



# WIZcoat™

Galvanneal Paintable Metal Framing Products

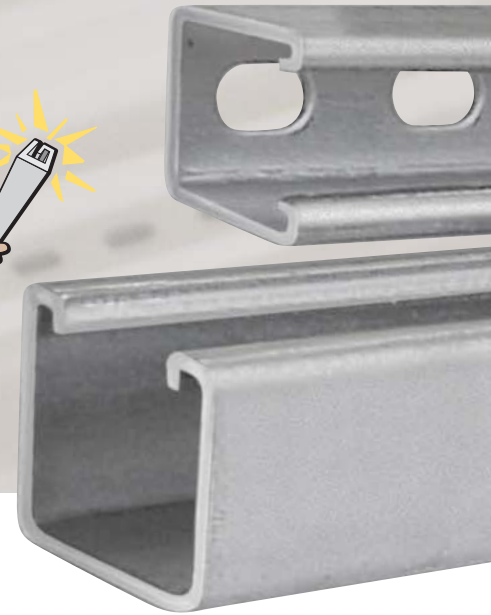


*Perfect for post-installation spray painting!*





*“Installation is a wiz”*



**G**regory Industries has been in operation for over 100 years...dedicated to the highest product standards and performance. Our company is unique among strut manufacturers in that we control the entire strut manufacturing process. At Gregory, we start with mill produced black hot-rolled steel master coils...slit the coils in preparation for processing...continuous pickle and galvanize in our own specialty line...roll form and in-line punch...and package and ship on Gregory Transport. At Gregory our philosophy is straightforward and simple: *Furnish the best quality products, with the best of customer service, and at the best possible price.*

### Why WIZcoat™ Galvanneal strut?

WIZcoat™ Galvanneal strut provides paintability for enhanced aesthetics in visible locations. Unlike regular galvanized or pre-painted strut, the galvanneal strut receives an additional heat induction step that modifies the finish to easily accept paint.

### WIZcoat™ Galvanneal strut matches the needs of any installation

WIZcoat™ is offered in all standard profiles and sizes to match the needs of your installation. Styles include solid, round holes, oval slots and long slots. Back-to-back welded combinations expand installation possibilities. Standard lengths are 10 and 20 feet. Custom lengths are available to suit virtually every application. WIZcoat™ Galvanneal strut conforms to industry standards for structural metal framing steel products.



### Wizard™ Accessories and Fittings

Wizard accessories include clamps, plates, brackets, fittings, bases and hardware that provide unlimited creative combinations for secure installation. Hardware is standard electro-galvanized finished. Custom strut finishes include hot-dip galvanized, powder coated, copper plated, PVC coated and yellow-zinc coated.



*“Painting is a wiz”*

## Strut Channel Technical Detail

### I. The Nature of Steel Strut Carbon Steel

Carbon steel is universally considered the commercial material of choice for high strength, formable, cost-effective industrial products. Metal Framing Strut is roll-formed and punched into a versatile product that stands the test of time and high stress. Bare carbon steel, however, has one distinct disadvantage, in that it easily corrodes or oxidizes even in minor general atmospheric conditions.

#### Steel Corrosion

The corrosion of steel is an 'electrochemical reaction' in which the steel, when exposed to oxygen via moisture, reacts to form an Iron Oxide alloy. The resulting 'red rust' combination of the iron and oxygen produces a non-protective surface that, over time, continues to react and actually dissolves the steel. This process of the steel thinning is referred to as 'spalling' or 'spalling off.' Without protection, steel will literally dissolve to dust. We have observed this phenomenon in old structures such as exposed beams or poles that are rendered unsafe as rust accelerates.

