

Cable Railing Project Guide

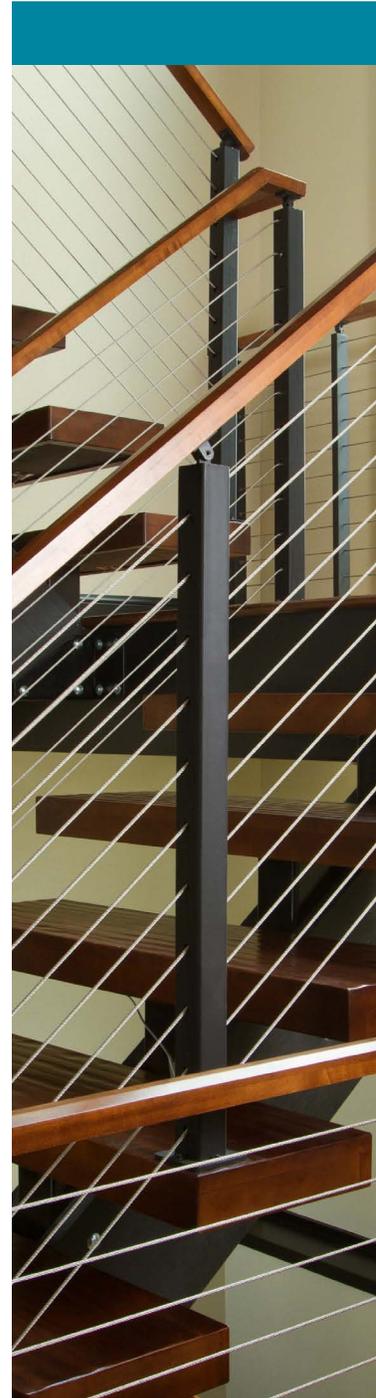
Understand the options and find the best solution for your project. No cable rail experience? No problem! This guide is designed to help you navigate the planning process for your own cable rail system, even if you have no prior knowledge of cable rail. After reading this guide you will be able to make informed decisions about the best system for your home.

Our goal is to simplify your cable rail design experience. If you have any questions along the way, we would love to personally address your concerns and provide more resources as needed. You can reach our cable rail team at **1 (574) 742-1030**, or fill out a [Cable Railing Design Help](#) form to receive a customized quote from an expert who will walk you through the entire design process.

From all of us at Viewrail – We wish you an enhanced view and a transformed living space.

Table of Contents

| | |
|---|-----------|
| Chapter 1: What is Cable Railing?..... | 2 |
| Introduction | |
| Can I Install Cable Railing by Myself? Location & Use | |
| Chapter 2: Cable Railing Posts..... | 3 |
| Post Material & Finishes | |
| Post Mounting Style | |
| Chapter 3: Cable & Components | 8 |
| Cable Tensioning Components | |
| Cable | |
| Chapter 4: Handrail | 11 |
| Handrail Styles | |
| Handrail Mounts | |
| Chapter 5: Start Planning | 12 |
| Safety & Special Measurements | |
| Draw Your Project | |



Chapter 1: What is Cable Railing?

Introduction

Cable railing offers an exciting alternative to traditional wood stair and deck railing, instead harnessing the sleek design of stainless steel cable tensioned between metal or wood posts. Depending on the configuration, cable railing complements a variety of styles: modern, industrial, classic, or craftsman. Always simple and elegant.

Popular for both interior and exterior, stainless steel cable, along with properly treated posts and handrail, offer corrosion resistance and durability. You can find cable railing in homes and commercial spaces across the United States, Canada, and tropical regions because of its versatility and open-concept experience.

Its luxurious appeal and corrosion resistance make it ideal for a high-end, modern space. But don't let that fool you – depending on the scale of the project, cable railing systems can be quite affordable.

Can I Install Cable Railing by Myself?

Absolutely! Most manufacturers provide some form of installation instructions for their cable rail system. If you plan to install the system yourself, it is important to look at these resources and determine if you are comfortable with the process. Some cable railing systems are easier to install than others! Viewrail prioritizes ease of installation, which supports both contractors and those – like you! – who want to do a cable rail project on their own. [Check out our resources here!](#)

Though many projects do not require the help of a contractor, especially complex projects may benefit from an expert.

