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ZINCALUME® steel with Activate® technology G450

General description

ZINCALUME® steel with Activate® technology G450 is a hot-dipped aluminium / zinc / magnesium alloy-coated structural steel with a regular spangle surface and a guaranteed minimum yield strength of 450MPa with limited ductility. Suitable for rollforming to a minimum internal diameter of 4t.

Typical uses

Structural sections.

Australian and International Standards

AS/NZS 1365:1996 (R2016)
AS 1397:2021
ISO 9001:2015 Quality System certified

Guaranteed properties of steel base

Mechanical properties	Guaranteed minimum
Yield Strength, MPa (longitudinal tensile)	450
Tensile Strength, MPa (longitudinal tensile)	480
Elongation on 80mm (≥ 0.60mm) %	9
90° Transverse Bend	4t

Chemical composition of steel base

Chemical properties	Guaranteed maximum %
Carbon – C	0.20
Manganese – Mn	1.20
Phosphorus – P	0.040
Sulphur – S	0.030

Metal coating adhesion – 180° bend test

Coating class	Result
AM125	2t

Where t = the diameter of mandrel in terms of thickness of product.

Dimensional capabilities

Thickness range (mm)	Max width (mm)
1.50 – 1.60	1000

Notes: Not every combination of thickness and width may be available. Supply conditions may be subject to dimensional restrictions and are subject to RPFL 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.

Fire hazard properties

Test & Evaluation Methods	Range	Result
Simultaneous determination of ignitability, flame propagation, heat release and smoke release (AS/NZS 1530.3:1999 (R2016)) *	Ignitability Index (0 – 20)	0
	Spread of Flame Index (0 – 10)	0
	Heat Evolved Index (0 – 10)	0
	Smoke Developed Index (0 – 10)	2
NCC non-combustible material concessions (NCC 2019; AS/NZS 1530.3:1999 (R2016)) *	National Construction Code, Building Code of Australia 2019; Volume 1: Part C1.9.e, and Volume 2: Part 3.7.1.1.e	May be used wherever a non-combustible material is required
	AS/NZS 1530.3:1999 (R2016)	
Combustibility test for materials (steel substrate) (AS 1530.1-1994 (R2016)) #	AS 1530.1-1994 (R2016)	Not deemed combustible (steel substrate)

* The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.
# These test results relate only to the behaviour of the test specimens 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.

Supply conditions

Attribute	Normal	Optional
Coating Class	AM125	-
Surface Condition	Spangled	-
Surface Treatment	Passivated & Resin coated	-
Branding	Branded	Not branded
Tolerance – Dimensions	Class A	Class B
Tolerance – Flatness	Class A	-

Important Notes: Optional supply conditions may be subject to dimensional restrictions.

Fabricating performance

Method	Rating
Bending	3
Drawing	NR
Pressing	NR
Rollforming	4
Lock Forming	NR
Welding (design must allow for some strength reduction near welds)	4
Painting Pre-treatment	5

Where: 1 = Limited to 5 = Excellent or NR = Not Recommended
The ratings in this table are general indicators only, given as a guide to fabricating performance.

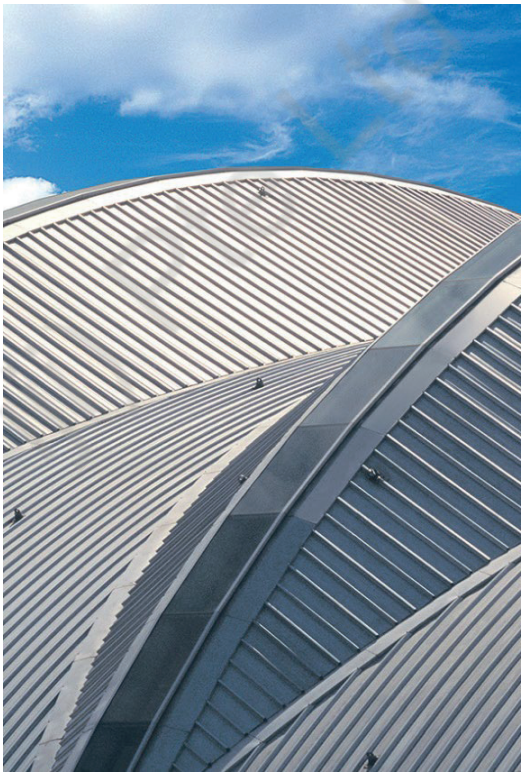
Important information

Material should be used promptly (within six months) to avoid the possibility of a storage related corrosion. For selection of the most appropriate metallic coated steel, please refer to Technical Bulletins TB1a, TB1b, CTB21 and CTB22. For storage, rollforming lubricants and other information please refer to the Technical Bulletins.

ZINCALUME® steel with Activate® technology G550

General description

ZINCALUME® steel with Activate® technology G550 is a hot-dipped aluminium / zinc / magnesium alloy-coated structural steel with a regular spangle surface, a guaranteed minimum yield strength of 550MPa with limited ductility.



Typical uses

Roofing, walling and structural sections.

