COLORBOND® XRW steel

TATA BLUESCOPE STEEL

Technical Data Sheet

Document no.: TDS 001 Revision no.: 11 May 2025

This literature supersedes all previous issues.

General description

COLORBOND® XRW steel- Pre-painted ZINCALUME® steel for Exterior roofing and walling (XRW) has been specifically designed by Tata BlueScope Steel to provide a highly durable roofing and wall cladding product for general use.

Typical Uses

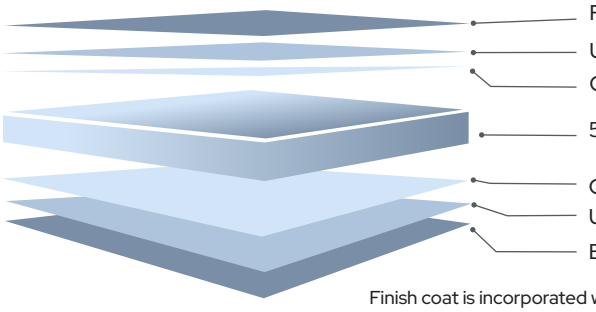
Roofing & accessories, wall cladding, rainwater goods.

Indian & International Standards

Substrate - AS 1397/ IS 15961
Paint coating - AS/NZS2728 Type 4 / IS 15965 Class 3
ISO9001 : 2015 Quality System Certified

Preferred Substrates

AZ150 G550/550 class 1 / YS550
AZ150 G350/340 class 2 /YS350
AZ150 G300/300/YS300



Finish coat is incorporated with Thermatech® solar reflectance tehnology(refer note 10) Finish coat paint system uses of inorganic and lead free pigments and advanced Ultra Durable Polyester (UDP) Resins for highest exterior durabilty. Paint DFT -Triple spot minimum coat thickness - 80% of nominal value.

Properties of Steel Base (other steel base possible on agreement)

Chemical Element	Guaranteed Maximum (%)			
	G550*/ 300**/ YS350#	G300*/ YS300#	340 Class 2**	G350*/ YS350#
Carbon (C)	0.35	0.35	0.25	0.35
Manganese (Mn)	4.0	4.0	1.35	4.0
Phosphorus (P)	0.05	0.05	0.20	0.05
Sulphur (S)	0.035	0.035	0.04	0.035

Note: *AS 1397, **ASTM A792M, #IS 15961

Guaranteed Minimum				
Mechanical Property	G550#/ 550** /YS550#	G300*/ YS300#	340 Class 2**	G350*/ YS350#
Yield Strength, MPa	550	300	340	350
Tensile Strength, MPa	550	340	-	420
Elongation on 80 mm GL (≥ 0.60 mm), %	2	18	12	14
Transverse Bend Test (180^0 Bend)	2t	t	-	t

**ASTM A792M (i) GL of 50mm, (ii) grade 550 in class 1, (iii) grade 340 in class 2
Note: Mechanical properties are guaranteed at ambient/room temperature | Tensile test in longitudinal direction

Dimension Range & Tolerances

Base Metal Thickness (mm)		
Range	Tolerance	
	Width ≤ 1200	Width > 1200
0.30 - 0.50	± 0.03	± 0.04
0.51 - 0.80	± 0.04	± 0.05
0.81 - 1.2	± 0.05	± 0.06
> 1.20	± 0.06	± 0.07

Width (mm)	
Range	Tolerance
< 900 (in slit edge)	+1 / -0
914 - 1000	+4 / -0
1001 - 1220	+5 / -0

a) Specific requirement is possible on agreement
b) Other dimension & shape tolerances as per AS 1365/ ASTM A568M / ASTM 924M/ IS/ISO 16163

Attributes Tested During Manufacture

Property	Measured By	Test Method	Results
Adhesion	Reverse Impact	AS/NZS 2728 (App.E) / IS 15965 (Annex B)	≥ 10 Joule
	T - Bend	AS/NZS 2728 (App.F) / IS 15965 (Annex B)	Maximum 5T
Specular Gloss	60^0 meter	AS/NZS 1580.602.2 / ASTM D 523 / IS 101 (Part 4/ Sce 4)	Nominal +/-10 unit

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Product Attributes & Evolution Methods

This literature supersedes all previous issues.

