

# Stair Treads and Risers Installation

**\*This is for educational purposes only\***

**\*Building codes may differ depending on location\***

**Where can I obtain stair treads and risers? – At Hardwood Lumber Company we have a plethora of stair treads and risers. The link below will redirect you to our stair parts department.**

<https://www.hardwood-lumber.com/stair-parts/>

## **Attention:**

- Professional help is recommended for this project. Treads and risers may require a higher skill level for correct installation.
- For safety, stair parts must be fully glued to the current stair structure. Unsecured or unsteady parts can consequently end in injury.
- Be cautious in the vicinity of any power tools.
- Wear proper safety attire.

## **Necessary Equipment**

- Safety Glasses
- Broom and dust pan
- Measuring tape
- Finish Nails
- Drill and drill bits
- Table saw with a sharpened or new blade
- Good quality miter saw with finish cut blade.
- Hammer
- Quality construction adhesive
- Nail gun and air compressor
- Wood Putty
- Crow bar
- Stair Buttons
- 2 Inch Framing Square
- Carpet knife (if removing existing carpet).
- Level

## Terminology

**Standard Tread:** Standard treads are well suited for a boxed in staircase that is enclosed by walls on both sides.



**Stair Riser:** Risers are the boards that form the vertical face of each step, building the area between the stair treads that you can kick with your toes.



## **Moldings**

Moldings for staircases rely on the particular staircase and the finish look you aspire to obtain, there are several moldings that can make this happen. Molding profiles include:

**Quarter Round Molding:** Is a transitional molding that goes along the bottom stair riser on a staircase to the current flooring.

**Base Shoe Molding:** Is a more narrow transitional molding that also goes along the bottom stair riser on a staircase to the current flooring to cover up anything between the tread and riser.

**Cove Molding:** A molding that is installed underneath the bullnose to add decorative transitions between the treads and risers.

