Hot Water Soft Wash!

Oxidation on Vinyl Siding

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Blue Sky Knows a thing or two about Vinyl Siding & Oxidization is wearing or breakdown of the materials and will happen to vinyl, aluminum and paints that are exposed to the elements (sun, rain, cold, heat). Some colors take longer to break down, while others break down quickly. Oxidization levels vary so greatly that it's impossible to predict how easily it will come off or if it will come off totally.

Some stains may not come completely off. When removing the chalky oxidation, the siding will likely be dull, and no longer have a sheen to it, not all of the chalky oxidation will come off. The bottom line is that some damage on vinyl siding cannot be remedied. There may still remain some splotching and chalky oxidation. Oxidation is pretty much the siding breaking down and that while the siding will be clean of mold and mildew, the oxidation will remain.

Can Vinyl Siding Oxidize? PVC exposed to UV light is especially prone to oxidation.Polyvinyl chloride or vinyl is a common plastic used to make siding and many other products. Despite its many desirable properties, PVC is less oxidation-resistant than other plastics such as polyacrylonitrile and acrylic, a characteristic it shares with polyethylene. Addition of antioxidant chemicals can help retard the oxidation process.

Effects: As the vinyl becomes degraded, the polymer chains become cross-linked and the oxygen content of the material increases. You may observe discoloration, yellowing and cracking; sometimes the plastic will develop a chalky surface. Products of photo-oxidation include carbon dioxide, methane, carbon monoxide, hydrogen and -- at higher temperatures -- hydrogen chloride. Increasing temperature increases the rate of oxidation. The strength and flexibility of the siding deteriorate as the vinyl becomes oxidized over time.

Considerations: PVC products are inherently susceptible to photo-oxidation. Ultimately, however, the vulnerability of vinyl siding to oxidation depends on the kinds of pigments, stabilizers and other additives the material contains. Since vinyl siding is designed for use outdoors, it will typically perform better than vinyl materials intended for indoor use. Nonetheless, when purchasing vinyl siding, you should consider stability and performance in outdoor conditions as important factors in your choice of product.

Photo-Oxidation: most important degradation process for vinyl siding is photo-oxidation or photodegradation. Light in the UV range of the spectrum has sufficient energy to break the bonds between chlorine and carbon atoms in the PVC, releasing reactive intermediates that participate in reactions contributing to polymer breakdown. The presence of oxygen greatly accelerates this process, and since vinyl siding outdoors is always in the presence of oxygen, this photo-oxidation process can potentially pose a problem.