Star Hanger
SYSTEMS

"Hidden Fastener Specialists" | www.starhanger.com

2022 INSTALLATION CATALOG

AWI
ARCHITECTURAL
WOODWORK
INSTITUTE

Star Hanger SYSTEMS
"Hidden Fastener Specialists" | www.starhanger.com

Star Hanger specializes in hidden hardware for the installation of many architectural elements like wall panels, acoustic panels, fabric panel, mirror frames, heavy art, wood trim. Our unique patented fastener designs are strong, fast, and economical.

SYSTEM INFORMATION

Most of our systems require both knowledge and practice to fully take advantage of the efficiency and versatility that is possible with our fasteners. The Installation Guides are one part of our System Information.

OTHER SYSTEM INFORMATION

All the information Star Hanger produces is on the website, except long form Shop Demonstration Videos which are on You Tube. These Shop Demonstration are full length working explanations of our fasteners being installed. Quick Animations, on the Website are less than one minute long and give a basic introduction. In addition to fasteners and accessories the website also has, Shop Drawing, Specification, Applications, Prices, Connection Finder etc.

LAYOUT METHODS

Star Hanger Installation Guides to support 3 basics layout and production methods.

Field & Plant layout using Alignment Pins

Field & Plant Layout using a Templates

Layout and production using pre-engineered panel and furring systems, (shop cut with CNC).

SYSTEM SELECTION

Our systems are organized by Series to help with selection.

100 Series: Catalogs, Samples, General Information

200 Series: Galaxy Line of strong, flexible, thin inserts

300 Series: Varity of versatile hangers and mounts

400 Series: Traditional & modern panel clips

500 Series: Overhead ceiling panels

600 Series: Overhead cable suspended cloud

700 Series: Cabinet fasteners

SYSTEM MOUNTING SCREWS

Part of our system versatility and strength is the 3 types of steel double headed screw we manufacture.
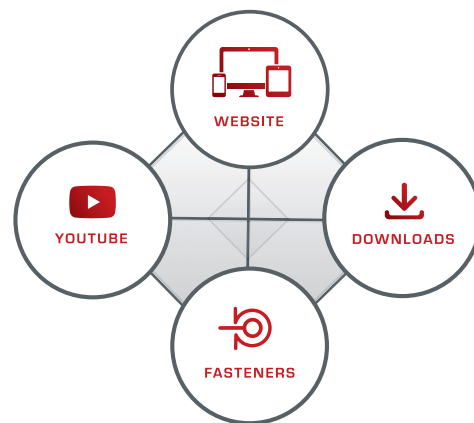
234, 235, Euro Screw, used in wood, particle board, MDF, etc.

236, 237, Combination Screws, used with anchors in sheetrock and composite material

238, 239, Mounting Bolts, used for mounting to tapped steel and aluminum.

We provide the infomration needed to help you fully optimize how you connect your work to walls.

See the full videos at StarHanger.com or Youtube.

WEBSITE

YOUTUBE

DOWNLOADS

FASTENERS

SALES & GENERAL QUESTIONS:
Christian Crosby: P. 803-250-9608 EXT. 2 E. ccrosby@starhanger.com

TECHNICAL QUESTIONS:
Charles Porter: P. 803-730-4463 E. cporter@starhanger.com

1

Required Tools.

2
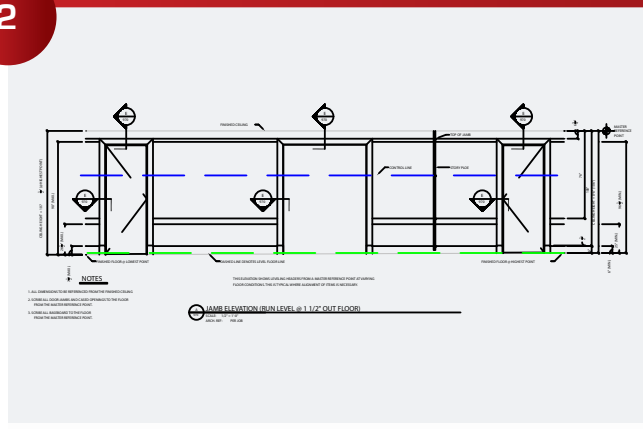
Look around the project's site conditions and plans, you need to know what you are laying out and identify any changes from the plan.

3

Find high point of floor, check to see if the project has a pre-set horizontal bench mark. If not set your own horizontal bench mark.

4

Determine greatest projection (bump out in wall). This will determine the face of the panels. Discuss the layout options with the GC. If there is a large bump you have two options, shim out most of your furring or have the projection corrected.

5
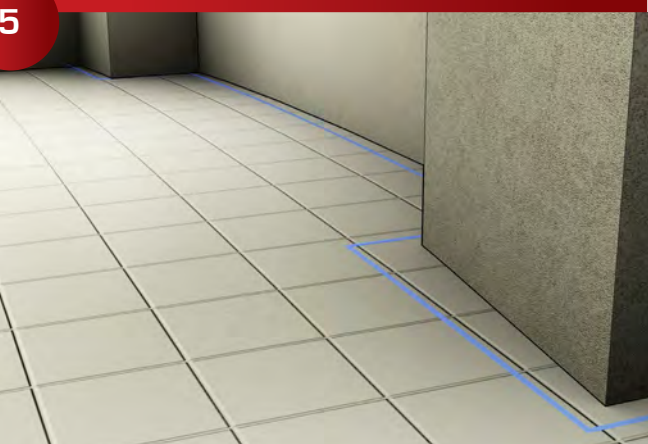
If the project is simple, shimming out the furring works well. If the panels have other constraints, you need to be very careful. There are many possible conflicts when furring out large areas, panel alignments, widths of door jambs, electrical build outs, held dimension, are just a few examples.
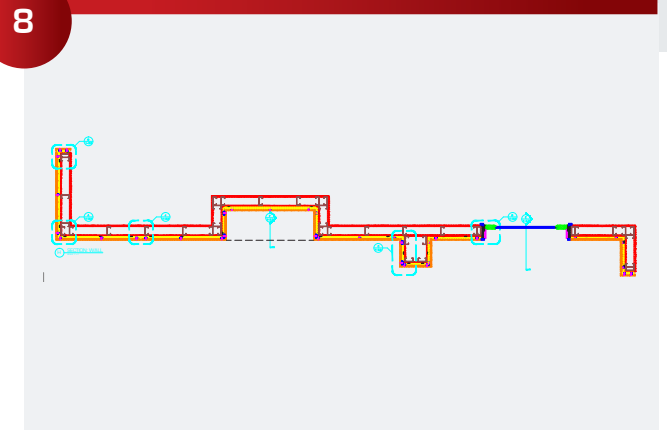
6
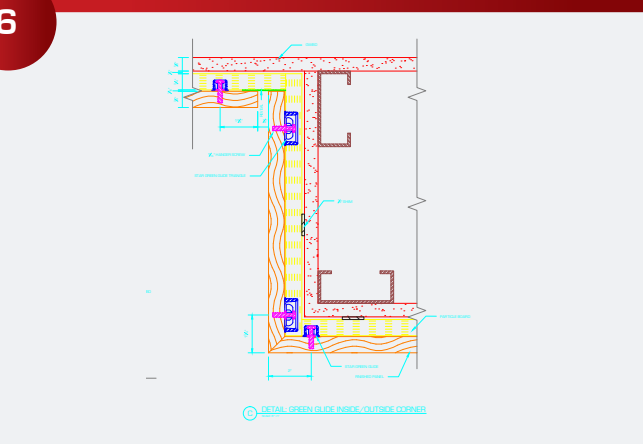
Review the section details for all the panel intersections (many can be downloaded from starhanger.com). On large projects it works well to print out full scale inside corners, outside corners, door jambs and any other complex areas. Then simply spray adhesive the layout in
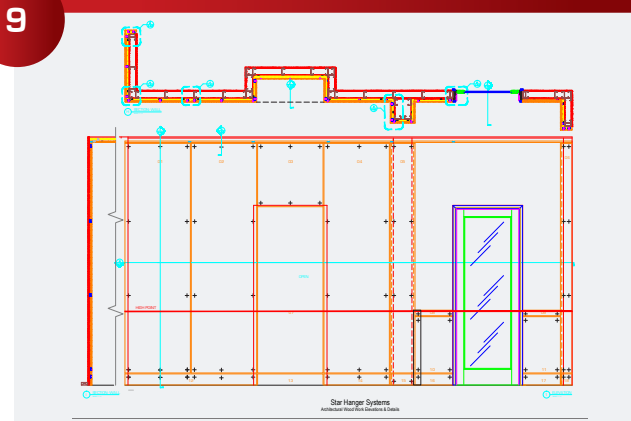
7
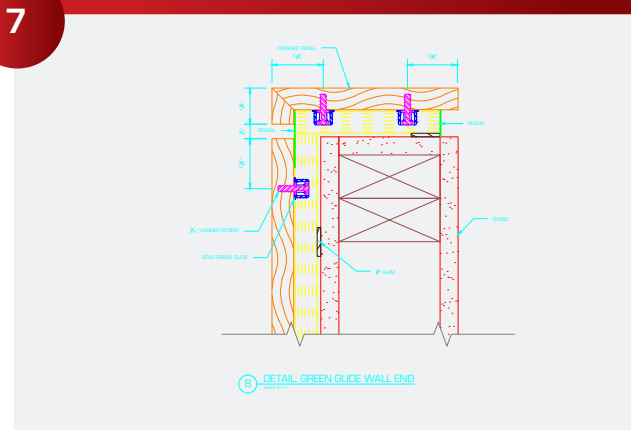
Determine panel widths based on horizontal lines and field alignment requirements.
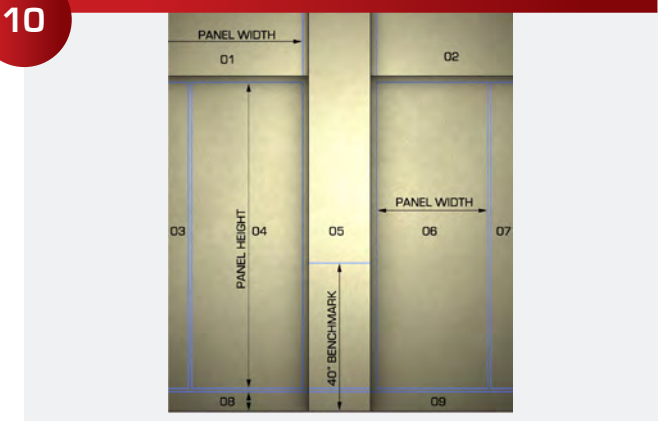
8

Field verify all required site dimensions based on face of panels for both field horizontal & vertical lines.
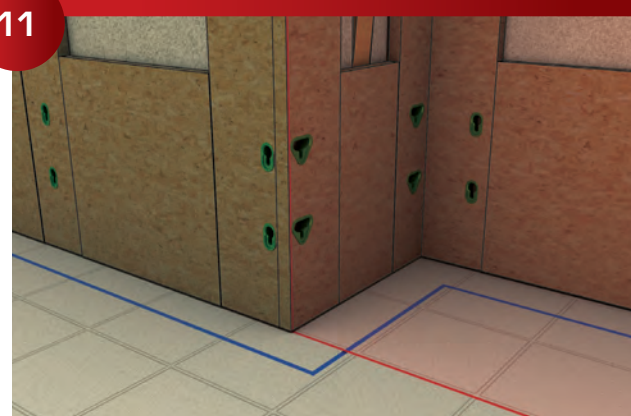
9

Revise elevations on the shop drawing based on panel heights horizontal & vertical level lines & end conditions. Determine face of all panel sizes on primary drawing layer.

10

Starting installation; re-verify all required site dimensions based on field horizontal & vertical level lines.

11

Start the installation of the furring systems, other Star Hanger Installation Guides may be helpful here.

ENGINEERED FURRING
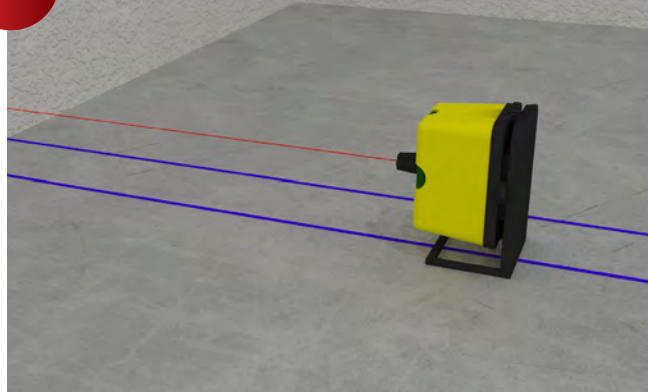
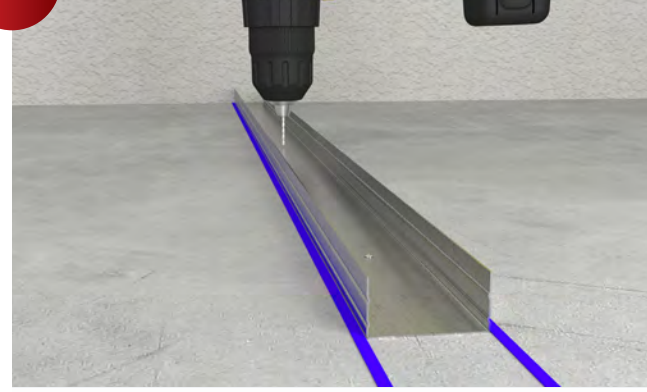|	
CONNECTS TO:	Wood
REVEALS:	Laminate
INSERTION:	Dead Blow
REMOVAL:	Vacuum Cup

1 — LAYOUT

Complete the track lay out per industry practices Typical Erection Tolerances. B. Maximum Variation, 1/8 inch in 10 feet (3 mm in 3 m). Typical Material Selection: 16" OC, 5/8 Rock, Web Depth: 3-5/8", 18 gauge. Paint the floor to denote this section has special specification WD-1.

2 — TRACK

Butt all track joints. Securely anchor abutting pieces of track to a common structural element, do not splice or overlap because that bulges out the track.

3 — STEEL STUD FRAMING

Use a #8 x 9/16 in. Waferhead low profile, self-drilling screws to attach steel framing. Do not use a standard panhead screw because they bulge out the gypsum wallboard.

4 — U CHANNEL

Use it least one row of cold-formed galvanized steel U Channel to hold the steel stud in place while installing the gypsum.

5 — HORIZONTAL BRACING

Steel Studs can also be used to hold the steel studs in place while installing the gypsum in leu of or in addition to U channel.

6 — INSTALLING GYPSUM BOARD

Use longest gypsum board length available, avoiding unnecessary joints. Do not use any gypsum wallboard that is distorted or wrapped. One side the wall with special specifications WD-1. Be sure to firmly screw all wallboard to the steel framing.
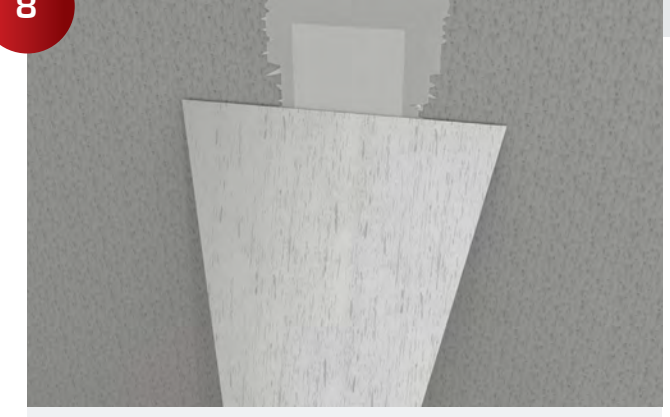
7 — CORNERS

Do not use cornerbead or tape on the outside corners, because they bulge out the corners. Use full thickness gypsum with carefully trimmed edges, do not use gypsum with tapered edges.

8 — FINISH LEVEL 2

Locations to receive special specification WD-1 should have only a Level 2 finish. All joints and corners should have tape embedded in joint compound and wiped with a joint knife leaving a thin coating of joint compound over the joints and corners.

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225 GALAXY, DIRECT TO SHEETROCK, ALIGNMENT PINS, PANEL ALCOVE, INSTALLATION GUIDE

1

Required Tools; 225 Galaxy, 229 Galaxy Alignment Pins, 236 Mounting Wood Screw, Dead Blow Hammer or 965 Galaxy Hammer, 919 Carbide Tipped Drill 5/16", 911 Carbide Tipped Drill 1-1/4" Forstner Drill, 952 Pop Toggle, 920 Panel Adjuster, 922 Vacuum Cup 8", 1/32" Plastic Laminate, Contact Cement.
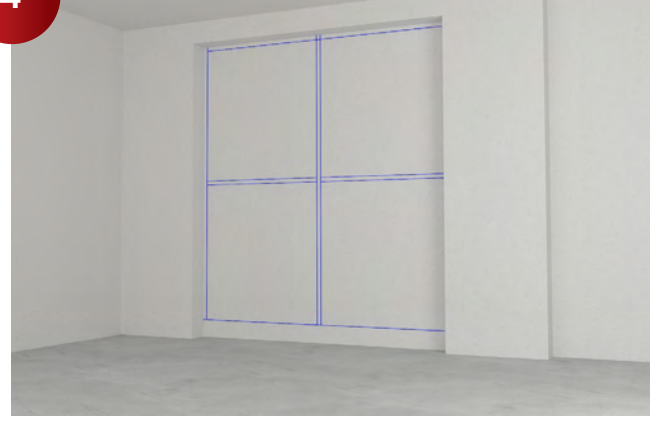
2

When sent in a pre-assembled flat packed kit, the tools required for customer installation are minimal.

3

Tools required for installation only: 229 Galaxy Alignment Pins, 236 Mounting Wood Screw, 919 Carbide Tipped Drill 5/16", 911 952 Pop Toggle, 1/32" Plastic Laminate, Contact Cement.

4

Layout the perimeter of the panels on the walls with a blue chalk line. Confirm that the panel layout is workable with field alignment, electrical and any other requirements.
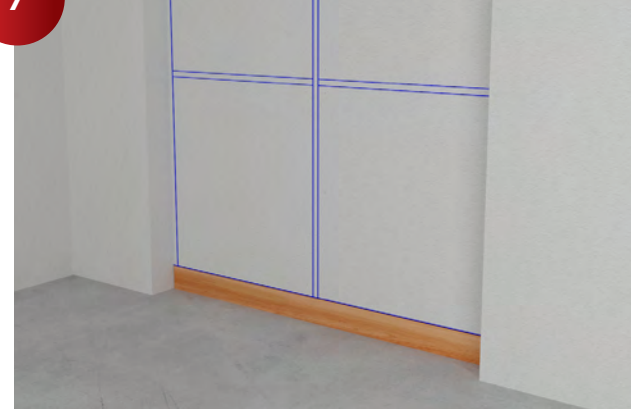
5

225 Galaxy should be drilled about 2" off the panel corners to firmly hold the panels. Drill the holes with a 911 Carbide Tipped Drill 1-1/4", Forstner Drill, 3/8" deep (in the field) or with a CNC (in the plant).

6
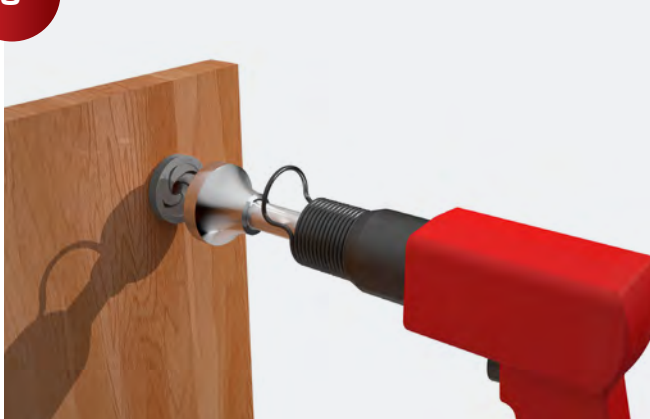
Install the 225 Galaxy using a Dead-Blow Hammer on a solid work surface. The 224 Galaxy can be installed flush, allowing the panels to be packed flat for shipping.

7

Install the baseboard or a support block board to steady the panels while marking for the Mounting screws. The reveals can be quickly painted, or you can use 1/32" plastic laminate with contact cement.
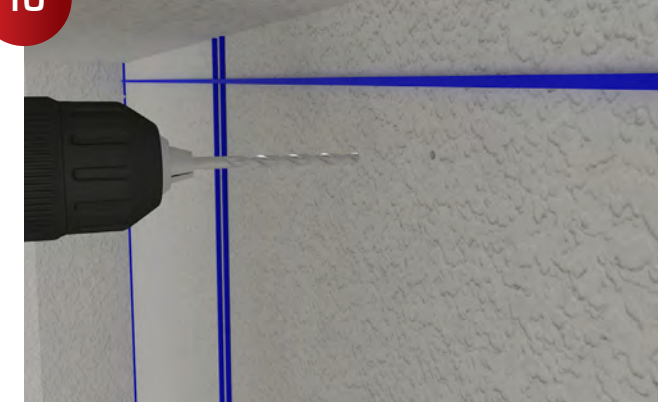
8

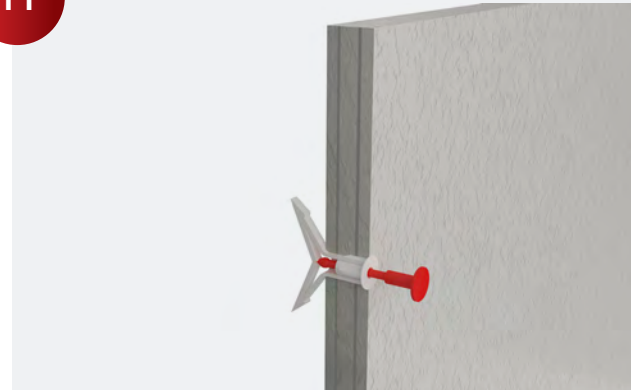Insert the 229 Galaxy Alignment Pins into the 225 Galaxy.

9

Set the panels on top of the support blocks and push them firmly into the drywall to mark the locations for the mounting screws.

10

Using 919 Carbide Tipped Drill 5/16" Bit, slowly drill the drywall holes in the appropriate locations.

11

Install the 952 Pop Toggle into the sheetrock, it should fit firmly. Push the setting stick into the 952 Pop Toggle to force the arms to pop out.
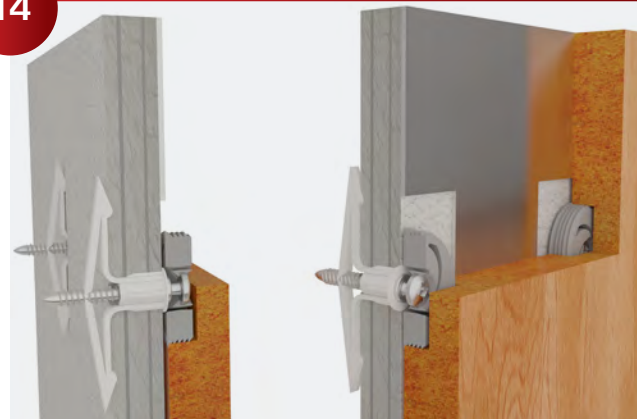
12

Using a drill set on low, torque gently snug the 236 Combination Screw into the 952 Pop Toggle. (TIP: Do not over tighten the bolt, it can compress into the sheetrock.)

