension system option and the installation procedures in more detail.

3. INSTALLATION

3.1 General

Before opening the panel carton, be sure to locate the hardware accessory kits needed for installation that were shipped separately. SoundScapes® Shapes may require two people to align and install each panel safely. **DO NOT REMOVE PANELS FROM THEIR CARTON** until the appropriate suspension system method has been prepared and is ready to accept the panels for installation.

Panels cannot be used to support any other material. The suspension system chosen must be fastened to the structure and cannot be hung from any commercial ceiling system. SoundScapes Shapes are not approved for exterior applications.

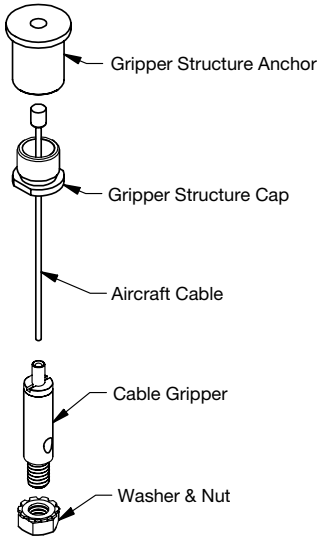
Each suspension system utilizes attachment points along the metal extrusion in the back of each panel. Each metal extrusion edge is marked with guidelines to facilitate suspension with several methods, as well as the possible hook location attachments in group configurations. Those suspension system specific attachment locations are explained in detail in the following sections.

3.2 Panel Installation: Deck Suspension

3.2.1 Deck Hanging Kit (Item 5450L8CR)

Suspended individual SoundScapes Shapes panels utilize the Deck Hanging Kit that includes:

- (2) Gripper Structure Anchors
- (2) Gripper Structure Caps
- (2) 8' Aircraft Cables
- (2) Bottom End Cable Adjusters
- (2) Nuts and Washers

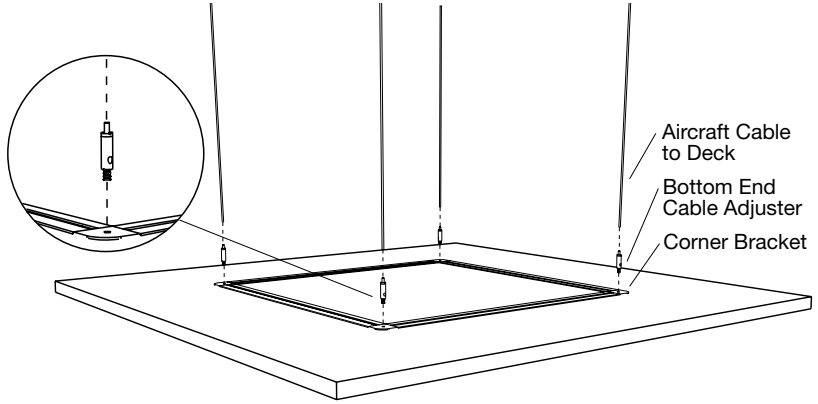


(Fig 1)

3.2.2 General Installation

To fasten the cable connectors to the structure, use fasteners by others that are compatible with the structure. This part of the installation will utilize the Gripper Structure Anchor and Cap from the Deck Hanging Kit (Item 5450L8CR).

Screw cable connectors into the threaded holes at the panel specific attachment points on the metal extrusion and configure the cable connectors as shown in ***(Fig 2)***. The height of a panel can be adjusted at the bottom end cable adjuster. When a final height is determined and installation is complete, cut off the excess cable wire from the side of the adjuster, leaving a 1" tail.



(Fig 2)

TIP: Excess wire can be wound up in a tight circle and left on the back of the panel for future use.

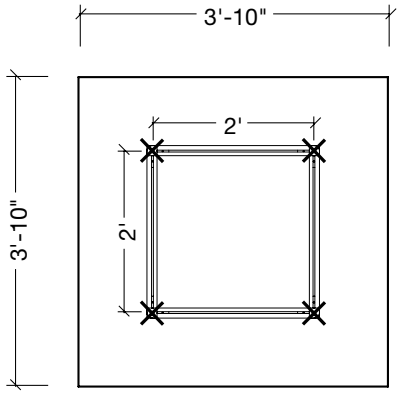
NOTE: An 8' aircraft cable is included in the standard Deck Hanging Kit. If additional cable length is needed for high ceiling applications, order the Extended Hanging Cables Kit (Item 625530), which has (4) 30' aircraft cables per kit.

For angled hanging applications up to 60°, use the Angled Hanging Kit (Item 7121), which has (2) angled hanging cables per kit. To install, insert the angled hanging cable between the bottom end cable adjuster of the deck hanging kit and the corner bracket on the back of the panel.

3.2.3 Panel Frame Attachment Points: 90° Shapes

4' × 4' Panels

When installing a single 4' × 4' (nominal) panel, hang all four cables from the structure in a 2' square configuration. The cables attach to the individual panel at the four corners of the back frame using the cable adjusters supplied in the Deck Hanging Kit ***(Fig 3)***.

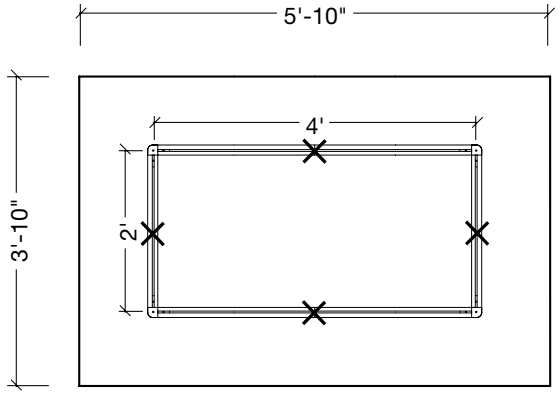


(Fig 3)

NOTE: Individually suspended panels will not use nuts and washers supplied in kit. Those are for group hanging applications only.

4' × 6' Panels

For 4' × 6' panels, attachment points are located at the midpoints of each side of the metal extrusion ***(Fig 4)***. First, line up the 1/4-20 nuts in the frames to the four midpoint areas of the back frames. Then screw the cable connectors into the 1/4-20 nuts in those locations. This provides the appropriate support for a 4' × 6' panel.

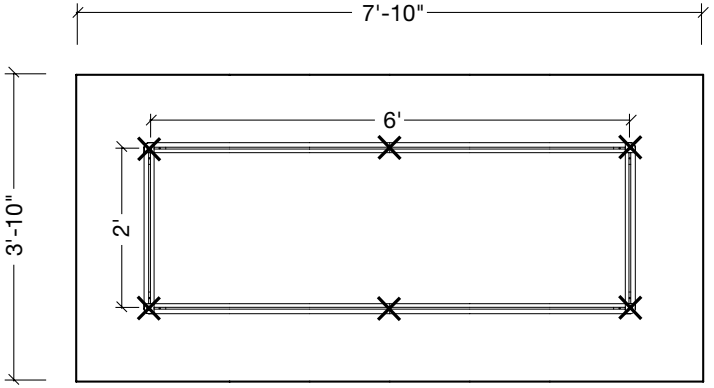


(Fig 4)

NOTE: Individually suspended panels will not use nuts and washers supplied in kit. Those are for group hanging applications only.

4' × 8' Panels

For 4' × 8' panels, in addition to the four corners, you will need to attach two additional cables to the midpoints of the long sides of the frames ***(Fig 5)***. For the midpoint attachments, first line up the 1/4-20 nuts in the frames to the midpoint areas of the frames. Then screw the cable connectors into the 1/4-20 nuts in those locations. Along with the corner attachments, this provides the appropriate extra support needed for a 4' × 8' panel. **NOTE:** Individually suspended panels will not use nuts and washers supplied in kit. Those are for group hanging applications only.



(Fig 5)

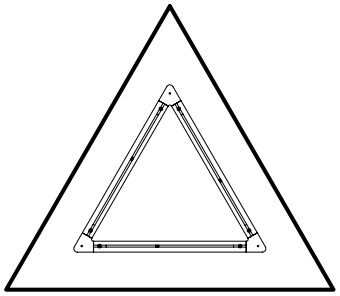
IMPORTANT SAFETY AND QUALITY NOTE: Do not allow any portion of the aircraft cable to drop below the panels while adjusting final panel height. To do so could cause injury to the installer or damage to the edge of a panel.

3.2.4 Panel Frame Attachment Points: 60° Shapes

Triangle Panels

For Triangle panels (Item 7101F0_T01), the cables attach to the individual panel at the three corners of the back frame using the cable adjusters supplied in the Deck Hanging Kit ***(Fig 6)***.