Australian and International Standards

AS/NZS 1365:1996 (R2016)
AS 1397:2021
ISO 9001:2015 Quality System certified

Guaranteed properties of steel base

Mechanical properties	Guaranteed minimum
Yield Strength, MPa (longitudinal tensile)	550
Tensile Strength, MPa (longitudinal tensile)	550
Elongation on 80mm (≥ 0.60mm) %	2

Chemical composition of steel base

Chemical properties	Guaranteed maximum %
Carbon – C	0.20
Manganese – Mn	1.20
Phosphorus – P	0.040
Sulphur – S	0.030

Metal coating adhesion – 180° bend test

Coating class	Result
AM125	2t

Where t = the diameter of mandrel in terms of thickness of product.

Dimensional capabilities

Thickness range (mm)	Max width (mm)
0.300 – 0.319	1000
0.320 – 0.349	1100
0.350 – 0.399	1220
0.400 – 0.700	1250
0.701 – 1.000	1220

Notes: Not every combination of thickness and width may be available. Supply conditions may be subject to dimensional restrictions and are subject to RPFL Sales and Marketing confirmation. Slitting and shearing available on request from RPFL Sales Offices. For requirements outside the standard product range please contact your local Sales Office.

Fire hazard properties

Test & Evaluation Methods	Range	Result
Simultaneous determination of ignitability, flame propagation, heat release and smoke release (AS/NZS 1530.3:1999 (R2016)) *	Ignitability Index (0 – 20)	0
	Spread of Flame Index (0 – 10)	0
	Heat Evolved Index (0 – 10)	0
	Smoke Developed Index (0 – 10)	2
NCC non-combustible material concessions (NCC 2019; AS/NZS 1530.3:1999 (R2016)) *	National Construction Code, Building Code of Australia 2019; Volume 1: Part C1.9.e, and Volume 2: Part 3.7.1.1.e	May be used wherever a non-combustible material is required
	AS/NZS 1530.3:1999 (R2016)	
Combustibility test for materials (steel substrate) (AS 1530.1-1994 (R2016)) #	AS 1530.1-1994 (R2016)	Not deemed combustible (steel substrate)

* The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.
# These test results relate only to the behaviour of the test specimens 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.

Supply conditions

Attribute	Normal	Optional
Coating Class	AM125	-
Surface Condition	Spangled	-
Surface Treatment	Passivated & Resin coated	-
Branding	Branded	Not Branded
Tolerance – Dimensions	Class A	Class B
Tolerance – Flatness	Class A	-

Important Notes: Optional supply conditions may be subject to dimensional restrictions.

Fabricating performance

Method	Rating
Bending	1
Drawing	NR
Pressing	NR
Rollforming	3
Lock Forming	NR
Welding (design must allow for some strength reduction near welds)	4
Painting Pre-treatment	5

Where: 1 = Limited to 5 = Excellent or NR = Not Recommended
The ratings in this table are general indicators only, given as a guide to fabricating performance.

Important information

Material should be used promptly (within six months) to avoid the possibility of a storage related corrosion. For selection of the most appropriate metallic coated steel, please refer to Technical Bulletins TB1a, TB1b, CTB21 and CTB22. For storage, rollforming lubricants and other information please refer to the Technical Bulletins.

GALVASPAN® steel G450

General description

GALVASPAN® steel G450 is a hot-dipped zinc-coated structural steel with a spangled surface and guaranteed minimum yield strength of 450MPa. Suitable for rollforming to a minimum internal diameter of 4t.

Typical uses

Rollformed sections such as purlins and girts for structural building applications.

Australian and International Standards

AS/NZS 1365:1996 (R2016)

AS 1397:2021

ISO 9001:2015 Quality System certified

Guaranteed properties of steel base

Mechanical properties	Guaranteed minimum
Yield Strength, MPa (longitudinal tensile)	450
Tensile Strength, MPa (longitudinal tensile)	480
Elongation on 80mm (≥ 0.60mm) %	9
90° Transverse Bend	4t

Chemical composition of steel base

Chemical properties	Guaranteed maximum %
Carbon – C	0.20
Manganese – Mn	1.20
Phosphorus – P	0.040
Sulphur – S	0.030

Metal coating adhesion – 180° bend test

Coating class	Result
Z350	2t
Z450	2t

Where t = the diameter of mandrel in terms of thickness of product.

Dimensional capabilities

Thickness range (mm)	Width range (mm)
1.50 – 1.60	700 – 1525
1.61 – 2.00	700 – 1350
2.01 – 3.00	700 – 1225
3.01 – 3.20	700 – 1200

Notes: Not every combination of thickness and width may be available. Supply conditions may be subject to dimensional restrictions and are subject to RPFL Sales and Marketing confirmation. Slitting and shearing available on request from RPFL Sales Offices. For requirements outside the standard product range please contact your local Sales Office. To determine maximum mill edge width available,subtract 30mm from the maximum width.

Fire hazard properties

Test & Evaluation Methods	Range	Result
Simultaneous determination of ignitability, flame propagation, heat release and smoke release (AS/NZS 1530.3:1999 (R2016)) *	Ignitability Index (0 – 20)	0
	Spread of Flame Index (0 – 10)	0
	Heat Evolved Index (0 – 10)	0
	Smoke Developed Index (0 – 10)	2
NCC non-combustible material concessions (NCC 2019; AS/NZS 1530.3:1999 (R2016)) *	National Construction Code, Building Code of Australia 2019; Volume 1: Part C1.9.e, and Volume 2: Part 3.7.1.1.e	May be used wherever a non-combustible material is required
	AS/NZS 1530.3:1999 (R2016)	
Combustibility test for materials (steel substrate) (AS 1530.1-1994 (R2016)) #	AS 1530.1-1994 (R2016)	Not deemed combustible (steel substrate)

* The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.
# These test results relate only to the behaviour of the test specimens 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.