### II. Options for protecting Carbon Steel Strut

#### Painting

Painting would appear to be a logical, aesthetic choice. Paint is a good "barrier" or "topical" coating that can shield the steel from the elements. Painting, however, has inherent weaknesses. Atmospheric exposure and breaches from general wear and tear will

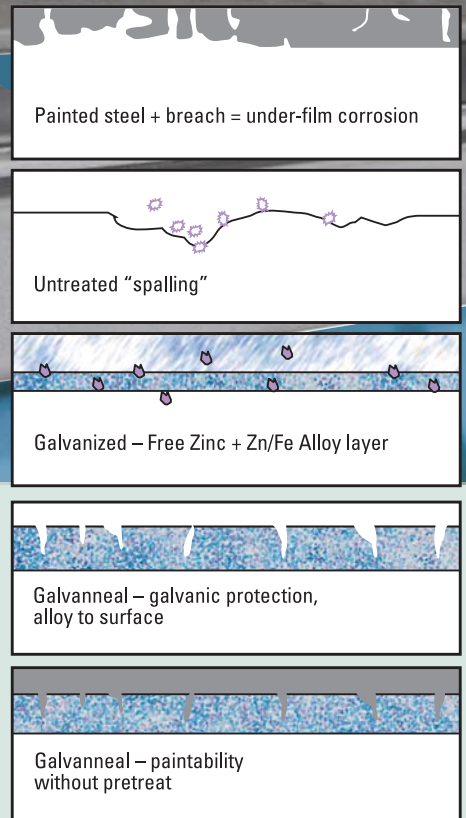
weaken paint's barrier and attacks the metal. The resulting electrochemical reaction is so prolific that it will oxidize or 'eat' under and 'bubble up' the surface of the paint, a condition referred to as "under-film" corrosion.

#### Zinc

Zinc is an elemental metallic coating that, when bonded to steel, possesses the best of all worlds – barrier protection and galvanic protection. *Galvanic protection* is also an 'electrochemical reaction' whereby even the exposed steel is protected from corrosion. The zinc coating actually corrodes in the presence of moisture, rather than the underlying steel. The phenomenon is commonly referred to as *galvanic corrosion*, in which the zinc reacts as a *sacrificial metal* for the steel. The zinc is consumed during the long corrosion process at a rate 10 to 25 times slower than that of steel. Also unlike plain oxidized steel, oxidized zinc actually alloys and serves as its own *barrier protection*.

### III. Pre-Galvanizing Hot-dipped pre-galvanizing

In this process, the flat steel strip is quickly passed through a molten zinc bath and the zinc is bonded into the surface of the steel. The result is a thicker, ductile layer of 'free' or pure zinc on the surface and a very thin alloy layer of zinc and iron – completing the 'circuit' for zinc's sacrificial metal property. Then the Strut is formed. The resulting product is superior in virtually every way to bare or painted strut.

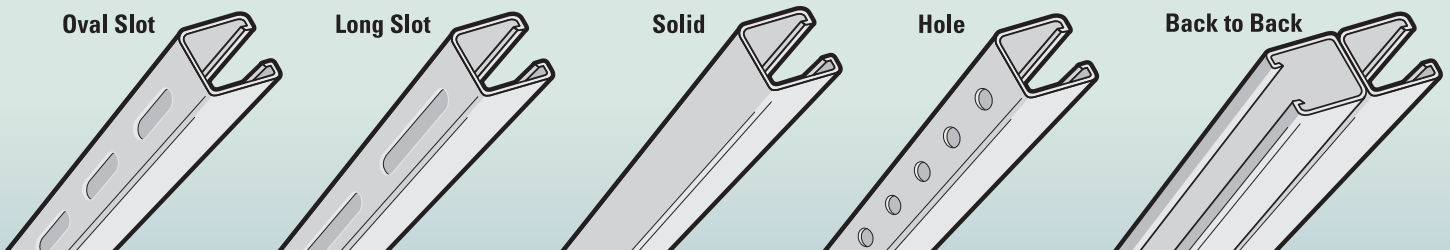


The only real disadvantage is that galvanized product (free zinc in particular) does not adhere paint very well unless pre-treated (and pre-treatment is generally not cost-effective).

