

### White-Rust / Wet Storage Staining

The finish and appearance of a hot dip galvanized coating is dynamic, a 'living' surface that visibly changes until the hot dip galvanized surface attains a stable zinc patina or zinc carbonate film which is a dense insoluble film dull-grey in colour.

Wet storage staining or white-rust occurs when galvanized materials are closely nested or tightly stacked with moisture entrapped between them and there is inadequate airflow across the zinc surfaces. Examples of this may be found when galvanized materials have been exposed to rain, condensation or high humidity atmospheric conditions and have remained wet for an extended period of time. Once the hot dip galvanized components are separated and dried-out, the formation of white-rust ceases.



White-rust on a galvanized section of guard rail as a result of being tightly nested and stored in wet conditions

White-rust is a post-galvanizing phenomenon. Prevention thereof lies in the manner materials are packed and stored prior to installation and use. The presence of white rust is not a reflection on the galvanized coating's performance. By ensuring that the causes of white-rust are recognised and the risks of its occurrence minimized it is avoidable and easily managed by all parties involved in the supply chain.

### Assessing and dealing with white rust / wet storage staining

The white or light-grey powdery residues from wet storage staining / white rust can be removed by using a stiff bristle non-metallic brush, some clean water and drying the material completely. Once removed, a 'shadow' or dark area where the wet storage stain had been will appear on the article. This is due to the reaction with CO<sub>2</sub> that has occurred and is of no consequence.

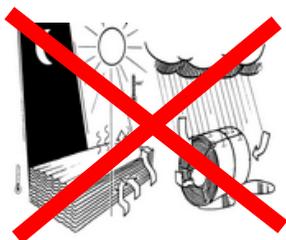
# Hot Dip Galvanized Information Sheet No.2

## White Rust (Also referred to as Wet Storage Stain) Revised 2018

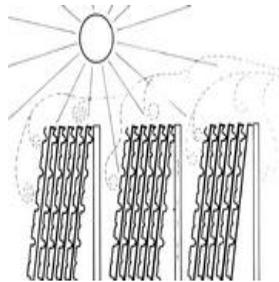
To assess the condition of the coating, the thickness of the remaining hot dip galvanized coating across the affected zone should be measured. The measured coating-thickness should be equal to or greater than the minimum coating-thickness stated in the relevant standard. Should the coating-thickness conform to the standard, then there is no reason to reject the material. Guidance from the various product standards should be referred to in cases where an aesthetic requirement had been specified.

### Recommended Storage

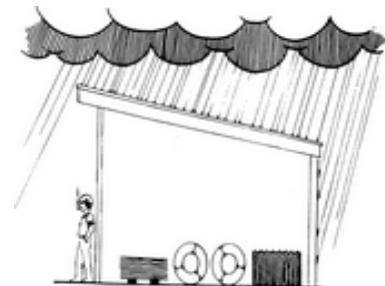
The HDGASA recommend that hot dip galvanized materials be stored in a well ventilated environment, free from moisture entrapped between articles and under cover. These simple measures will significantly reduce the risk of developing wet storage staining or white rust.



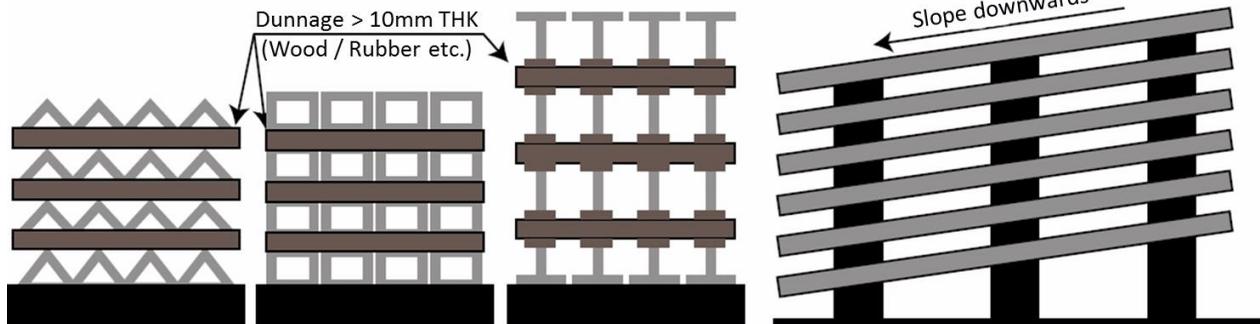
Incorrect storage of hot dip galvanized materials.



Store so as to maintain ventilation between hot dip galvanized articles.



Wherever possible store under cover and prevent ingress of moisture



Examples of proper storage layouts