

GENERAL DESCRIPTION

A heat treatable grade for general engineering applications

AUSTRALIAN STANDARDS

AS/NZS 3678: 2011

AS/NZS 1365: 1996

TYPICAL USES

- General engineering parts
- Profile cut gears
- Wear / abrasion applications

FEATURES & BENEFITS

- Abrasion / wear properties improved on heat treatment

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
- This grade is supplied in the as rolled condition. Specific applications may require heat treatment

NORMAL / OPTIONAL SUPPLY CONDITIONS

	Normal	Optional
Thickness Range	10mm – 100mm	
Availability	Available in standard sizes	Sizes outside standard plate offer are available by enquiry
Edge Condition	Untrimmed (Mill Edge)	
Tolerances	AS/NZS 1365: 1996	
Ultrasonic Inspection		AS 1710: 2007 available
Surface Inspection	BlueScope Steel	Third party
Certification	BlueScope Steel	Third party endorsed

Optional supply conditions may be subject to dimensional restrictions

Plate – PL

Analysis - A

CHEMICAL COMPOSITION

Element	Guaranteed Maximum %	Typical % Thickness (mm)
		10 ≤ t ≤ 100
Carbon	0.47	0.43
Silicon	0.50	0.25
Manganese	0.90	0.75
Phosphorus	0.040	0.020
Sulfur	0.040	0.013
Chrome*	0.25	0.023
Nickel*	0.50	0.021
Copper*	0.40	0.017
Molybdenum*	0.10	0.002
Aluminium	0.10	0.025
Titanium	0.040	0.003
CEQ (IIW)	-	0.56

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

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

* Chrome + Nickel + Copper + Molybdenum ≤ 1.00%

MECHANICAL PROPERTIES

Tensile Properties (Transverse)		Thickness (mm)
		10 ≤ t ≤ 100
Yield Strength (MPa)	Guaranteed Min	-
	Typical	300 – 380
Tensile Strength (MPa)	Guaranteed Min	-
	Typical	600 – 670
Elong. On 5.65√S ₀ (%)	Guaranteed Min	-
	Typical	16 - 28

OIL QUENCH DATA*

Typical	YS (MPa)	TS (MPa)	% Elong 5.65√So	Hardness	
				HRC	BHN
H850°C + Q + T 400°C	820	1000	11	36	324
H850°C + Q + T 500°C	715	895	15	28	284
H850°C + Q + T 600°C	700	820	21	22	241

WATER QUENCH DATA*

Typical	YS (MPa)	TS (MPa)	% Elong 5.65√So	Hardness	
				HRC	BHN
H840°C + Q + T 400°C	1275	1310	12	43	400
H840°C + Q + T 500°C	970	1025	16	34	313
H840°C + Q + T 600°C	770	825	21	27	262

* Typical test results from limited trials on 10mm plate. Customers should establish by own evaluation the suitability of the product for the required application and the mechanical properties achieved from their own heat treatment method

FORMABILITY

Hot forming
Recommended

HARDNESS

Typical
160 – 220 BHN

WELDABILITY

Group
8

Refer to WTIA Technical Note 1 or AS/NZS 1554.1.

Australia 1800 800 789

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

