Metallic Coated Steel

MC GI

GENERAL INFORMATION

Revision 4, November 2003
This literature supersedes all previous issues

GENERAL DESCRIPTION

The metallic coated products of BlueScope Steel Limited are generally described by a registered trade mark followed by a designation of the steel base and coating class as outlined in Australian Standard 1397:2001.

Continuously hot-dipped metallic-coated steels

As the surface of steel products gradually reverts to its most stable form, that is, iron oxide, it is necessary to isolate the surface from atmospheric conditions to prevent the unsightly oxide forming. This can be achieved by covering the surface with metals or organic materials such as paint or PVC laminate. The latter materials and some metals merely provide a blanket covering to protect the steel from the atmosphere and this is successful provided the complete coverage remains intact. Some metals, such as zinc, give an added feature of sacrificial protection at areas where the steel base is exposed such as cut edges, holes and scratches. A zinc/aluminium alloy coating combines the best features of both aluminium and zinc coatings. Metallic coating with zinc or zinc/aluminium alloy by the hot dip method is a universally proven and accepted system. The continuous hot-dip metallic coating lines operated by BlueScope Steel Australia produce a range of zinc-coated and zinc/aluminium coated steel sheet and strip products to meet the requirements of manufacturers in Australia.

The degree of corrosion protection afforded by each coating type and class depends on the many macro and micro environments in which it performs and therefore cannot be simply quantified. However it can generally be assumed that for a particular coating the life of the sheet would be in direct proportion to the coating mass on the sheet. For normal exterior protection the life of ZINCALUME® steel coating is far superior to the life of an equivalent thickness zinc coating.

ZINCANNEAL® and ZINCSEAL® are hot-dipped, zinc/iron alloy coated cold rolled steels which have smooth matte finish suitable for direct on painting in critical surface applications. This material is produced as a zinc coating which is heat treated after the hot dip coating process to provide a smooth zinc/iron alloy coating.

Zinc coatings are superior where products manufactured from them come into contact with concrete or concrete based products and are also superior for sheds used in intensive animal farming.

In addition, some manufacturers prefer the increased ductility of zinc coatings when forming metallic coated steel sheet into articles with very tight bends.

ZINCALUME® and GALVALUME® steel are the brand names of BlueScope Steel alloy-coated steel sheet. They are more readily painted than zinc surfaces for which added precautions are necessary in pretreatment and priming to ensure adequate paint adhesion.

ZINCALUME® zinc/aluminium alloy-coated steel is now supplied standard with a new specially formulated water-based clear acrylic resin film factory roller- coated and oven cured over the conventional passivation layer. The resin film, in combination with the passivation layer, has excellent adhesion to the substrate, very good impact resistance and flexibility, excellent marking resilience and the resin film acts as a lubricant during forming operations. GALVALUME® zinc/aluminium alloy-coated steel is essentially the same product as ZINCALUME® except that it is not supplied with a resin coating.

Please ensure you have the current data sheet for this product as displayed at www.bluescopesteel.com.au

BlueScope Steel Limited
BlueScope Steel Limited ABN 16 000 011 058
BlueScope Steel (AIS) Pty Ltd ABN 19 000 019 625

SYDNEY: (02) 9795 6700 **MELBOURNE:** (03) 9586 2222 **BRISBANE:** (07) 3845 9300 **ADELAIDE:** (08) 8243 7333 **PERTH:** (09) 9330 0666

Produced by Artimprint (02) 9984 8586

GENERAL INFORMATION Continued

Revision 4, November 2003
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Designation System - Base Steel

The steel base grades of BlueScope Steel Limited continuously heat-treated, hot-dipped qualities are designated with the letter "G" followed by characters which indicate formability or strength and condition. Refer Table 1.

Designation System - Coatings

Metallic coatings on steel sheet and strip are divided into five different types. Refer Table 2.

Coating Mass

The ability of a metallic-coated sheet and strip product to withstand corrosion in a particular environment is a function of the amount (and type) of coating on the surface of the steel base. This is quantified as the "coating mass" and is the mass of coating on both sides of the steel base expressed in grams per square metre (g/m^2).

Coating Class

Coating Class is designated by the specified coating type and the minimum mass of coating on both sides of the sheet measured by the triple spot test as detailed in Australian Standard 1397:2001, eg AZ150, zinc/aluminium coating with a minimum coating of 150 g/m^2.

