



Stripping Paint From Exterior Wood Surfaces

Removing paint and other film-forming finishes is a time-consuming and often difficult process. In some cases, finishes need to be removed prior to repainting; for example, if the old surface is covered with severely peeled or blistered paint or if excessive paint buildup has caused cross-grain cracking. You must also remove the finish before applying a penetrating stain or water-repellent finish to a previously painted or stained (solid-color) surface.

This FinishLine outlines some factors to consider when stripping exterior wood before painting or staining. Stripping indoor wood is not difficult and the process tolerates mistakes, but stripping exterior wood can be difficult and unforgiving.

The information given here is based on our knowledge of wood. There has been no research at the Forest Products Laboratory to determine the best stripping systems for exterior wood. We do know that the best surface to repaint is one that has been sanded and has no leftover stripper.

Stripping Methods

Finishes can be removed by scraping, sanding, wet or dry sandblasting, spraying with pressurized water (power washing), using electrically heated paint removers and blow torches, or stripping with chemicals. Although wet sandblasting and power washing work well to remove a finish, it is difficult to avoid digging holes in the wood if the paint is firmly adhered. Common dry sandblasting should never be used to strip wood if you plan to apply another finish. Using heat as a stripper works well, but this method is not permitted if the paint contains lead. Lead is also a problem for sanding or power washing.

Chemical Strippers

Chemical strippers, though they can be tedious, may sometimes be the only choice. All chemical strippers we are aware of are reasonably effective on wood that is kept indoors.

There appears to be an inverse correlation between how safe stripping products are and how fast they work. The safer the product, the slower it acts. Strippers that claim to be safe take several hours to be effective and tend to dry out in the process. Evaporation can be prevented by covering the treated wood with plastic wrap and allowing the stripper to work overnight.

The fastest working strippers contain methylene chloride (dichloromethane), a known carcinogen that can burn skin and requires good ventilation. Strippers with methylene chloride can work in

as little as 10 minutes. Because of safety concerns with methylene chloride, some formulations are now being made with other strong solvents that are probably safer to use but still hazardous to either the user or the environment.

For all chemical strippers, the process involves applying the stripper, waiting, scraping, and sanding. The wood can then be refinished.

Peel-Away Strippers

Peel-away products, which are based on strong bases (alkali), usually take a day to work. For interior wood with many layers of finish, the peel-away process is very effective. Wood stripped with a peel-away product must be neutralized with an acid because leftover base will degrade paint. Oxalic acid is frequently the acid of choice for neutralization because it brightens wood.

Neutralization is difficult because acids and bases penetrate wood differently. If considerable amounts of acids and bases are used, even if the proportions are correct, much salt will remain in the wood. Because salt is hygroscopic, the wood will be wetter than untreated wood, and too much moisture is always a problem. Washing the wood with water may remove some salt, but some types of wood may warp.

Failure of the finish on stripped exterior wood is a common problem. Often, the cause is application of too much stripper. Rather than risk failure to remove all the paint with one application, there is a tendency to apply too much stripper. When the neutralizer (acid) is applied, the wood remains alkaline because only the surface has been neutralized. The addition of more acid at this point only aggravates the problem. If all the paint peels away easily, too much stripper was used or too much time elapsed between applying and removing the stripper.

Non-Alkali Peel-Away

There are peel-away products based on strong solvents, such as N-methylpyrrolidone (NMP), that do not damage wood but may not work as well as the alkali peel-away products. However, they would be a better option for exterior wood when considering the life of the finish subsequently applied. They are likely to be safer to humans than the fast strippers based on methylene chloride.

Disposal of Old Paint

No matter what method you use to remove paint, you must be careful in disposing of the old paint. Paint containing lead is

considered hazardous waste. In some areas, laws regulate who can handle lead-containing material; be sure to follow local laws pertaining to removal and disposal of lead-based paint. Lead waste can be difficult to contain during power washing or other mechanical methods, and sanding requires high-efficiency vacuum cleaners.

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