

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 holes for screws

Clamps (minimum 2 per foot of bending)

Angle Brackets

Bending Glue



Construction 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 of 3" wide and 12" long.



Lay out the location of 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 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 mold 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 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 mold on the outside of the handrail. The bending mold will protect the handrail from the clamps and spread the force of the clamps across the handrail.



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