



METAL POST INSTALLATION GUIDE FOR CABLE RAILING

Welcome to Viewrail! We are excited to help you install your new railing system. We know you will enjoy it for many years to come. Our goal is to bring you top quality products in a very organized package. This binder is your resource for the following information:

- Installation Instructions for Viewrail Cable Railing Systems
- Code Compliance Information
- Drawings of your project that were made in our office as we quoted your project. In these drawings, the posts are labeled with numbers. You will find these numbers on the packing material of each post, making them easy to identify and place in your layout. (Drawings may not be included for simple orders.)

A word to the wise: it is very helpful to lay out all of your posts where they will be installed before you install anything. This step is important as it allows you to visualize how the installation will come together.

Our mission is to create simplicity and elegance, and we can't wait to see that become a part of your décor. If you need any help, please feel free to give us a call. As a victory lap, send us some photos of your finished project. We'll enter you into a quarterly photo contest where you can win up to \$250!

Blessings from your Viewrail team,
Len, Fernando, and Trent

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Unpack & Prep

Your shipment has arrived and it's time to get busy installing! The first thing you need to do is unpack your boxes. While you're unpacking, keep your eyes open for any **shipping damage**. You'll also want to check your layout (drawing made to quote your job, found in the back of this binder) for **order accuracy**.

If anything is wrong or damaged, you must contact us within 5 business days.

What's in the Box

Here's a quick rundown of what you will find inside a Viewrail post box. *Not everything seen here is included with a post purchase, but most are commonly ordered alongside a post.*



Cable Rail Installation Kit (VR400)

Crimpers and cutters have clear purpose, but our kit has a few unique tools, which are explained below.

Tightening Tool

Made to rest on the cable, the Tightening Tool has teeth that fit into the notches on a Threaded Crimp Fitting. It holds the fitting during tightening so the cable doesn't spin.

Wooden Block

The Wooden Block is used to simplify the process of tapping in the Insert Sleeves. Straddling the cable, the block provides an even surface to tap and prevents the sleeve from entering the post at an angle.

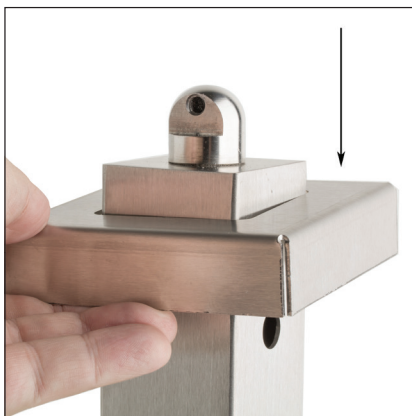
String

Run the provided string through the bottom holes of your layout with the posts in place **before** they are installed. This exercise will help you know exactly where to install posts for optimum cable clearance on stairs.



Prepping Your Posts

To get your posts ready for installation, you'll need to slide on the foot covers and attach the handrail brackets.



Carefully slide the foot cover over the top of the post before the bracket is attached.



Place the handrail bracket on top of the dome, then insert hex screws on both side of the dome.



If you have a Flat Top post, place the bracket in the top of the post and tighten the provided nut.

Mount Posts

Your posts are unpacked and prepped: now you're ready to mount them. When it comes to post mounting, patience is your key to success. Carefully executing the following steps will help the installation flow smoothly.

Place Posts

Consider this a dry run of your railing layout. This is an extremely important step, as it allows you to see the layout and make any adjustments before posts are mounted. Time spent in this step will save you considerable headaches down the road. "Measure twice, cut once." Cheesy, but so so smart.

Use the layout drawing in the back of this binder to put the posts in place. You may have noticed a post number on each post box. That number corresponds to the post labels on the layout drawing. The post number can also be found on the tag attached to the post. Using these post numbers to complete the layout will greatly simplify your task.

Be Careful

While laying out your posts, exercise the utmost care. Since the posts won't be secured during this step, it is possible to knock them over if you aren't careful. You don't want to damage your new railing, the décor, or yourself!

Proper Spacing

Posts should be placed no more than 4 feet apart. Spans greater than 4 feet will allow too much cable deflection.

