

# PRODUCT REVIEWS

by Max Girouard  
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## *Royal-Lac Post-Catalyzed Finish*

[www.shellacfinishes.com](http://www.shellacfinishes.com)

The Royal-Lac product, manufactured by Vijay Velji of Shellac Finishes, is a shellac-based finish that contains other proprietary synthetic resins. It cures hard, and is resistant to heat, alcohol, and other solvents.

We first heard about Vijay and his finishes after watching an informative video on YouTube about how shellac was harvested and processed into flakes. We've tried many finishes and have been comparing results over the years. While we like the look and feel of traditional shellac, we had concerns about its durability, so we tried using Royal-Lac Original on a few instruments. The results looked great, but the cure time was long (about thirty days before buffing), so we were excited to hear that a post-catalyzed formulation of the finish was in development. This version can theoretically be buffed after curing for four days.

We served as preliminary testers of the post-catalyzed formulation in 2016, trying it on sample boards and then on several instruments. The finish responded well to a variety of tests, including abrasion, chemical rub, freezing, and heating. Benefits of the finish include: exceptional clarity, ease of use, fast cure time, durability, and repairability. As luthiers are well aware, it's difficult to find a finish that scores well in all of these areas. The clarity in particular is important to us, because we both use sunbursts on a lot of instruments, and dark-stained woods are unforgiving of finishes that aren't completely clear. We've tried many waterborne finishes, and none of them have come close to the clarity of Royal-Lac. It has a very light amber color (just enough to "warm up" the color of ivoroid binding a little), and has the warm, crystalline glow of shellac. Other benefits from a builder's standpoint



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include the fact that relatively few coats are required, all the coats can be applied in two days.

Royal-Lac Post Catalyzed is a two-part finish that must be mixed before use and then has a ten-hour pot life. It has high solids content (40%) and is low VOC (<275G/L). It looks similar to shellac, but has a noticeable odor of acetone and other solvents. Fortunately, this odor seems to disappear completely after curing for about an hour, and then the finish just smells like shellac during curing, sanding, and buffing. It is designed to be sprayed, but small areas can be brushed. French polishing is not recommended. A spray booth, respirator, and eye protection are recommended. One thing to note is that any overspray doesn't dry immediately like it does with lacquer or shellac — it stays sticky for around a half hour and will adhere tenaciously to whatever surface it lands on (e.g., eyeglasses). After some trial and error, the two of us have arrived at finishing schedules that are very similar. We've made notes below where they differ.

Day 1: Preparation will have included staining, scraping the binding, and sealing with fresh shellac or Shellac Finishes' "Seal-Lac." Scuff-sand the sealer with grey Scotchbrite pad and blow off the dust. Mix catalyst into an appropriate amount of finish. Apply approximately five coats, sprayed 1.5–2 hours apart. We each use Walcom EGO gravity-feed HVLP conversion guns, with 1.2MM tips. The finish seems to flow and level well despite the high solids content, and doesn't sag or run very easily. Mandolins have nooks and crannies where

spray won't reach, so we brush in these areas where necessary before spraying each coat. You can also drop fill as necessary between coats.

Day 2: Level-sand with 3M Gold P320 dry. This can be hard work; the finish is still somewhat soft at this point and sandpaper finer than 320 will clog quickly. Wipe and blow off the dust. Mix the finish and spray two or three final coats to fill the sanding scratches. We each thin the finish somewhat (anywhere from 5%–25%) with denatured alcohol for these final coats. If we've sanded through in any spots, we brush a few extra coats on those areas.

Andrew has waited until the third day to finish level-sanding and apply the final coats, and this works just fine, too. We've made repairs at least two weeks after applying the initial coats with no evidence of witness lines, so applying the final coats in a short window of time doesn't seem to be crucial.

We've measured the applied dry film thickness (not including sanding and buffing) at approximately .004"–.006". After sanding and buffing, we'd estimate the film at .002" or less, and even less than that after shrinking.

After at least 72 hours, Max level sands with Carborundum P1000 Dri-Lube papers, followed by EZ Touch P1500/P1200 sanding sponge and finally Abralon 2000-grit sanding pads. He uses 4000 grit Abralon pads in areas that are hard to reach with the buffer. He then buffs with medium and fine Menzerna buffing compounds.

Andrew also dry sands with the 1000-grit Carborundum paper, but then switches to wet-sanding, with 1500-grit 3M Imperial Wet-or-Dry. He then wet-sands areas that are difficult to buff with 2000-grit wet-or-dry, and then buffs with medium and fine Menzerna. He uses naphtha as the wet-sanding lubricant around soundholes and tuner holes to avoid getting water in those areas.

Royal-Lac Post Catalyzed looks completely smooth when it comes off the buffer, and then shrinks noticeably over the next few months, giving a look similar to what you might see on a vintage instrument, especially one with a thin shellac finish. Pores in most woods become noticeable, along with grain lines and medullary rays in spruce. As with

many finishes, pores in ebony and other open-pored woods will become quite noticeable, so we fill the pores in our ebony headstocks with medium-viscosity superglue before finishing, which works quite well. It's also recommended to wipe down ebony and other oily woods immediately before sealing to remove any oils. Although the finish can be buffed in just a few days, we extend this to a few weeks to try to reduce the amount of shrinking after buffing. We're both primarily mandolin builders, and our customers generally appreciate finishes that highlight the texture of the wood, because they look similar to more traditional mandolin varnishes.

As is the case with lacquer, some care is required reaming tuner holes and cleaning up nut slots and other areas where you're likely to chip the film. It will chip and flake rather than slicing cleanly like some other finishes. So far we've seen absolutely no tendency for the finish to check over time, so in that regard it seems to be plenty flexible for an instrument finish.

The repairability of this finish is somewhat of an unknown, but repairs after a few weeks are totally invisible. You can buff these repairs out after just a few days, which is wonderful if you accidentally sand or buff through during the final stages of finishing. Some test repairs that we've made after a few months are invisible or nearly so. It remains to be seen whether the finish will completely burn in to itself after longer time periods, but so far we are optimistic. We've also repaired some small cracks and chips with superglue, which works reasonably well too.

We both have been quite pleased with this new finish, and plan to continue to use it on our instruments. As far as we are aware, there is nothing else like it on the market. We are confident that it will have none of the frustrating problems of traditional shellac like case-printing, adverse reactions to sweat and body chemistry, and softening in hot weather. It may also be a viable low-VOC alternative to lacquer, and an alternative for those (like us) who have tried waterborne finishes but have never been completely happy with the results. —

