

XLERPLATE[®] steel

SA/AS 1548 – PT490N (L20, L40, L50)

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 hot rolling and normalising.

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

Warnings

This material should be used in conjunction with the appropriate pressure vessel design and welding standards.

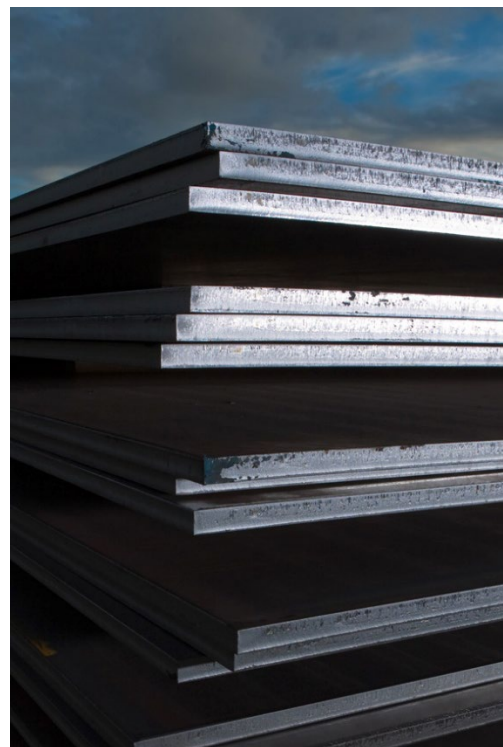
Guidelines for cold bending, where fracture toughness is important are given in AS 4100:2020 and AS 1210:2010.

Australian and International Standards

AS 1548:2008 (R2018)

AS/NZS 1365:1996 (R2016)

ISO 9001:2015 Quality System Certified



Normal / optional supply conditions

	Normal	Optional
Thickness Range	PT490N:10mm – 100mm PT490NL20: 10mm – 100mm PT490NL40: 10mm – 80mm PT490NL50: 10mm – 80mm	-
Availability	By enquiry only	-
Edge Condition	Trimmed	-
Tolerances	Thickness: AS 1548:2008 (R2018) Others: AS/NZS 1365:1996 (R2016)	-
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 ≤ 80	80 < t ≤ 100
Yield Strength (MPa)	Guaranteed Min	360	340	330	320
Tensile Strength (MPa)	Required	490 to 610	490 to 610	490 to 610	490 to 610
Elongation 5.65√S₀ (%)	Guaranteed Min	20	20	20	20

Charpy Impact Properties	Longitudinal on 10 x 10mm test piece	Test Temperature (°C)	Absorbed Energy (joules)	
			Avg. of 3	Individual
Guaranteed Min	490N	0	55	43
Guaranteed Min	490NL20	-20	55	43
Guaranteed Min	490NL40	-40	45	33
Guaranteed Min	490NL50	-50	42	31

Formability	Thickness (mm)	Longitudinal	Transverse
Recommended min inside Radius	t ≤ 20	3.0t	2.0t
	20 < t ≤ 50	6.0t	4.0t
	t > 50	Hot Forming	

Fire hazard properties

Test & Evaluation Method	Result
Combustibility test for materials (AS 1530.1-1994 (R2016))	Not deemed combustible (steel substrate) #

These test results relate only to the behaviour of the test specimens of the material under the particular conditions of the test and they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use.

steel.com.au

To ensure you have the most current information

1800 024 402

steeldirect@bluescopesteel.com
For more information contact Steel Direct



The information contained in this datasheet is provided by way of general information about this product only, and has not been prepared with your specific needs in mind. We recommend that you seek BlueScope's advice as to the suitability of this product for the purpose(s) for which you propose to use it. To contact BlueScope for advice about your proposed use of this product, please contact Steel Direct. XLERPLATE®, BlueScope and the BlueScope brand mark are registered trade marks of BlueScope Steel Limited. © 2019 BlueScope Steel Limited ABN 16 000 011 058. All rights reserved.