Property	Measured after	Test	Results
Flexibility	T - Bend	ASTM D 4145	Maximum 10T (no cracking). Refer Note 5.
Resistance to abrasion	Scratch	AS 2331.4.7	Typically 2000 g
Hardness	Pencil	AS/NZS 1580.405.1 / IS 15965	HB or Harder
Adhesion	Natural well washed exposure (10 years)	AS/NZS 1580.457.1	No flaking or peeling. Refer Note 9.
Resistance to humidity	1000 hours	ASTM D 2247 ASTM D 4585 AS/NZS 1580.481.1.9 AS/NZS 1580.408.4 IS 15965 (Annex D)	Blister density: ≤ 3 Blister size: ≤ S2 No loss of adhesion or corrosion of base metal
Resistance to corrosion	Salt Spray (1500 hours)	ASTM D1654 ASTM B117 AS 2331.3.1 AS/NZS 2728 (App. I) AS/NZS 1580.481.1.9 (Blisters) AS/NZS 1580.408.4 (Adhesion) IS 15965 (Annex D)	Blister density: ≤ 2 Blister size: ≤ S3 Undercut from a score: ≤ 2 mm No loss of adhesion or corrosion
Resistance to colour change	QUV (2000 hours)	ASTM G 154 - 16 ASTM D 2244 - 21 (color)	ΔE CIELAB 2000 - Intermediate Color: ≤ 5 units
	Natural well washed exposure (10 years)	ASTM D 2244 - 21 (color) AS/NZS 1580.457.1	ΔE CIELAB 2000 - Refer Note 9. Light Color: ≤ 4 units Int. Color: ≤ 6 units, Dark color: ≤ 10 units
Resistance to chalking	QUV (2000 hours)	ASTM G 154 - 16 AS/NZS 1580.481.1.11 (Chalk Method B)	Chalk Rating: ≤ 4
	Natural well washed exposure (10 years)	AS/NZS 1580.457.1 AS/NZS 1580.481.1.11 (Chalk Method B)	Chalk Rating: ≤ 4. Refer Note 9.
Resistance to acids Resistance to alkalies Resistance to Solvents	Exposure	ASTM D 1308 (3.1.1) - 20 AS/NZS 1580.481.1.9 (Blister) ASTM D 2244 - 21 (Color)	No discoloration or blistering. Refer Note 6.
Resistance to Heat	Exposure 100° C continuous (500 hours)	ASTM D 2244 - 21 (Color)	Colour Change ΔE CIELAB 2000: ≤ 3 units
Fire Hazard Property	Exposure	AS/NZS 1530.3	Index / Range / Rating Ignitability 0-20 0 Spread of flame 0-10 0 Heat evolved 0-10 0 Smoke developed 0-10 2

Important Note:

1) COLORBOND® XRW steel may not be suitable for use in abnormally corrosive environments; in areas not washed by rain, or in applications where it will be wholly or partly buried in the ground. Before purchase, check suitability by contacting Tata BlueScope Steel's sales office.
2) Results mentioned are for standard colours of COLORBOND® XRW steel under normal well washed conditions of exposure away from marine location.
3) The product is supplied with a nominal 25 unit (600) gloss Top Coat.
4) Backing Coat - a thin coating applied to the reverse surface of the prepainted coil. It also gives additional durability to the reverse surface during the service life of the product, but for aesthetic reasons it is not recommended for exposure to sunlight. Performance Requirements are generally not applicable to backing coats. The backer coat in specific color and with foam adhesion properties is possible on agreement.
5) The minimum internal bend diameter for forming process to achieve no paint cracking (visibility using x10 magnification) and to avoid paint adhesion issues are specified by T-Bend flexibility and T-Bend adhesion results respectively - where 1T equals the Total Painted Thickness (TPT) in mm of the material. These results are based on testing at 20-25°Celsius.
6) COLORBOND® XRW steel has good resistance to accidental spillage of solvents such as methylated spirits, white spirit, mineral turpentine, toluene, trichloroethylene, dilute mineral acids and alkalis. However, all spillages should be immediately removed by water washing and drying.
7) For most products, the metallurgical ageing process which is inherent in the paint stoving cycle will result in some loss of ductility compared with unpainted product. However, minimum strength levels designated by relevant standards will still be qualified.
8) Improper storage or the use of un-approved roll-forming lubricants may adversely affect colour. Material which becomes wet while in stacks or bundles must be separated and dried (refer AS/NZS 2728 Appendix L).
9) Values quoted are for panels exposed in accordance with AS/NZS 2728. Variations for in-situ performance may occur due to complexity of building design and location.
10) COLORBOND® XRW steel colours are incorporated with Thermatech® solar reflectance technology. Thermatech® technology lowers surface temperature by absorbing lesser heat from the sun, thereby reducing the heat radiation travelling downwards into the building and thus keeping both the roof and building cooler.

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