

Prepainted – PP

GENERAL DESCRIPTION

COLORBOND® ULTRA prepainted steel, specifically designed by BlueScope, combines long term durability and exceptional corrosion resistance. To determine if warranties apply, please contact your nearest BlueScope sales office for advice.

TYPICAL USES

Exterior building profiles in applications requiring excellent corrosion resistance. Suitable for moderate to severe marine or industrial environment. For material selection advice, please contact your nearest BlueScope sales office.

AUSTRALIAN STANDARD

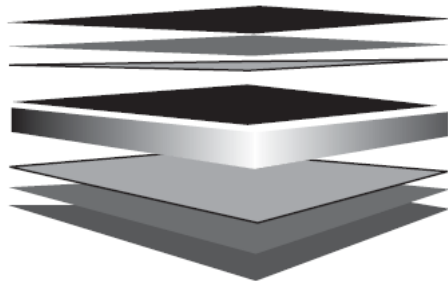
Paint Coating – AS/NZS 2728 Type 4;
Substrate – AS 1397

MALAYSIAN STANDARD

Paint Coating – MS 2383 C5;
Substrate – MS 1196

PRODUCT INFORMATION

PREFERRED SUBSTRATE	ZINCALUME® G550S AZ200 steel (aluminium/zinc alloy-coated steel) ZINCALUME® G300S AZ200 steel (aluminium/zinc alloy-coated steel) (Refer Note 8)
PRETREATMENT	Corrosion resistant proprietary conversion coating
PRIMER COAT	Universal corrosion inhibitive primer. Nominal dry film thickness 5µm each side
FINISH COAT	Custom formulated super polyester paint system with high performance pigments. Nominal dry film thickness 20µm on the top or weather side. The finish coat can, if required, be applied to both sides to provide a double-sided product
BACKING COAT	Custom formulated Shadow Grey. Nominal dry film thickness 5µm
COLOUR	A range of standard colours is available. Other specifically required colours may be available on request.



Finish Coat (Nominal 20µm) (Refer Note 4 & 5)
Universal Corrosion Inhibitive Primer (Nominal 5µm)
Conversion Coating
ZINCALUME® AZ200 Steel Substrate
Conversion Coating
Universal Corrosion Inhibitive Primer (Nominal 5µm)
Backing Coat (Shadow Grey, Nominal 5µm) (Refer Note 6)

DIMENSIONAL CAPABILITIES*

ZINCALUME® G550S AZ200 STEEL		ZINCALUME® G300S AZ200 STEEL	
PREFERRED BASE METAL THICKNESS, mm*	MAXIMUM WIDTH, mm	PREFERRED BASE METAL THICKNESS, mm*	MAXIMUM WIDTH, mm
0.35, 0.45, 0.50, 0.60, 0.70, 0.75	1219	0.35, 0.45, 0.50, 0.60, 0.70, 0.75	1219
0.42, 0.48	1230	0.42, 0.48	1230
0.55	1200	0.55	1200

Notes

* The dimensional tolerances for thickness, width flatness and camber shall be in accordance with the requirements of AS/NZS 1365. Not every combination of thickness and width may be available. Supply conditions may be subject to dimensional restrictions and are subject to BlueScope Sales and Marketing confirmation. Slitting and shearing available on request from BlueScope Sales Offices. For requirements outside the standard product range please contact your local Sales Office.

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RESISTANCE TO DIRT STAINING

The change in appearance of normal coil-coated products due to weathering is expected to be minimal within one year of installation. Yet, the overall appearance change can be obvious in some environments, not as a result of changes in the paint system itself, but as a result of severe dirt pick-up which causes darkening of its surface. These effects are more pronounced on light colours than on dark colours. In some instances, atmospheric dirt can become engrained into the surface of the paint, causing dirt staining which is difficult to remove.

COLORBOND® ULTRA steel (with Clean Technology), can **resist dirt pick-up** and more importantly, **RESIST DIRT STAINING**.

A weathering test has been conducted where the appearance changes of normal coil-coated products and COLORBOND® ULTRA steel (with Clean Technology) is monitored. The samples were placed in environments where atmospheric dirt is known to cause dirt staining problems. The Clean Technology shows clear benefits over normal coil-coated products after one year of exposure to rainfall where there's no cleaning conducted, as shown in TABLE 1 below.

