

Metallic Coated MC Structural S ZINC HI-TEN® G450 steel 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, scaffolding.

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

BlueScope Steel Limited

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Produced by Artimprint (02) 9984 8586



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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

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 ZINC HI-TEN® G450 steel will generally give a marginally higher yield strength and marginally reduced % elongation.

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