

Zincalume®



Continuing a tradition of dependability

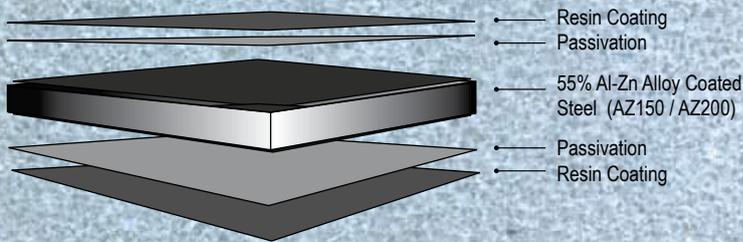


**The Smart Choice for Durability in
Roof & Wall Cladding Applications**


**TATA BLUESCOPE
STEEL**

Zincalume®

Launched in 1976, ZINCALUME® steel, the world's leading 55% Al-Zn alloy coated steel product (55% Aluminium, 43.4% Zinc and 1.6% Silicon), is an outcome of extensive research and continues to set standards for corrosion resistance and long life. It has been proven to stand the test of time as it is designed to withstand the rigors of various climatic conditions. In fact, for two decades the product's performance has been monitored across a wide range of climatic conditions using exposure test sites and infield inspections.



Cross Section View of ZINCALUME® steel

ZINCALUME® steel has 150 g/m² or 200 g/m² metallic coating distributed equally on both surfaces. It is available in Base Metal Thickness (BMT) ranging between 0.30mm to 1.30mm and coil widths of 900 to 1250 mm.

It is offered with yield strength of minimum 300 MPa to minimum 550 MPa depending on the application. ZINCALUME® steel complies with AS1397, ASTM A792M, IS 15961 and ISO 9364 standards.

Remarkable Corrosion Resistance

ZINCALUME® steel combines both the galvanic protection of Zinc and barrier protection of Aluminium. The Zinc-rich region is locked in tiny pockets within the Aluminium-rich matrix (Figure 1).

The Aluminium in the coating complements the corrosion resistance process by providing barrier protection, reducing the rate of dissolution of the Zinc from the Zinc-rich areas of the alloy layer.

The Zinc-rich areas are important as they provide the product with galvanic protection. In service, galvanic action causes zinc compounds to automatically build up at cut edges and scratches by an electrolytic reaction when water or moisture is present. These slow the rate at which the surrounding coating is consumed around damaged areas. This effect is sometimes referred to as the "self-healing" property of coatings containing zinc. This has been tested by removing coating of similar thickness from ZINCALUME® steel and galvanized sheet down to the steel base, using scribe marks ranging from 0.40mm to 4.0mm in width. When exposed to the atmosphere, the differences in the samples are slight, particularly at the thinner scribe marks (Figure 2). At the cut edge, ZINCALUME® steel provides similar protection to galvanized coatings.

The adjacent pockets of the Zinc-rich phase, which are in electrical contact with the steel, provide continual galvanic protection. Thus, steel at any point is not readily available for corrosion.

On an average ZINCALUME® steel (AZ150) lasts up to four times longer than Galvanized steel (Z275) in similar environmental conditions. (Figure 3)