TABLE 1 – Quantitative comparison of colour appearance change after 12 months sample exposure.

COLOUR SHADE	TYPICAL APPEARANCE CHANGE (ΔL UNITS CIELAB 2000)	
	NORMAL COIL-COATED PRODUCTS	COLORBOND® ULTRA STEEL (WITH CLEAN TECHNOLOGY)
Light (e.g. Enduring White)	-20 to -10	-4
Intermediate (e.g. Forever Beige)	-10 to -5	-3

EXPECTED PRODUCT SERVICE PERFORMANCE

The appearance of COLORBOND® ULTRA steel and other coil-coated products can change over time on exterior weathering not only due to dirt pick-up but also to changes in the paint system itself and resulting in gloss loss and fading of pigmentation. Colour change, which is largely due to changes in pigmentation will depend on the colour shade chosen. It is measured using a spectrophotometer, according to ASTM D2244 on surfaces thoroughly cleaned of dirt, oxidised film and foreign contaminants. The typical appearance changes of standard COLORBOND® ULTRA steel colours in normal environments after 12 years of service are given in TABLE 2.

TABLE 2 – Expected colour change after 12 years in natural well washed exposure (AS/NZS 1580.457.1 & ASTM D2244).

COLOUR SHADE	TYPICAL APPEARANCE CHANGE (ΔE UNITS CIELAB 2000)
Light (e.g. Enduring White)	≤ 4
Intermediate (e.g. Forever Beige)	≤ 6
Dark (e.g. Eternal Red)	≤ 10

Notes

Refer Note 9 & 10

ATTRIBUTES TESTED DURING MANUFACTURE

PROPERTY	TEST & EVALUATION METHOD(S)	RESULTS
Specular Gloss		
Specular Gloss at 60°meter	AS/NZS 1580.602.2; ASTM D523	Nominal 25 \pm 10 units
Adhesion		
Reverse Impact	AS/NZS 2728 (Appendix E)	≥ 10 joules
T-bend	AS/NZS 2728 (Appendix F)	Maximum 6T. Refer Note 7
Hardness		
Pencil	AS/NZS 1580.405.1	HB or harder

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PRODUCT ATTRIBUTES

PROPERTY	TEST & EVALUATION METHOD(S)	RESULTS
Resistance to Abrasion		
Scratch	AS 2331.4.7	Typically 1500g
Flexibility		
T-bend	ASTM D4145	Maximum 10T (no cracking). Refer Note 7
Adhesion		
Natural well washed exposure (15 years)	AS/NZS 1580.457.1; AS/NZS 1580.481.1.10	No flaking or peeling. Refer Notes 9 & 10
Resistance to Humidity		
Cleveland (500 hours)	ASTM D4585; AS/NZS 1580.481.1.9 (Blisters); AS 1580.408.4 (Adhesion); AS 1580.481.3 (Undercutting, Corrosion)	Blister density: ≤3. Blister size: ≤S2. Undercut at scribed lines: ≤2mm. No loss of adhesion or corrosion of base metal.
Resistance to Corrosion		
Cyclic corrosion (4000 hours)	AS/NZS 2728 (Appendix I), AS/NZS 1580.481.1.9 (Blisters); AS 1580.408.4 (Adhesion); AS 1580.481.3 (Undercutting, Corrosion)	Blister density: ≤2. Blister size: ≤S2. Undercut at scribed lines: ≤1mm. No loss of adhesion or corrosion. Refer Note 2
Resistance to Colour Change		
QUV (2000 hours)	ASTM G154 & ASTM D2244 (Colour)	ΔE CIELAB 2000: Intermediate colour: ≤5 units
Resistance to Chalking		
Natural well washed exposure (10 years)	AS/NZS 1580.457.1 & AS/NZS 1580.481.1.11 (Chalk Method B)	Chalk Rating: ≤4. Refer Notes 9 & 10
QUV (2000 hours)	ASTM G154 & AS/NZS 1580.481.1.11 (Chalk Method B)	Chalk Rating: ≤4
Resistance to Solvents, Acids, Alkalis		
Exposure	ASTM D1308 (3.1.1) & ASTM D2244 (Colour); AS/NZS 1580.481.1.9 (Blisters)	No discoloration or blistering. Refer Notes 2, 9 & 11
Resistance to Heat		
Exposure 100°C continuous (500 hours)	ASTM D2244 (Colour)	Colour change ΔE CIELAB 2000: ≤3 units
Fire Hazard Properties[#]		
Simultaneous determination of ignitability, flame propagation, heat release and smoke release	AS/NZS 1530.3 (Ignitability index; Spread of flame index; Heat evolved index; Smoke developed index)	Ignitability index: 0 rating in scale of 0 – 20; Spread of flame index: 0 rating in scale of 0 – 10; Heat evolved index: 0 rating in scale of 0 – 10; Smoke evolved index: 2 rating in scale of 0 – 10.
Fire classification	BS 476-6 (Fire propagation); BS 476-7 (Surface spread of flame)	Fire propagation index, I < 12; sub-index, i ₁ < 6; Surface spread of flame: Class 1. Classification: Class O.
	SANS 53501 – 1 (Reaction to fire)	Degree of flammability: Very limited contribution to fire; Smoke production: Low emission rate and speed; Droplets generation: No droplets; Classification: A2-s1, d0

