

# Galvanized versus Galvalume Coatings for Metal Siding and Roofing Applications

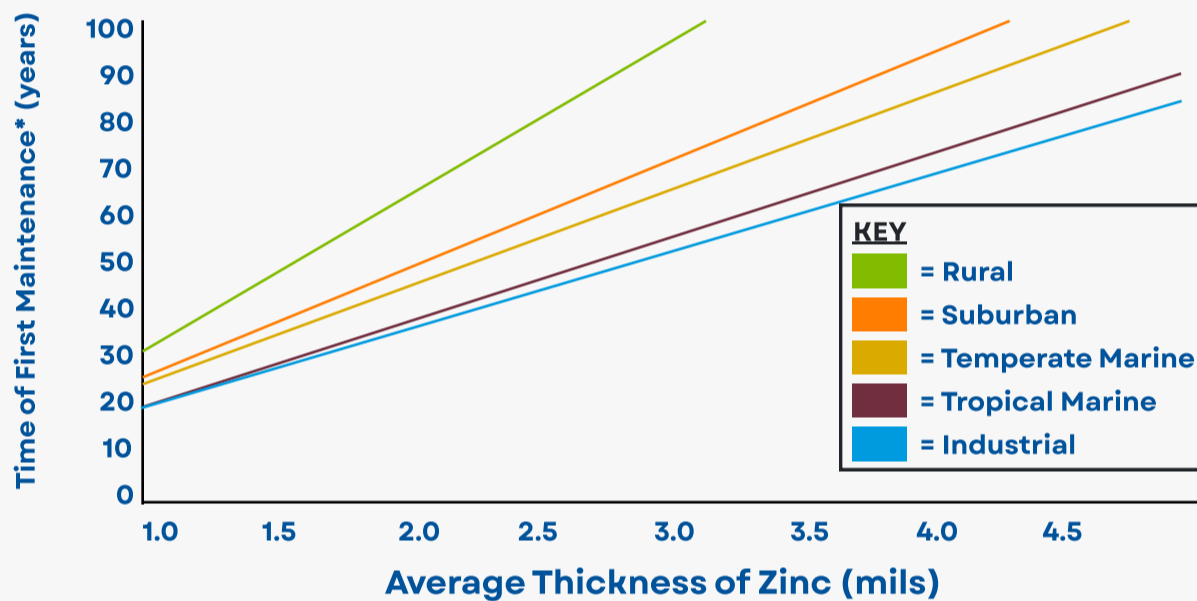
## Coating Composition:

Galvanized Coating – 99% or higher zinc

Galvalume Coating – 55% Al, 43.5% Zn and 1.5% Si

## Relative corrosion rate and comparison of coatings (unpainted) with similar coating thickness:

Coating	Marine (Severe)	Industrial (Less)	Rural (Least)	Alkaline Contact	Confine Animals	Cut Edge Protection	Coating Formability
AZ 50	Lower	Lower	Lower	Higher	Higher	Good	Good
G 90	Higher	Higher	Higher	Lower	Lower	Better	Better



Source: American Galvanizers Association

## Factors affecting coating life

- Weather
- Climate
- Pre-Painted/bare coating
- Coating weight zinc / zinc-Aluminum alloy
- Acrylic coating

## How to determine fitness for use.

Heavier zinc coatings are required for comparable corrosion resistance as Galvalume. The Time to First Maintenance, defined as 5% red rust for uncoated HDG, is shown in the chart below. A G115 coating with approximately 1.04 mils of Zn per side would be expected to provide 20 to 30 years of service. A pre-painted panel would significantly extend this and should provide excellent service life for all environments. A slightly lower coating weight, G90, can also be considered as extrapolated service life will also be good.

## Typical Chemistry and Tensile Properties for WI Grade 80 SS:

Grade	C%	Mn%	Yield (KSI)	UTS (KSI)	% El
80 SS	.09	.40	90	98	< 5

Steel supplied for Grade SS 80 will meet the requirements of ASTM A653/653M. Minimum gauge available is .0140"

The load-bearing capacity of a roof is directly related to the yield strength of the steel. The following table shows how load at yield strength varies by gauge for a 0.5" wide tensile test specimen from the SS 80 steel:

Thickness	.011"	.012"	.013"	.014"	.015"	.016"
Load (Lbs.)	495	540	585	639	675	720
% Change	-22.5%	-15.5%	-8.5%	Baseline	+5.6%	+12.7%

Resistance to denting and mechanical damage will be improved as gauge increases.