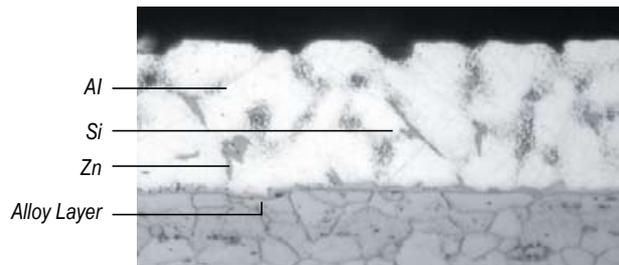


Figure 1: Microstructure Cross Section of ZINCALUME® steel

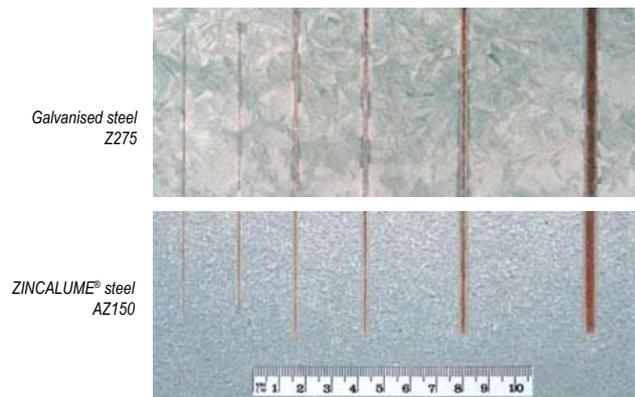


Figure 2: Cut Edge Performance



ZINCALUME® steel AZ150:
Washed panels -
Exposed for 21 years

Galvanized steel Z300:
Washed panels -
Exposed for 21 years

Figure 3: Outdoor Exposure Performance



Advanced Manufacturing

Tata BlueScope Steel assures consistent and superior performance with the highest degree of automation, process control, an online inspection & testing facility and a well-equipped laboratory. The uniform metallic coatings on top and bottom are achieved with modern coating control system and routine testing during production. The consistency in mechanical proportion is achieved through precise control in input steel chemistry and in-process parameters.

Long Lasting Aesthetics

ZINCALUME® steel is manufactured using proven technology and durable surface treatment (coated with special passivation and resin system). Excellent long term exposure performance and thermal reflectivity ensures that your roof and wall cladding looks newer for a longer period of time.

Greater Thermal Comfort

ZINCALUME® steel has a lower thermal mass as compared to conventional building materials, so it does not hold heat for long. The primary source of the heat is sunlight. The fine spangle and special surface treatment of ZINCALUME® steel (with SRI value 57) enables it to reflect a greater portion of the sunlight and transmit less energy into the building.

Excellent Mark Resistance

The resin coating on ZINCALUME® steel provides excellent mark-resistant qualities. For the rollformer, roof fixer, builder or manufacturer, marks from sweaty hands or moisture are a thing of the past. Boot and scuff marks are virtually eliminated. The result? A better looking product for the consumer.

Exceptional Design Flexibility

ZINCALUME® steel offers designers the unique combination of value for money and incredible design flexibility. Whether your next project is being created for a purely functional application or for leading edge design, ZINCALUME® steel makes it easier to create an enduring design – for roofing and walling, framing structures and manufacturing articles.



Peace of Mind

Tata BlueScope Steel takes a professional approach to product warranties, which are treated as an important part of our product offer and after-sales service. Our warranties are developed after thorough review and are not just sales tools. ZINCALUME® steel will have life prior to corrosion to perforation in natural elements up to 20 years.*

*Subject to terms and conditions.

Quality Assurance

ZINCALUME® steel is supplied with a brand mark at regular intervals on one surface of the strip (Figure 4). You are assured of the highest quality every time, backed by our team of qualified and experienced personnel at Tata BlueScope Steel.

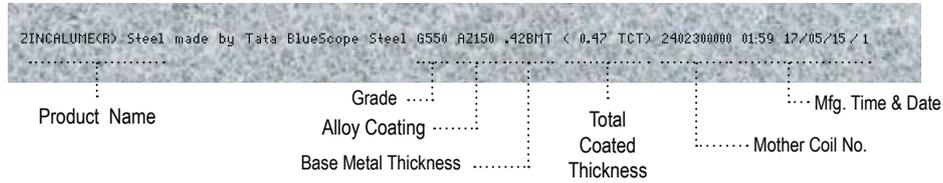


Figure 4: Brandmark on the reverse of ZINCALUME® steel



Tensile Testing (UTS, YS & % E)



Salt Spray Corrosion Resistance Testing



Outdoor Exposure Site Testing

Higher Reflectivity

Cool Comfort
All Year Round

Anti-darkening Properties

Looks Newer
for Longer

Reliable Brands

Decades of
Proven Performance

Brandmark

A Surety of
Genuineness

100% Recyclable

Environment
Friendly

Note:

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