NOTE: An individually suspended panel will not utilize the nuts and washers supplied in that kit. Those are for group hanging applications.

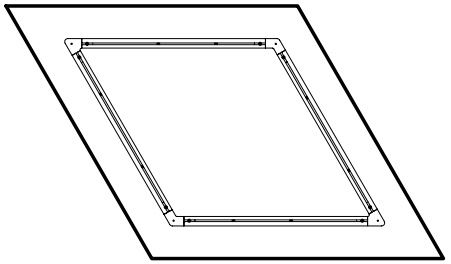


(Fig 6)

Parallelogram Panels

For Parallelogram panels (Item 7101F0_P01), the cables attach to the individual panel at the four corners of the back frame using the cable adjusters supplied in the Deck Hanging Kit ***(Fig 7)***.

NOTE: An individually suspended panel will not utilize the nuts and washers supplied in that kit. Those are for group hanging applications.

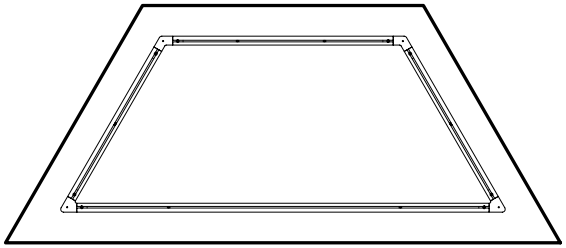


(Fig 7)

Trapezoid Panels

For Trapezoid panels (Item 7101F0_Z01), in addition to the four corners, you will need to attach two additional cables to the midpoints of the long, parallel sides of the frames ***(Fig 8)***. For the midpoint attachments, first line up the 1/4-20 nuts in the frames to the midpoint areas of the frames. Then screw the cable connectors into the 1/4-20 nuts in those locations. Along with the corner attachments, this provides the appropriate extra support needed for a Trapezoid panel.

NOTE: An individually suspended panel will not utilize the nuts and washers supplied in that kit. Those are for group hanging applications.



(Fig 8)

3.3 Panel Installation: Direct to Ceilings

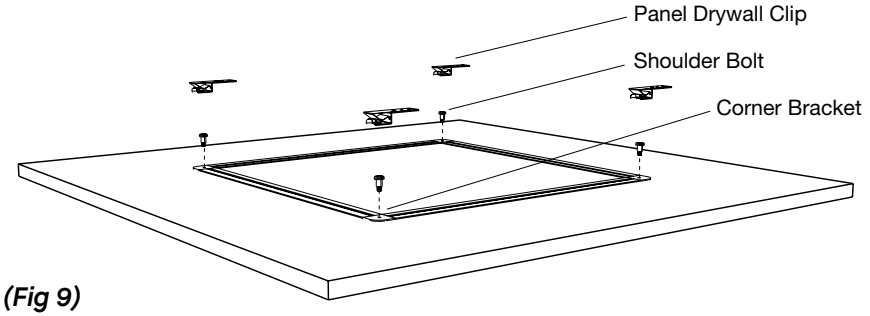
3.3.1 General Installation

With attachment to ceilings, the panels can be installed individually or grouped in any arrangement that allows at least 2" of space between panels. The panel drywall clip drops the back of the panel approximately 1" from the face of the drywall or solid surface ceiling.

Attach the panel drywall clips to the ceiling structure using the appropriate fasteners (by others), such as toggle bolts or molly bolts.

NOTE: If the ceiling is drywall, the drywall clip must be fastened to the building structure behind the drywall.

Install the shoulder bolts into the panel specific attachment points on the metal extrusion on the back of the panel ***(Fig 9)***.

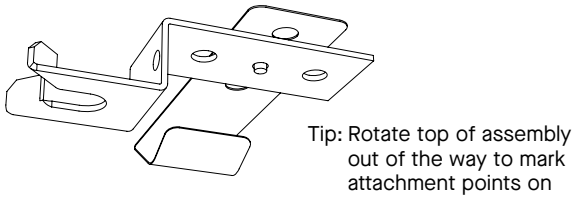


(Fig 9)

The drywall clips need to be located on the ceiling so the ends of the clip with the detail that accepts the bolt heads are arranged in the same layout as the shoulder bolts are located on the back of the panel.

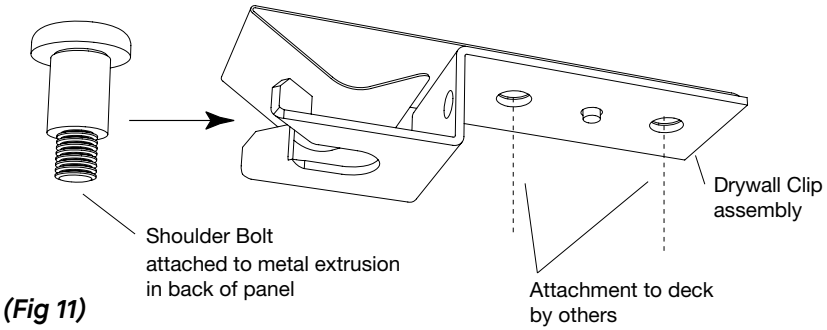
To mark these locations in the ceiling, swing the top part of the clip out of the way to visually align the hanging point location (where the shoulder bolt will go) and mark the location on the drywall or solid surface ceiling above for mounting attachment ***(Fig 10)***.

TIP: Create a jig using a piece of cardboard to mark the attachment point locations of the shape when installing the drywall clips on the ceiling to ensure the exact location of attachment points.



(Fig 10)

Once drywall clips are mounted in the ceiling and shoulder bolts are mounted in the panel frame, lift the panel to the ceiling, carefully lining up all of the bolts with the open ends of the clips. Slide the panel so that the bolts enter the ends of the clips ***(Fig 11)***.



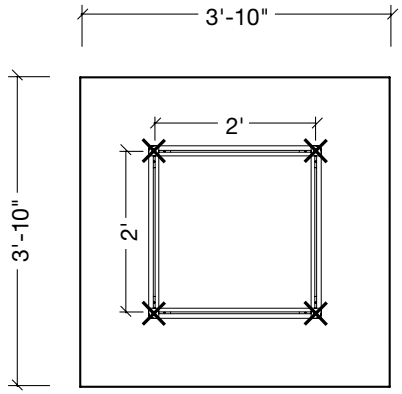
(Fig 11)

NOTE: Visualizing the alignment of the shoulder bolts to the drywall clips can be difficult once the panel is raised to its mounting position. Be sure to handle the panel and edges carefully during this process. It is helpful to have a second person who can see where the bolts are to carefully guide panel placement onto the clips.

When the panel has been successfully positioned and fully engaged with the clip opening, lower the panel so the bolt heads are captured by the clips, to ensure the panel will not move.

3.3.2 Panel Frame Attachment Points: 90° Shapes
4' × 4' Panels

When installing 4' × 4' panels directly to ceiling structure, place shoulder bolts into threaded holes at the four corner attachment points of the metal extrusion on the back of the panel ***(Fig 12)***.

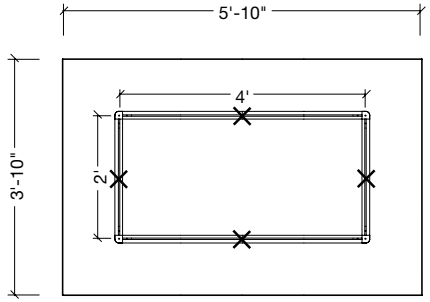


(Fig 12)

Panel drywall clips should be located on the ceiling, so clip ends with the detail that accepts the bolt heads are arranged in a 2' × 2' square configuration. This ensures the clips will line up with the four corners of the metal extrusion.

4' × 6' Panels

For 4' × 6' panels, the drywall clip attachment points are at the midpoints of each side of the metal extrusion in the back of the panel ***(Fig 13)***. To support these panels, line up the 1/4-20 nuts in the frames with the four midpoint areas. Then screw shoulder bolts into the 1/4-20 nuts in those locations.

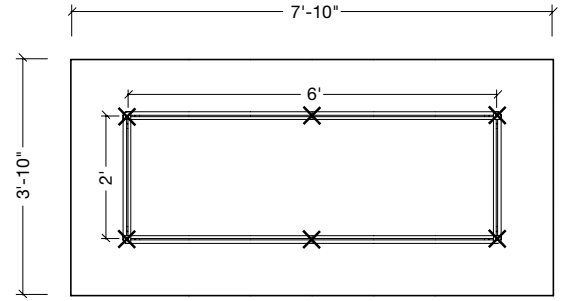


(Fig 13)

NOTE: The alignment of a 4' × 6' panel to the installed clips can be challenging due to its larger size. Please handle the panel with care and patience during this process, especially with colored panels. It is helpful to have a second person who can see where the bolts are to help carefully guide panel placement onto the clips.