Supply conditions

Attribute	Normal	Optional
Coating Class	Z350	Z450
Surface Condition	Spangled	-
Surface Treatment	Passivated	-
Branding	Branded	-
Tolerance – Dimensions	Class A	-
Tolerance – Flatness	Class A	-

Important Notes: Optional supply conditions may be subject to dimensional restrictions.

Fabricating performance

Method	Rating
Bending	3
Drawing	NR
Pressing	NR
Rollforming	3
Welding (design must allow for some strength reduction near welds)	5
Painting Pre-treatment	5

Where: 1 = Limited to 5 = Excellent or NR = Not Recommended
The ratings in this table are general indicators only, given as a guide to fabricating performance.

Important information

Material should be used promptly (within six months) to avoid the possibility of a storage related corrosion. For selection of the most appropriate metallic coated steel, please refer to Technical Bulletins TB1a, TB1b, CTB21 and CTB22. For storage, rollforming lubricants and other information please refer to the Technical Bulletins.

ZINCANNEAL® steel G2S

General description

ZINCANNEAL® steel G2S is a hot-dipped zinc/iron alloy-coated commercial forming steel with a skin-passed smooth matte surface suitable for direct-on painting. Some powdering of the coating may occur with severe deformation.

Typical uses

Exposed painted panels, non-exposed automotive panels, office furniture, washing machines, acoustic ceiling tiles, door frames, switchboards, commercial refrigerators, and freezers.

Australian and International Standards

AS/NZS 1365:1996 (R2016)

AS 1397:2021

ISO 9001:2015 Quality System certified

Guaranteed properties of steel base

Mechanical properties	Guaranteed minimum
Elongation on 80mm (≥ 0.60mm) % (transverse tensile)	27
180° Transverse Bend	0t

Chemical composition of steel base

Chemical properties	Guaranteed maximum %
Carbon – C	0.10
Manganese – Mn	0.45
Phosphorus – P	0.030
Sulphur – S	0.030

Dimensional capabilities

Thickness range (mm)	Max width (mm)
0.50 to <0.55	1510
≥0.55 to <1.83	1535
≥1.83 to <2.00	1525
≥2.00 to ≤2.40	1250

Notes: Not every combination of thickness and width may be available. Supply conditions may be subject to dimensional restrictions and are subject to RPFL Sales and Marketing confirmation. Slitting and shearing available on request from RPFL Sales Offices. For requirements outside the standard product range please contact your local Sales Office.

Fire hazard properties

Test & Evaluation Methods	Range	Result
Simultaneous determination of ignitability, flame propagation, heat release and smoke release (AS/NZS 1530.3:1999 (R2016)) *	Ignitability Index (0 – 20)	0
	Spread of Flame Index (0 – 10)	0
	Heat Evolved Index (0 – 10)	0
	Smoke Developed Index (0 – 10)	1
NCC non-combustible material concessions (NCC 2019; AS/NZS 1530.3:1999 (R2016)) *	National Construction Code, Building Code of Australia 2019; Volume 1: Part C1.9.e, and Volume 2: Part 3.7.1.1.e	May be used wherever a non-combustible material is required
	AS/NZS 1530.3:1999 (R2016)	
Combustibility test for materials (steel substrate) (AS 1530.1-1994 (R2016)) #	AS 1530.1-1994 (R2016)	Not deemed combustible (steel substrate)

* The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.
# These test results relate only to the behaviour of the test specimens 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.

Supply conditions

Attribute	Normal	Optional
Coating Class	ZF100	ZF80
Surface Condition	Smooth Matte	-
Surface Treatment	Phosphated	Unphosphated (oiled)
Branding	Not Branded	-
Tolerance – Dimensions	Class A	Class B
Tolerance – Flatness	Class A	Class B

Important Notes: Optional supply conditions may be subject to dimensional restrictions.

Fabricating performance

Method	Rating
Bending	5
Drawing	3
Pressing	3
Rollforming	5
Welding	5
Painting Pre-treatment	5

Where: 1 = Limited to 5 = Excellent or NR = Not Recommended
The ratings in this table are general indicators only, given as a guide to fabricating performance.

Important information

This type of product is not suitable for painting in coil form and forming post painting as problems may be experienced with paint adhesion.

Material should be used promptly (within six months) to avoid the possibility of a storage related corrosion. For selection of the most appropriate metallic coated steel, please refer to Technical Bulletins TB1a, TB1b, CTB21 and CTB22. For storage, rollforming lubricants and other information please refer to the Technical Bulletins.

COLORBOND® steel

for roofing and walling

General description

COLORBOND® steel for roofing and walling (XRW) has been specifically designed by New Zealand Steel to provide a highly durable roofing and wall claddingprepainted product for general use. Available in a standard or matt finish.

Typical uses

Roofing and accessories, wall cladding, rain water goods. To determine if warranties apply or for material selection advice, please visit colorbond.com and steel.com.au or contact Steel Direct.