13

Install reveal strips or paint between the chalk lines with contact cement. The joints can be cut with laminate shears.
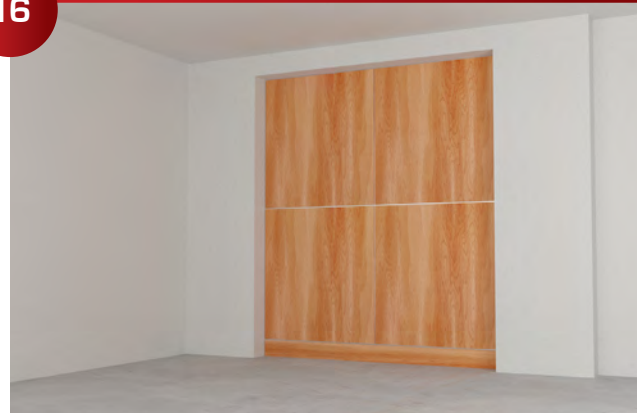
14

To install the panels they must be carefully realigned with the mounting screws. Next push them straight into place firmly, you should hear them lock in position. (TIP: Use support blocks to quickly locate the position of the panel.)
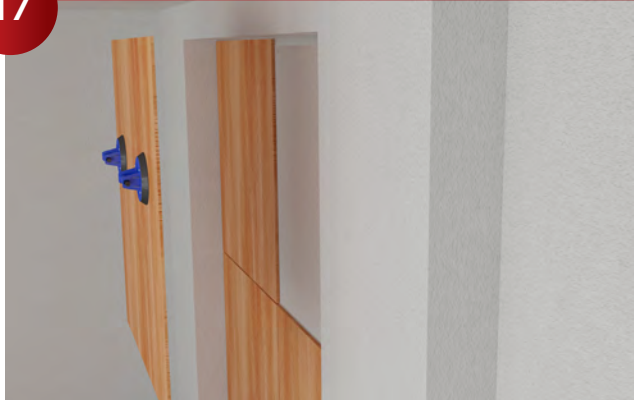
15

Cutaway view of Horizontal Cross Section

16

Finished panel wall.

17

The panels are permanently removable for maintenance. The Galaxies are not suitable for frequently used access panels.

1

Required Tools; 225 Galaxy, 229 Galaxy Alignment Pins, 236 Combination Screw, Dead Blow Hammer or 965 Galaxy Hammer, 919 Carbide Tipped Drill 5/16", 911 Carbide Tipped Drill 1-1/4" Forstner Drill, 952 Pop Toggle, 920 Panel Adjuster, 922 Vacuum Cup 8", 1/32" plastic laminate, Contact Cement.

2
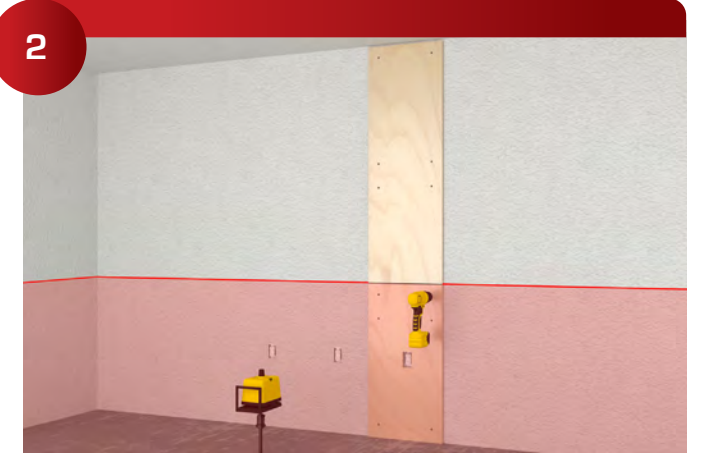
Cut a ¾" wood template, sized to the centerline of the reveals. 917 Drill Collars can be used to improve durability and precision. The 224 Galaxy should be drilled about 2" off the panel corners and every 24" to firmly hold the panels.

3

A full layout is not required; you just need the layout required to install the reveal strips. Adding a support strip under the template is helpful.
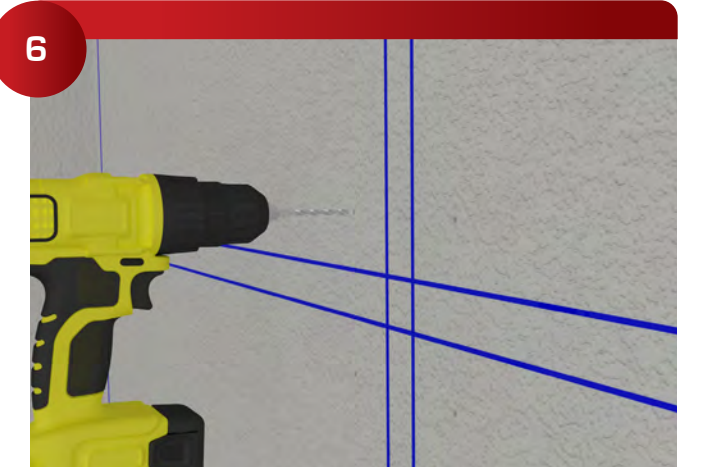
4
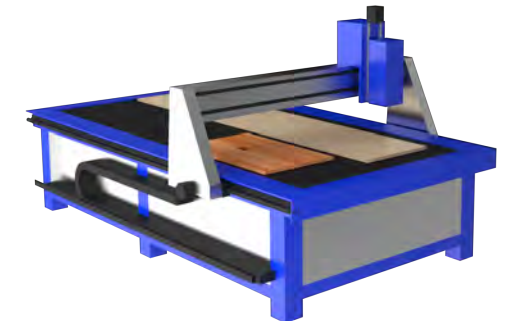
The panels and template can be cut out with a CNC router. Or the same template can be used with the 916 Drill Collar and 5/16" Center Drill to mark the location of the 1-1/4" Forstner Drill.

5

Install the 224 Galaxy using a Dead-Blow Hammer on a solid work surface. The 224 Galaxy can be installed flush, allowing the panels to be packed flat for shipping.

6

Screw the template in place and drill the 919 Carbide Tipped Drill 5/16" Bit slowly through the sheetrock. (Tip, the hole needs to be clean to hold the Pop Toggle accurately).
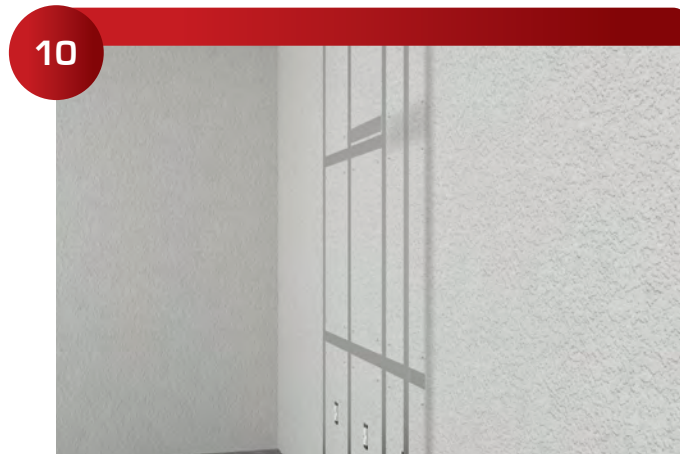
7

Install the 952 Pop Toggle into the sheetrock, it should fit firmly.

8

Push the setting stick into the 952 Pop Toggle to force the arms to pop out.

9

Using a drill set on low torque, gently snug the 236 Combination Screw into the 952 Pop Toggle. (TIP: Do not over tighten the screw, it can compress into the sheetrock.)

10

Install reveal strips with contact cement or paint over the chalk lines. The joints can be cut with laminate shears.

11

To install the panels they must be carefully realigned with the mounting screws. Next push them straight into place firmly, you should hear them lock in position. (TIP: Use spacer strips to quickly locate the position of the panel).

12

Cutaway view of the assembly
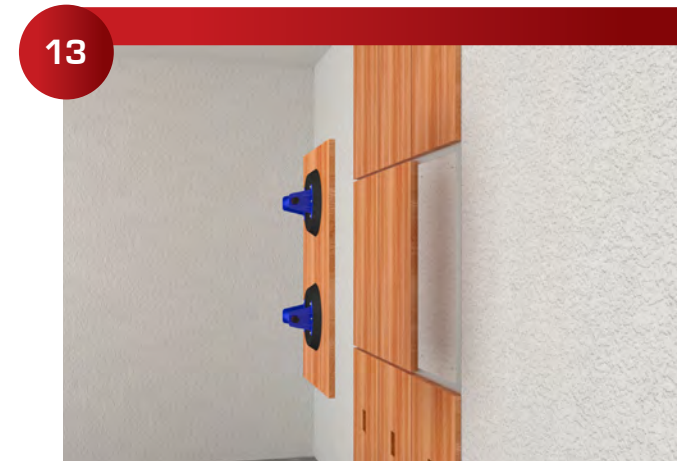
13

The panels are permanently removable for maintenance. The Galaxies are not suitable for frequently used access panels.

14
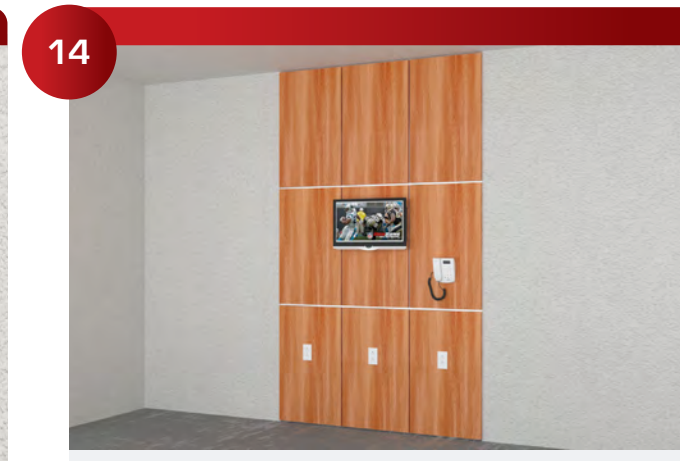
Finished panel wall.

This 225 Galaxy and the 236 Mounting Screw can be used in combination with a master template to make the direct installation of panels and artwork to drywall quickly and precisely. In this case we are showing the panel 1/32" off the wall for use with a 1/32" thick metallic laminate reveal. However, the 225 Galaxy can be mounted flush to the drywall.

225 GALAXY, DIRECT TO STEEL, TEMPLATE, ELEVATOR CAB, INSTALLATION GUIDE

1

Required Tools; Includes 224 Galaxy, 136 Mounting Screw, 5MM Drill Bit, 917 Spring Loaded Punch, 922 Vacuum Cup 8", Plastic Laminate, Contact Cement, Plant Cut Template
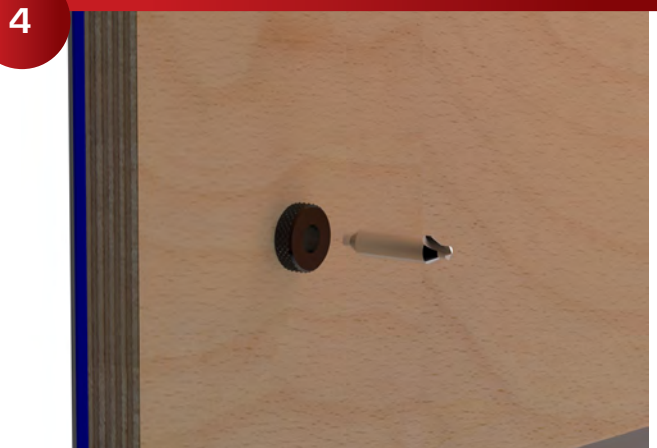
2

Our starting assumption is the steel elevator cab is reasonably level and square. If baseboard is required, the same hardware can be used for installation.

3

The 224 Galaxy can be plant installed, flush with the panels, allowing the panels can be shipped flat packed. The Cab Package should include layout template, precut reveals strips, contact spray.
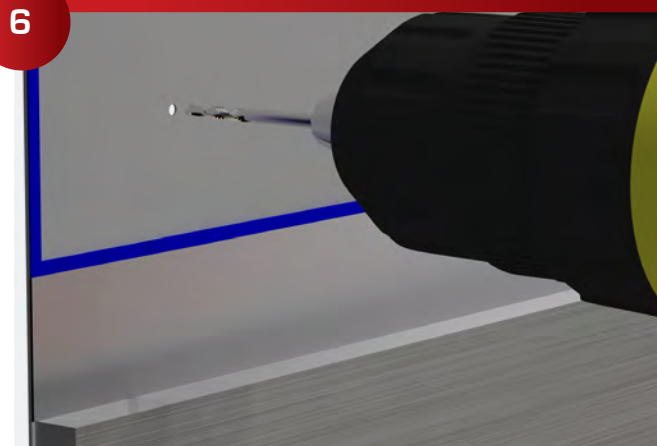
4

A plant prepared CNC cut layout template, including 916 Drill Collar and 516 Center Drill the centers for the mounting screws makes the field installation very quick. The template should also include the layout for the reveal strips.
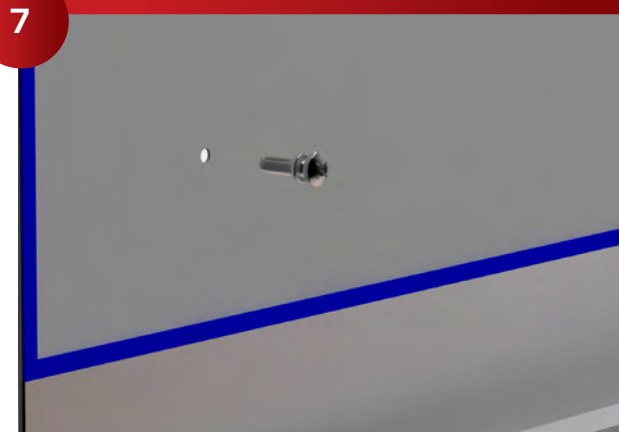
5

The 239 Machine screws can be quickly drilled with a 5/16" Center Drill.

6

. The 239 Machine screws can be quickly drilled and tapped with 917 Drill & Tap combination,10-24 Thread

7

Install the 239 Mounting Bolts, be careful not to over tighten the screw in the thin steel.

8

Install reveal strips between the layout lines using contact spray adhesive. The joints can be cut to length with laminate shears.

9

If needed the 224 Galaxy can be field installed with the same template. This uses the 916 Center Point Drill, 911 Carbide Tipped Drill, and a 1-1/4" Forstner Drill

10

The 225 Galaxy can be installed flush with a block of steel and hammer or a 965 Galaxy Hammer.

11

Install the panels and push them firmly into the mounting screw. There should be an audible click when the 224 Galaxy snaps into place.
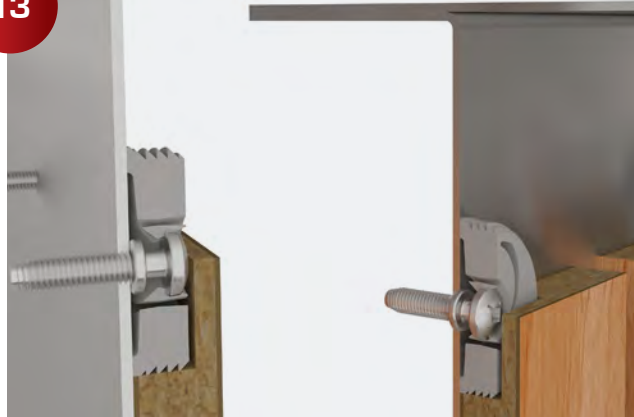
12

Finished Elevator Cab

13

225 Galaxy Detail showing, 239 Machine Screws, with a 10 – 24 Thread

14

The panels are permanently removable for maintenance. The Galaxies are not suitable for frequently used access panels.

1

Required Tools; 225 Galaxy, 234 Euro Screw, 229 Galaxy Alignment Pins, 916 Drill Collar and 516 Center Drill, 911 Carbide Tipped Drill 1-1/4", Galaxy 1-1/4" Template, 915 Router Bit, 3/32" Offset

2

Determine the location of the panels and install a 225 Galaxy in the die wall as needed. All the die wall parts and panels can be pre-machined on a CNC.

3

The 225 Galaxy can be field installed using a 911 Carbide Tipped Drill 1-1/4", Forstner Drill. However, most solid surface manufactures prefer the holes be cut with a router to avoid heat buildup.

4

The 225 Galaxy can be plant installed flush with the furring. A plant prepared CNC cut die wall parts, including the 5mm holes for the mounting screw makes the field installation very quick.

5

If prepared in the field, place 229 Galaxy Alignment Pins in each 225 Galaxy to mark in the furring. The Alignment Pins are reusable.

6

Carefully place the panel in the correct position and bump the panel in each corner to mark the location of each mounting screw.

7

Drill the 5mm hole with a center bit. Star Hanger sells the 916 Drill Collar and 516 Center Drill.

8

Install the 234 Euro Screw. Tip, be careful not to screw them in to deep.

9

To install the panels, push them firmly into the mounting screw. There should be an audible click when the 225 Galaxy snaps into place.

10

The finished solid surface panels can be easily removed with a plastic prybar or 922 Vacuum Cup 8".
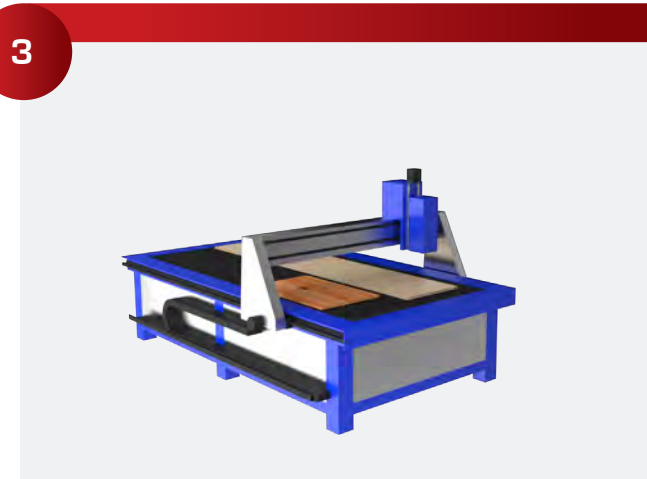
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225 GALAXY & 334 MOUNTING SCREWS; PRE-ENGINEERED COMPLEX PANEL SYSTEMS

1

Required Tools;Skilled CNC Programmer, 225 Galaxy, 234 Euro Screw, Dead Blow Hammer or 965 Galaxy Hammer, 920 Panel Adjuster, 922 Vacuum Cup 8"

2

Field layout showing horizontal & vertical control lines.

3

CNC Routing of furring system and panels

4

First section of pre-engineered furring.

5

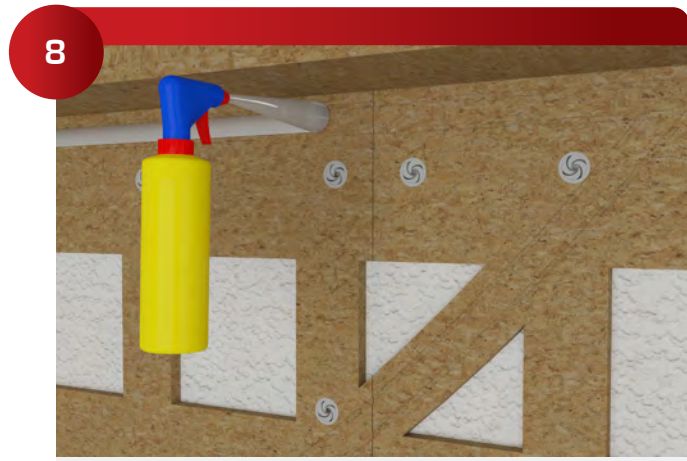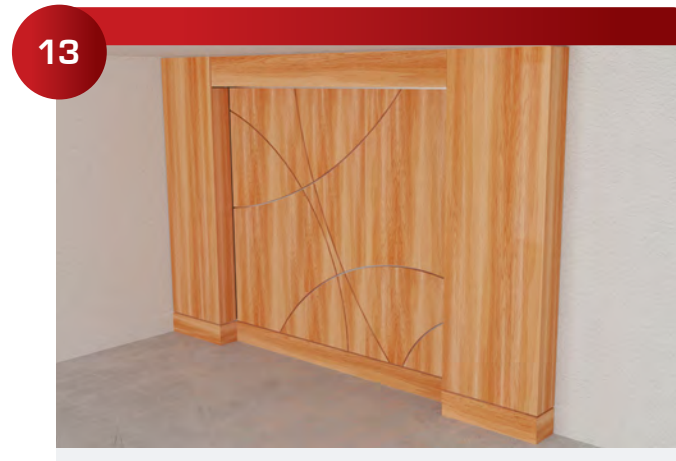Insert the 225 Galaxy on a heavy work bench

6

Use a laser to straighten, shim, and glue all furring into place. Leave an expansion gap between furring panels.
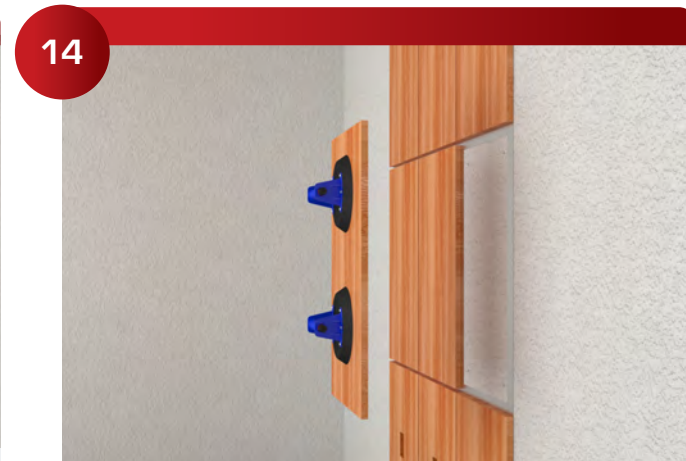
7

Verify furring conforms to job site conditions with GC.

8

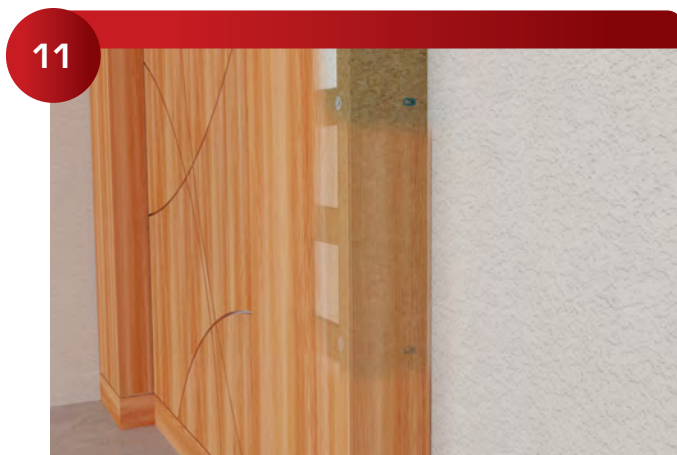Use contact cement to install thin laminate reveals or 3 ply matching plywood.
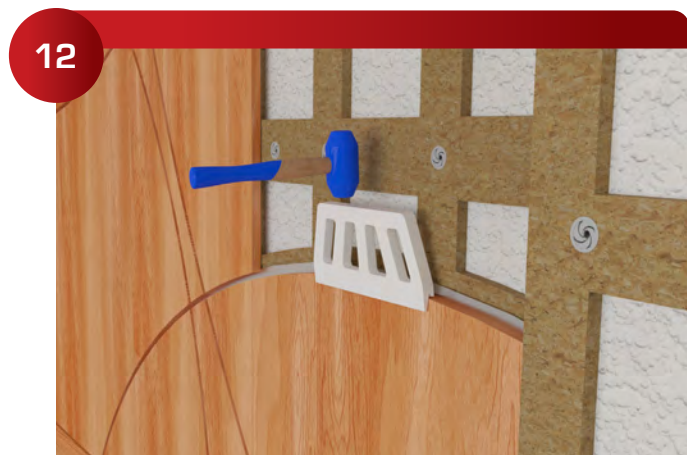

9

Install the baseboard

10

The panels are snapped into place, which also pulls the panels tightly against the reveals.

11

The Galaxy and the Green Glide can be used together, this allows for 90 Degree corners to be pre-assembled.

12

A panel adjustment tool can be used for slight adjustments.

13

Finished panels

14

The panels are removable with vacuum cups for maintenance.

