



# Oasis Outdoor Products

## RAILING

## INSTALLATION GUIDE

## Glossary of Parts



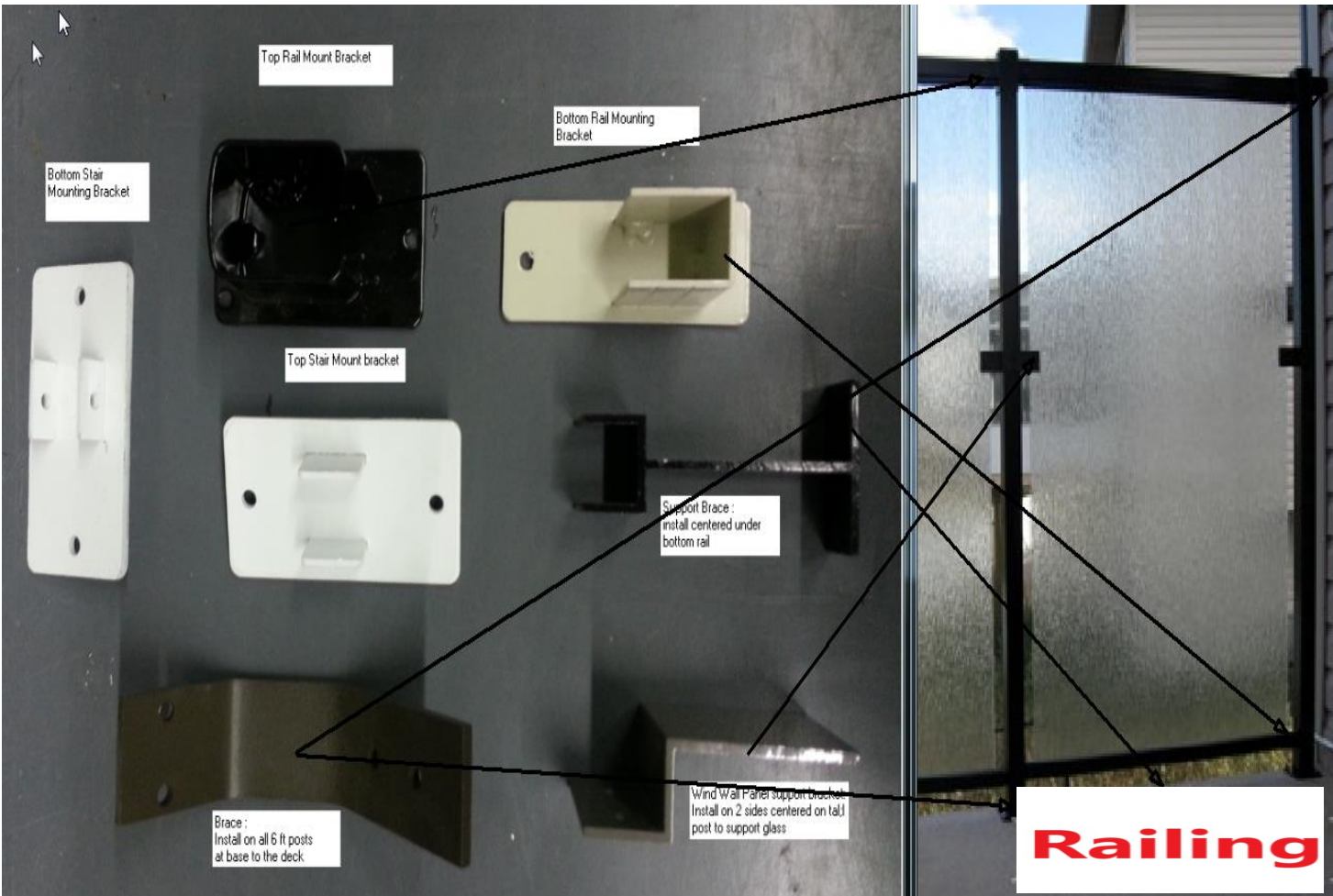