Australian and International standards

Substrate - AS 1397:2021
Paint Coating - AS/NZS 2728:2013 Type 4
ISO 9001:2015 Quality System certified

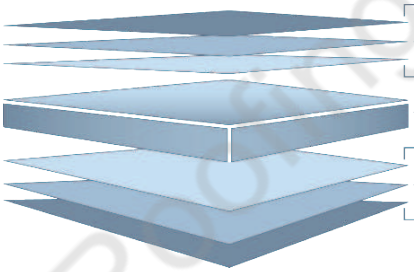
Preferred substrates

AM100 G550S steel with Activate® technology. AM100 G300S steel with Activate® technology {Refer Note 8}.

For substrate properties please refer to the relevant Metallic (AM) Coated steel datasheets or AS 1397:2021.

Please refer to current price list or RPFL Sales Office for availability of colours and dimensions. Available in matt finish.

CORSTRIP® film may be available on request {Refer Note 3}.



Finish Coat (Finish Coat + Primer = nominal 25µm) {Refer Notes 4 & 5}
Universal Corrosion Inhibitive Primer
Conversion Coating

Aluminium / Zinc / Magnesium alloy-coated steel with Activate® technology substrate

Conversion Coating
Universal Corrosion Inhibitive Primer
Backing Coat (Backing Coat + Primer = nominal 10µm total) {Refer Note 6}

Attributes tested during manufacture

Property	Test & Evaluation Method(s)	Results
Adhesion		
Reverse impact	AS/NZS 2728:2013 (App. E)	≥10 joules
T-bend	AS/NZS 2728:2013 (App. F)	Maximum 6T. Refer Note 7.
Specular gloss		
60° meter	AS/NZS 1580.602.2:1995 (R2013); ASTM D523-14 (2018)	Nominal ± 10 units; matt finish nominal ± 3 units

Product attributes

Property	Test & Evaluation Method(s)	Results
Flexibility		
T-bend	ASTM D4145-10 (2018)	Maximum 10T (no cracking). Refer Note 7.
Resistance to abrasion		
Scratch	AS 2331.4.7-2006 (R2017)	Typically 2000g
Hardness		
Pencil	AS/NZS 1580.405.1:1996 (R2013)	HB or harder
Adhesion		
Natural well washed exposure (10 years)	AS/NZS 1580.457.1:1996 (R2013) AS/NZS 1580.481.1.10:1998 (R2013)	No flaking or peeling. Refer Notes 9 & 10.
Resistance to humidity		
Cleveland (500 hours)	ASTM D4585/D4585M-18; AS/NZS 1580.481.1.9:1998 (R2013) (Blisters); AS 1580.408.4-2004 (R2019) (Adhesion)	Blister density: ≤3. Blister size: ≤S2. Undercut from score: ≤2mm. No loss of adhesion or corrosion of base metal.
Resistance to corrosion		
QFog (2000 hours)	AS/NZS 1580.481.1.9:1998 (R2013) (Blisters); AS 1580.408.4-2004 (R2019) (Adhesion), AS 1580.481.3-2002 (R2013) (Undercutting, Corrosion)	Blister density: ≤2. Blister size: ≤S2. Undercut from score: ≤1mm. No loss of adhesion or corrosion of base metal. Refer Note 2.
Resistance to colour change		
Natural well washed exposure (10 years)	AS/NZS 1580.457.1:1996 (R2013) & ASTM D2244-21 (Colour)	ΔE CIEDE2000: Light colour: ≤4 units; Intermediate colour: ≤6 units; Dark colour ≤10 units. Refers Notes 9 & 10.
QUV (2000 hours)	ASTM G154-16 & ASTM D2244-21 (Colour)	ΔE CIEDE2000: Intermediate colour ≤5 units
Resistance to chalking		
Natural well washed exposure (10 years)	AS/NZS 1580.457.1:1996 (R2013) & AS/NZS 1580.481.1.11:1998 (R2013) (Chalk Method B)	Chalk rating: ≤4. Refer Notes 9 & 10.
QUV (2000 hours)	ASTM G154-16 & AS/NZS 1580.481.1.11:1998 (R2013) (Chalk Method B)	Chalk rating: ≤4

Property	Test & Evaluation Method(s)	Results
Resistance to solvents, acids, alkalis		
Exposure	ASTM D1308-20 (3.1.1) & ASTM D2244-21 (Colour); AS/NZS 1580.481.1.9:1998 (R2013) (Blisters)	No discolouration or blistering. Refer Notes 2, 9 & 11.
Resistance to heat		
Exposure 100°C continuous (500 hours)	ASTM D2244-21 (Colour)	Colour change ΔE CIEDE2000: ≤3 units
Fire hazard properties		
Simultaneous determination of ignitability, flame propagation, heat release and smoke release (AS/NZS 1530.3:1999 (R2016)) *	Ignitability index (0 – 20)	0
	Spread of flame index (0 – 10)	0
	Heat evolved index (0 – 10)	0
	Smoke developed index (0 – 10)	2
NCC non-combustible material concessions (NCC 2019; AS/NZS 1530.3:1999 (R2016)) *	National Construction Code, Building Code of Australia 2019; Volume 1 Part C1.9.e, and Volume 2: Part 3.7.1.1.e	May be used wherever a non-combustible material is required
	AS/NZS 1530.3:1999 (R2016)	
Combustibility test for materials (steel substrate) (AS 1530.1-1994 (R2016)) #	AS 1530.1-1994 (R2016)	Not deemed combustible (steel substrate)

* The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.
# These test results relate only to the behaviour of the test specimens 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.

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 New Zealand Steel to extend, modify or otherwise affect any stated product warranty. To find out more, please visit the New Zealan Steel website or contact Steel Direct for advice.