Location & Use

No matter the project, cable railing promotes a clean aesthetic that compliments both interior and exterior spaces. On your stairways, use cable railing to create an open-concept style, expanding your home by creating a visually larger and more spacious room. Or, take your project outside – the sleek design of cable railing minimizes distractions and extends your view on decks and balconies.

It is essential to select the products that are suited for your location and specific application. If you live within 5 miles of the coast or near surfaces that receive de-icing salt in the winter, 2205 Stainless Steel or Aluminum with a Fluoropolymer powder coat are needed. High salt content in the air can corrode metal posts very quickly if they are not made from the proper materials (see Post Materials below). Even the most stylish cable railing system will only remain beautiful if it can withstand the elements! Read on to learn about selecting materials and styles that will look beautiful for years to come.



Chapter 2: Cable Railing Posts

Posts act as the anchor for cable railing systems. It's important to have strong posts to support the tension required to keep cable railing taut. Explore your options! There are many styles available to create a system that fits your budget and design preferences.

Post Materials & Finishes

Cable railing pairs elegantly with posts made of a variety of materials, most commonly wood or metal. Each material provides a unique look and may be personalized with a variety of finishes.

Metal Posts

For a sleek design, metal posts offer a strong and versatile solution. Normally constructed from either stainless steel or aluminum, metal posts can have a brushed steel finish or powder coated in a wide variety of colors.

Q: "Are the posts pre-cut and pre-drilled?"

Yes. Some people don't mind cutting and drilling on-site... but that's not for everyone! This can be a difficult (and messy) process. At Viewrail, we want to simplify installation for you. Our design team helps you pinpoint your measurements and our manufacturing team creates your custom posts, fully finished and ready to install as soon as you receive them.

Q: "What kind of metal is used?"

It's important to select the right kind of metal for posts that will provide long-lasting beauty. Stainless Steel and Aluminum are the most prominent options available – find the best fit for your environment!

Stainless Steel

Brushed and powder coated stainless steel is the standard for cable rail posts, but there are many variations available on the market. The most common type is 304 Stainless Steel, which is popular because it is strong, affordable, and provides sufficient corrosion resistance for most applications.

However, some applications require a stronger level of corrosion resistance. If you are located in a coastal region within 5 miles of saltwater or near surfaces where salt is used to prevent ice build up, you will need to use a more corrosion resistant stainless steel alloy. The best alloy for this application is 2205 duplex stainless steel posts which provide the absolute highest level of corrosion resistance on the market.



Surface Mount Post
w/ Foot Cover is one of
many options available.

Aluminum

Aluminum is strong, lightweight, affordable, and can be powder coated to match any design. Some companies offer aluminum in a brushed finish with no protective coating, but we've found such posts scratch easily and don't perform well. We recommend using aluminum posts with a high-quality powder coat finish for a budget solution that will hold up very well both indoors and outdoors. Viewrail offers two types of powder coats. The standard powder coat can be used when the location is more than 5 miles from the coast. If you are within 5 miles of the coast, we recommend using our marine grade Fluoropolymer

Other Metals

Occasionally, you may come across posts made of Mild Steel or Galvanized Steel. These materials are not as strong as stainless steel and offer significantly less corrosion resistance over time. We highly recommend selecting either stainless steel or aluminum posts, as we've found these materials perform the best over time.

Q: "How many posts will I need?"

Metal posts must be no more than 4' apart to control cable deflection (read more about post spacing on page 12). The overall number of posts needed to complete your project will vary significantly based on the manufacturer.

For example, some brands don't have a solution for mounting cable on one corner post, so they put 2 posts on each corner instead. Some use this same method for transitioning from level surfaces to angled stairs, which creates a more cluttered appearance and works against your goal of an open and simple cable rail project. Additionally, double posting at each transition increases your costs significantly.

Unlike many options on the market, the Viewrail design solves this problem. Most corners and stair transitions only require one post, which streamlines the system and saves you money. A simple solution that's an all-around win!

Budget Tip:

Powder coated aluminum posts are a great option for projects on a budget!

They provide the modern look you want at an accessible price.

