

Ready To Go

SimpleSpec 200.50-Duet™

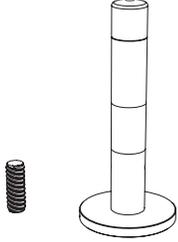
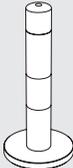
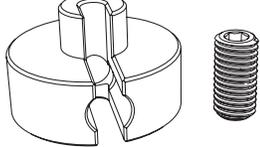
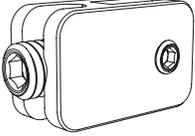
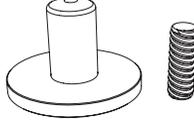
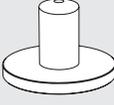
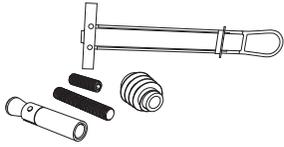
Solution Document



For more information, please visit 3-form.com or call 800.726.0126

APRIL 2018 | MAN-RTG-200-50 | REV 001 © 2018 3form, Inc. All rights reserved.

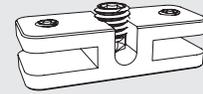
Contents Overview

<p>(×1)</p>  <p>1/8" Duet Panel</p>	<p>(×2)</p>  <p>Cable Tensioner with Cover Plate KIT Stainless Steel: 3-15-1636-K Black Oxide: 3-15-2005-K</p>	<p>=</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>Cable Tensioner with Cover Plate KIT SS: 3-15-1636 BO: 3-15-2005</p> </div> <p>+</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>M8 Thread Rod, 25mm 3-15-1754</p> </div>
<p>(×2)</p>  <p>3mm Cable Stainless Steel: 3-15-0723 Black Oxide: 3-15-2006</p>	<p>(×2)</p>  <p>1" Shelf Holder KIT Stainless Steel: 3-15-0754-K Black Oxide: 3-15-2018</p>	<p>=</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>1" Shelf Holder SS: 3-15-0754 BO: 3-15-2018</p> </div> <p>+</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>M6 × 12mm Set Screw 3-15-0776</p> </div>
<p>(×6)</p>  <p>Single Panel Connector for Duet Stainless Steel: 3-15-1991 Black Oxide: 3-15-1993</p>	<p>(×2)</p>  <p>Cable Coupler KIT Stainless Steel: 3-15-1639-K Black Oxide: 3-15-2004-K</p>	<p>=</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>Cable Coupler with Cover Plate SS: 3-15-1639 BO: 3-15-2004</p> </div> <p>+</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>M8 Thread Rod, 25mm 3-15-1754</p> </div>
<p>(×2)</p>  <p>Suspend Anchoring KIT 3-15-7000-K</p>	<p>=</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>M8 Toggle Bolt Anchor 3-15-0734</p> </div> <p>+</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>M8 Threaded Wood Insert 3-15-0791</p> </div> <p>+</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>M8 Concrete Anchor 3-15-3011A</p> </div> <p>+</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>M8 Threaded Rod, 50mm 3-15-3032A</p> </div> <p>+</p> <div style="border: 1px solid gray; padding: 5px;">  <p>(×2)</p> <p>M8 Thread Rod, 25mm 3-15-1754</p> </div>	

Contents Overview cont...

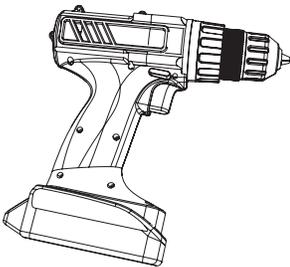
For Each Additional Panel

- (×1) Duet Panel
- (×1) 3mm Cable (SS: 3-15-0723; BO: 3-15-2006)
- (×1) Cable Coupler KIT (SS: 3-15-1639-K; BO: 3-15-2004-K)
- (×1) Cable Tensioner with Cover Plate KIT (SS: 3-15-1636-K; BO: 3-15-2005-K)
- (×2) Suspend Anchoring KIT 3-15-7000-K
- (×1) 1" Shelf Holder KIT (SS: 3-15-0754-K; BO: 3-15-2018)



- (×3) Double Panel Connector for Duet
Stainless Steel: 3-15-1992
Black Oxide: 3-15-1994

Required Tools



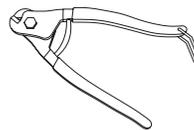
Drill



Concrete or
Wood Bit



Metric Allen
Wrenches



Cable Cutters



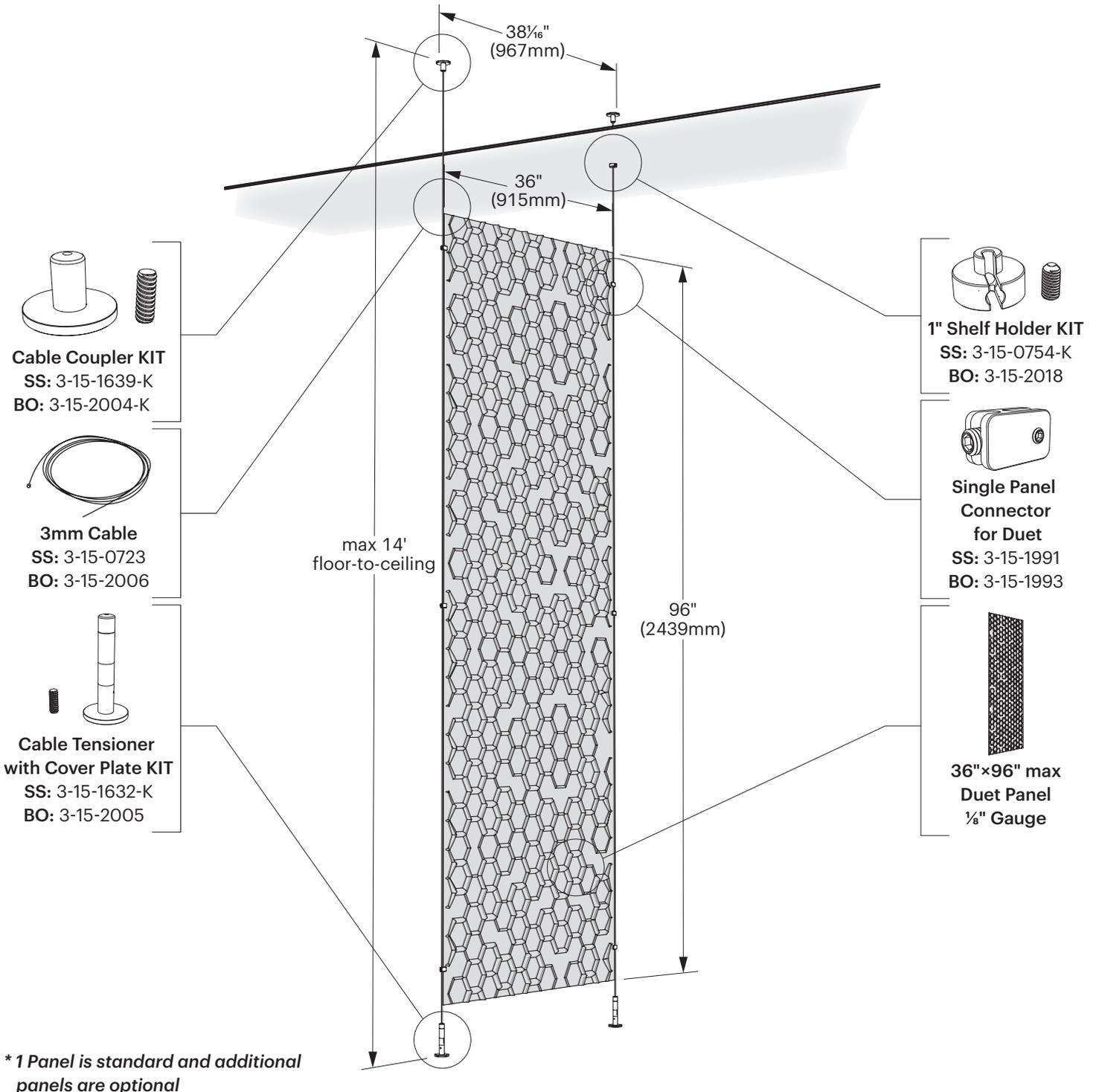
Super Glue



Plumb-bob

Overview

The 200.50 Duet partition is a suspended side-fastening floor-to-ceiling partition for wood and concrete with smooth connectors and a Drop Ceiling cover. This elegant solution would be a great addition to any space.

