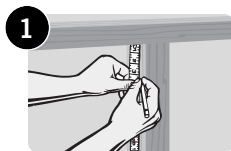


Step-by-Step Installation

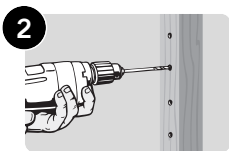
TOOL CHECKLIST

- Safety Glasses
- Work Gloves
- Pencil
- Measuring Tape
- Electric Drill
- Drill Bits
- Hammer
- Cable Cutters
- Vise-Grip Pliers
- 7/16" Wrench
- Electric Grinder with Grinding Disk & Cut-off Disk
- Hacksaw or Electric Reciprocating Saw
- Cable Lacing Needle
- Feeney Tension Gauge



Mark drill hole locations on posts.

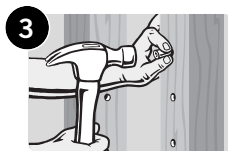
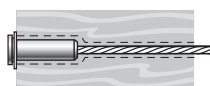
To minimize cable deflection, space cables no more than 3 inches apart and have a post or vertical spacer at least every 3 feet. Also, straight runs of cable (no turns/dips) should not exceed 70 feet. Runs with corners (2 bends at most) should not exceed 40 feet. See Basic Frame Design on back page.



Drill holes in posts. Hole diameter depends on cable size and type of fitting. See chart below.

Cable Size	Threaded Term. Post			Quick-Connect Post
	1/8"	3/16"	1/4"	
5/16"	5/16"	3/8"	1/4"	3/8"
3/8"	3/8"	7/16"	5/16"	9/16"
1/2"	1/2"	1/2"	1/2"	1/2"

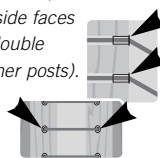
If desired, Quick-Connect® posts may be through drilled at 1/4" (5/16" if 1/4" cable) and then counter-bored with the recommended Quick-Connect® drill to countersink the fitting.



(Metal posts only)
Insert Isolation Bushings or Grommets (optional), into their corresponding post holes. **Note: call for special drill hole sizes.**

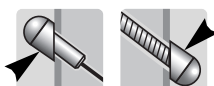
(Wood posts only)
Insert Protector Sleeves at necessary locations. Tap in until flush.

Protector Sleeves prevent abrasion at angled transitions on wood posts (e.g. stair transition posts or outside faces of double corner posts).

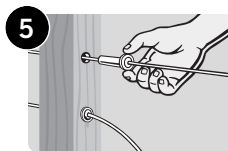


Insert the Threaded Terminal through the Terminal end post and attach a flat washer and Snug-Grip® Washer Nut. Spin the nut 2 full turns. Strong resistance will be felt as the Snug-Grip® threads engage; so hold the Terminal shaft with pliers.

Note: Metal assemblies have Nylon Flat Washers in both white and black. Choose the color that best matches your railing frame.



Use Beveled Washers for stair termination posts with angled holes. Available for Threaded Terminal and Quick-Connect® Inset fittings. Always install the Connect® Inset fittings in the top stair post to prevent rain water from running down the cable into the fittings.



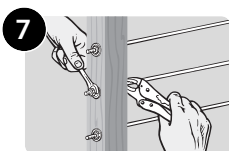
Lace the free end of the cable through the intermediate posts and Quick-Connect® end post. Slide on a flat washer and Quick-Connect® Inset fitting until they rest against the face of the post.

Use a Lacing Needle if snagging becomes a problem.

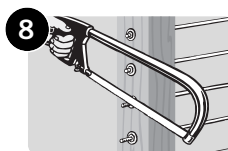


Hold the Quick-Connect® Inset fitting with one hand and pull the cable tight with the other. The fitting automatically locks when you release the cable.

CableRail Tensioning Tool #6005-pkg may be used.