Choose Speedboat Silver for a finish that resembles stainless steel.



Wood Posts

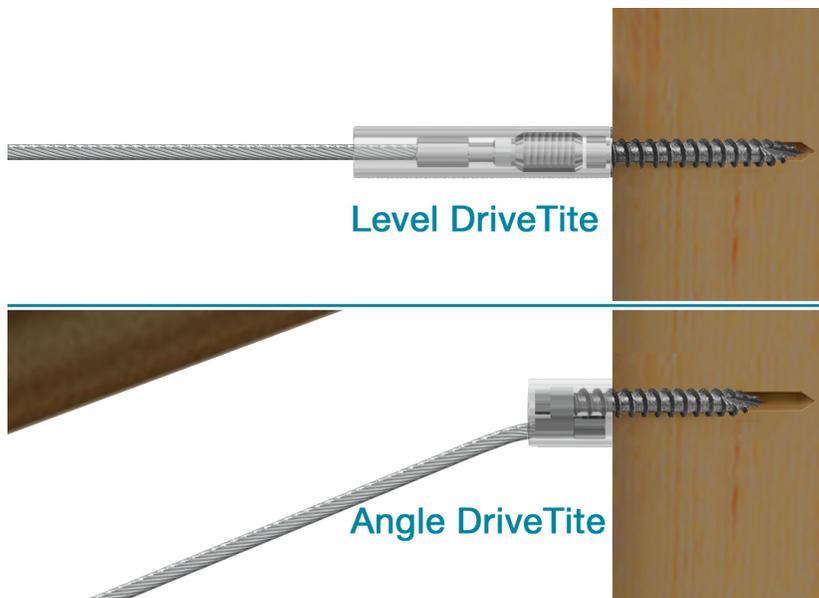
Natural wood posts offer a strong and warm appearance, melding to meet your style goals based on your choice of wood species, stain, and finish.

Already have wood posts? Great! Many companies offer kits that may be used to tension cable into existing wood posts. Some may require special modifications, such as drilling holes through the posts, while others like **Viewrail's DriveTite** can be used on most pre-existing wood posts with very little modification. Cable railing is a fairly easy DIY project that can make a major impact on your living space, and using your own wood posts is a great way to save time and money!

Q: "Should I use solid or hollow wood posts?"

There are cable railing systems available for both solid and hollow wood posts. Check the specific kit you are looking at buying to make sure it is compatible with the posts you are using.

Viewrail offers an Angle and Level option for DriveTite. Both are attached to the outside of a wooden post.



Q: “What species of wood is good for exterior wood posts?”

Let your creativity run wild with interior wood selections – all can be finished to hold up to normal, everyday indoor use. However, think again when it comes to exterior wood selection – pick woods that are strong enough to stand up to the elements and support your cable system, such as oak or maple protected with an exterior grade finish. Keep in mind that wood strength requirements for cable rail vary by brand, so it’s best to double check before purchase.

Q: “What are intermediate posts and why would I need them?”

Intermediate posts are thin metal posts that are placed between larger structural posts to prevent cable deflection, or cable bending. Building code in most locations require that gaps in railing systems be no larger than 4". The further cables span, the more they are able to deflect. Viewrail uses 3 1/8" spacing between cable runs.



The intermediate posts in the picture above are only used between wood posts

To help reduce this bending, intermediate posts are placed between structural posts positioned more than 4' apart, supporting the railing system in a simple, unobtrusive way. Read more about post and cable spacing on page 12.

Q: “Does cable railing work with vinyl sleeved wood posts?”

It definitely can! However, it is important to double check if the specific kits you are looking into will work with vinyl sleeved posts. Due to how different kits are designed to mount into a post, the vinyl sleeve could present an issue depending on if there is a gap between the sleeve and wood post. These kits are designed to anchor into wood posts, even through the vinyl sleeve, and support the cable railing system.

Budget Tip:

Install cable railing on your existing wood posts.

It looks beautiful and saves you time and money!

Post Mounting Style

Metal posts may be mounted in a variety of ways. Evaluate the area where you will be installing your railing and refer to the chart below to figure out which post mount style is best for your application. There might be one obvious solution, but you also might have some options! Answer these two questions to help determine the perfect post mounting style for your application:

How can my posts be mounted?

