

OVERVIEW: What finish should I put on my deck & how?

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WEATHER

Follow this link for details on critical weather specifications for applying water repellents to outdoor wood.

MOISTURE PROOFING

Although pressure treated wood, cedar and redwood will not rapidly develop rot, any wood left totally unprotected outdoors will grey with sunlight and develop cracks, called "checking" from wet / dry cycles. In a cold climate, once the checks are developed, water in the cracks will accentuate the problem with freeze / thaw cycles. All wood outdoors should be protected from fading and checking, even those which already have natural or pressure treated rot protection.

So what we are talking about is moisture proofing. That could be with paint or varnish, although I hate to use paint and varnish outdoors because you eventually have to scrape even the best paint and varnish off and start over -- that's just my lazy streak. You could moisture-proof the wood with opaque stain, but again someday you have to scrape any film-forming finish and opaque stain is really a thinned down paint that sits on the surface of the wood. In addition, it was only recently that opaque stains have been formulated to stand up to the abuse of foot traffic. If you do want to apply an opaque or solid stain, be sure that it indicates on the can that it can be used for decks and not just for vertical surfaces like siding and fencing. Semi-transparent stain does go into the wood and does not form a film on the surface, but unless it has specific water repellent additives in it, it will colour the wood but not moisture-protect it.

In fact the range of finishing products made for outdoor wood today goes from PAINT & VARNISH, to SOLID stains, to SEMI-TRANSPARENT stains, to SHEER (sometimes called TONER) stains that only have a suggestion of colouration, to totally TRANSPARENT water repellents with no stain at all. And just as you can buy water repellent with no stain, you can buy stain with no water repellent. The difference between a paint and a solid stain is that the stain is designed to allow the texture but not the colour of the wood to show through the finish. The real difference between all the stains is the physical size of the particles of pigment with the smaller sizes actually soaking into the wood rather than sitting near or on the surface. The more opaque the colourant, the more the pigment protects the natural wood colour from the UV rays of the sun -- and some products, even some totally transparent water repellents, have UV filters added as well -- all to slow down the natural graying process.

If you want to avoid surface checking and splinters, you will need to put some kind of water repellent over any outdoor wood and in this sense paint is actually one form of a water repellent. Some pressure treated wood used to come with a bit of water repellent already in the wood but with new chemical formulations that is now rare.

DECK PAINTS

Deck paints fall into the category of film forming finishes. They are special wear resistant paints designed for maximum paint durability on a deck surface. You can sprinkle anti-skid painter's sand over wet deck paint between coats, especially on steps, to make them less slippery in wet weather. Remember that this makes them less comfortable to walk on in bare feet and harder to keep clean. Deck paints require especially good surface preparation because they must stick to the surface of the wood, they don't penetrate into the wood much. Clean and sand the surface. No paint or varnish finish should be applied full strength directly to bare wood, despite what the manufacturer may say to make it appear easier to use their product than the competition. You need a primer/sealer coat that is more

liquid than the final finish, which will soak into and attach strongly to the wood fibers as well as seal the wood so that the following coats will be absorbed evenly across the deck for a more uniform look. Then the final finish can adhere well to this primer coat. This is often done by simply thinning the first coat with 25% of whatever solvent is recommended for cleaning the brushes.

DECK VARNISHES

Clear varnish and varnish like finishes are touchy to use but can make cedar stand out nicely. They are rarely used on pressure treated wood just because they are a lot of trouble for what you are going to see. They should contain UV filters, or be specifically designed for cedar to prevent the UV light from setting up a reaction between normal cedar resins and the finish that will cause premature peeling. Remember that they are still a film and are considered a high maintenance finish as they must be re-finished every few years -- largely depending on sun exposure. The best formula for a clear glossy finish on a cedar deck that I have seen is as follows -- slightly different from manufacturers recommendations but better durability:

Strip, sand then seal the deck with special designed-for-cedar products like Sikksens Cetol. Cetol 1 is a very liquid sealer. Then a day later, put on a slightly thicker coat as a primer, a mixture of 50% Cetol 1 and 50% Cetol DEK. A week later put on the wear layer, a coat of straight 100% Cetol DEK. I learned that one in the Miskoka region of Ontario, where deck building approaches a religious practice.