Coating Adhesion

The ability of a metallic coating to withstand deformation without peeling from the steel substrate varies with coating type and coating mass. Table 3 lists the guaranteed performance of the various metallic coatings and base combinations.

This table is an EXPLANATION of the DESIGNATION SYSTEM ONLY

It does not imply that all combinations are available
Regularly available products are listed in the Data Sheets

Table 1 – Designation System for Base Steel of Metallic-Coated Steel Sheet & Strip

GROUPS	CHARACTER POSITION			
	1	2	3	4
Formable (Ductile)	Product Type	Degree of Formability	Condition	Surface Quality
	G – Continuously heat-treated and hot-dip coated	1 – Profiling 2 – Commercial forming 3 – Drawing	B – Bake hardenable S – Skin – passed N – Non-ageing	F – Fully inspected E – Exposed applications
Example	G	2	S	
Structural (Strength)	Product Type	Strength (Minimum Yield Strength – MPa)		
	G – Continuously heat-treated and hot-dip coated	Numeral	Numeral	Numeral
Example	G	2	5	0

Table 2 – Metallic coating types and designations

Coating Type	Coating Designation
Hot-dipped zinc (Zn)	Z
Hot-dipped aluminium/zinc (Al/Zn)	AZ
Hot-dipped zinc/iron (Zn/Fe)	ZF, ZS

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Regularly available products are listed in the Data Sheets

Table 3 – Approximate coating thickness (total both sides) resulting from coating mass values

Coating Class Designation	Nominal Total Coated Thickness Calculation Factor
Z100	0.02 mm
Z200	0.03 mm
Z275	0.04 mm
Z350	0.05 mm
Z450	0.07 mm
Z600	0.09 mm (≤ 2.00 mm BMT)
Z600	0.10 mm (> 2.00 mm BMT)
AZ50	0.02 mm
AZ150	0.05 mm
AZ200	0.06 mm
ZF80	0.01 mm
ZF100	0.02 mm
ZS30	0.01 mm
45F45	0.01 mm
60F60	0.01 mm

Note: BMT – base metal thickness

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Metallic Coated Formable GALVABOND®

MC F G2 steel G2S steel

Revision 8, November 2003
This literature supersedes all previous issues

GENERAL DESCRIPTION

GALVABOND® G2 steel 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® G2S steel is skinpassed to improve surface quality. Under normal storage conditions it will be free of fluting for 3 months after galvanising.

TYPICAL USES

Tube, Airconditioning ducts, Airconditioning Panels, Meter Box, Trailers, Partioning Systems, Cable Trays, Scaffolding Planks, Rendering Mesh, Feeder Troughs.

AUSTRALIAN STANDARDS

AS 1365
AS 1397:2001

GUARANTEED PROPERTIES OF STEEL BASE

MECHANICAL PROPERTIES	GUARANTEED MINIMUM
Elongation on 80mm (≥ 0.60mm) %	27
180° transverse bend (L axis)	0t
Pittsburgh lock-seam (≤ 1.6mm)	Pass

CHEMICAL PROPERTIES	GUARANTEED MAXIMUM %
Carbon (C)	0.1
Phosphorus(P)	0.025
Manganese (Mn)	0.45
Sulphur (S)	0.03

Note – tensile tested in transverse direction

COATING ADHESION – 180° BEND TEST

COATING CLASS	GUARANTEED
Z100	0t
Z275	0t
Z450	1t
Z600	2t

FIRE HAZARD PROPERTIES

IGNITABILITY INDEX	(range 0-20)	0
SPREAD OF FLAME INDEX	(range 0-10)	0
HEAT EVOLVED INDEX	(range 0-10)	0
SMOKE DEVELOPED INDEX	(range 0-10)	0

DIMENSIONAL CAPABILITIES

Thickness Ranges mm		Max. Width mm
≥ 0.3 < 0.32	G2, G2S	1070
≥ 0.32 < 0.35	G2, G2S	1100
≥ 0.35 < 0.40	G2, G2S	1220
≥ 0.40 ≤ 0.45	G2, G2S	1390
> 0.45 ≤ 0.50	G2, G2S	1510
> 0.50 ≤ 1.85	G2, G2S	1525
> 1.85 ≤ 1.90	G2, G2S	1485
> 1.90 ≤ 1.95	G2, G2S	1440
> 1.95 ≤ 2.00	G2, G2S	1400
> 2.00 ≤ 3.20	G2	1220

Slitting and shearing available on request from BlueScope Steel sales offices.