Rail Bracket

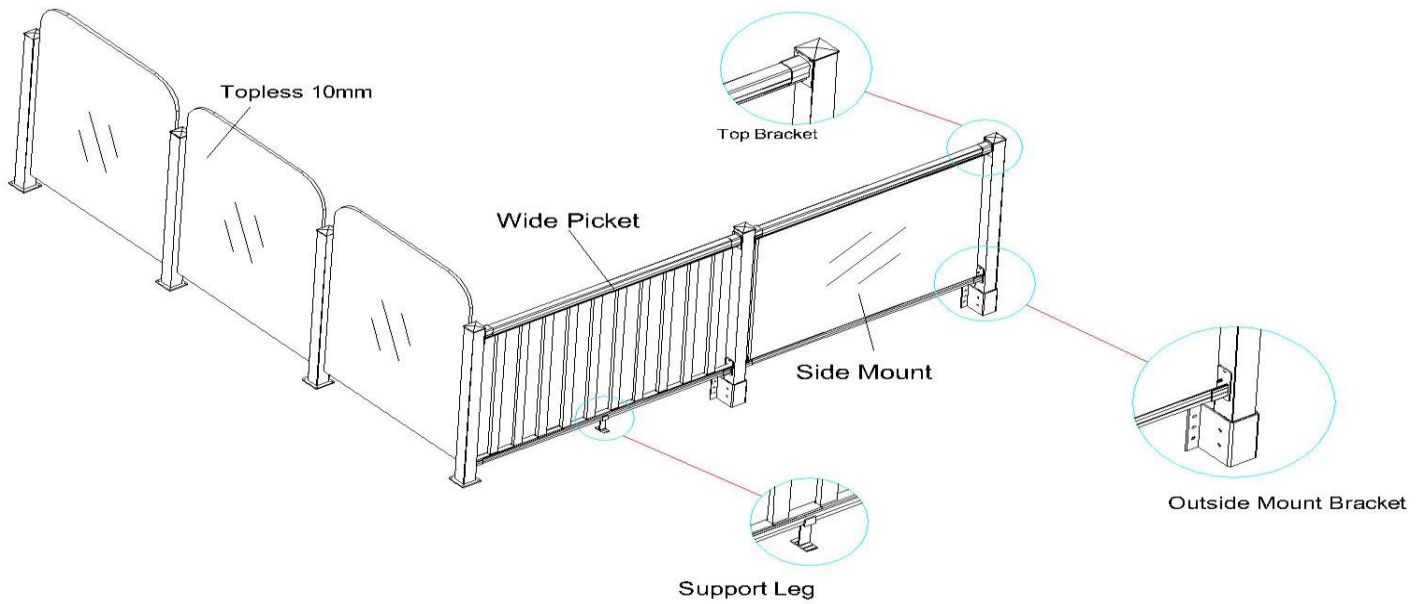
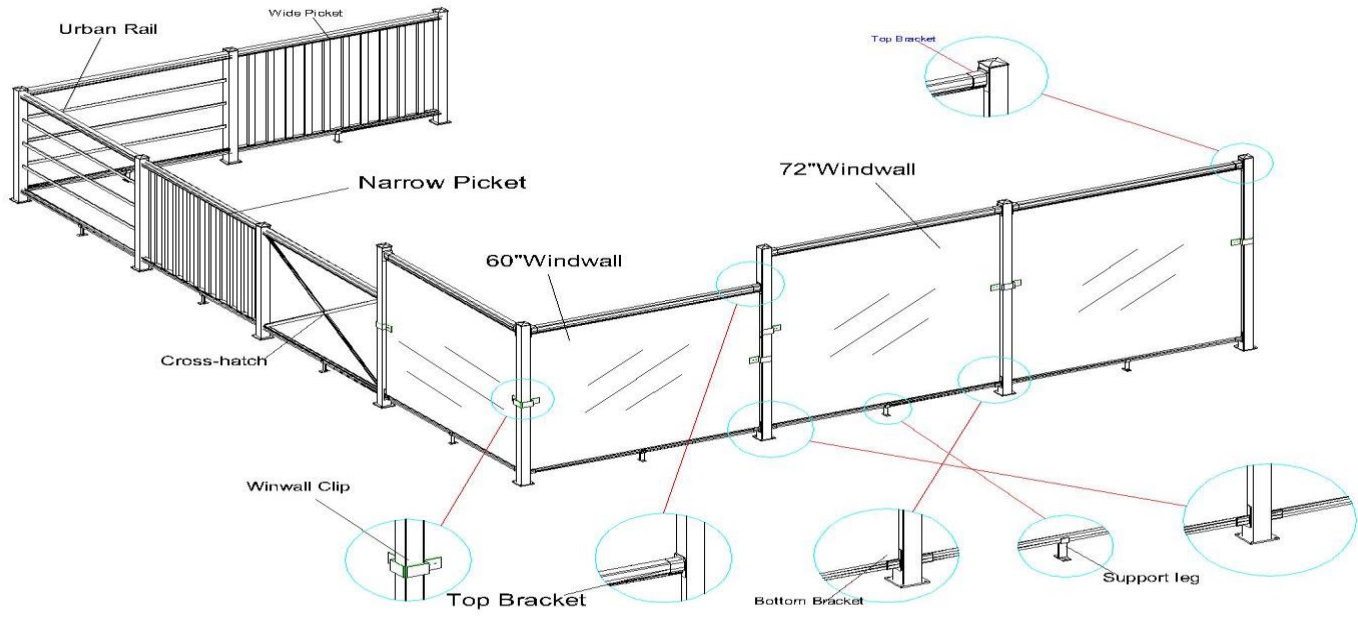