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226 GALAXY, SOLID SURFACE DIRECTLY TO SHEETROCK INSTALLATION GUIDE

1

Required Tools: 225 Galaxy, 236 Combination Screws, 229 Galaxy Alignment Pins, Dead Blow Hammer or 965 Galaxy Hammer, 919 Carbide Tipped Drill 5/16", 952 Pop Toggle, 920 Panel Adjuster, 922 Vacuum Cup 8"
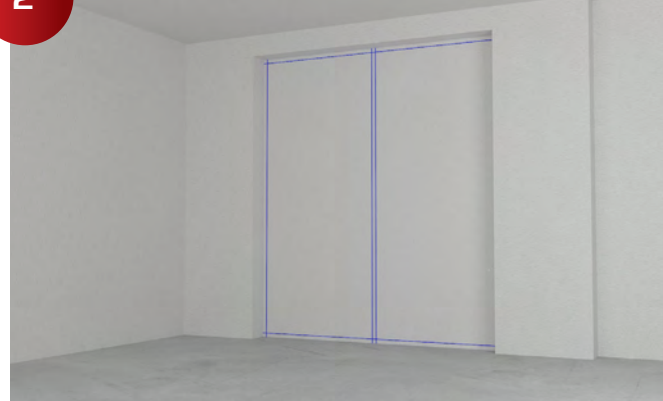
2

Layout the perimeter of the panels on the walls with a blue chalk line. Confirm that the panel layout is workable with field alignment, electrical and any other requirements. Tip, the sheetrock finish should be Level 2 only, taped, one coat, no corner bead, no skim coat.

3

The 225 Galaxy can be CNC cut and plant installed flush into the pre-engineered solid surface panels, allowing the panels to be shipped flat packed.
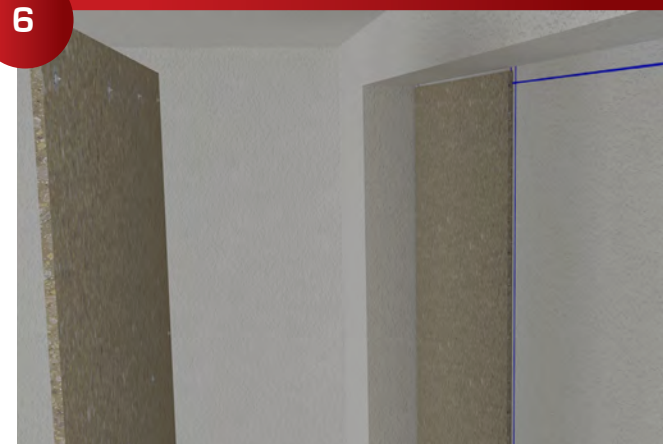
4

Install the 225 Galaxy using a Dead-Blow Hammer on a solid work surface. Tip, Stronger Galaxies may need to be glued into place.
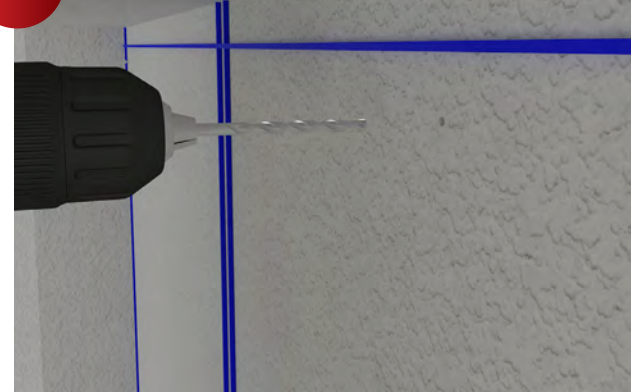
5

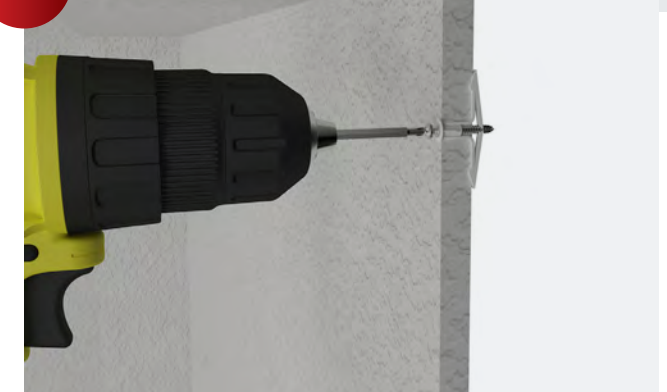Insert the 229 Galaxy Alignment Pins into the 225 Galaxy. The 229 Galaxy Alignment Pins are reusable.

6

Carefully place each panel in the correct position and bump the panels to mark the locations of each mounting screw.

7

Using 919 Carbide Tipped Drill 5/16" Bit, slowly drill the drywall holes in the appropriate locations.

8

Install the 952 Pop Toggle into the sheetrock, it should fit firmly. Push the setting stick into the 952 Pop Toggle to get the arms to pop out. Using a drill set on low torque, gently snug the 236 Combination Screws into the 952 Pop Toggles. The gap between the sheetrock and the solid surface panel can be adjusted with the screws or washer. Most solid surface manufacturers recommend 1/8" gap.

9
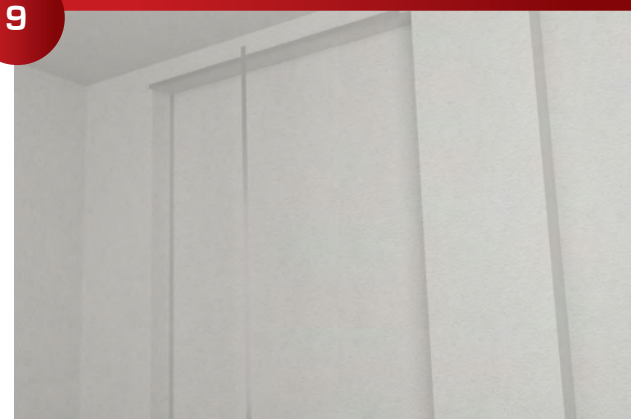
If reveal strips are needed, install them now.

10
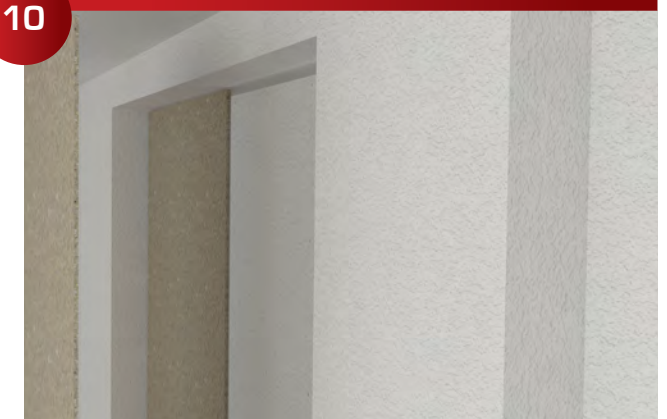
Test fit the panels; they must be carefully realigned with the mounting screws. Next push them straight into place firmly, you should hear them click and lock into position.
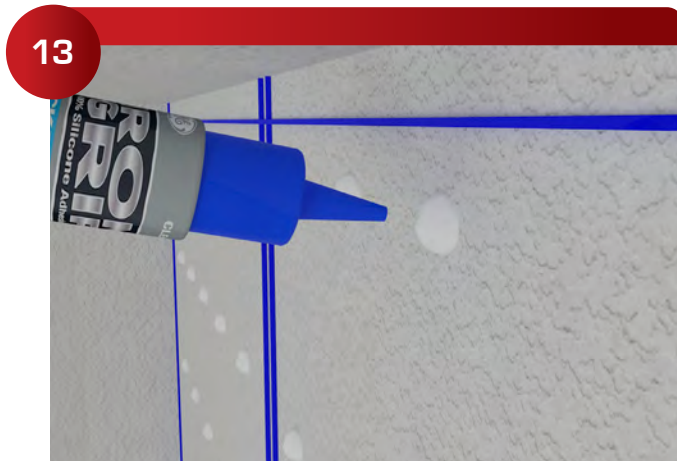
11

After confirming the panels fit flush into place and you are ready for permanent installation. Thoroughly clean all residue on the mating edges with a clean rag and denatured alcohol.
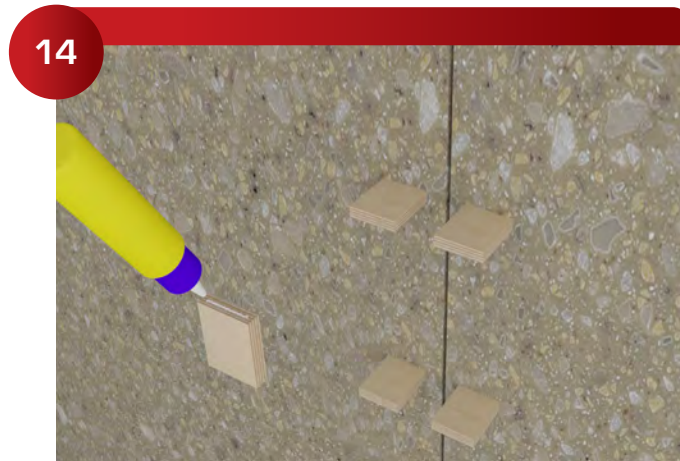
12
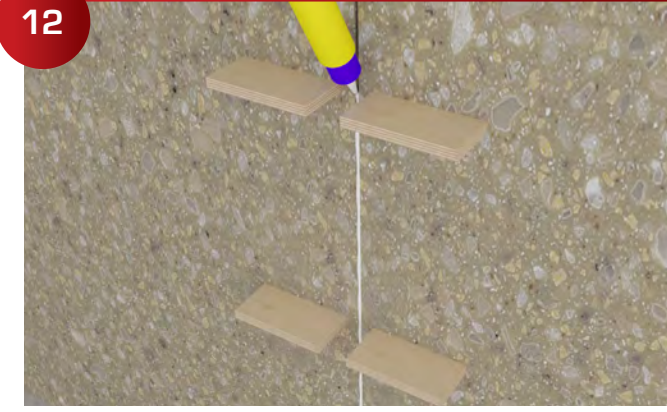
Install the clamp blocks with hot melt glue.

13

When ready for two hours of uninterrupted work, start installing the panel. The solid surface panels are set permanently in place with thick spots of silicone, about 12" apart. Start with silicone because it takes longer to set than the Solid Surface adhesive

14

Place a thick bead of solid surface matching adhesive on both edges of the panel. The goal is to have ooze 100% of the length joint and completely sealed. Carefully push the 12mm panels into the silicone, and firmly into the mounting screw.

15

There should be about a 1/8" gap between the sheetrock and the Solid Surface panel. The 225 Galaxy only holds the panel in place until the silicone sets.

16

Use bar clamps to force the panels together, floating on the silicone. Push the panel into place with a dead blow hammer until all areas of the panel are set in the silicone. To alignment the panels, (vacuum cup alignment tools are available for this step). The Galaxy 226 will flex enough to work the seam.

17

Using a soft plastic chalk scraper and denatured alcohol, scrape off all the excess matching adhesive before it sets. This should leave a fine line of matching adhesive.

18

At this point you should have almost no seam and be securely locked into place with gap between two panels 100% filled. (Tip, getting the panels perfectly aligned is critical, sanding solid surface flush is very difficult).

19

Allow to fully set before sanding and finishing. Solid Surface flush seams require an experienced professional with the correct finishing products.

20

Clean the surface and caulk perimeter of the wall with paintable clear caulk.

21

The finished solid surface panels are not removable.

1

Required Tools; 225 Galaxy, 229 Galaxy Alignment Pins, 236 Combination Screws, Dead Blow Hammer or 965 Galaxy Hammer, 919 Carbide Tipped Drill 5/16", 911 Carbide Tipped Drill 1-1/4", Forstner Drill, 952 Pop Toggle.

2
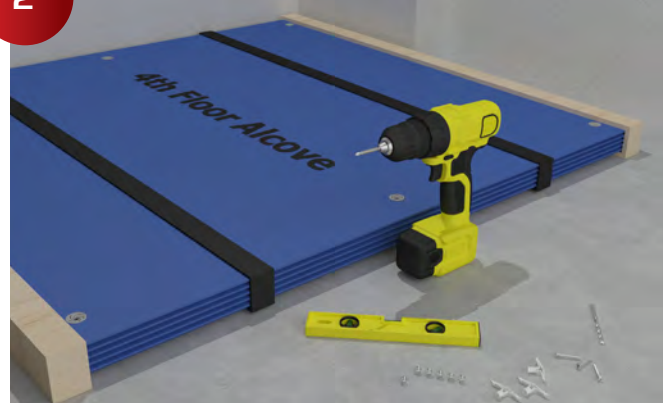
When shipped in a pre-assembled flat packed kit, the tools required for customer installation are minimal.   Tools required for "Customer DIY Installation": 229 Galaxy Alignment Pins, 236 Combination Screws, 919 Carbide Tipped Drill 5/16", 911 Carbide Tipped Drill 1-1/4", 952 Pop Toggle.

3

Layout the perimeter of the panels on the walls with a blue chalk line. Confirm that the panel layout is workable with field alignment, electrical and any other requirements.
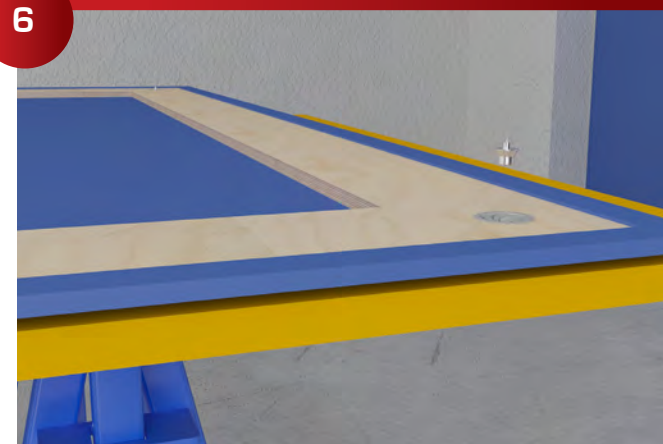
4
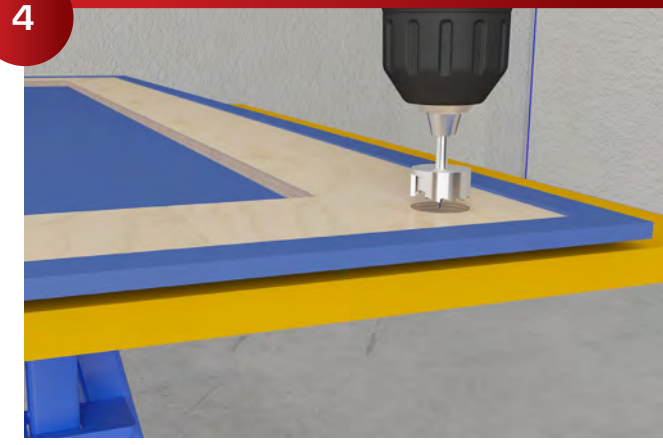
225 Galaxy should be drilled about 2" off the panel corners to firmly hold the panels. Drill the holes with a 911 Carbide Tipped Drill 1-1/4", Forstner Drill, 3/8" deep.

5
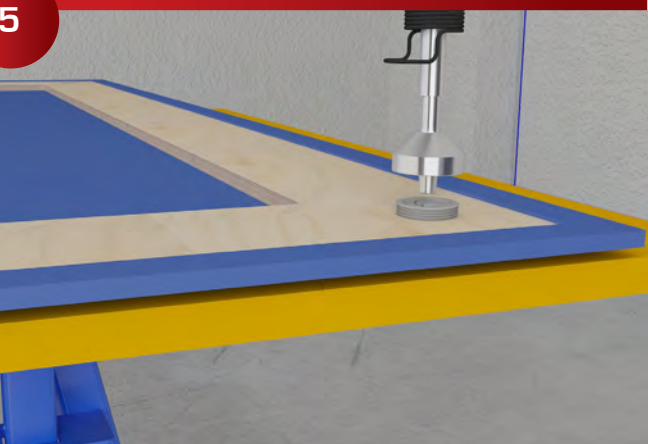
Install the 224 Galaxy flush with the panel surface using a Dead-Blow Hammer.
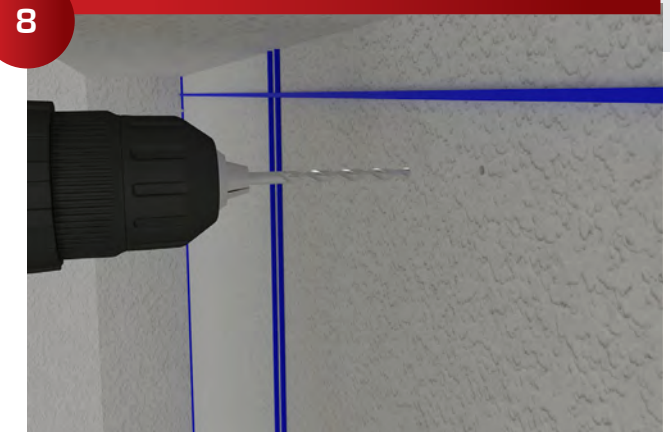
6

Using pliers insert the 229 Galaxy Alignment Pins into the 225 Galaxy.

7

Set the panels on top of the reveal strips and push them firmly into the drywall to mark the locations for the 236 Combination Screws.
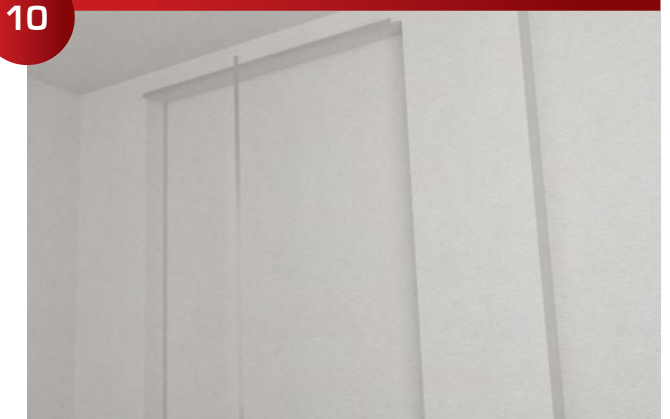
8

Drill a 5/16" hole in the positions indicated by the 211 Alignment Pins

9

Install 952 Pop Toggle and 236 Combination Screws. Push red the setting stick into the 952 Pop Toggle to force the arms to pop out in the back. Using a drill set on low torque gently snug the screws. (TIP: Do not over tighten the screw, it can compress into the sheetrock.)

10

The reveals can be quickly painted, or you can use 1/32" plastic laminate with contact cement.

11

To install the panels they must be carefully realigned with the mounting screws. Then push them straight into place firmly, you should hear them click and lock in position. (TIP: Use reveal spacers to quickly locate the position of the panel.)

12

The panels are permanently removable for maintenance. The Galaxies are not suitable for frequently used access panels.

226 GALAXY, DIRECT TO STEEL, ALIGNMENT PIN, EXTERIOR SIGN, INSTALLATION GUIDE

1

Required Tools; 226 Galaxy, 229 Galaxy Alignment Pins, 239 Machine Screws, Dead Blow Hammer or 965 Galaxy Hammer, 917 Drill & Tap combination, 10-24 Thread, 911 Carbide Tipped Drill 1-1/4" Forstner Drill

2

Determine the location of the sign and lightly mark the location, use tape on the door if it's too hard to mark.

3

The 226 Galaxy can be field installed using a 911 Carbide Tipped Drill 1-1/4", Forstner Drill

4

The 226 Galaxy can be plant installed flush with the back of the sign, allowing signs to be shipped flat with the hardware installed. A plant prepared CNC cut sign and layout template,including the centers for the mounting screws, makes the field installation very quick.

5

Place 229 Galaxy Alignment Pins in each 226 Galaxy to mark the sign. Alignment Pins are reusable.

6

Carefully place the sign in the correct position and bump the sign in each corner to mark the location of each mounting screw.

7

Drill a Wire number size 25, or 0.1495", and tap with a #10-24 UNC (common size), or you can use the Drill & Tap combination, 10-24 Thread on the center punched locations for each mounting hole.

8

. Install the 239 Machine Screws, be careful not to over tighten the screw in the thin steel.

9

To install the sign, push them firmly into the mounting screw. There should be an audible click when the 226 Galaxy snaps into place.
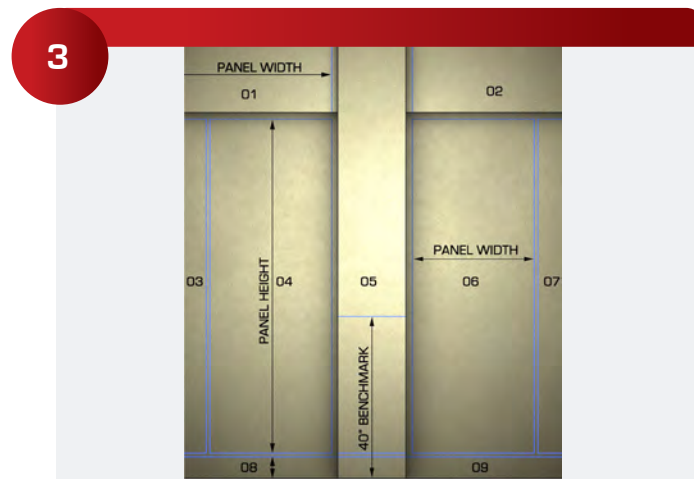
10

The finished sign can be easily removed with a plastic prybar.

210 LOCK, PANELS FIELD FURRING INSTALLATION GUIDE

1

Required Tools; 210 Lock, 211 Alignment Pins,
910 Carbide Tipped 1" Forstner Drill, Center Point Drill,
920 Panel Adjuster, 1/32" plastic laminate, Spray
Contact Cement, Panel Adhesive.

2

Determine greatest projection (bump out in wall) to
determine face of panels on a floor layout. (Working Plane)

3

Field verify all required site dimensions based on
face of panels for both field horizontal & vertical lines,
revise shop drawing for production.

4

Preassemble the vertical furring corners (if any) and install
them to use as a guide for the horizontal furring.

5

Using string lines or a laser, shim, glue, and screw
all horizontal furring into place.

6

Transfer the revised shop drawing panel sizes
to the face of the furring.

7
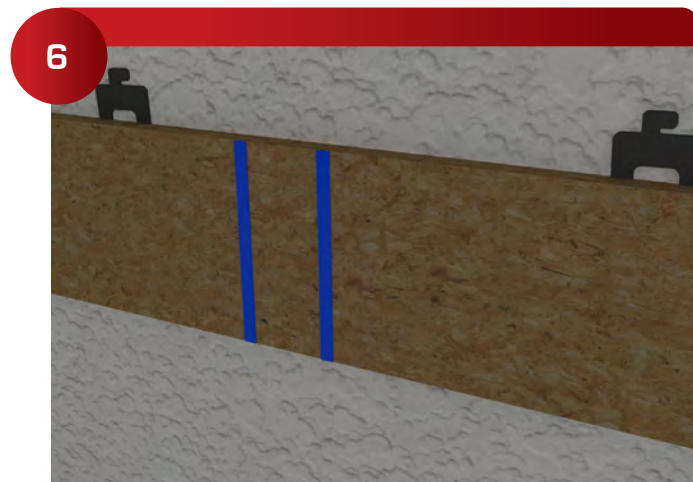
Insert the 210 Lock at 24" on center or as needed.
The Locks can be drilled to 1" with a 910 Carbide
Tipped 1" Forstner Drill, Center Point Drill

8
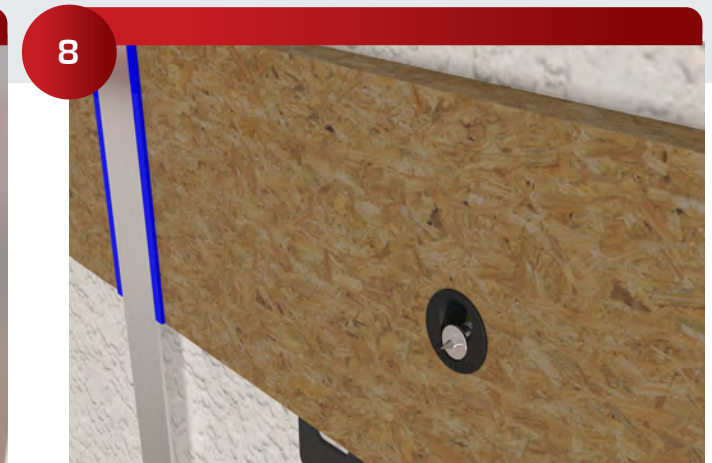
Place 211 Alignment Pins in each Lock needed
to mark one full panel.
(Tip: 211 Alignment Pins are reusable.).

