

SURFACTANT LEACHING

EXTERIOR LATEX PAINTS

This phenomenon is known by several names: streak staining, surfactant leaching, surfactant staining, exudation, and weeping. It can occur with any exterior latex house paint when conditions are such that water soluble components of the paint are extracted and deposited in concentration on the surface. Surfactant leaching is visually more apparent with dark, ultra deep and accent colors, though it can be problematic with white and light colors, especially if the exudate has a tan color, as sometimes happens. The likelihood and severity of this deposition of water soluble components depend on the paint formulation and the conditions under which the paint is applied and dried.

All latex paints are made with some water soluble ingredients, such dispersants, surfactants, wetting agents, thickeners, and glycols. All of these ingredients eventually come out of the paint film upon exposure.

These materials normally are leached out by rain and dew, usually over the first several weeks of exposure. Weather conditions can be such that a large proportion of water soluble ingredients are brought to the surface as the paint dries, or shortly thereafter, and appear typically as shiny streaks or blotches. Also, dew or light rain soon after painting can extract water-solubles, resulting in surfactant leaching.

Surfactant leaching will generally weather off in a month or so. Removing it before then can be difficult, especially if it has been baked by sunshine. Care should be taken in trying to remove it with power washing in that a paint job can remain tender until it has thoroughly dried out or "cured".

For this reason, paint companies or sales representatives may suggest the customer to not take action to have the problem area repainted and instead ask the customer to wait to allow "self-correction" of the problem. In general, surfactant leaching does not adversely affect the film integrity or exterior durability of the paint.

Formulating a latex paint to minimize the amount of water soluble ingredients will help minimize surfactant leaching or water spotting. The formulator uses the minimum level of surfactants required for good color acceptance, the minimum level of co-solvents for paint stability and application properties and the minimum level of coalescent for good film formation. Unfortunately, the addition of colorant may eliminate any benefits gained by minimizing the amount of water soluble ingredients because universal tinting colorants contain glycols and surfactants.