

Preventing Storage Corrosion or Staining on Pre-painted and Galvanized Building Panels and Components

Introduction

Pre-painted and galvanized building panels and components have been successfully used for many years. In general, properly installed building materials under normal service conditions have excellent corrosion resistance. However, pre-painted and bare building materials are subject to premature corrosion failures *prior to installation*, if they are not handled and stored properly. Excessive storage periods or poor storage conditions often result in water intrusion. Prolonged exposure to wet conditions can cause paint blistering and galvanized substrate corrosion or staining in as little as 2 weeks.

Environmental and Service Conditions

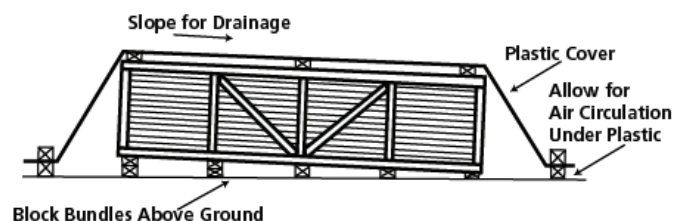
Water is a necessary prerequisite for corrosion of stored panels or components. When water or water vapor is available along the sides of a panel bundle or a column/purlin stack, it may penetrate between the panels or parts by capillary action. If proper precautions are not taken during transport, water may be present upon delivery at the job site. Material must be inspected at the time of delivery. Ambient humidity and temperature cycles will also promote water intrusion into stored bundles and stacks through condensation. Finally, rain and snow are other potential sources of water that can cause storage corrosion and staining.

Besides water, two other important factors that contribute to the corrosion are temperature and exposure time. Corrosion will accelerate with increased temperature. Given enough time, panel bundles, columns and/or purlins will eventually become wet and storage corrosion and staining may occur. Storage corrosion can be prevented by:

- Reducing site storage time.
- Decreasing water contact.
- Moderating temperature extremes.

Storage

Prolonged storage will always increase the likelihood of storage corrosion; therefore, the best prevention is to minimize the storage time. Proper storage limits the collection of water from rain, snow and condensation on the panel surfaces. Under roof storage is always preferred. If panel bundles or other components have to be stored outdoors, a number of precautions must be taken to prevent storage corrosion. Material should be stored in a level area out of the way of other activities to minimize the number of movements required. If the material is stored on the ground, i.e. dirt, grass or gravel, a plastic ground cover must be put down to minimize condensation of water from the ground onto the panels or components. The material must then be raised off the plastic ground cover to avoid contact with water puddles, and allow for air circulation to promote drying of condensed water. **The material must be stored on an angle, or slope, to promote drainage of water.**



Wet, uncured or pretreated lumber should not come in contact with the material. Sufficient support must be provided to the raised and angled material to avoid excessive bowing, which may result in low spots that could hold water.

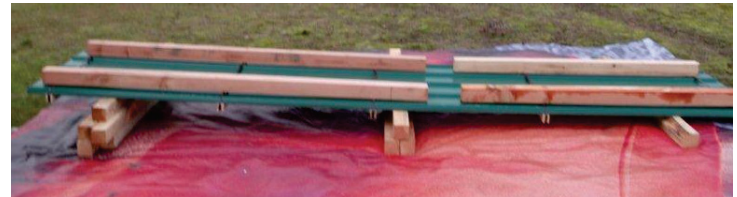
Remedy

Storage corrosion on pre-painted material cannot be remedied. Once the corrosion process has begun the film integrity of the paint is compromised. Panels displaying any type of corrosion or paint bubbling should not be installed. Light corrosion or staining (white or black in color) on bare galvanized material may be cleanable; contact your ASC representative for proper cleaning techniques.

References

National Coil Coating Association, *Tool Kit #1 Preventing Job Site Storage Corrosion of PrePainted Building Materials*

GalvInfo Center, GalvInfoNote 3.2 *Protecting Galvanized Steel Sheet Products from Storage Stain*



Example of proper storage