

Material Information



Coated Steel AZ55

Introduction

Coated Steel AZ55, commonly known as Galvalume® AZ55 (ASTM A792), is a cold-rolled carbon steel sheet coated with a 55% aluminum, 43.4% zinc, and 1.6% silicon alloy applied via a continuous hot-dip process. The "AZ55" designation indicates a nominal coating weight of 0.55 oz/ft² (total both sides). Combining the long-term barrier protection and heat reflectivity of aluminum with the sacrificial edge protection of zinc, Coated Steel AZ55 offers superior corrosion resistance compared to standard galvanized steel. It is widely specified in sheet metal fabrication for long-lasting exterior and industrial components.

Advantages

Coated Steel AZ55 offers exceptional long-term corrosion resistance, typically lasting two to four times longer than conventional G90 galvanized steel in outdoor and industrial environments. The alloy coating provides a self-healing sacrificial protection at cut edges and scratches. Additionally, it features high thermal reflectivity and heat tolerance (resisting temperatures up to 315°C/600°F without discoloration), excellent paint adhesion, and good roll-forming and lock-forming capabilities.

Disadvantages

Due to its hot-dip alloy coating, extensive deep drawing or severe stretching can cause localized micro-cracking or flaking of the protective layer if proper forming radii are not maintained. Highly alkaline environments (such as direct contact with wet concrete, mortar, or bare lead and copper) can accelerate corrosion of the aluminum-zinc coating, requiring protective isolation or coatings. Additionally, it exhibits slightly higher resistance to spot welding than uncoated carbon steel due to the surface alloy layer.

Tolerance

We offer tolerances as tight as +/- 0.005". Tighter tolerances are available upon manual review.

Recommendation

The powerful combination of long-term atmospheric corrosion resistance, excellent cut-edge protection, high thermal reflectivity, and reliable

formability makes Coated Steel AZ55 an ideal material choice for sheet metal fabricated parts exposed to weathering, moisture, and elevated temperatures. It is highly recommended for roofing panels, wall cladding, HVAC enclosures, appliances, and industrial outdoor housings where durability and low maintenance are critical.

Material Specifications (For reference only.)	
Tensile strength	310 to 570MPa
Yield strength	230 to 550MPa
Elongation at Break	12% to 20%

Attention

When fabricating Coated Steel AZ55 sheet metal, tight bend radii and sharp die edges should be avoided to prevent surface micro-cracking or damage to the aluminum-zinc protective coating. Direct contact with wet concrete, treated lumber, or dissimilar metals like copper and lead must be avoided to prevent galvanic corrosion. When arc or spot welding, appropriate ventilation should be maintained, and welding parameters adjusted to ensure consistent weld quality and handle surface alloy fuming.

Applications

3DSPRO finds people using Coated Steel AZ55 to make functional parts and prototypes in the following industries and applications.

Building and construction:

Roofing panels, exterior wall cladding, siding, rain gutters, downspouts, structural framing components, and industrial building enclosures requiring long-term outdoor durability.

HVAC and environmental systems:

Ductwork, heat exchangers, furnace components, air handling units, and solar heating collectors where heat reflectivity and corrosion resistance are essential.

Appliances and industrial equipment:

Appliance back panels, electrical equipment enclosures, switchgear cabinets, outdoor housings, and dryer/furnace bodies needing heat tolerance and protective finish.

Agricultural and general sheet metal fabrication:

Granary panels, livestock housing equipment, outdoor storage sheds, light agricultural enclosures, and formed structural panels that benefit from cut-edge protection and longevity.