These dimensions are a reflection of technical capability to produce. Supply conditions may be subject to dimensional restrictions and is subject to BlueScope Steel Sales and Marketing confirmation.

NORMAL/OPTIONAL SUPPLY CONDITIONS

	Normal	Optional
Coating Class	Z275	Z100 Z450>0.35mm Z600>0.40mm
Surface Condition	Spangled	Minimised spangle
Surface Treatment	Passivated	Unpassivated (oiled)
Tolerance Class		
Dimensions	A Class	B Class
Flatness	A Class	B Class
Branding	Branded	

Important Notes

Material should be used promptly (within 6 months) to avoid the possibility of a storage related phenomena of galvanised coatings termed intergranular corrosion.

For selection of the most appropriate metallic coated steel, please refer to technical bulletins TB1a, TB1b, CTB21 and CTB22.

For storage, rollforming lubricant and other information please refer to the Technical Bulletins.

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Metallic Coated Formable GALVABOND® MC F G2 steel G2S steel

Revision 8, November 2003
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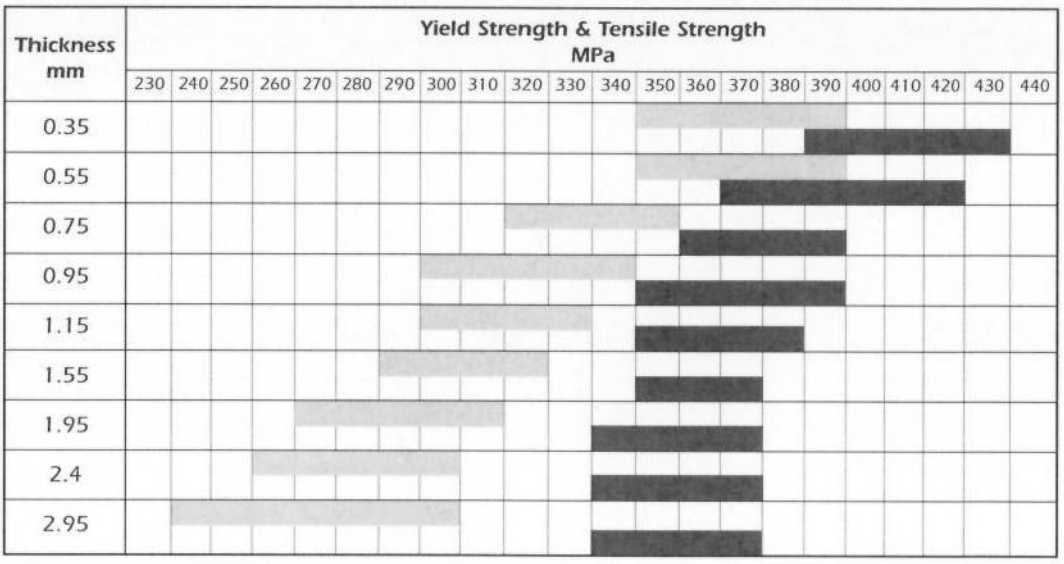
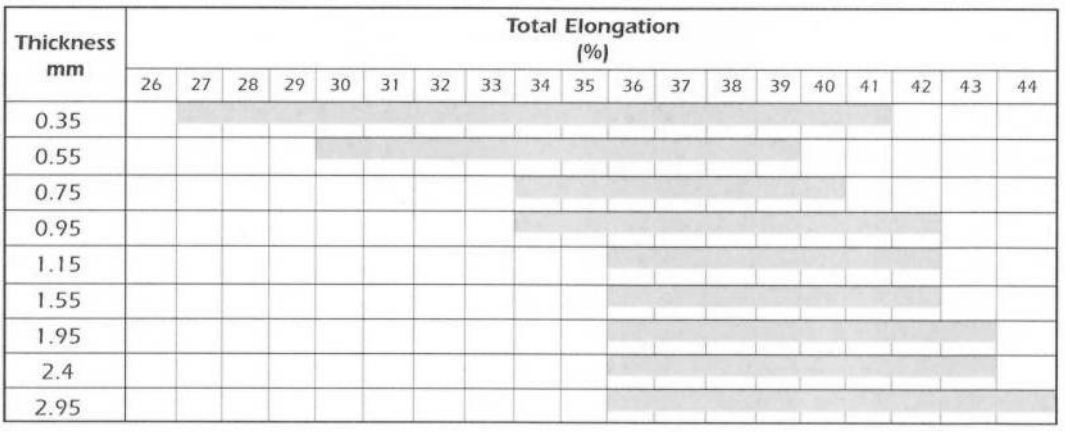
Continued

