



Sawn Baluster Sizing and Installation Guide

Welcome to the Durabrac® sizing and installation guide for Sawn Balusters. This guide has been prepared to answer any questions you may have about our Sawn Balusters and recommended ways to install them.

What you will find in this document.

- Guidance on selecting the style, size, and options that best fit your needs.
- Ordering information and explanation of our three tier ordering options.
- What raw material we use and its benefits to you.
- A description of the individual parts.
- An installation guide with specifics installation options.
- Cutting, drilling or modifying, plus hardware tips.
- Painting information.
- Proper care for your Durabrac® components.

Selecting style, size and options

Are you looking for simple and practical, or maybe something flowing or whimsical. We have 22 original designs with various styles and themes. When it comes to style it's what makes you happy.

Durabrac Sawn Balusters come in two standard heights. Custom designs and lengths are available. You may notice that Durabrac baluster prices vary wildly. Many of our balusters are wider and use more raw materials. On average, you need less of the higher priced balusters, but more of the lower priced balusters to cover the same distance. Some styles lend themselves to wider spacing which helps to lower that baluster's cost per foot; otherwise, all Durabrac Balusters cost roughly the same per linear foot.

Standard heights available are 23-1/2" and 31-1/2". Adding the Cap Rails will add 1-1/2" to the height. Our Tee railing adds 3-1/2" top and 3-1/2" bottom for 7" total. As an assembly, the 23-1/2" balusters can reach a 36" railing height when allowing for a 4" space under the bottom rail. The 31-1/2" height can reach over 42" with just 3" of space between the bottom rail and the porch surface. If you have or obtain your own railing your height will adjust according to the height of that railing. If you have questions about this formula don't hesitate to give us a call.

Our Three Tier ordering system

You may choose from Balusters only or Balusters with cap rails to align your balusters and join them to create the baluster assembly. Cap Rails will speed up installation time when installing to your existing railing, or when installing to railing you may have purchased locally. For our builder customers we offer a Complete Railing and Post System (CR+PS). The CR+PS system is delivered complete and ready to install. All we need from you is your measurements. If you have your own railing, purchasing balusters and cap rails will simplify the process of attach our balusters to your new or existing railing.

- You've picked you style and determined you size. Next is to determine you installation needs.
- Select **Balusters only** if you are constructing you railing in a traditional manor. A painted Durabrac Baluster is hard to distinguish from wood.
- Add **Cap Rail** to your order for easier installation to your original or locally purchased railing. Any railing system will work as long as the top of the bottom rail and the bottom of the top rail have a flat surface that is at least 1-1/2"



- **Total System Packages** are available. A complete system built just for you, ready to install. For information and pricing please contact Mike Sheehan by phone at 850.433.4981 or send your specifications by email to mike@cdandm.com.

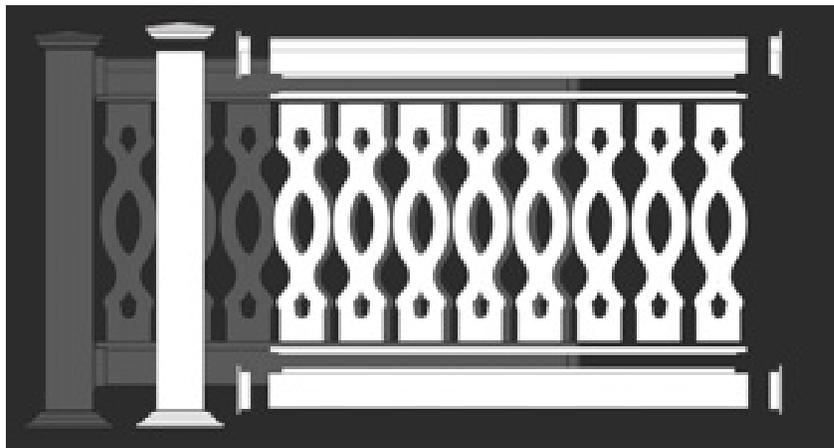
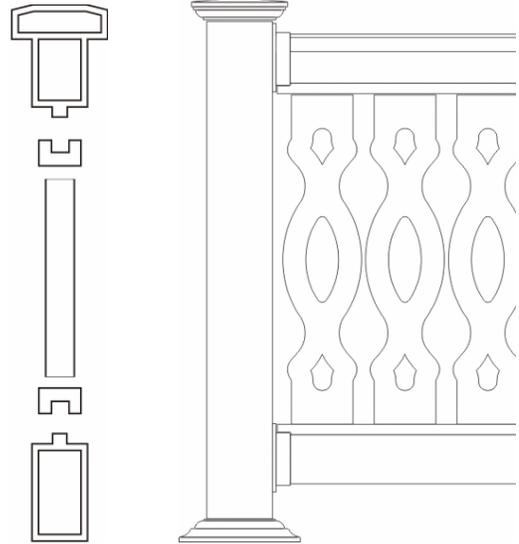
The Material

