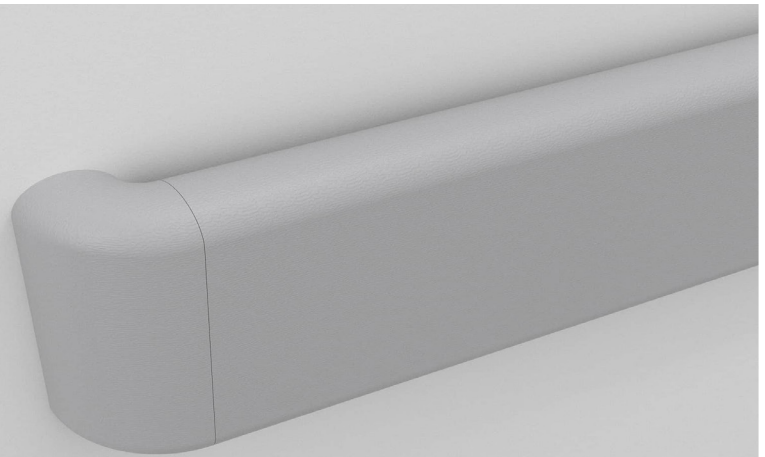


Installation Instructions



Handrail Components and Hardware



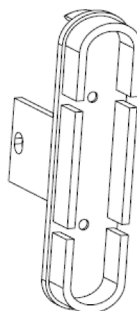
**ALUMINUM
RETAINER**



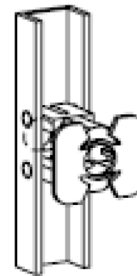
**IMPACT
BUMPER**



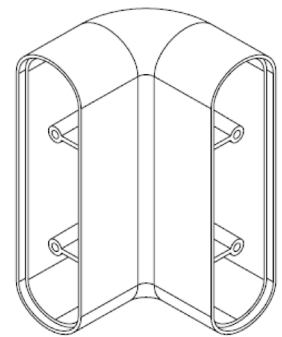
**HANDRAIL
COVER**



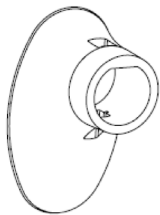
**END CAP AND
CORNER INSERT**



**TOGGLE
ANCHOR**



**END CAP AND
CORNER HOUSING**



**LOCKTIGHT
STANDOFF**



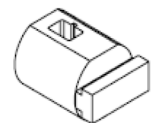
**ALUMINUM
RETAINER SPLICE**



1/4-20 SLOT NUT



LOCKTIGHT PIN



**LOCKTIGHT
INSERT**



**1/4-20x3" PHILLIPS
HEAD FASTENER**



**#8 SELF TAPPING
SCREW**



**1/4-20x3/8" BUTTON
HEAD FASTENER**



Tools Required for Handrail Assembly

- Level
- Chalk Line
- Tape Measure
- Phillips Screwdriver
- Compound Mitre Saw with an 80-100 tooth carbide blade
- Drill
- 1/4" Drill Bit
- 1/2" Drill Bit

Note: Drill bit sizes may differ for Masonry and other substrate applications, see instructions on the appropriate fasteners for the substrate (provided by others).

Hardware Details

End Cap and Corner Assembly:

- #8 Self tapping screw
- 1/4-20x3/8" button head fastener
- 1/4-20 slot nut

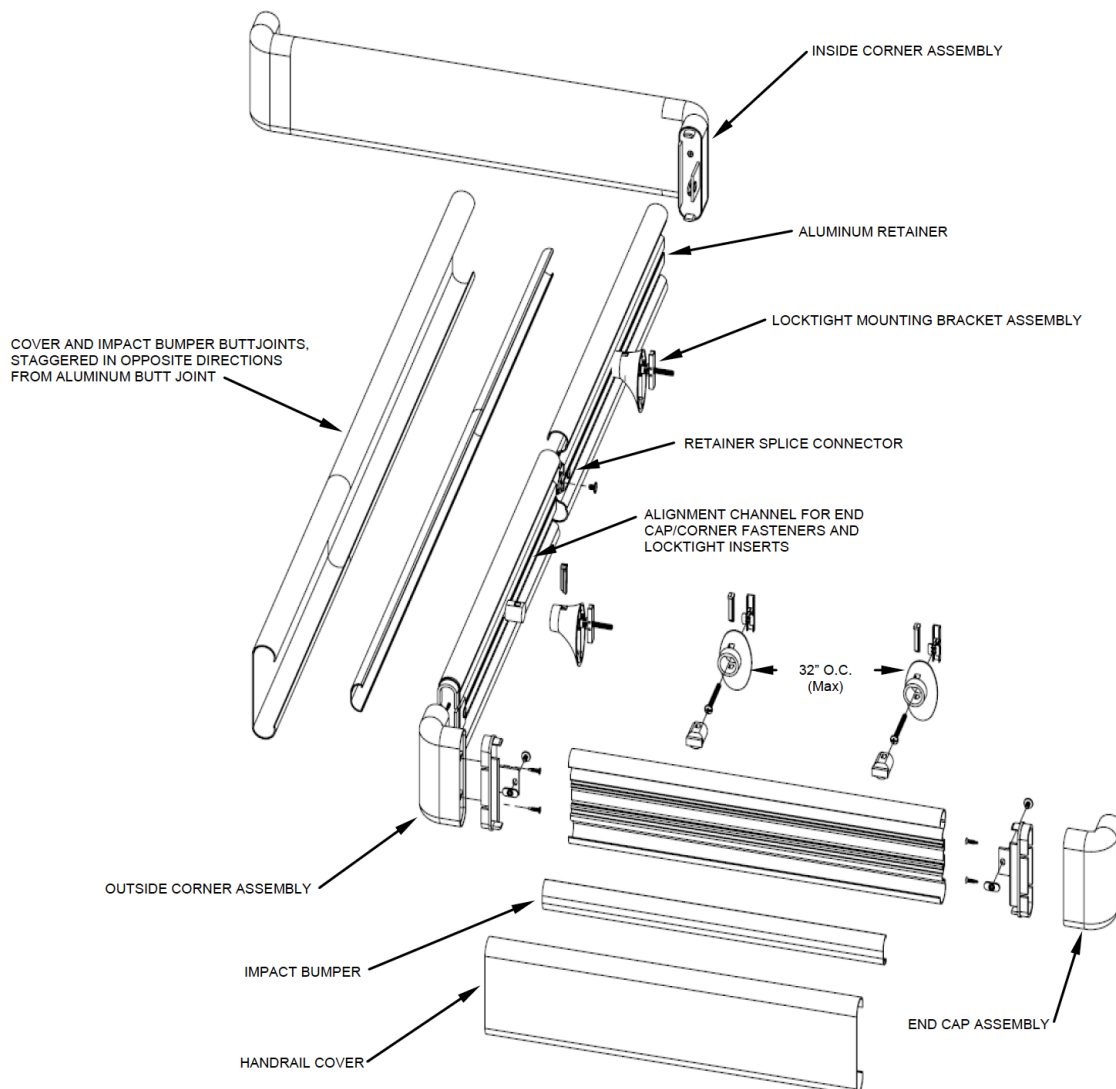
Standoff Assembly:

For standard steel stud and drywall applications

- Toggler® brand anchor
- 1/4-20x4' Phillips head screw

Aluminum Retainer Splice Connections:

- Aluminum retainer splice
- 1/4-20x3/8" button head fastener



► 5-1/2" Flat Handrail

Pre-Installation Notes

Check to ensure that the anchors supplied by the factory will work with the type of wall substrate on the project. The factory recommends using back up channels at stud wall conditions (**FIGURE 3**). When splices occur (runs over 12'-0"), always splice the aluminum retainers, vinyl covers, and impact cushion at different locations along the run. The minimum required spacing between the splice locations is 6" (**TYPICAL LAYOUT**). Install the longest run of the handrail first. Use scraps for shorter runs. The handrail requires a minimum of 2 standoffs per unit/run. The minimum distance of a straight run for this handrail is 17" (**FIGURE 1**). The minimum distance from a corner to an end cap for this handrail is 8-1/2" (**FIGURE 3**).