TYPICAL PROPERTY RANGES (FOR NORMAL SUPPLY PRODUCT)



Key: yield strength; tensile strength



FABRICATING PERFORMANCE

Method	Rating
Bending	5
Drawing	3
Pressing	3
Roll-Forming	5
Lock-Forming	5
Welding	5
Painting (Pretreatment)	5

TYPICAL CHEMICAL COMPOSITION OF STEEL BASE

	%
Carbon (C)	0.035 - 0.070
Phosphorus (P)	0.00 - 0.02
Manganese (Mn)	0.20 - 0.30
Sulphur (S)	0.00 - 0.02
Silicon (Si)	0.00 - 0.02
Aluminium (Al)	0.02 - 0.07
Nitrogen (N)	0.000 - 0.008

where 1 = limited to 5 = excellent, or NR = not recommended

IMPORTANT NOTES:

- Typical Mechanical Properties are based on typical product dispatched to customers. Note that ductility will decline through a natural aging process during storage and/or paint stoving cycle.
- The Skin-Passing of GALVABOND® G2 steel will generally give a marginally higher yield strength and marginally reduced % elongation.

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Metallic Coated Structural GALVASPAN® G450 steel

MC
S

Revision 7, November 2003
This literature supersedes all previous issues

GENERAL DESCRIPTION

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

TYPICAL USES

Roll-formed sections for structural applications.

AUSTRALIAN STANDARDS

AS 1365
AS 1397:2001

GUARANTEED PROPERTIES OF STEEL BASE

MECHANICAL PROPERTIES	GUARANTEED MINIMUM
Yield strength (MPa)	450
Tensile Strength (MPa)	480
Elongation on 80mm (≥ 0.60 mm) %	9
90° transverse bend (L axis)	4t

CHEMICAL PROPERTIES	GUARANTEED MAXIMUM %
Carbon (C)	0.20
Phosphorus (P)	0.04
Manganese (Mn)	1.20
Sulphur (S)	0.03

Note – tensiles tested in longitudinal direction

COATING ADHESION – 180° BEND TEST

COATING CLASS	GUARANTEED
Z350	2t
Z450	2t

FIRE HAZARD PROPERTIES

IGNITABILITY INDEX	(range 0-20)	0
SPREAD OF FLAME INDEX	(range 0-10)	0
HEAT EVOLVED INDEX	(range 0-10)	0
SMOKE DEVELOPED INDEX	(range 0-10)	0

DIMENSIONAL CAPABILITIES

Thickness Ranges mm	Max. Width mm
≥1.50 ≤ 1.60	1350
>1.60 ≤ 1.80	1235
>1.80 ≤ 2.00	1220
>2.00 ≤ 2.50	1200
>2.50 ≤ 3.20	1150

Slitting and shearing available on request from BlueScope Steel sales offices.

These dimensions are a reflection of technical capability to produce. Supply conditions may be subject to dimensional restrictions and is subject to BlueScope Steel Sales and Marketing confirmation.

NORMAL/OPTIONAL SUPPLY CONDITIONS

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

Important Notes

Material should be used promptly (within 6 months) to avoid the possibility of a storage related phenomena of galvanised coatings termed intergranular corrosion.

For selection of the most appropriate metallic coated steel, please refer to technical bulletins TB1a, TB1b, CTB21 and CTB22.

For storage, rollforming lubricant and other information please refer to the Technical Bulletins.