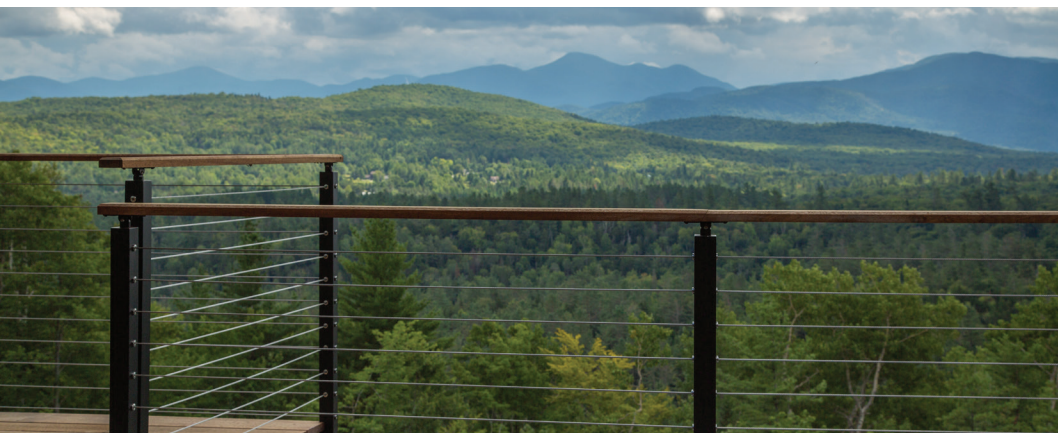
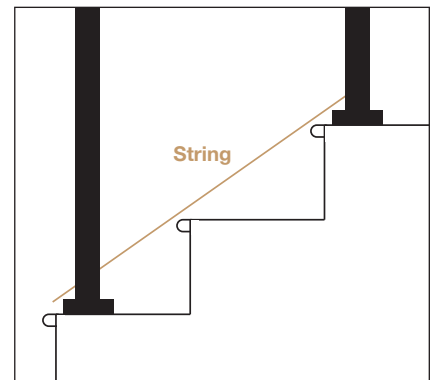
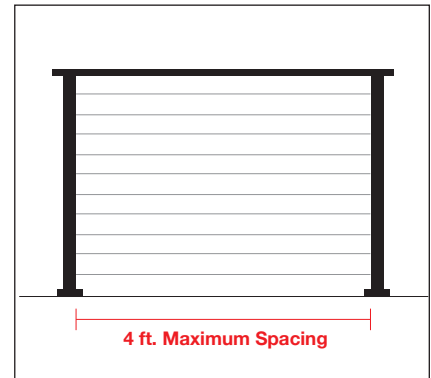
Run String?

Yes! There's a bundle of string in your Viewrail Cable Rail Installation Kit. Run that string through the bottom cable hole of your layout. This will be especially helpful for proper placement of your posts on stairs. The string will ensure the bottom cable will clear stair nosings.

Handrail Check

This is a great time to lay out the handrail and check lengths, angles, etc. Evaluate your post layout for proximity to vertical surfaces. You may need to install postside handrail brackets before mounting your posts. Also consider if any other handrail brackets need to be bent to accommodate transitions.

These steps are the same for Side Mount Posts and Surface Mount Posts.



Mount Posts

You've carefully laid out your posts according to the drawing and made any necessary adjustments—time to screw them down. This step boils down to two very important items:

1. Mounting screws must go into firm framing material.
2. Posts need to be plumb.

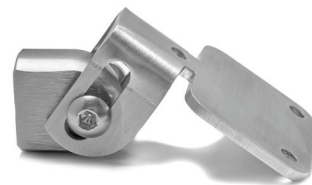
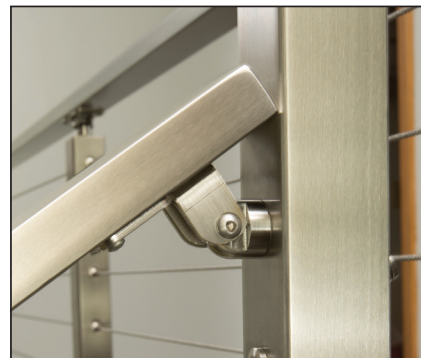
It is very likely that you'll need to shim posts to make them all consistently plumb. Making the effort to do this well will pay off when it's time to attach the handrail.

Now turn to the [Post Attachment Appendix](#) on page 11 for information detailing your specific mounting application.

Postside Handrail Bracket

Postside Handrail Brackets are used when a handrail terminates into the side of a post (most commonly H or I posts). Your system may or may not use them depending on your layout. If you do have one, here's how to install it:

1. Slide the provided lock washer onto the allen bolt. Insert them through the pre-drilled 1/2" hole on your post and out the pre-drilled 1/4" hole on the opposite face.
2. Slide a lock washer onto the Allen Bolt. Then, put the washer and bolt through the 1/2" hole until it comes out of the 1/4" hole.
3. Thread the dome onto the bolt until it is tight, using the Allen Wrench to position and support the bolt.
4. Use a rubber mallet to push the plug into the 1/2" hole on the back side of the post.
5. Adjust the bracket's location by moving the screw up and down the slots on the ears of the bracket. Continue this process until the bracket is positioned as needed.



Attach Handrail

Once your posts are securely mounted and plumb, it's time to tie them together with handrail. These instructions are going to cover the installation of Viewrail metal handrail. Wood handrail should be cut to fit and attached with screws.