Posts are primarily mounted onto 3 types of surfaces: level, angled, or vertical (fascia mounted).

Flat Surfaces: Posts mounting to flat surfaces are usually called Surface Mount, Flat Mount, or Standard Mount. These posts mount directly to the floor or to the tread of a stairway and can be used in most applications.

Angled Surfaces: On angled surfaces, like knee walls and ramps, use Angle Foot Posts. This mounting style anchors onto the angled surface with a foot customized to match your surface's exact angle.

Vertical Surfaces (Fascia): Often called fascia mount or side mount posts, this style saves space by attaching to a vertical surface like the side of a deck or stairway. There are many different styles of these mounts available. Choose the one that suits your home best!

What is that surface made of?

The surface for installing cable railing posts must be strong, stable, and thick enough for mounting hardware.

Wood Surface: The most common mounting surface is wood. Nearly all standard posts are designed to mount onto a wood base. Be sure to check what thickness and wood hardness is required for the design.

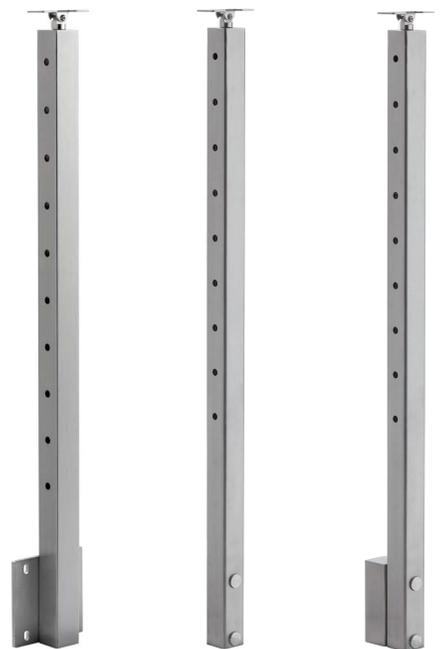
Composite Surface: Many decks are made from composite material. True composite is made of wood and plastic and should work with most posts intended for wood mounting. Beware: plastic-only composite is usually not compatible. To mount on true composite, additional materials, like wood blocking for fastening, may be required.

Cement Surface: Mounting posts into cement is tricky, but may be necessary sometimes. Be sure to find hardware and posts, like Viewrail Special Application Posts, that are compatible with cement installation. Consider working with a contractor to help avoid cracks on your cement surface as you mount your posts.



Surface Mount
w/ Foot Cover

Angle Foot Post
w/ Foot Cover



Side Mount
(fascia mount)

Slim Side
Mount
(fascia mount)

Side Side
Bump-Out Mount
(fascia mount)

Chapter 3: Cable & Components

After you've discovered what kinds of posts are available, the next decision you face is what cable and tensioning components are right for you! Because posts and components are designed to work together, we recommend purchasing both products from the same manufacturer to ensure the system works as intended.

Cable Tensioning Components

Keep your cable taut between each end post with cable tensioning components. They come in an array of shapes, sizes, and styles to best fit your needs.

Post Material

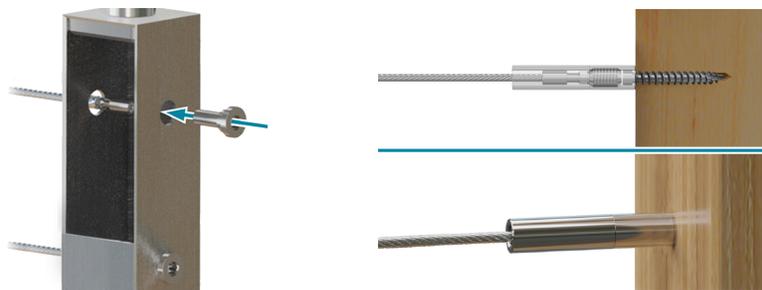
Now that you've selected your posts, choose cable tensioning components that are compatible with the them. If you have wood posts, find a system like Viewrail DriveTite Surface for easy installation. Pre-drilled metal posts are best paired with the cable tensioning system of the same brand.