9

Place reveal spacers between panels to locate the
exact panel positions. Carefully push the panel into the
211 Alignment Pins to mark the Lock positions.

10
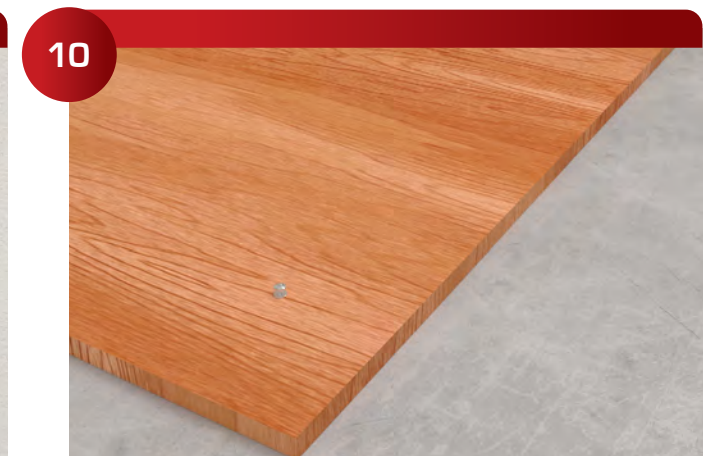
Drill a 5MM hole in the positions indicated by the
211 Alignment Pins, and install the Mounting Screw
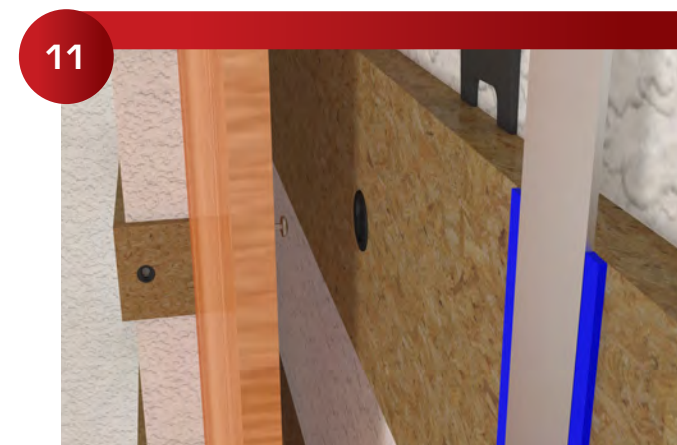
11

Set the panels by firmly pulling them down until they
bottom out on the clips. (Tip: It is good practice to use a
dab of silicone on the center clips to prevent movement.)

12

Completed Panel System.
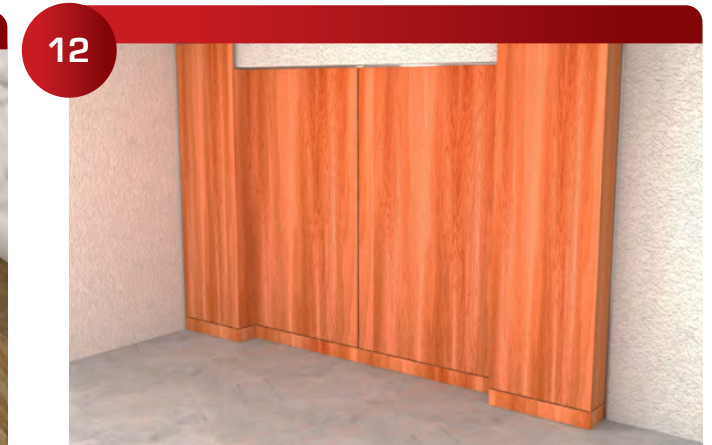
# 300 GREEN GLIDE
INSTALLATION GUIDE

1

Required Tools; 300 Green Glide, 318 Drill Template, 311 Alignment Pins, 913 Pilot Drill, 5MM Center Point Drill & Stop, Dead Blow Hammer or 305-300 Hammer Head for Green Glide, Panel Adjuster, 1/32" plastic laminate, Spray Contact Cement, Panel Adhesive.
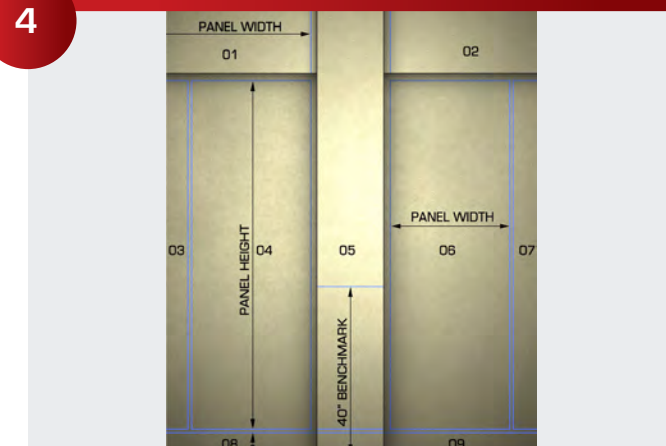
2

Carefully review the shop drawing to understand field alignment requirements. Find high point of the floor and set horizontal bench mark at any workable point.
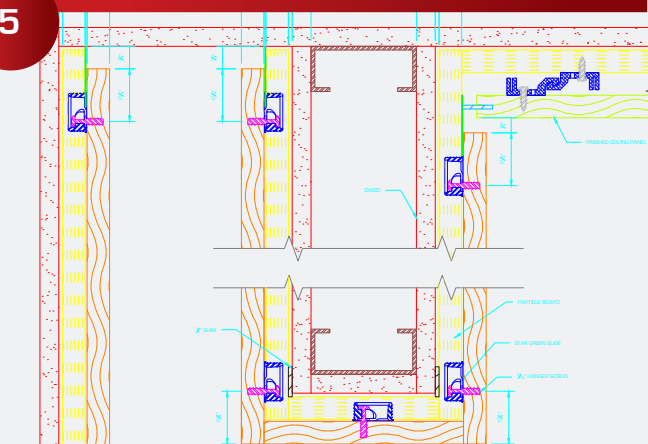
3
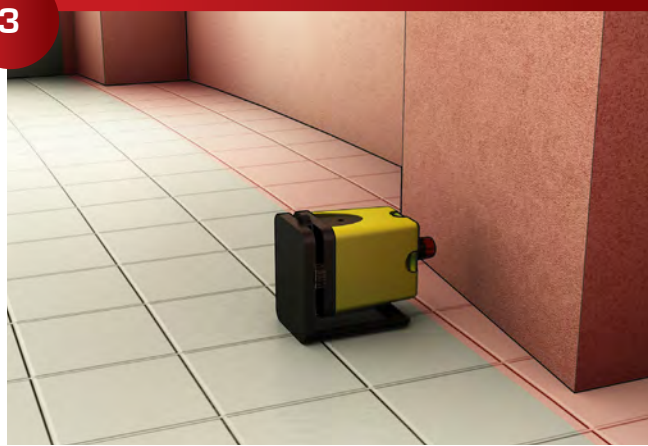
Determine greatest projection (bump out in wall) to determine face of panel horizontal layout.
Determine panel widths based on horizontal lines and field alignment requirements

4

Field verify all required site dimensions based on face of panels for both field horizontal & vertical lines.

5

Check section details of all panel intersections to make sure field dimensions match face of panels, many details can be downloaded from Starhanger.com.

6
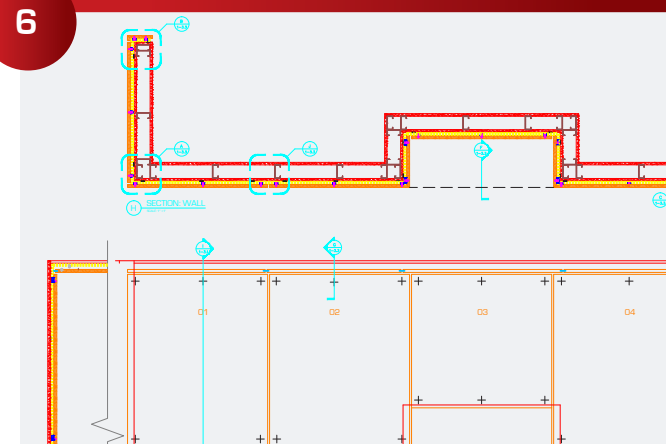
Revise shop drawn elevations and details based on the field verified horizontal and vertical level lines, end conditions, field changes, etc..

7
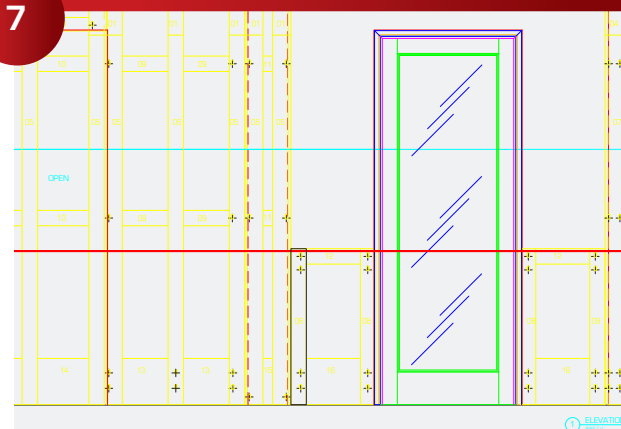
Revise shop drawings to reflect face of all panel sizes on primary drawing layer. Revise the furring layer to match panel sizes precisely, this a critical step.

8

It is helpful to set the 334 Mounting Screw 1-3/4" to 2" from panel corners to simplify mounting screw locating.
(**Useful Accessories:** The 318 Drill Template, 2" Offset (includes Template & Stops) helps speed this process.)
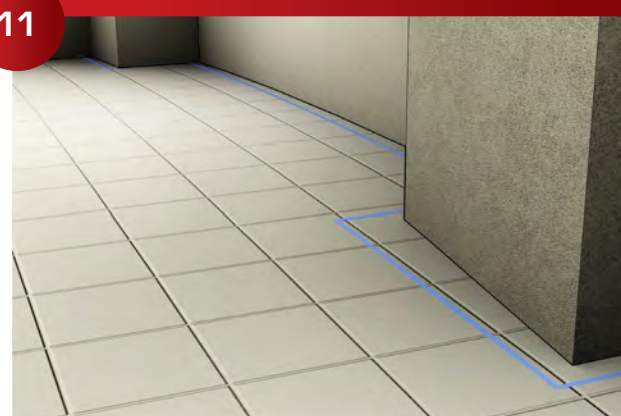
9
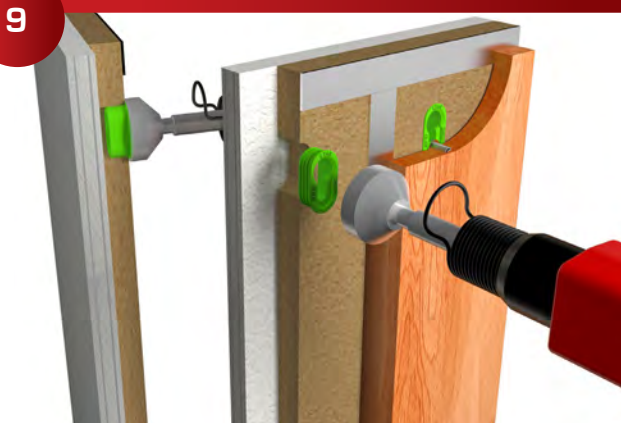
Install the 300 Green Glide using a Dead-Blow Hammer.
(**Useful Accessories:** The 305-300 Hammer Head can speed up installation of the 300 Green Glide inserts.)
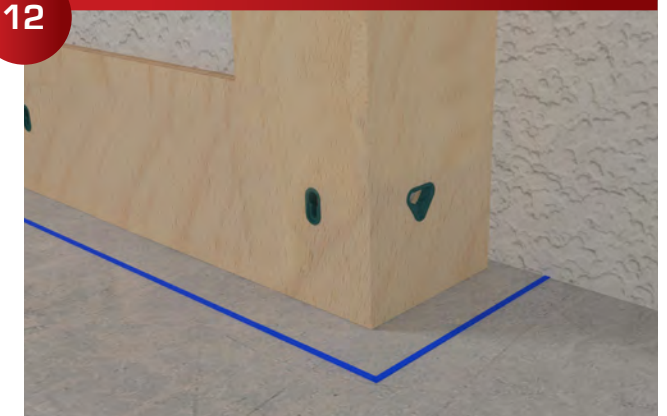
10
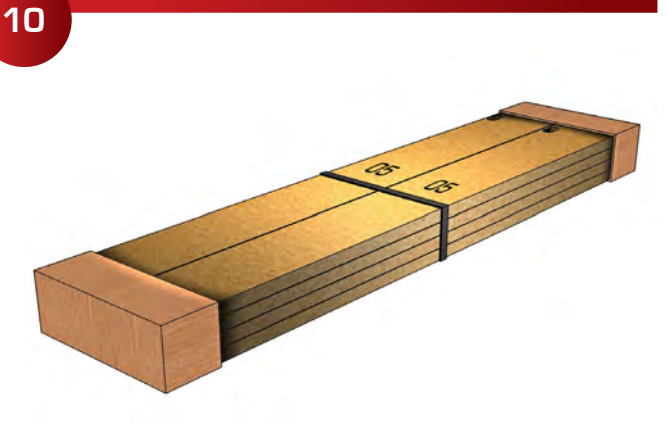
The pre-fabricated panel furring & panels can be packed flat for shipping.

11

STARTING INSTALLATION: Rechalk and reverify all required site dimensions based on field horizontal & vertical level lines.

12

Adjust and set plumb all corners and outside edges of the prefabricated panel furring. The installation and fit of the prefabricated panel furring will verify the fit of the panels.

13

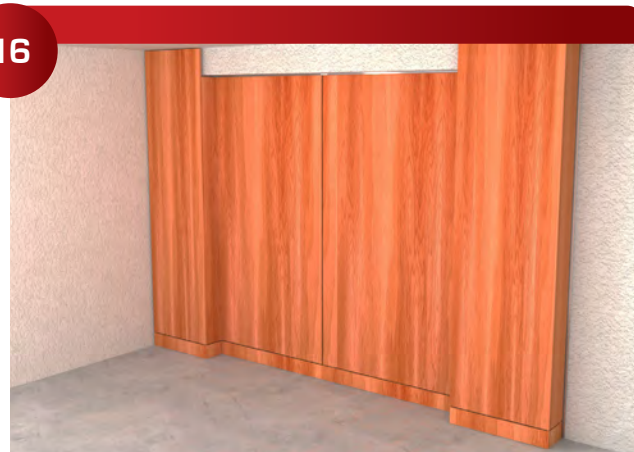Use a string line or laser to shim, screw and glue all furring into place.

14

Locking the panels into place should be the simplest part of the process.
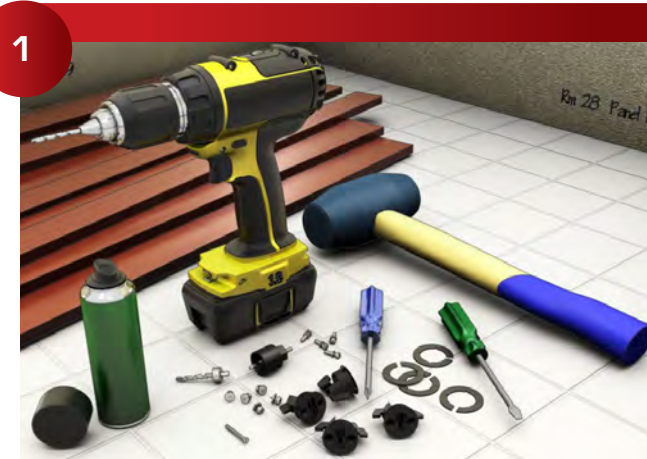
15

(**TIP:** If there is a bust or change in the process. Star Hanger sells field installation tools like 319 Green Glide Router Template/ 915 Router Bit/ 311 Green Glide Alignment Pins.)
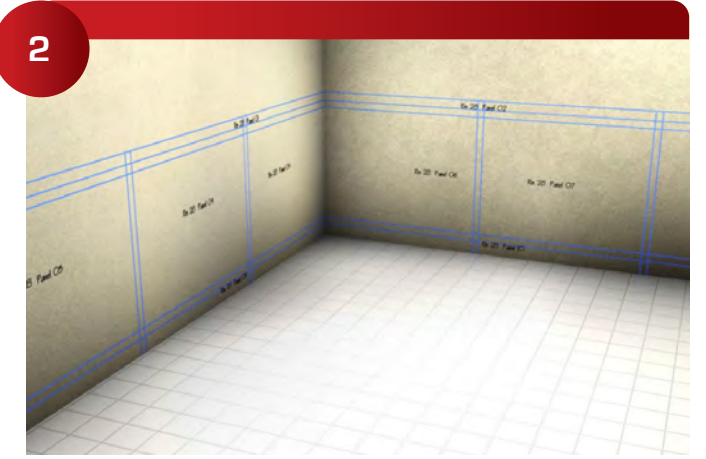
16

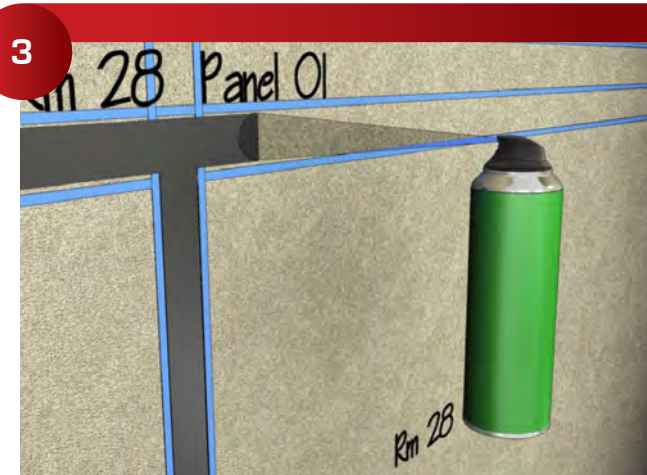Finished room using prefabricated panel furring and the 300 Green Glide.

1

Required Tools; 200 Hangers, 211 Alignment Pins, Contact Cement Spray, 1/32 Revel Material, Dead Blow Hammer, Panel Adjuster, Drill, 1-3/8" Hole Saw.

2

Layout the position of the reveals on site, adding 1" to the width of the chalk line and the width of the reveal.
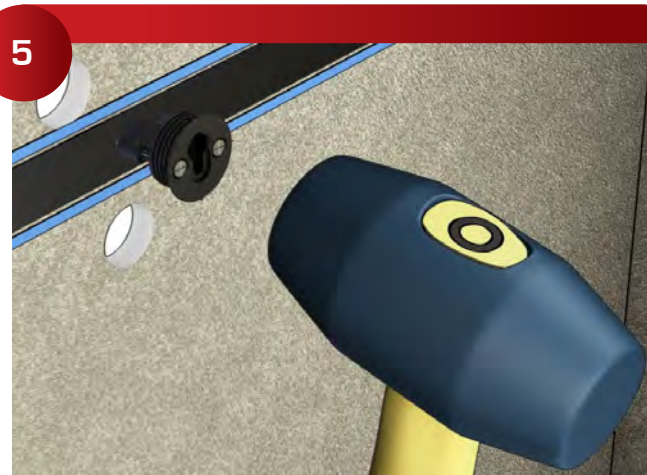
3
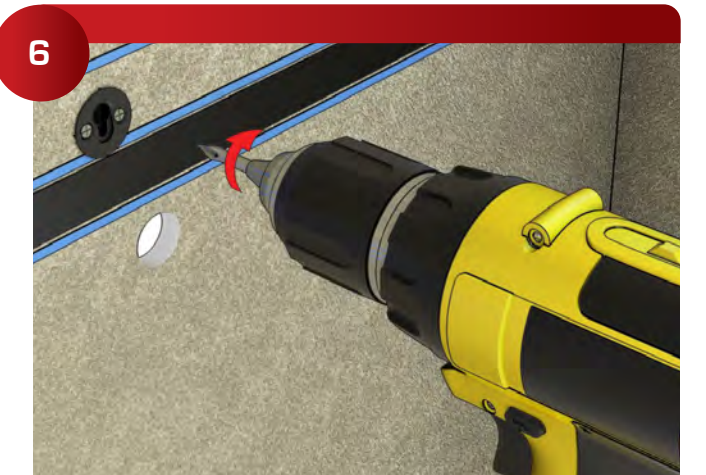

Paint the reveals.

4

Drill the 1 3/8" diameter holes through the sheet rock, as needed. (**TIP:** Exact location is not required.)
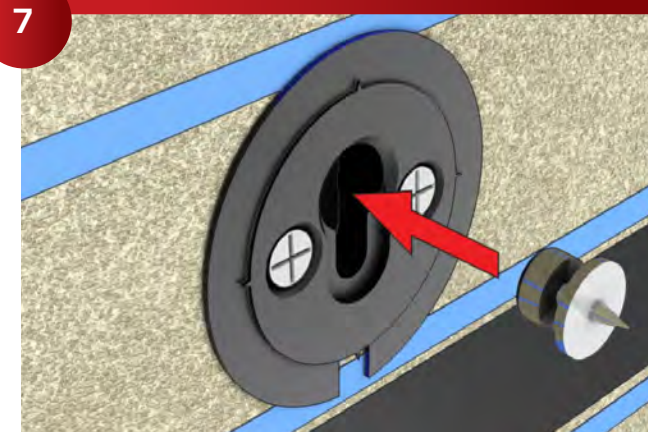
5

Insert the 200 Hanger into the pre-drilled hole.
(**TIP:** If you hit a stud, cut off the back arms and remove the wings of the 200 Hanger for a flush fit.)
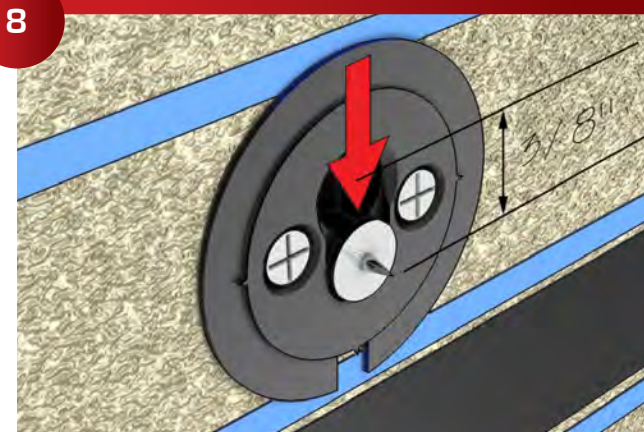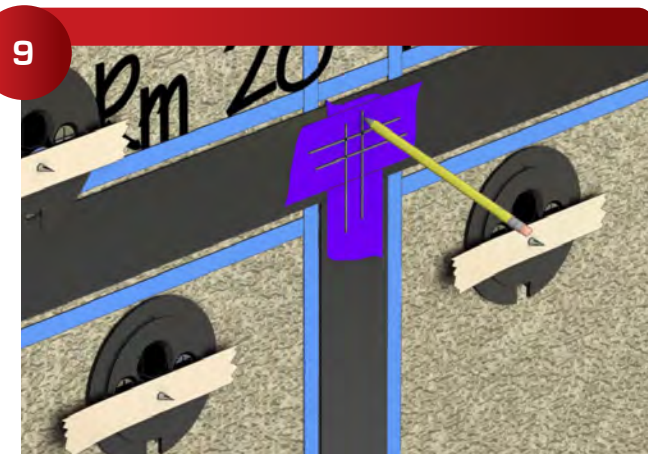
6

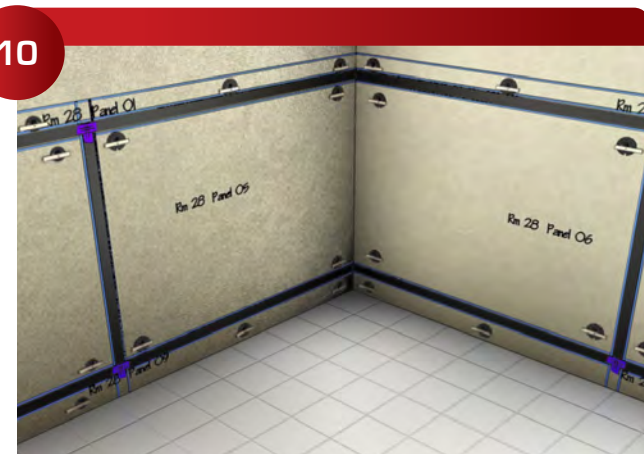Use an electric drill to lock the 200 Hanger into place. Set drill for minimum torque.

