AS/NZS 3678 - 250

XLERPLATE® steel

DATE: AUGUST 2009

PRODUCT DESCRIPTION

- A medium strength structural steel plate product with nominal yield strength of 250 MPa

SUPPLY CONDITIONS

- Thickness Range: 5mm – 150mm
- Availability: Plate is available in standard sizes. For sizes outside the standard plate offer refer to XLERPLATE® steel Size Schedule 1
- Edge Condition: Trimmed / Untrimmed (Mill Edge)
- Tolerances: AS1365
- Ultrasonic Inspection: AS1710 available
- Surface Inspection: BlueScope Steel (third party available)
- Certification: BlueScope Steel (third party endorsed available)

TYPICAL USES

- General fabrication
- Structural members
- High-rise buildings
- Bridges
- Storage tanks

FEATURES & BENEFITS

- Guaranteed minimum strength levels
- Excellent weldability
- Excellent formability

WARNINGS

- This material should be used in conjunction with the appropriate structural design and welding standards.
- An untrimmed (Mill) edge may contain minor surface discontinuities as a result of the rolling process (refer Clause 7 AS/NZS 3678). It is recommended that a minimum of 50mm be removed from each untrimmed edge.
- Where impact testing is required refer to AS/NZS 3678 - 250L15.

NEAREST OVERSEAS SPECIFICATIONS

ASTM A36 ISO 630-Fe430A/Fe430B JISG 3101-SS400 JISG 3106-SM400A EN 10025-2-S235JR

For more information contact:

BlueScope Steel Direct
Phone: 1800 800 789
Email: steeldirect@bluescopesteel.com
Website: www.xlerplate.com.au

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CHEMICAL COMPOSITION					
Element	Guaranteed Maximum %(2)	Typical % / Thickness (mm)			
		5 ≤ t < 32	32 ≤ t < 50	50 ≤ t ≤ 115	115 < t < 150
Carbon	0.22	0.155	0.14	0.15	0.15
Silicon	0.55	0.15	0.20	0.30	0.35
Manganese	1.70	0.65	1.10	1.20	1.35
Phosphorus	0.040	0.020	0.020	0.020	0.020
Sulfur	0.030	0.010	0.010	0.010	0.003
Aluminium	0.100	0.025	0.035	0.025	0.035
Titanium	0.040	–	0.018	0.018	0.018
CEQ (IIW) (1)	0.43 (3)	0.27	0.32	0.36	0.39

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

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

(3) This is lower than the AS/NZS 3678 maximum

MECHANICAL PROPERTIES							
Tensile Properties (Transverse)		Thickness Range (mm)					
		6 < t ≤ 8	8 < t ≤ 12	12 < t ≤ 50	50 < t ≤ 80	80 < t ≤ 115	115 < t ≤ 150
Guaranteed Min.	Yield Strength (MPa)	280	260	250	240	230	230
	Tensile Strength (MPa)	410	410	410	410	410	410
	Elong. on 5.65 √ So (%)	22	22	22	22	22	22
Typical	Yield Strength (MPa)	290 - 480	280 - 400	260 - 370	240 - 320	230 - 310	230 - 310
	Tensile Strength (MPa)	420 - 540	420 - 500	420 - 500	430 - 490	430 - 480	430 - 480
	Elong. on 5.65 √ So (%)	23 - 45	26 - 42	26 - 40	26 - 34	25 - 34	27 - 33

Charpy Impact Properties - Longitudinal at -15°C on 10 x 10mm specimen	Absorbed Energy (joules)	
	Avg. of 3	Ind.
Typical as rolled	50 - 200	30 - 250

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

(4) Refer to WTIA Technical Note 1 or AS/NZS 1554.1

FORMABILITY (recommended min. inside radii)		
t ≤ 6mm	Long 1.5T	Trans 1.0T
6 < t ≤ 10mm	Long 2.25T	Trans 1.5T
10 < t ≤ 20mm	Long 3.0T	Trans 2.0T
20 < t ≤ 50mm	Long 6.0T	Trans 4.0T
t > 50mm	Hot form	

HARDNESS
Typical
120 - 160 BHN

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