# Best Practices for Cleaning

**Pressure washing alone is not always the answer, especially when cleaning exterior wood.**

Coatings failure can occur due to improper cleaning. It is a common misconception that cold water pressure washing alone is sufficient for cleaning most surfaces prior to coating. This is however untrue when dealing with surface contaminants such as oils.

Cleaning results

Consider this; If you were going to wash a frying pan, would you use cold water? No, because cold water will not sufficiently remove the oil/grease from the surface.

Oils are hydrophobic compounds, which means that they have an absence of attraction to water. Water molecules stick to each other so well that the oils don't have a chance to get between them to be washed away.

Oils can be scrubbed, which will provide enough energy to loosen some and allow the water to carry it away, but only by increasing the water temperature will it give the water molecules more mobility so they can move apart and let the hydrophobic compounds in.

The addition of detergents further increases the removal of oils from a surface. Detergents are surfactants, or Surface Active Agents, that have an amphiphilic nature (loves water and oil) which works to help facilitates the mixture of the hydrophobic compounds (oils) with water, enabling them to be washed away even easier.

See MPI Repaint Surface Preparation standard - MPI RSP 13 Detergent Cleaning for further details.

**Specific Surface cleaning - Exterior Wood Mildew cleaning. (See MPI RSP-9)**

Let's further explore a specific cleaning method; by looking at **Exterior wood** and the removal of mildew.

**"**Mildew**"** is a general name for a variety of fungal species of the family, Erysiphaceae. Mildews seen on painted surfaces are usually black, brown or gray, and can be mistaken for dirt. At a magnification of 20X, mildew appears as a central spore, with many fibers (mycelium) reaching outwards. A method of field testing for mildew or mold is to place a few drops of household bleach (5.25% sodium hypochlorite) on the damage. The bleach will turn mildew white, but leave dirt unaffected (color still shows).

Algae is also found on exterior surfaces (often behind bushes and shrubbery), and is identified by its green color. It is removed using the same techniques as for mildew.

In some areas mildew is seasonal, with dry and wet cycles, but is quite common in damp, humid conditions out of direct sunlight. In some environments, mildew can be very difficult to control. Many coatings include mildewcides to eliminate or reduce growth on the surface. In the past, various metallic compounds (e.g. phenyl mercuric oleate (and acetate), cuprous oxide, mercury chloride, etc.) were used. Newer coatings use organic fungicides that are equally poisonous to mildew, but are more environmentally friendly. Rough and textured surfaces are more prone to mildew growth, because they tend to retain airborne dirt, spores and moisture.

Complete sterilization with a bleach solution can kill any kind of mildew or algae; there are also commercial mildew treatments available that may be more environmentally friendly and safer for the wood.

Work the solution over the mildewed area with an appropriate brush to assure good coverage and penetration into cracks and crevasses, and allow the solution to set for a minimum of 20 minutes to assure all of the mildew is killed. Then, wash the substrate clean with a power washer or scrub the surface thoroughly with clean water, and allow the surface to dry completely. This last step is critical: the lone use of a bleach or biocide is insufficient for treating mold: it may spread the mold, and it will not remove the dead spores.

In summary; to successfully clean a surface ready for coating, you must consider the



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