AS/NZS 3678 - 350

XLERPLATE® steel

DATE: AUGUST 2009

PRODUCT DESCRIPTION

- A high strength structural steel product with nominal yield strength of 350 MPa

SUPPLY CONDITIONS

- Thickness Range: 5mm – 100mm (thicknesses greater than 80mm are available by enquiry)
- Availability: Plate is available in standard sizes. For sizes outside the standard plate offer refer to XLERPLATE® steel Size Schedule 2.
- Edge Condition: Untrimmed (Mill Edge) / Trimmed
- Tolerances: AS/NZS 1365
- Ultrasonic Inspection: AS1710 available
- Surface Inspection: BlueScope Steel (third party available)
- Certification: BlueScope Steel (third party endorsed available)

(1) Optional supply condition. May be subject to size range restrictions.

TYPICAL USES

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

FEATURES & BENEFITS

- Guaranteed minimum strength levels
- Excellent weldability
- Good formability

WARNINGS

- This material should be used in conjunction with the appropriate structural design and welding standards.
- Maximum recommended temperature for hot forming 620°C. If heated above 620°C, mechanical properties may deteriorate.
- 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 - 350L15.

NEAREST OVERSEAS SPECIFICATIONS

ASTM A572-50 ISO 630-E355B JISG 3106-SM490A EN 10025-2-S355JR

For more information contact:

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CHEMICAL COMPOSITION						
Element	Guaranteed Maximum % (2)	Typical % Thickness (mm)				
		5 ≤ t	5 < t < 8	8 ≤ t ≤ 25	25 < t ≤ 80	80 < t ≤ 100 (3)
Carbon	0.22	0.155	0.14	0.15	0.09	0.13
Silicon	0.55	0.15	0.20	0.30	0.35	0.45
Manganese	1.70	0.65	1.10	1.20	1.50	1.50
Phosphorus	0.040	0.020	0.020	0.020	0.020	0.020
Sulfur	0.030	0.010	0.010	0.010	0.010	0.003
Aluminium	0.100	0.030	0.035	0.025	0.035	0.035
Micro alloys - Nb (4)	0.150	-	-	-	0.025	0.015
(when added) - Ti	0.040	-	0.018	0.018	0.018	0.018
CEQ (IIW) (1)	0.48	0.27	0.33	0.36	0.35	0.41

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

(2) All values shown refer to the relevant Australian Standard unless stated otherwise
(3) Additional Alloys 0.2 Ni, 0.3 Cu
(4) Niobium + Vanadium + Titanium ≤ 0.15%

MECHANICAL PROPERTIES							
Tensile Properties (Transverse)		Thickness Range (mm)					
		8 ≤ t	8 < t ≤ 12	12 < t ≤ 20	20 < t ≤ 25	25 < t ≤ 80	80 < t ≤ 100
Guaranteed Min.	Yield Strength (MPa)	360	360	350	340	340	330
	Tensile Strength (MPa)	450	450	450	450	450	450
	Elong. on 5.65 $\sqrt{So}$ (%)	20	20	20	20	20	20
Typical	Yield Strength (MPa)	410 - 540	380 - 440	360 - 420	350 - 440	350 - 420	350 - 410
	Tensile Strength (MPa)	480 - 590	470 - 550	470 - 550	470 - 550	460 - 530	500 - 550
	Elong. on 5.65 $\sqrt{So}$ (%)	20 - 33	22 - 35	23 - 33	23 - 33	25 - 35	25 - 35

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

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WELDABILITY						
	Guaranteed Maximum	Typical Group / Thickness (mm)				
		5 ≤ t	5 < t < 8	8 ≤ t ≤ 25	25 < t ≤ 80	80 < t ≤ 100
Group 5 (5)	5	1	2	3	3	4

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

FORMABILITY (recommended min. inside radii)		
t ≤ 20mm	Long 3.0T	Trans 2.0T
20 < t ≤ 25mm	Long 3.75T	Trans 2.5T
t ≤ 25mm	Hot form (max 620°C)	

HARDNESS
Typical
140 - 180 BHN

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