
Faulty Practices in House Painting in Cold Climates—The Exterior Vapor Retarder Problem

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ABSTRACT

A home is generally the largest single investment that most individuals will acquire in their lifetime. Naturally, they want their home to look its best both inside and out with little or no maintenance for as long as possible—preferably the life of the structure, or at least as long as they own it. This is not a naive or unreasonable expectation, considering the advances that have been made in low maintenance exterior finish materials over the last several decades. When one considers that a typical asphalt shingle roof, exposed to the onslaught of far more rain and sun than an exterior wall, can last as long as 15 to 25 or more years, why should not the outside wall exterior finish last at least as long or longer? In fact, some homes with painted exterior wood finishes have lasted as such, simply because of a properly chosen and applied finish initially.

However, a large number of homes are plagued with ongoing paint failures and are repainted repeatedly with alarming frequency—perhaps every five years or even less. Along with this, there can be subtle or nearly invisible sheathing or siding deterioration that may not show up as complete failure until perhaps the fourth or fifth repainting job. For the home building and home renovation industries, this would seem to be an unacceptable and awkward, perhaps even embarrassing, situation considering the worldwide evolution of the concept and need for sustainable housing over the last two decades.

It is suggested that many within the house painting industry frequently promote three flawed practices that cause or contribute to these problems. They are

- 1. the continued and antiquated use of vapor-retardant alkyd or oil-based paint as the paint of choice for the exterior finish, when only considerably more vapor-permeable or latex-based paints should be used to maximize the drying potential of the wall,*
- 2. high-pressure water washing to remove old paint, and*
- 3. “back priming” new wood siding with alkyd or oil-based primer in an attempt to minimize moisture absorption into the back of the siding either from incidental rainwater penetrating the siding from the back or from moisture diffusing from the interior and penetrating outward into the siding. This is intended to minimize differential swelling of the wood and reduce or minimize the blistering and peeling of the (vapor retardant) alkyd or oil-based finish.*

This presentation will expand on these practices in detail and will offer explanation of how, even without interior vapor generation, vapor retardant exterior paints can still blister and peel, the problems with high-pressure washing, and how back priming with vapor-retardant paint causes several problems and solves none. Explanation will include vapor transmission and capillarity concepts, references to the NBC1995 and others, and photographs of problems and deterioration.

The presentation and discussion will not involve rigorous technical analysis or chemistry. Rather, the intent is to provide a general overview of the issues involved and hopefully to stimulate some thought on subtle but long-term problematic practices and attitudes that have been present in the house painting industry for decades, and what the solutions might be.

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