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Metallic Coated Structural GALVASPAN® G450 steel

MC
S

Revision 7, November 2003
This literature supersedes all previous issues

Continued

TYPICAL PROPERTY RANGES (FOR NORMAL SUPPLY PRODUCT)

Thickness mm	Yield Strength/Proof Strength & Tensile Strength MPa															
	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630
1.5																
1.9																
2.4																
3.0																

Key: yield strength; tensile strength

Thickness mm	Total Elongation on 80mm (%)									
	8	9	10	11	12	13	14	15	16	17
1.5										
1.9										
2.4										
3.0										

FABRICATING PERFORMANCE

Method	Rating
Bending	3
Drawing	NR
Pressing	NR
Roll-Forming	3
Welding (design must allow for some strength reduction near welds)	5
Painting (Pretreatment)	5

where 1 = limited to 5 = excellent, or NR = not recommended

TYPICAL CHEMICAL COMPOSITION OF STEEL BASE

	%
Carbon (C)	0.035 - 0.070
Phosphorus (P)	0.00 - 0.02
Manganese (Mn)	0.20 - 0.30
Sulphur (S)	0.00 - 0.02
Silicon (Si)	0.00 - 0.02
Aluminium (Al)	0.02 - 0.07
Nitrogen (N)	0.000 - 0.008

IMPORTANT NOTES:

- Typical Mechanical Properties are based on typical product dispatched to customers. Note that ductility will decline through a natural aging process during storage and/or paint stoving cycle.

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Metallic Coated Structural ZINC HI-TEN® G450 steel

MC S G450S steel

Revision 9, November 2003
This literature supersedes all previous issues

GENERAL DESCRIPTION

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

ZINC HI-TEN® G450S steel is skinpassed to improve surface quality. This skinpassed product is only available up to 2mm thick.

TYPICAL USES

Purlins, structural decking, scaffoldling.

AUSTRALIAN STANDARDS

AS 1365
AS 1397:2001

GUARANTEED PROPERTIES OF STEEL BASE

MECHANICAL PROPERTIES	GUARANTEED MINIMUM
Yield Strength (MPa)	450
Tensile Strength (MPa)	480
Elongation on 80mm (≥ 0.60 mm) %	9
90° transverse bend (L axis)	4t

CHEMICAL PROPERTIES	GUARANTEED MAXIMUM %
Carbon (C)	0.20
Phosphorus (P)	0.04
Manganese (Mn)	1.20
Sulphur (S)	0.03

Note – tensiles tested in longitudinal direction

COATING ADHESION – 180° BEND TEST

COATING CLASS	GUARANTEED
Z100	0t
Z200	1t
Z275	2t
Z450	2t
Z600	3t

FIRE HAZARD PROPERTIES

IGNITABILITY INDEX	(range 0-20)	0
SPREAD OF FLAME INDEX	(range 0-10)	0
HEAT EVOLVED INDEX	(range 0-10)	0
SMOKE DEVELOPED INDEX	(range 0-10)	0

DIMENSIONAL CAPABILITIES

Thickness Ranges mm		Max. Width mm
≥ 1.50 ≤ 1.60	G450, G450S	1350
> 1.60 ≤ 1.80	G450, G450S	1235
> 1.80 ≤ 2.00	G450, G450S	1220
> 2.00 ≤ 2.50	G450	1200
> 2.50 ≤ 3.20	G450	1150

Slitting and shearing available on request from BlueScope Steel sales offices.

These dimensions are a reflection of technical capability to produce. Supply conditions may be subject to dimensional restrictions and is subject to BlueScope Steel Sales and Marketing confirmation.

NORMAL/OPTIONAL SUPPLY CONDITIONS

	Normal	Optional
Coating Class	Z275	Z200, Z450, Z600
Surface Condition	Spangled	Minimised spangle
Surface Treatment	Passivated	–
Tolerance Class		
Dimensions	A Class	–
Flatness	A Class	–
Branding	Branded	–

Important Notes

Material should be used promptly (within 6 months) to avoid the possibility of a storage related phenomena of galvanised coatings termed intergranular corrosion.

For selection of the most appropriate metallic coated steel, please refer to technical bulletins TB1a, TB1b, CTB21 and CTB22.

For storage, rollforming lubricant and other information please refer to the Technical Bulletins.

