

Q: Sealing Vessels

May I ask you, when I make a wooden drinking vessel, what would you seal it with? I have asked about twelve turners and they mostly say, "You cannot seal them to make it safe to drink from." I just want the vessels to drink wine or beer from. Is that possible? I was informed you might know.

~ John Forster (England)



A: Sealing Wood for Food Grade

Thanks for your message. This is a common question about finishing for food grade surfaces.

Depending upon the wood used, (fine grain hardwoods, such as hard maple, beech, and similar dense woods), sealing the wood for use with liquids can be accomplished with food grade finishes. Some will require continual maintenance (such as oil finishes), while others (film finishes) may be attempted which require less upkeep, but may have other concerns regarding de-lamination due to natural wood movement.



Barbara Dill

Oil-Based Finishes: Wooden vessels have been used for centuries without sealing them (raw wood), but likely were also replaced frequently. Beer, and certainly red wine, will likely stain the raw wood with continued use. You might try turning vessels in maple or beech, and sealing them with multiple applications of natural oil finishes (e.g. tung oil, linseed oil, walnut oil), diluting the oil significantly in the early coats to encourage penetration. Multiple coats would be advised, allowing the oil to fully cure between applications. Such a surface would be water resistant, but not waterproof. It likely will require maintenance and additional applications of oil periodically throughout the life of the vessel. Increased water resistance might be improved with the frequent application of carnauba wax between uses (fully food safe).

There is no guarantee that the vessel will maintain its shape if used with liquids that remain in contact with the wood for extended periods. This might be considered for "short-lived" vessels.

Chemically Reactive Film Finishes: Turners have been successful using food-grade epoxy products to provide protection to woods used in drinking and eating vessels. You would need to find a local source for food-grade epoxy products, and follow the manufacturer's mixing instructions for resin to hardener proportions. If the mixed epoxy can be diluted with a solvent, this may improve penetration and adhesion of the finish to the wood (do not sand too smooth, perhaps stopping at 120 or 180 grit to improve adhesion of the surface epoxy film). This forms one of the most durable surface finishes possible with applied materials, and if food grade epoxy is used, this should provide a safe surface finish. If the wood moves appreciably, there is the possibility that the epoxy film finish may de-laminate from the wood.

Use of evaporative film finishes, such as shellac or lacquer, is not advised.

Note that, at least in theory, fully cured polyurethane finishes are reported to also be food safe, but are likely not as durable as epoxy finishes (it is essentially a coat of plastic), or as easily repaired and rejuvenated as are oil finishes (which are not surface films, but penetrate and cure within the wood itself). I have heard of people using multiple coats of polyurethane finish on platters and serving plates; these are not used as cutting surfaces (with knives), but only for serving prepared foods.

I hope I have given you some options to pursue to finish the vessels you turn. If you have additional questions, let me know.

~ Rob Wallace, Ames, Iowa
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