2. Product may not be suitable if it is intended to use COLORBOND® steel for roofing and walling (XRW) 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. For selection of the most appropriate COLORBOND® steel product, please refer to the Technical Bulletins TB1a, TB1b, CTB16, CTB21 and CTB22. Before purchase, you should check on suitability by visiting the BlueScope website or by contacting Steel Direct for advice.

3. Note occasionally strippable film may be supplied in lieu of CORSTRIP® film for operational reasons. The CORSTRIP® film/strippable film should be removed from the painted steel strip immediately on installation. Sunlight can increase adhesion of the protective film to the painted surface if left uncovered outside. End consumers who directly purchase COLORBOND® steel for roofing and walling (XRW) with CORSTRIP® film/strippable film can recycle the film via the national RED cycle Program.Note: it must be cut into smaller, A3 size pieces before returning. Builders should contact their relevant waste provider to discuss requirements for recycling this type of material as REDcycle is not able to accept commercial/industrial or large volumes of film.

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. The matt finish product is supplied with a nominal 3 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 minimal 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 total coated thickness (tct) 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 2728:2013 Appendix L, and also Technical Bulletin TB7). Contact Steel Direct to obtain advice on appropriate rollforming lubricants.

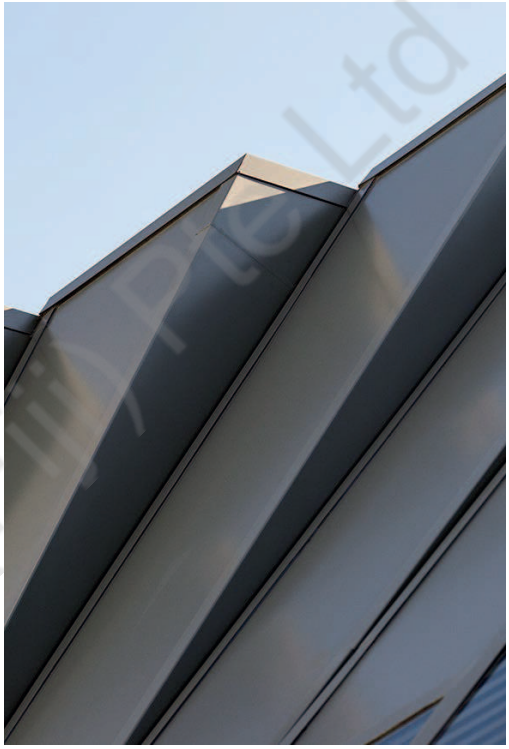
10. Values quoted are for panels exposed in accordance with AS/NZS 2728:2013. Variations for in-situ performance may occur due to complexity of building design and location.

11. COLORBOND® steel for roofing and walling (XRW) has good resistance to accidental spillage of solvents such as methylated spirits, white sprit, mineral turpentine, toluene, trichloroethylene and dilute mineral acids and alkalis. However, all spillages should be immediately removed by water washing and drying.

COLORBOND® Ultra steel

General description

COLORBOND® Ultra steel (ULT), specifically designed by New Zealand to provide a prepainted product which combines long term durability and excellent corrosion resistance.



Typical uses

Exterior building profiles in applications requiring excellent corrosion resistance and long term durability. Suited to moderately severe marine and industrial environments. To determine if warranties apply or for material selection advice, please visit colorbond.com and steel.com.au or contact Steel Direct.

Australian and International standards

Substrate - AS 1397:2021
Paint Coating - AS/NZS 2728:2013 Type 4
ISO 9001:2015 Quality System certified

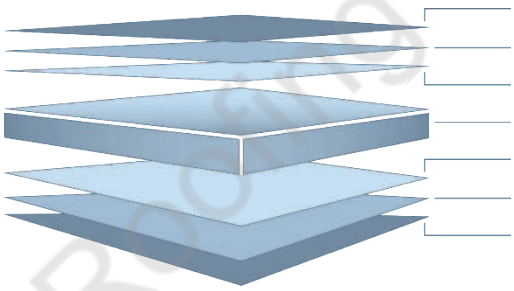
Preferred substrates

AM150 G550S steel with Activate® technology. AM150 G300S steel with Activate® technology {Refer Note 8}.

For substrate properties please refer to the relevant Metallic (AM) Coated steel datasheets or AS 1397:2021.

Please refer to current price list or RPFL Sales Office for availability of colours and dimensions.

CORSTRIP® film may be available on request {Refer Note 3}.



Attributes tested during manufacture

Property	Test & Evaluation Method(s)	Results
Adhesion		
Reverse impact	AS/NZS 2728:2013 (App. E)	≥10 joules
T-bend	AS/NZS 2728:2013 (App. F)	Maximum 6T. Refer Note 7.
Specular gloss		
60º meter	AS/NZS 1580.602.2:1995 (R2013); ASTM D523-14 (2018)	Nominal ± 10 units

