

How to bend a handrail

Bending handrail is not difficult. However, it requires more time in planning and preparation than most other home construction projects. In the illustrations that you see below a white oak 6010 handrail was bent around a stairway with a very tight radius. The radius was under 4' which made the work challenging.

Tools required:

Drill
Wood screws
Drill bit for pilot hole for screws
Clamps (minimum 2 per foot of bending)
Angle brackets
Bending Glue



Construct angle brackets from any strong and straight construction material. The angle brackets will have a lot of force against them so take your time and make them very strong. The base that is screwed to the tread should be a minimum 3" wide and 12" long. The vertical should be a minimum 3" wide and 12" long.



Layout the location for your handrail and install angle brackets with at least 4 screws into the stair treads. If the handrail is being bent while disposable construction treads are in place, be sure that the construction treads are firmly attached. If the angle brackets are attached directly to the final treads, then the holes in the stair treads can be filled and sanded after installation.



Wet the handrail with water and pre-bend it by placing it against the brackets and clamping it. Wet the bending mould as well so that it will become flexible.. If the handrail is being installed around a tight radius then apply several applications of water to make the handrail more pliable. Bend the handrail gently by increasing the clamp pressure over a 48 hours.



Remove the handrail that has been pre-bent and has a memory of the shape that it will be when installed.. Apply glue to the handrail. Place the bending mould on the outside of the handrail. The bending mould will protect the handrail from the clamps and spread the force of the clamps across the handrail. Stair Supplies recommends our specially formulated bending glue. Stair Supplies bending glue has a long open time and flexible polymers which means you have a longer time to work with the bending handrail before it sets and becomes unworkable. Long open time glue is a real handrail saver.



Put the handrail into place and check to make sure it is centered so that there is adequate overhang on each end. Place the first clamp in the center of the bend and begin working outward placing a clamp every other step.



Begin to add clamps working from the center of the bend outward. You may find you have to loosen some clamps and re-tighten them. Look for consistent and even glue squeeze out along the top of the handrail. Any area that has a crack or uneven glue squeeze-out will need additional clamps. As a general rule, apply a clamp every six inches.



Allow the handrail to sit for 24-48 hours before removing the clamps. Plan to spend several hours with a chisel and sandpaper removing glue and shaping the handrail.