Cutting to Length

If you are cutting the handrail onsite, we recommend using a chop saw with a special blade designed for cutting stainless steel. ****DO NOT ATTEMPT TO CUT STAINLESS STEEL WITH ANY OTHER TYPE OF BLADE.****

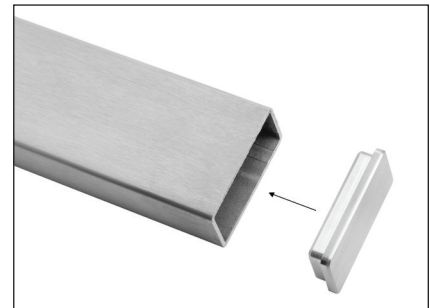
1. Carefully measure to determine the desired cut length.
2. Once the cut length of the handrail has been determined, mark the handrail accordingly.
3. Clear any debris from the surface of the saw. We recommend covering the sides of the handrail with painters tape to avoid direct contact between the handrail and the saw in order to protect the handrail from marring.
4. Cut the handrail.

Adding End Caps

Properly installed end caps provide a smooth, finished end to your handrail. This step is pretty simple:

1. Remove any burrs and/or debris from the end of the handrail to be capped.
2. Carefully place the cap over the end of the handrail and tap it in with a mallet. You may want to cover the mallet with some clean fabric to protect the finish of the end cap.

*Powdercoated handrail may require minor touch up with a paint pen.
Epoxy may be used to secure the cap if desired.*



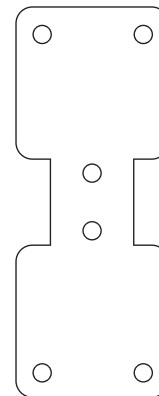
Grab a Friend, It's Time to Attach Handrail

When working with handrail sections of more than 6 feet, we highly recommend finding someone to assist with the handrail attachment phase of your railing installation. Long pieces of handrail are very difficult to handle by yourself. That said, let's dive in.

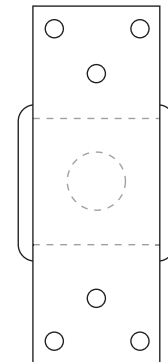
1. Assuming that you've attached the handrail brackets to the post tops as directed in the *Unpack & Prep* phase, set the handrail on your posts, making sure the handrail brackets are centered beneath it.

If you'll be butting inline handrail sections, make sure your sections are cut to the appropriate length so each section uses exactly half of the handrail bracket on your joining post.

When attaching handrail sections to corner brackets or butting together inline sections, completely attach one section before marking and drilling the other section.



Universal Top
Handrail Bracket



Flat Top
Handrail Bracket

FOR UNIVERSAL TOP HANDRAIL BRACKETS

2. Using a marker, mark all 6 holes where the handrail will be fastened to one Tensioning Post.
3. After the holes are properly marked, remove the handrail, placing it on a surface where it will not be damaged. Using a 9/64" or #29 cobalt drill bit, pre-drill the marked holes for one Tensioning Post bracket only.
Remove the corresponding handrail bracket from its post and mount it to the handrail with #8 self-tapping stainless screws into the pre-drilled holes.
4. Carefully set the handrail back on your posts and reattach the mounted handrail bracket to its dome. Now that your handrail is locked into place, mark the rest of your bracket holes.

Tensioning Posts – populate all 6 holes in handrail bracket*

Pass-Through Posts – populate 4 holes

*When using a half bracket or corner brackets, populate all holes.

5. Remove the handrail to predrill all marked holes and attach each handrail bracket accordingly. Once all handrail brackets are attached, carefully place the handrail back on the posts and reattach each bracket to its dome.



FOR FLAT TOP HANDRAIL BRACKETS

2. Using a marker, mark all holes that will be populated.
Tensioning Posts – populate all 6 holes in handrail bracket*
Pass-Through Posts – populate 4 holes
*When using a half bracket or corner brackets, populate all holes.
3. After the holes are properly marked, remove the handrail, placing it on a surface where it will not be damaged. Using a 9/64" or #29 cobalt drill bit, pre-drill the marked holes.
4. Carefully set the handrail back on your posts and populate each predrilled hole with a stainless steel #8 self-tapping screw.

Adding Handrail Covers

Your system may or may not have handrail covers. They are made to cover metal handrail joints that are straight, 90°, or 135°. These covers are quite simple to install. Apply silicon or epoxy to the underside of the cover, then set in place.

Run Cable & Tension

Now that the posts are mounted and handrail is securely attached, you're ready for cable. This section will lead you through four installation stages: Measure & Cut, Crimp, Thread & Tension, and Apply Sleeves.

Measure & Cut

1. Measure the distance from the outside face of one Tensioning Post (where the cable terminates) to the outside face of the other Tensioning Post.
2. Based on which Kit you're installing, subtract the amount listed below from your measurement in the previous step:

NOTE: This amount is to be subtracted ONCE per cable. Do not subtract from each end.