General (Rail) Brace



Wind Wall Clips





### Materials:

- 2 ¼" X 2 ¼" Aluminum Posts with 4" X 4" Base Plates attached
- End Posts, No Hole Posts, Line Posts, Corner Posts, 45\* Posts
- 6' Wind Wall Posts
- 12' lengths of Top and Bottom Rail with bottom support braces (2)
- Bundles of Picket and Clip with 50 clip packs (either notched or straight)

### Fasteners:

- 5/8" Tek screws
- 1" Tek screws
- 1 ½" Tek screws
- 2" Hex Lag screws
- 3" Hex Lag screws
- Mungo Plugs for concrete
- Wind Wall Clips, used for securing Wind Wall glass mid post

-Glass Insert – 12ft lengths. Used in top and bottom rail for glass installation

-Glass Blocks – Used for glass to sit on in bottom rail (2 per pane)

-General Brace and Outside Support Braces (not shown in glossary) – Used for 6ft Wind Wall sections for bracing the run of glass

-Top and Bottom Rail Brackets – Used in place of fabricated posts or to attach to existing posts

-Hand Rail and Wall Mount Brackets and Top Rail Caps (not shown in glossary) – Used for walk ups, or mounting to house

### Tools:

- 10" or 12" mitre saw (Chop Saw)
- **10" or 12" Non Ferrous Aluminum Cutting Blade ONLY!**
- Square (Most important)
- Torpedo Level
- #3 Robertson used for post and plate dismantle
- 3/8" Hex head bit, used for lag screws
- Cordless Drill(s)
- Hammer Drill (Hilti TE2 recommended) with 5/16" bit for concrete installation
- Drill Bits for Pre-drilling into wood
- Tape Measure
- Metal file
- Hammer
- Pliers, Wrenches, Socket set
- Brush (to clean area after concrete holes are pre drilled before the post is put in place)
- **Composite shims (not supplied)**
- Chisel (to tidy composite shim edges)
- Black Marker
- Clamps (Quick Grip recommended)
- Power Cords
- Table

### Notes about Blocking:

- Please be advised it is HIGHLY recommended to block or plate under each post to ensure optimal structural performance of our rail system

### Notes About Code:

- Maximum gap between two items allowed by code is 4" (post to house, column to post, picket to picket etc.)
- Stair rail is to be 31.5" to 38" high from the nose of the tread
- Maximum allowable size for each glass pane is 20 square feet
- **All railing is to be installed in no more than 6ft lengths**
- Instals at heights you must screw each picket to the rail to ensure no one can remove them

### Front Entrance Installation

- Basic setup for front entrances is: house to column (or edge of step) and down 1 side of stairs

### House to Column:

(If concrete front. If wood see "NOTE" below)

- Measure 1" to 3" from the edge of the concrete landing (depends upon the size of the lip). Using a square, with **END POST** in hand, mark locations of the screw holes in the base plate onto the concrete with a black marker. This will act as a for a guide when drilling holes into the concrete for the Mungo plugs/fasteners
- Drill all holes with a hammer drill making sure they are deep enough for Mungo plugs to fit flush to just below the surface of the concrete
- Once holes are drilled and plugs inserted, clean area of dust and debris, and tap in plugs flush with the concrete surface
- Place **END POST** on top of where the holes have been drilled. Use your square to position the post square to the edge
- Install with 2" hex head screws to secure the post to the concrete, making sure post is kept square after each screw is put into place
- Level the post both ways (parallel to the house, and perpendicular to the house) to ensure proper installation. Ensure "level" is determined by testing at the top of the post. Use composite shims to adjust height as needed
- Once post is level, snap off shim and clean up broken edge with chisel
- Repeat this process for the other post to complete a straight run from house to column (or edge of step)

Once posts are level, measure for rail, insert and fasten.