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Metallic Coated Structural ZINC HI-TEN® G450 steel

MC S G450S steel

Revision 9, November 2003
This literature supersedes all previous issues

Continued

TYPICAL PROPERTY RANGES (FOR NORMAL SUPPLY PRODUCT)

Thickness mm	Yield Strength/Proof Strength & Tensile Strength MPa																	
	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650
1.5																			
2.0																			
2.5																			
3.0																			

Key: yield strength; tensile strength

Thickness mm	Total Elongation on 80mm (%)									
	8	9	10	11	12	13	14	15	16	17
1.5										
2.0										
2.5										
3.0										

FABRICATING PERFORMANCE

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

where 1 = limited to 5 = excellent, or NR = not recommended

TYPICAL CHEMICAL COMPOSITION OF STEEL BASE

	%
Carbon (C)	0.035 - 0.070
Phosphorus (P)	0.00 - 0.02
Manganese (Mn)	0.20 - 0.30
Sulphur (S)	0.00 - 0.02
Silicon (Si)	0.00 - 0.02
Aluminium (Al)	0.02 - 0.07
Nitrogen (N)	0.000 - 0.008

IMPORTANT NOTES:

- Typical Mechanical Properties are based on typical product dispatched to customers. Note that ductility will decline through a natural aging process during storage and/or paint stoving cycle.
- The Skin-Passing of ZINC HI-TEN® G450 steel will generally give a marginally higher yield strength and marginally reduced % elongation.

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Metallic Coated MC
Structural S
ZINCFORM® G300 steel
G300S steel

Revision 8, November 2003
This literature supersedes all previous issues

GENERAL DESCRIPTION

ZINCFORM® G300 steel is a hot-dipped zinc-coated structural steel with a spangled surface and guaranteed minimum yield strength of 300 MPa, with good ductility. Suitable for roll-forming to an internal diameter of 1t minimum.

ZINCFORM® G300S steel is skinpassed to improve surface quality. This skinpassed product is only available up to 1.60mm thick.

TYPICAL USES

Roll-formed structural sections, nailplate.

AUSTRALIAN STANDARDS

AS 1365
AS 1397:2001

GUARANTEED PROPERTIES OF STEEL BASE

MECHANICAL PROPERTIES	GUARANTEED MINIMUM
Yield Strength, MPa	300
Tensile Strength, MPa	340
Elongation on 80mm (≥ 0.60 mm) %	18
180° transverse bend (L axis)	1t

CHEMICAL PROPERTIES	GUARANTEED MAXIMUM %
Carbon (C)	0.30
Phosphorus(P)	0.10
Manganese (Mn)	1.60
Sulphur (S)	0.035

Note – tensiles tested in longitudinal direction

COATING ADHESION – 180° BEND TEST

COATING CLASS	GUARANTEED
Z100	0t
Z200	0t
Z275	1t
Z450	1t
Z600	2t

FIRE HAZARD PROPERTIES

IGNITABILITY INDEX	(range 0-20)	0
SPREAD OF FLAME INDEX	(range 0-10)	0
HEAT EVOLVED INDEX	(range 0-10)	0
SMOKE DEVELOPED INDEX	(range 0-10)	0

DIMENSIONAL CAPABILITIES

Thickness Ranges mm		Max. Width mm
≥ 0.30 < 0.32	G300, G300S	1010
≥ 0.32 < 0.35	G300, G300S	1100
≥ 0.35 < 0.40	G300, G300S	1220
≥ 0.40 ≤ 0.45	G300, G300S	1390
> 0.45 ≤ 0.50	G300, G300S	1510
> 0.50 ≤ 1.60	G300, G300S	1525
> 1.60 ≤ 2.90	G300	1220

Slitting and shearing available on request from BlueScope Steel sales offices. Thicknesses over 2.90 mm may be available on request.

These dimensions are a reflection of technical capability to produce. Supply conditions may be subject to dimensional restrictions and is subject to BlueScope Steel Sales and Marketing confirmation.

NORMAL/OPTIONAL SUPPLY CONDITIONS

	Normal	Optional
Coating Class	Z275	Z200 Z450 ≥ 0.35 Z600 ≥ 0.40
Surface Condition	Spangled	Minimised spangle
Surface Treatment	Passivated	–
Tolerance Class		
Dimensions	A Class	B Class
Flatness	A Class	B Class
Branding	Branded	–

Important Notes

Material should be used promptly (within 6 months) to avoid the possibility of a storage related phenomena of galvanised coatings termed intergranular corrosion.

