

Galvanized Scales

The galvanizing process has been refined and enhanced over that last 200 years. It represents the absolute best way to protect steel and ensure long-lasting, corrosion-free performance. Less costly than materials such as stainless steel and aluminum, galvanized steel delivers a significantly lower life cycle cost and requires no appreciable coating maintenance once installed.

Galvanizing Process

Our galvanizing process uses a proprietary formulation of molten metals that produces the most consistent coating thickness available while also creating an even, enduring finish. Part of a four-step, hot-dipped galvanizing process, it meets ASTM A123, ASTM A153 and ASTM B6 requirements to deliver high quality zinc coatings on ferrous materials.

Preparation

A thorough inspection of the scale is completed to ensure proper drainage and venting. Once in the staging area, careful handling ensures the material is transported efficiently and effectively through the initial cleaning process.

Cleaning

Cleaning is a critical part of the process which begins with a complete immersion in a hot alkali solution to remove organic compounds and dirt. Next, acid pickling removes imperfections. Finally, fluxing eliminates surface oxides to promote intermetallic development.

Hot-dip galvanizing

The scale is submerged in a bath of molten zinc until it reaches 840° F (449° C). At this point, the zinc reacts with the steel to form zinc/iron intermetallic layers on all surfaces inside and out.

Post-dip quality inspection

The galvanized scale is cleaned, weighed and carefully inspected. Calibrated instrumentation ensures quality standards are met and coating thickness, appearance and compliance with ASTM specifications are all reviewed before final approval.



How Zinc Protects Steel from Corrosion

The reason for the extensive use of hot-dip galvanizing is the two-fold protective nature of the coating. As a barrier coating, it provides a tough, metallurgically bonded zinc coating that completely covers the steel surface and seals the steel from the corrosive action of the environment. Additionally, zinc's sacrificial action protects the steel even where damage or minor discontinuity in the coating occurs.

Barrier Protection

Barrier protection is perhaps the oldest and most widely used method of corrosion protection. It acts by isolating the metal from the electrolyte in the environment. Two important properties of the barrier protection are adhesion to the base metal and abrasion resistance. Paint is one example of a barrier protection system.

Cathodic Protection

Cathodic protection is an equally important method for preventing corrosion. Cathodic protection requires changing an element of the corrosion circuit by introducing a new corrosion element, thus ensuring that the base metal becomes the cathodic element of the circuit.



A Heavy Footprint, but not on the Environment

Our environmentally friendly, proprietary galvanizing process does not emit volatile organic compounds or hazardous air pollutants. The use of sustainable, 100% recyclable galvanized steel as a construction material qualifies as a green building practice eligible for certification points under the Leadership in Energy and Environmental Design (LEED) rating system.