For a straight cut, put the tape measure all the way into 1 **END POST** (in the top hole), and measure to the inside face of the next post. Subtract ¼" from measurement. Once the length needed is determined, mark and cut the top and bottom rail together. Note: Rail may need to be trimmed if too long

To install rail, put the top and bottom pieces into one post all of the way on one side, then slide the other end into the next post making sure to have even rail amounts in each post for fastening. Fasten the top and bottom rail using 2 1" Tek screws to prevent the rails from moving. **You must make sure the screws connect with the rail inside the post!** Fasten the rails, both top and bottom, from both the inside of the landing and the outside to eliminate flex points

Once the rails are fastened, add pickets to the section. Start by adding notched spacer clips from the house to the column. The spacers will go on both top and bottom rails (one each), then a picket. Repeat until the section is completed

If spacing is not even at the end of the section, take measurements to find out the spacing between picket and post. Trim the spacer on the top and bottom, if needed to make them even. Be careful when cutting small gaps. Spacers can be trimmed for the whole section to keep each gap even, or just the last spacers between the posts and picket

**NOTE:** If the front entrance is wood, make sure to find joist in order to secure posts properly. There must be 2 outside screws attached into the joists, if not then run will be unsafe and unsecure

Also, remember to install the bottom rail support braces if runs are longer than 3'. This brace is used to prevent the rail from bowing. The bottom rail support is not to be fastened down; it is designed to "float" under the bottom rail

### **FRONT ENTRANCE STAIR INSTALLATION:**

#### **Post Installation option 1 (on a picket):**

- For rail down a set of stairs on a front entrance, you will need 1 **NO HOLE POST**, 1 **END POST** and 2 pickets to start
- The **NO HOLE POST** at top of the stairs must be flush with the inside of the column (if no column, the **END POST** will be used in place as it is completing the railing installed in the steps above)
- Once the placement is determined, then fabricate stair posts
- For fabrication, follow these steps:
  - First cut 2 narrow pickets at 30" long at a 35 degree angle on one end
  - Then measure from the base plate up to 37". Mark it, square and center the mark on the post
  - Place the picket with the angle facing outwards, making sure to center it at the mark on the post
  - Attach the picket with three 1.5" Tek screws, making sure picket is centered. If it is off slightly then the entire railing run will be off
  - To fabricate the bottom post measure 38.5" from base plate. Mark it, square and center the mark on the post
  - Place picket with angle facing inwards, making sure to place it at the mark on the post
  - Attach picket with three 1.5" Tek screws, making sure picket is centered

**NOTE:** Code for stair rail states: The height from nose of tread of top rail should be 31.5" to 38". Stair rail installation completed with the steps described above will meet requirements for code.



### Post Installation Option 2 (brackets):

- When using brackets for stair rail installation, use the following steps:
  - Attach top stair rail bracket to blank face of **END POST** facing down the stairs. The top of the bracket will be 1 ½" down from the top cap
  - Attach bottom stair rail bracket to the same blank face as above so the bottom of the bracket is 6" up from the base plate
  - On the **NO HOLE POST** for the bottom step, place the top stair rail bracket flush with the top cap
  - On the same face of the **NO HOLE POST**, attach the bottom stair rail bracket so the bottom of the bracket is 7 ½" up from the base plate

### Stair Picket Method

- Place Posts – Install and level (Same distance from the edge of each step)
- Cut 2 pickets at 35 degrees to 30" long and attach one to each stair post
- Attach the first picket 6" down on the top stair post
- Attach second 30" picket 4.5" down on the bottom stair post
- Cut rail longer than needed and clamp onto posts in position on side of posts so the bottom of the rail is 1" below attached top of each picket
- Score the back of each rail with a pencil (this is your angle cut for rail)
- Do the same procedure with the bottom rail (clamp on 1" higher than the bottom of each attached picket)
- Score the back of each and cut
- Slip the top rail on over the picket and attach to the picket using the 5/8 Tek Screws
- Do the same for the bottom rail (hold up tight and screw to the pickets on each post using the 5/8 Tek screws)
- Snap first clip on the bottom rail
- Cut all pickets to the same size as first 2 then tilt each one and slide in place tight to the clip
- Repeat process until complete.

