

## AS/NZS 3678 - WR350

### XLERPLATE® steel

**DATE:** AUGUST 2009

#### PRODUCT DESCRIPTION

- Structural weather resistant steel with nominal yield strength of 350 MPa

#### SUPPLY CONDITIONS

- Thickness Range: 8mm – 20mm
- Availability: By enquiry only
- Edge Condition: Trimmed
- Tolerances: AS1365
- Ultrasonic Inspection: AS1710 available
- Surface Inspection: BlueScope Steel (third party available)
- Certification: BlueScope Steel (third party endorsed available)

#### TYPICAL USES

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

#### FEATURES & BENEFITS

- Enhanced weather resistance
- Guaranteed minimum strength levels
- Good formability

#### 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.

#### NEAREST OVERSEAS SPECIFICATIONS

EN 10025-5-S355J0WP    ASTM A242 TYPE 1    JISG 3125-SPA-H    CORTEN A

#### For more information contact:

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CHEMICAL COMPOSITION		
Element	Guaranteed Maximum % <sup>(2)</sup>	Typical % Thickness (mm)
		6 ≤ t ≤ 20
Carbon	0.14	0.09
Silicon	0.15 - 0.75	0.45
Manganese	1.70	0.80
Phosphorus	0.055 - 0.16	0.09
Sulfur	0.030	0.010
Aluminium	0.100	0.030
Nickel	0.55	0.20
Chromium	0.35 - 1.05	0.70
Copper	0.15 - 0.50	0.25
CEQ (IIW) <sup>(1)</sup>	0.49 <sup>(3)</sup>	0.39

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

(2) All values shown refer to the relevant Australian Standard unless stated otherwise.

(3) Values shown refer to the BlueScope Steel internal standard.

MECHANICAL PROPERTIES				
Tensile Properties (Transverse)		Thickness Range (mm)		
		t ≤ 8	8 < t ≤ 12	12 < t < 20
Guaranteed Min.	Yield Strength (MPa)	340	340	340
	Tensile Strength (MPa)	450	450	450
	Elong. on 5.65 √ So (%)	20	20	20
Typical	Yield Strength (MPa)	420 - 620	380 - 480	360 - 440
	Tensile Strength (MPa)	510 - 640	490 - 580	480 - 530
	Elong. on 5.65 √ So (%)	20 - 35	28 - 39	28 - 34
Typical Charpy Impact Energy Properties	Longitudinal at -0°C	Absorbed Energy (joules)		
		Avg. of 3	Ind.	
Typical	WR350 (10 x 10mm)	50 - 130	30 - 160	
	(10 x 5mm)	30 - 60	25 - 90	

FORMABILITY (recommended min. inside radii)		HARDNESS	WELDABILITY
Long 3.0T	Trans 2.0T	Typical	Group 5 <sup>(4)</sup>
		140 - 190 BHN	

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