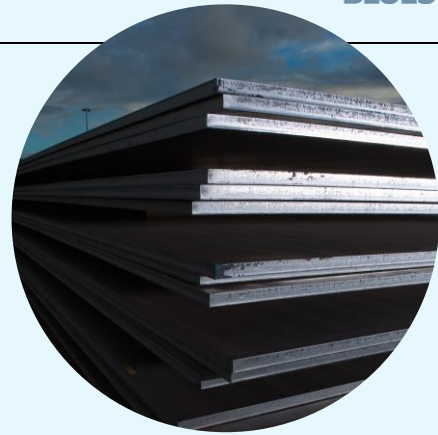


Uncoated steel

Data Sheet



October 2019. This literature supersedes all previous issues



XLERPLATE® steel

AS/NZS 3678 – 450L15

General description

A structural steel plate product suitable for low temperature application with nominal yield strength of 450MPa and guaranteed impact properties at -15 °C.

Typical uses

- General fabrication
- Structural members
- Bridges
- Storage tanks

Features & benefits

- Guaranteed minimum strength levels
- Low temperature properties
- Excellent weldability

- Excellent formability
- ACRS accreditation (ACRS Certificate No. 120802)
- ATIC10 accreditation

Warnings

- This material should be used in conjunction with the appropriate structural design and welding standards
- Maximum recommended temperature for hot forming is 620°C. If heated above 620°C, mechanical properties may deteriorate.

Australian standards

AS/NZS 3678: 2016
AS/NZS 1365: 1996
ISO 9001:2015 Quality System certified

Normal / optional supply conditions

	Normal	Optional
Thickness Range	10mm – 50mm	-
Availability	By enquiry only	-
Edge Condition	Trimmed	-
Tolerances	AS/NZS 1365: 1996	-
Ultrasonic Inspection	-	AS 1710: 2007
Surface Inspection	BlueScope	Third party
Certification	BlueScope	Third party endorsed

Optional supply conditions may be subject to dimensional restrictions

Chemical composition

Element	Guaranteed Maximum %
Carbon	0.22
Silicon	0.55
Manganese	1.80
Phosphorus	0.040
Sulfur	0.030
Chromium	0.25
Nickel	0.50
Copper	0.60
Molybdenum	0.35
Aluminium	0.10
Niobium**	0.060
Titanium	0.040
CEQ (IIW)	0.48

All values shown refer to the relevant Australian Standard unless otherwise stated

$$CEQ(IIW) = C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Cu + Ni)}{15}$$

** Niobium + Vanadium + Titanium ≤ 0.15%

Mechanical properties

Tensile Properties (Transverse)		Thickness (mm)			
		10 ≤ t ≤ 12	12 < t ≤ 20	20 < t ≤ 32	32 < t ≤ 50
Yield Strength (MPa)	Guaranteed Min	450	450	420	400
Tensile Strength (MPa)	Guaranteed Min	520	520	500	500
Elongation 5.65√S ₀ (%)	Guaranteed Min	16	16	18	18

Charpy Impact Properties	Longitudinal on 10 X 10 mm test piece	Test Temperature (°C)	Absorbed Energy (joules)	
			Avg. of 3	Individual
Guaranteed Min	450L15	-15	27	20

Formability	Thickness (mm)	Longitudinal	Transverse
Recommended min inside Radius	t ≤ 10	3.0t	2.0t
	10 < t ≤ 20	4.5t	3.0t
	t > 20	Hot Forming	

This product is not suitable for hot forming above 620 °C.

Fire hazard properties

Test & Evaluation Method	Result
Combustibility test for materials (AS 1530.1-1994)	Not deemed combustible

steel.com.au

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

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For more information contact Steel Direct



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