



Unpainted Galvalume™ Steel Fact Sheet

A Superior Building Material

ArcelorMittal Galvalume™ is a coated steel product that has proven its superior performance as a building material in extended field testing in a diverse range of corrosive environments. Its unique combination of durability, edge protection, and resistance to corrosion is at least twice that of galvanized steel.

ArcelorMittal produces Galvalume coated steel sheet in the US and Canada and is the exclusive producer in Canada. The Galvalume coating is an alloy composed of 55% aluminum and approximately 45% zinc by weight. It is applied on both sides of cold-rolled steel sheet using a precise continuous hot dip process. The result is a highly corrosion resistant coated steel that combines the barrier protection and extended durability of aluminum with the galvanic protection of zinc.

Galvalume also offers exceptional heat reflectivity properties, resulting in a lower energy load on buildings and improved interior comfort.

From an aesthetic perspective, the fine spangle and gentle sheen of unpainted Galvalume offers a very attractive appearance.

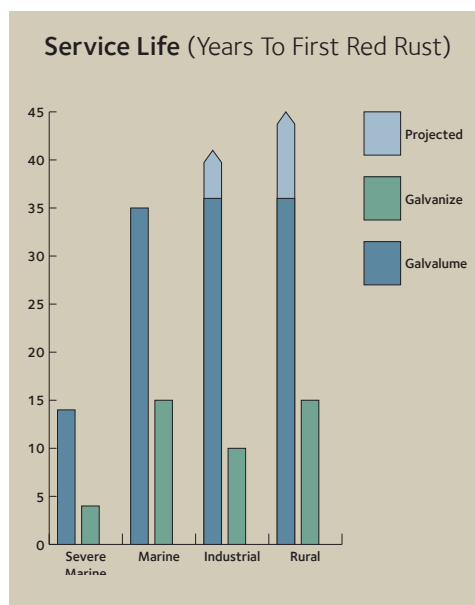
Product Characteristics

Proven Superior Corrosion Resistance

Galvalume steel sheet can be expected to provide at least twice the service life of traditional zinc-coatings of similar coating thickness under the same exposure conditions. This has been proven by actual exposure tests using flat coupon samples, conducted over 36 years in the U.S.A. and 15 years in Canada.

The tests covered a variety of environments ranging from rural to severe marine. The following chart, comparing the performance of Galvalume and galvanized

of equal coating thickness, shows that Galvalume has at least twice the service life versus galvanized.



Superior Cut Edge Protection

The aluminum and zinc in the coating combine to prevent corrosion at exposed edges. The zinc component of the Galvalume coating provides galvanic cut edge protection, while the aluminum component remains as a continuing barrier to corrosion.

Heat Reflectivity and Solar Reflectance (Energy Efficiency)

Bare, unpainted Galvalume has undergone extensive testing by the Oak Ridge National Laboratory (ORNL), to determine its solar reflective performance. Test results have qualified Galvalume as an approved roof product by the U.S. EPA – ENERGY STAR Program, for both low-slope and high-slope applications.

On newly manufactured Galvalume, heat reflectivity was rated above the minimum U.S. EPA requirement of 0.65. For

weathered roofs over three years of age, the overall solar reflectance also exceeded the minimum U.S. EPA requirement of 0.50 for maintenance reflectivity.

Enhanced Surface Treatment

ArcelorMittal offers a variety of surface treatments suited to specific manufacturing and application needs.

For unpainted applications, bare Galvalume Plus™ is available. Galvalume Plus has a clear, organic resin coating applied to both sides of Galvalume steel sheet, can be roll-formed without lubricants, and is delivered to the job site with an oil-free surface. See our Fact Sheet on Galvalume Plus for more information.

Unpainted Galvalume can also be passivated with a chemical treatment. With this treatment, Galvalume must be oiled with either vanishing or slushing oil.

If color is specified, Galvalume steel sheet can be ordered as prepainted coil. This option offers an additional layer of paint protection in a wide assortment of attractive colors and paint systems. See our Fact Sheet on Prepainted Galvalume Steel for more information.

Applications

Galvalume has many proven applications in Commercial, Industrial, Institutional, Agricultural, and Residential Construction.

