

## 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:

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CHEMICAL COMPOSITION					
Element	Guaranteed Maximum % <sup>(2)</sup>	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) <sup>(1)</sup>	0.43 <sup>(3)</sup>	0.27	0.32	0.36	0.39

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

(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)					
Typical as rolled		Avg. of 3			Ind.		
		50 - 200			30 - 250		

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

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

FORMABILITY (recommended min. inside radii)			HARDNESS
t ≤ 6mm	Long 1.5T	Trans 1.0T	Typical
6 < t ≤ 10mm	Long 2.25T	Trans 1.5T	120 - 160 BHN
10 < t ≤ 20mm	Long 3.0T	Trans 2.0T	
20 < t ≤ 50mm	Long 6.0T	Trans 4.0T	
t > 50mm	Hot form		

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