4' × 8' Panels

For 4' × 8' panels, in addition to the four corners, you will need to attach two additional shoulder bolts to the midpoints of the long sides of the frames for support ***(Fig 14)***. For midpoint attachments, first line up the 1/4-20 nuts in the frames to the midpoint areas. Then screw shoulder bolts into the 1/4-20 nuts in those locations.



(Fig 14)

NOTE: The alignment of a 4' × 8' panel to the installed clips can be challenging due to its larger size. Please handle the panel with care and patience during this process, especially with colored panels. It is helpful to have a second person who can see where the bolts are to help carefully guide panel placement onto the clips.

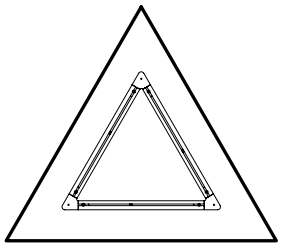
3.3.3 Panel Frame Attachment Points: 60° Shapes

Triangle Panels

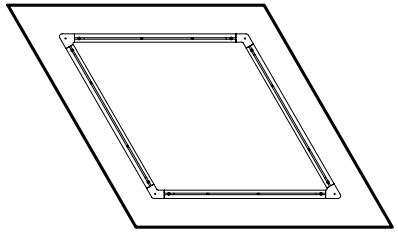
For Triangle panels (Item 7101F0_T01), install shoulder bolts into the threaded holes at the three corners of the metal extrusion on the back of the panel ***(Fig 15)***. Then proceed with the installation of the drywall clips to the ceiling structure and subsequently the panel to the clips.

Parallelogram Panels

For Parallelogram panels (Item 7101F0_P01), install shoulder bolts into the threaded holes at the four corners of the metal extrusion on the back of the panel ***(Fig 16)***. Then proceed with the installation of the drywall clips to the ceiling structure and subsequently the panel to the clips.



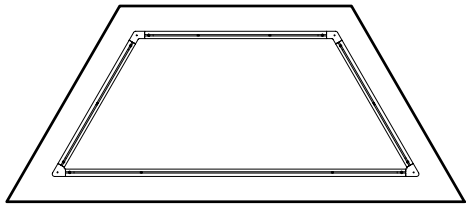
(Fig 15)



(Fig 16)

Trapezoid Panels

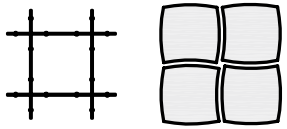
For Trapezoid panels (Item 7101F0_Z01), in addition to the threaded holes at the four corners of the metal extrusion on the back of the panel, install two additional shoulder bolts to the midpoints of the long, parallel sides of the frames to provide necessary panel support ***(Fig 17)***. For the midpoint attachments, first line up the 1/4-20 nuts in the frames to the midpoint areas of the frames. Then screw shoulder bolts into the 1/4-20 nuts in those locations.



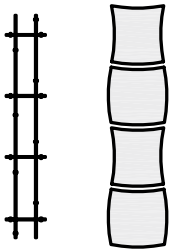
(Fig 17)

3.4 Panel Installation: Group Suspension

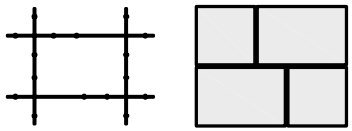
3.4.1 When suspending panels in a group configuration of more than two panels, grouping frames and suspension hooks provide support and systematic spacing designed for use in all seismic areas. This takes the math and extra effort out of maintaining consistent spacing. First, determine the length of the 144" grouping frame components needed based on your layout, then cut and arrange them so panels have at least 2" of clearance between them. There are a variety of grouping options with different frame arrangements needed for support ***(Fig 18)***. For more grouping design options, patterns, and drawing details visit armstrongceilings.com/soundscapesshapes and armstrongceilings.com/patterngallery for a list of 20 patterns, including a Bill of Materials for each. Contact TechLine for assistance with your layout.



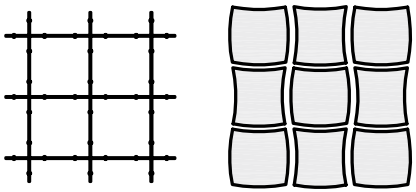
Group Example 1



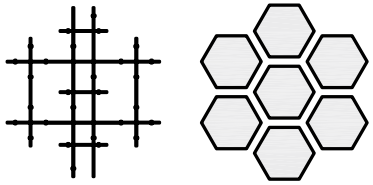
Group Example 2



Group Example 3



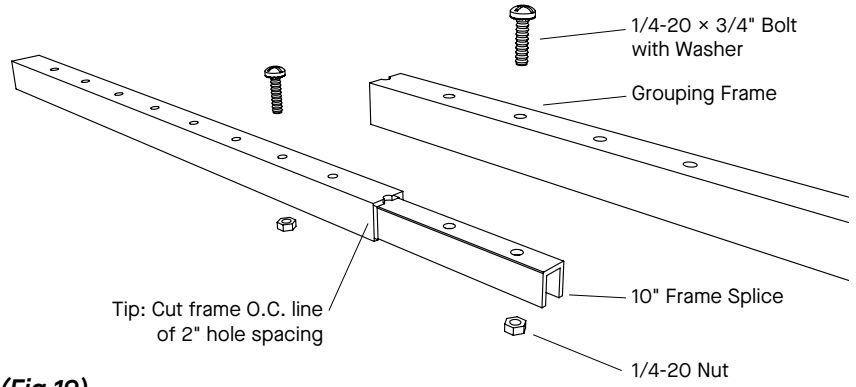
Group Example 4



Group Example 5

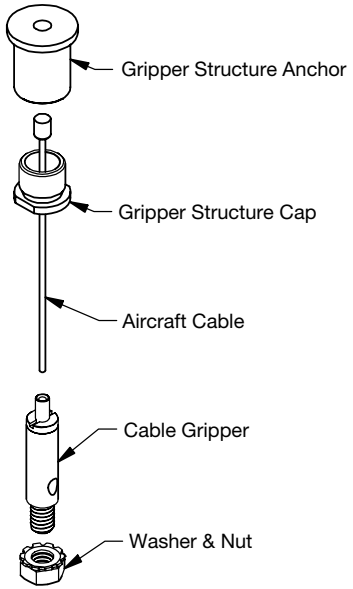
(Fig 18)

3.4.2 For groupings with more than 2" of space between panels, it is necessary to increase the center distances between grouping frames accordingly. If the grouping arrangement length increases, additional grouping frame and Frame Splice Kits (Item 5452) may be needed to connect the 144" frames ***(Fig 19)***. Center distances must be changed in 2" increments to correspond with the 2" hole spacing in the grouping frame.



(Fig 19)

3.4.3 In every group suspension system, multiple Deck Hanging Kits (Item 5450L8CR) are used to suspend grouping frame assemblies to deck. The Gripper Structure Anchor is attached to the deck with appropriate deck fastening hardware supplied by others. The cable is then inserted into the Gripper Structure Cap as shown, and threaded into the Gripper Structure Anchor ***(Fig 20)***. The bottom end cable adjuster must be attached to the bottom or "lower" grouping frame, and not to the top or "upper" grouping frame.



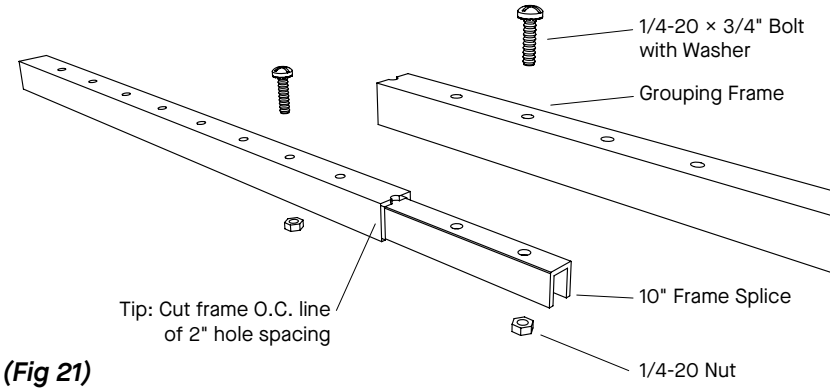
(Fig 20)

3.4.4 Grouping Frame Assembly

All grouping frame kits come with (4) 144" long pieces. Cut the frames to the appropriate lengths needed for the application. The aluminum frames can be field cut with a hacksaw or a miter saw equipped with a carbide blade.

