

## CAUSE

Many paint manufacturers and coating technologists believe that discoloration often seen on painted hardboard siding is caused by “wax bleed.” The migration of the wax appears to be caused by a combination of two or more of the following factors.

1. Flat paints and exterior stains, both water and solvent based, are most susceptible.
2. Thin dry film thickness of coating.
3. Poor and uneven film thickness application.
4. Internal moisture vapor transmission.
5. Temperature.
6. External moisture — dew condensation, rain, humidity.
7. Irregular board density (this includes textured hardboard).

Flat paints and stains used in homes today are formulated by necessity to have a high pigment loading (a must for a flat appearance). Not only are these products more porous in nature, but they exhibit a pigment-air interface. It is believed that the discoloration occurs when the wax migrates to the surface and wets some of the pigment. Thus it creates a pigment-liquid interface and causes a darkening effect even though the wax is nearly colorless. Porous type paints and thin films do not readily deter this migration since they do not provide an adequate “barrier” to the wax bleed. This phenomenon is more evident with medium and deep tone bases.



## IDENTIFICATION:

Identification of the discoloration should be approached as follows:

1. Apply a few drops of household bleach (5% sodium hypochlorite solution) to rule out possible mildewing, tannin or sulfide staining. Bleaching will occur if these conditions are present. Wax will not be affected by bleaching.
2. Apply a few drops of water both to a discolored area and to a non-discolored area. If the water beads up and runs off the discolored area while being absorbed into the non-discolored area, a wax condition is indicated on the discolored area.
3. A rag saturated with mineral spirits or naphtha should then be used to wipe a section of the discolored area. In most cases, if wax is present, the original (lighter) color will reappear after total solvent evaporation.
4. In severe cases, the wax can be felt with the fingers as an oily or waxy substance.

## SOLUTION:

Areas with discoloration that have been previously painted must be thoroughly cleaned with a detergent solution and then rinsed with a strong stream of water. If this does not remove the wax because of extreme wax build-up, a clean cloth saturated with mineral spirits should be used to remove the deposits. Change rags and solution frequently. Then repeat the cleaning process using the detergent solution and rinsing with a strong stream of water.

On factory-primed materials, paint should be applied no more than 120 days after installation. Unprimed panels must be primed and/or finished no more than 30 days after installation. Then use an Alkyd Primer such as Prime-O-Seal® or a 100% Acrylic primer such as Sure Grip® or Weather-Plate® should be used.

In painting hardboard (new or repainting), a good quality oil, alkyd or latex topcoat may be used. The use of stains, either latex or oil, is not recommended on exterior hardboard. A minimum of 4 mils (this is total dry film thickness including primer) is recommended. Pre-primed panels have approximately 1.2 dry mils of primer so the topcoat should be applied heavy enough to obtain 2.8 dry mils for a total of 4 dry mils.

For more information on painting hardboard siding, contact your Diamond Vogel® representative or visit the Diamond Vogel® web site at [www.diamondvogel.com](http://www.diamondvogel.com).