

White Rust and the LiteSteel Beam

Background

White rust or "white/wet storage stain" occurs due to oxidation on the surface of newly galvanized steel in the presence of moisture and the absence of free flowing air. Under these conditions the zinc oxides and hydroxides produced may not convert to the zinc carbonates that form the protective zinc patina. If items are closely packed and/or stored in a humid environment where moisture can bridge between pieces, the local shortage of oxygen may set up a galvanic cell that will produce white rust where the oxygen is deficient. White rust is visible as a bulky, white, powdery deposit that forms on the zinc surface and does not involve the underlying steel material or alter the structural capacity of the LSB. Only once the zinc coating has been perforated does the underlying steel begin to corrode [Red Rust].

Treating Galvanized Surfaces Affected by White Rust

1. Light white rusting

This is characterized by the formation of a light film of white powdery residue and frequently occurs on galvanized products during periods of heavy rain. Provided the items are well ventilated and well drained, white rust rarely progresses past this superficial stage. It can be brushed off if required for appearances. No remedial treatment is generally required for this level.

2. Moderate to severe white rusting

This is characterized by a noticeable darkening and apparent etching of the galvanized coating under the affected area, with the white rust formation appearing bulky. If appearance is unacceptable, the white rust affected area can be treated by using a bristle brush to remove all white correction products. In cases of severe white rust, where the coating thickness has been significantly reduced, the product will require repair to restore the finish to its original or equivalent specifications.

Avoiding White Rust Formation

1. Insure packed material remains dry.
2. Provide/permit air circulation between the surfaces.
3. Allow for drainage on stacked items.

LiteSteel Technologies White Rust Reduction Program

1. Use galvanized coils which have been "Mill Passivated"
2. Allow bundles to "drain" by elevating one end at the bundling station.
3. Inventory (both finished and raw) is stored under roof with good air flow.

Material Storage Recommendations

1. Material should be stored under cover and off the ground with good air flow.
2. Bundles should be at a slight angle to prevent water or condensation from being trapped between adjacent surfaces.
3. If bundles become wet, beams should be separated as soon as possible, wiped with a clean cloth and then placed apart to allow air circulation.
4. Refer to "LSB Storage Requirements" for specific requirements.



Description:

White Rust and LiteSteel Beam

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