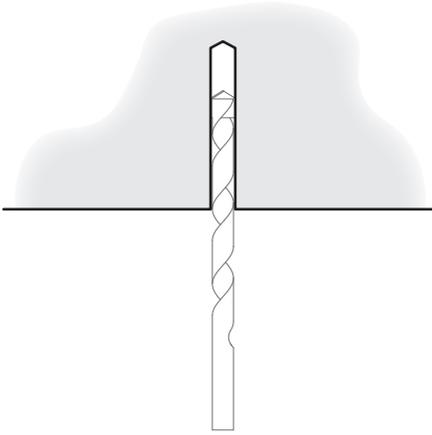


Installation

1 Install Ceiling Anchor for the First Cable Assembly

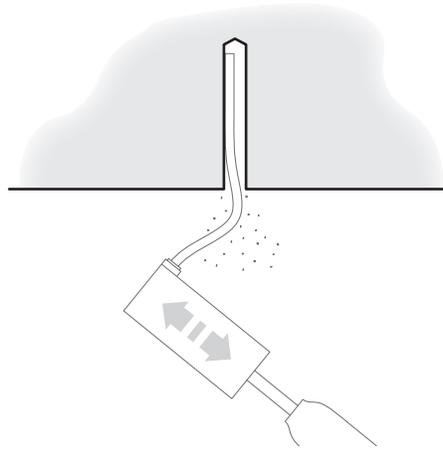
**If anchoring in concrete follow Steps 1a-f, if anchoring in drywall follow Steps 1g-l, if anchoring in wood follow Steps 1m-n.*

a Concrete Installation



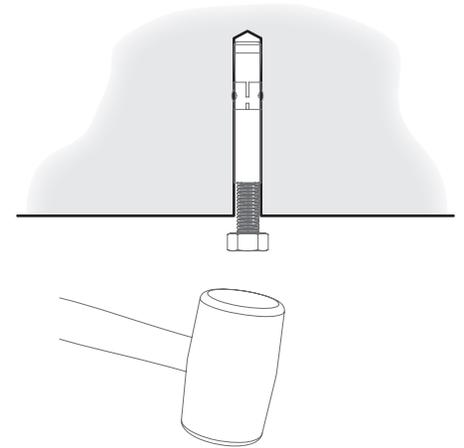
Drill Ø10mm hole, minimum 65mm deep.

b



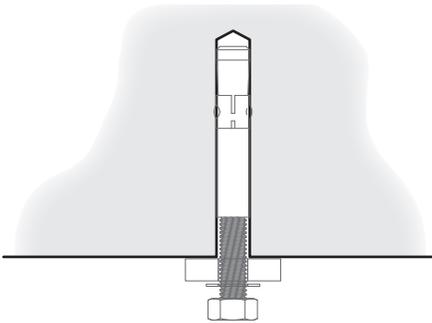
Remove drilling debris with a blowout bulb or with compressed air.

c



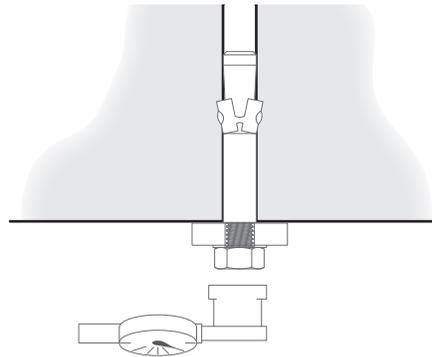
With screw in anchor (3-15-3011A), use a hammer to insert anchor.

d



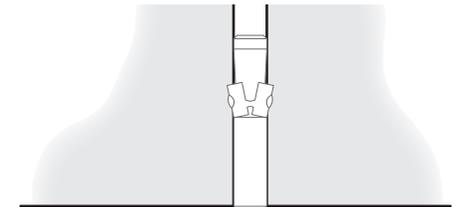
Place a washer under the screw head.

e



Torque the screw to 15 Nm.

f

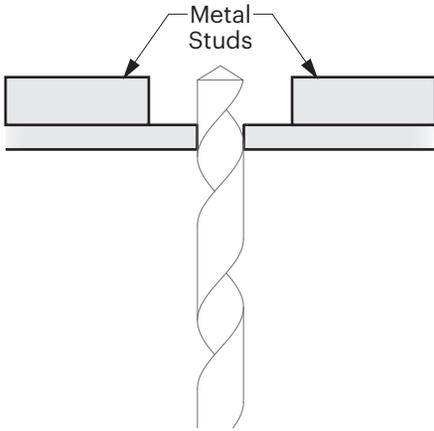


Remove screw.

Installation

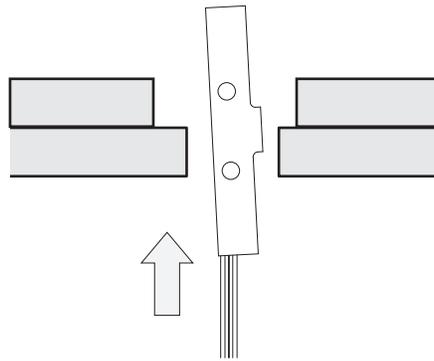
1 Install Ceiling Anchor for the First Cable Assembly *cont...*

g Hollow Substrate Installation



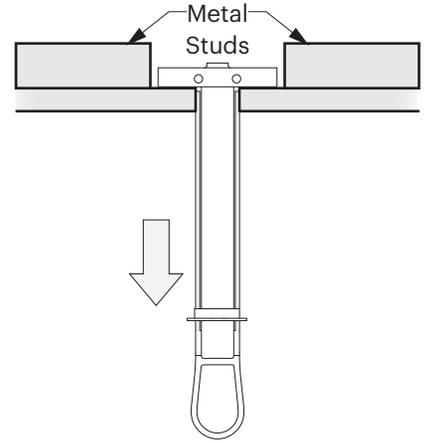
Drill $\text{\O} \frac{3}{4}$ " (19mm) hole. Minimum clearance behind wall = $1 \frac{1}{8}$ " (48mm)

h



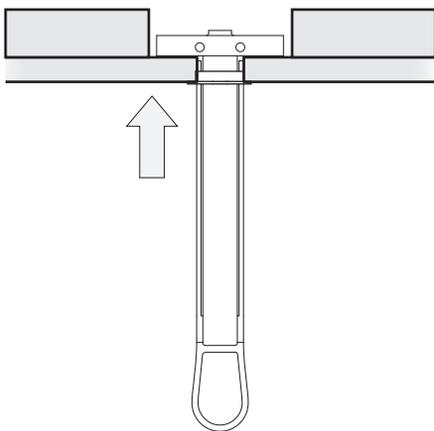
Position the metal channel parallel with the plastic legs. Insert the metal channel through the drilled hole into the wall cavity.

i



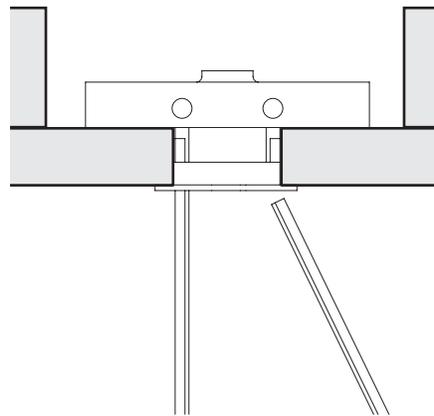
Pull the metal channel firmly against the inner wall cavity by tugging the plastic pull ring.

j



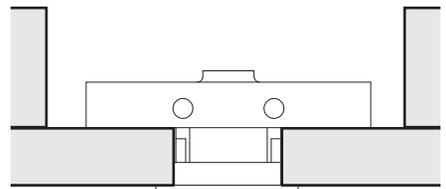
Slide the plastic cap forward along the legs until it is seated flush to the work surface.

k



Snap the plastic legs off flush at the plastic cap by pushing outward.

l

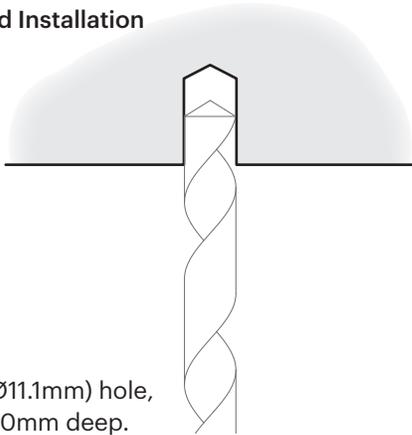


Note: Maximum torque on screw or rod is 5 ft-lb.