### Both Picket and Bracket Installations:

- Once the posts are fabricated, mark and install them to the structure
- Start with the top post first. Once the post is marked, drilled, level and secured, measure its distance from the edge of the stair
- Ensure the bottom post is the same distance away from the edge of the stair as the top post for proper alignment of posts and rail
- Once posts are level, secured and aligned, stand back and make a visual check to double check alignment. Adjustments to the posts may need to be made if it looks "out", even if your tools tell you it's not

To determine the length to cut the top and bottom rails for the stairs, measure 2" past the top post and 2" past the bottom post to ensure there is enough material to use for installation and fine tuning of angles. Cut both top and bottom rails to this measurement

To mark the cuts for the rail start with the bottom rail first. The bottom rail has 2 lines on it; make sure that the line at the bottom of bottom rail matches up with the angle of the pickets (for brackets, ensure the tabs are on the outside of the bottom rail and the hole in the tab is at the line closest to the bottom) for both top and bottom posts. Use clamps to stabilize the rail to the posts in the proper positions. Once the angle has been found, mark it with a pencil and cut. Make sure that when cutting angles for stair rail that the railing is held securely in place to prevent it from moving and being cut poorly.

Once the rail is cut, fasten it with 5/8" Tek screws on both sides (for brackets fasten through hole in tab into bottom rail). When the bottom rail is complete and fastened, proceed to install the top rail. For placement of the top rail make sure that the pickets and top rail are lined up to get the best angle (for brackets, the top rail should sit just under the top screw of the stair rail bracket). Once the angle is found, clamp it in place, mark and cut the top rail. Remember: cut it longer rather than shorter, and then trim accordingly.

Once the bottom and the top rail have been fastened with 5/8" Tek screws, begin picketing. Stair pickets should be cut to approx. 29.5" (30" for brackets) long. Begin by installing a stair clip at the bottom of the stair rail. Add a picket. Continue until you reach the top. If the gaps aren't the same size, adjust the clips to ensure it looks evenly spaced at the top and bottom.



**Wood stairs:** The base plate of the post has to be mounted flush with the inside of the stringer to ensure the top and bottom posts are in proper alignment for stair rail.

**NOTE:** No rail is required down a set of stairs if it is 3 rises or less. Rail is required if there are 4 rises or more. If there are 6 rises, then rail is required down both sides of the stairs

### **Deck Railing Installation (pickets and glass)**

- For decks make sure to install “key posts” first
- “Key posts” are posts that start and end a run of rail (**END POST** and **CORNER POST**)
- Do not over tighten hex screws as you will strip wood
- Make sure to find where the joists are on the deck because hex-head screws must fasten into rim joists to ensure structural stability along the outside of the deck
- If it’s a wood deck, find the rim joists by looking for nail or screw imprints
- If the deck is vinyl, then usually  $\frac{1}{2}$ ” or  $\frac{3}{4}$ ” from the edge of the deck is where joist should be found.
- With “Key posts” be sure to come in the same distance from the edge all the way around. The only exception to this is at the stringer location for the stairs off the deck.
- Mark the holes and pre-drill. If the deck is vinyl, then **EVERY SCREW MUST BE CAULKED** to ensure no water leakage occurs underneath the vinyl.
- Level all “Key posts” with composite shims (both ways) to ensure straight runs.
- Once all the “Key posts” are installed and level, then determine if the run requires a **LINE POST**
- **NO SECTION SHOULD EXCEED 6’ FOR GLASS AND 6’ FOR PICKET!** If it does, then **LINE POST(s)** are required for the run. Also, there should not be 2 or more 6’ sections of picket in a row
- If the run is longer than 12’, then 2 **LINE POST** are needed, over 6’ and under 12’ will require 1 line post, and under 6’ will require no line posts.
- To mark **LINE POST** location do the following:
  - Measure from plate to plate of the “Key posts” and find the length (ex 144” run)
  - This run will need 2 **LINE POST** therefore 2 posts, each with 4” plates= 8”
  - $144-8=136$ ” Divide 136 by 3 sections = 45.33”
  - From “Key post” plate to **LINE POST** plate is 45.33”
- Installing posts that are evenly spaced along the run ensures evenness and stability of the railing. It is also much more visually appealing
- Once all posts are placed, level and secured, move onto cutting rail for the runs
- To measure each section, put the tape measure into one post and measure to the inside face of the next post. Subtract  $\frac{1}{4}$ ” from this measurement. Cut rail accordingly.
- For cutting rail at the **CORNER POST**, add  $\frac{1}{2}$ ” to your measurement for additional length as the rail will be cut at a 45 degree angle. If necessary, trim. Ensure there is enough rail material in the post so it can be fastened together on either post
- Make sure all sections over 3’ have bottom support braces for picket and glass rail
- Ensure all picket sections have equal spacing for a uniform look
- If the deck is to have glass panels in the railing, remove the plastic insert from the rail and install the rubber glass insert in both the top and bottom rails
- Be sure to install setting blocks in the bottom rail as the glass will rest on these blocks. Try not to put them over the drainage holes you just drilled. The blocks should sit in the bottom rubber gasket about 4” in from each post
- Once the rubber insert is in, make sure to drill a few drainage holes through the rubber and bottom rail to allow for any trapped moisture a path to leave. 2-3 will be enough per section
- Opening measurements need to be taken for each section that requires glass
- Measure from the inside face of the post to the inside face of the post and subtract 2”
- For 42” railing, the glass height is standard as the rail locations are predetermines. Make sure and measure with the glass inserts in. The height is found by measuring from bottom of top rail to top of bottom rail with rubber gaskets in and adding  $\frac{7}{8}$ ”.