## **Installation:**

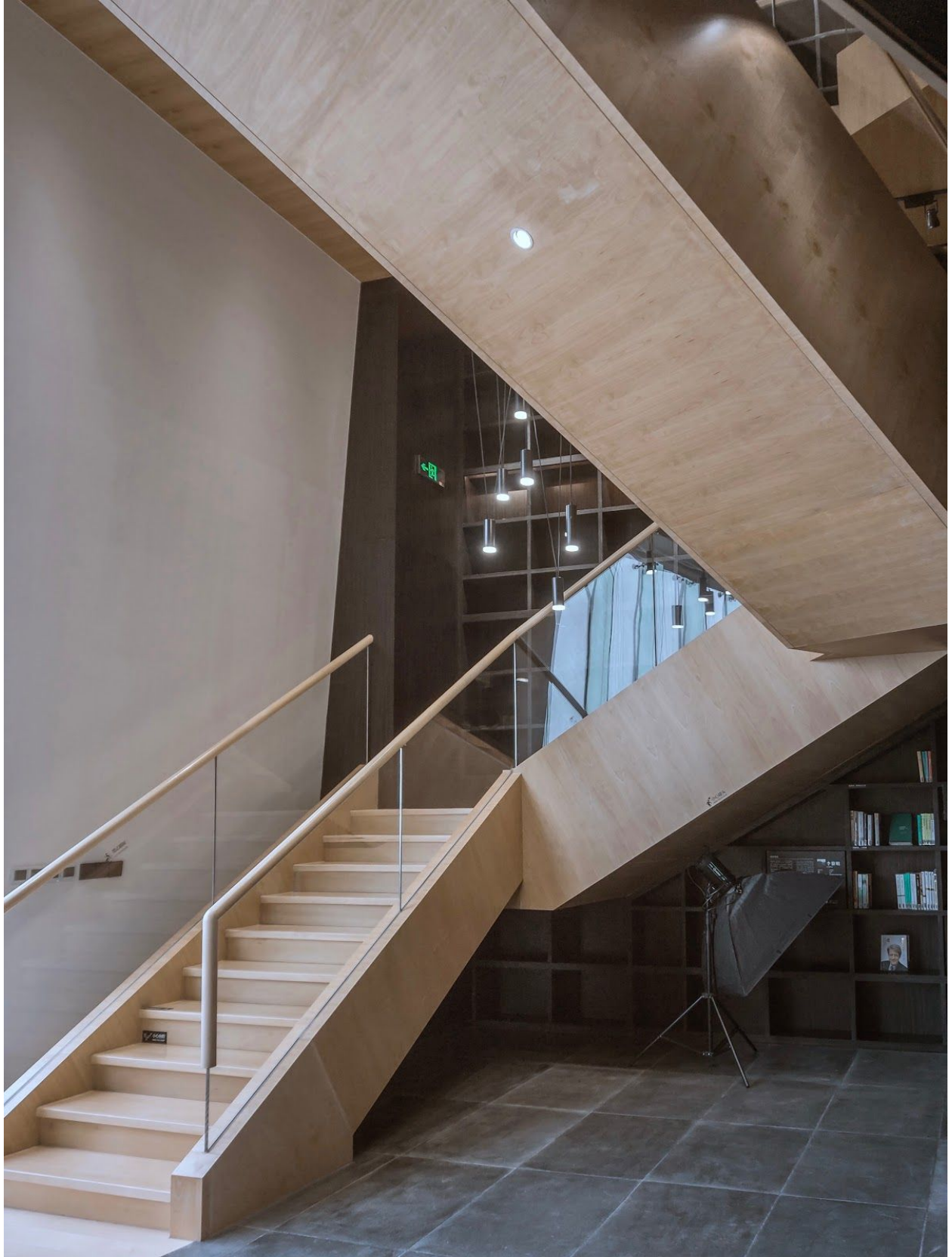
Figure out the staircase slope

Stairs are made up of three things. That would consist of risers, treads and stringers. Refer to the terminology section for more information. Once you've collected all of the materials listed in *section II* we have to start calculating the slope of your staircase.

1. Use a tape measure to measure the riser height (distance from the floor to the top of your staircase. Make sure to calculate in thickness by accounting for anything like carpet, padding, and subflooring.
2. Divide your total height from finished floor to finished floor by the number of risers that is called for your plan. This will give you the height of each riser.
3. Set stair buttons on your square with the rise and run of the stairs (risers usually 7" to 8") and the other being (9" to 10").
4. Mark your stringers where the risers and treads will go. \*Account for the subtraction of the thickness of your tread (Usually 1") from the bottom of your stringer and add the same to the top.
5. Fasten (glue blocks) triangular pieces of wood to the stringer where your risers and treads will be attached.

\*Take into account building codes in your area.\*

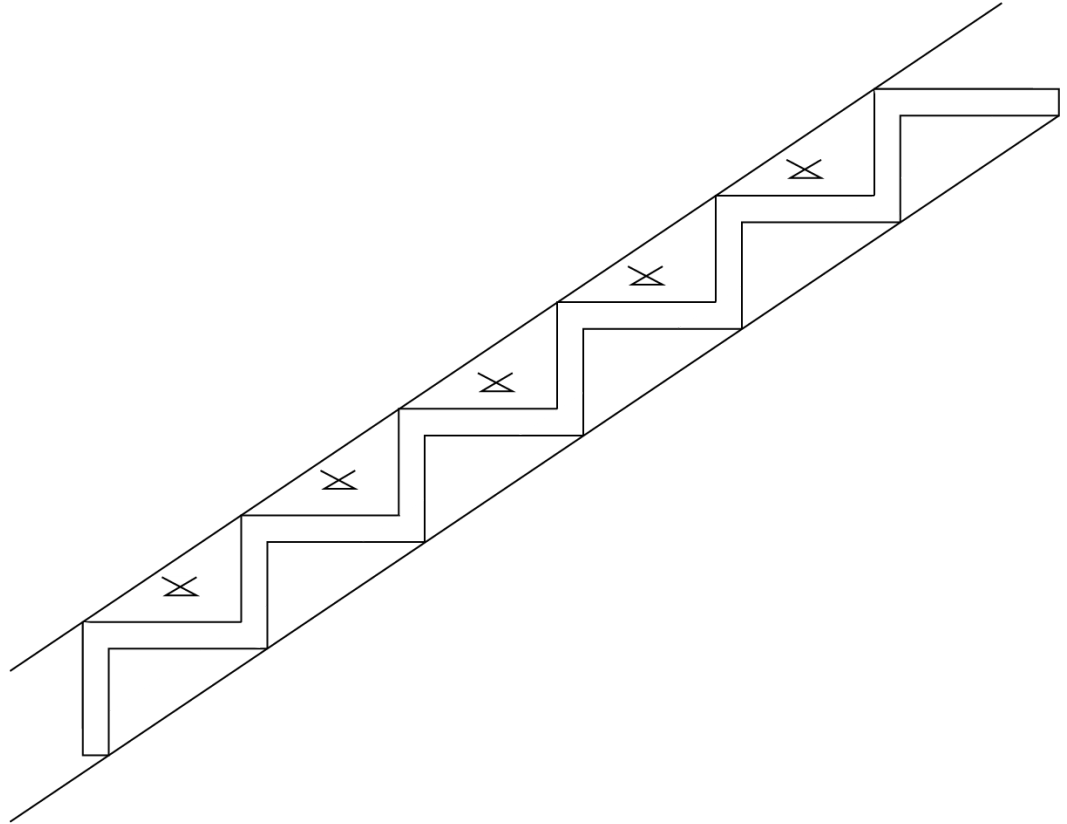
## **Box Stairs**



**\*Open Stairs\***



For stringers for the open staircases make sure to cut the stringers in between the riser and tread on each step. (This will give the stairs an open look).



