

**Thank you for choosing Q-bendywood. You have decided to use an innovative, high quality product that gives you the possibility to create any project that you can dream of with the ease of simple assembling.**

Although handling Q-bendywood is very easy, we would like to ask you to read the technical information and consider them while mounting. Please visit [www.q-railing.com](http://www.q-railing.com) for further Q-bendywood information and a reference video.



## General information

Q-bendywood handrails can be bent up to a radius that is 20 times the thickness of the handrail (e.g. a 42mm handrail can be bent up to a radius of 840mm). Since Q-bendywood is a natural product, meanderings of the minimum radius are possible.

Ø42  $R_{min}=840mm$

Ø48  $R_{min}=960mm$

The railing on which the handrail will be mounted on should be stable. The ideal distance between the fixing points is approximately 1 meter.

Please take care that when using Q-bendywood handrails made of oak wood, they do not get in contact to metal. Oak wood contains tannin which can cause dark-blue / black staining when it gets in contact to metal.

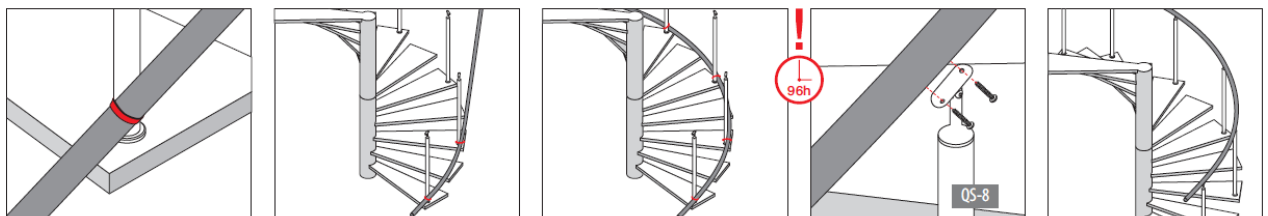
## Before handling

***Please leave the Q-bendywood handrails in their original packaging until handling.***

## Bending by hand

Q-bendywood can be bent directly after unpacking. Please do not bend handrails into different directions for before use.

1. We recommend the use of 2 people to bend Q-bendywood; while this is an easy process the use of 2 people will ease the bending and installation process. The handrail can be bent on a template or directly on the railing that it will be mounted on (the railing has to be stable enough). We recommend the use of Q-bendywood for handrails on stairway stairs.
2. Please bend the handrail from the bottom to the top (here an overlength of 30cm should be arranged) and fix it provisorily with the help of cable clips at every stair respectively every post of the railing.



3. At the top please arrange an overlength of 20 cm.
4. Leave the fixed handrail at the intended position for a period of 4-5 days so it can stabilize its shape and length. This waiting process will reduce existing tension within Q- bendywood. The length of the handrail can reduce up to 1% during this waiting period. Please don't mark or drill any fixing holes to prevent wrong drilling positions and to avoid high force effects after mounting on the railing.
5. After 4-5 day waiting period you can mark the necessary drilling holes and remove the provisorily fixing. Here the handrail will open again. We recommend drilling oval fixing holes over the entire length (with the exception of the central fixing point in the middle of the handrail). The endings of the handrail can be cut to size (by the use of an electrical saw). When the appropriate design has been achieved and not other mounting is required Q-bendywood can now be lacquered if desired.
6. Please fix the handrail in pairs and start at the central fixing point. Thereupon you can screw the Q-bendywood in place at the remaining points. Next, proceed from the middle to the endings.

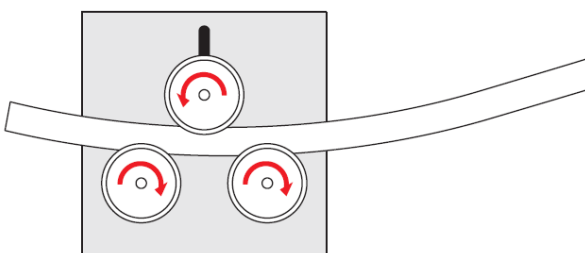
## Bending by a machine

Q-bendywood can be bent mechanically comparable to steel handrails. For handrails with a diameter of 48mm we recommend to pre-bend it mechanically.

Please use a low bending-speed and a maximum radius of 50% of the designated radius, which you achieve by multiple bending (approx. 5-10 runs) in smaller radii to assure a constant stress relaxation and to avoid that the material breaks.



Max 50% R



## Glueing and bating/varnishing

-Q-bendywood can be handled the same way like normal wood. We suggest abrading the handrail with fine grained sandpaper before bating or painting it.

- Please avoid dunking the handrail into any aqueous glues or lacquers that you may be using. We recommend applying any glue or lacquer directly by a paint brush. The use of acrylic or polyurethane base glues, stains and lacquers can be used with Q-bendywood.

-When applying any glue or lacquer to Q-bendywood please ensure that the humidity is between 8 and 11%.

## Handling

Q-bendywood can be handled using the same tools that are used to mount normal wood however the higher density and strength of the material is stronger than normal wood so we recommend the following when mounting the handrail:

- Saw and polish the Q-bendywood like normal wood.
- Do not mill Q-bendywood against the grain. Furthermore the handrail should be led more tight to avoid ruptures. Please use a minimum 20% higher rotation speed than compared to milling normal wood (HSS-milling-machines are optimal).
- Take care that you handle Q-bendywood not before it is dried down to a humidity degree of 8-10%. Don't cut Q-bendywood to fixed lengths before installation because the length can vary exiguous during the drying period. While fixing please take care that the handrail is not moist (the humidity degree is the highest at the middle of the cross-section. But the handrail dries very fast, especially when it is cut into single pieces).
- Q-Bendywood should not be processed or stored at temperatures below 5°C.
- When storing Q-bendywood please make sure, that there is no contact to water to avoid discolorations and deformations / damages of the wood.

## Galvanizing of several Q-bendywood pieces

When glueing two pieces of Q-bendywood we recommend attaching the two pieces by a diagonal connection. Please take care that the lengths of each cut is minimum the three- to fourfold of the handrails' diameter. In any case do not use straight perpend joints.

## The advantages of Q-bendywood

- Bend by hand, without using water or additional heat
- The wood can be processed as normal, with adhesive, a drill or screws for example
- Re-bending is always possible
- High-quality hardwood
- Completely bent in only 10 minutes, which saves time and so saves on costs!
- Ecologically sound manufacturing process that does not need chemicals