Installation

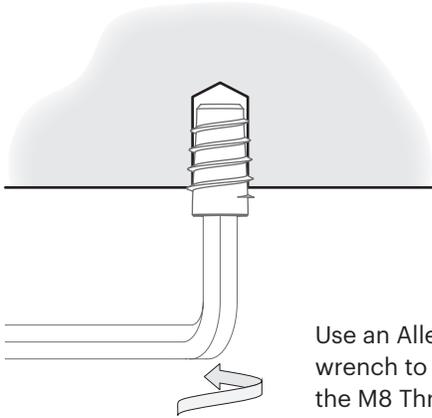
1 Install Ceiling Anchor for the First Cable Assembly *cont...*

m Wood Installation



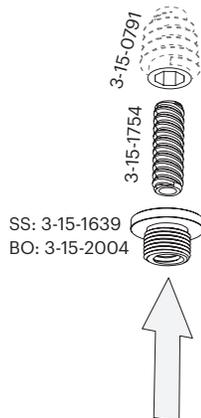
Drill $\text{\O} \frac{1}{16}$ " ($\text{\O} 11.1\text{mm}$) hole, minimum 20mm deep.

n



Use an Allen wrench to install the M8 Threaded Insert (3-15-0791).

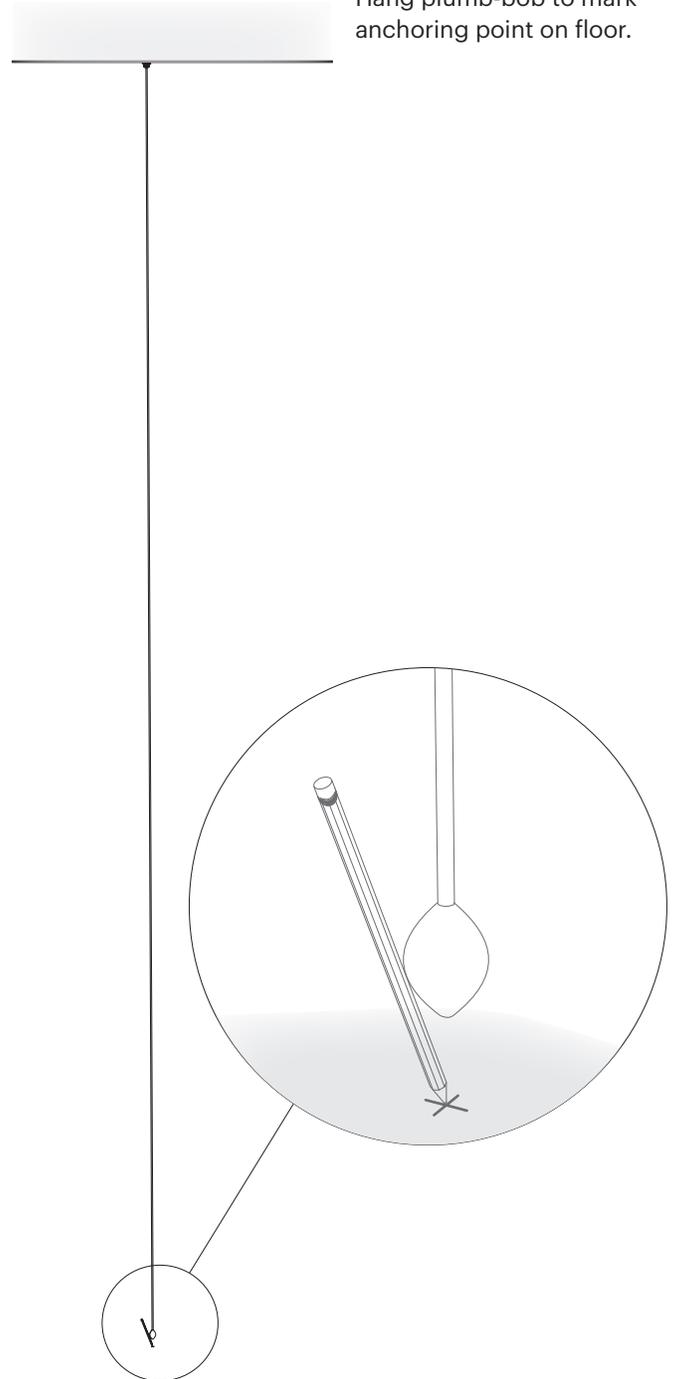
o



2 Install Floor Anchor for the First Cable Assembly

a

Hang plumb-bob to mark anchoring point on floor.

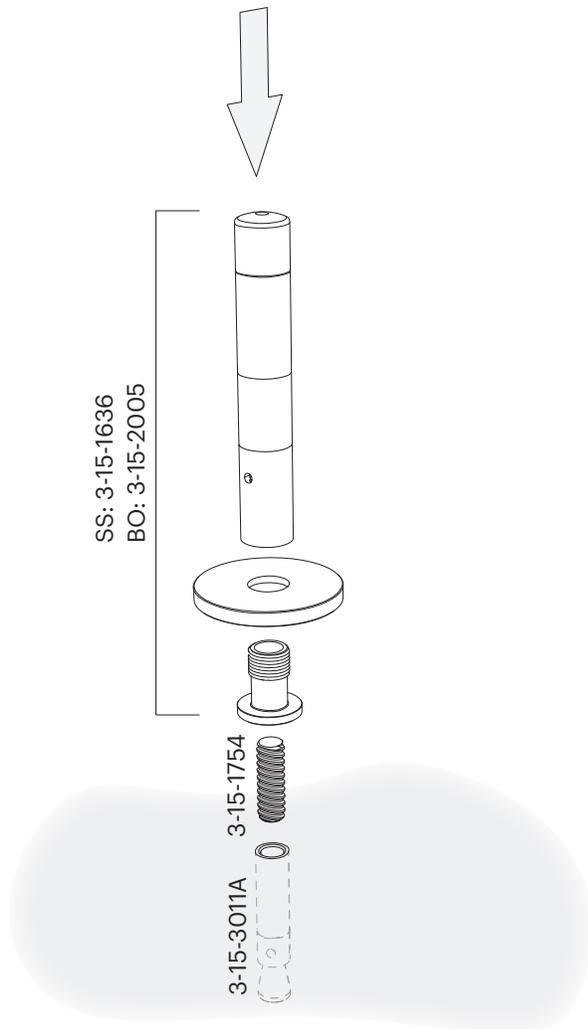


Installation

2 Install Floor Anchor for the First Cable Assembly *cont...*

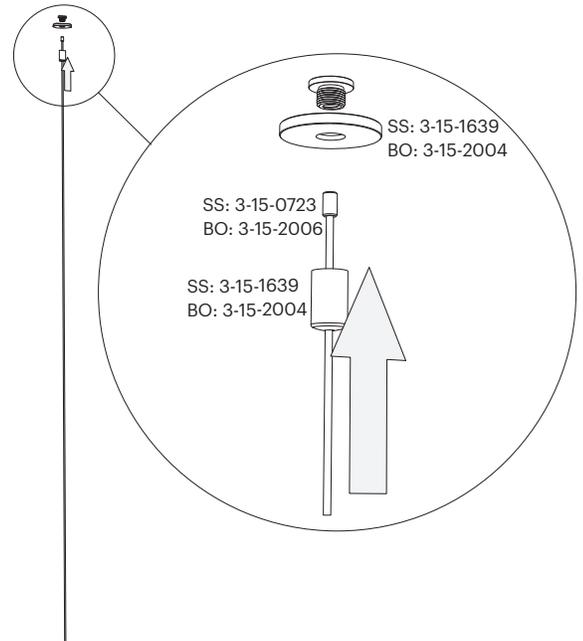
b If anchoring in concrete follow Steps 1a-f, if anchoring in wood follow Steps 1g-h.

c Attach the Cable Tensioner (SS: 3-15-1636; BO: 3-15-2005) to the floor anchor with the included M8 Threaded Rod (3-15-1754).

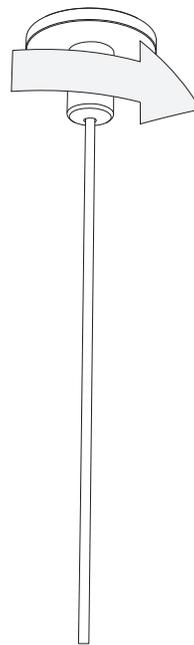


3 Attach First Cable Assembly

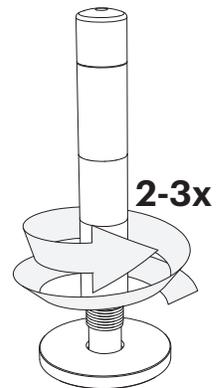
a



b



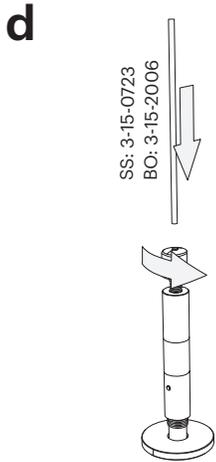
c



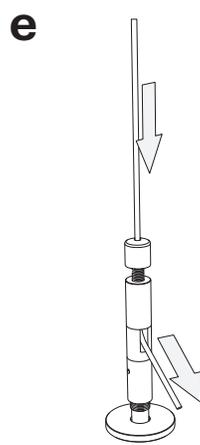
Do not tighten yet!