Installation Steps

STEP 1

Using the correct plans, layout guides, and local code requirements, layout and mark the location of the handrail on the wall at the appropriate height above the finished floor. Measure 2-3/4" down from the desired top of the

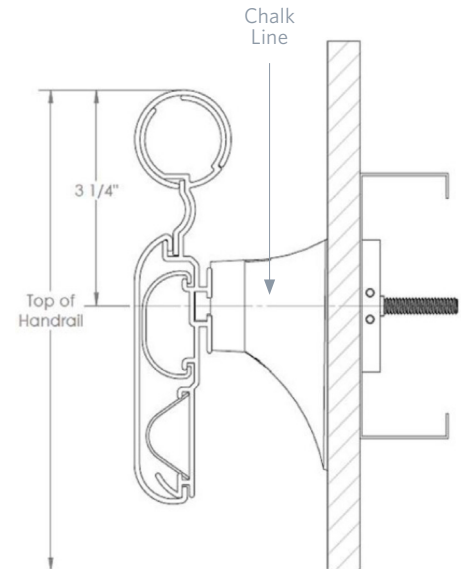


FIGURE 2

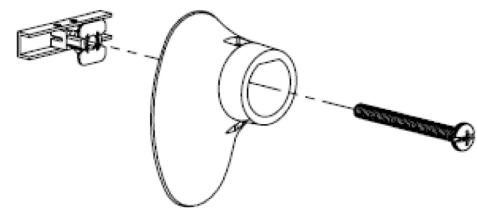


FIGURE 3

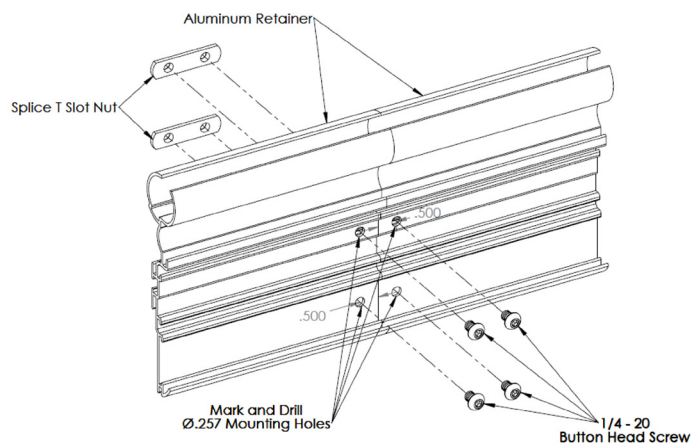


FIGURE 4

handrail and mark this location at each end of the run (See **FIGURE 2**). Snap a chalk line, or use a laser level to mark the height of the standoff fasteners.

STEP 2

Layout the handrail runs, marking the location of each standoff along the chalk or laser line. There must be a standoff located 6" from the start and the end of each run. Standoffs must be located 6" from all outside corners and 10" from all inside corners. The remaining standoffs are to be spaced a maximum of 32" O.C.. Make sure there is an equal distance on both ends of the handrail run from door jambs and windows (see **FIGURES 1 & 3**).



STEP 3

Layout the aluminum retainer "face up." Mark and drill the mounting bracket hole locations, using the groove in the retainer to locate the centerline of the retainer (**FIGURE 3**). Mounting bracket holes must be spaced:

- 32" on center maximum spacing
- 1-1/2" to 6" from the end of the aluminum retainer at returns and corners
- A minimum of 4" from the end of the retainer splices to avoid interference with splice hardware (**FIGURE 7**)
- If a backing channel is not provided, the mounting brackets must line up with wall studs.

Note: Observe all safety precautions when drilling to avoid all utilities and re-bar.

STEP 4

Locate and drill the mounting bracket holes into wall construction using the aluminum retainer as a template or by careful measurement. Choice of hardware will dictate the required hole diameter.

STEP 5

Insert molded accessories into the end of the corresponding aluminum retainer, press firmly to ensure that the molded part is seated squarely against the end of the retainer. Drill, or mark and drill, the accessory mounting holes using the accessory as a template (See **FIGURE 4**).