### Deck Stair Railings

- If rear deck has stairs then placement for posts is as follows:
  - Posts that are used to start the stair rail on decks are usually **END POST** with stair picket attached (see front step stair installation instructions above)
  - Make sure the post plates at the top and bottom of the stairs are the same distance from the nose of the tread
  - Stair rail should be made into no more than 6' sections. If a longer run is needed, then divide it into sections ensure stability
  - If the stair case requires a **CENTER POST** in the run, then 2 pickets need to be attached to a **NO HOLE POST** ; one at 36 ½" and on the opposite side 38.5" having the 38.5" side facing up the stairs
  - Use same techniques to find stairs angle as mentioned above in front entrances
  - Make sure the stair posts are installed on the inside of the stair stringer to match up for bottom posts (same and wood front stairs)

### Urban Glass Rail

- Install all posts and top and bottom rails as described in the DECK RAIL instructions above
- After the posts and rails are fastened in and the blue clear gasket is removed, install a narrow picket against the posts on either side of the section by fitting it into the channels, and fastening each one with 2 1" Tek screws to the post
- Insert the rubber gasket between the pickets in each section in both the top and bottom rail
- Be sure to drill drainage hole through the rubber gasket and bottom rail for each section, and place glass blocks accordingly
- To measure for glass, the height will be standard as it is a 42" railing option only. The height is found by measuring from bottom of top rail to top of bottom rail with rubber gaskets in and adding 7/8". For the width, measure from inside face of the picket to the inside face of the picket and subtract 2"
- Measure the inside of each section from posts to post, and cut the 6' clip to that measurement. There needs to be 2 cut for each section
- Measure down from the bottom of the top rail 10 ¾" and fasten one of the cut clips to the pickets. The top of the clip will be at the 10 ¾" mark
- Measure up from the top of the bottom rail 10 ¾" and fasten the second cut clip to the pickets. The bottom of the clip will be at the 10 ¾" mark

### Walkouts and Retaining Walls:

- Walkouts need to have 42" rail installed on the top of the retaining wall to meet code if the grade is greater than 24" from the surface of the deck. The railing installation process is the same as the Deck Railing installation instructions listed above
- Retaining walls must be at least 8" wide to safely install railing on it
- Install "Key posts" into retaining wall, making sure posts are level, square, and secured. Make sure to predrill all holes for Mungo plugs and 2" lag screws
- Then add **LINE POSTS** if necessary
- Install the rail as per the deck installation instructions above

### Hand Rails Only

- Walkouts will also have stairs accessing the basement
- Rail down the stairs only requires a "Hand Rail"
- There are 2 ways to install hand rail:
  - The *first* way is to use 2 posts, 1 for the top of the landing, and the 2<sup>nd</sup> for the last tread on stairs at the bottom
  - Treat the stair rail for a walk out the same as any stair installation. Only the top rail is used for a hand rail. All rules still apply when mounting rail to posts