When determining the required frame length, consider that the frame should extend at least 2" beyond the point where the panel hooks will engage them. This ensures that the hooks will not slip off the frames. However, due to the specific angles of 60° shapes, it might be necessary to extend the frame slightly more than 2" to ensure proper hook engagement. To maintain a clean and unobtrusive appearance, it is recommended not to exceed 4" beyond the embedded framing on the back of the panel.

NOTE: If the design requires grouping frames longer than 144", 10" Frame Splice Kit (Item 5452) can be used to join the frame members, as shown in ***(Fig 21)***.

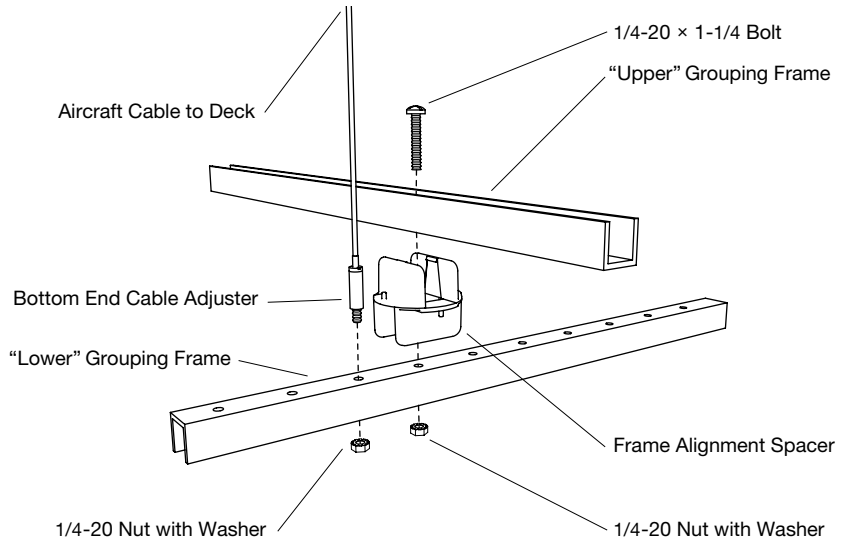


(Fig 21)

Next, arrange the grouping frames into the desired design layout, and determine top and bottom elements to maximize the efficiency of installation hanging points. In all cases, the top or "upper" grouping frames should be oriented with the U-profile facing up, and the bottom or "lower" grouping frames facing down, as shown in ***(Fig 22)***. The bottom grouping frames are the support mechanisms that will be suspended from the structure with the Deck Hanging Kits.

Install Frame Alignment Kits where grouping frames cross to establish either a 90° (Item 5453D090) or 60° (Item 5453D060) alignment angle. Use the nuts and bolts supplied with the Frame Alignment Kit to secure the connection through the pre-drilled grouping frame holes spaced every 2".

Finally, attach the bottom end cable adjuster every 4' along the supporting (bottom) frame for 90° systems, and at every intersection for 60° systems. The bottom end cable adjuster is inserted into one of the pre-drilled holes in the bottom grouping frame at the appropriate 48" or intersection location. Use the nuts with washers provided to secure the cable adjuster to the frame ***(Fig 22)***.



(Fig 22)

TIP: The grouping frame configuration can be laid out on the floor to install all of the components. The entire assembly can be hung as one unit utilizing the bottom end cable adjusters to gradually position the frame upward. Frame members can also be suspended one by one from the structure, and built into a grouping framework incrementally or in sections.

3.4.5 Panel Hook Attachment

3.4.5.1 Once the group assembly is finished, suspended, and leveled, support hooks can be secured to the backs of the panels.

One Panel Hook Kit (Item 5454), is required for all 4' × 4', 4' × 6', Triangle, and Parallelogram panels. Each kit includes 4 hooks – 2 "high" hooks and 2 "low" hooks.

Trapezoid panels require 6 hooks - 3 "high" hooks and 3 "low" hooks, so 2 Panel Hook Kits are required.

NOTE: 2 of the 8 hooks will not be used.

It is not recommended to install 4' × 8' panels as a group from grouping frames; only independent suspension is recommended. Please see Sections 3.2.3 and 3.3.2 for those recommendations.

3.4.5.2 While installing the hooks to the panel frames, be aware of the location of the “high” and “low” hooks. High hooks are always across from each other, and low hooks are always across from each other.

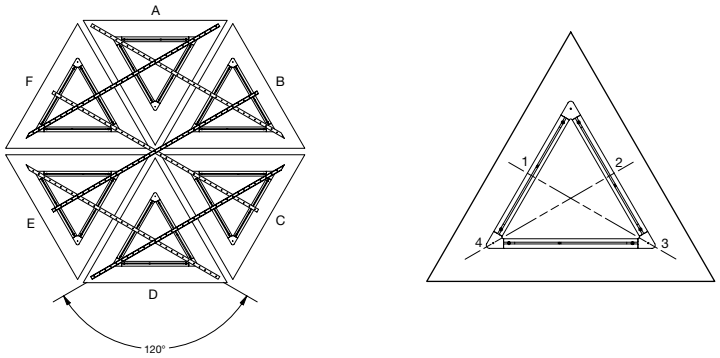
For non-symmetrical shapes, such as squares and circles, reference the factory marks on the frames, along with the diagrams in the following section to determine high and low hook placement.

3.4.5.3 Hook Placement: 60° Shapes

Depending on the pattern layout, the 60° panels can be in different orientations which can change where the hooks are located on the grouping frame. Shown are diagrams showing the possible directional orientations for each panel and the corresponding hook placements, located in the charts.

Triangle Panels *(Fig 23)*

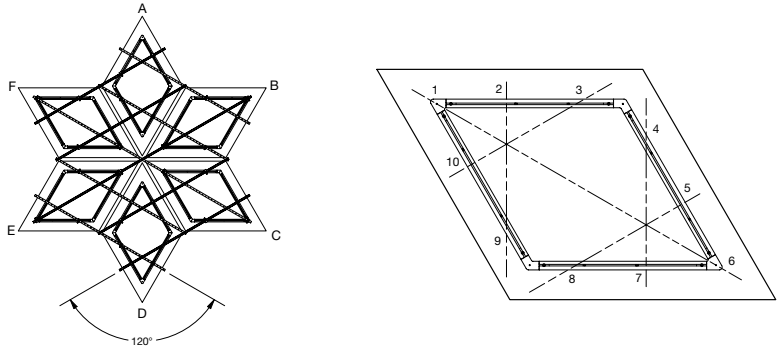
Hook Placement				
Position	**Location 1**	**Location 2**	**Location 3**	**Location 4**
All Positions	L	H	L	H



(Fig 23)

Parallelogram Panels *(Fig 24)*

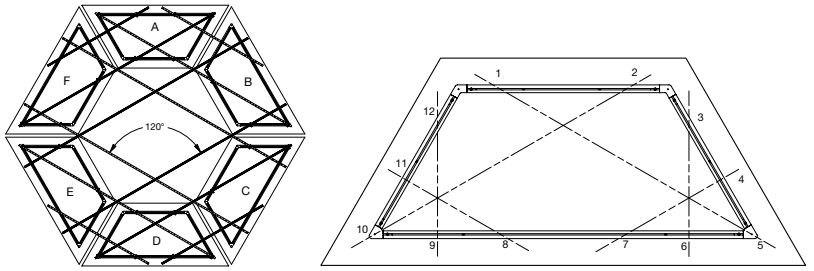
Hook Placement										
Position	**Loc. 1**	**Loc. 2**	**Loc. 3**	**Loc. 4**	**Loc. 5**	**Loc. 6**	**Loc. 7**	**Loc. 8**	**Loc. 9**	**Loc. 10**
A & D	–	H	–	–	L	–	–	L	H	–
B & E	H	–	–	L	–	H	–	–	L	–
C & F	L	–	H	–	–	L	–	H	–	–



(Fig 24)

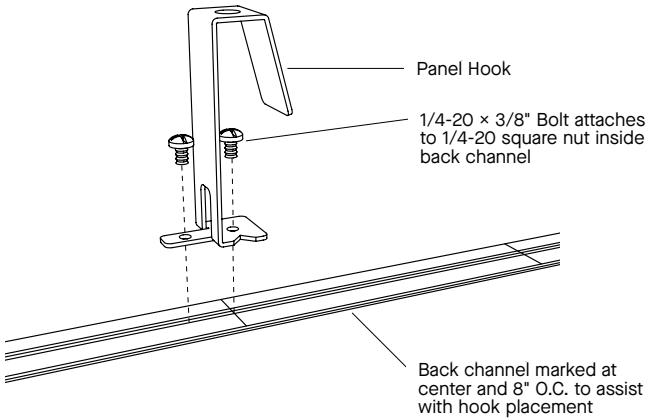
Trapezoid Panels *(Fig 25)*

Hook Placement												
Position	**Loc. 1**	**Loc. 2**	**Loc. 3**	**Loc. 4**	**Loc. 5**	**Loc. 6**	**Loc. 7**	**Loc. 8**	**Loc. 9**	**Loc. 10**	**Loc. 11**	**Loc. 12**
A & D	L	H	–	–	L	–	H	L	–	H	–	–
B & E	–	L	–	L	–	H	–	–	H	L	–	H
C & F	H	–	L	–	H	L	–	–	L	–	H	–