Product attributes

Property	Test & Evaluation Method(s)	Results
Flexibility		
T-bend	ASTM D4145-10 (2018)	Maximum 10T (no cracking). Refer Note 7.
Resistance to abrasion		
Scratch	AS 2331.4.7-2006 (R2017)	Typically 2000g
Hardness		
Pencil	AS/NZS 1580.405.1:1996 (R2013)	HB or harder
Adhesion		
Natural well washed exposure (10 years)	AS/NZS 1580.457.1:1996 (R2013) AS/NZS 1580.481.1.10:1998 (R2013)	No flaking or peeling. Refer Notes 9 & 10.
Resistance to humidity		
Cleveland (500 hours)	ASTM D4585/D4585M-18; AS/NZS 1580.481.1.9:1998 (R2013) (Blisters); AS 1580.408.4-2004 (R2019) (Adhesion)	Blister density: ≤3. Blister size: ≤S2. Undercut from score: ≤2mm. No loss of adhesion or corrosion of base metal.
Resistance to corrosion		
QFog (2000 hours)	AS/NZS 1580.481.1.9:1998 (R2013) (Blisters); AS 1580.408.4-2004 (R2019) (Adhesion), AS 1580.481.3-2002 (R2013) (Undercutting, Corrosion)	Blister density: ≤2. Blister size: ≤S2. Undercut from score: ≤1mm. No loss of adhesion or corrosion of base metal. Refer Note 2.
Resistance to colour change		
Natural well washed exposure (10 years)	AS/NZS 1580.457.1:1996 (R2013) & ASTM D2244-21 (Colour)	ΔE CIEDE2000: Light colour: ≤4 units. Intermediate colour: ≤6 units. Dark colour:≤10 units. Refer Notes 9 & 10.
QUV (2000 hours)	ASTM G154-16 & ASTM D2244-21 (Colour)	ΔE CIEDE2000: Intermediate colour: ≤ 5 units
Resistance to chalking		
Natural well washed exposure (10 years)	AS/NZS 1580.457.1:1996 (R2013) & AS/NZS 1580.481.1.11:1998 (R2013) (Chalk Method B)	Chalk rating: ≤ 4. Refer Notes 9 & 10.
QUV (2000 hours)	ASTM G154-16 & AS/NZS 1580.481.1.11:1998 (R2013) (Chalk Method B)	Chalk rating: ≤4

Property	Test & Evaluation Method(s)	Results
Resistance to solvents, acids, alkalis		
Exposure	ASTM D1308-20 (3.1.1); ASTM D2244-21 (Colour); AS/NZS 1580.481.1.9:1998 (R2013) (Blisters)	No discolouration or blistering. Refer Notes 2, 9 & 11.
Resistance to heat		
Exposure 100°C continuous (500 hours)	ASTM D2244-21 (Colour)	Colour change ΔE CIEDE2000: ≤3 units
Fire hazard properties		
Simultaneous determination of ignitability, flame propagation, heat release and smoke release (AS/NZS 1530.3:1999 (R2016)) *	Ignitability index (0 – 20)	0
	Spread of flame index (0 – 10)	0
	Heat evolved index (0 – 10)	0
	Smoke developed index (0 – 10)	2
NCC non-combustible material concessions (NCC 2019; AS/NZS 1530.3:1999 (R2016)) *	National Construction Code, Building Code of Australia 2019; Volume 1: Part C1.9.e, and Volume 2: Part 3.7.1.1.e	May be used wherever a non-combustible material is required
	AS/NZS 1530.3:1999 (R2016)	
Combustibility test for materials (steel substrate) (AS 1530.1-1994 (R2016)) #	AS 1530.1-1994 (R2016)	Not deemed combustible (steel substrate)

* The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.
# These test results relate only to the behaviour of the test specimens 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.

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 New Zealand Steel to extend, modify or otherwise affect any stated product warranty. To find out more, please visit the New Zealand Steel website or contact Steel Direct for advice.

2. Product may not be suitable if it is intended to use COLORBOND® Ultra steel (ULT) in an exterior application within 200m 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. For selection of the most appropriate COLORBOND® steel product, please refer to Technical Bulletins TB1a, TB1b, CTB16, CTB21 and CTB22. Before purchase, you should check on suitability by visiting the New Zealand Steel website or by contacting Steel Direct for advice.

3. Note occasionally strippable film may be supplied in lieu of CORSTRIP® film for operational reasons. The CORSTRIP® film/strippable film should be removed from the painted steel strip immediately on installation. Sunlight can increase adhesion of the protective film to the painted surface if left uncovered outside. End consumers who directly purchase COLORBOND® Ultra steel (ULT) with CORSTRIP® film/strippable film can recycle the film via the national REDcycle Program. Note: it must be cut into smaller, A3 size pieces before returning. Builders should contact their relevant waste provider to discuss requirements for recycling this type of material as REDcycle is not able to accept commercial/industrial or large volumes of film.

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. Performance Requirements are not generally applicable to Backing coats. Where specific Performance Requirements are deemed necessary for the reverse surface coating, "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 total coated thickness (tct) 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 2728:2013 Appendix L, and also Technical Bulletin TB7). Contact Steel Direct to obtain advice on appropriate rollforming lubricants.

10. Values quoted are for panels exposed in accordance with AS/NZS 2728:2013. Variations for in-situ performance may occur due to complexity of building design and location.

11. COLORBOND® Ultra steel (ULT) has good resistance to accidental spillage of solvents such as methylated spirits, white spirit, mineral turpentine, toluene, trichloroethylene and dilute mineral acids and alkalis. However, all spillages should be immediately removed by water washing and drying.

GALVABOND® steel G2 / G2S

General description

GALVABOND® steel G2 is a hot-dipped zinc-coated commercial forming steel with a spangled surface, suitable for general manufacturing, widely available as distributor stock. Product is suitable for moderate drawing applications and is suitable for lockseaming up to 1.6mm thick.