7

Place 211 Alignment Pin into the 200 Hanger.

8

Push the 211 Alignment Pin down. (**TIP:** If the pin fits loosely, use tape to better hold the pin if needed.)
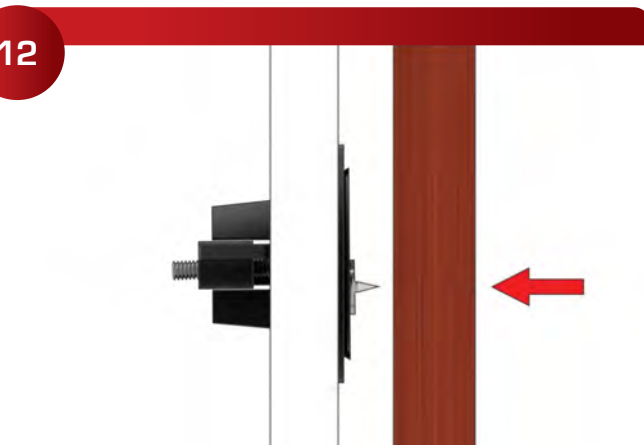
9

Place blue tape over the corners of the reveals and mark the exact position of the panel.
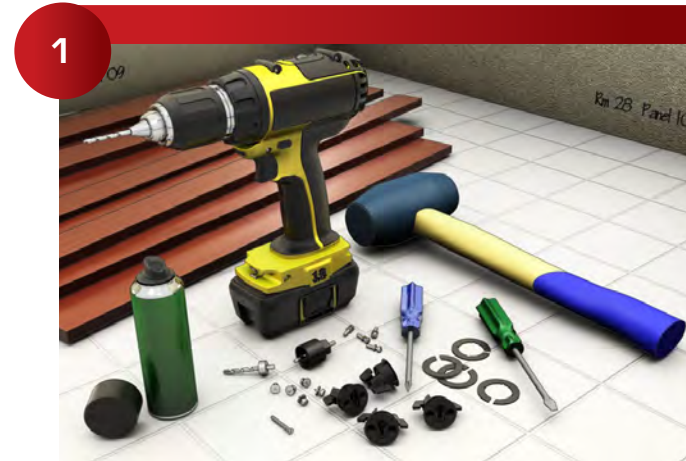
10

Carefully measure and number each panel and place panel order.

11

Carefully position your panel over your 211 Alignment Pins and push them firmly to leave a location mark for the 3/16" Mounting Screw.
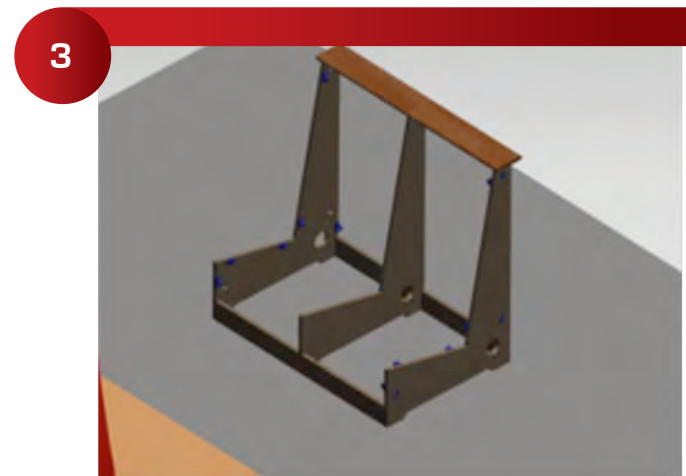
12

(**Useful Accessories:** Star Hanger sells the 210 Hanger Shim 1/32" it is available to help with dips in the wall.)
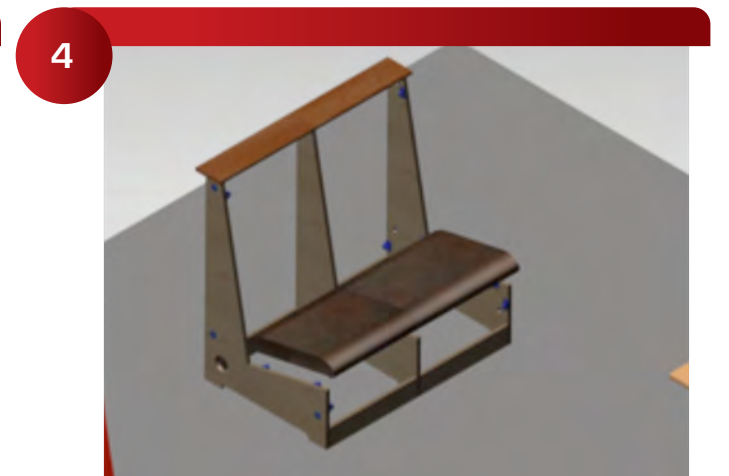
1

Required Tools; 325 Zero Side Mount, 330 Alignment Pins, 913 Pilot Drill 5MM Center Point Drill & Stop

2
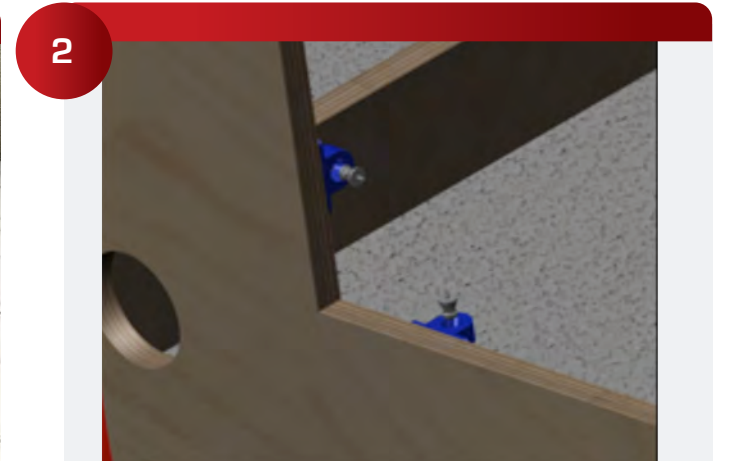
The 325 Zero Side Mounts can be used to install the removable booth seating. Install the Zero Side Mounts flush with the intersecting panel edge.

3

Install the 330 Zero Alignment Pins for marking the 334 Mounting Screw locations.

4

Firmly push the panels into place to mark the 334 Mounting Screw locations. Install the mounting screws using a 913 Brad Point Drill Bit, 5mm.

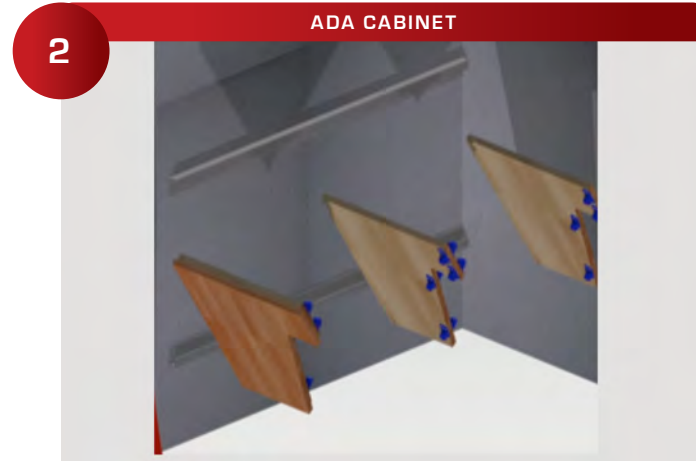**5**

Other components can also be installed using the 325 Zero Side Mount.

6

The upholstery snaps into place and is removable with about 25 pounds of force, a small pry bar helps.

325 ZERO SIDE MOUNT, ADA & SOFFIT INSTALLATION GUIDE

1 — ADA CABINET

Required Tools; 325 Zero Side Mount, 330 Alignment Pins, 913 Pilot Drill 5MM Center Point Drill & Stop.

2 — ADA CABINET

Install both your wall rails with heavy duty self-tapping screws being sure to hit the steel studs. Lock each shop built gusset plate into position and secure each gusset plate with angle brackets.
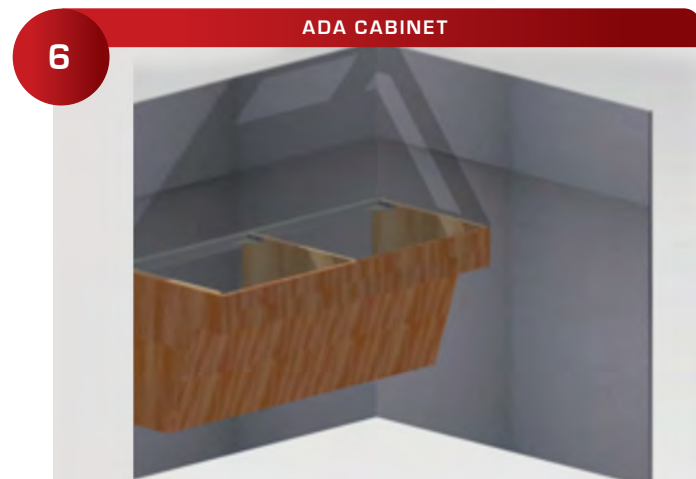
3 — ADA CABINET
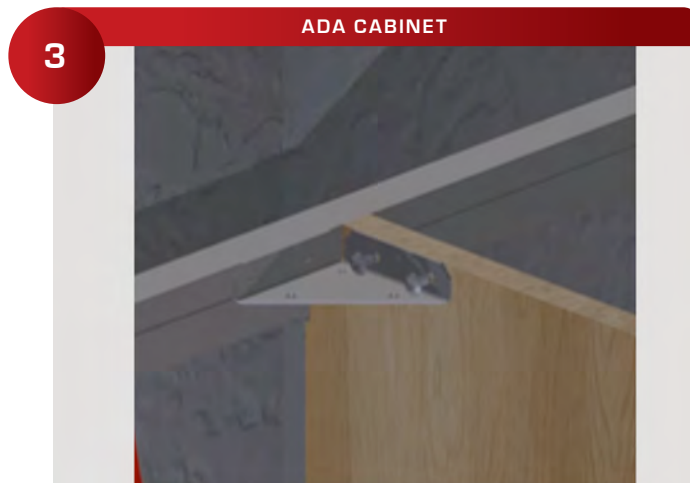
Install the 452 "L" Brackets onto gusset plates.

4 — ADA CABINET
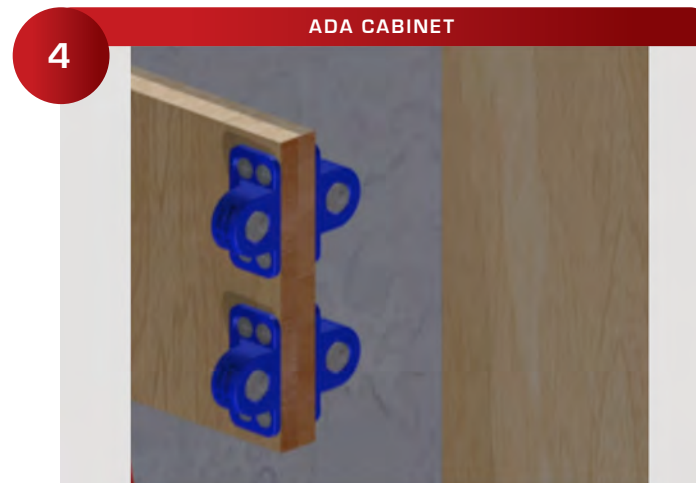
Install the 330 Zero Alignment Pins to help mark the locations for the 334 Mounting Screws.

5 — ADA CABINET
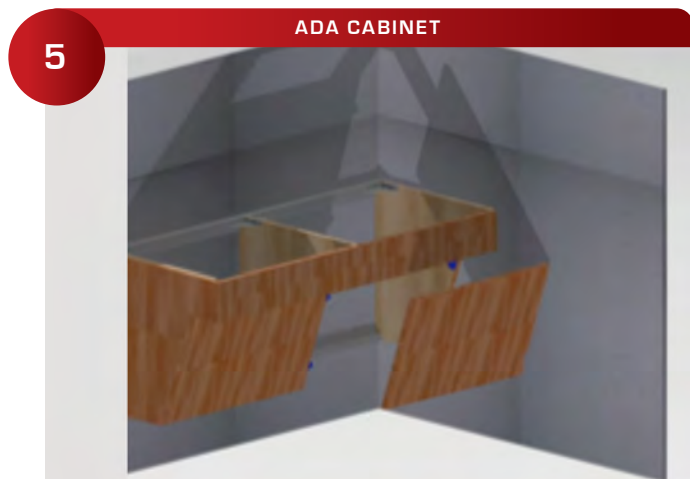
Press each panel into the Alignment Pins to mark the 5/16" Mounting Screw locations.

6 — ADA CABINET

Completed ADA unit can be installed in about 30 minutes.

7 — WALL CABINET SOFFITS

The 325 Zero Side Mounts can be used to install wall cabinet soffits quickly.

8 — WALL CABINET SOFFITS

Install wall gussets above the wall cabinets with the 325 Zero Side Mounts pre-installed. The gussets can be installed by simply sitting them in beads of panel adhesive and allowed to dry overnight.

9 — WALL CABINET SOFFITS

Install the 330 Zero Alignment Pins and press the panels firmly into place to mark the 334 Mounting Screw locations.

10 — WALL CABINET SOFFITS

Push the soffit firmly against the 330 Zero Alignment Pins to mark the 334 Mounting Screw locations.

11 — WALL CABINET SOFFITS

The completed soffits above the cabinets can be removed for later access.

349 UPHOLSTERY MOUNT, HEAVY ACOUSTICAL PANEL INSTALLATION GUIDE

1

Required Tools; 224 Galaxy, 229 Galaxy Alignment Pins, 349 Upholstery Mount, Dead Blow Hammer or 965 Galaxy Hammer, 919 Carbide Tipped Drill 5/16", 911 Carbide Tipped Drill 1-1/4", Forstner Drill, 952 Pop Toggle, 920 Panel Adjuster, 922 Vacuum Cup 8", 1/32" plastic laminate, Contact Cement.
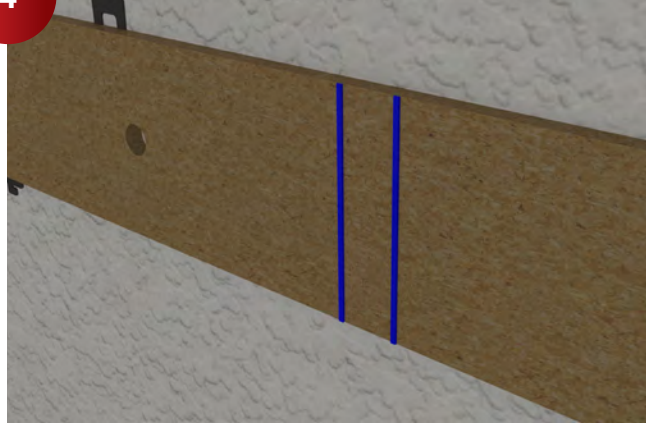
2

Find high point of floor, check to see if the project has a pre-set horizontal benchmark. If not set your own horizontal benchmark.
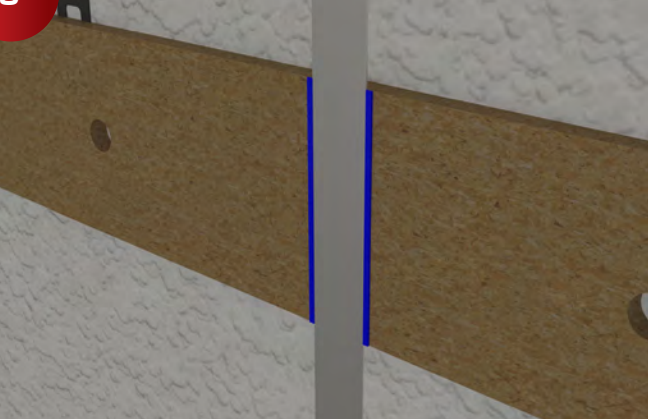
3

Using string lines or a laser, shim, glue, and screw all horizontal furring into place. Furring is not required if the walls are reasonably flat.

4

Layout the perimeter of the panels on the walls with a blue chalk line. Confirm that the panel layout is workable with field alignment, electrical and any other requirements.
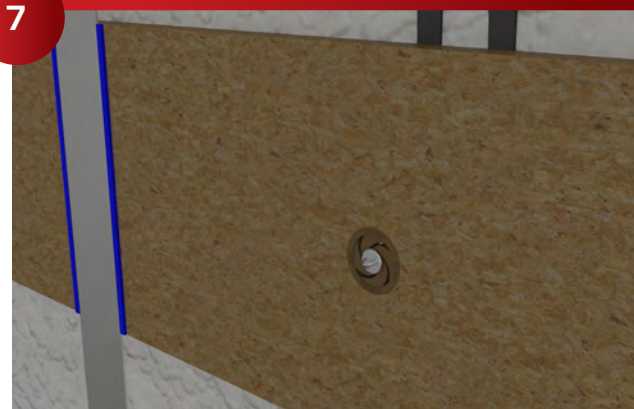
5

The reveals can be quickly painted, or you can use 1/32" plastic laminate with contact cement.

6

224 Galaxy should be drilled about 2" off the panel corners to firmly hold the panels. Drill the holes with a 911 Carbide Tipped Drill 1-1/4", Forstner Drill, 3/8" deep (in the field) or with a CNC (in the plant).
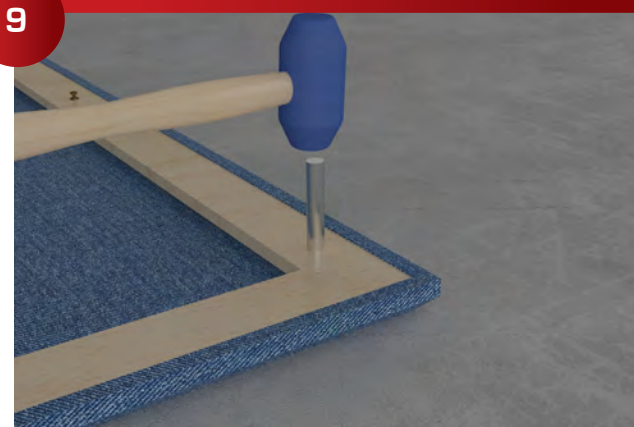
7

Install the 224 Galaxy using a Dead-Blow Hammer. The 224 Galaxy is flush with the panel surface.
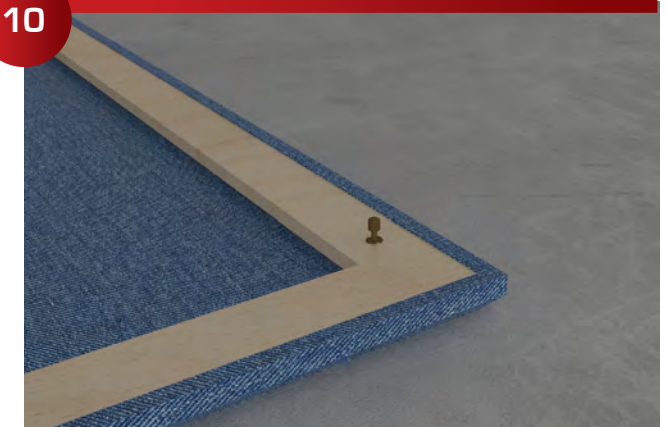
8

Insert the 229 Galaxy Alignment Pins into the 224 Galaxy.

9

Set the panels on top of the reveal strips and push them firmly into the drywall to mark the locations for the Mounting Bolt.

10

Drill a 1/2 hole in the positions indicated by the 211 Alignment Pins and press in the 349 Upholstery Mounts.

11

To install the panels they must be carefully realigned with the mounting screws. Then push them straight into place firmly, you should hear them lock in position. (**TIP:** Use the reveal spacers to quickly locate the position of the panel. Panels remain permanently removable.)
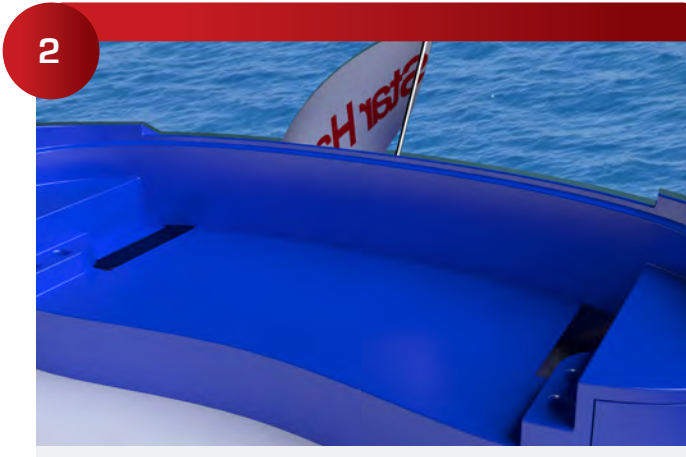
12

Completed Panel System.

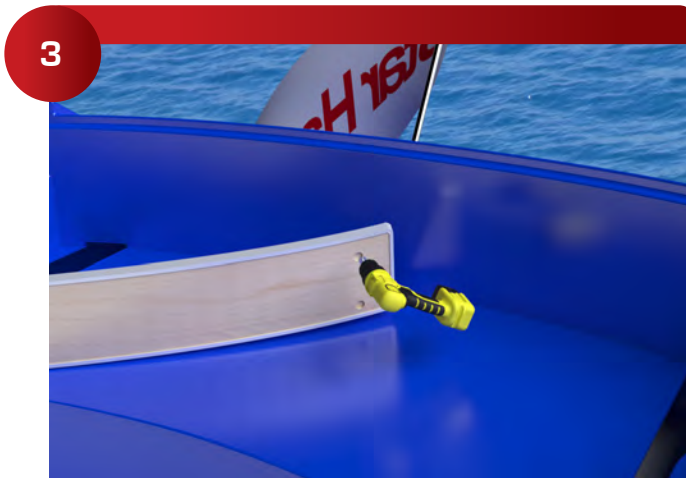# 349 UPHOLSTERY MOUNT & 224 GALAXY INSTALLATION GUIDE

1

Find a beautiful yacht that needs new Upholstered seat cushion, (this is the hardest part).

2

Carefully space the locations for each cushion.

3

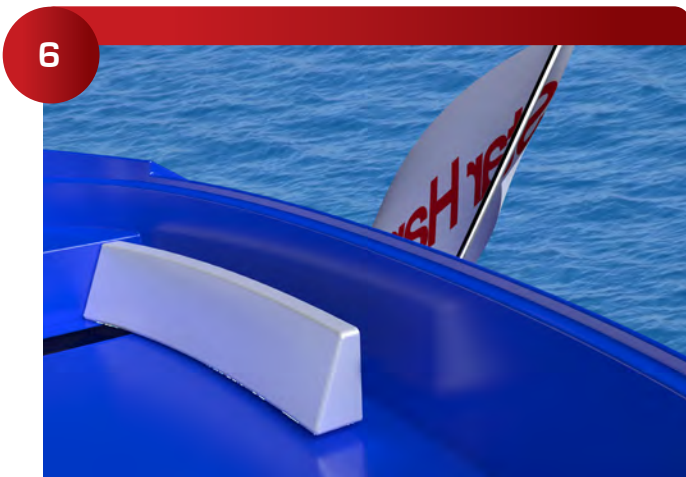Drill a 1-1/4" hole x 3/8" deep for each Galaxy.