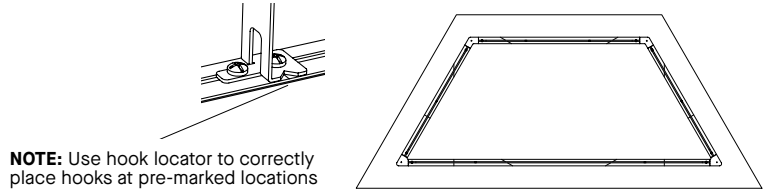
(Fig 25)

3.4.5.4 There is a notch cut into the base of the hooks to align the hooks with the appropriate marks on the frame. The notch will always face outwards. 1/4-20 nuts for securing the hooks to the frames are factory installed in the extrusion channels. Line up the nuts with the correct location for the hooks, and screw hooks to the panel using bolts included in the Panel Hook Kit (Item 5454) ***(Fig 26)***.



(Fig 26)

NOTE: The back channel is marked in various locations on each product to assist with hook placement. See the Trapezoid panel frame in ***Fig 27*** as an example.

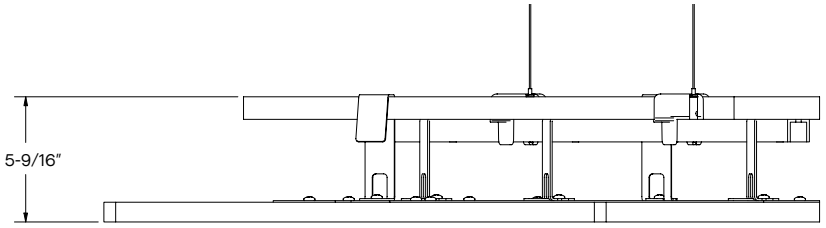


(Fig 27)

3.4.6 Grouping Frame Assembly

Install the panels onto the Grouping Frame by rotating the panel hooks over the frame members as shown in ***(Fig 28, 29, 30, & 31)***.

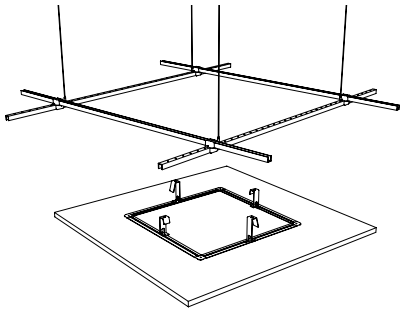
After panels are installed, there should be 5-9/16" spacing from the top of the upper frame to the panel face when using the panel Hook Kit (Item 5454) ***(Fig 32)***. Adjust the final height of the group assembly as needed.



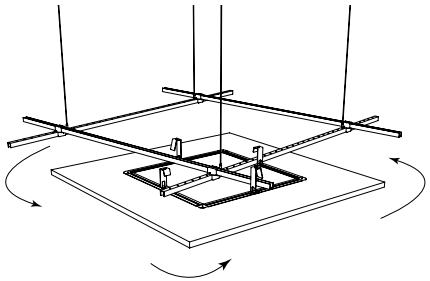
(Fig 32)

IMPORTANT SAFETY AND QUALITY NOTE: Do not allow any portion of aircraft cable to drop below the panels while adjusting final panel height. To do so could cause injury to the installer and/or can damage panel edges.

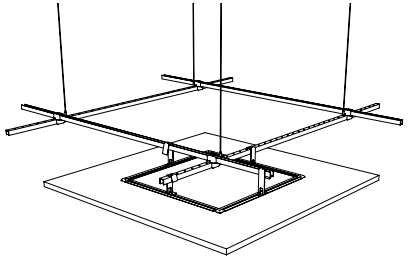
3.4.7 Multi-Plane Hanging Kits (Items 5629, 5630, 5631) Refer to Section 3.4.5 for panel hook placements. The only difference with these hooks is that they lower the panels either 1", 2", or 3" from the grouping frame.



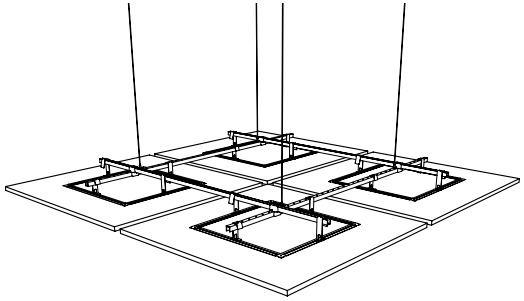
(Fig 28)



(Fig 29)



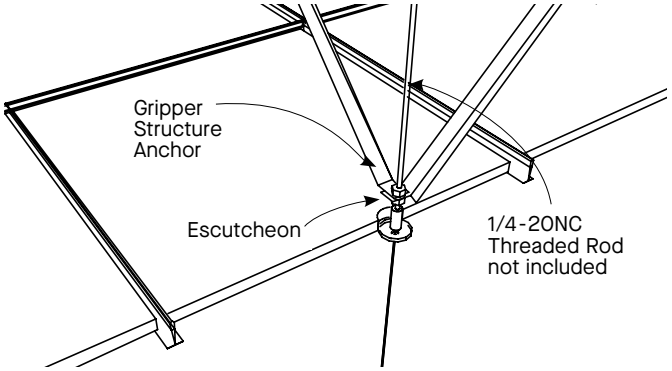
(Fig 30)



(Fig 31)

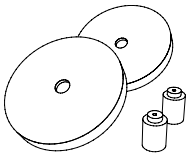
3.5 Installing Below Suspended Ceilings Accessory

Suspension cables used to suspend shape panels individually or in groups from the deck should not impose any lateral force on a suspended ceiling ***(Fig 33)***.



(Fig 33)

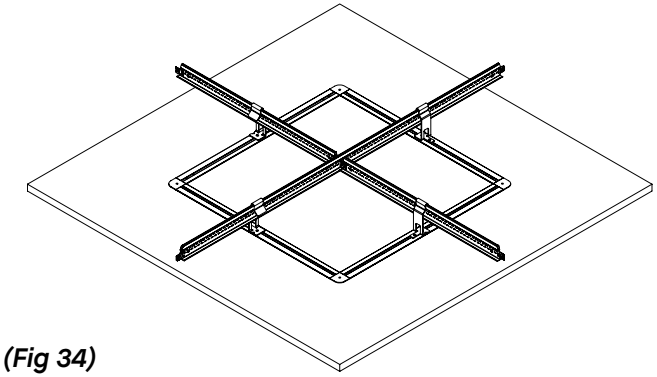
1. The structure gripper anchor must be mounted to a support at or above the existing ceiling.
2. Attach 1/4-20 threaded rod to structure to secure the structure gripper anchor at the correct height.
3. Use diagonal bracing to structure to provide support.
4. Conceal the structure gripper anchor when installed above the ceiling level with the optional Escutcheon Kit (Item 7006). Kit includes:
   - (2) Collars with Set Screws
   - (2) 2" Escutcheons



(Item 7006)

3.6 Panel Installation: Grid Attachment

To install SoundScapes® Shapes panels on grid, install the hooks on the back of the panels ***(Fig 34)***. Refer to Section 3.4.5 for installation of hooks on the back of the panels. However, these hooks will all be the same height. When these hooks are used, the panel can be installed at any grid intersection (assuming that the existing grid is no closer than 24" O.C.) that allows enough space for the panel between the intersection to the wall. Install on grid only when the mains and tees have the same web height. Use heavy-duty Prelude® XL® 2' Cross Tees (Item XL8320) to maintain 1-11/16" cross tee height. Use only with Prelude main beam 15/16" grid face. For additional seismic requirements refer to Section 7.2.



