



Volatile Organic Compounds

The United States Congress over the last several years has enacted legislation pertaining to the reduction of pollution in our environment – air, land and water. The Environmental Protection Agency (EPA) has been given the responsibility of writing, controlling, and enforcing the various regulations. The Clean Air Acts of 1990, the latest Congressional re-authorization, require each state to comply with regulations which will reduce air pollution, especially street-level ozone, a hazardous component of smog. One way in which this can be accomplished is by reducing the **Volatile**

Organic Compounds (VOC) or solvents in AIM (Architectural & Industrial Maintenance) coatings. The EPA will issue national standards for VOC limits for all AIM products.

To make a product VOC compliant, manufacturers increase the level of solids in a product and lower the amount of solvents, the actual VOC component. Solids are defined as any non-solvent part of the product and would include pigment, mildewcides, resins (oils), flattening agents, etc. The higher level of solids in these stains does not mean that the product looks different when applied. A semi-transparent stain will still allow the natural texture and grain of the wood to show through, and a solid stain is still opaque and flat in appearance. The long-term durability of the VOC product is still the same. In fact, the durability of VOC-compliant products may be enhanced due to the increase in solids. However, three aspects of these higher solid products do change – handling characteristics such as brush drag, slower drying and increased film build. Increased brush drag and slower drying time mean that these coatings will have expanded “open-time” leading to a more uniform application. An increase in film build means that more product is applied to the surface, which leads to greater hide and increased durability for one-coat applications.

Cabot has been manufacturing VOC-compliant products since 1987 and has gained considerable experience in their handling and application. As part of our ongoing commitment to our customers, we are taking this opportunity to provide a better understanding of the correct application techniques for these products. It is important for the Cabot dealer and the applicator of VOC products to understand the differences in the handling and application of VOC-compliant stains and paints vs. the non-compliant stains and paints that are more familiar.

Below are some hints, which when followed, will allow for increased success with the application of VOC stains.

1. **One coat** of VOC-compliant O.V.T.® Solid Color Oil Stain (#6500) and VOC-compliant Bleaching Oil™ (#3241) is recommended. Two coats may result in a higher sheen. For complete hiding, additional coats may be required with lighter colors. Always test a small area prior to applying a second coat. Remember, because of the higher solids in VOC-compliant products, greater brush drag and increased film build lead to increased hiding.
2. Cabot Semi-Transparent (#0300) or Semi-Solid® (#0100) stains are already produced in a VOC-compliant formula. Two coats are recommended for maximum durability on new, porous wood. Always test a small area prior to applying a second coat. One coat is recommended for redo work.
3. Do not apply Cabot VOC-compliant oil-based products over previously painted, non-porous, or sealed surfaces, including Problem-Solver Primer. The high solids content formula of VOC-compliant O.V.T. Solid Color Stains (#6500) has excellent cedar-bleed retarding properties.

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4. When staining a previously stained surface which is still porous, the surface must be cleaned prior to staining. Power washing is recommended. Proper surface preparation is the key to maximum performance.
5. The surface **must** be thoroughly dry. After power washing, allow 3-5 days of dry weather before restaining. The moisture content of the wood should be 15% or less.
6. Because of the reduction in solvent, these VOC stains must be applied at 50°F or higher. The viscosity will increase at lower temperatures.
7. New wood that is unseasoned or appears shiny (mill-glazed) should be allowed to weather sufficiently before staining, but generally no longer than three months.
8. Cabot Problem-Solver® Primers may be applied to new, smooth (mill-glazed) lumber without waiting or seasoning, as long as the wood is dry. Topcoat Problem-Solver Primer with Cabot O.V.T. Solid Color **Acrylic** Stain or The Finish by Cabot.
9. A natural bristle brush is recommended for application of solvent-based products. When spraying, it is critical that backbrushing be done immediately after each section is coated to ensure proper penetration and maintain the recommended spread rates.
10. The high solids content of VOC-compliant O.V.T. Solid Color Stain (#6500) will increase the brush drag of the product and can lead to overapplication. Be sure to apply the product at the proper spread rates.
11. It is illegal for contractors and homeowners to thin VOC-compliant products. We do not recommend intermixing Semi-Transparent Stains (#0300) with the VOC-compliant O.V.T. Solid Color Oil Stain (#6500) to reduce the viscosity.



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