

## Technical Tip

# Why Log Homes Need a Pigmented Finish

Let us assume that you have a brand new log home, or a home that has had an old finish recently removed. The bare wood is nice and bright, and the color is exactly what you always envisioned for your log home. What's wrong with applying one or two coats of some type of clear sealer to hold the color of the wood and protect your logs from rain, snow and ultraviolet (UV) light damage?

Here are the problems with this approach. The most damaging environmental factors to wood are water and sunlight. Water penetration creates conditions conducive to decay while the UV component of sunlight destroys the integrity of the wood's cellular structure. Technically, we define this UV damage as the photo-oxidation of the lignin. Although clear coats alone can temporarily provide a barrier against water penetration, they have difficulty dealing with UV light for more than a few months. Clear coats rely on two mechanisms to protect the underlying wood from UV light, reflection and absorption. If the clear coat is slick and shiny, it will reflect much of the UV light but as it gets dirty or dull less and less light is reflected allowing more UV light getting through to the wood. Chemical UV inhibitors may be included in the formulation, but these are sacrificial, in other words the more UV light that they are exposed to, the quicker they get used up.

The bottom line is that if only clear coats are applied to exterior bare wood they provide only temporary protection against UV damage and degrade fairly rapidly so that even their ability to repel water may only last for a year or two. Within a few months the home will end up being multicolored with sun protected areas being significantly lighter than those areas exposed to direct sunlight.

### ***Effect of 18 months of sun exposure on bare northern white cedar.***



So how does a colored finish avoid these same issues? The colorants or pigments contained in a colored finish absorb UV light and remain active as long as the pigments remain on the surface. It's the pigments that do the majority of the work protecting the underlying wood from the effects of UV exposure. The purpose of our Advance™ Clear Topcoat is to protect the color coats just like the clear coat on a car. In addition to making a car attractive, car paint is designed to protect the underlying metal. The job of the clear coat is to protect the paint. The same concept applies to our exterior finish systems. The color coats protect the underlying wood and the Advance™ Clear Topcoat protects the color coats from the effects of dirt, wind, sunlight and weather. If you want a bare wood look, you can choose a color like Butternut or Wheat. They have the appearance of bare wood, but offer the UV protection inherent in a high quality pigmented stain. Note: These colors still need to be topcoated with Advance™.

We occasionally get calls from potential customers who only want to purchase our Advance™ exterior clear coat to apply to bare wood and become upset when we refuse to sell it to them. It's because we know that they will be disappointed with the results. We pride ourselves in supplying the very best finish systems in the world and to knowingly sell something to a log home owner that will not live up to our high performance standards is not the way Perma-Chink Systems, Inc. does business.