Remember that all film forming finishes will eventually begin to wear and/or peel and will need to be stripped or sanded down and replaced every few years. Good ventilation under a deck will allow them to last longer as there will be less moisture trying to work its way up from beneath. Some builders insist on priming every board before installing it so that all four sides are sealed against moisture, a good but costly process -- and your deck may already be built. Good ventilation will usually work almost as well. Remember that film forming finishes are high maintenance finishes.

NON FILM FORMING FINISHES

These are water repellents, semi-transparent stains and combination products.

First let's cut through a bit of manufacturer's hype. Almost none of these "stains" are truly stains but they are radically thinned down paints. If the can says to "stir", that means that there are paint pigments that must be put into suspension for even distribution on the surface. A true "stain", like iodine and beet juice, needs no mixing and goes directly "into" the wood fibers, not "onto" the wood fibers. However, true "stains" are extremely difficult to work with and even in furniture making, only seasoned pros will attempt to work with them. True stains are simply more beautiful. Semi-transparent stains hide the wood a bit rather than just changing its colour, but they are much easier to work with. The reason it is important to understand that semi-transparent stains are actually thinned out paint pigments is that if the wood grain has not been opened by cleaning and possibly sanding, or if some other finish is already on the wood, the paint pigments will just sit on top of the wood like ordinary paint and wear off rather quickly. Properly prepared wood allows the solvent or water base to carry the pigment down amongst the wood surface fibers, making the colouring last much longer.

I am constantly asked if you should stain first or put on a water repellent first. The reality is that whatever goes on first will soak deeper into the wood and prevent the second product from getting a good grip. This is especially true of trying to apply a stain over a water repellent. If you want some kind of colour to be added, then your best bet is to apply a combination product that will soak in both the stain and the water repellent at the same time.

SURFACE PREP

Just as for painting, the surface preparation work is important, even for a totally transparent water repellent that seems to just flow into the wood without a problem. New wood can have compressed fibers on the surface from the mill work and all outdoor wood will probably have atmospheric grime if not dirt from foot traffic -- all of which causes uneven and poor penetration of both stains and water repellents.

Whether the deck is old or new, the first step is to clean the surface -- and this is best done with chemicals that will both remove soil and kill mould and mildew spores. TSP can clean, but doesn't kill the mould and is in fact difficult to rinse completely. Pressure washers are generally overkill and

without caution they can actually gouge into the soft wood. There are basically three types of cleaners on the market: ones for old or new wood that have little finish on them and mostly just need to kill mildew; removal of old water repellent or stain and brightening of the wood; and heavy duty removal of opaque stains or layers of protective coats where you need to get down to bare wood.

NEW WOOD

New wood can be washed with the mildest of the deck cleaners, generally ones containing Sodium Hypochlorite or Sodium Metasilicate and Sodium Carbonate for Pressure Treated Wood, or Oxalic Acid for Cedar or Redwood. Oxalic Acid tends to brighten old wood as well. The objective here is to kill and remove any mildew spores and open up the grain of the wood that might have mill marks that could prevent the penetration of the protective coating.

First heavily sprinkle water on all nearby plants -- that way any splashes or over-spray of the cleaning chemical will be diluted when it hits the leaves of the plants. (When you are all finished with the job, soak all the plants and the soil to further dilute any over-spray and run-off.) Use a pump sprayer to wet the surface and edges of the boards with the deck wash product but only as much as you can clean and rinse in 10-15 minutes -- it must not dry on the boards. Let it sit for a few minutes then pass over it with a Deck Brush, a short synthetic bristle brush that will work the chemical into the texture of the wood. Then simply rinse it thoroughly with a garden hose. You must not allow the chemical to dry before rinsing -- so if you are working on a large or complex deck, work on small areas at a time. Separate work areas along boards - not across boards - to prevent lap marks.

