

### Avoiding Metallic Surface Contamination

Although we emphasize the importance of cleaning the surface prior to the application of our finishes, there are some types of surface contaminants that can be very difficult or even impossible to remove with just a light washing. The leading cause of dark discolorations appearing under any transparent finish like LIFELINE is the presence of minute metal particles imbedded in the surface of the wood. All wood contains tannic acid. When tannic acid migrates to the surface, it can react with iron, generating iron tannate complexes. This causes blue-black discolorations.

#### The Origin of Metallic Contamination

##### Milling, Planing and Shaping

All logs and siding used in a log home go through some type of process to remove bark, cambium, branches, and to shape the wood. No matter what process is used, milling, planing, draw knifing or hand hewing, some type of steel blade is involved. Although you may not be able to see them, microscopic particles of steel are deposited on the surface as the blade, or blades, cut through the wood.

##### Using the Wrong Materials

Using wire brushes, steel wool or metallic abrasives to aid in the removal process of old finishes or to smooth the surface will create discoloration problems. Small bits of metal will be deposited on the wood and the use of these materials should be avoided at all costs.



*Spots created by steel wool.*



*Section on left was wire brushed.*



*Section of fascia that was wire brushed.*



*Iron tannate discolorations from an unknown source.*

### **Sandpaper and Sanding Pads**

Although the use of most sandpaper and sanding pads presents no risk in the formation of discolorations, it is best to use new sandpaper to avoid cross contamination. Also, avoid sanding over screws and nails.

### **Contaminated Blasting Media**

Blasting media like crushed glass is very abrasive and since it maintains its abrasiveness even after being used, some people try to reclaim and reuse it several times. If done once or twice it usually does not present a problem. When reused multiple times it can become contaminated with metal, picked up as it flowed through the blaster pot, valves and connections. It can also pick up contamination from the ground when it is reclaimed.

### **Installation of Steel Roofs and Other Metal Components**

You can easily envision the amount of metallic dust and particles generated by cutting or sawing steel roof panels. They may end up on the surface of your logs or even more likely, your deck. If they are not completely washed away, they will become a source of discolorations. Any metal that contains iron has the potential for creating dark discolorations.

## **Preventing Discolorations Due to Contamination**

The best way of preventing iron tannate discoloration is to avoid contaminating the surface in the first place, though that may be impossible. Wood surfaces should always be thoroughly cleaned with Log Wash, or in the case of milled log siding, Wood ReNew before the first coat of finish is applied.

### **Steps to Take to Avoid Metallic Contamination:**

- Never use a wire brush or steel wool on a wood surface that is going to be finished.
- Use good quality sandpaper and sanding pads specified for use on wood. Never use any that have been previously used for another purpose. Store them separately in plastic bags and do not allow the abrasive side to contact any metal prior to use.
- If during sanding you run over a nail or screw discard the paper or pad.
- Do not attempt to reuse blasting media more than two times and avoid picking up dirt or other contaminants as you reclaim it.
- Wood surfaces should always be thoroughly cleaned with Log Wash, Cedar Wash (specific wood species like Western Red Cedar), or Wood ReNew before the first coat of finish is applied.