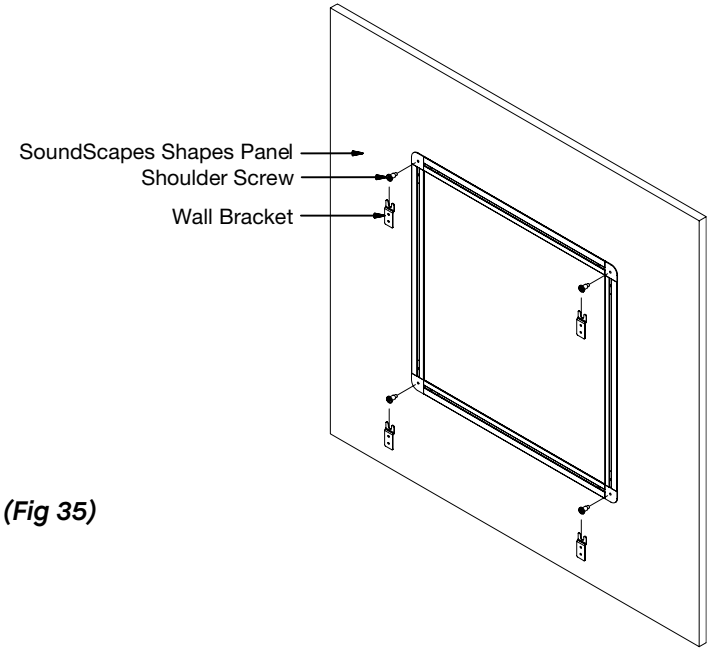
(Fig 34)

NOTE: The 60° panels are not able to be installed by hanging on grid. Only 90° panels can be installed on grid.

3.7 Installing Individual Panels Directly to Walls

SoundScapes® Shapes panels can be installed on walls with the Wall Hanging Kit (Item 5588). For all 4' × 4' shapes, install shoulder bolts into the four corners of the panel frame and fasten the four brackets to the wall structure using hollow wall anchors ***(Fig 35)***. When fastening the brackets to the wall structure, arrange them 24" O.C. to coordinate with the shoulder bolt locations on the panel.

NOTE: If the wall is drywall, the drywall clip must be fastened to the building structure behind the drywall.



(Fig 35)

For a 4' × 6' or 4' × 8' nominal shape the same process should be followed but more brackets and shoulder bolts will need to be used. The brackets and shoulder bolts must be spaced 24" O.C. along the length and width directions of the shape. This will lead to six brackets and shoulder bolts being used on a 4' × 6' nominal shape and eight brackets and shoulder bolts being used on a 4' × 8' nominal shape.

For a Triangle panel, install shoulder bolts into the three corners of the panel frame.

For Parallelogram panels, install shoulder bolts into the four corners of the panel frame.

For Trapezoid panels, in addition to the four corners, attach two additional shoulder bolts to the midpoints of the long, parallel sides of the panel frame. For the midpoint attachments, first line up the 1/4-20 nuts in the frames to the midpoint areas of the frames. Then screw the shoulder bolts into the 1/4-20 nuts in those locations.

To ensure the safety and integrity of wall installations, it is recommended that they be installed a minimum of 6' above the finished floor or in locations that are inaccessible to people or objects. This will help avoid potential damage.

PRO TIP: Create a jig using a piece of cardboard to mark the corner locations of the shape when installing the brackets on the wall to ensure the exact location of the attachment points.

When the brackets and bolts are in place, hold the panel against the wall slightly above the brackets and lower the panel onto the brackets.

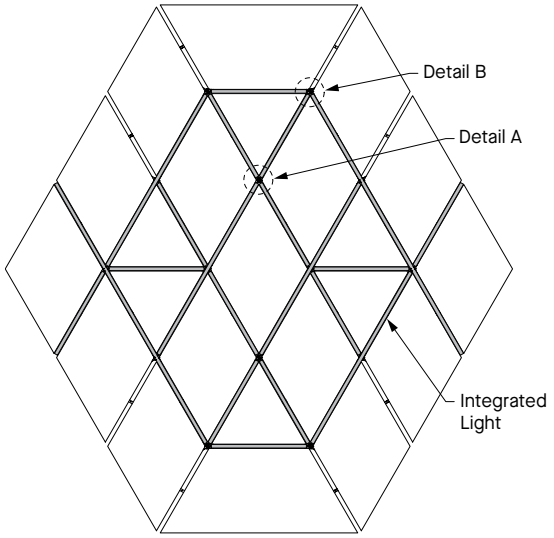
4. MEP INTEGRATION

The panels can be field cut for penetrations such as lighting or sprinklers as long as the fixtures are independently supported and not supported in any way by the panel suspension system.

5. LIGHTING INTEGRATION

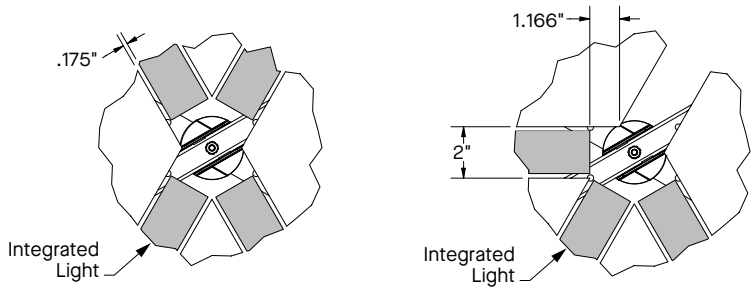
5.1 The Axis Stencil

No penetrations are needed if the Axis Stencil® Light is used in conjunction with the system. The narrow light can fit in between the prescribed 2" gap between panels ***(Fig 36)***. The lights will need to be independently supported.



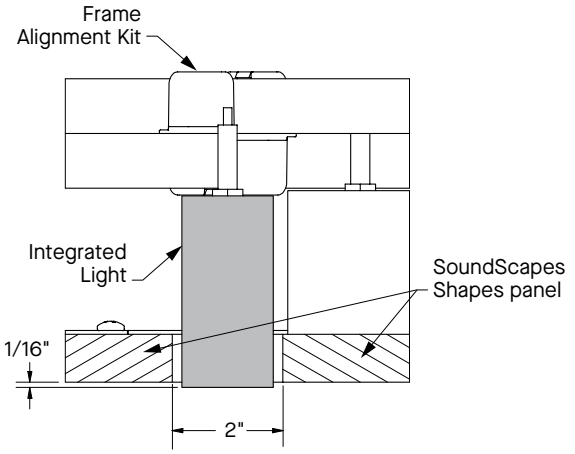
(Fig 36)

NOTE: The lights may not extend to each panel corner ***(Fig 37)***. Contact your local Axis representative for custom-sized lights.



(Fig 37)

The Axis Stencil light is 2" in height and should fit underneath the Frame Alignment Kit(s) without any interference. It is recommended that the light is suspended so the lens is flush with the face of the panel ***(Fig 38)***.

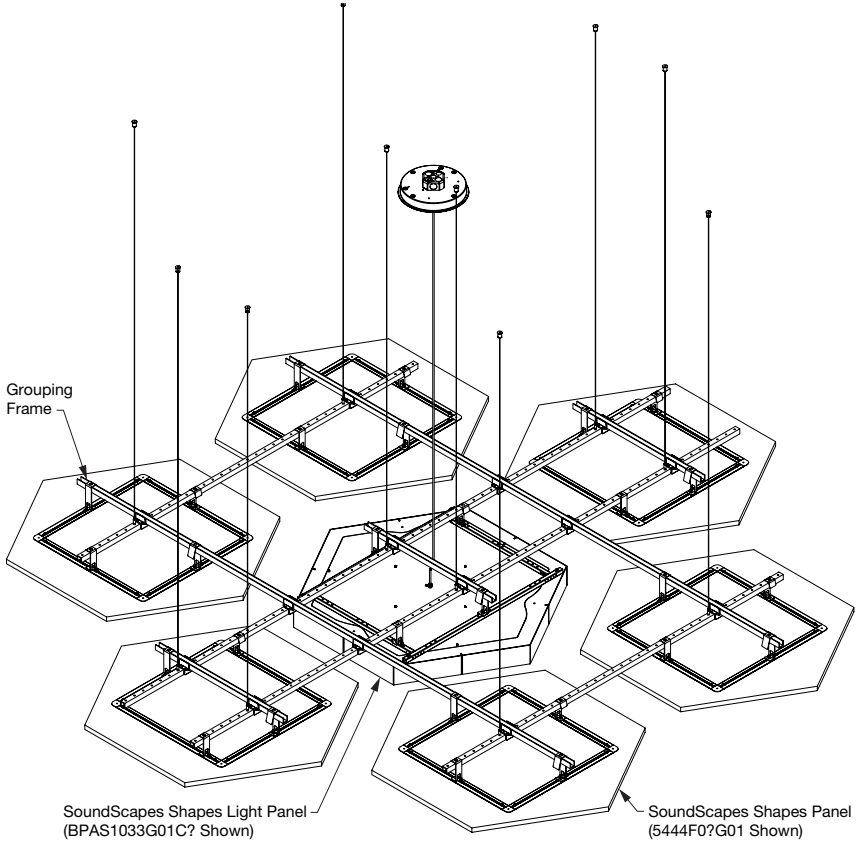


(Fig 38)