All Durabrac® components are manufactured from a high grade of cellular PVC vinyl. We select only the best, time tested material. Durabrac® components have the feel and weight of wood. We select our raw material for following reasons.

- Color stability and UV protection.
- Structural stability and uniformity of thickness.
- Painting is not required. You can leave them natural white.
- No special priming is needed to when painted with latex paint.

Individual Baluster and Railing Parts

- **Sawn Balusters**
- **Cap Rail and Adapter rail**
(sold as a pair)
- **Top T-Rail and Bottom**
(sold as a set)
- **Attaching Brackets**
(sold as a top and bottom pair)
- **Newel Post**
(steel support not shown)
- **Newel Post Cap**



Balusters

Our balusters are accurately cut from one inch vinyl material. The top and bottom edges are square. If you have need for special notching to match your railing contact us to arrange for this service.

Cap Rail

The Cap Rail includes an adapter rail. When you order our complete railing system the adapter rail is preinstalled.

Top T-Rail and bottom rail and attaching brackets

We use a commercial grade system that is good looking, installs easy and provides a high level of safety.

Newel Post and Cap

If you need railing longer than 84 inches you should consider adding a newel post in the middle of the span. Our newel posts have a steel core that rise up inside the 4 inch outer shell. The steel core bolts solidly to wood or concrete. The newel post comes with added internal, plastic material for the railing bracket installation screws to have something solid to attach to. A decorative cap and base is included.

Installation of Balusters to Railing

Sub-assembly

If you ordered our complete system cut to length you will not need to cut or trim any of the parts. The one exception to this is stair railing. Angled stair railing is best measured and cut as needed. You would receive longer railing that you would trim in the field.

Assembly is a two step process. First, create a flat work. On this work surface you will assemble the baluster sub-assembly for each section. This assembly consists of attaching the correctly spaced balusters with the correct Cap Rail that is matched to the top and bottom railing for each section.

Final assembly is accomplished as the railing and baluster sub-assemblies are combined during installed to your porch or deck.



Set up a flat work surface to assemble the Balusters to the Cap Rail. Be sure it is longer than the longest section you will need to assemble. Plywood or a flat door on saw horses is acceptable. The above picture shows the aluminum insert being used as a straight edge. Also pictured are the top and bottom Cap Rail. The Durabrac balusters stacked for assembly. Two long 1/4" thick shims used to raise the balusters to the center of the Cap Rail.



Place one Cap Rail along the straight edge to be used as a guide. Line up the balusters along this Cap Rail with the uniform spacing of choice. Remember to allow for end spacing. Starting a baluster flush with the end of a Cap Rail will give you $\frac{1}{4}$ " of end spacing. If you need more add it by moving in from the end of the Cap Rail accordingly. Make custom shims to hold and ensure accurate spacing. All the balusters are manufactured to exactly the same width so use equal spacing top and bottom. Snap a chalk line down the middle of the other Cap Rail. Position it against the spaced balusters and mark for two holes per baluster as shown.



Drill holes larger than the body of the screws you will use to attach the Cap Rail to the Balusters. The screw threads should fit into the hole easily but not be too loose.

After drilling the holes in the Cap Rail, flip the rail to channel or groove side up. Stand up the installation screws in all the holes. The screws in the photo are $2\frac{1}{2}$ "galvanized deck screws. Use Stainless steel screws for coastal or extremely wet environments.



Rotate the Cap Rail and the screws 90 degrees. Be sure the channel is facing out. Fasten the first screw into the baluster nearest the square corner being sure you have proper end spacing and alignment to the square corner. Go to the other end and establish proper end spacing then install one screw. With a screw at each end holding everything in alignment screw the remaining screws in until their heads pull flush. Now flip baluster assembly 180 degrees and repeat for other Cap Rail.