Level or Angled Runs

Sometimes the tensioning components used for angled runs, such as those going up stairs, are different than the tensioning components required for level runs. Your project may have a combination of level and angled runs. . . no problem! Just make sure you are using the correct components for each application.

Hidden or Exposed Components

Visually, a big differentiator between cable tensioning systems is whether the components are hidden within the posts or exposed along the cable runs.



Some systems, like **Viewrail Level Tension Kits** (for metal posts), discreetly conceal the tensioning components inside of the posts for a clean finish. Other systems, like Viewrail DriveTite, use exposed tensioning components that mount to the outside of the post.

Ease of Installation

It is important to install cable rail properly to ensure safety and beautiful results. If you plan to do the installation on your own, investigate to see if the company has installation videos or other helpful resources. Call and talk to the customer service team to find out if you will get installation instructions with your order. When your cable rail arrives at your home, you'll be glad you thought to ask!

Cable

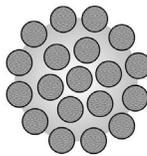
All cable used for cable railing is formed by twisting together thin pieces of stainless steel wire. There is a wide variety of cable on the market, each different based on the number of wires, the thickness of the wires, and the arrangement in which they are twisted.

Composition and Diameter

Cable is described by 2 major elements: composition and diameter. You'll see descriptions like 1x19 Cable. The first number represents the number of wire groupings in the cable. The second number stands for the number of wires in each grouping.



1x19 Stainless Steel Cable
5/32" Diameter
Non-flexible



For example, a 1x19 Cable is formed from 19 individual strands of wire twisted together into 1 group. This style is strong and provides a smooth appearance. Viewrail 1x19 Stainless Steel Cable is 5/32" in diameter. Diameter refers to the thickness of the entire cable.

Make sure to use cable provided by the same company as your tensioning components.

Many components will only work with a certain style of cable!

How Much to Buy?

Calculate the amount of cable you need based on the length of the run multiplied by the number of cable runs. Before multiplying, add one extra foot to the cable length for installation. Be sure to add all runs together to get your total amount of cable needed.

For example:

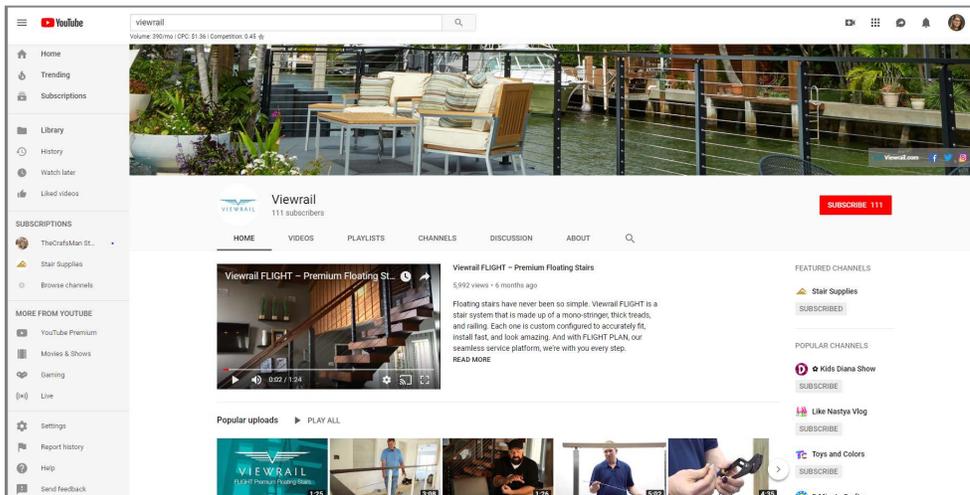
The front side of a deck might be 12' long. Each side is 8' long. There will be 10 runs of cable along each side (see Chapter 5 on page 12 for more details about determining number of cable runs.)

| | | |
|----------------------------|---|--|
| Front of Deck: | 12' + 1' = 13' | 13' x 10 cables = 130' of cable |
| Side 1: | 8' + 1' = 9' | 9' x 10 cables = 90' of cable |
| Side 2: | 8' + 1' = 9' | 9' x 10 cables = 90' of cable |
| Total cable needed: | 130' + 90' + 90' = 310' of cable | |

Cable is sold in varying lengths, only available in 100' and 400' spools. Make sure to take your footage and round up to the next 100'. We recommend ordering more cable than you think you need, especially if you are under tight time constraints. If a mistake is made along the way and a new piece of cable needs to be cut, the extra cable will come in handy!