GALVABOND® steel G2S is skinpassed to improve surface quality. Under normal storage conditions,free of fluting for 3 months after galvanising.

Typical uses

Partition walling systems, air conditioning ducts and panels, tube, meter boxes, trailers, cable trays, scaffolding planks, rendering mesh, feeder troughs.

Australian and International Standards

AS/NZS 1365:1996 (R2016)
AS 1397:2021
ISO 9001:2015 Quality System certified

Guaranteed properties of steel base

Mechanical properties	Guaranteed minimum
Elongation on 80mm (≥ 0.60mm) % (transverse tensile)	27
180° Transverse Bend (L axis)	0t
Pittsburgh lock-seam (≤ 1.6mm)	Pass

Chemical composition of steel base

Chemical properties	Guaranteed maximum %
Carbon – C	0.10
Manganese – Mn	0.45
Phosphorus – P	0.025
Sulphur – S	0.030

Metal coating adhesion – 180° bend test

Coating class	Result
Z100	0t
Z200	0t
Z275	0t
Z450	1t
Z600	2t

Where t = the diameter of mandrel in terms of thickness of product.

Dimensional capabilities

Thickness range (mm)	Max width (mm)
0.30 – 0.319	1000
0.32 – 0.349	1100
0.35 – 0.399	1220
0.40 – 0.419	1300
0.42 – 0.499	1390
0.45 – 0.500	1510
0.501 – 2.00	1530
2.01 – 3.20	1220 (G2 only)
3.201 – 3.50	1000 (G2 only)

Notes: Not every combination of thickness and width may be available. Supply conditions may be subject to dimensional restrictions and are subject to RPFL Sales and Marketing confirmation. Slitting and shearing available on request from RPFL Sales Offices. For requirements outside the standard product range please contact your local Sales Office. To determine maximum mill edge width available, subtract 30mm from the maximum width.

Fire hazard properties

Test & Evaluation Methods	Range	Result
Simultaneous determination of ignitability, flame propagation, heat release and smoke release (AS/NZS 1530.3:1999 (R2016)) *	Ignitability Index (0 – 20)	0
	Spread of Flame Index (0 – 10)	0
	Heat Evolved Index (0 – 10)	0
	Smoke Developed Index (0 – 10)	2
NCC non-combustible material concessions (NCC 2019; AS/NZS 1530.3:1999 (R2016)) *	National Construction Code, Building Code of Australia 2019; Volume 1: Part C1.9.e, and Volume 2: Part 3.7.1.1.e	May be used wherever a non-combustible material is required
	AS/NZS 1530.3:1999 (R2016)	
Combustibility test for materials (steel substrate) (AS 1530.1-1994 (R2016)) #	AS 1530.1-1994 (R2016)	Not deemed combustible (steel substrate)

* The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.
# These test results relate only to the behaviour of the test specimens 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.

Supply conditions

Attribute	Normal	Optional
Coating Class	Z275	Z100, Z200, (Z450 >0.35mm; Z600 by enquiry)
Surface Condition	Spangled	Minimised spangle
Surface Treatment	Passivated	Unpassivated (oiled)
Branding	Branded	-
Tolerance – Dimensions	Class A	B Class
Tolerance – Flatness	Class A	B Class

Important Notes: Optional supply conditions may be subject to dimensional restrictions.

Fabricating performance

Method	Rating
Bending	5
Drawing	3
Pressing	3
orming	5
Lock Forming	5
Welding (design must allow for some strength reduction near welds)	5
Painting Pre-treatment	5

Where: 1 = Limited to 5 = Excellent or NR = Not Recommended
The ratings in this table are general indicators only, given as a guide to fabricating performance.

Important information

Material should be used promptly (within six months) to avoid the possibility of a storage related corrosion. For selection of the most appropriate metallic coated steel, please refer to Technical Bulletins TB1a, TB1b, CTB21 and CTB22. For storage, rollforming lubricants and other information please refer to the Technical Bulletins.

COLORBOND® steel

for insulated panels

General description

COLORBOND® steel for insulated panels (XIP), designed by New Zealand Steel, specifically for the manufacture of sandwich panels for exterior building use. This prepainted product offers excellent formability coupled with good durability.

Typical uses

Exterior sandwich panels. To determine if warranties apply or for material selection advice, please visit steel.com.au or contact Steel Direct for advice.

Australian and International standards

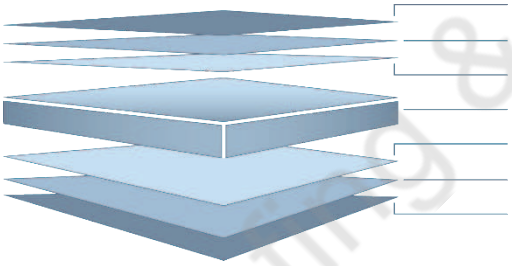
Substrate - AS 1397:2021
Paint Coating - AS/NZS 2728:2013 Type 3
ISO 9001:2015 Quality System certified

Preferred substrates

Z275 G300S BF steel {Refer Note 8}.

For substrate properties please refer to the relevant Metallic (Z) Coated steel datasheet or AS 1397:2021.

Please refer to current price list or RPFL Sales Office for availability of colours and dimensions.