### IV. Galvanneal Hot-dipped pre-galvanneal (WIZcoat™)

By subjecting the pre-galvanized strip to additional heat induction, the layer of 'free zinc' is effectively extended into an iron-zinc alloy all the way to the surface of the steel. The resulting product retains the desired 'galvanic protection' while gaining several new properties – most notably – **PAINTABILITY**.

The WIZcoat™ Galvanneal surface is dull, matted gray in appearance. Microscopically, the surface has cracks and crevices, which provide excellent paint adhesion without the need for pre-treatment (chemical etching, shot blasting). In salt spray tests, painted galvanneal strut actually outperforms conventional galvanized. *Because strut is commonly spray painted post-installation, WIZcoat™ Galvanneal is the superior alternative. In contrast, when galvanized and pre-painted strut are spray painted post-installation, the resulting finishes are susceptible to peeling and cracking almost immediately.*



# Specifications

## Prime Steel

WIZcoat™ galvanized strut is produced from prime, hot-rolled carbon steel substrate. Material conforms to the ASTM A653 specification and is produced from structural grade steel (See Engineering Data.) Produced on Gregory's own specialty Modified Sendzimir Hot-Dip Galvanizing Line, coils are alkaline-cleaned, pickled and galvanized in one continuous process.

## Paintability

WIZcoat™ galvanized strut is designed for superior paint adhesion. The process induces an ideal surface that is a zinc alloy well suited to painting. The resulting surface forms microscopic crevices that accept and hold paint better.

## Weldability

The zinc-iron alloy without "free zinc" on the surface minimizes welding fumes, and reduces adhesion problems associated with conventional galvanized product welding.

## Designations & Weights

WIZcoat™ galvanized strut is produced from steel that is designed to meet requirements for forming, drawing, bending, welding and painting – conforming to designations and test limits in accordance with provisions of ASTM A653.

## Finish

The dull silvery matte finish and low reflectivity of galvanized coatings provides excellent weldability and paint-adherence properties without special surface treatment.

## Galvanized Coating Specs.

(Standard & metric)

Galvanized Coating Designation	Minimum Triple Spot Total Both Sides		Minimum Triple Spot Total One Side		Minimum Single Spot Total both Sides	
	oz/ft <sup>2</sup> or gm/m <sup>2</sup>	oz/ft <sup>2</sup> or gm/m <sup>2</sup>	oz/ft <sup>2</sup> or gm/m <sup>2</sup>	oz/ft <sup>2</sup> or gm/m <sup>2</sup>	oz/ft <sup>2</sup> or gm/m <sup>2</sup>	oz/ft <sup>2</sup> or gm/m <sup>2</sup>
Standard (Metric)	STD.	MET.	STD.	MET.	STD.	MET.
A40 (ZF120)	0.40	120	0.12	36	0.30	90

The above table describes the coating designations as well as test limits in accordance with provisions of ASTM A653.

\* Note: A40 is the most common and commercially recommended galvanized coating. Heavier coatings are more susceptible to flaking/peeling in bending and forming operations.

## Engineering Data

Galvanized G-Strut is produced from hot roll carbon steel (ASTM 570) to the following mill certification physical/mechanical properties. Average yield strength: 42,700 pounds; Average tensile strength, 62,600 pounds; Average Rockwell B (RB Value) range: 62 – 74.

## ISO CERTS - Quality Control

Gregory Industries upholds the highest industry standards, conforming to and maintaining ISO 9001; 2000 – ANSI/ISO/ASQ Q9001-2000 certification for the manufacture and supply of galvanized steel coils. [Certificate # 112358-0, registration # 1132-01].

G-Strut benefits from this detailed QC process. With Gregory's on-site testing lab, physical and mechanical properties can be tested in-house. In addition to monitoring precise gauge accuracy, coating thickness is measured in-line and verified post-production. Precise gauge readings are monitored in the slitting process. Rolled formed products are monitored and tested for conformance to close tolerance standards.



G-STRUT® METAL FRAMING DIVISION

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