Level Tension Kit (VR290) if tensioning on both ends – 2 1/2"

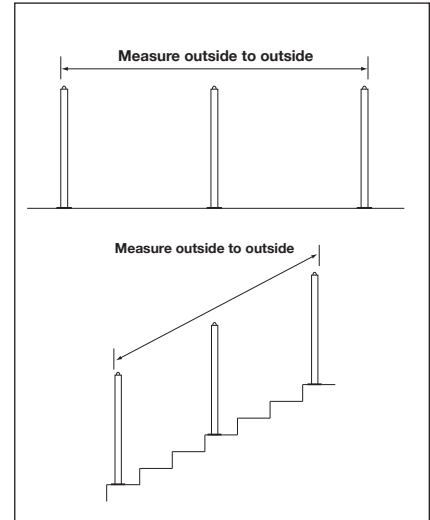
Angle Tension Kit (VR294) if tensioning on both ends – 1 1/2"

Angle Tension Kit (VR294) & Level Tension Kit (VR290) – 2"

KeyMount Kit (VR292) & Level Tension Kit (VR290) – 2 3/4"

KeyMount Kit (VR292) & Angle Tension Kit (VR294) – 2 1/8"

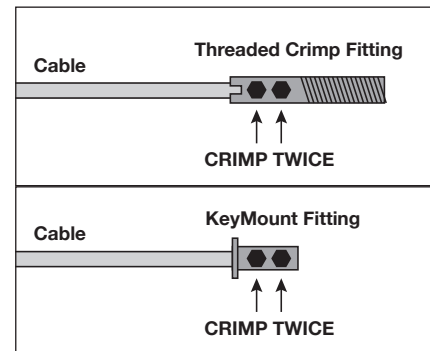
3. Once you've determined cut length, mark one cable and cut.
We recommend cutting and crimping one cable at a time.



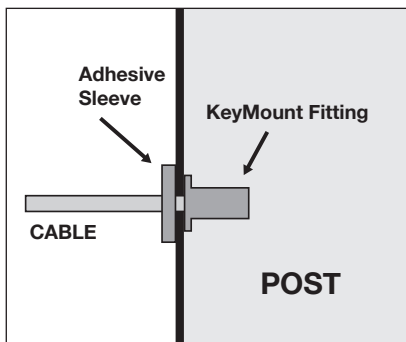
Crimp

1. **Threaded Crimp Fitting** – Slide the cable into the fitting until it cannot slide any further. *Make sure sleeves are on the cable before crimping both ends.*
KeyMount Fitting – Slide the large end of the fitting on the cable until the opposite end of the fitting is flush with the end of the cable.
2. Put the fitting, with the cable inside it, between the crimper dies.
3. Crimp the fitting onto the cable, avoiding the threads and fins of the fitting. Be sure to crimp all fittings twice. When crimped correctly, you'll see the number 10 inside the crimped area.

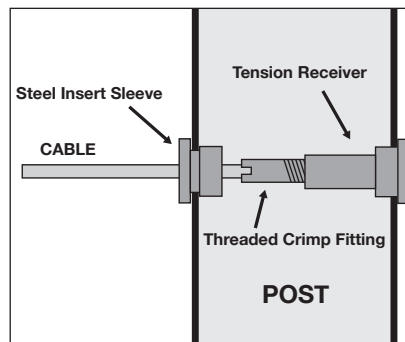
*** *KeyMount Fittings require Viewrail Posts that have been designed with a special hole specifically for this fitting. The fitting is simply inserted and turned 1/4 turn. This fitting has no tensioning ability.*



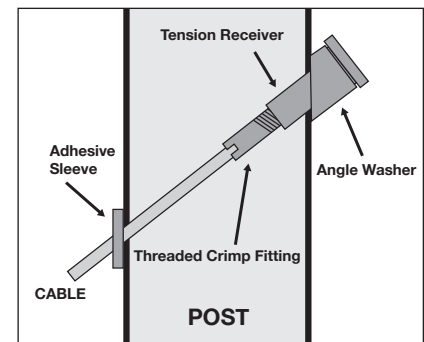
A Look at How each Kit Works



KeyMount Kit (VR292)



Level Tension Kit (VR290)



Angle Tension Kit (VR294)

Thread & Tension

1. Put the Threaded Crimp Fitting through the hole of a Tensioning Post and thread the Tension Receiver on the Threaded Crimp Fitting. Tighten 4 turns.

**If this is an angled run, be sure to add the Angle Washer to the Tension Receiver before threading into the Threaded Crimp Fitting.*

2. Thread the cable through each post, putting the proper sleeves on the cable as your layout requires. *Please read the **Apply Sleeves** section below before completing this step.*
3. Place the Guide Pin in the end of the Threaded Crimp Fitting and use it to align the threads with the Tension Receiver at the final post. Snug the cables, but do not tighten until all cables have completed this step.
4. Begin tightening at the middle of the post and work out using the Allen Wrench and Tightening Tool. Tighten from each end so that the Threaded Crimp Fitting is into the post far enough that the sleeve can be inserted.

NOTE: Tightening the cable too much could apply stress to the screws and handrail brackets attached to your posts. Stop tightening once cable is taut.

5. Use the Tightening Tool to hold the fittings in place while tightening. Do not allow the cable to spin while tightening.

Tip: When installing on an angle, crimp and attach the bottom end first. This will allow gravity to help hold the guide pin in place when aligning and attaching tension receivers at the top.