**\*Tip\*** Always use a good quality adhesive wherever two pieces of wood meet. And always leave any excess glue sit until it has cured before you start scraping it off with a sharp chisel instead of trying to clean it up while it is wet.

## **Install Treads**

After the stringers are secured, we can start installing the stair treads and risers.

1. Use a circular saw to cut the treads to the length of each riser.
2. Install them to the stringers with wood screws.
  - a. Use level tool to level the tread front to back.
  - b. Pre-drill all nail holes.
  - c. Or you may use an air gun.
  - d. Use finish nails to nail each tread or riser into each stair stringer.
3. After you install one riser you can cautiously climb to the next step.
4. Repeat the entire process until you get to the top of the staircase.



5. Make sure to always install the first two risers first.
6. Treads are then installed on top of the first riser and against the second.

\*Adhere to your local building codes.\*

## **TREAD & RISER REPLACEMENT**

1. Remove any wood balusters currently there by cutting 12-inches below where they are connected to the handrail.
2. Remove them. Make sure holes are empty of any nails, debris and wood glue.
3. The next step is to remove the treads and risers using a pry bar or hammer.
4. Dispose of any debris and remove any nails.
5. Once you have removed the old treads and risers, we will now install the new risers. Apply adhesive to the face of the nailing block.
6. Nail/Screw risers in place.
7. Apply adhesive to riser top and bottom face of second riser where tread meets.
8. Place treads on blocks and risers.
9. Nail/Screw in place.
10. Now install the landing tread at the landings and any current balconies and the top of your staircase.
11. Nail these in place.

## **NEWEL POST INSTALLATION FOR POST-TO-POST SYSTEMS**

1. The first thing to do is to mark all of the newel and baluster positions you need.
2. So you can now sit the newel where it is going to be positioned, and slip the smaller side of the framing square beside the slope of your current stairway. And make sure to measure down 1" from the top of the newel block.
3. Now start trimming and securing the newels in place using wood plugs or equivalent.
4. When using a knee wall stair, the balustrade should be aligned centered on the knee wall.
5. Use an open tread stair the centerline should be half of the baluster square in the face of the stringer. (Or for open stairs you can center on wall where open stops).
6. Use rail bolts to attach the handrail and fittings with the staircase.
7. Make sure to use wood glue or an adhesive for the ends of rails and fittings.
8. Tighten nut with a wrench.
9. Glue wood plug into hole.

\*Level rail is 39" to 42"\*

1. Measure and trim newel posts
  - a. Remember that the level rail height should be somewhere in between 36" and 42".  
\*\*\*check out your local building code\*\*\*

- b. Center the assembled handrail over the newel locations. Measure distance between the tread and the bottom of the handrail fitting.
- c. Measure the thickness of the handrail.

\*Stair rail code is 36" from the nose of the tread plumb up to the top of the handrail\*

### **Installing square top balusters**

1. Drill holes in treads.
2. Make sure baluster holes are proportionally placed.
3. If you are using lay handrail and shoe rails for the stairs, you can mark where they intersect with the newels.
4. Use a miter saw to cut rail marks.
5. Attach handrail using the recommended wood screws.

### **BALUSTER INSTALLATION ON SHOERAIL**

1. Use a level and a resizable square to figure angle needed to cut the balusters.
2. Now cut the balusters to the proper length.
3. You can now toe nail and glue the balusters in securely.
4. Cut the fillet pieces which will match the angles precisely.
5. After you can glue and nail in place by using finish nails.
6. \*For OPEN TREADS\*
7. Using the marks made proceed to drill the holes using a bit that fits the pins on the baluster.
8. \*A good secure way to fasten baluster is with double lag screws available from Moldings One.
9. Proceed to cut the balusters to the correct length.
10. Insert the baluster into the handrail and make sure to use level.
11. Now cut the handrail fillet and match the angles perfectly.
12. Once again you may nail and glue in place using finishing nails.

### **ATTACHING HANDRAIL SYSTEMS TO WALL**

1. Make sure there is a 1-1/2" space between the wall rail and wall.
2. Anchor handrail brackets into studs through the drywall.
3. Connect the rail to wall with handrail brackets.