

February 7, 2022

# How to Prevent Rust



Written by: **Sam Steele**

Steel and iron are a couple of our most useful and common materials.

The primary difference between iron and steel is the amount of carbon present (think the periodic table in chemistry class), and steel is a composition of both. Pure iron is brittle on its own, we add it to carbon to create the very strong, very useful steel that constructs many of our everyday, valuable items like outdoor furniture, homes, cars, machinery, bridges, railroads, buildings and even cell towers.

[Become a Dealer](#)

[Buy Now](#)

## How does rust come into play?

When metals, especially steel, aren't treated properly, they rust. Rust is easy to identify. It's reddish or brownish and rough in texture, and it can appear on metals after a period of time. Rust, however, is more than an eye-sore. It actually eats away at the metal little by little, causing it to deteriorate and turn into a dry powder, and compromising the integrity of its structure.

Once corroded beyond repair, steel can be extremely expensive—and extremely difficult to replace. So we obviously want to **protect it from rusting in the first place**. Problem solved, right?

## Preventing rust begins with knowing how it starts.

Rust is the result of an oxidation process, when iron and oxygen combine. It mainly occurs when you have a corrosive environment: salt, chemicals, acids, extreme temperatures or temperature differences, moisture, dampness and humidity. These can wreak havoc on metal, especially steel, causing it to rapidly oxidize and corrode.

[Skip to content](#)

# Basic ways to protect steel from rust:

**Reduce damage.** Fix any minor damage, like scratches and dents, before moisture reaches the metal.

**Keep it dry.** Keep your steel items dry by storing them away from rain and humidity.

**Paint it.** By painting metal, you can form a barrier that keeps corrosive elements away from the exposed steel.

While these options are quick and easy for small, household items, they're not exactly feasible for large steel items that need to handle the elements on a daily basis for long periods of time. It's simply impossible to keep track of every scratch, and overwhelmingly time-consuming and expensive to constantly reapply fresh coats of paint before rust sets in.

For bigger projects and structures, a longer-term solution is critical.

[Download: Guide to Surface Preparation](#)

[Become a Dealer](#)

## The best way to prevent rust is Galvanizing.

[Buy Now](#)

**Galvanizing** is applying a zinc coating to steel or iron to protect it from rust or corrosion. There are two types:

**Hot-dip Galvanizing** is done in a manufacturing plant. It's the process of immersing iron or steel in molten zinc to provide it with a protective, galvanic exoskeleton.

A **Cold Galvanizing Compound** is a zinc-rich, corrosion prevention coating that is applied like a paint, right out of the can. This is an easier, more convenient yet reliable process than hot-dip galvanizing that can be done on-site for rust prevention of entire projects, not just touch-ups.

ZRC's **cold galvanizing products** contain 95% metallic zinc by weight in the dried film post-application. They are recognized under the Component Program of **Underwriter's Laboratories, Inc.** as an equivalent to hot-dip galvanization. This means that you can get the same level of protection that is provided by the immersion process of hot-dip galvanizing in the ease of a can; shipped to you to apply directly on-site. Cold Galvanizing Compounds conform to the same level of Federal Specification as hot-dip galvanized products (DOD-P-21035A, formally MIL-P21035A).

Cold Galvanized Compounds can be project savers!

If a metal for a project shows up ungalvanized, you have two options, send it back to a manufacturer for hot-dip galvanizing and deal with long delays in getting finished, or use a high-

[Skip to content](#)

and steel, not all products are created equal. A Cold Galvanizing Compound needs to have enough zinc in the dried film by weight—in a non-encapsulating binding system—to provide the same level of protection as hot-dip galvanizing. Learn more about ZRC and about Cold Galvanizing compounds [here](#).

## Prevent rust before it's too late

Steel and iron may be different in nature, but both need to be treated to stop rust from shortening their life spans. In the end, rust prevention extends a metal's integrity, lengthens its life-span, and ultimately, saves you time, money and stress in the long run.

[User Guide: Galvanic Corrosion Prevention](#)

## Subscribe to our blog

[Become a Dealer](#)

Get the latest news delivered straight to your inbox!

Email\*

[Buy Now](#)

[Subscribe](#)

## Products

[ZRC® Cold Galvanizing Compound](#)

[ZRC Galvilite](#)

[ZRC® 221 Cold Galvanizing Compound](#)

[ZRC® Zero-VOC Galvanizing Compound](#)

[Product Finder Tool](#) 

[Dealer Locator](#)

## How It Works

[Technical Overview](#)

[Functional A](#)

[Skip to content](#)

Resource Center

User Guides

Fact Sheets

Product Specifications

Case Studies

## Why ZRC

About Us

Contact Us



ZRC Worldwide  
145 Enterprise Drive  
Marshfield, MA 02050 USA

Phone: (781) 319-0400  
Toll-Free: (800) 831-3275 (US Only)  
Fax: (781) 319-0404  
Email: [info@zrcworldwide.com](mailto:info@zrcworldwide.com)

