AS/NZS 3678 - 250L15 XLERPLATE® steel

Revision 2 January 2015

This literature supersedes all previous issues

Plate – PL **Structural - S**

GENERAL DESCRIPTION

A structural steel plate product suitable for low temperature application with nominal yield strength of 250MPa and guaranteed impact properties at -15°C

AUSTRALIAN STANDARDS

AS/NZS 3678: 2011
AS/NZS 1365: 1996

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)

WARNINGS

- This material should be used in conjunction with the appropriate structural design and welding standards
- An untrimmed (Mill) edge may contain surface discontinuities associated with the rolling process (refer to Clause 9 of AS/NZS 3678:2011). The plate supplied may include an amount outside of the nominal ordered width, in accordance with relevant Australian Standards. The area of the supplied plate which is outside of the nominal (customer ordered) width must not be used. Customers are advised to remove an equal width from each side of the plate when trimming

NORMAL / OPTIONAL SUPPLY CONDITIONS

	Normal	Optional
Thickness Range	5mm – 150mm	
Availability	5mm – 40mm refer to XLERPLATE® steel size schedule 1	>40mm available by enquiry only
Edge Condition	Untrimmed (Mill Edge)*	Trimmed
Tolerances	AS/NZS 1365: 1996	
Ultrasonic Inspection		AS 1710: 2007
Surface Inspection	BlueScope Steel	Third party
Certification	BlueScope Steel – Analysis and Mechanical tests	

Optional supply conditions may be subject to dimensional restrictions
* Plates less than 8mm in thickness are supplied with trimmed edges

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CHEMICAL COMPOSITION

Element	Guaranteed Maximum %	Typical % Thickness (mm)				
		5 ≤ t < 10	10 ≤ t < 40	40 ≤ t ≤ 100	100 < t ≤ 115	115 < t ≤ 150
Carbon	0.22	0.155	0.14	0.09	0.15	0.15
Silicon	0.55	0.15	0.2	0.40	0.30	0.35
Manganese	1.70	0.65	1.10	1.40	1.20	1.35
Phosphorus	0.040	0.020	0.020	0.020	0.020	0.020
Sulfur	0.030	0.010	0.010	0.003	0.01	0.003
Chrome	0.25	0.023	0.023	0.023	0.023	0.023
Nickel	0.50	0.021	0.021	0.021	0.021	0.021
Copper	0.40	0.017	0.017	0.017	0.017	0.017
Molybdenum	0.10	0.002	0.002	0.002	0.002	0.002
Aluminium	0.100	0.030	0.025	0.030	0.025	0.035
Titanium	0.40	-	0.018	0.018	0.018	0.018
CEQ (IIW)	0.44	0.27	0.33	0.33	0.35	0.39

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

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

MECHANICAL PROPERTIES

Tensile Properties (Transverse)		Thickness (mm)				
		5 ≤ t ≤ 8	8 < t ≤ 12	12 < t ≤ 50	50 < t ≤ 80	80 < t ≤ 150
Yield Strength (MPa)	Guaranteed Min	280	260	250	240	240
	Typical	310 - 480	300 - 400	290 - 480	270 - 350	270 – 350
Tensile Strength (MPa)	Guaranteed Min	410	410	410	410	410
	Typical	430 - 540	430 - 530	420 - 510	430 - 490	430 – 490
Elong. On 5.65√S_0 (%)	Guaranteed Min	22	22	22	22	22
	Typical	23 - 38	26 - 45	26 - 42	29 - 40	49 - 38

Charpy Impact Properties	Longitudinal at -20°C on 10 x 10mm Specimen	Absorbed Energy (joules)	
		Av. Of 3	Ind.
Guaranteed Min		27	20
Typical t ≤ 40mm		35 - 130	30 - 180
t > 40mm		100 250	60 - 280

WELDABILITY

	Guaranteed maximum	Typical Group / Thickness (mm)		
		5 ≤ t < 32	32 ≤ t < 50	50 ≤ t ≤ 150
Group 4	4	1	2	3

Refer to WTIA Technical Note 1 or AS/NZS 1554.1

FORMABILITY

Thickness (mm)	Long	Trans
t ≤ 6	1.5t	1.0t
6 < t ≤ 10	2.25t	1.5t
10 < t ≤ 20	3.0t	2.0t
20 < t ≤ 50	6.0t	4.0t
t > 50	Hot form	

Recommended min. inside radii

HARDNESS

Typical
120 – 160BHN