

Technical Tip

Volatile Organic Compounds (VOCs)

Over the past few years there has been a lot of talk about VOCs and how they concern products used on log homes. Here are some frequently asked questions about VOCs as they relate to log home finishes and sealants.

What are VOCs, and what are the risks posed by VOCs to the environment?

VOCs are Volatile Organic Compounds, typically petroleum based solvents and other liquids contained in coatings, sealants, cleaners, fuels and other products that evaporate into the atmosphere. Once in their vapor state they have been implicated in the increase of the ground level ozone concentration. In addition, many of these compounds are designated as health hazards. VOCs are typically measured in terms of grams per liter (g/L). The higher the number, the more VOCs are contained in the product.

What are some of the VOC restrictions placed on stains?

Stains are classified as architectural coatings and both state and federal agencies have limited the amount of VOCs allowed in coatings. Some states like California, Virginia, Pennsylvania, New Jersey and others have placed VOC limits lower than those mandated by the federal government. This is why many of the oil-based stains sold in these states are not the same products they were five years ago. Within the next few years it is expected that both state and federal allowable VOC limits will continue to decrease.

What kind of challenges have the VOC restrictions posed to Perma-Chink Systems?

Since Perma-Chink Systems manufactures and sells only water-based coatings, VOC restrictions have not had much of an impact on us other than increasing the demand for our products. However, there is one method of measuring VOCs that has a minor impact. Back when VOCs first became an issue the solvent-based coating manufacturers lobbied that it was unfair to compare a water-based coating with a solvent-based product. The result was a method of determining the VOC content of water-based products by first removing all of the water. Even if a product contains 80% water, this method only looks at the remaining 20% of the components. Although this method of determining VOCs in water-based coatings has fallen out of favor by many coating organizations, it is still used by the states under the direction of the EPA. Although all of our stains, topcoats and sealants currently meet or are significantly lower than the VOC requirements for all 50 states plus Canada, we continue to investigate formulations that contain even lower amounts of volatile organic compounds while maintaining or increasing the performance in terms of longevity and durability of our product lines.

Is there any difference in the quality, color and durability of low VOC water-based stains versus oil-based stains?

Over the past few years almost all new innovations in coating technology have been in low VOC water-based systems. This new technology has allowed the development of high quality products like our LIFELINE™ brand stains and Advance™ Topcoats that not only look great but meet all of the requirements of a log home. Recent advances in polymers, UV light inhibitors and mildewcides have significantly improved the look, longevity and performance of water-based coating systems. For those manufacturers like Perma-Chink Systems willing to make the investment, this new technology has allowed us to develop water-based products that look better, last longer and outperform the best oil-based product ever made. On the other hand, one way that high VOC oil-based coating manufacturers have lowered their VOC content is to add fillers such as pigments or extenders to their coatings. The subsequent reduction in solvent content has, in most cases, decreased the attractiveness and longevity of these products.

Why is it important for Perma-Chink Systems to offer low-VOC products to our customers?

Since our inception back in 1982 Perma-Chink Systems has always had a concern for our environment, and we have always taken the environmental impact of a product into consideration during its development. In retrospect this was and is a very wise decision which has resulted in our considerable growth over the years as people become more aware of the influence of the products they use on the quality of our environment.

Aside from the environmental impact, are water-based products safer to use and apply?

Most water-based coatings have little if any odor and can be applied both inside and outside a home without concern. In addition, water-based coatings can be cleaned from brushes and spray equipment with just soap and water. On the other hand, oil-based coatings must be cleaned with mineral spirits which releases even more VOCs into the atmosphere.

Besides low-VOC water-based stains are Perma-Chink Systems' sealants also earth and people friendly?

Perma-Chink Systems offers a wide range of caulks and sealants including Perma-Chink®, Energy Seal®, Woodsman™ and Check Mate 2®. All of our sealants are low VOC water-based products. We do not make any petroleum solvent-based sealants nor do any of our sealants outgas xylene, toluene, formaldehyde or other toxic or carcinogenic components.