

VCI

Brief Introduction

VCI is an abbreviation for Vapor Corrosion Inhibitor. (Also known as VpCIs or Vapor Phase Corrosion Inhibitors.) These corrosion inhibiting compounds release molecules into the air. When these compounds come in contact with metal surfaces they form a very thin molecular layer. This thin layer effectively inhibits corrosion on the metal surface by preventing air and moisture from coming in contact with the surface. Unlike other methods of rust prevention, the corrosion inhibiting vapors have the ability to reach into intricate surfaces that would be otherwise hard to reach with traditional rust prevention products.

Original Usage

VCIs were originally developed to protect boilers and piping systems of ships to be mothballed. Their effectiveness and ease of application attracted early users. Over the years, the field of usage has increased to cover electronics, packaging, process industries, reinforced concrete, coatings, and metalworking fluids.

Advantage

1. Environment Friendly

VCIs are water-based and non-polluting, and they have a very low impact on the environment.

2. Cost effective

They replace petroleum-based rust preventatives and save time and labor involved with applying and removing conventional protective coatings.

3. Easy to use

Most parts are ready to use immediately, or are ready to move on to the next step of. Parts can readily be handled at any time during the protection stage or thereafter. There is no superficial film to be removed or disposed of.

4. Multi-metal protection.

VCI technology offers an important alternative to rust-preventive oils in protecting metals against corrosion. In many instances traditional treatments can be replaced with VCI products that are pro-environmental.

VCI vs Hot-Dip Galvanized

Finishing Comparison (VCI vs Hot Dip Galvanizing)			
No	Test	VCI	Hot-Dip Galvanizing
1	Salt Spray Test	3500 hours	2000 hours
2	Corrosive Chemical Test	1000 hours no corrosion	650 hours corrosive spots shows 5%
3	Alternating Hot and Humid Test	300 hours no color changes; surface is smoothy and glossy	244 hours surface color starts to fade; glossiness decreases 50%
4	UV Condensation Test	240 hours glossiness is 106.4%; color differentiates 1.33 degrees	180 hours glossiness is 60%; color differentiates 3 degrees
5	Acidic Water Test	240 hours with very little bubbles	180 hours corrosive area is 10%
6	Adhesiveness	0	0
7	Coating Thickness	45um	65 um
8	Resistance Test	0.00025Ω	0.00031Ω