

Pre-Raising the Grain

Important Step or waste of time?



Pre-raising the grain; important step to complete waste of time...

Conventional Wisdom tells us that we should **pre-raise the grain** whenever we intend to apply a water-soluble dye, water-borne stain, or water-borne finish. The logic supporting this position says that water in the finish will cause the wood fibers loosened by planing, scraping, and sanding to swell and "stand-up" resulting in a rough surface. It is further contended that by lightly wetting the grain first, allowing the wood to dry, and then lightly sanding again, the finisher will successfully remove the wayward wood fibers and the newly sanded surface will then remain smooth when water is again introduced with the dye, stain, or finish. The logic holds that the loosened fibers will have all been cut away by following this procedure, so there will be no wayward grain to raise with the second wetting.

It is an interesting theory and, if all of the steps are executed properly, it does have some merit. However, in practical terms it is quite difficult to execute all the steps properly as I will explain in a moment. It is also a bit irrelevant. A "smooth surface" following the dye or stain coat, or even the first coat of a water-borne finish is not all that important in view of all the sanding that is still to come following the completion of these steps. But, I'm getting a bit ahead of myself. Let's rewind to the start and take the process one step at a time.

My view of the whole issue of "raising the grain" is contrary to the "conventional wisdom"—I see it as largely a wasted step in most finishing schedules. The whole point in raising the grain focuses on the observation that water causes wood fibers loosened by milling and sanding to swell and stand up—sort of wood's counterpart to a bad hair day. Therefore, so the logic goes, if you intend to use a finish that contains water you need to eliminate these wayward wood fibers first or the surface will be rough after the water evaporates. The solution to the problem goes like this. After sanding, lightly wet the wood to cause the fibers to swell. Then, when the wood is dry, very lightly sand to cut away or level these fibers. In this way, it is reasoned, when the dye or stain is applied the grain will already have been raised so no further raising will take place and the surface of the wood will remain smooth as it would had you used an oil-based colorant or finish..

The problem is that most sanding done to cut away the raised fibers goes too far—not only are the raised fibers removed, but sanding proceeds to the point of exposing new, un-raised fibers that will still manifest themselves when the water-soluble dye or water-

borne stain is applied. Wood fibers are exceedingly small. It is difficult to the point of impossible to sand so precisely that you only remove those damaged by previous milling and sanding. In other words, you've done precisely what you were supposed to do to solve the problem, but you are still exactly (or nearly) in the same place you would have been had you not bothered with the step in the first place.

My approach is a bit different—water raises the grain, so what! May I point out that the dye or stain step is only the first step (after sanding) in finishing the wood anyway; so, who gives a rip if the surface is a bit rough after the water step. You aren't through yet! The only purpose of this step is to color the wood. I presume that you intend to sand between coats of whatever film forming finish you intend to apply. I also assume that you intend to apply more than one coat of your intended finish, whether water-borne, oil-based, or lacquer. Therefore, let those little (now colored) raised fibers stand there in all their rough glory. The first coat of your film forming finish will 1) seal the surface of the wood so that all subsequently applied finish is going to build on the surface, and 2) is going to lock the offending fibers in place so that they will easily be cut away by your first sanding—you know, the light sanding you are going to do when the first coat of finish is dry, in preparation for the second coat. Therefore, by the time you have applied and lightly sanded one or two coats (depending on the type of finish you use) all evidence of the raised grain is going to be gone anyway.

Let me explain this in another way by proposing a test that you can perform in your shop. Take two wood samples and sand both as you would when preparing for your finish. Raise the grain on only one of the samples. Then, apply a water-soluble dye or water-borne stain to both samples. When the dye or stain (which ever you applied) is dry, apply your first coat of finish (no sanding). Note the "feel" of the surface when the first coat of finish has dried and then sand both lightly with P320 sandpaper. Sand just enough to smooth the surface, and conduct the feel test again—any detectable difference? Now, apply your second coat of finish. Again, give the surface the feel test when the finish is dry. After two coats I submit that you will be unable to detect any difference between the two samples. I also submit that there will be no visible difference either. Sand lightly again with P320-P380 in preparation for the third coat, apply that coat, and conduct the feel test again. Any noticeable difference at all—none, right; then why did you go to the effort to raise the grain in the first place? If the finish you applied was oil-based you were probably unable to make any distinction between the two samples after the first coat. If water-borne, any differences disappeared after the second.

The bottom line, in my view, is that raising the grain is one of those must do steps that has crept into finishing schedules for no good reason, and has remained there because it has become tradition. Now, if you intend to use an oil finish or an oil/varnish blend in which the finish film is weak, raising the grain may be a useful step; but, even then, if you modify the finish application schedule such that you allow the second coat to cure thoroughly (3-5 days) and lightly sand before applying the third, grain raising will still be unnecessary. There is enough of a finish film in even straight BLO, and certainly in oil/varnish blends, to lock the raised fibers in place and hold them there so that they can

successfully be cut away or leveled without resorting to the grain raising step. But, don't take my word for it—try it for yourself and see if you can detect an appreciable difference.

Either which way, raising the grain (in my view) is totally unnecessary. It is certainly unnecessary when finishing coarser textured woods such as oak, ash, hickory, etc. It is equally dubious when working with very dense, fine textured woods such as maple, birch, cherry, and similar diffuse porous hardwoods. By following either of the two preceding techniques it is of little value on any of the other woods that do not fall into one or the other of these categories.

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