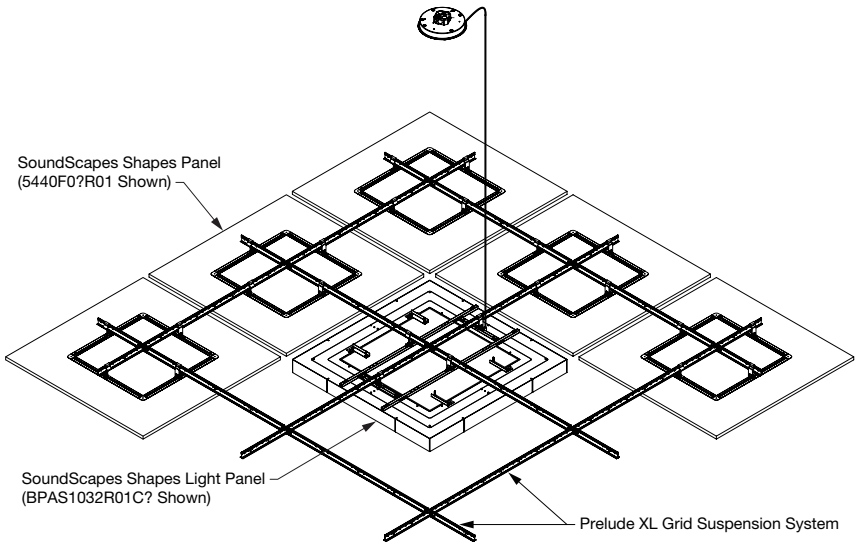
For detailed lighting information, including installation instructions, contact your local Axis representative.

5.2 SoundScapes Shapes Light Panel by Armstrong Integrated Lighting

When using SoundScapes Shapes Light Panel with the system, no penetrations are required. These shape light panels are specifically designed for the SoundScapes Shapes system and install in place of a standard SoundScapes Shapes panel. For detailed guidance on integrating these Shape Light panels with the SoundScapes Shapes system, refer to the SoundScapes Shapes Lighting Integration Instructions ***(Figs 39 & 40)***



(Fig 39)



(Fig 40)

6. INSTALLING SOUNDSCAPES 360° PANELS

360° panels are designed specifically for independent suspension only. Unlike the standard panels, they lack the embedded framing necessary for group hanging. Panels must be installed a minimum of 18" apart. Lipping may be visible in installation closer then 18".

All necessary hanging hardware is included with panels. Before proceeding with installation, be sure to locate, remove, and set aside the hardware kit.

For safe handling and to minimize damage, is recommended to have at least two people when working with SoundScapes® Shapes 360° panels during installation. Do not remove the panels from the carton until step 7.3 of the installation process. While the panel is still in carton, locate the suspension hardware and make all necessary connections.

SoundScapes Shapes panels cannot be cut, drilled, or altered in any way. The panel must not be used to support any other material. The cable suspension system must be fastened to the structure and cannot be hung from any commercial ceiling system.

6.1 Suspension Cables

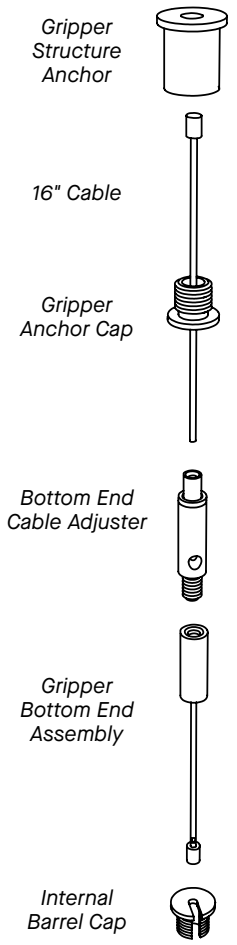
SoundScapes® Shapes 360° panels must be installed with four suspension cables.

6.1.1 Cable Attachment to Structure ***(Fig 41)***

Attach the gripper structure anchor to the structure with a fastener, by others, compatible with the structure and that will carry the full weight of the panel. This part of the installation will utilize the Gripper Structure Anchor and Cap from the Deck Hanging Kit (Item 5450L8CR).

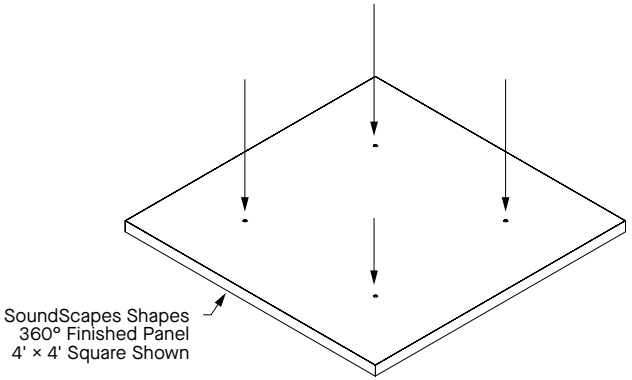
Additional structural support may be required if cable anchor points are obstructed by HVAC, piping, or other components in the plenum.

- Insert the end of the cable into the gripper anchor cap
- Screw the gripper anchor cap completely into the gripper structure anchor



(Fig 41)

6.2 Cable Attachment to SoundScapes Shapes 360° Panel *(Fig 42)*

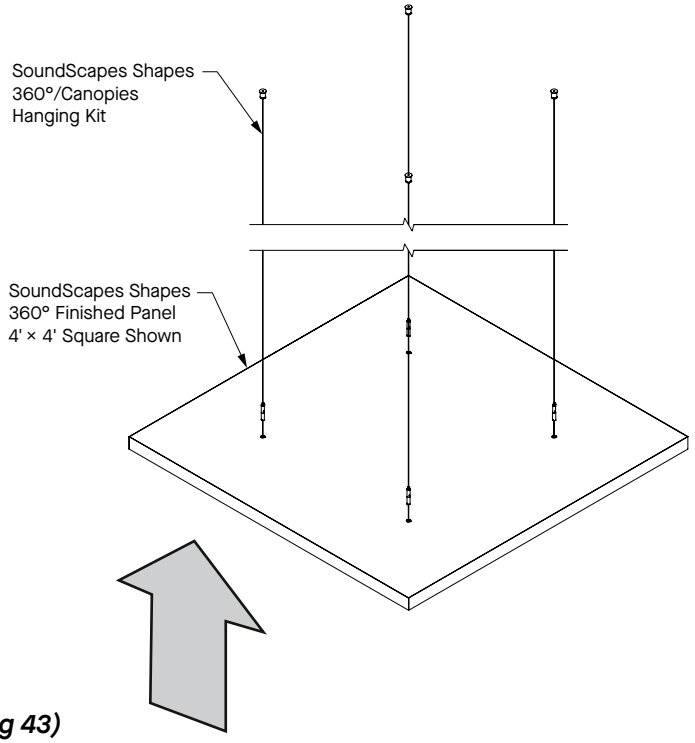


(Fig 42)

All cable attachment should be made while the product is in the carton.

- Remove cardboard packaging from top of panel
- Locate the four embedded anchor points on the panel
- Insert the end of the cable into the internal barrel cap and completely screw this into the embedded panel plate
- Screw the bottom end cable adjuster into the gripper bottom end assembly
- Repeat until all four bottom end assemblies are attached to the panel

6.3 Install the SoundScapes Shapes 360° Panel *(Fig 43)*



(Fig 43)

6.3.1 Insert Suspension Cables

Move the carton to the approximate location of the installation. Keep the boxed panel on a flat surface to support the carton.

- Insert a suspension cable into the top of the cable adjuster at all four hanging points
- Gently pull the cable through the cable adjuster until all the slack is removed

6.3.2 Suspend the Panel

Suspending the panel requires two people. Make sure your hands are clean or wear white cotton gloves.

- Raise the panel and gently pull the cable(s) to take up the slack
- **DO NOT** pull the cables to raise the panel under full panel weight. Cable damage will occur.
- Continue to raise the panel until the desired height is reached
- To lower the panel, take the weight off the cable(s), depress the plunger on top of the cable adjuster and lower the panel. Release the plunger to lock the cable into the adjuster. Adjust panel height as needed.

IMPORTANT SAFETY AND QUALITY NOTE: Ensure no portion of the enclosed 16' cable drops below the panel during final height adjustments. Doing so could cause injury to the installer or damage to the panel's edge.