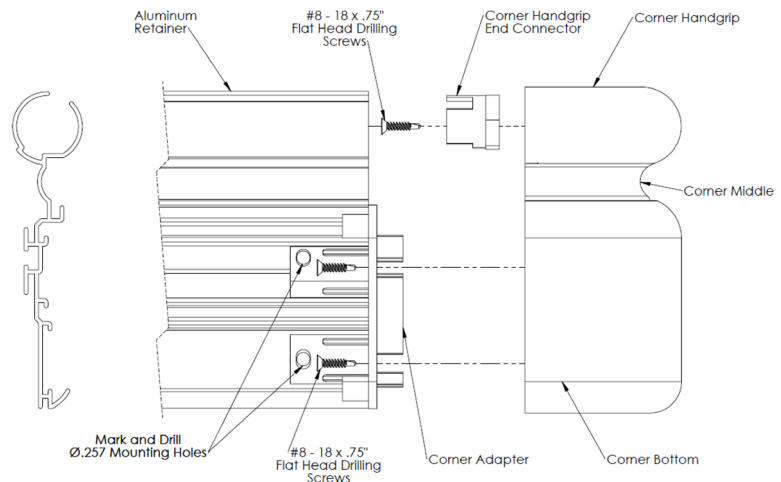
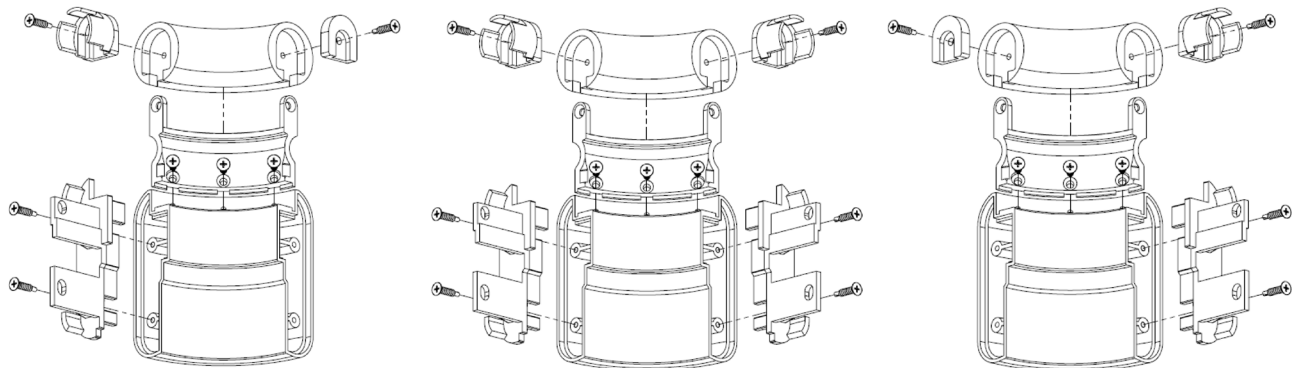


FIGURE 5



LEFT HAND RETURN ASSEMBLY

OUTSIDE CORNER ASSEMBLY

RIGHT HAND RETURN ASSEMBLY

STEP 6

Measure and cut the flexible impact cushion to fit comfortably between the molded accessories that are to be attached to the retainer. Then slide the impact cushion into the track located on the aluminum retainer (See **FIGURE 5**).

STEP 7

Attach the molded returns and corners to the aluminum retainer with the accessory seated firmly and squarely to the retainer while tightening. Fasten with a 1/4" bolt, slat washer, and nylon lock nut provided. Caution: Do not use a lock washer. Use flat washer only. Always place a flat washer between the nut and the molded tab. Tighten to 10 ft-lbs maximum torque (See **FIGURE 6**).

STEP 8

Mount the assembly to the wall with the mounting brackets and the appropriate hardware according to the wall construction. See Step 9 for splicing information.

Suggested Hardware:

Drywall: Toggler® brand toggle bolts

Masonry: Plastic Alligator® inserts or appropriate Tapcon®

STEP 9

When splicing is required always locate the splice joints a minimum of 4" from mounting bracket locations. For additional splicing detail, see **FIGURE 7**. Offset the butt joint in the cover, handrail grip, accent strip, aluminum retainer, and impact cushion (See **TYPICAL ASSEMBLY**, page 1).