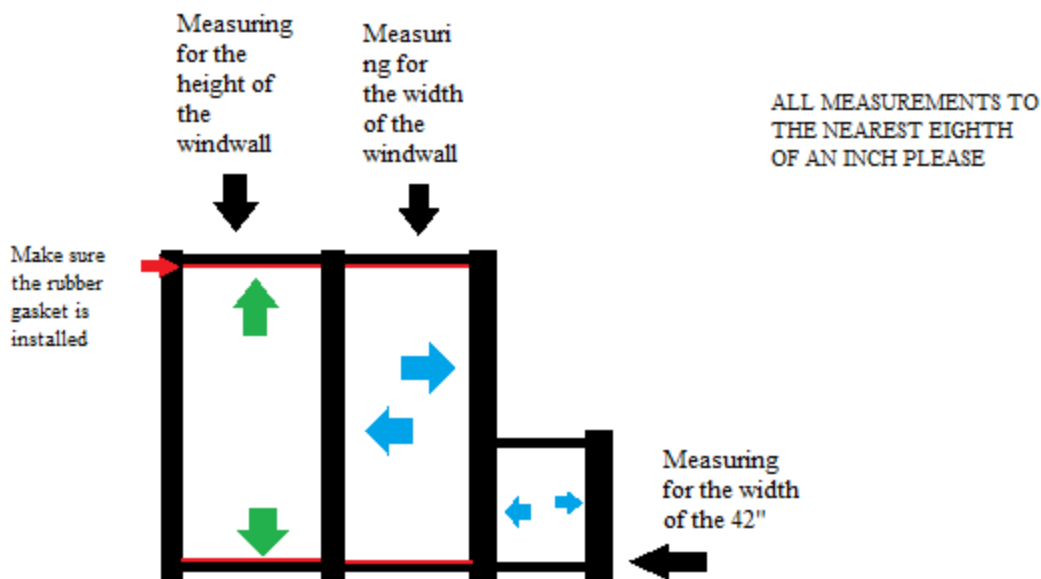
- The *second* way is to use a post on the top of the landing and then install a hand rail bracket which is fastened into the retaining wall
- Make sure the space is the same distance from the wall to bracket and wall to post to ensure evenness. If using a hand rail bracket, install a cap on the end of the top rail run. This closes off the rail and prevents injury
- Make sure the hand rail meets height requirements for code as listed above

### Wind Wall Installation (glass)

- Make sure to have the correct materials. Need: Bottom rail brackets, top rail brackets, 6' alum posts, fasteners, general braces
- The first 6' post will be fastened to the deck no further than 4" away from the house or column
- Attach this post into house or column for structural stability using a general brace at the top of the post
- Depending upon the height of the wind wall, the post spacing will change. For 6' wind walls, the maximum distance apart for posts is 38". For 5' wind walls, the maximum distance between posts is 48"
- To make the needed 6' posts, do as follows:
  - Install the top rail bracket at the top of the post
  - Install the bottom rail bracket at 2 5/8" from the base plate. Mark it, square it, center it

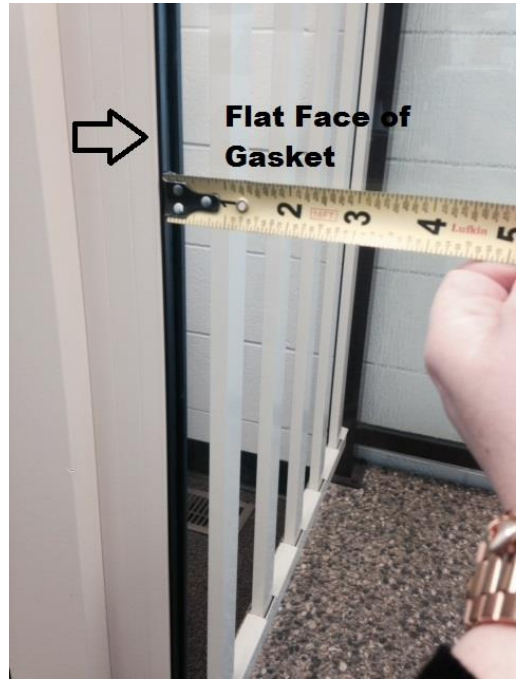
**NOTE: If 6' OR 5' posts are needed, cut down the 7' or 6' posts by removing the top cap first, and then trimming equal amounts of each post needed for the 6' OR 5' high run. After the height adjustment is made, replace the post cap and follow the same instructions for the 6' post fabrication**

- Once the posts are fabricated, they must be installed into rim joists for stability, if necessary block underneath deck for added support
- After posts for the wind wall are installed, secured and levelled both ways, it's time to cut rail
- Measure the distance in between posts to insure there is enough rail to fasten the sections together
- Once the rail is cut and fitted into the brackets, fasten with 5/8" Tek screws from both sides to ensure stability. This is done for both top and bottom rail
- Wind wall sections may or may not have bottom rail braces on them. This depends upon the slope of the deck
- When rail is attached and fastened, remove the blue clear insert from the rails and install the rubber glass insert into both the top and bottom rail
- Be sure to drill through the rubber gasket and bottom rail 2-3 times for drainage. Install setting blocks in bottom rail after
- After the section is assembled and secured, measure each opening for glass that is to be installed at a later date
- To measure for glass do as follows:
  - Measure each section separately
  - The height is found by measuring from the bottom of the top rail to the top of the bottom rail with the rubber gaskets in and adding about 7/8"
  - The width is found by measuring from the inside of the post to the inside of the post and subtracting 2"
- Divide the height in half and that is where your wind wall clips will be installed to secure glass after it is installed
- Wind wall clips are used to stabilize glass in 6' and 5'tall wind wall sections
- To secure glass to the wind wall clips, use exterior grade caulking. This will ensure glass will not move in future
- Once the wind wall is complete the only thing left to do is install general support braces for the wind wall posts
- These are used to ensure stabilization of the wind wall. They will need to be mounted on to the deck surface and to the aluminum post
- By adding these braces and following the above installation rules, it will ensure a stable deck railing system