Installation

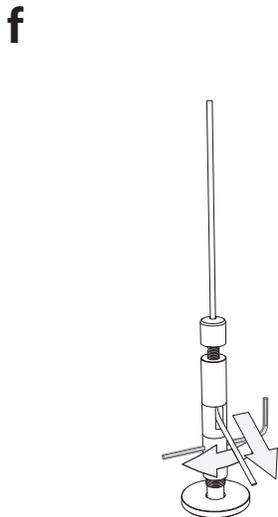
3 Attach First Cable Assembly cont...



Unscrew the cap.



Pull excess cable through the side exit on the tensioner.



max weight per cable

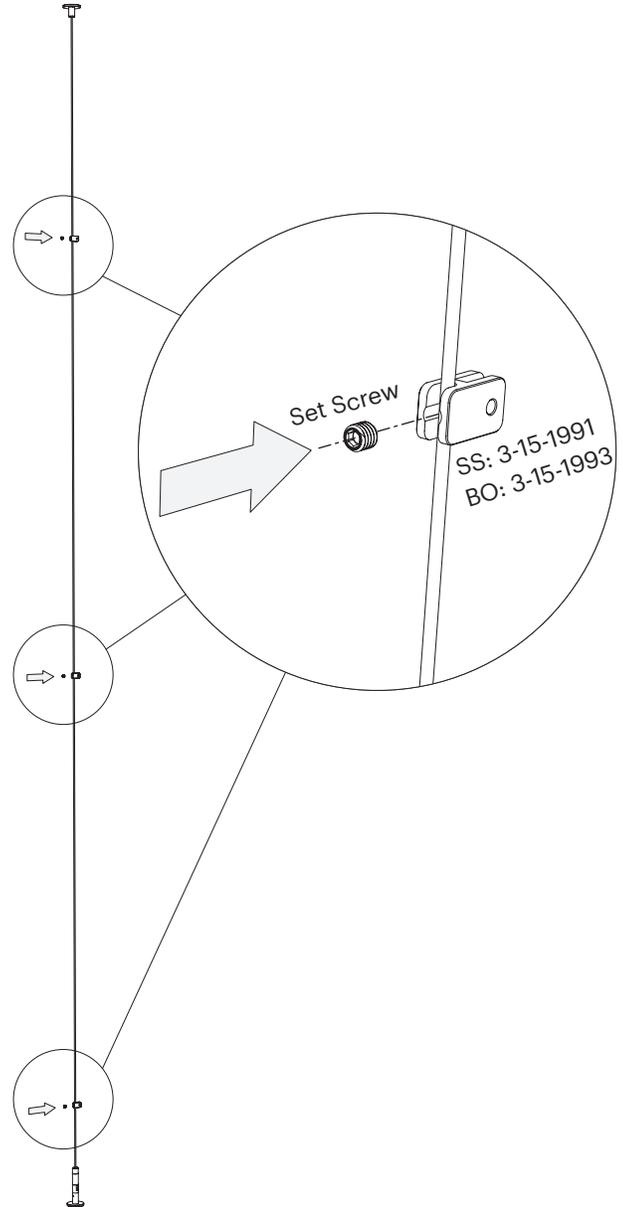
150-200 lbs

225 + lbs

Maximum Weight = 225 lbs
Maximum Tension = 400 lbs
Hollow Substrate: Max Tension + Weight < 70lbs

4 Dry-Fit Panel and Measure

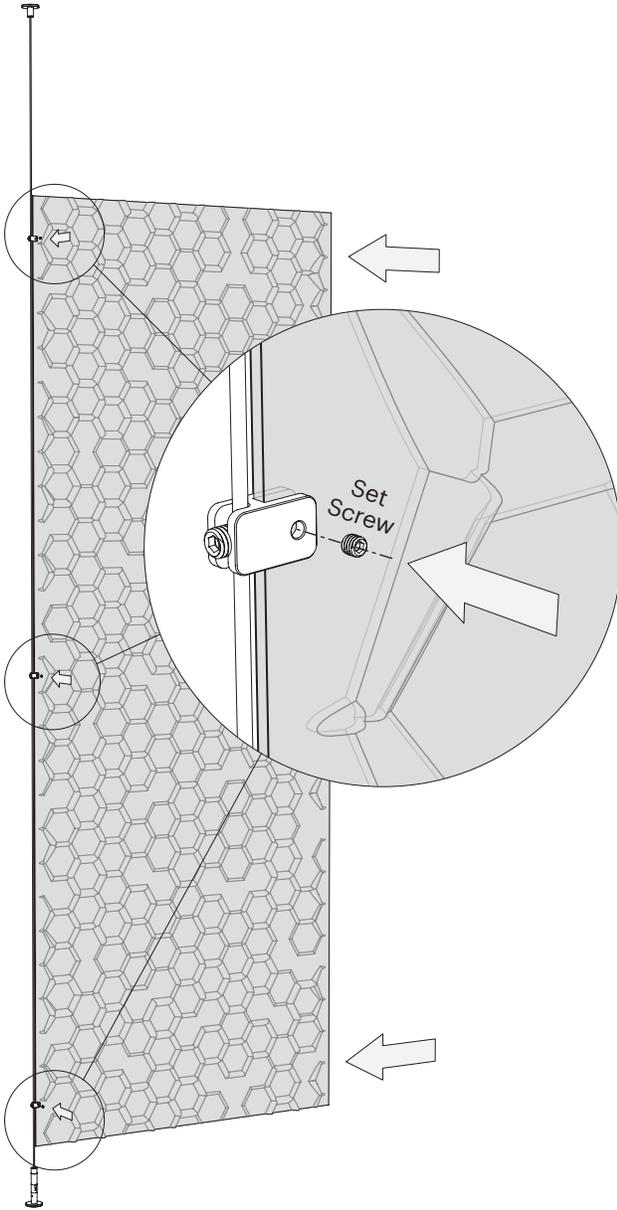
a Do not tighten set screw!



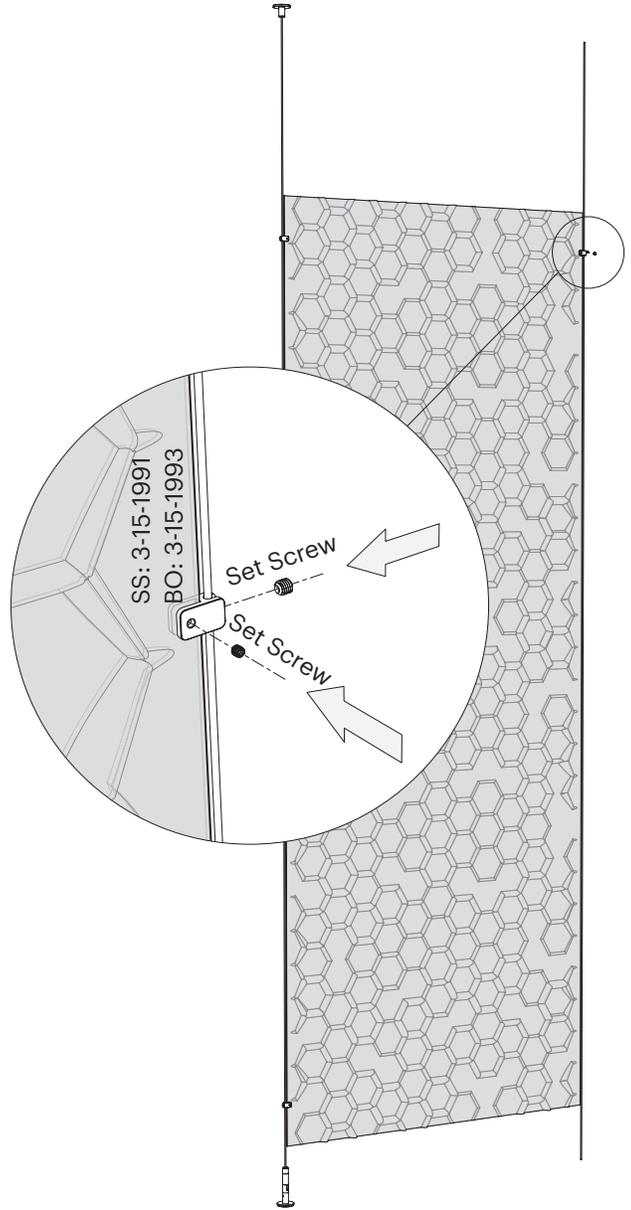
Installation

4 Dry-Fit Panel and Measure cont...

b Do not tighten set screws!