Tension the cables by holding the Threaded Terminal shaft with Vise-Grip pliers and spinning the Snug-Grip® Washer Nuts with a wrench. A Feeney Tension Gauge may be used to check uniform tension. See tensioning sequence diagram at left.



Use hacksaw, reciprocating saw, or electric grinder with cut-off disk to saw off the excess threads as close to the Snug-Grip® Washer Nut as possible. Touch-up with electric grinder. The special Snug-Grip® threads prevent the nut from loosening.



Use cable cutters or electric grinder with cut-off disk to trim the excess cable. Grind flush the exposed cable ends with an electric grinder.

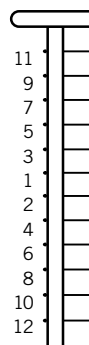


Snap on end caps over the exposed Quick-Connect® Inset fittings and the Snug-Grip® Washer Nuts. You're done.

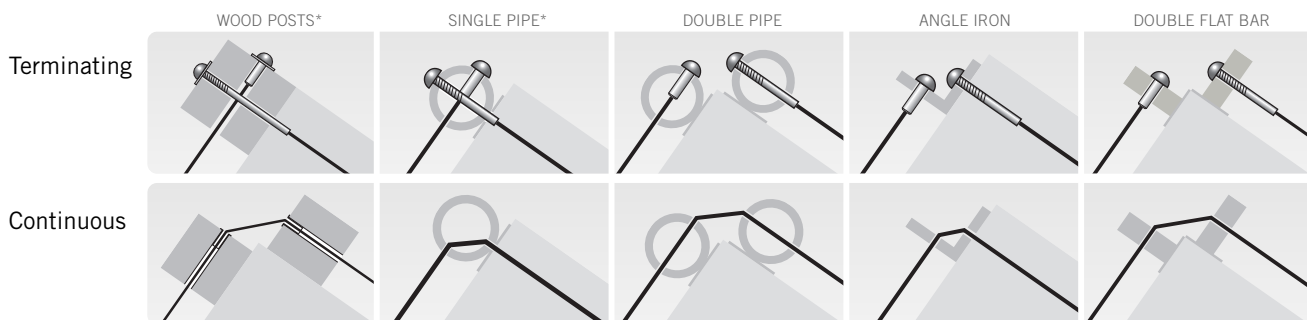
Feeney SteelProtect™ can be applied for lasting protection of stainless steel cable and parts.

Important Note: If using electric or pneumatic tools to tighten the Washer Nuts, spin the nuts very slowly otherwise they will heat up causing the threads to seize.

Recommended cable tensioning sequence



Cables can either terminate or run through corner posts



*Offset drill holes at least 1/2" if you choose to have cables terminating at a single wood or pipe post.

Frame Requirements

Railing frames need to be designed and built strong enough to support the tension of properly installed cables, which is a load in excess of 300 lbs for each cable. Here are some basic guidelines to help you properly prepare your railing frames. These guidelines apply whether you are using 1/8", 3/16" or 1/4" cable (1/4" cable not recommended for wood frames).

Minimum sizes for all corner and end posts

All other posts should be sized as required for cap rail support strength or for code



4X4 WOOD

3-1/2" wide, 3-1/2" thick
Note: Softer woods may require larger post sizes, especially for 42" high railings



FLAT BAR

2" wide, 1" thick



ANGLE IRON

2" wide, 1/2" thick



EXTRA STRONG PIPE

1-1/2" ID, 1-7/8" OD



SQUARE TUBE

2" wide, 1/4" wall

The Basic Frame Design

Spacing From Walls:

Set end posts 3 to 4 inches away from the house/wall face to allow access for attaching cable end fittings.

Top Rail:

Always include a strong, rigid top rail that is securely fastened to all posts. Minimum recommended size is 2"x6" wood. Set railing height per local code.