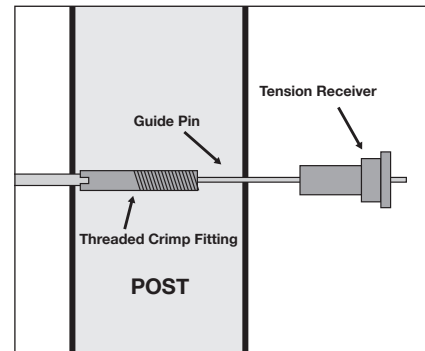
Apply Sleeves

Make sure sleeves are put on the cable as it is being strung through the posts before both ends have fittings crimped. Only apply Steel Insert Sleeves once all other installations have been finished and cables are tightened.

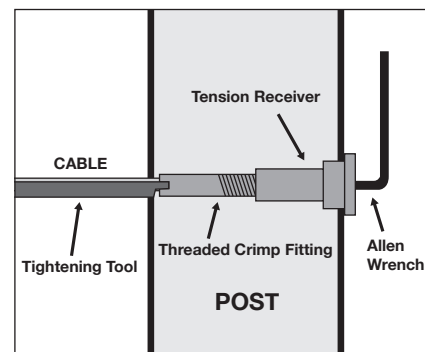
1. To apply the Steel Insert Sleeves, tap them in using the wood block provided in your tool kit.

How to Install Adhesive Sleeves

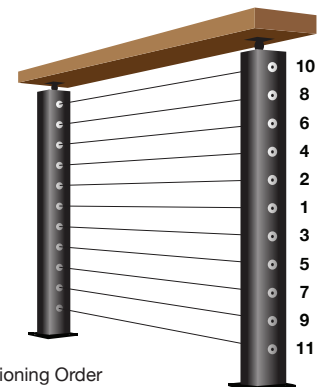
1. Wipe the area on the post where the sleeves will be installed with a clean rag. Peel the backing off and do not touch the adhesive.
2. Once you are ready to apply the Adhesive Sleeves, simply press them against the post, applying moderate pressure for 3-5 seconds.



Use Guide Pin for easier alignment and threading.



Use Tightening Tool and Allen Wrench to tension.



Cable Tensioning Order

Use care to keep steel tools, dirt, harsh chlorine-based cleaners, and acids away from any stainless steel parts before, during, and after installation.

You're Almost Done!

Clean, Clean, Clean!

Cleaning and sealing your stainless steel Viewrail system after installation is the best investment you can make to ensure the lasting beauty of this elegant railing.

EXTERIOR INSTALLATIONS

If the work site is still active after your system is installed, rinse stainless steel thoroughly with water to remove any surface contaminants. (A pressure washer is great for this task!) Once thoroughly rinsed, cover your system until all work on the site is complete, if this is possible. The goal is to protect the stainless steel from any airborne iron particles or harsh chemicals that can cause discoloration.

Once all work on the site is complete, uncover your system and give it another healthy rinsing. We highly recommend applying *Marine 31™ Stainless Steel Liquid Polish* followed by *Marine 31™ Stainless Steel Liquid Sealant*. If you didn't order these products with your system, contact your Viewrail salesperson for ordering information.

IMPORTANT: Polish must be rinsed away completely before application of the sealant. This requires a substantial amount of water. (Optional step: Wipe the stainless steel down with rubbing alcohol to ensure all of the polish has been removed.)

INTERIOR INSTALLATIONS

As soon as installation is complete, clean all stainless steel with a retail stainless steel cleaner (the same kind you would use on stainless steel appliances). If the work is still active, cover your system to protect it from airborne contaminants. When all work on the site is complete, uncover your system and clean again if necessary.

Troubleshooting

“My cable unravels when I cut it.” — Your cutters are dull and need to be sharpened or replaced.

“I cut the cable to the length you showed me in the instructions, but it is a little too short on one end. I think I should cut it longer.” — You likely threaded the Threaded Crimp Fitting all the way into the Tension Receiver. Back it out and tension both ends at the same time.

“It is really hard to get the threads to line up since I am doing it blind in the hole.” — Use the Guide Pin as described in the instructions to simplify the threading process.

“I tightened up the cable like you said, but when I came back a day later it was loose. It comes loose no matter how many times I tighten it.” — You probably “wound up” the cable. If the cable spins and winds up, it will unwind overnight and loosen. When you tighten the cable make sure that you use the Tightening Tool to hold the crimp fitting so that the cable does not spin while you tighten the Tension Receiver.

“How do I get the Steel Insert Sleeves out without scratching my post?” — Use a plastic putty knife to carefully pry them out.

“How do I get the Steel Insert Sleeves to stay in the holes? (I may have put them in and taken them out a few times.)” — The Steel Insert Sleeves have a very small lip that may get rolled over after several uses. Apply a small amount of silicone, put the insert back in, and apply some painters tape on the inserts until the silicone sets up.

“The Adhesive Sleeve isn't sticking to the post. It keeps falling off.” — If the post is dirty or fingers touch the adhesive, then the adhesive may not hold. A small amount of superglue can be used to reattach Adhesive Sleeves.