4

Insert the Galaxies into place, this can be done with a soft blow hammer or specialized tools form Star Hanger.

5

Install the Galaxy Alinement Pins into place, they can be removed with pliers or a pry bar.
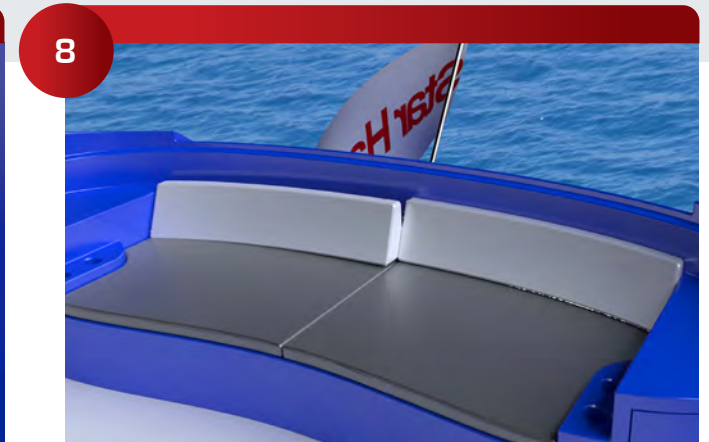
6

Carefully align the cushion into place and push it firmly to mark the screw positions.
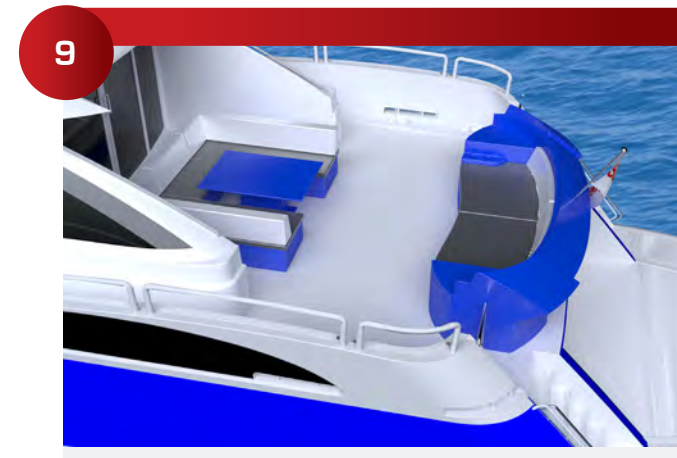
7

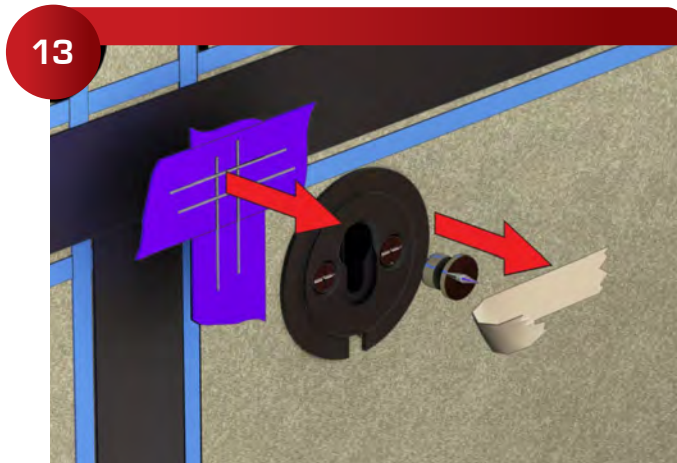Predrill with a 1/8" Hole. Install stainless steel screws into the fiberglass.

8

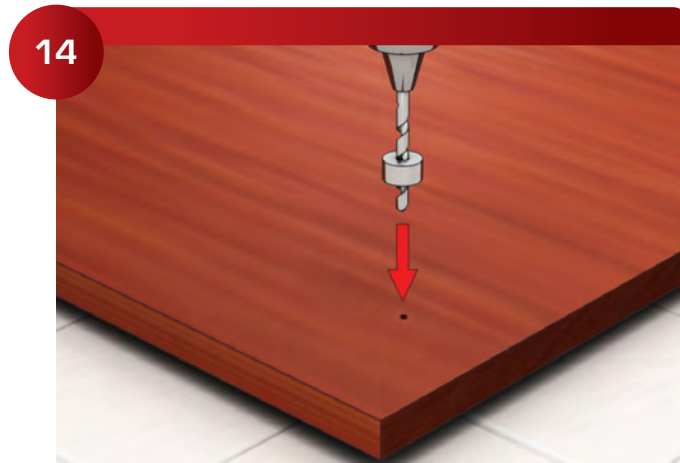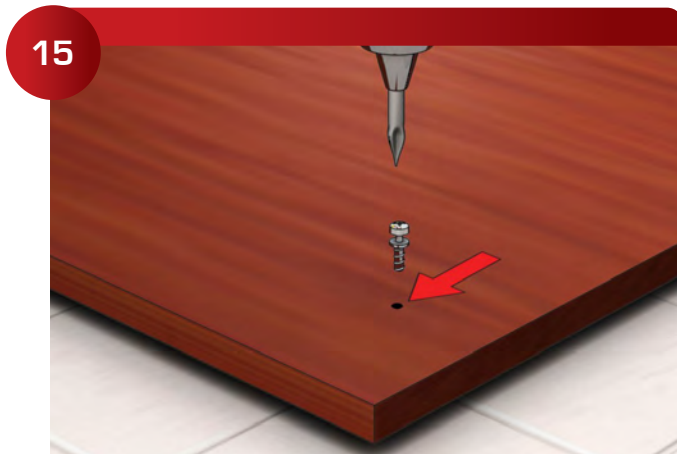Install cushion, you should hear each Galaxy snap into place.

9

Completed cushion can be stored flat with no hardware projecting.

13

Remove placement tape and pin.

14

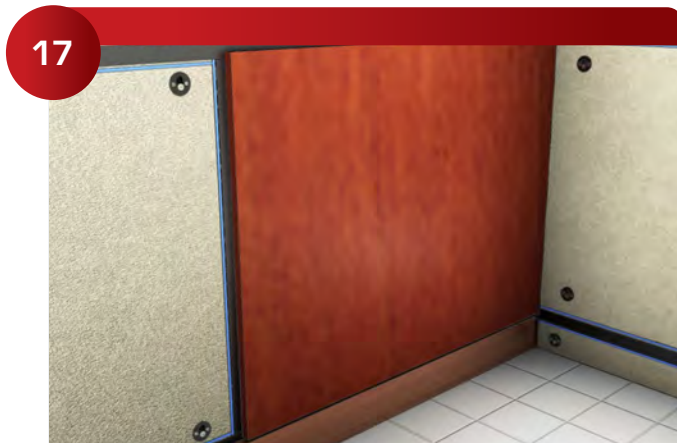
Pre-drill the back side of the panel at each location mark.
(**Useful Accessories:** Star Hanger sells the 913 5MM Drill Bit with a Stop).

15
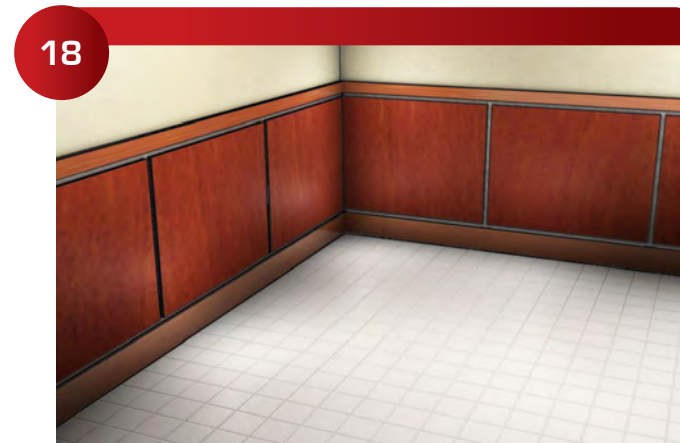

Insert the provided 3/16" Mount Screw.
(**Tip:** For additional screws look up Item 240.)

16

Lift the panel into place about 1/2" above marks, push in and down.

17
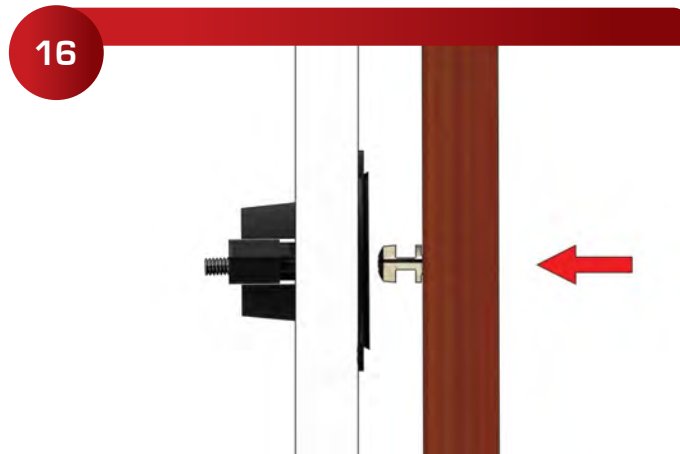
Pull down firmly to lock the panels into their final position.

18

Finished product.

The 400 NZ Clip was tested using a Senco SLS18MG Staple gun with a 18 Gauge, 1/4" Crown x 5/8" Staple.

**We recommend that the gun was modified in 3 ways:**

A. Grind a small V shape in the Safety Pin to help align the nailer with the clip slots.

B. Reduce the air pressure down to 70 PSI.

C. The pressure reduction hold the gun's staple driver from pulling all the way up, it helps the feed to to grind 1/32" off the steel Staple Driver.

Small V shape in the Safety Pin	Reduce the air pressure down to 70 PSI

1
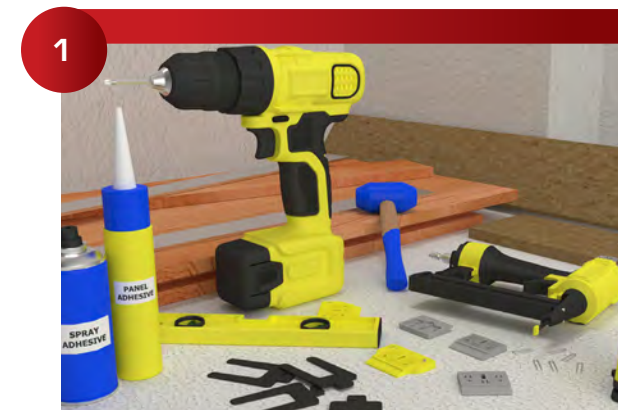
Required Tools; 400 NZ Clip, 410 Alignment Clips, ¼ Pneumatic Staple Gun, Panel Adjuster, 1/32" plastic laminate, Spray Contact Cement, Panel Adhesive

2

Determine greatest projection (bump out in wall) to determine face of panels on a floor layout. (Working Plane)

3

Field verify all required site dimensions based on face of panels for both field horizontal & vertical lines, revise shop drawing for production.

4

Preassemble the vertical furring corners (if any) and install them to use as a guide for the horizontal furring.

5

Using string lines or a laser, shim, glue, and screw all horizontal furring into place.

6

Transfer the revised shop drawing panel sizes to the face of the furring.

7

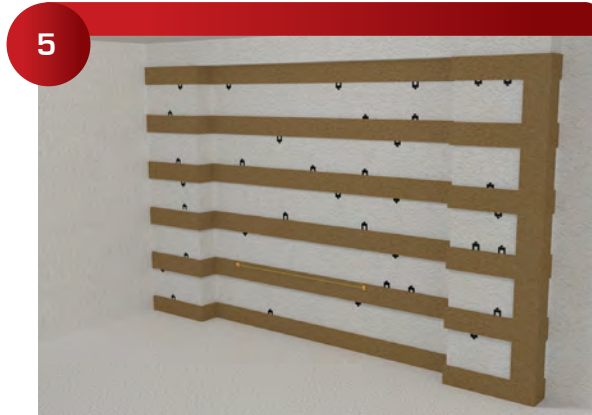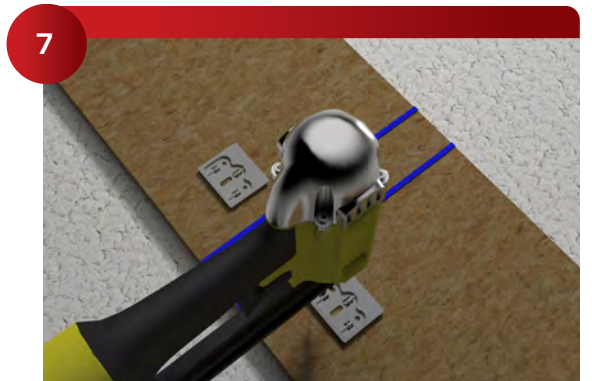Screw or Staple the 400 NZ Clips at all corners and 24" on center or as needed.

8

Place 410 NZ Alignment Clips on each individual panel's set of clips (**Tip:** The 410 NZ Alignment Clips are reusable.).

9

Place reveal spacers between panels to locate the exact panel positions. Carefully push the panel into the 410 NZ Alignment Clips to mark the panel clip position.

10

Screw or staple the 400 NZ Clips in the position indicated by the Alignment Clips. (**Tip:** You have the option of using only the center slotted screw if you need the clips to be adjustable.)
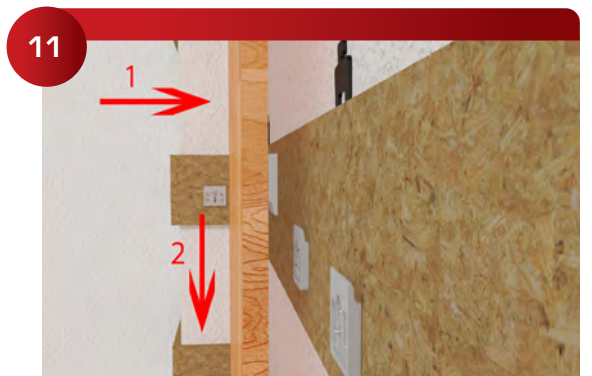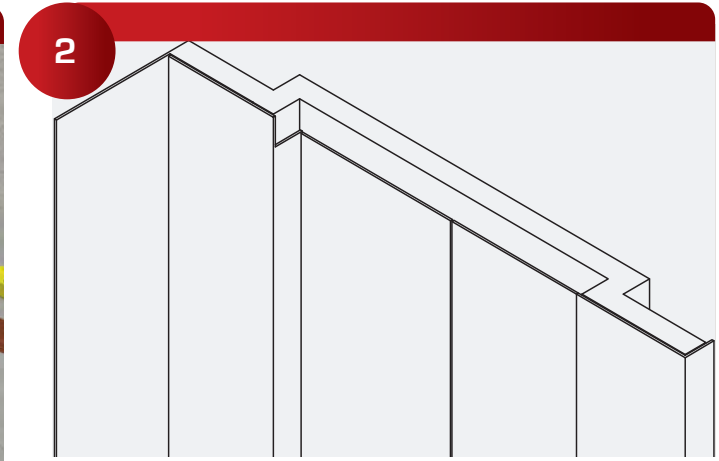
11

1

2

Set the panels by firmly pulling them down until they bottom out on the clips. (**Tip:** It is good practice to use a dab of silicone on the center clips to prevent movement.)
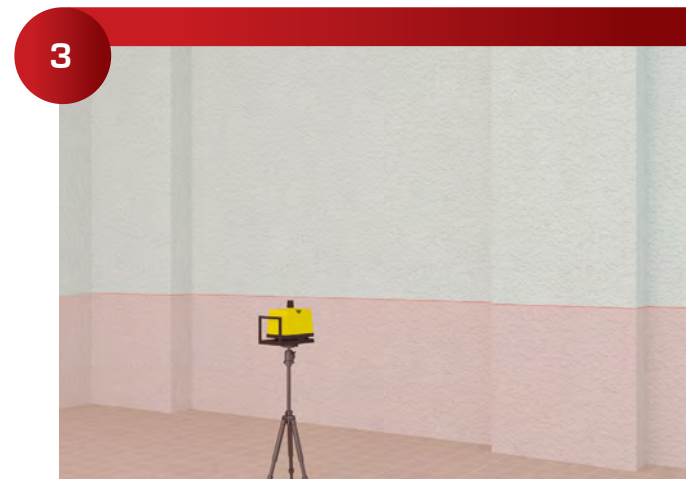
12
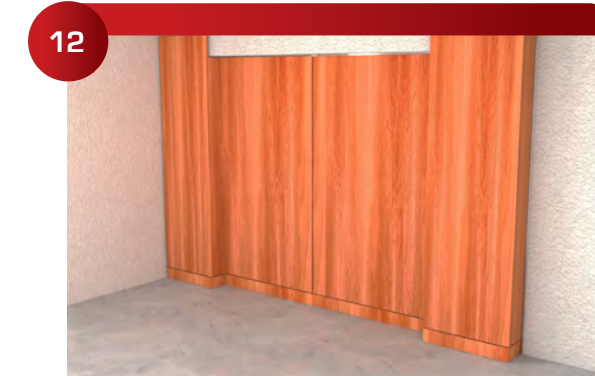
Completed Panel System.
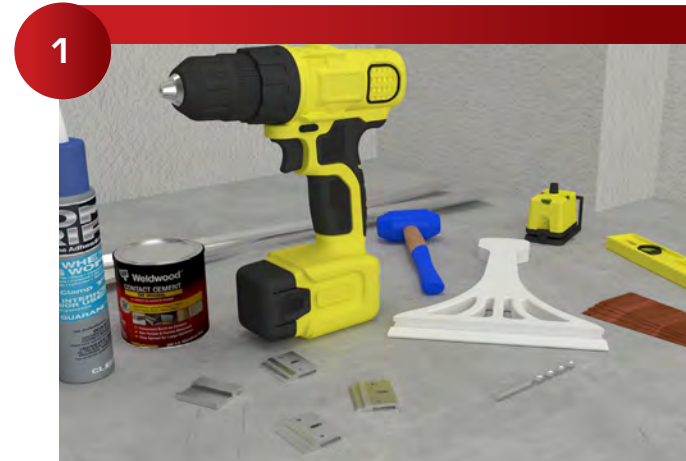
1

420 S Clip, 430 S Clip Bars, 421 S Alignment Clips, 920 Panel Adjuster

2

Review project site conditions and plans, you need to know what you are laying out and identify any deviations from the plans.

3

Find high point of floor, check to see if the project has a pre-set horizontal benchmark. If not set your own horizontal benchmark.

4
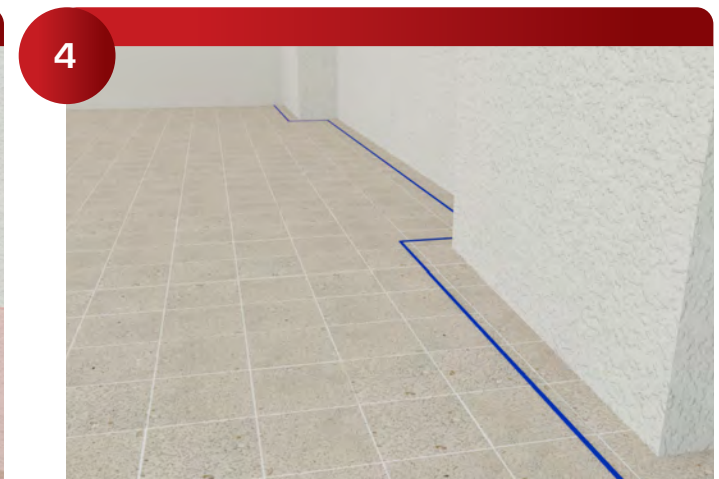
Determine greatest projection (bump out in wall). This will determine the face of the panels.If there is a large bump, discuss the layout options with the GC. There are generally two options, shim out your 430 S Clip Bars or have the projection corrected.

5

If the project is simple, shimming out the 430 S Clip Bars works well. If the panels have other constraints, you need to be careful. There are many possible conflicts when shimming bars out large areas, panel alignments, widths of door jambs, electrical build outs, held dimension are just a few examples.

6

Layout a story pole that includes the benchmark, top and bottom of the Bars and Clips, they are 3" apart. The bars should be about 24" apart. Proceed around the space marking at the bottom of the clips at every stud.

7

Starting in the corners shim the bars out to the greatest projection per wall, then use a string line to straighten each bar between the corners. The finished bars should be level and straight.

8

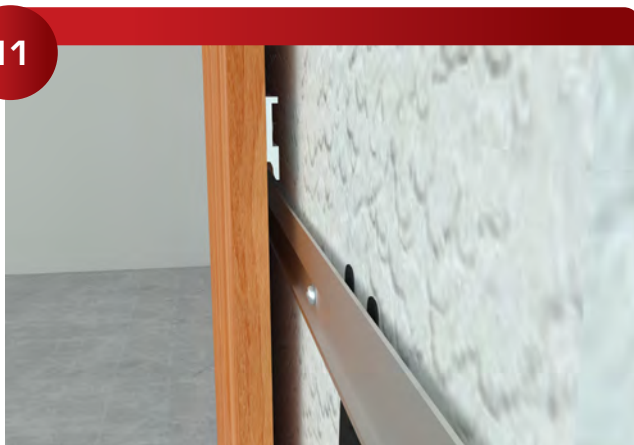Place your panel upside down on a carpeted surface.

9

Use your story pole mark the top of the 400 S Clips and accurately screw them into place.
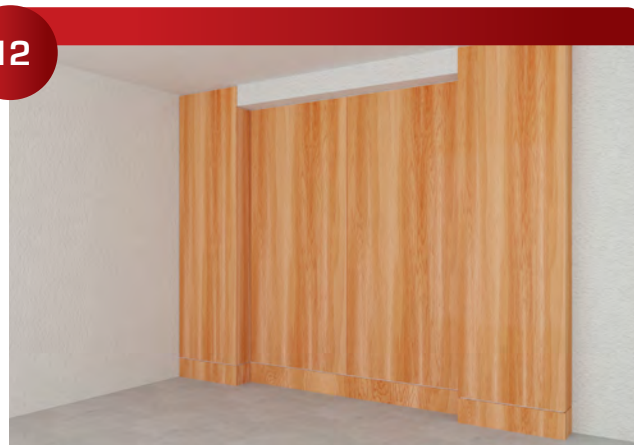
10

The reveals strips are generally used with bars, either a spline or a dado at back of the panels or both work well. A dab of silicone on the center clip helps hold the panel in place.

11

Lift the panel into place about 1/2" above marks, push in and down firmly to lock the panels into their final position.

12

Install the splines as needed

1
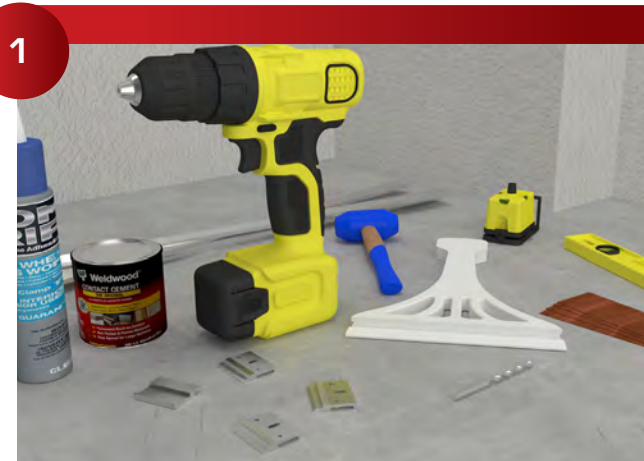
Required Tools; 420 S Clip, 421 S Alignment Clips, Panel Adjuster, 1/32" plastic laminate, Spray Contact Cement, Panel Adhesive.