[#]These test results relate only to the behaviour of the test specimen of the material under the particular conditions of the test and they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use.

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IMPORTANT NOTES

1. All warranties for a product, if any, are subject to eligibility. Terms and conditions apply. Nothing in this document is intended by BlueScope to extend, modify or otherwise affect any stated product warranty. To find out more, please contact your nearest BlueScope sales office.
2. If it is intended to use COLORBOND® ULTRA steel in an exterior application within 1km of salt marine locations, severe industrial or abnormally corrosive environments; in areas not washed by rain, or in applications where it will be wholly or partly buried in the ground, please contact your nearest BlueScope sales office for specialized advice. For selection of the most appropriate COLORBOND® steel product, please refer to Technical Bulletins TB1a, TB1b, CTB16, CTB21, CTB22.
3. Customers should use product promptly (within 6 months) to avoid the possibility of storage related corrosion.
4. Finish Coat – the coating applied to the exposed surface of the prepainted coil which is expected to meet the Performance Requirements.
5. The product is supplied with a nominal 25 unit (60°) gloss Finish Coat.
6. 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 is not recommended for exposure to sunlight. Performance Requirements are generally not applicable to Backing Coats. Where specific Performance Requirements are deemed necessary for the reverse surface coating, a “double sided” product should be specified, in which case a topcoat of full nominal thickness will be applied.
7. The minimum internal bend diameters for forming processes to achieve no paint cracking (visible using x10 magnification) and to avoid paint adhesion issues are specified by the T-bend flexibility and T-bend adhesion results respectively – where 1T equals the After Painted Thickness (APT) in mm of the material. These results are based on testing at 20 – 25°C.
8. 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 applicable.
9. Improper storage or use of non-approved roll-forming lubricants may cause brand transfer and paint blushing and may adversely affect colour and long term durability. Product in coil or sheet pack form must be kept dry. If the coil or sheet pack becomes wet, it must be separated and dried (refer AS/NZS 2728 Appendix L, and also Technical Bulletin TB7). Contact nearest BlueScope sales office on appropriate rollforming lubricants.
10. Values quoted are for panels exposed in accordance with AS/NZS 2728. Variations for in-situ performance may occur due complexity of building design and location.
11. COLORBOND® ULTRA steel has good resistance to accidental spillage of solvents such as methylated spirits, white spirit, mineral turpentine, toluene, and trichloroethylene and dilute mineral acids and alkalis. However, all spillages should be immediately removed by water washing and drying.
12. We recommend storage in bore vertical orientation to prevent coil slump. If you wish to know more about the consequence of coil slump, please refer to our Fact Sheet 2, link: <https://www.nsbluescope.com/my/wp-content/uploads/sites/7/2020/10/Fact-Sheet-Coil-Slump.pdf>.
13. Use of aged coil might lead to quality issue during roll-forming process. To determine if warranties apply for aged coil, please contact your nearest BlueScope sales office for advice.