- Low-slope structural roofing
- High-slope architectural roofing
- Cladding and siding
- Quonset Buildings
- Pre-engineered Steel Buildings
- Building Accessories
- Construction Tubular
- Structural Steel Framing
- Appliance Components
- Automotive Parts

Points to Remember

Compatibility with Dissimilar Metals

All materials that can be used in contact with galvanized steel sheet can be used with complete safety in contact with Galvalume. However, as with galvanized, contact of lead or copper with Galvalume steel must be avoided, as it can result in accelerated corrosion.

Galvalume and galvanized can be combined on the same building project, although it is not advisable because galvanized will likely exhibit corrosion before Galvalume. As a design practice, when both materials are in contact, always use Galvalume downstream from unpainted galvanized steel, otherwise accelerated corrosion of the galvanized can occur.

Handling and Storage

To preserve the surface, handling should only be carried out using clean, dry gloves. Do not slide sheets over rough surfaces or each other.

As with galvanized or painted steel products, bundles of Galvalume steel sheets or products made from Galvalume

steel in all finishes must be kept dry in transit. After transit, material should then be covered and stored off the ground, at a slight angle, to prevent water or condensation from being trapped between adjacent sheet surfaces.

If the bundles become wet, sheets should be separated, wiped with a clean cloth without delay and then placed so that air circulation completes the drying process. These procedures are recommended to avoid possible deterioration of the coating, which could result in non-uniform appearance.

Joining and Sealing

Recommended fasteners to be used on Galvalume steel sheet should have washers made of Neoprene or a similar material. (See table below). Fasteners containing lead or copper should not be used. Lead headed nails and lead washers should also not be used on Galvalume.

For sealing, neutral cure silicone sealants should be used. Sealants containing acetic

acid or amines should not be used on Galvalume steel. Check with your sealant supplier for brand name recommendations.

Product Availability

Sizes Available

Thickness:

0.012" (0.30mm) to 0.090" (2.28mm)

Width: 49.5" (1257mm) maximum

Qualities

ASTM A792/792M

Commercial Steel

Structural Steel

Special Forming Steel

Helical Steel

Standard Coating Weights

(Minimum Triple Spot)

AZ30, AZ50, AZ55, AZ60, & AZ 70 (0.30, 0.50, 0.55, 0.60, & 0.70 oz/ft² respectively)

AZM100, AZM150, AZM165, AZM180, & AZM210 (100, 150, 165, 180, & 210 g/m² respectively)

Galvalume sheet steel can also be ordered as a prepainted coil. Prepainted Galvalume offers an additional layer of paint protection in a wide assortment of attractive colours and paint systems. See our Fact Sheet on Prepainted Galvalume steel for more information.

Special Customer Note:

The Information in this Fact Sheet is provided for the general guidance of customers and does not imply any warranty. Information provided is based on research conducted by ArcelorMittal and other organizations. Interpretation and/or use of this information is the sole responsibility of the user.

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TM – Galvalume is a trademark of ArcelorMittal in Canada, and a trademark of BIEC International Inc. in the United States.

Guidelines for Selection of Fasteners for use with Prepainted Galvalume Steel Sheet

Rural Atmosphere	Moderate Industrial Atmosphere	Heavy Industrial or Marine Atmosphere
<ol style="list-style-type: none">300 Series stainless steel or 300 Series capped-stainless steel washer combinationAluminum-zinc alloy cast or capped head used with neoprene-coated aluminum or Type 303 stainless washerNylon capped head over zinc coated carbon steel shank1.0 mil zinc coated steel, with additional organic or inorganic coating	<ol style="list-style-type: none">300 Series stainless steel or 300 Series capped-stainless steel washer combinationAluminum-zinc alloy cast or capped head used with neoprene-coated aluminum or Type 303 stainless washerNylon capped head over zinc coated carbon steel shank1.6 mil zinc coated steel, with additional organic or inorganic coating	<ol style="list-style-type: none">300 Series stainless steel or 300 Series capped-stainless steel washer combinationAluminum-zinc alloy cast or capped head used with neoprene-coated aluminum or Type 303 stainless washerNylon capped head over zinc coated carbon steel shank1.6 mil zinc coated steel, with additional organic or inorganic coating

ArcelorMittal Dofasco
P.O. Box 2460
Hamilton, ON
L8N 3J5

t 1-800-363-2726
e customer_inquiries@dofasco.ca

ArcelorMittal USA
1 South Dearborn St.
Chicago, IL
60603

t 1-800-422-9422
e constructioninquiries@arcelormittal.ca

www.arcelormittal.com

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