- After achieving the correct panel height, cut off any excess cable, leaving about 1" remaining outside the cable adjuster

7. SEISMIC

The following are modifications to installations that are Seismic Category C, D, E, or F. Please refer to our Seismic Design: What You Need to Know brochure for more details on seismic installations.

7.1 Installing Aircraft Cables

This system has been tested and approved for installation in all IBC Seismic Design Categories. ASCE 7 provides an exception to the restraint requirement for architectural components stated in Section 13.5.1 provided that:

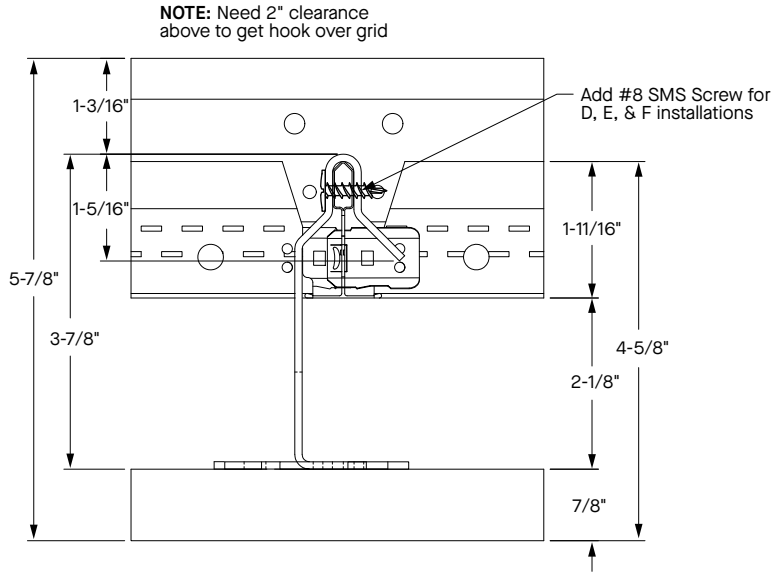
- The connection to the structure must allow a 360° range of motion in the horizontal plane
- The component may not cause damage to an essential building element

The International Building Code allows architectural components to swing freely as long as they will not be damaged or cause damage. Cable lengths less than 20" will generate the greatest amount of pendulum reaction during a seismic event and should, therefore, be avoided.

When it is not practical to use cables greater than 20" long, allow lateral clearance around the architectural component equal to, or greater than, the length of the cable. Architectural components suspended from cables greater than 20" long will swing no more than 8". Restraint of architectural elements has proven to be ineffective and is not recommended.

7.2 Panel Installation: Grid Attachment

In addition to the installation steps outlined in Section 3.6, when using the grid hook clip, a screw is required to be installed through the clip into the grid for a positive attachment ***(Fig 44)***



(Fig 44)

7.3 Bracing Multiple Grouping Frames

Consult Armstrong's TechLine or your project engineer for proper bracing techniques for your specific project. Please note, TechLine does not provide layout or design services.

7.4 No additional requirements or modifications are required for OSHPD DSA installations.

NOTE: Pendulum reaction information based on full-scale testing and computer modeling conducted at the Structural Engineering Earthquake Simulation Lab located at the State University of New York at Buffalo.

SOUNDSCAPES® Shapes Items		
Item #	**Description**	**Sold by the**
5440F0_R01	90° Square	Carton
5443F0_C01	90° Circle	Carton
5444F0_G01	90° Hexagon	Carton
5445F0_Z02	90° Trapezoid	Carton
5448F0_R02	90° Small Rectangle	Carton
5449F0_R03	90° Large Rectangle	Carton
7101F0_P01	60° Parallelogram	Carton
7101F0_T01	60° Triangle	Carton
7101F0_Z01	60° Trapezoid	Carton

8. ACCESSORY KITS

Applications always require more than one kit.

Item # **Kit Contents**

5450L8CR – Deck Hanging Kit

Allows for suspending individual shapes or grouping frames from deck and bottom-end adjustment of height at panel or frame level.

(2) gripper structure anchors
(2) gripper structure caps
(2) 8' aircraft cables
(2) bottom-end cable adjusters
(2) nuts with washers



7121 – Angled Hanging Kit (60° maximum angle)

For use when hanging panels at different angles. Extends from the end of Deck Hanging Kit (5450L8CR).

(2) angled hanging cables



625530 – Extended Hanging Cables

For use with Deck Hanging Kit when longer cables are needed.

(4) 30' aircraft cables

NOTE: Accessory kit hardware is attached to panels via the metal extrusion or corner brackets on the back of each panel. The diagram on the right shows the location of extrusions and corner brackets in the back of a nominal 4' × 4' panel. If you need assistance identifying what and how many accessory kits are needed for your project, please contact TechLine customer support at 1 877 276 7876.

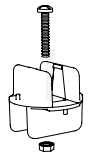
* Indicate desired color using two-digit color code when ordering; BL = Black; WH = White

Item # **Kit Contents**

5453D090 – 90° Frame Alignment Kit

For use with 90° group suspension frames.

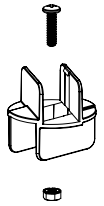
(4) frame alignment spacers, clear plastic
(4) bolts
(4) nuts with washers



5453D060 – 60° Frame Alignment Kit

For use with 60° group suspension frames.

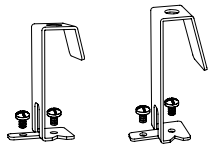
(4) frame alignment spacers, clear plastic
(4) bolts
(4) nuts with washers



5454 _ _* – Panel Hook Kit

For use with group frames. All panels require 1 kit, except Item 5449F0_R03 (Large Rectangle) and Item 7101F0_Z01 (60° Trapezoid) require two kits.

(2) 4-1/2" high panel hooks, Black (BL) or White (WH)
(2) 3-1/2" high panel hooks, Black (BL) or White (WH)
(8) bolts



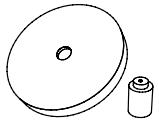
Item #	Kit Contents

7006 – Escutcheon Kit

Used when hanging panels below an existing ceiling.

(2) collars with set screws

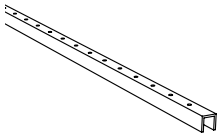
(2) 2" escutcheons



5451 _ _* – Grouping Frames Kit

Suspension frames used to group panels together.

(4) suspension frames, 12' long, Black (BL) or White (WH)



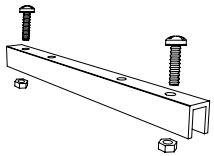
5452 _ _* – Frame Splice Kit

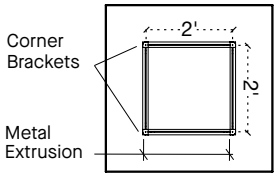
Connects group suspension frames for longer runs (> 12 feet).

(2) group frame connectors, 10" long, Black (BL) or White (WH)

(4) bolts with washers

(4) nuts





NOTE: Accessory kit hardware is attached to panels via the metal extrusion or corner brackets on the back of each panel. The diagram on the right shows the location of extrusions and corner brackets in the back of a nominal 4' × 4' panel. If you need assistance identifying what and how many accessory kits are needed for your project, please contact TechLine customer support at 1 877 276 7876.

* Indicate desired color using two-digit color code when ordering; BL = Black; WH = White

Item #	Kit Contents

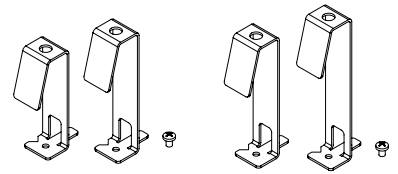
Multi-Plane Hanging Kit

For use when hanging panels at heights below Panel Hook Kit (5454).

5629 – 1" Drop Hook Kit
(2) 4-1/2" hooks
(2) 5-1/2" hooks
(8) screws

5630 – 2" Drop Hook Kit
(2) 5-1/2" hooks
(2) 6-1/2" hooks
(8) screws

5631 – 3" Drop Hook Kit
(2) 6-1/2" hooks
(2) 7-1/2" hooks
(8) screws

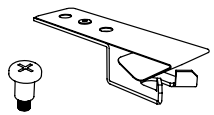


5455 – Ceiling Hanging Kit

For individual panel attachment to a ceiling.

(2) drywall clip assemblies

(2) shoulder bolts

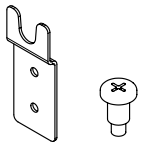


5588 – Wall Hanging Kit

For individual panel attachment to a wall.

(4) clip assemblies

(4) shoulder bolts

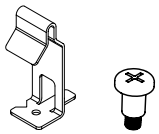


5632 – Grid Hook Kit

For hanging individual panels from a standard suspension system.

(4) hooks

(8) screws



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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