



# XLERPLATE<sup>®</sup> steel

## AS 1548 – PT460T (L0, 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 460MPa. Produced by thermo-mechanical controlled rolling.

### Features & benefits

- Guaranteed minimum strength levels
- Grades available with guaranteed low temperature properties
- Excellent weldability
- Excellent formability
- Alternative to normalised grades where good toughness is required

### 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.
- This grade is not recognised in the ASME material code and does not carry the 'SA' prefix
- This grade is not suitable for hot forming above 620°C. Where hot forming is required use AS 1548 – PT460NR / NRA / N.

### Australian standards

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

### Normal / optional supply conditions

	Normal	Optional
<b>Thickness Range</b>	PT460T: 6mm – 80mm PT460TL0: 6mm – 80mm PT460TL20: 6mm – 40mm PT460TL40: 10mm – 40mm PT460TL50: 10mm – 40mm	-
<b>Availability</b>	By enquiry only	-
<b>Edge Condition</b>	Trimmed	-
<b>Tolerances</b>	Thickness: AS1548: 2008 Others: AS/NZS 1365: 1996	-
<b>Ultrasonic Inspection</b>	-	AS 1710: 2007
<b>Surface Inspection</b>	BlueScope	Third party
<b>Certification</b>	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**	0.010
Titanium	0.040
CEQ (IIW)	0.43

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

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

\*\* Niobium up to 0.030% may be added for L20, L40 and L50 designations

## Mechanical properties

Tensile Properties (Transverse)		Thickness (mm)		
		t ≤ 16	16 < t ≤ 40	40 < t ≤ 80
Yield Strength (MPa)	Guaranteed Min	305	295	275
Tensile Strength (MPa)	Required	460 to 580	460 to 580	460 to 580
Elongation 5.65√S <sub>0</sub> (%)	Guaranteed Min	21	21	21

Charpy Impact Properties	Longitudinal on 10 X 10 mm test piece	Test Temperature (°C)	Absorbed Energy (joules)	
			Avg. of 3	Individual
Guaranteed Min	460T	0	31	23
Guaranteed Min	460TL0	0	51	38
Guaranteed Min	460TL20	-20	47	35
Guaranteed Min	460TL40	-40	45	33
Guaranteed Min	460TL50	-50	42	31

Formability	Thickness (mm)	Longitudinal	Transverse
Recommended min inside Radius	t ≤ 20	2.5t	2.0t
	20 < t ≤ 40	6.0t	4.0t

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