Post Attachment Appendix

Attaching 2" Square Metal Posts to Wood Structures

The framing members where wood screws are to be attached must be of a specific density equal to or greater than Southern Yellow Pine (.55). Screws must fully penetrate without splitting. Pre-drilling may be required. Structural members must be secure without any movement or fasteners may fail.

Standard Surface Mounting Posts

The standard Viewrail Surface Mounting Post has a foot plate that is 3 3/4" square. It requires a framing structure that is 4 1/2" wide or wider (triple 2x8 recommended). Each post must have (4) fasteners (5/16" x 4" screws) installed to full depth. Balcony posts must have screws in the (4) corner holes of the mounting foot. (See Diagram 1.) 36" or shorter posts installed on stairs can have screws mounted in holes as shown in Diagram 2, when the mounting plate needs to extend onto the bullnose.

Standard Surface Mounting Posts on Thick Treads

Tread material must be Red Oak (or a wood more dense than Red Oak) and at least 2 1/4" thick to mount with screws. If wood does not meet these specifications, mount posts using bolts, or bolts and a mounting plate (following instructions below).

Mounting to Thick Tread with Screws (See Diagram 3.)

Minimum tread thickness for mounting posts with screws is 2 1/4". (4) fasteners (5/16" x 2 1/2" screws) must be used. Pre-drill holes to keep wood from splitting.

Mounting to Thick Tread with Bolts (See Diagram 4.)

Minimum tread thickness for mounting posts with bolts is 1 1/2".

- Drill 3/8" holes through treads to match the corner holes in the post foot.
- Drill 1/2" holes 1/4" deep on bottom side of tread to allow carriage bolt to seat itself into the tread.
- Insert 5/16" carriage bolts of appropriate length from the bottom so threads are up.
- Tighten bolts.
- Cut off excess threads with cutting wheel in angle grinder.

Mounting to Thick Tread with Mounting Plate (See Diagram 5.)

Minimum tread thickness for mounting posts with a mounting plate is 1".

- Drill 3/8" holes through treads to match the hole pattern in the post foot.
- Place mounting plate underneath tread.
- Insert 5/16" carriage bolts of appropriate length from the bottom so threads are up.
- Tighten bolts.
- Cut off excess threads with cutting wheel in angle grinder.

Surface Mounting Posts on Reduced Width Structures

Only use this option when standard is not practical since the fastener strength safety factor is reduced.

One application is a double 2x10 joist where the flooring and ceiling are already installed. A special order post with a slim foot plate (3/8" thick x 3 1/4" x 3 3/4") is used and has a handrail height **limited to 36"**. This post material must be steel or stainless steel. **Aluminum is not acceptable.** (4) fasteners (3/8" x 6" screws) must be installed to full depth and inserted at a slight angle so that they will have maximum penetration into the structure. Pre-drill holes to avoid splitting wood. (See Diagram 6.)

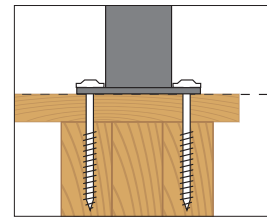


Diagram 1

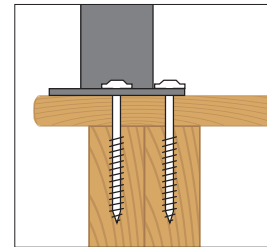


Diagram 2

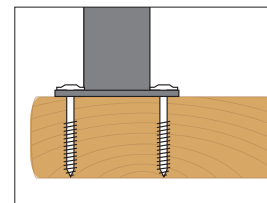


Diagram 3

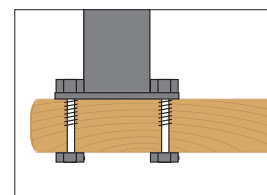


Diagram 4

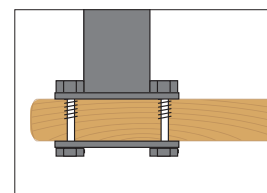


Diagram 5

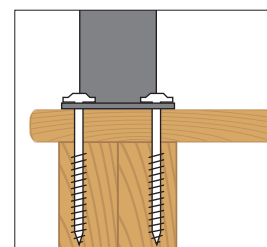


Diagram 6

Post Attachment Appendix

Surface Mounting Posts to Reduced Thickness Framing

(Such as sleepers over a membrane roof. See Diagram 6.)

This is a reduced safety factor installation with a safety factor of 2.75 instead of the standard 4.0 based upon a 200lb lateral load on the handrail.

The substructure must be very secure. A special order post is needed with a large area foot plate (5/16" thick x 5" x 7" with 6 holes). All (6) holes must be populated. Use (6) fasteners (5/16" x 2 1/2" screws) at least 2 1/2" in length. Use longer screws if framing material will allow. **Maximum handrail height for this method is 36".**

Posts must be steel or stainless steel. Aluminum is not acceptable.