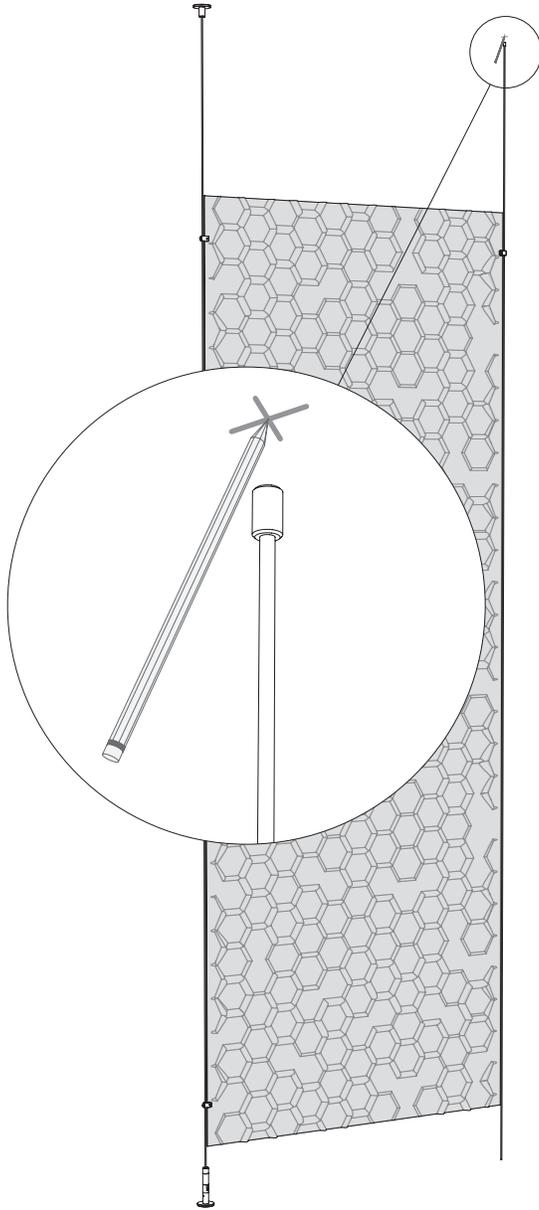
c Do not tighten set screws!



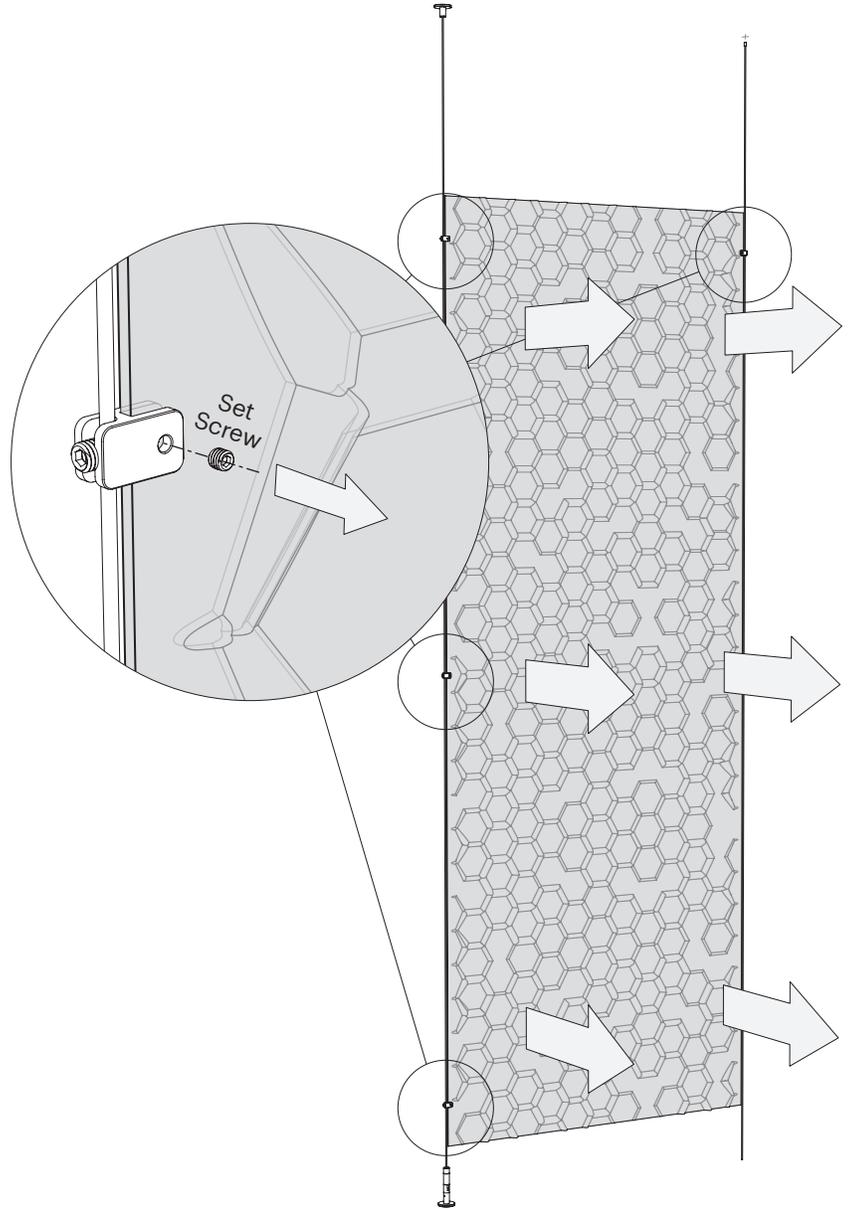
Installation

4 Dry-Fit Panel and Measure *cont...*

d



e Remove Panel



Installation

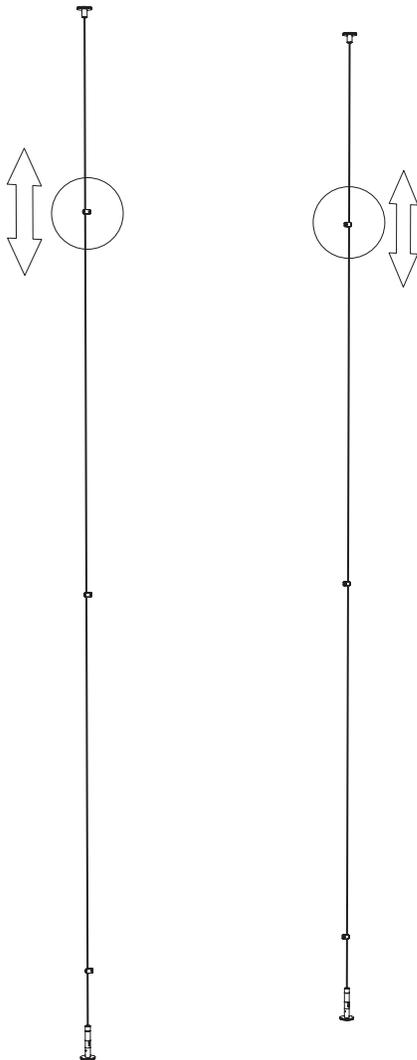
5 Anchor Second Cable Assembly

a Repeat Steps 1-3 for the Second Cable Assembly.

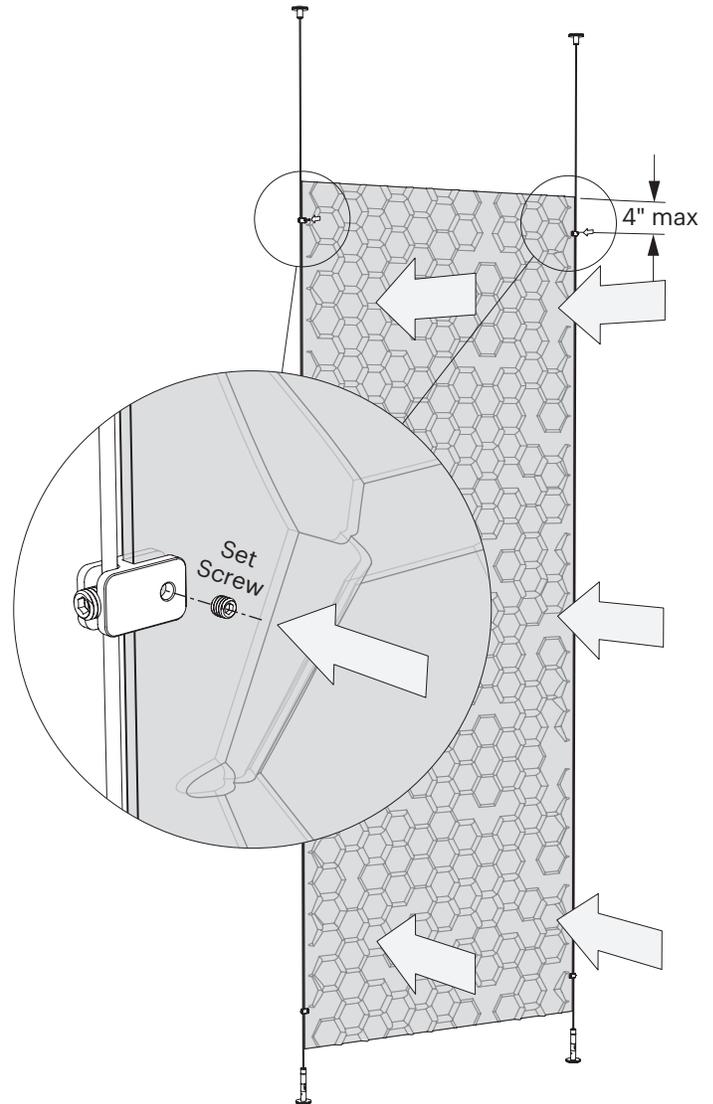
b Repeat Step 4 and then Steps 1-3 for each additional panel.