Attributes tested during manufacture

Property	Test & Evaluation Method(s)	Results
Adhesion		
Reverse impact	AS/NZS 2728:2013 (App. E)	≥10 joules
T-bend	AS/NZS 2728:2013 (App. F)	Maximum 6T. Refer Note 7.
Specular gloss		
60° meter	AS/NZS 1580.602.2:1995 (R2013); ASTM D523-14 (2018)	Nominal ± 10 units

Product attributes

Property	Test & Evaluation Method(s)	Results
Flexibility		
T-bend	ASTM D4145-10 (2018)	Maximum 10T (no cracking). Refer Note 7.
Resistance to abrasion		
Scratch	AS 2331.4.7-2006 (R2017)	Typically 2000g
Hardness		
Pencil	AS/NZS 1580.405.1:1996 (R2013)	HB or harder
Resistance to humidity		
Cleveland (500 hours)	ASTM D4585/D4585M-18; AS/NZS 1580.481.1.9:1998 (R2013) (Blisters); AS 1580.408.4-2004 (R2019) (Adhesion)	Blister density: ≤3 Blister size: ≤S2. Undercut from score: ≤2mm. No loss of adhesion or corrosion of base metal.
Resistance to corrosion		
Salt Spray (500 hours)	AS/NZS 1580.481.1.9:1998 (R2013) (Blisters); AS 1580.408.4-2004 (R2019) (Adhesion); AS 1580.481.3-2002 (R2013) (Undercutting, Corrosion)	Blister density: ≤2. Blister size: ≤S3. Undercut from score: ≤2mm. No loss of adhesion or corrosion of base metal. Refer Note 3.
Resistance to colour change		
Natural well washed exposure (10 years)	AS/NZS 1580.457.1:1996 (R2013) & ASTM D2244-21 (Colour)	ΔE CIEDE2000: Light colour: ≤4 units; Intermediate colour: ≤6 units; Dark colour ≤10 units. Refers Notes 9 & 10.
QUV (2000 hours)	ASTM G154-16 & ASTM D2244-21 (Colour)	ΔE CIEDE2000: Intermediate colour ≤5 units
Resistance to chalking		
Natural well washed exposure (10 years)	AS/NZS 1580.457.1:1996 (R2013) & AS/NZS 1580.481.1.11:1998 (R2013) (Chalk Method B)	Chalk rating: ≤4. Refer Notes 9 & 10.
QUV (1000 hours)	ASTM G154-16 & AS/NZS 1580.481.1.11:1998 (R2013) (Chalk Method B)	Chalk rating: ≤4

Property	Test & Evaluation Method(s)	Results
Resistance to solvents, acids, alkalis		
Exposure	ASTM D1308-20 (3.1.1); ASTM D2244-21 (Colour); AS/NZS 1580.481.1.9:1998 (R2013) (Blisters)	No discolouration or blistering. Refer Notes 3, 9 & 11.
Fire hazard properties		
Simultaneous determination of ignitability, flame propagation, heat release and smoke release (AS/NZS 1530.3:1999 (R2016)) *	Ignitability index (0 – 20)	0
	Spread of flame index (0 – 10)	0
	Heat evolved index (0 – 10)	0
	Smoke developed index (0 – 10)	2
NCC non-combustible material concessions (NCC 2019; AS/NZS 1530.3:1999 (R2016)) *	National Construction Code, Building Code of Australia 2019: Volume 1 Part C1.9.e, and Volume 2: Part 3.7.1.1.e	May be used wherever a non-combustible material is required
	AS/NZS 1530.3:1999 (R2016)	
Combustibility test for materials (steel substrate) (AS 1530.1-1994 (R2016)) #	AS 1530.1-1994 (R2016)	Not deemed combustible (steel substrate)

* The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.
# These test results relate only to the behaviour of the test specimens 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.

Important notes

1. It is the panel manufacturer's responsibility to ensure the colour of the Finish Coat selected is suitable for the core material, adhesives and the intended exposure conditions of the finished panel. Darker colours can attain a higher surface temperature which needs to be considered in the overall exposure of the panel.

2. All warranties for a product, if any, are subject to eligibility. Terms and conditions apply. Nothing in this document is intended by New Zealand Steel to extend, modify or otherwise affect any stated product warranty. To find out more, please visit the New Zealand Steel website or contact Steel Direct for advice.

3. Product may not be suitable if it is intended to use COLORBOND® steel for insulated panels (XIP) 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. For selection of the most appropriate COLORBOND® steel product, please refer to Technical Bulletins TB1a, TB1b, CTB16, CTB21 and CTB22. Before purchase, you should check on suitability by visiting the BlueScope website or by contacting Steel Direct for advice.

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. This backing coat has been specially designed to facilitate adhesion to foam cores, for common foam core adhesives. It is the manufacturer's responsibility to test the suitability of their adhesives to this backer.

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 total coated thickness (tct) 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 2728:2013 Appendix L, and also Technical Bulletin TB7). Contact Steel Direct to obtain advice on appropriate rollforming lubricants.

10. Values quoted are for panels exposed in accordance with AS/NZS 2728:2013. Variations for in-situ performance may occur due to complexity of building design and location.

11. COLORBOND® steel for insulated panels (XIP) has good resistance to accidental spillage of solvents such as methylated spirits, white spirit, mineral turpentine, toluene, trichloroethylene and dilute mineral acids and alkalis. However, all spillages should be immediately removed by water washing and drying.