

## GENERAL DESCRIPTION

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

## AUSTRALIAN STANDARDS

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

## TYPICAL USES

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

## FEATURES & BENEFITS

- Guaranteed minimum strength levels
- Excellent weldability
- Good formability
- ACRS accreditation (ACRS Certificate No. 120802)

## 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
- An untrimmed (Mill) edge may contain minor surface discontinuities as a result of the rolling process (refer to clause 9 AS/NZS 3678). It is recommended that a minimum of 50mm be removed from each untrimmed edge

## NORMAL / OPTIONAL SUPPLY CONDITIONS

	Normal	Optional
Thickness Range	5mm – 80mm	>80 – 100 mm by enquiry only
Availability	Plate is available in standard sizes	For sizes outside standard offer refer to XLERPLATE® steel size schedule 2
Edge Condition	Untrimmed (Mill Edge)*	Trimmed
Tolerances	AS/NZS 1365: 1996	
Ultrasonic Inspection		AS 1710: 2007 available
Surface Inspection	BlueScope Steel	(third party available)
Certification	BlueScope Steel	(third party endorsed available)

Optional supply conditions may be subject to dimensional restrictions

\* Plates less than 8mm in thickness are supplied with trimmed edges

## CHEMICAL COMPOSITION

Element	Guaranteed Maximum %	Typical % Thickness (mm)				
		t = 5	5 < t ≤ 8	8 < t ≤ 25	25 < t ≤ 80	80 < t ≤ 100
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
Chrome	0.25	0.023	0.023	0.023	0.027	0.023
Nickel	0.50	0.021	0.021	0.021	0.027	0.20
Copper	0.40	0.017	0.017	0.017	0.010	0.30
Molybdenum	0.35	0.002	0.002	0.002	0.002	0.002
Aluminium	0.100	0.030	0.035	0.030	0.035	0.035
Niobium*	0.150	-	-	-	0.024	0.015
Titanium	0.040	-	0.018	0.018	0.018	0.018
CEQ (IIW)	0.48	0.27	0.33	0.36	0.35	0.41

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)					
		t ≤ 8	8 < t ≤ 12	12 < t ≤ 20	20 < t ≤ 25	25 < t ≤ 80	80 < t ≤ 100
Yield Strength (MPa)	Guaranteed Min	360	360	350	340	340	330
	Typical	360 - 540	360 - 470	350 - 440	350 - 440	380 - 670	340 - 420
Tensile Strength (MPa)	Guaranteed Min	450	450	450	450	450	450
	Typical	480 - 570	470 - 560	470 - 540	470 - 540	470 - 540	510 - 570
Elong. On 5.65√S <sub>0</sub> (%)	Guaranteed Min	20	20	20	20	20	20
	Typical	21 - 35	22 - 40	23 - 37	23 - 36	23 - 36	23 - 36

Charpy Impact Properties	Longitudinal at 0°C on 10 x 10mm Specimen	Absorbed Energy (joules)	
		Av. Of 3	Ind.
		Guaranteed Min	27
Typical	50 - 200	30 - 250	

## WELDABILITY

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

Refer to WTIA Technical Note 1 or AS/NZS 1554.1

## FORMABILITY

Thickness (mm)	Long	Trans
t ≤ 20mm	3.0t	2.0t
20 < t ≤ 25mm	3.75t	2.5t
t ≤ 25mm	Hot form (max 620°C)	

Recommended min. inside radii

## HARDNESS

Typical
140 – 180 BHN