6 Attach the Panel

a Position the top Side Brackets (SS: 3-15-1991; BO: 3-15-1993) 4" below the desired location of the top of the panel. Tighten set screws to the cable. (only for top side brackets).



b Position the panel to desired location and ensure it is level. Tighten set screws to the panel on top side brackets only.

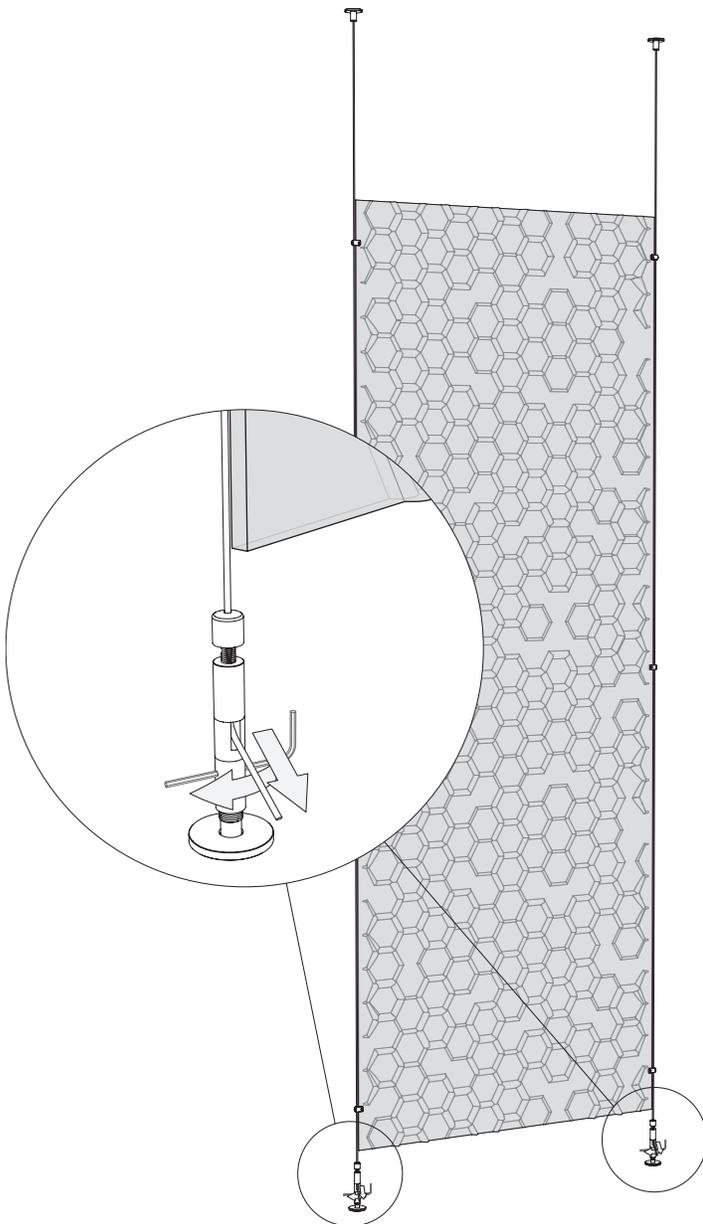


Installation

6 Attach the Panel cont..

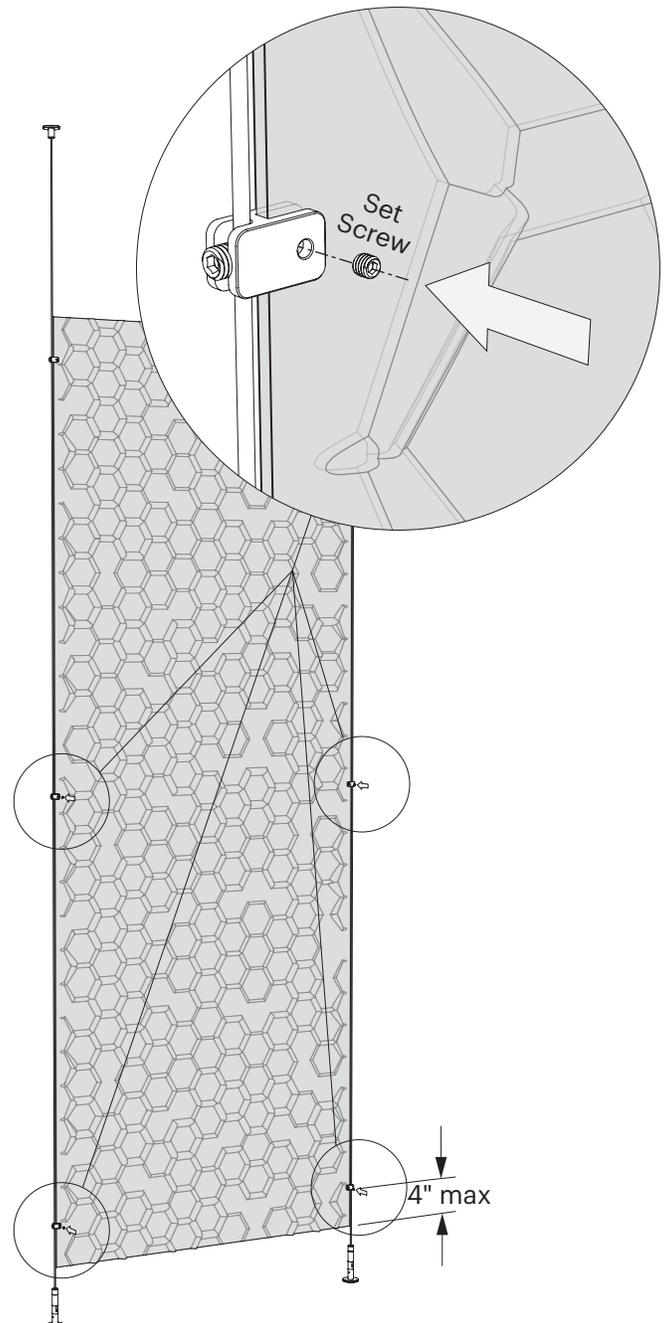
c **Critical Tensioning Step!**

Wait to re-tension the cables as weight of the panel is applied. Re-tension the cables, pulling excess cable through the tensioner, and tighten using Allen wrench through tensioner as shown in 6c.