2
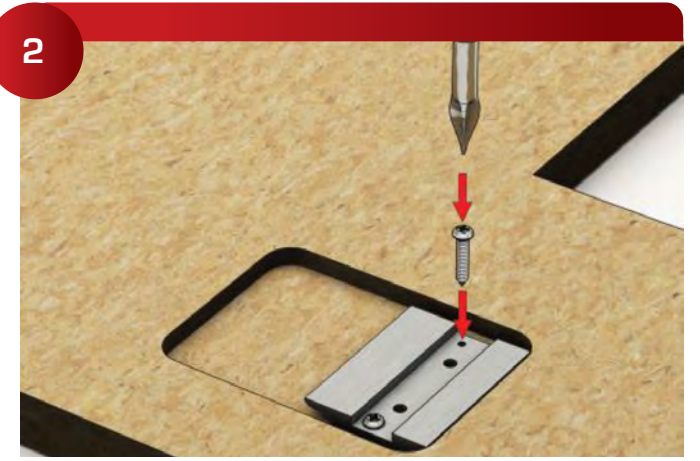
When using pre-engineered, field verified, CNC cut furring, the panel clips are pushed firmly to the bottom of the clip pocket.

3
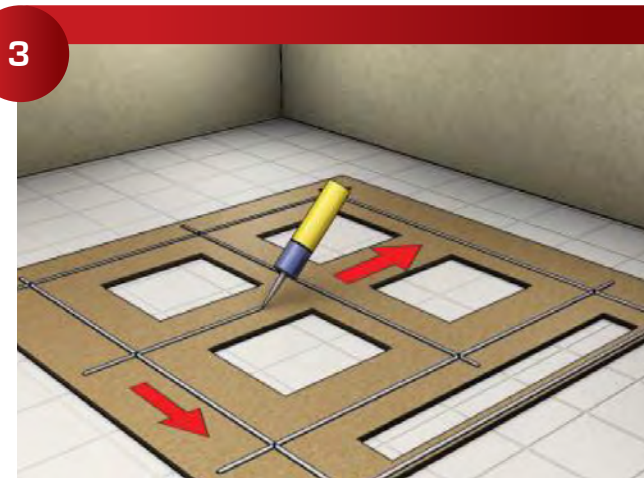
Full size furring sections can be pre-glued and shimmed into place.

4

Install the corner furring sections to the field control lines.

5
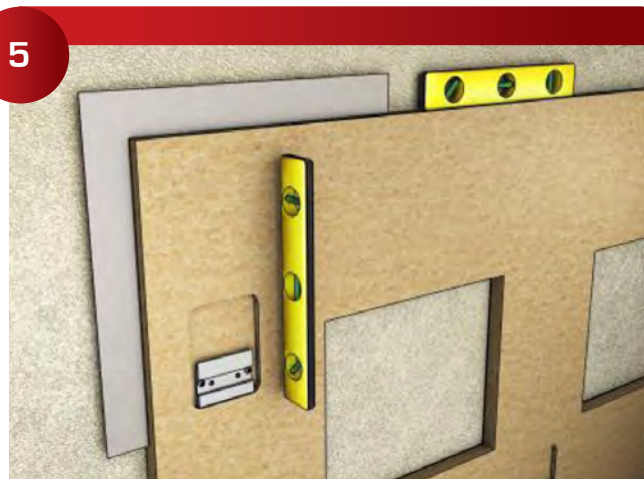
Level and square the corner furring sections with shims and screws as required.

6

Use a string line to straighten the pre-cut furring. (Tip: If you have per-glued the furring panels, you need to work quickly.)

7

The finished furring should be level and straight.

8

The position of the reveals can be marked with the CNC in the shop.

9
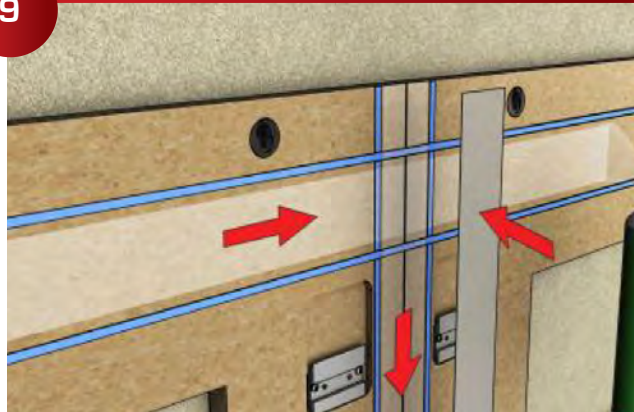
Use contact adhesive to install 3/32" thick pre-cut reveal strips. (Tip: Be careful to leave your layout lines showing.)

10
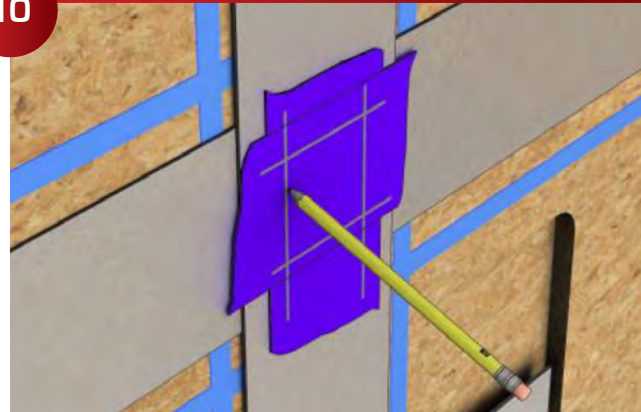
Place blue tape over the intersections of the reveals and mark the exact position of the panel, using existing layout lines.

11

When using pre-engineered furring your panel clips should fit 2" down from the top and corners.

12

(**Useful Assesories:** 421 S Alignment Clip is available to help with any off positioning.)

13
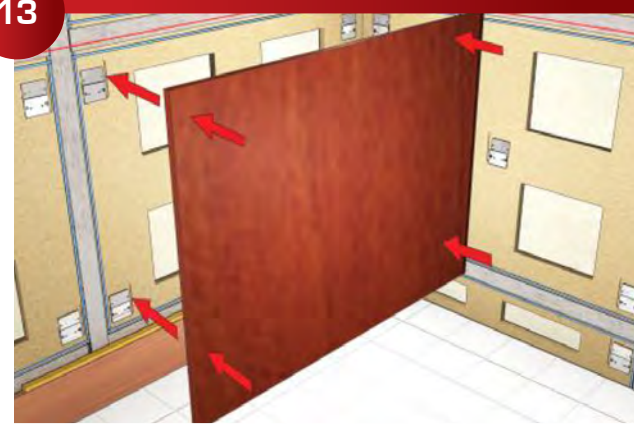
Carefully position your panel over the 421 S Alignment Clips and push them firmly enough to leave a location mark for the mounting screws.

14
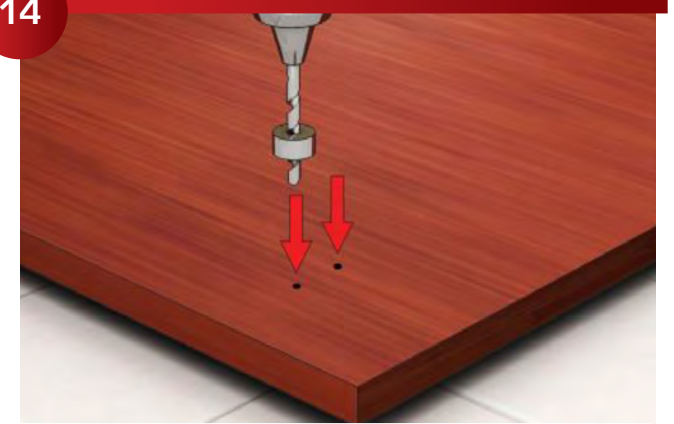
Pre-drill with a 1/16" drill on the back side of the panel at each location mark.

15

Insert supplied screws.

16

Lift the panel into place about 1/2" above marks, push in and down firmly to lock the panels into their final position.

17

Finished paneled wall.

510 CEILING CLIP, PAIR ALUMINUM, INSTALLATION GUIDE

1 — GET TOOLS READY

Required Tools; 510 Ceiling Clip, 537 Ceiling Clip, Router Template, 915 Router Bit, 1/32" Offset, 920 Panel Adjuster, Laser Level.

2 — INSPECT THE STRUCTURE
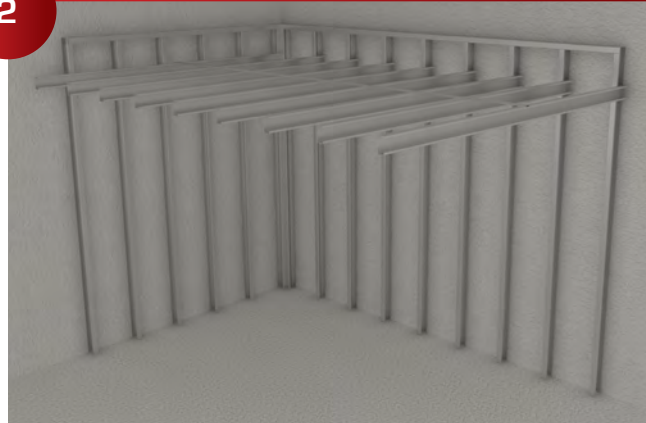
FIRST: Insure that the structure above the sheetrock will support the panels you are planning to install. Our weight holding for screws is based on using 16-gauge steel studs.

3 — LAYOUT

Lay out the perimeter of the panel's layout lines on the floor, to check fit.

4 — FURRING LAYOUT
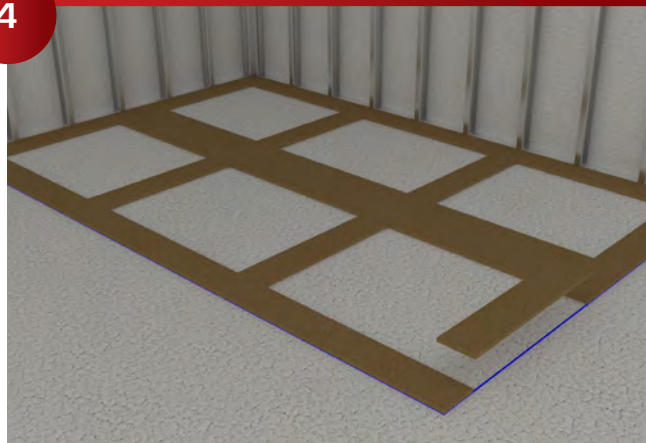
Cut the ¾" plywood furring to fit layout.

5 — INSTALL FURRING ON THE CEILING

Securely install ¾" plywood furring with a string line, level & flat.

6 — CUT CEILING CLIP TEMPLATE

Make a template from ¼" plywood to provide accurate installation of the clips. (**Useful Accessories:** Star Hanger sells the 537 Ceiling Clip Router Template.)
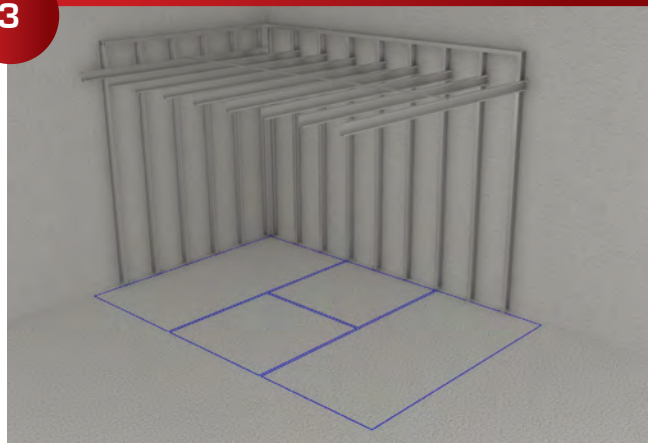
7

Temperately set the ¼" plywood template in the exact location of the panel with a few screws. Install the 3" Ceiling Clip carefully against the back of the template, with 3 screws.

8

Set up flat carpeted work table to work on.

9 — INSTALL TEMPLATE ON THE PANEL

Temperately set the ¼" plywood template panels with a few screws.

10 — INSTALL THE CEILING CLIP
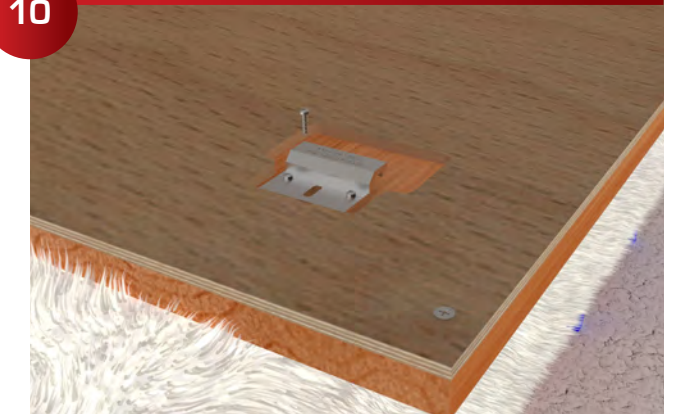
Install the panel 2" Ceiling Clip carefully against the front of the template, with 3 screws.

11 — INSTALLING FIRST PANEL

Install the ceiling panel carefully and make sure each clip has dropped into place.

12 — INSTALLING ALL PANELS

Ceiling panels can be glued with a small spot of silicone to hold reveal tolerances. The panels are now safely in place and still permanently removeable.

511 CEILING CLIP BAR INSTALLATION GUIDE

1 REQUIRED TOOLS

Required Tools; 512 Ceiling Clip, 511 Ceiling Clip Bar, 537 Ceiling Clip Router Template, 915 Router Bit, 1/32" Offset, 920 Panel Adjuster, Laser Level, 12 -24 Self Tapping Screws

2 CHECK STRUCTURE WILL HOLD

FIRST: Insure that the structure above the sheetrock will support the panels you are planning to install. Our weight holding for screws is based on using 16-gauge steel studs.

3 FLOOR TEST LAYOUT

Layout the panels and layout a story pole for the 511 Ceiling Bars locations. The precision of the layout is important.
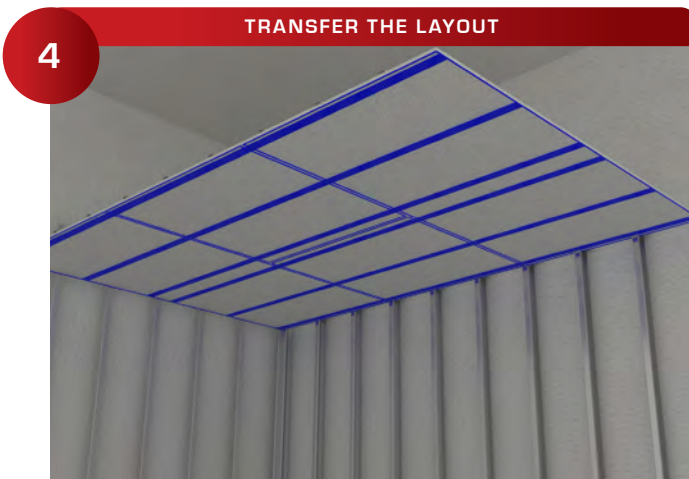
4 TRANSFER THE LAYOUT

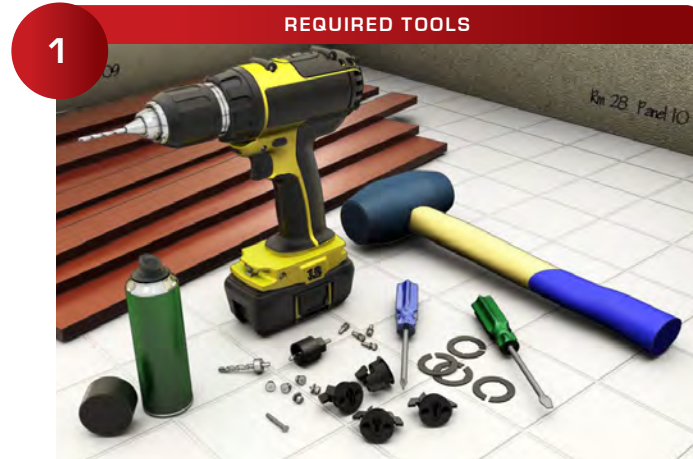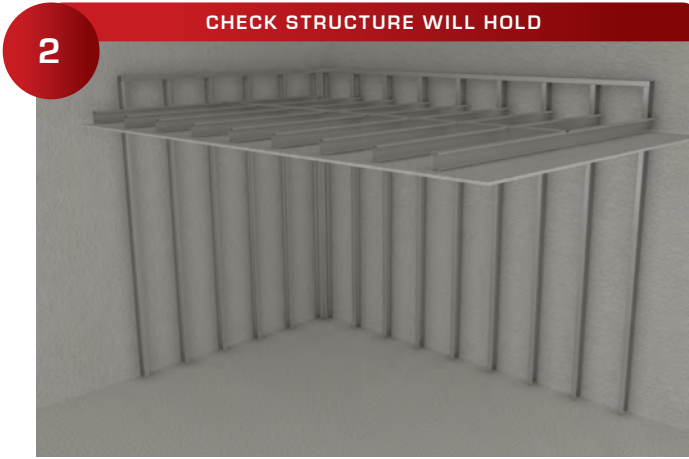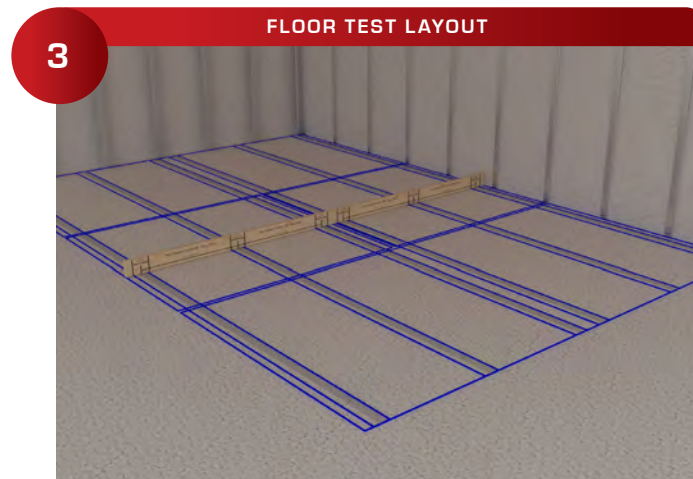Transfer the layout to ceiling and cut the 511 Ceiling Bars to fit layout. (**Tip:** Avoid putting the 512 Ceiling Clips near bar joints.)

5 INSTALL BARS

Install the 511 Ceiling Clip Bars, shim if needed to a plate plane. Use 2 screws at bar joints. (Recommendation: Hilti Self Drilling, Self-Tapping Screws at every stud.)

6 WORK TABLE

Make a flat carpeted work table to work from.

7 LAYOUT CLIPS

Use your story pole to set the 512 Ceiling Clips into place, use 3 screws.

8 INSTALL FIRST PANELS

With a secure platform, lift ceiling panel into position.

9 CHECK EACH PANEL

Install the ceiling panel carefully and make sure each clip has dropped into place.

10 INSTALLING ALL PANELS

The ceiling clip allows for about ¼" of movement. (**Tip:** The ceiling panel can be glued with a small spot of silicone to hold reveal tolerance.)

11 FINISH CEILING PANEL

The panels are now safely in place and still permanently removeable.

630 CLOUD HANGER
INSTALLATION GUIDE

GET TOOLS READY

1

Required Tools; 630 Cloud Hanger, 622 Cloud Hanger, 1/8" Fork Connector & 5 Ft. 1/8" Cable, Select appropriate 600 connector to structure, Laser Level, Vise Grip, Needle Nose Plies, Cable Cutter

2

There are 3 common ceiling structures that the 630 Cloud Hanger can be suspended from, steel beams, concrete and wood. The type of ceiling structurer determines your first steps.

3

Determine the desired location of ceiling panel on the floor. (**Tip:** A template with the cable connection points is helpful.)

4

Use a laser level to transfer the cable connection points to the ceiling structure.
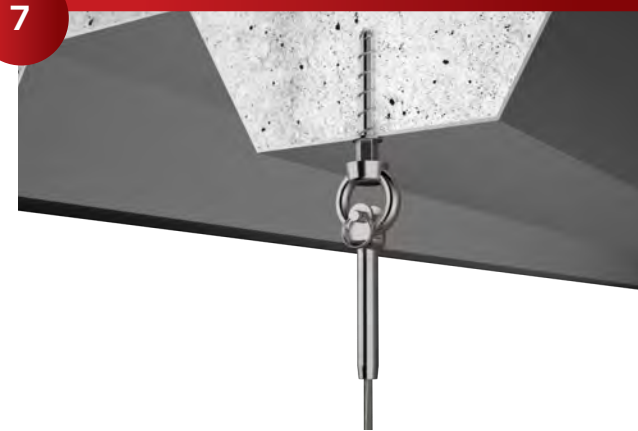
5

Examine the ceiling structure above and determine if the cable connection points are workable. If required, adjust the location of the template to locate solid connection points.

6

When working with exposed steel beams the 610 Cloud Hanger, 1/4"-20, Beam Clamp connected to a 1/4"-20, eye bolt works well.

7

When working with an exposed concrete deck above the 612 Cloud Hanger, 1/4"-20, Screw Anchor & Eye Bolt, works well.

8

When working with wood beams, the 614 Cloud Hanger, Stainless 1/4" Eye Pad can be screwed in place on a thick wood beam with heavy screws.

9

When working with finished sheet rock ceiling and hidden steel beams. A good option is to use a 610 Cloud Hanger, 1/4"-20, Beam Clamp connected to a 1/4"-20 threaded rod left exposed through the finished ceiling. After the ceiling is finished the exposed rod is cut to 1/2" below the ceiling and cleaned up, ready for the 620 Ball Connector. SEE step 12

10

When working with finished sheet rock ceiling and hidden concrete deck. A good option is to use a 612 Cloud Hanger, 1/4"-20, Screw Anchor connected to a threaded rod. SEE Step 12.
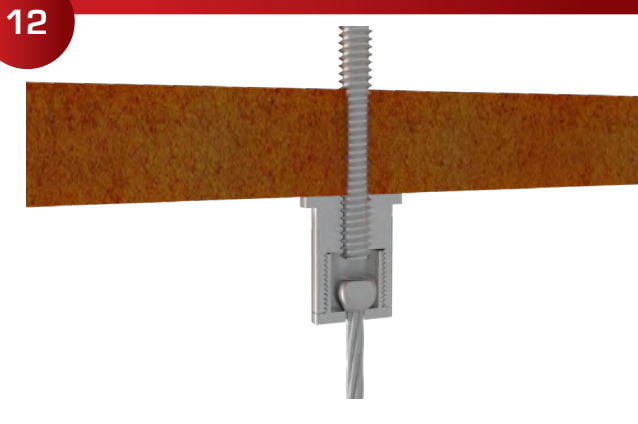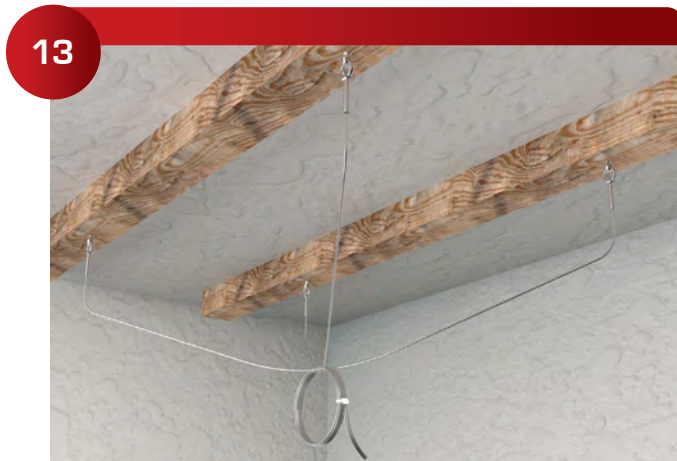
11
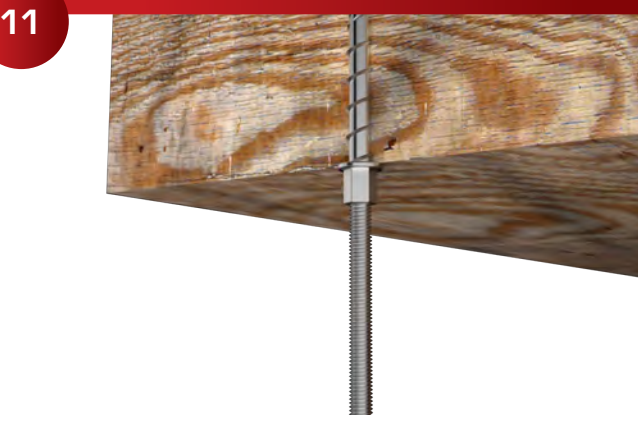
When working with finished sheet rock ceiling and hidden wood beam. A good option is to use a 612 Cloud Hanger, 1/4"-20, Screw Anchor connected to a threaded rod.

