

This literature supersedes all previous issues

Plate – PL

Structural - S

GENERAL DESCRIPTION

Structural weather resistant steel with nominal yield strength of 350MPa for thicknesses from 8 to 80mm with guaranteed impact performance at 0 °C.

AUSTRALIAN STANDARDS

AS/NZS 3678: 2011

AS/NZS 1365: 1996

TYPICAL USES

- Railway rolling stock and storage hoppers / bins
- Architectural features
- Bridges

FEATURES & BENEFITS

- Enhanced weather resistance
- Guaranteed minimum strength levels
- Good formability
- Good toughness
- ACRS accreditation (ACRS Certificate No. 120802)

WARNINGS

- This material should be used in conjunction with the appropriate structural design and welding standards
- The weather resistance of this material is due to the formation of an impervious oxide layer through the use of alloy additions. Damage to this layer, or environmental conditions affecting the development of this layer, will impact on the effectiveness of the corrosion resistance
- Colour retention across welds can be achieved by appropriate electrode selection. Welds may be susceptible to hot cracking
- Weathering steels are not recommended without further protection for buried or submerged situations or for applications exposed to concentrated industrial fumes or severe marine conditions
- Oxide staining of surrounding areas may occur due to run-off from this material
- Refer to BlueScope Technical Bulletin No. 26 for more information regarding the use of this material

NORMAL / OPTIONAL SUPPLY CONDITIONS

	Normal	Optional
Thickness Range	8mm – 50mm	>50mm available as Mod grade
Availability	By enquiry only	
Edge Condition	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

Australia 1800 800 789

XLERPLATE® steel, XLERPLATE LITE® steel and BlueScope are trade marks of BlueScope Steel Limited ABN 16 000 011 058.

Please ensure you have the current data sheet for this product as displayed at www.steel.com.au



CHEMICAL COMPOSITION

Element	Guaranteed Maximum %	Typical % Thickness (mm)		
		8 ≤ t ≤ 20	20 < t ≤ 50***	50 < t ≤ 80
Carbon	0.14	0.09	0.08	0.095
Silicon	0.75	0.45	0.25	0.40
Manganese	1.70	0.80	1.05	1.35
Phosphorus	0.16	0.09	0.015	0.015
Sulfur	0.030	0.010	0.008	0.008
Chromium	1.05	0.70	0.55	0.55
Nickel	0.55	0.20	0.20	0.30
Copper	0.50	0.25	0.30	0.35
Molybdenum	0.10	0.002	0.003	0.003
Aluminium	0.100	0.030	0.030	0.035
Niobium**	0.025	-	0.020	0.020
Titanium	0.040	0.015	0.018	0.018
CEQ (IIW)	0.49*	0.39	0.41	0.47

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

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

* Values shown refer to the BlueScope Steel internal standard

** Niobium + Titanium + Vanadium ≤ 0.15%

*** This chemistry may also be used in thicknesses 10-20mm depending on the application.

MECHANICAL PROPERTIES

Tensile Properties (Transverse)		Thickness (mm)					
		t ≤ 8	8 < t ≤ 12	12 < t ≤ 20	20 < t ≤ 40	40 < t ≤ 50	50 < t ≤ 80
Yield Strength (MPa)	Guaranteed Min	340	340	340	340	340	340
	Typical	420 - 620	380 - 480	360 - 440	380 - 480	360 - 440	N/A
Tensile Strength (MPa)	Guaranteed Min	450	450	450	450	450	450
	Typical	510 - 640	490 - 580	480 - 530	490 - 580	480 - 550	N/A
Elong. On 5.65√S ₀ (%)	Guaranteed Min	20	20	20	20	20	20
	Typical	20 - 39	28 - 39	28 - 35	22 - 39	28 - 35	N/A

Charpy Impact Properties	Longitudinal at 0° C (10 X10)	Absorbed Energy (joules)	
		Av. of 3	Ind.
	Guaranteed Min	27	20
	Typical	50 - 280	30 - 240

FORMABILITY

Thickness (mm)	Long	Trans
t ≤ 10	3.0t	2.0t
10 < t ≤ 20	4.5t	3.0t
t > 20	Hot form (max 620°C)	

Recommended min. inside radii

HARDNESS

Typical
140 - 190 BHN

WELDABILITY

Group
5

Refer to WTIA Technical Note 1 or AS/NZS 1554.1