d

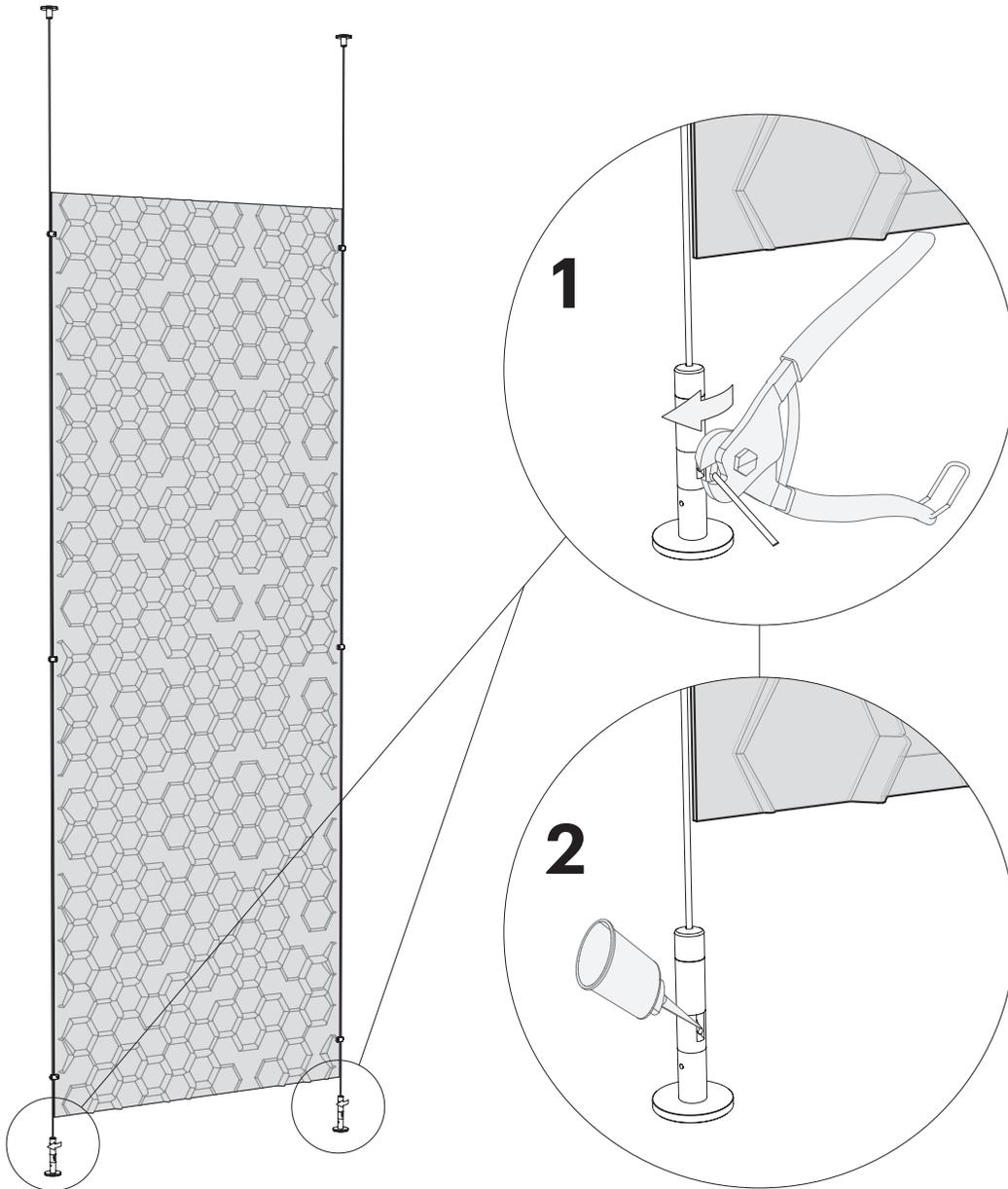
Tighten set screws on lower side brackets once cables have been tensioned. This will prevent gapping in tension on the cables.



Installation

7 Finish Tensioner Assembly

Cut cable and put a drop of super glue at end of cut cable to keep from fraying.



Product Description

3form Duet is a thin gauge, two sided texture system with beautiful geometry that can really transform your space. Available with 6 different patterns and 250 color options to choose from.

Features and Benefits

- Produced on an individual order basis, allowing for creative design and product selection (minimum order quantity – one sheet!)
- SCS-certified recycled content helps achieve LEED credits for building sustainability
- Very tough, allowing for easy fabrication and maximum installed durability
- Extremely versatile which enables designers to achieve full design potential
- Lightweight, half the density of glass, which makes for easier installation and reduces structural support requirements
- Excellent chemical resistance which reduces potential harm incurred by cleaning agents

Available Colors

3form Duet is available in a variety of color options. Visit www.3-form.com for options.

Panel Sizes and Tolerances

3form Duet panels are offered in 3' × 8' (0.9 m × 2.4 m). All dimensions and squareness are subject to a $\frac{3}{16}$ " (4.7 mm) tolerance.

3form Duet is available in $\frac{1}{8}$ " gauge.

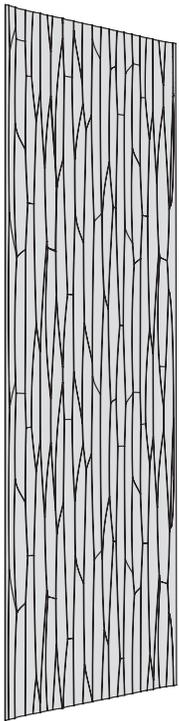
Sheet tolerance readings are based on an average of several measurements along both long edges of each panel. These measurements are taken 2-3 inches (50-75 mm) from the edges of the panel.

Available Textures and Finishes

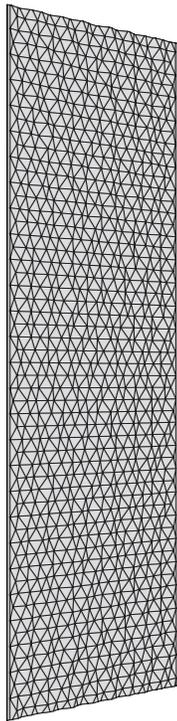
Each product in the Duet collection comes standard with both a front and back finish.

Finishes include:

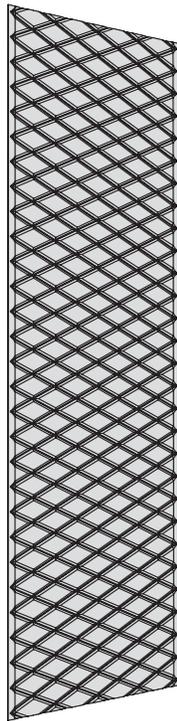
- **Sandstone** – A more durable finish with a subtle texture
- **Vellum** – A random brushed matte finish similar to the 3form renewable matte finish



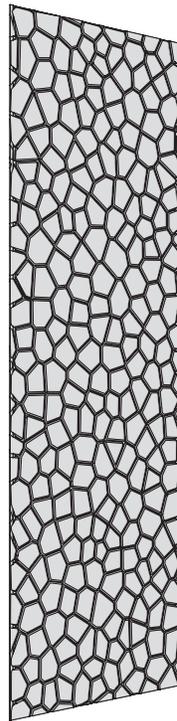
Fila



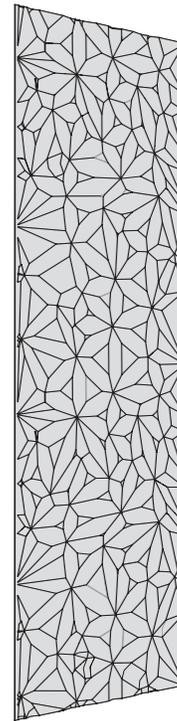
Geotic



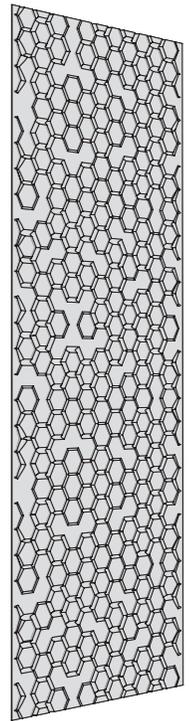
Hitch



Paragon



Surge



Tazzo

Specifications

Flammability and Smoke Test Results

- Building Code Approvals

3form Duet has been independently tested and meets the criteria for approved interior finishes as described in the 2017 International Building Code®.

Test	3form Duet	Result
ASTM D 2843 Smoke Density	71.6%	PASS Less than 75
ASTM D 35 Flame Spread	Self Extinguishing	PASS CC1
ASTM D 1929 Self-ignition Temperature	716°F	PASS Greater than 650°F
UL94	Flame Class - HB	PASS
UPITT Mortality Test	PASS	Not more toxic than wood
ASTM E84-17 Flame Spread, 1/8" thickness Smoke Generated	0 190	Class A 0-25 <450

Panel Sizes and Tolerances

Like all resin products, 3form Duet will expand and contract nominally with fluctuations in temperature. The following formula provides allowances that should be made in framed or fitted applications:

$$\begin{array}{l} \text{Longest Length} \\ \text{of Panel} \\ \text{(inches)} \end{array} \times \begin{array}{l} \text{Temperature} \\ \text{Change of the} \\ \text{Sheet (F}^\circ\text{)} \end{array} \times 0.00004 = \begin{array}{l} \text{Amount of Linear} \\ \text{Expansion/Contraction} \\ \text{(inches)} \end{array}$$

Usage Limitations

Do not use cyanoacrylate or solvent type thread locking materials with 3form Duet. To more permanently secure hardware, use the recommended products from the 3form adhesives matrix.

Edge Finishing

Edges of 3form Duet panels come beveled along the 96" edge. Additional finishing, such as sanding or polishing, can also be provided to some edges.