12

When finished sheet rock ceiling and an exposed rod, the rod is cut to 1/2" below the ceiling and cleaned up, ready for the 620 Ball Connector.
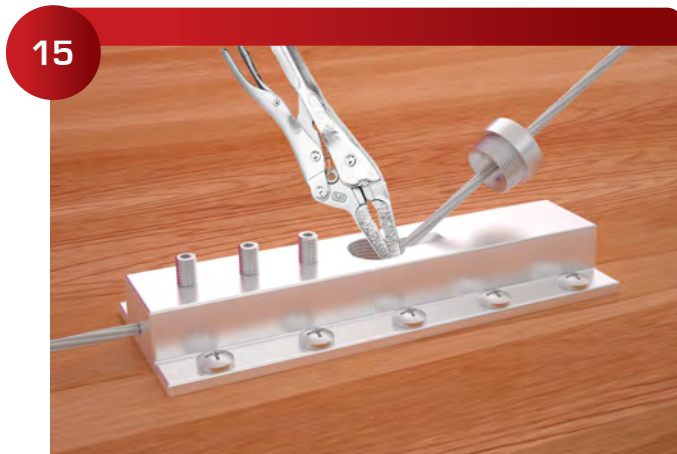
13

When using exposed structural connections & cables. The cables should be dropped about 12" below the final panel level. Tie & loop the cables together to hang them well above the work zone.

14

Install the 630 Cloud Hangers onto the Cloud Panel. (**Note:** Use all 10 of the #8 x 3/4" pan head screws provided.)

15

Carefully lift the panel into position from a secure platform. Install the Cloud Hangers to the cables by loosening the cable locking set screws and unscrewing the friction ring. Feed the cable through horizontal locking hole with needle nose pliers. Clamp the 1/8" cable with needle nose vise.
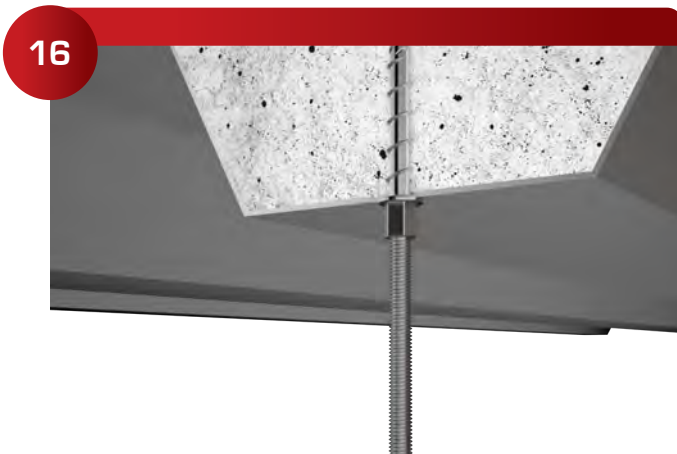
16

Reinstall the friction ring and adjust the cable length until the Cloud Panel is at the correct height. Tighten all 3 Allen Bolts to lock in place. (Tip: Use firm force to lock all 3 Allen Bolts in place, but not enough to cut cable.) Trim excess cable.
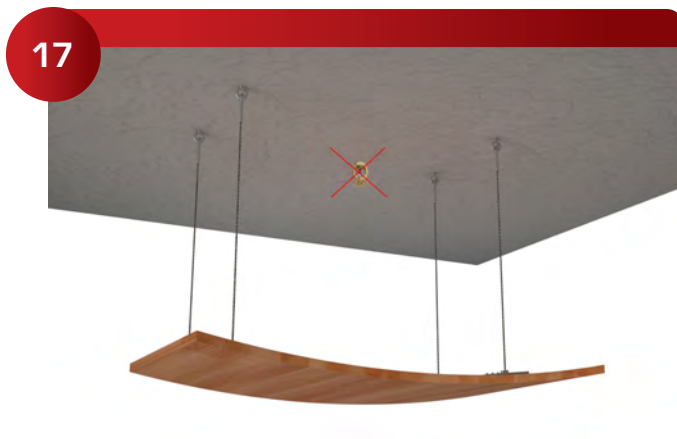
17

Take a good look at the panel from the ground to make sure it does not hit anything. And does not block HVAC Vents, Fire Sprinklers or other critical equipment. (**Note:** A fixed cable connection should not be used if the panel will be constantly subject to sway or noticeable movement caused by HVAC vents, fans, ect...)
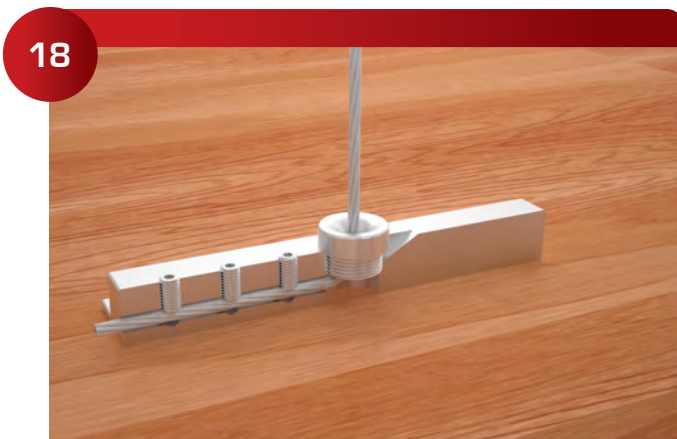
18

Cut of cable off flush with the end of the Cloud Hangar. The 1/8" stainless steel cable is difficult to cut, use a large pair of wire cutters or a small bolt cutter.

19
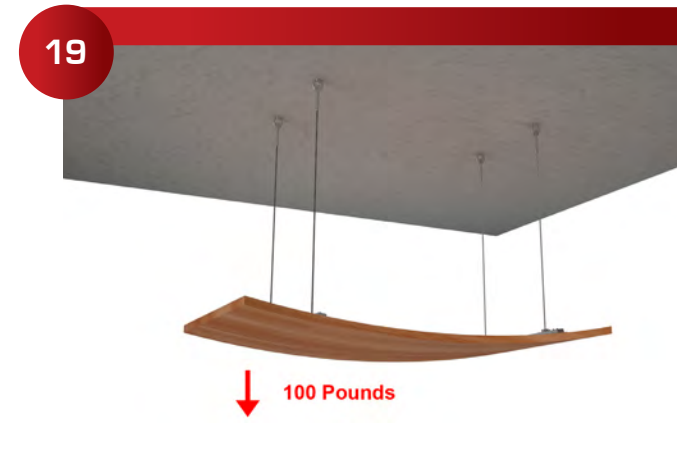
100 Pounds

While standing solidly on the ladder, pull down firmly on both ends of the panel. If properly connected, the ends should show no signs movement of failure with 100 pounds of added force.

20

Finished panels

MOVEMENT DISCLAIMER:

630 Cloud Hanger is a fixed cable connection; therefore, the cable must bend if the panel is subject to swaying. This bending will cause metal fatigue. 630 Cloud Hanger has been tested to 1,000,000 sway cycles, at 10 degrees angle, holding 100 pounds. A fixed cable connection should not be used if the panel will be constantly subject to sway or noticeable movement.
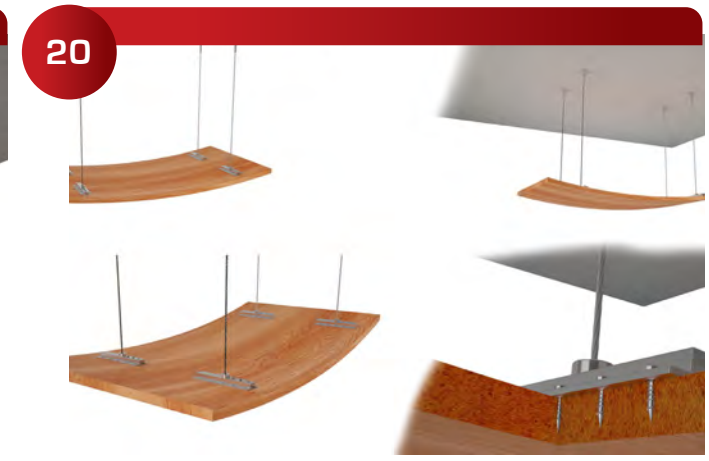
You should consider both weight and long-term stability of the panel. If the panel will be susceptible to warp or bowing, you may want to add more cables.

750 TAPERED SHIM,
INSTALLATION GUIDE

7

Using a 3rd ¾" thick block, work down the line, one stud at a time to level, shim, glue and screw the furring into permanently into place.

GET TOOLS READY

1

Required Tools: 750 Tapered Shim, Panel Adhesive, Drill, Screws

2

750 Tapered Shims can be used for any item that needs variable spacers. They are especially useful for shimming furring.

3

Determine greatest projection (bump out in wall). This will determine the face of your furring and panels. It is important to know exactly where you want your face of furring before you start.

4

After laying out your furring horizontally, start the installation of the furring systems by nailing the furring straight into position, without panel adhesive. This allows the furring to be adjusted in and out.
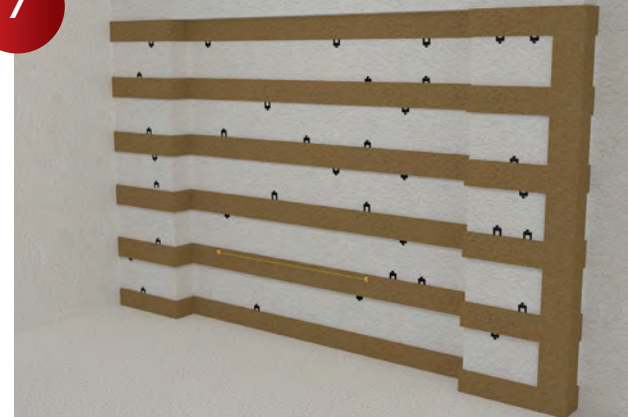
5

Use a level, shims and glue to screw and lock the far left and right sides of the furring into place. This provides level work surfaces to straighten the middle of the furring.

6
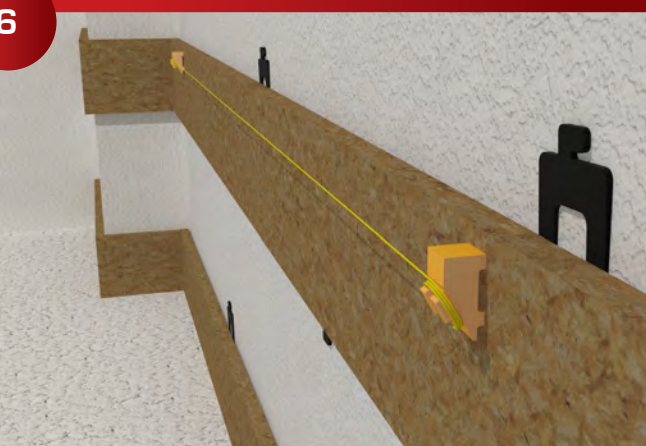
Place a ¾" thick blocks on the far left and right sides of the furring that are fixed and leveled. Pull a tight string line between the blocks.
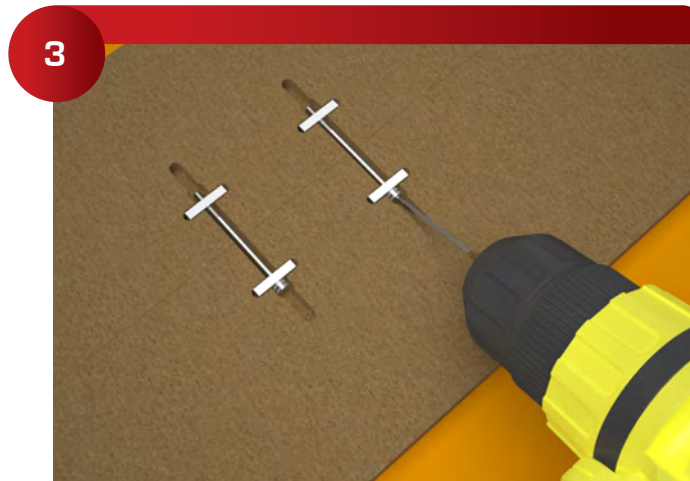
760 COUNTERTOP BOLT
INSTALLATION GUIDE

GET TOOLS READY

1

Required Tools: 760 Countertop Bolt, 765 Ball End Allen Wrench, 770 Countertop Router Template, 915 Router Bit, 3/32 Offset, Small Battery-Operated Drill, Silicone Adhesive, Dead Blow Hammer, Denatured Alcohol Spray Bottle.

2

The 760 Countertop Bolt works very well with the 765 Ball End Allen Wrench.

3

A 765 Ball End Allen Wrench and a small battery operated drill can be used to tighten the bolt in a second. (**Tip:** Use the lowest torque setting on the drill.)

4

(**Tip:** The 760 Countertop Bolt can also be tightened with a standard socket wrench and fits into a standard ball joint pocket.)into a standard ball joint pocket.

5

(**Useful Accessories:** Star Hanger also provides the 770 Countertop Bolt, Router Template. This template is a 3/8" thick phenolic resin made to be used with our 915 Router Bit, 3/32 Offset.)

6
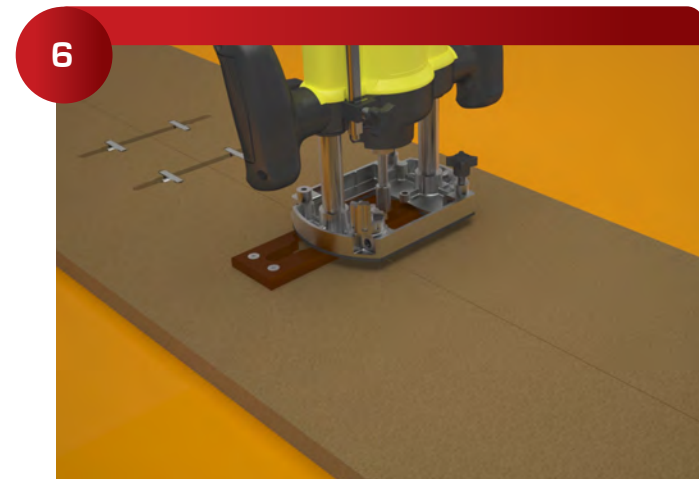
The template is screwed to the underside of the countertop. A plunge cut ¼" Router is used with any standard ¼" Shaft, ½" Ball Bearing with a 3/32 Offset.

7

To join the countertops, apply a generous amount of silicone or other waterproof glue to ensure the seam is waterproof and never moves.
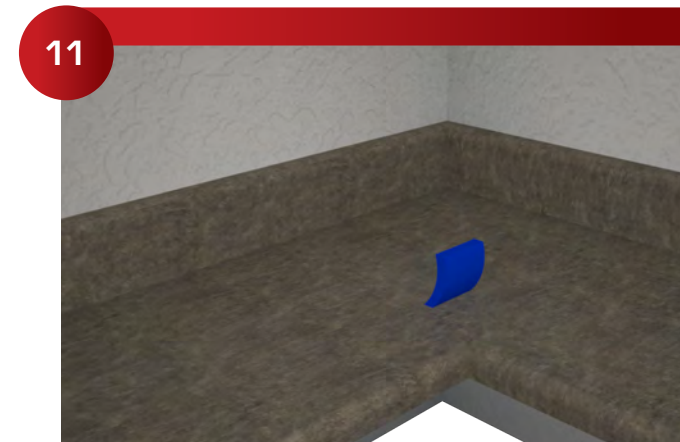
8

Use a drill to lightly slug up the bolts.

9

Use a wood block to hammer the countertop flush prior to the final tightening.
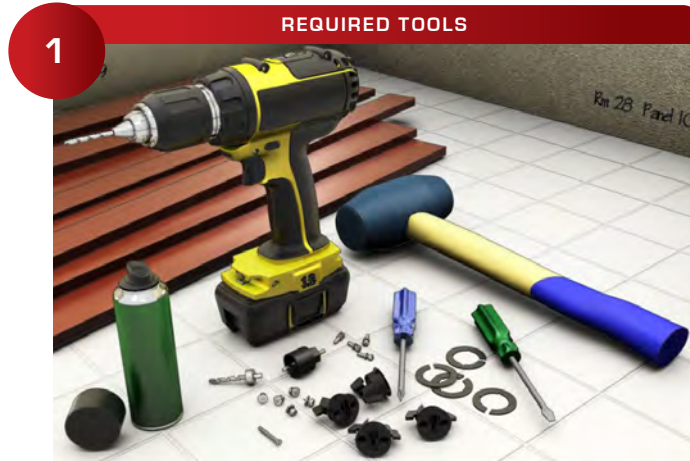
10

(**Tip:** Be careful to not over-tighten the bolt, particle board will break at approximately 500 pounds of tension. These are Grade 5 bolts rated for 2000lbs.)

11

Use mineral spirits and a clean rag to clean out any silicone that oozes from the joint.

12

Finished Countertop

740 BACKSPLASH DOWEL & 745 DOWEL JIG, INSTALLATION GUIDE

1 — REQUIRED TOOLS

Required Tools; Backsplash Dowels, Silicone, Backsplash Drill Jig, Dead Blow Hammer, Panel Adjuster, Denatured Alcohol Spray Bottle, Soft Plastic Chalk Scraper.

2 — FIND LOW SPOTS

After the countertop is securely installed, find low points and the recessed areas of the drywall of the countertop with a level or straight edge.
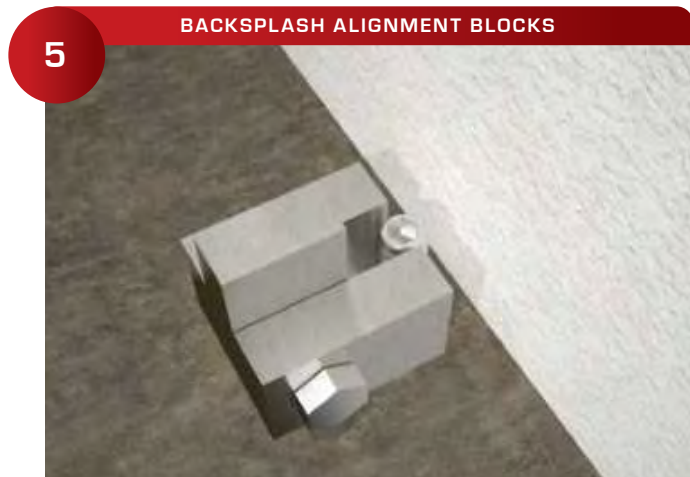
3 — DRILL REAR DOWEL HOLES

Use the Backsplash Drill Jig to drill 5/16" dowel holes in the low and recessed areas of the wall and countertop, about 36" OC should work.

4 — DRILL FRONT DOWEL HOLES

Drill dowel holes about 4" from the front end of the backsplash.

5 — BACKSPLASH ALIGNMENT BLOCKS

The Backsplash Alignment Blocks are used to hold backsplash into position and as a dowel location gauge for the backsplash.
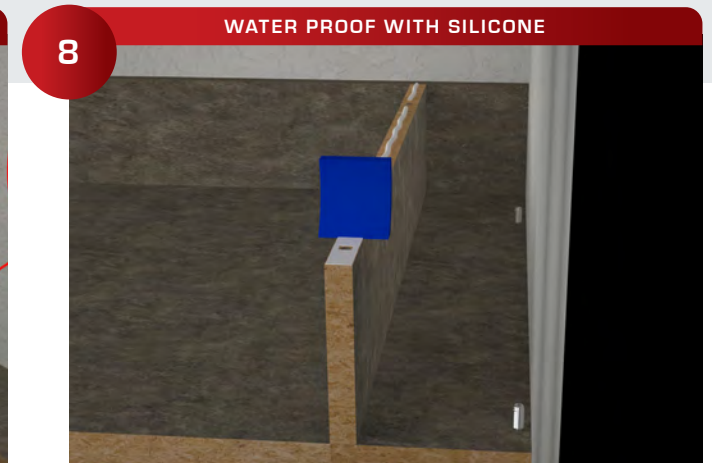
6 — MARK BACKSPLASH

Dry fit the backsplash into position and make the pencil marks on both sides of the dowel to the backsplash.

7 — DRILL BACKSPLASH DOWEL HOLES

Using the pencil marks as your guide for the Backsplash Drill Jig, drill the holes for the Dowels.

8 — WATER PROOF WITH SILICONE

Place a thick bead of silicone on the base of backsplash. The goal is to have ooze 100% of the length of the counter to splash joint. This completely seals the backsplash from water.

9 — MOUNT WITH SILICONE

Place a thick bead of silicone on the wall above. The goal is not to let the silicone ooze over on the wall, most wall paint will not stick to silicone adhesive.

10 — LOCK INTO DOWELS

Force the backsplash down onto the dowels and into the bed of silicone. Lock into place with a dead blow hammer or clean block. (**Useful Assesories:** The 920 Panel Adjuster works well here.)
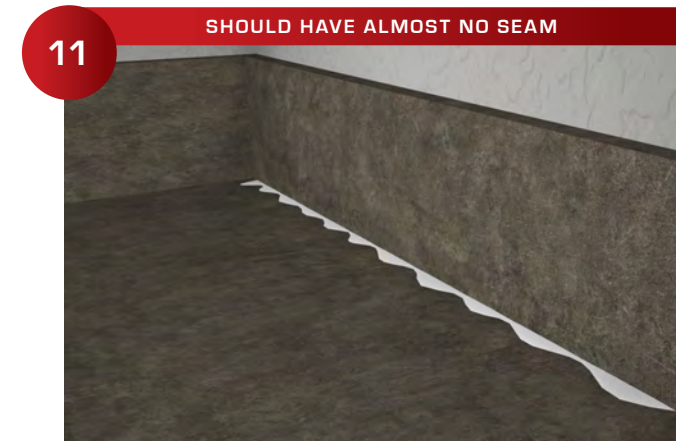
11 — SHOULD HAVE ALMOST NO SEAM

At this point your Backslash should have almost no seam and be securely locked into place with gap between the backsplash and the countertop 100% filled.

12 — SPRAY DENATURED ALCOHOL

(**Tip:** Spray all the excess oozed silicone with Denatured Alcohol to stop it from sticking to the counter top during clean up.)
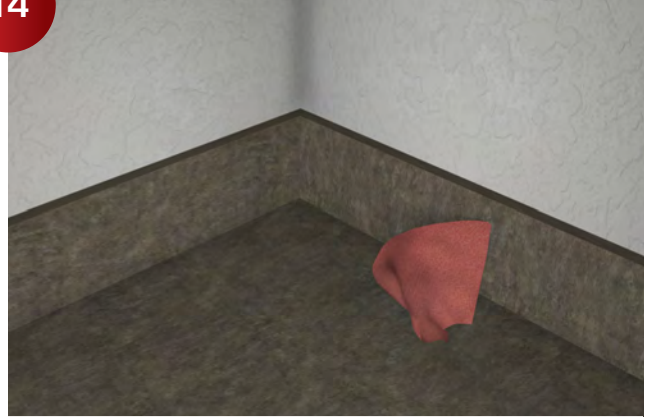
REMOVE EXCESS SILICONE

Using a soft plastic chalk scraper, scrape off all the excess silicone. This should leave a fine, clear, water resistance line of caulk.

14

CLEAN UP

Wipe down any silicone residue with a clean rag and denatured alcohol.

15

CAULK SPLASH

Caulk splash to wall with paintable clear caulk.

16

DONE

Finished, mechanically fastened, water resistance Backsplash (per AWI Premium).