STEP 10

Measure between accessories (corners and returns) and cut the corresponding vinyl cover, accent strip, and handgrip profiles to the correct size. Cut the profiles so that they will span any retainer butt joints/splices. Important: All cuts must be square and deburred.

STEP 11

Place the accent strip in the finger groove of the aluminum retainer, ID mark down (See **FIGURE 8**). Snap the handgrip cover into place on the retainer, then snap the lower vinyl cover into place by hooking the upper leg first, then pushing downward snap the lower hook into position.



► 5-1/2" Flat Handrail

WX7

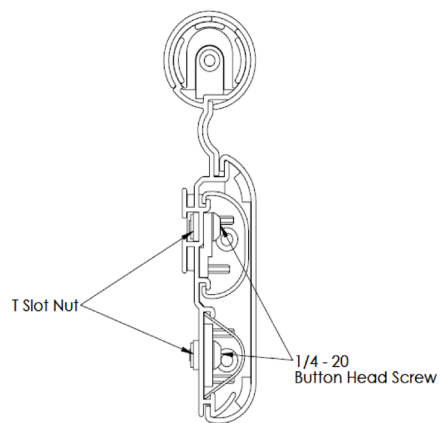


FIGURE 6

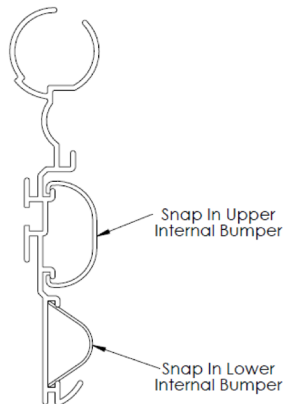


FIGURE 7

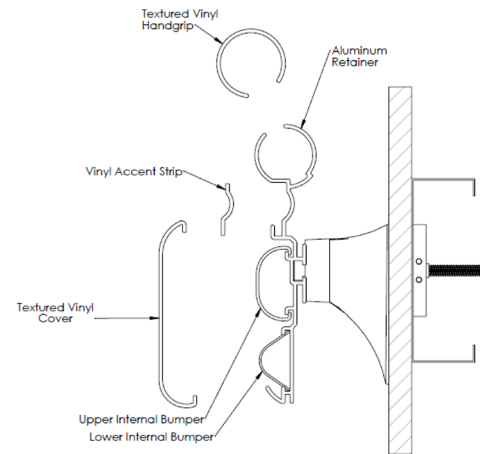


FIGURE 8



FIGURE 9

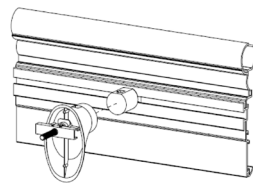


FIGURE 10

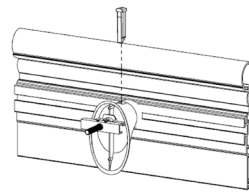


FIGURE 11

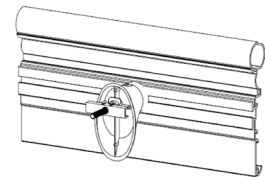
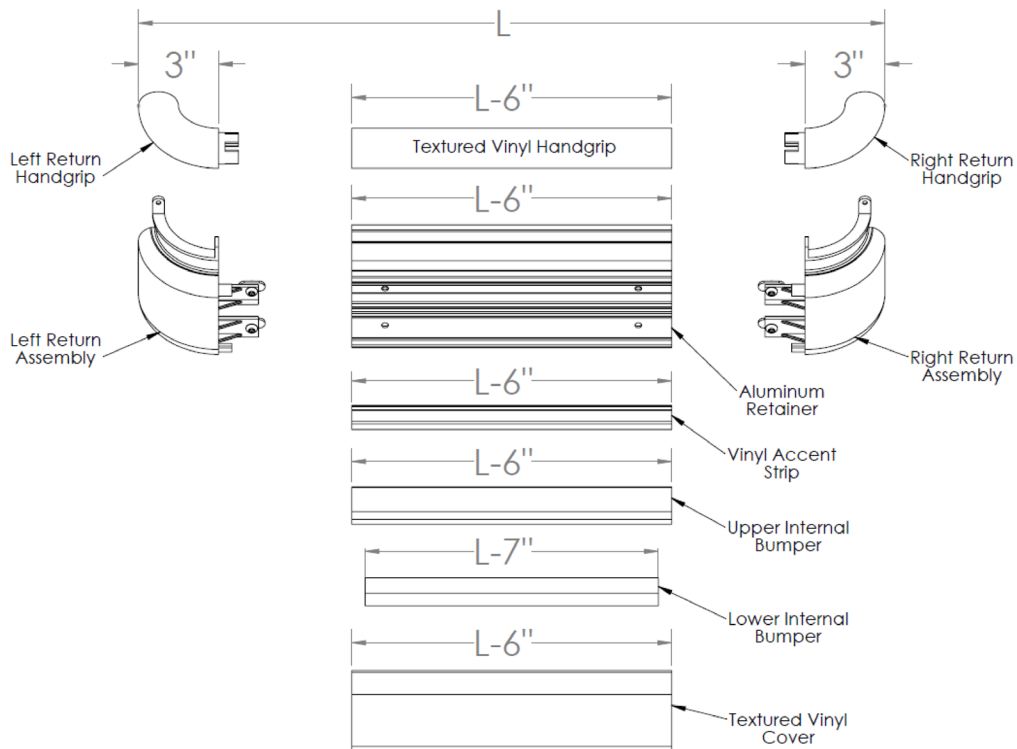
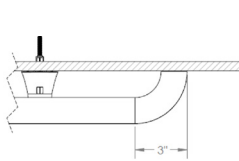


FIGURE 12

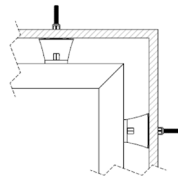


CUTTING ADJUSTMENT DIAGRAMS AND SCHEDULE

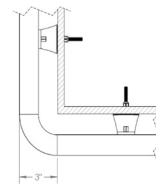




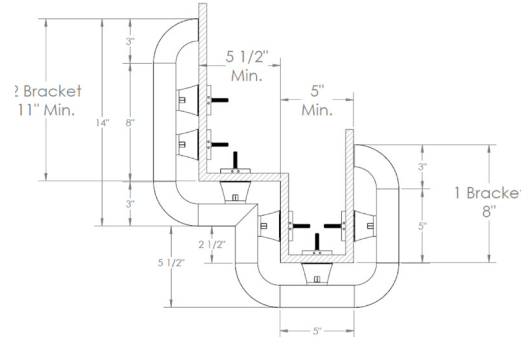
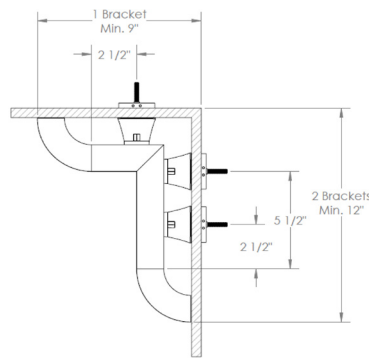
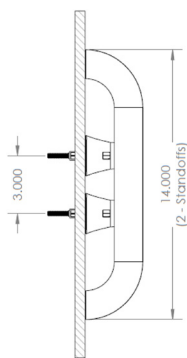
RETURN