Learn More

Check out the [Viewrail YouTube Channel](#) for product animations and installation instructions.



Chapter 4: Handrail

Top off your cable railing project with handrail that works in harmony with the rest of your design.

Handrail Styles

Handrail with a simple form, such as round or rectangular shapes, pair nicely with the sleek look of cable railing. Avoid handrail with intricate shapes common with traditional stair systems. Such styles often clash with cable railing's modern appearance.

Metal, wood, and vinyl are the most common types of handrail for cable railing systems. If you choose to use metal handrails, it is best to use the same metal and finish as your posts. Wood handrail looks beautiful, but know your environment – apply an appropriate exterior grade finish to ensure long-lasting beauty.

Handrail Mounts

There are two main methods of mounting handrail on cable rail posts: Flat and Universal.

Flat handrail mounts attach handrail directly to the post using simple, discreet brackets. These disappear beneath the handrail for a clean look. Usually, flat mounts are only available for level handrail, not for handrail on stairs or ramps.

Universal handrail mounts are adjustable. Transition from stairway to flat surface while maintaining the same mounting method throughout.



Many different styles and finishes are available.



Universal Top
for Level or Angle



Flat Top
Level runs only

Chapter 5: Start Planning

Safety & Special Measurements

Planning out your project is an important step for you and your contractor, if you choose to work with one. This process helps you understand what challenges you might encounter, how to space your posts, and what materials you need to get your project completed.

Safety

Now that you understand each aspect of cable railing, it's time to design your own. But before the measuring begins, keep in mind these safety guidelines and steps to meet your local building code requirements. Be sure to contact your local code official before purchasing any products!

Post Spacing

As you know, cable rail is tensioned between two posts – but how far apart should each post be spaced? Metal posts should be placed no wider than 4' apart to decrease cable deflection and provide support to the railing.

If using wood posts spaced more than 4' apart, use an intermediate post in between them to minimize cable deflection. Intermediate posts are normally thin strips of metal and neither secure the cable nor provide structural support to the system, but they do help keep cable from sagging.

Even if you are using intermediate posts you will still need to have a structural post at least every 8' to support the railing.

Cable Spacing

The most common railing code enforces the 4" Sphere Rule, which prohibits gaps in railing large enough for a sphere 4" in diameter to fit through. This ensures that a child's head will not fit between the railing. Because of this, each cable in your railing system should be spaced no more than 3 1/8" apart. This ensures that the tensioned cables will not deflect enough to open a 4" gap in the railing.

You can calculate the number of cable runs needed based on the height of the posts, keeping cables spaced at a maximum of 3 1/8" apart in order to comply with the 4" Sphere Rule. For example, using Viewrail Posts and Cable, a 36" handrail height requires approximately 10 runs of cable, 37" requires 11, and 38" requires 12.