Panel Weight

Material	Thickness	Weight Flux
3form Duet	1/8" (3.1mm)	0.8 lb/ft ² (3.9 kg/m ²)

Cleaning Instructions

3form Duet, like all thermoplastic resin materials, should be cleaned periodically. A regular, seasonal cleaning program will dramatically help prevent noticeable weathering and dirt build-up. 3form recommends the use of the following common cleaning products: Windex, Formula 409, Simple Green, Fantastik, Virex, 10:1 Water/Bleach Solution.

Rinse the sheets with lukewarm water. Remove dust and dirt from 3form Duet with a soft cloth or sponge and a solution of mild soap and/or liquid detergent in water. A 50:50 solution of isopropyl alcohol and water also works well. Rinse thoroughly with lukewarm water.

Always use a soft, damp cloth to blot dry. Rubbing with a dry cloth can scratch the material and create a static charge. Never use scrapers or squeegees on 3form Duet. Also avoid scouring compounds, gasoline, benzene, acetone, carbon tetrachloride, certain deicing fluids, lacquer thinner or other strong solvents.

Do:

- Keep edges dry and free of liquids
- Apply cleaning solution or water to a clean cloth and wipe resin clean

Do not:

- Use a squeegee
- Use strong solvents, highly alkaline or abrasive cleaning agents
- Clean in hot sun or at elevated temperatures
- Rub with a dry cloth
- Do not completely saturate panel with cleaning solution or water
- Expose organic or fabric interlayers to water or cleaning solution

Selected Mechanical and Physical Properties for 3form Duet

Values reported for 3form Duet with decorative inserts are shown in the table to the right. Should your application require specific test values, consult the 3form Product Technology Department.

*Unless noted otherwise, all tests are run @ 73°F (23°C) and 50% relative humidity, using specimens machined from extruded sheeting with a thickness as indicated.

** Nonbreak as defined in ASTM D 4812 using specimens having a thickness as indicated. Properties reported here are typical of average lots. 3form makes no representation that the material in any particular shipment will conform exactly to the values given.

Refinishing

It is possible for 3form Duet to become damaged by scratching.

Light scratches and scuffs on the sandstone surface finish can be repaired with a plastic polish. The majority of 3form products have a surface finish that would be ruined by buffing.

Sound Transmission Class (STC) Values for Duet

Measurement protocol: ASTM E 90 - Standard Test Method for Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

Material	Thickness	STC Value
3form Duet	1/8" (3.1mm)	25

Property*	ASTM Method	Typical Value	
		0.118" (3mm)	
		SI	U.S.

General			
Density	D 1505	1,270 kg/m³	79 lb/ft³
Water Absorption	D 570 23°C (73°F) 24h Immersion	0.2%	0.2%

Mechanical			
Tensile Stress @ Yield	D 638	53 MPa	7,700 psi
Tensile Stress @ Break	D 638	26 MPa	3,800 psi
Elongation @ Yield	D 638	4.8%	4.8%
Elongation @ Break	D 638	50%	50%
Tensile Modulus	D 638	2,200 MPa	320,000 psi
Flexural Modulus	D 790	2,100 MPa	310,000 psi
Flexural Strength	D 790	77 MPa	11,200 psi
Shear Strength	D 732	62 MPa	9,000 psi
Shear Modulus	—	793 MPa	115,000 psi
Rockwell Hardness	D 785	115	115
Safety Glazing	ANSI 97.1	PASS	
Izod Impact Strength, Notched	D 256 @ 73°F	88 J/m	1.7 ft-lbf/in.
	D 256 @ 32°F	66 J/m	1.2 ft-lbf/in.
	D 256 @ -22°F	39 J/m	0.7 ft-lbf/in.
Impact Strength, Unnotched	D 4812 @ 73°F	NB**	NB**
	D 4812 @ 32°F	NBB	NBB
	D 4812 @ -22°F	NBB	NBB
Impact Resistance — Puncture, Energy @ Max. Load	D 3763 @ 73°F	33 J	24 ft-lbf
	D 3763 @ 32°F	40 J	30 ft-lbf
	D 3763 @ 14°F	42 J	31 ft-lbf
	D 3763 @ -4°F	43 J	32 ft-lbf
	D 3763 @ -22°F	47 J	34 ft-lbf

Thermal			
Cont. Max Use Temperature -Varia	—	65°C	150°F
Cont. Max Use Temperature -Dichroic/Reflect	—	60°C	140°F
Heat Deflection Temp	D 648 @ 264psi	70°C	157°F
Vicat Softening Temperature	D 1525 @ 1 kg	83°C	181°F
Forming Temperature	—	138-160°C	280-320°F
Thermal Conductivity	ASTM D 5930	0.205 W/m·K	0.118 Btu/hr-ft²·°F
Coefficient of Thermal Expansion	ASTM D 696	7x10-5 mm/°C	4x10-5 in/in/°F

Chemical Resistance of 3form Duet to Select Compounds

365 Day Full Immersion Testing @ 73°F (23°C)

Polymer materials are affected by chemicals in different ways. Changes in performance or appearance can be attributed to fabrication methods, exposure conditions, concentration of chemical substances or exposure duration. Such factors can even influence the final effect of substances that 3form Duet is considered "Resistant" to under test conditions. Further details are explained below:

Fabrication

Stresses generated from sanding, grinding, drilling, polishing, machining, sawing and/or forming (hot or cold).

Exposure

Exposure duration, stresses imparted during the application life-cycle due to loads, temperature changes, heat, environments, etc.

Application of Chemicals

Application from contact, rubbing, wiping, spraying, soaking, etc. Also having an affect is the relative concentration of the chemical in question.

The following data is based on complete immersion of 3form Duet in the chemical or reagent shown. Samples remained immersed and were stored at 73°F (23°C) for a period of one year. Following the test period the samples were removed from immersion and inspected.

The table below provides indicative performance of the chemical resistance characteristics of Ecoresin. The following codes are used to describe the chemical resistance characteristics:

R = Resistant

3form Duet is able to withstand the identified compound for long exposure periods up to 120°F (7 days, full immersion)

LR = Limited Resistance

3form Duet is only resistant when in contact with this compound for short periods at room temperature. It is advised that further determination of the effect of the substance be further tested in your particular application.

NR = Not Resistant

3form Duet is not resistant to the compound. The material will swell, craze, haze, dissolve or experience some physical change when exposed to this substance.

Reagent	Result	Reagent	Result	Reagent	Result
Acetic Acid, 5%	R	Gasohol, 10% Ethanol	LR	Oleic Acid, 83%	R
Acetic Acid, conc.	NR	Gasohol, 10% Methanol	LR	Olive Oil	R
Acetone	NR	Gasoline, Base for Gasohol	LR	OxiCide, product use dilution	R
Ammonium Hydroxide, conc.	NR	Gasoline, Premium Unleaded	LR	Penetrating Oil, Liquid Wrench #1	NR
Antifreeze, Automotive Ethylene Glycol Type	R	Gasoline, Regular	R	Phenol, 5%	NR
Benzene	NR	Gasoline, Regular Unleaded	LR	Silicone Spray Lubricant	LR
Brake Fluid, DOT3	R	Grease, Automotive	R	Soap Solution, 1%	R
Brake Fluid	LR	Hand Cleaner, Waterless Jergens SBS30	R	Sodium Carbonate, 2%	R
Carbon Tetrachloride	NR	Hexane	R	Sodium Carbonate, 20%	R
Chromic Acid, 40%	R	Hydrochloric Acid, conc.	NR	Sodium Chloride, 10%	R
Citric Acid, 10%	R	Hydrochloric Acid, 10%	R	Sodium Hydroxide, 1%	R
Cottonseed Oil	R	Hydrogen Peroxide, 3%	R	Sodium Hydroxide, 10%	R
Deionized Water	R	Hydrogen Peroxide, 28%	R	Sodium Hypochlorite, 3.5%	R
Detergent, Alconox (0.25%)	R	Isooctane	R	Sulfuric Acid, conc	NR
Di (2-Ethylhexyl) Phthalate	R	Kerosene	R	Sulfuric Acid, 3%	R
Dibutyl Sebacate	R	Lacquer Thinner	LR	Sulfuric Acid, 30%	R
Diesel Fuel	LR	Methyl Alcohol	LR	Tapping Oil	R
Dimethyl Formamide	NR	Mineral Oil	R	Toluene	NR
Ethanol, 50%	R	Motor Oil	R	Transformer Oil	LR
Ethanol, 100%	R	Nitric Acid, conc.	NR	Transmission Fluid, Auto	R
Ethyl Acetate	NR	Nitric Acid, 10%	R	Turpentine	LR
Ethylene Dichloride	NR	Nitric Acid, 40%	LR		