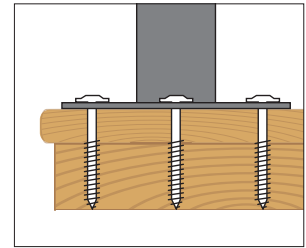


Diagram 6

Standard Side Mount Post

Mounting with Screws (See Diagram 7a.)

(4) fasteners (5/16" x 6" screws) must be used at full depth into triple 2x8 or equivalent. The side mount plate holes are slotted to allow for vertical adjustment of posts.

Mounting with Bolts (See Diagram 7b.)

(4) fasteners (3/8" carriage bolts) must be used through face with thick large area washers under the nuts. The minimum framing material required is a double 2x8.

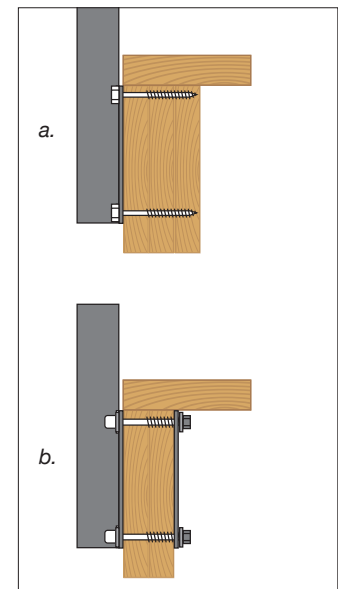


Diagram 7

All Side Mount Posts require a rear mounting plate when mounting with bolts.

Slim Side Mount Posts

Mounting with Screws (included with Post)

(2) fasteners (modified 3/8" coated steel screws, not for coastal use) must be used into framing material; minimum is triple 2x8. Pre-drill holes to avoid splitting wood.

Mounting with Bolts (included with Post)

(2) fasteners (5/16" x 4" stainless steel socket head bolts) must be used with rear mounting plate to prevent bolts from pulling through. Minimum framing material is a double 2x8.

Side Mount Bump Out Posts

Mounting with Screws (included with Post) (See Diagram 7.1)

(2) wood screws hold mounting block, (2) fasteners (modified 3/8" coated steel screws, not for coastal use) must be used into framing material; minimum is triple 2x8. Pre-drill holes to avoid splitting wood.

Mounting with Bolts (included with Post) (See Diagram 7.2)

(2) wood screws hold mounting block (2) fasteners (5/16" x 4" stainless steel socket head bolts) must be used with rear mounting plate to prevent bolts from pulling through. Minimum framing material is a double 2x8.

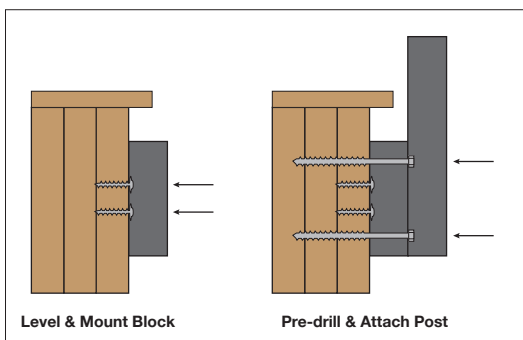


Diagram 7.1

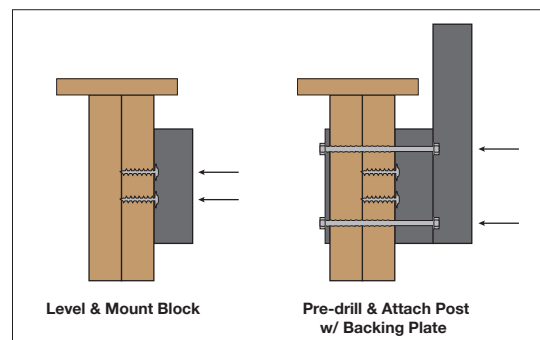


Diagram 7.2

Angle Foot Posts

(4) fasteners (5/16" x 4" screws) must be used into framing material that is at least 3 1/2" wide. Pre-drill holes and run screws at an angle toward center of beam. Maximum angle foot post height supports 10 cables. (See Diagram 8.)

Angle Foot Posts on Reduced Width Structures

A special order post with a slim foot plate (5/16" thick x 2 1/2" x 4 1/2") is used. This post must be steel or stainless steel (**aluminum is not acceptable**) and is limited to a height of 30" (not including the mounting structure). The framing material must be a minimum of 2 1/2" wide.

High Side Fasteners:

- Install 5/16" x 3" dowel screws
- Pre-drill holes
- Place post over dowel screws
- Attach with nuts on top of mounting plate

Low Side Fasteners: use standard screws (5/16" x 4" screws)
(See Diagram 9.)

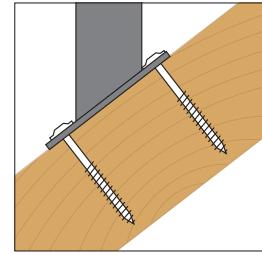


Diagram 8

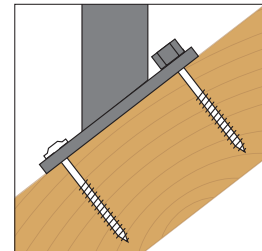


Diagram 9

Attaching 2" Square Metal Posts to Concrete

These requirements for attachment of posts to concrete are based upon information supplied by ITW Redhead Wedge Anchors, the industry leading concrete fastener. The ITW Redhead wedge anchor is IBC 2006 compliant and tested to U.S. Government Specification A-A-1923A Type 4.

