CLEANING HOT-DIP GALVANIZED STEEL

What is the best way to clean hot-dip galvanized steel?

Cleaning galvanized steel is a simple process and several different commercially available products can be used. Before selecting a cleaning chemical, it is first necessary to determine what has contaminated the steel since cleaning procedures and chemicals will depend on the contaminant on the coating.

Dirt or Mud

Dirt or mud can be easily removed from galvanized steel by rinsing with water. A nylon bristle brush can be used if necessary. If a power wash is used, ensure the blast pressure is less than 1450 psi to prevent damage to the coating.

Wet Storage Stain

The process used to clean wet storage stain from galvanized steel depends on the severity of the stain on the galvanized coating. If the wet storage stain is light, it can be left as long as the surface receives adequate airflow. If the stain is of medium severity, a mild solution of ammonia (1 part ammonia to 10 parts fresh water) and a nylon brush can be used. (Stronger acids such as hydrochloric, sulfuric, or muriatic acid should not be used since they will aggressively attack the galvanized coating.) If an ammonia or acid solution is used, rinse the galvanized surface with plenty of fresh water immediately after cleaning and allow the surface to dry thoroughly. Compressed air can be used to dry the surface as long as care is taken not to damage the galvanized coating. When the wet storage stain is very heavy, as indicated by black spots on the galvanized coating or using on the underlying steel, stripping of the galvanized coating and re-dipping may be necessary. If the heavy storage stain is only on a section of the article, removal by mechanical means and application of zinc via one of the A780 touch-up methods may be warranted.

In addition to the chemical solution described above, several different commercially available chemicals were found to be effective at removing wet storage stain during an American Galvanizers Association study. In addition to effectively removing wet storage stain, these products were shown to work without dulling the coating. These products include CLR, lime juice, Naval Jelly, Rust dissolver, pickle, 10G, and white vinegar. Instructions for cleaning with these chemicals are discussed in the Galvanizing Note, Cleaning Wet Storage Stain from Galvanized Surfaces.

Contaminants

During a study conducted by the American Galvanizers Association, different types of cleaning chemicals were tested to determine which chemicals successfully removed contaminants from galvanized steel without damaging the coating. The contaminants used in the study included permanent marker, oil, grease, and spray paint. Two products proved to be most effective at completely removing the contaminants without marring the coating. These products are sold commercially, including Kean-Strip, Graffiti Remove, and Motsenbocker’s Lift Off4.