Cable Spacing:

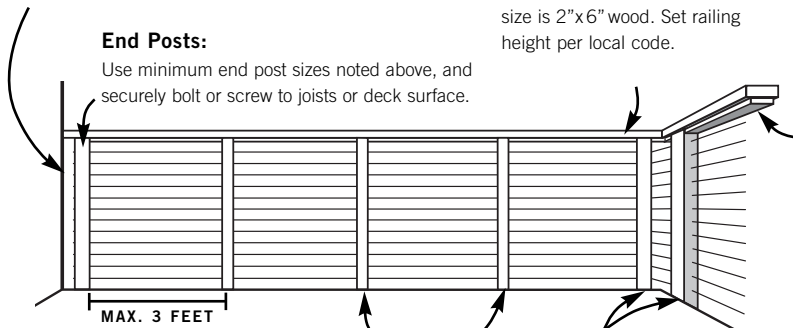
Maximum 3 inches apart.

Wood Blocking (WOOD FRAMES ONLY):

Underneath the top rail attach minimum 1"x4" wood blocking between posts to provide additional lateral reinforcement to the posts so that they won't pull out of plumb when the cables are tensioned.

End Posts:

Use minimum end post sizes noted above, and securely bolt or screw to joists or deck surface.



Maximum Post Spacing:

Space all posts and vertical spacers (see below) a maximum of 3 feet apart to minimize any deflection that may occur if the cables are ever forced apart.

Intermediate Posts:

Size all intermediate posts as required for top rail support strength or for code.

Double Corner Posts:

If possible use double corner posts to allow the cable to run continuously through the corners without terminating (see single corner post option below). Securely bolt or screw posts to joists or deck surface and use minimum corner post sizes noted above.

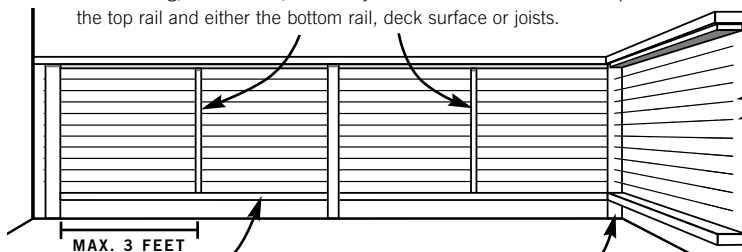
CONSTRUCTION CHECKLIST

- Space cables no more than 3 inches apart
- Space posts/verticals no more than 3 feet apart
- Observe minimum end/corner post sizes shown above
- Securely fasten all posts and top rails
- Carefully plan all termination and corner posts for proper clearance, positioning, and maximum cable run lengths
- Straight runs of cable (no turns/dips) should not exceed 70 feet; runs with corner bends (2 bends at most) should not exceed 40 feet

And Some Other Options

Vertical Spacers (OPTIONAL):

Slender spacers may be used instead of some of the larger intermediate posts to achieve a more open railing design. These are non-structural members and are only intended to maintain cable spacing and minimize deflection. Examples are 2"x2" wood strips, 1" metal tubing, 1/4" flat bar, or Feeney Intermediate Pickets. Attach spacers to the top rail and either the bottom rail, deck surface or joists.



Bottom Rails (OPTIONAL):

Bottom rails should be spaced no more than 4 inches above the deck surface, or as required by local code, and should be sized as needed for support strength and design appearance.

Single Corner Post (OPTIONAL):

In most cases with single corner posts cables must be terminated. Exceptions are angle iron posts or tubular metal posts. When terminating on a single corner post, be sure to offset the drill holes at least 1/2" to allow internal clearance for the cable fittings. Use minimum end post sizes noted above and securely bolt or screw to joists or deck surface.

IMPORTANT NOTE

For railings we recommend spacing the cables no more than 3 inches apart and placing posts or vertical members no more than 3 feet apart.

Please note that since building codes vary by state, county and city, our recommendations may not comply with code requirements in all areas.

Always consult with your local building department before starting your project.