For selection of the most appropriate metallic coated steel, please refer to technical bulletins TB1a, TB1b, CTB21 and CTB22.

For storage, rollforming lubricant and other information please refer to the Technical Bulletins.

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Metallic Coated Structural ZINCFORM® MC S G300 steel G300S steel

Revision 8, November 2003
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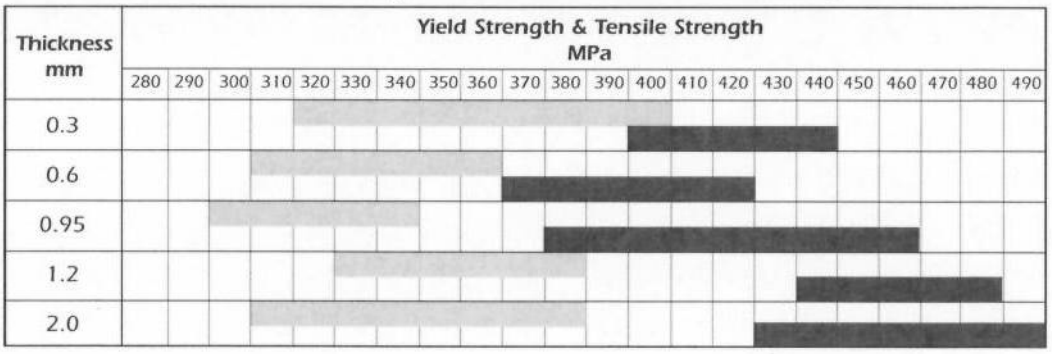
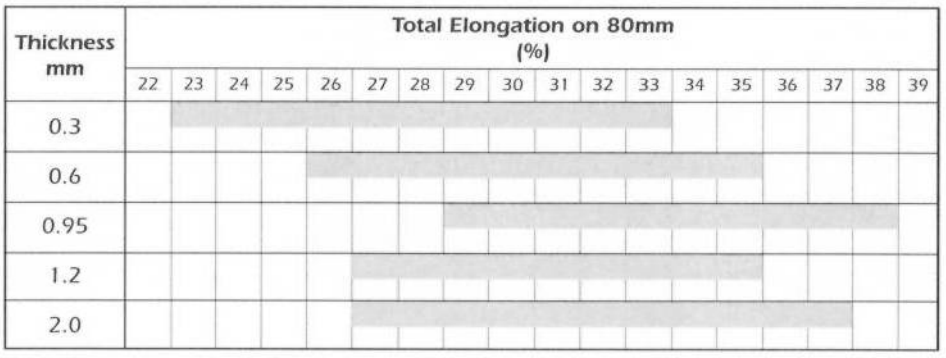
Continued

TYPICAL PROPERTY RANGES (FOR NORMAL SUPPLY PRODUCT)



Key: yield strength; tensile strength



FABRICATING PERFORMANCE

Method	Rating
Bending	5
Drawing	3
Pressing	2
Roll-Forming	5
Welding	5
Painting (Pretreatment)	5

TYPICAL CHEMICAL COMPOSITION OF STEEL BASE

	< 0.70 mm	0.70 ≤ 1.00	1.00 mm +
Carbon (C)	0.035 - 0.07	0.08 - 0.13	0.13 - 0.18
Phosphorus (P)	0.00 - 0.02	0.00 - 0.03	0.00 - 0.03
Manganese (Mn)	0.20 - 0.30	0.30 - 0.60	0.60 - 0.90
Silicon (Si)	0.00 - 0.02	0.00 - 0.03	0.00 - 0.03
Sulphur (S)	0.00 - 0.02	0.00 - 0.02	0.00 - 0.02
Aluminium (Al)	0.02 - 0.07	0.015 - 0.08	0.015 - 0.08
Nitrogen (N)	0.00 - 0.008	0.00 - 0.008	0.00 - 0.010

where 1 = limited to 5 = excellent, or NR = not recommended

IMPORTANT NOTES:

- Typical Mechanical Properties are based on typical product dispatched to customers. Note that ductility will decline through a natural aging process during storage and/or paint stoving cycle.
- The Skin-Passing of ZINCFORM® G300 steel will give a marginally higher yield strength and marginally reduced % elongation.

