

Plate – PL

Structural - S

GENERAL DESCRIPTION

A structural steel plate product suitable for low temperature applications with nominal yield strength of 300MPa 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 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	8mm – 40mm	
Availability	By enquiry	
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	Third party endorsed

Optional supply conditions may be subject to dimensional restrictions

CHEMICAL COMPOSITION

Element	Guaranteed Maximum %	Typical % Thickness (mm)
		8 ≤ t ≤ 40
Carbon	0.22	0.15
Silicon	0.55	0.20
Manganese	1.70	1.20
Phosphorus	0.040	0.020
Sulfur	0.030	0.010
Chrome	0.25	0.023
Nickel	0.50	0.021
Copper	0.40	0.017
Molybdenum	0.10	0.002
Aluminium	0.100	0.025
Titanium	0.040	0.018
CEQ (IIW)	0.44	0.33

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)		
		8 ≤ t ≤ 12	12 < t ≤ 20	20 < t ≤ 40
Yield Strength (MPa)	Guaranteed Min	310	300	280
	Typical	330 - 470	330 - 440	300 - 410
Tensile Strength (MPa)	Guaranteed Min	430	430	430
	Typical	460 - 550	460 - 540	440 - 530
Elong. On 5.65√S ₀ (%)	Guaranteed Min	21	21	21
	Typical	24 - 40	24 - 36	24 - 34

Charpy Impact Properties	Longitudinal at -15°C on 10 x 10mm Specimen	Absorbed Energy (joules)	
		Av. Of 3	Ind.
	Guaranteed Min	27	20
	Typical	35 - 200	30 - 200

WELDABILITY

Group	Guaranteed Maximum	Typical Group Thickness (mm)
		8 ≤ t ≤ 40
Group 4	4	2

Refer to WTIA Technical Note 1 or AS/NZS 1554.1

FORMABILITY

Thickness (mm)	Long	Trans
8 < t ≤ 10	2.25t	1.5t
10 < t ≤ 20	3.0t	2.0t
20 < t ≤ 40	6.0t	4.0t

Recommended min. inside radii

HARDNESS

Typical
120 – 160 BHN