INSIDE CORNER MITER

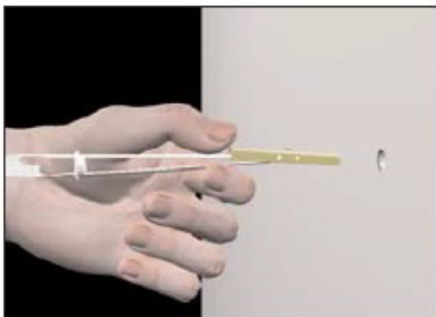


OUTSIDE CORNER



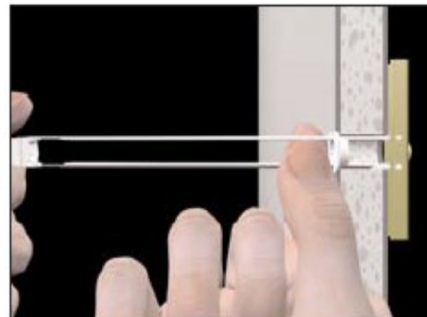
MINIMUM LAYOUT CONFIGURATIONS

Toggle Installation Instructions and Technical Data



STEP 1

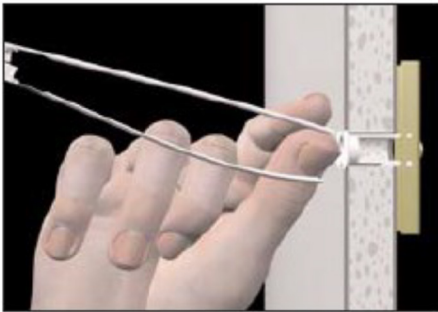
Drill appropriate size hole. Hold metal channel flat alongside plastic straps and slide channel through the hole. Minimum clearance behind wall: only 1 7/8".



STEP 2

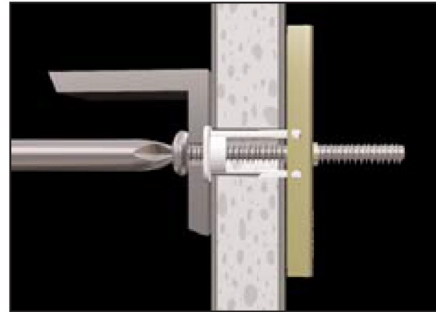
Hold ends of strap together between thumb and forefinger and pull toward you until channel rests behind wall. Ratchet cap along straps with other hand until flange of cap is flush with wall.





STEP 3

Place thumb between the straps at the wall. Push thumb side to side, snapping off the straps level with the flange of the cap.



STEP 4

Place standoff to the wall over the flange. Using 1/4, 20 tap bolt, insert and tighten until snug against the standoff, then stop.

Ultimate Tensile Pull-out Values (lb)

UNC Thread	Drill Diameter	1/2" Drywall	5/8" Drywall	1/2" with 25 gauge stud ¹	5/8" with 25 gauge stud ¹	Concrete Block	1/2" Steel Plate
1/4"-20	1/2"	265	356	425	464	1080	1288 ²

¹Failure measured as breakage of drywall portion

² Hardened bolts used

Ultimate Shear (lb)

UNC Thread	Drill Diameter	1/2" Drywall	5/8" Drywall
1/4"-20	1/2"	241	324

**For maximum shear holding, orient channels vertically to the floor. Use hardened or stainless bolts for maximum weight load. Enlargement of specified insertion holes size will reduce anchor effectiveness. All toggle anchors meet requirements of Type V anchors in Federal Specification FF-B-588-D (superseded). 1/4-20 x 4" tap bolt/screw (fully threaded) meeting/exceeding ASTM A307 Grade A and SAE J429 Grade 1.*





Cutting Handrail

All materials are supplied in stock 12' lengths and are to be field cut using quality equipment to insure that all cuts are square. When cutting materials Wallprotex recommends using a 80-100 tooth carbide tipped saw blade or equivalent. *Note:* Stock Length material does not always have squared ends and may require squaring in the field. If space is available use a minimum 12' long cutting bench to allow the installer to cut the material without having to turn it around.



Storage & Handling

The handrails are shipped unassembled. Upon receipt, immediately check all material for any damage that may have occurred in transit and verify that all of the items and quantities are correct. The handrail covers should be stored in the horizontal position at room temperature (65 - 75° F). This is a finished product; store in a protected, clean, dry area away from direct sunlight.



Cleaning Instructions

STEP 1

For best results, the use of liquid cleaners such as "409," "Fantastic," and "Mr. Clean," etc. are recommended. The use of powder cleansers is not recommended. Use of such cleansers can leave residue which is difficult to remove.

STEP 2

Do not use chlorinated or aromatic hydrocarbons, esters, or ketones to clean Wallprotex vinyl products. Avoid the use of heavy degreasers, compounds containing surfactants, and abrasive compounds or cleaning devices.



Caution

DO NOT walk on the handrail.
DO NOT store anything on top of the handrail.