Please ensure you have the current data sheet for this product as displayed at www.bluescopesteel.com.au

BlueScope Steel Limited
BlueScope Steel Limited ABN 16 000 011 058
BlueScope Steel (AIS) Pty Ltd ABN 19 000 019 625

SYDNEY: (02) 9795 6700 **MELBOURNE:** (03) 9586 2222 **BRISBANE:** (07) 3845 9300 **ADELAIDE:** (08) 8243 7333 **PERTH:** (09) 9330 0666

Produced by Artimprint (02) 9984 8586

Metallic Coated Formable ZINCANNEAL® G2S steel

MC
F

Revision 8, November 2003
This literature supersedes all previous issues

GENERAL DESCRIPTION

ZINCANNEAL® G2S is a matte hot-dipped zinc/iron alloy-coated commercial forming steel with a skin-passed smooth 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, washing machines, acoustic ceiling tiles, door frames, switchboards, commercial refrigerators and freezers.

AUSTRALIAN STANDARDS

AS 1365
AS 1397:2001

GUARANTEED PROPERTIES OF STEEL BASE

MECHANICAL PROPERTIES	GUARANTEED MINIMUM
Elongation on 80 mm (≥ 0.60 mm) %	27
180° transverse bend (L axis)	0t

Note – tensiles tested in transverse direction

CHEMICAL PROPERTIES	GUARANTEED MAXIMUM %
Carbon (C)	0.10
Phosphorus (P)	0.025
Manganese (Mn)	0.45
Sulphur (S)	0.03

FIRE HAZARD PROPERTIES

IGNITABILITY INDEX	(range 0-20)	0
SPREAD OF FLAME INDEX	(range 0-10)	0
HEAT EVOLVED INDEX	(range 0-10)	0
SMOKE DEVELOPED INDEX	(range 0-10)	0

DIMENSIONAL CAPABILITIES

Thickness Ranges mm	Max. Width mm
0.50 < 0.57	1525
≥ 0.57 < 1.00	1625
≥ 1.00 < 1.83	1525
≥ 1.83 < 1.90	1470
≥ 1.90 ≤ 2.00	1400

Slitting and shearing available on request from BlueScope Steel sales offices.

These dimensions are a reflection of technical capability to produce. Supply conditions may be subject to dimensional restrictions and is subject to BlueScope Steel Sales and Marketing confirmation.

NORMAL/OPTIONAL SUPPLY CONDITIONS

	Normal	Optional
Coating Class	ZF100	45F45, 60F60, ZF80
Surface Condition	Smooth matte	–
Surface Treatment	Phosphated	Unphosphated (oiled)
Tolerance Class		
Dimensions	A Class	B Class
Flatness	A Class	B Class
Branding	Not Branded	–

Important Notes

Material should be used promptly (within 6 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 lubricant and other information please refer to the Technical Bulletins.

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Metallic Coated Formable ZINCANNEAL® steel

MC F G2S

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Continued

TYPICAL PROPERTY RANGES (FOR NORMAL SUPPLY PRODUCT)

Thickness mm	Yield Strength & Tensile Strength MPa																		
	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430
0.6																				
1.0																				
1.6																				
2																				

Key: yield strength; tensile strength

Thickness mm	Total Elongation on 80mm (%)															
	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
0.6																
1.0																
1.6																
2																

FABRICATING PERFORMANCE

Method	Rating
Bending	5
Drawing	3
Pressing	3
Roll-forming	5
Welding	5
Painting (Pretreatment)	5

TYPICAL CHEMICAL COMPOSITION OF STEEL BASE

	%
Carbon (C)	0.035 - 0.070
Phosphorus (P)	0.00 - 0.025
Manganese (Mn)	0.20 - 0.30
Silicon (Si)	0.00 - 0.02
Sulphur (S)	0.00 - 0.02
Aluminium (Al)	0.02 - 0.07
Nitrogen (N)	0.000 - 0.008

where 1 = limited to 5 = excellent, or NR = not recommended

IMPORTANT NOTES:

- Typical Mechanical Properties are based on typical product dispatched to customers. Note that ductility will decline through a natural aging process during storage and/or paint stoving cycle.
- This type of product is not suitable for painting in coil form and forming post painting as problems may be experienced with paint adhesion.

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