Hole drilling bits and technique are critical to a safe install. Find complete information at itwredhead.com.

There are several other attachment methods such as large diameter tapcons or adhesive anchors. None of these methods have been tested. Installer may choose other methods based upon their research and experience.

Load calculations are based upon uncracked 3000 PSI concrete. If your concrete is different, please consult the tables at itwredhead.com for ratings.

Core Drilling Posts

The ultimate strength solution for attaching posts to concrete is core drilling. The downside to core drilling is that it is slower, and more difficult to change or replace posts. We provide a post with an additional 6" of length for use in a core drill application. The post may be field cut shorter to fit your application. We recommend drilling a hole 3" in diameter and filling with quikrete or epoxy. Below is an excellent article on how to core drill and attach posts.

<https://www.quikrete.com/athome/video-anchoring-handrails.asp>

Surface Mount Posts – 6 x 6 Foot Plate

Special order mounting plates (6" x 6" x 3/8" thick for concrete mounting) are required in order to achieve a standard 4 to 1 safety factor. Consult a design engineer for the safety factor needed for your project.

- 3/8" wedge anchors 4 1/2" or longer in 4 holes at the corners of mounting plate
- Anchor must be embedded 3" or deeper in concrete
- Concrete should be 4 1/2" or thicker
- Edge of concrete to fastener should be 3" or greater
- Anchors to have 5 1/4" separation
- Use a torque wrench to tighten anchor bolt to 25 foot pounds

Post Attachment Appendix

Surface Mount Posts – 4.5 x 4.5 Foot Plate

This special application post has an oversized 4 1/2" square foot and foot cover. This mounting application is for use in special circumstances that many of our customers encounter. Consult an engineer to see if this product fits your needs. The plate is 3/8" thick in stainless and 7/16" thick in aluminum. Installers must select and provide appropriate fasteners. Note that concrete anchor manufacturers may require a larger mounting foot for hole spacing wider than 4.5".

Side Mount Posts

Special order mounting plates (7" x 7" x 3/8" thick for concrete mounting) are required in order to achieve a standard 4 to 1 safety factor. Consult a design engineer for the safety factor needed for your project.

- 3/8" wedge anchors 4 1/2" or longer
- Anchor must be embedded 3" or deeper in concrete
- Slab must be 11 1/2" thick where side mounts are being installed
- The edge of concrete to the edge of top hole to be 3" minimum
- Concrete must be normal weight 3000 psi or stronger
- Use a torque wrench to tighten anchor bolt to 25 foot pounds

Code Compliance Information

Code Compliance For 200lb Force on a Handrail or Guardrail in Any Direction

Viewrail posts are engineered and tested to exceed the 200 lb. Force Code when properly installed. We submitted a post to Graham Engineering in Nappanee, Indiana. Doug Graham's calculations (as well as our own in-house tests) repeatedly showed that the fastener is the weakest part of the system that we provide. But the fasteners aren't weak. Installed correctly, the fasteners exceed 200 lbs. with a safety margin of over 200%. The shear strength in LBF for our 5/16" x 4" screws is 2948. The weakest point in the post installation becomes the material to which the post is being mounted. We do not provide such structures and, thus, have no control over their capacity. Lumber should have properties that meet or exceed those of Southern Yellow Pine. Each screw should be pre-drilled to avoid splitting the wood. A 7/32" drill bit is recommended. The screws must be inserted into wood for the full length of the screw, a minimum of 2x6 is recommended. In most cases, extra blocking must be installed prior to installation of posts so that (4) screws can be inserted into the deck structure. The blocking must meet or exceed the screw holding Southern Yellow Pine and it must be adequately attached to the deck structure.

In addition to the 200 lb. Force Code, installers should be concerned with the quality of fastener selected for corrosion resistance. We offer both a coated fastener and a stainless steel fastener. Both of these fasteners meet the IRC code AC257. The AC257 is the updated code related to the corrosive properties of ACQ treated lumber. It is very important that any fastener used meets or exceed AC257.

Code Compliance for 4" Sphere

Meeting the 4" sphere rule means that cables should be spaced on the standard spacing provided in the Viewrail posts. The standard spacing is 3 1/8" O.C. which allows a reasonable amount of deflection of the cable when the posts are spaced no more than 4' apart. When laying out a deck or balcony, it is tempting to space posts farther than 4' apart; however, the deflection of the cable increases dramatically and it cannot be overcome with increased tension. Do not place posts more than 4' apart and do not space cables more than 3 1/8" apart to conform to the 4" sphere rule. Often posts are placed adjacent to each other for a dual corner. When placing two posts in a corner, be sure to place them no more than 4" from each other.