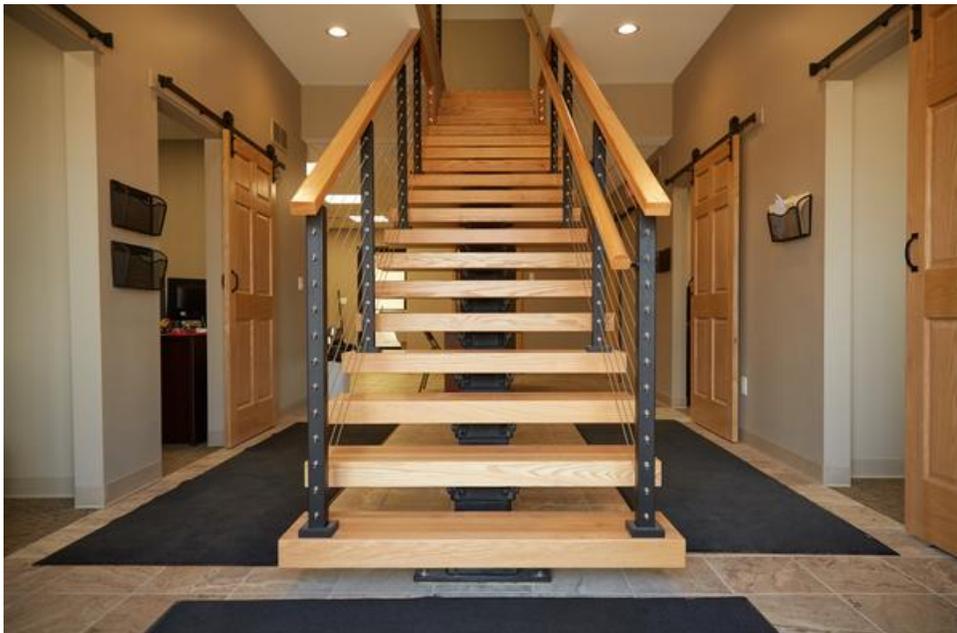


Handrail & Post Height

In most locations, building code calls for stair handrail to be between 34" - 38" high. The most common handrail height on a stairway is 36" tall. Handrail height for balconies varies more based on location, but is commonly in the 39" - 42" range. When you read about a post height, most times that measurement refers to the overall height of the handrail after installation, including the added height from brackets and handrail.

Grab Rail

Occasionally, local building code may require the use of grab rail. This is an additional handrail mounted lower on the posts, intended to provide an easier grasp for those going up and down stairs. If your project includes stairs, be sure to check with your local code official about grab rail requirements in your area.



Typical Grab Rail installation shown above

Common tools for installation

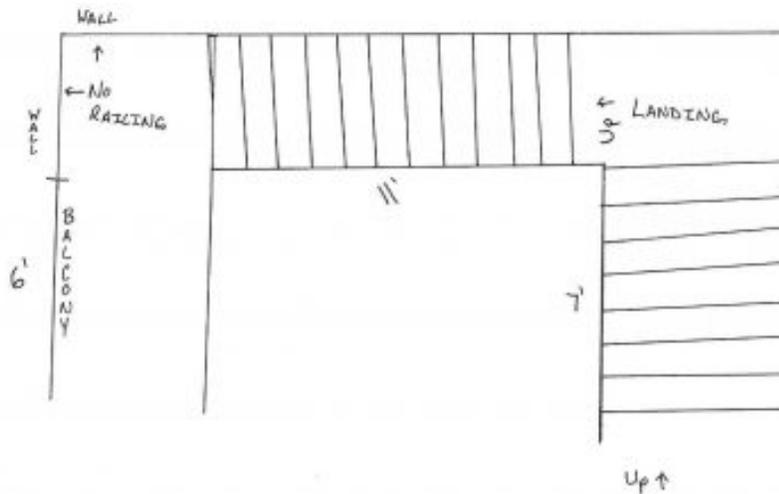
You may need to purchase a few special tools to install cable rail. Check with the manufacturer to see which tools are required for their system. Here are some common tools you may need: Cable Cutters, Crimping Tool, Drill, Screwdriver, Stainless Steel Polish.



Draw your Project

Create a diagram to help you visualize your project! All you need is a measuring tape, ruler, pencil, and paper.

Start with an overall sketch of your space. Do your best to make it as proportionally accurate, and clearly labeled as possible. Like this example, make sure that it's obvious which areas are stairs, landings, balconies, and walls. If your project includes stairs, be sure to draw or otherwise indicate how many steps you have per flight of stairs.



Next, measure the sides of each section and write these measurements on the corresponding locations in your drawing. Include notes about unique sections or areas of concern.

At this point, you should have enough information that a cable rail specialist should be able to help you figure out the rest of the details about your project and help you order the correct amount of posts and components for your project. You could also use the suggested post-spacing measurements above to determine what you need for yourself. Then all that is left is installing your system!

At Viewrail, we specialize in figuring out the complexities of your project so you don't have to. If you would like more help with designing your system, use the [Design Center](#) to send us a few details, including a diagram like the example above, and we will help you achieve a beautiful railing system.



Get Design Help Now.
VISIT THE VIEWRAIL DESIGN CENTER

