Fixes for dirt, oil, mold and rust stain When things go off the rails there are quick fixes. *Quick* is the operative word. Despite the best efforts of many players in the supply chain, timbers do get dirty. It only takes a forklift operator to set his forks down in a dirty mud puddle or a truck driver to spill fuel that gets onto the timbers via oily boots. A leaky hydraulic cylinder can spray a fine, barely noticeable mist of oil onto rollers, forks or dunnage, which then is unknowingly transferred to the timbers. When the paper wrap is removed in the customer's yard, the results are evident and prompt action at all levels is required.

Marinating is good for steaks, not for timbers. Whatever you do, do not delay or procrastinate cleaning the timber. Responsible suppliers will pay the cost to correct a problem that is clearly their fault. However, a supplier could be justified in ascribing some or all of the liability to others if you delay and prompt action could have kept remedial costs down. Despite the fact that damage was caused at the mill or during transit, do not leave oil, mold or rust stain to soak in deeper, multiply (in the case of mold) and become heavily ingrained deep in the wood fibers. The longer it is left, the worse it gets. Oil, stain, mold and dirt on timbers, like dead fish, do not get better with age.

Use test sections of the timber to apply any chemical cleaning solution. When you get the mixture right, then do all the stained pieces. For mold, spray diluted ammonia or bleach onto the test section, leave it for varying lengths of time and then power-wash. Table A on page 20 lists remedies for common problems.

Oxalic acid ($H_2C_2O_4$), 10 percent solution Oxalic acid is used to clean metal stains that come from steel decks, forklifts and rollers. Generally available as a powder from paint stores, it's also known as wood bleach. Read the manufacturer's instructions and adjust the proportions for the size of your rust-removal job. Oxalic acid powder must be mixed with *hot water* to be used on wood. Oxalic acid will react with metal, so mix the solution in a plastic container.

Table A Easily available cleaners for dirty timbers

Oxalic acid	Rust, metal stain.
Marine bilge cleaner	Oil, grease, dirt
Boat deck cleaner	Oil, grease, dirt, sunburn
Bleach	Mold
Borax	Mold (inhibitor), insects, fungi
Trisodium phosphate	General dirt

For large areas (Figs. 16, 17), apply the solution with a stiff brush over the complete face of the timber to avoid splotchy light patches. If the rust stain is a small one, use a thin brush to apply the oxalic acid and leave the timber overnight. To avoid a blotchy appearance, then treat the whole surface completely from end to end. For a severe rust problem, you may have to reapply the solution two or three times. Let it dry each time.

The final step is to neutralize the acid to stop its corrosive action. Make an alkaline solution by mixing 2 tbs. of baking soda with 1 qt. of water. Use this solution to wash the wood, let it dry, and then a final power-wash should clean the timber.

Desirable tools for cleaning timber include the power washer (3000 psi), a hot-water pressure washer, a steam cleaner, a stiff-bristled deck brush and a stainless steel or brass brush for rotary drill or angle grinder.

At the sawmill, antistain solutions are applied to control mold, stain and rust as an integrated part of the production line. Commercial antistain solutions contain bleach, borate and oxalic acid, among other things, a preventive cure for most timber stain problems before the timber is packaged. During an 8-hour shift it is possible to treat 10 to 20 truckloads of timber through commercial antistain machines, dip tanks and spray tunnels. For small-volume, occasional stain control in a timber framer's yard, antistain solution can easily be applied with a watering can or garden sprayer. But time is of the essence. Commercial antistain brand names and suppliers are listed in Table B.