

## Staining Exterior Wood

How to apply stain on exterior wood decks is a common question posed by our clients. Here is a comprehensive guide to applying exterior stain to cedar wood decks, timber pergolas and any other garden structures made of wood. We were not satisfied with telling you how to apply the stain, but also why exterior stain fails.

### ***Our Solutions to Peeling Stain:***

*Plants absorb and store moisture and nutrients in the root structure then draw them up the stem as required. Trees are simply just a large plant which means that lumber is that stem sliced up. Think of a redwood tree 150' in height drawing moisture from the roots and feeding it to the branches. The larger the species, the longer the cells and the greater the suction created of moisture in the end grain.*

**Solution 1:** Seal the end grains too.

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*As a plant is dehydrated, it shrinks. Trees, being large plants behave in exactly the same way. In fact, if a tree is left whole after cutting, they will tend to develop cracks to the center, larger in the outer grain, smaller in the center grain. If you have ever noticed a fence post, which is cracking all 4 sides, you will be assured the core of the tree is in the center of the timber. That core of the tree's closest route for the crack is to each flat surface of the post.*

**Solution 2:** Seal all 4 sides as well as the ends to stabilize moisture content.

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**Solution 3:** If you cut a timber seal the end again during assembly.

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*During the planing process (smoothing of wood), superheated sap and sawdust tends to be forced into the surface of the wood. This “mill glaze” is similar to glass and stain will not penetrate it. You can see the mill glaze if you look at the surface of the wood from an angle and see a shiny surface.*

**Solution 4:** Before applying stain, sand all surfaces with 80 grit sandpaper to open up the cells of the wood to accept the stain.

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**Solution 5:** Rollers will lay stain on fast, however it won't get the stain into the pores. You can apply with a roller but you should really go over it with a brush. Thin the stain 10% to keep it workable and enters the pores more readily.

*Plants need moisture to live. At the time of harvesting trees have a high moisture content. During the production and finishing the timbers lose some moisture, but only kiln drying will get most of the moisture out of the wood. Your typical lumber is about 18-22% moisture content. Kiln dried typically has about 5-8%. Before drying, that*

*moisture resides in the pores of the wood, where you want the stain to be. That moisture, when it freezes, will expand*

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**Solution 6:** Stack your lumber with 1 or 2” spacers between layers, boards 1” away from each other. Plug a couple of fans in, and open the garage door a crack. Dry the lumber for a couple of weeks before you sand it to remove the glaze.

*Paint lasts longer than stain, however it deteriorates and marks on horizontal surfaces. Solid stain lasts longer than semi-transparent in general terms. There are many different companies which make numerous products with benefits and drawbacks to all of them.*

*Generally a good choice of stain will contain plenty of pigment for UV protection, a mildewcide and fungicide and be oil based.*

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**Solution 7:** Use a good quality stain with a track record. Price of product does not guarantee good performance.

*Coatings tend to fade over time. Vertical surfaces will weather at different rates than horizontals. If you have decided to re-stain only part of your deck, you may find it is now 2 different shades. This is particularly true when it comes to semi-transparent coatings.*

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**Solution 8:** Consider staining the deck surface in semi, and use a solid color on the verticals, (paint or stain).

When it comes time to re-coat the horizontal surfaces, you won't have to do the verticals as well.

*All stains are made of chemicals and compounds that are mixed. They all require stirring prior to application.*

*Direct sunlight can cause the materials in the stain to separate, which will cause poor results. Often humidity or moisture will cause the stain to contaminate. If it is too warm or too cold stains often will give poor results.*

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**Solution 9:** Apply your stain on a warm, dry, overcast day for best results.

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## **Q&A**

### **How long should a stain job last?**

*If you follow the guide above, 2-3 years on horizontals due to wear from foot traffic and other factors. 4-7 years on verticals. If you just slap the stain on after the structure is built, you may get a year or two before it peels off.*

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### **In choosing stain color, are there any guidelines?**

*We like to borrow colors from the exterior of the house. Trim colours for rails, (to imitate a wainscoting), floor colors for the deck (often semi transparent to make it an extension of the floor in the house).*

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**Can I use a spray gun or rig to apply the stain?**

*Sure, but just be careful you don't spray your neighbor's car, house, children...and run a brush over the whole board end to end twice to help penetration.*

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