If you ordered your railing to fit, your railing tracks come with the proper set back at both ends. This set back allows room for the installation brackets. If for any reason you have to shorten the railing you will need to notch the rail back to make enough room for the installation bracket. Protect the surface with masking tape. Use a fine tooth saw to cut down through the 1/2" rail. The fastest way to remove the extra material is with a sharp chisel. A few smaller taps are better than one big hit with the hammer.



The finished baluster assembly. Notice the notches at each end of the attaching rails. These are for clearance over the attaching bracket. If you ordered your railing to fit these notches come pre-cut. If you need for any reason to trim the Cap Rail then you will need to re-create this notch at the trimmed end.



From experience, it is best to assemble the baluster sub assembly and the railing by installing the bottom rail first. Place shims every 24 inches under the installed bottom rail to prevent any sagging while assembling the baluster assembly and top railing. Apply a 3/8" wide bead of adhesive along the top of the bottom rail as shown (a suggested list of adhesive is at the end).



Set the baluster assembly on the bottom rail. If gaps appear, adjust the shims under the rail to make everything level. If any adhesive squeezes out let it stiffen some before removing with a sharp knife. If you use epoxy, it is best to trim any squeeze out before the epoxy fully hardens.



To install the top railing for a section, apply a bead of adhesive down in the groove on the top of the baluster assembly. Set the top rail in place making note that there are no big gaps or unevenness. Follow the same cleanup guidelines as provided for the bottom rail



The brackets that you will use to install the railing come with specific instructions and hardware. Each package has a copy. If you have questions about them please contact us.



If for any reason you do not want to assemble the railing in place you can complete the assembly as shown above and install as a complete section. Be sure to allow time for the adhesive to cure. Refer to the adhesive manufacturer's recommendations for application and curing times.

Adhesives

Use adhesive to bond the baluster assembly to the top and bottom rail. The two choices are epoxy and polyurethane adhesive caulk. Epoxy is the best choice when assembling a complete section that is to be put a side for a later installation. When the baluster assembly and the railing are bonded and installed at the same time the polyurethane is the better choice.

Epoxy is difficult to use without experience. It sets up quickly and is non reversible should you find you made a mistake. Because of the quick setup time it is best used in a production environment with at least two assistants. Once you begin using the epoxy you can not lay the gun down for more than a minute or two or you risk the epoxy setting up in the mixing nozzle. The mixing nozzle is disposable. It has a one time use so it is important to keep the epoxy flowing. As a team you need to move from section to section. The advantages are that it is a strong bond that hardens quickly. Using epoxy allows you to quickly assemble all sections in a controlled environment. After only a few hours the complete section can be screwed in place. Quickly moving from one to the next.

Polyurethane adhesive caulk is much easier to use and more forgiving should adjustments be needed. It does takes as long as 24 hours to setup and a week or more to completely harden. For that reason the best way to assemble the baluster sub-assembly to the railing is to assemble them in place as per the instructions above.

Painting Your Balusters

If you have a wood home with wood trim you know how involved painting wood can be. That is not the case with Durabrac® Architectural Components. The material Durabrac® components are made from does not allow moisture to penetrate behind a properly applied painted surface. Moisture seeping behind painted finishes is the main cause the finish peels, cracks or checks.

Components painted with bright colors are subject to fading from contact with the sun's rays. Should you need to repaint a Durabrac® component you will not be subject to all the time consuming scraping and sanding required in a repaint a wood surface.

Painting Durabrac components is very easy. Use a quality latex paint. Apply the paint by brush or spray. No special primer is needed. Wash and rinse prior to painting with a grease cutting detergent. Dishwashing detergent works well to remove dirt and oily hand prints. The material manufacturer states that sanding or roughing the surface is not necessary.

The use of a Scotch Brite pad or a soap free scouring pad to wash will lightly scratch the surface and gives the paint a rougher surface to bond to. This method also insures that stuck on dirt and foreign material will be removed. *Scotch-Brite is a registered trademark of the 3M Company*

Care and Cleaning of your Balusters

Care for your Durabrac components with a periodic washing with a mild soap or detergent. A pressure washer may be used but do so with care. Do not direct a concentrated pinpoint stream from the pressure washer on the bracket. You may pressure wash painted Durabrac components as long as you use wide sweeping motions and keep the nozzle tip 18 or more inches from the surface.

Our goal is that the information found in this guide will answer whatever questions you may have. If you need more information or have a specific question, please contact us directly.

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