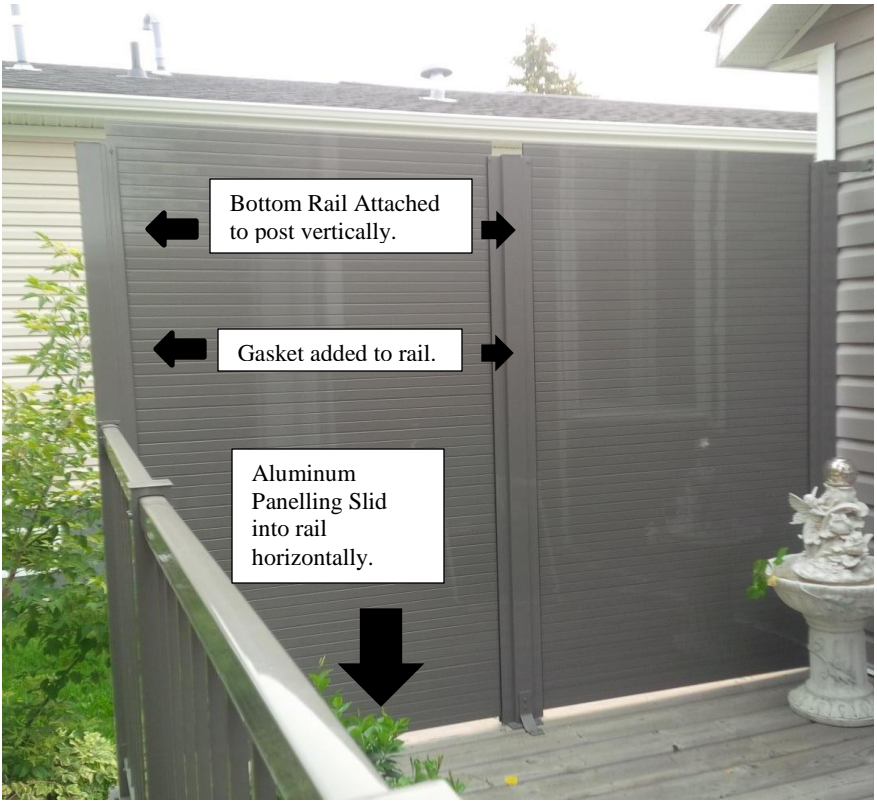


### Topless Railing Installation

- Before installing the posts
  - Remove the cap off of the post
  - Install three wide (1.5") pickets into the post sleeve
  - Replace the cap on the post
  - If deck is level install the topless glass bracket to the post, if your deck is not level follow directions on page 12.
- Install posts onto the deck surface making sure that they are level and plumb
  - Post must be no further than 4' apart
  - Fasten posts to the deck surface with 2" and 3" Lag screws
  - Use composite shims to level and plumb
  -
- Run a string line (or use a 4'-5' level) across the posts on the sides of the deck, at the bottom of the posts. Start 3" up on the outside corner. As you move closer to the house the height of the string will change due to the slope of the deck.
- Cut down both the insert and the clip to match the string line height for each post. (Keep in mind each one will be different and accuracy is key for glass tops to line up with each other.
- To measure for glass:
  - After the glass insert is put into the U-channel bracket, measure from rubber face to rubber face WITHOUT PUTTING THE TAPE MEASURE PAST THE RUBBER FACE OF THE GASKET AT ALL and add 1.5"
  - The glass height measurement will be from the top of the base plate up 42" or 60" depending on what height of railing you purchased which will be measurement "A". Take the measurement from the top of the base plate to the bottom of the U-Chanel bracket this will be measurement B. Subtract measurement B from A which will give you the height measurement you will require for glass. **OR** another way of explain is; the glass height will be 42" less the measurement from the ground up to the bottom of the U-channel bracket.



**Aluminum Wind Panel/Fence Panel**



\*Material is subject to a 20% restocking fee upon return.