



XLERPLATE[®] steel

SA/AS 1548 – PT490NR (L20)

General description

A fully killed, fine grained, carbon-manganese steel for boiler and pressure vessel applications, with a guaranteed minimum tensile strength of 490MPa. Produced by normalised rolling.

Features & benefits

- Grades with elevated temperature properties available
- Grades available with guaranteed low temperature properties
- Excellent weldability
- Excellent formability
- This grade is recognised in the ASME material codes
- NR grades may be ordered mechanically tested in the normalised condition. This is designated NRA. See PT490NRA datasheet

Warnings

- This material should be used in conjunction with the appropriate pressure vessel design and welding standards
- Guidelines for cold bending, where fracture toughness is important are given in AS 4100:1998 and AS 1210:2010.

Australian standards

AS 1548:2008
AS/NZS 1365:1996
ISO 9001:2015 Quality System certified

Normal / optional supply conditions

	Normal	Optional
Thickness Range	10mm – 60mm	-
Availability	By enquiry only	-
Edge Condition	Trimmed	-
Tolerances	Thickness : AS1548:2008 Others : AS/NZS 1365:1996	-
Ultrasonic Inspection	-	AS 1710:2007
Surface Inspection	BlueScope	Third party
Certification	BlueScope	Third party endorsed

Optional supply conditions may be subject to dimensional restrictions

Chemical composition

Element	Guaranteed Maximum %
Carbon	0.20
Silicon	0.6
Manganese	1.70
Phosphorus	0.040
Sulfur	0.030
Chromium	0.25
Nickel	0.50
Copper	0.40
Molybdenum	0.10
Aluminium	0.10
Niobium	0.050
Titanium	0.040
CEQ (IIW)	0.46

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)		
		t ≤ 16	16 < t ≤ 40	40 < t ≤ 60
Yield Strength (MPa)	Guaranteed Min	360	340	330
Tensile Strength (MPa)	Required	490 to 610	490 to 610	490 to 610
Elongation 5.65√S ₀ (%)	Guaranteed Min	20	20	20

Charpy Impact Properties	Longitudinal on 10 X 10 mm test piece	Test Temperature (°C)	Absorbed Energy (joules)	
			Avg. of 3	Individual
Guaranteed Min	490NR	-20	55	43
Guaranteed Min	490NRL20	-20	55	43

Formability	Thickness (mm)	Longitudinal	Transverse
Recommended min inside Radius	t < 16	3.0t	2.0t
	16 ≤ t ≤ 40	6.0t	4.0t
	t > 40	Hot Forming	

This product is not suitable for hot forming above 620 °C.

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

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For more information contact Steel Direct



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