OLD WOOD

If you are working with wood that has previously had a water repellent and/or stain on it, then you need a heavier duty cleaner to actually dissolve off the top layer of finish and old wood fibers. These generally contain Sodium Hydroxide. Read the product instructions carefully to see if any cleaner needs to be neutralized with another chemical prior to finishing. Failure to do this can be the cause of a very poor looking job.

CEDAR

Because of natural resins in cedar and redwood they require treatment of their own. The best resource is the Western Red Cedar Export Association. Here is the link to their page about [FINISHING CEDAR](#).

APPLICATION

The stain and/or water repellent can be applied by spray, brush or roller but the best job is working the finish into the wood with a 4" brush. If you want to spread it out quickly with a roller and then brush it into the wood that works well also. The problem with a sprayer or even a roller is that it might just sit more on the top of the wood rather than be worked into the wood. Some products require two coats, others are specifically made for one coat. Some must be applied to dry wood, others can be used right after cleaning the wood - just avoid any standing water that would dilute the repellent. Investing in a magnifying glass to be able to completely read and understand the instructions on the label might be worthwhile. Don't feel shy about sitting on the renovation centre floor reading label after label and making notes -- it is not simple.

MAINTENANCE

Water repellent needs to be refreshed every few years, and traffic paths more often than the rest of the structure. Every year check your deck during a dry spell with a garden hose. If water beads up everywhere, you do not need to do anything. If water soaks in only on traffic paths, apply water repellent only on the traffic path. When the colour needs retouching or the water repellent has worn off across most of the deck, it is time to clean, sand and start over. The nice thing is that all you have to do is clean and dry the deck before applying water repellent; you don't have to scrape or sand unless you have let it go too long without maintenance.

SANDING

If you do need to sand the surface, this is best done after cleaning and let it dry as the cleaning process can raise the grain. In addition, sanding does not kill mould spores but cleaning does. Use a belt sander with a fairly rough paper -- 80 or 100 grit - working with the grain to hide scratch marks. If you use fine sandpaper or allow the wood to get hot from sanding you can actually burnish or close

the wood grain, causing uneven absorption of the finishing chemicals. This is not a piece of living room furniture -- it needs the water repellent to flow into the wood fibres.

BUYING THE RIGHT PRODUCT

Each manufacturer gives you several choices for water repellents these days. Just think a bit about the difference in the structure of wood and concrete and you will realize that the all-purpose combined water repellents that claim to do all surfaces will in fact be a bit of a compromise. Buy one specifically made for your type of wood, or one specifically made for concrete and masonry, but not one that claims to do everything. The less expensive combination product will work, but not as well nor as long and are probably not actually a cost savings in the long run. Water based sealers are good for both wood and concrete. Oil based sealers tend to darken concrete and will not soak into damp wood. However oil based sealers could be the best choice for a deck with very old dried out wood to restore some of the oil and colour to the wood.

Remember that none of the water protectors -- from paint to varnish to stains to water repellents -- are wood preservatives. None of them will prevent rot, although they will slow it down on the areas where they are applied. The problem is that rot usually occurs where two boards overlap -- precisely where you don't generally manage to apply any of these paint-on products. So as far as rot is concerned, you are protecting the whole board, except where the rot will start. That is why we make most of our outdoor projects out of cedar, redwood and pressure treated wood -- boards that won't rot quickly -- and then we moisture-protect the exposed surfaces to keep them looking good.

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Let's just say that this is the best sense I have been able to make out of all the deck builder claims, arguments and constantly changing product lines.

Keywords:

Decks, Environmental, Finishes, Finishing, Overview, Paint, Preserved Wood, Pressure Treated, Stains, Water Repellent, Wood