

### ASTM A 516 Pressure Vessel Quality Plate

**ASTM A516 is a specification for carbon steel plates for moderate and low temperature service. The plates are generally used for the construction of welded pressure vessels when an improvement in notch toughness is required.**

ASTM A516 (or ASME SA516) is available in four grades: 55, 60, 65 and 70. Tensile strengths range from 380MPa to 620MPa depending on the grade. Oakley Steel supplies Grade 60 and Grade 70.

Whilst it is possible for very thick plates (200mm) to be produced that meet the requirements of the standard the thickest generally available plates are 150mm.

A516 steel plate is killed and has a fine austenitic grain size. Plates less than 40mm thick can be supplied as rolled or normalised, whereas plates over 40mm thick are normalised.

- Thickness: 4 - 200mm
- Width: 1500mm, 2000mm, 2055mm, 2500mm, 3000mm, 4000mm\*
- Length: 6000mm, 8000mm, 10000mm, 12000mm, 14000mm\*

### Chemical Properties

	Composition (%)		
	A516 Grade 60	A 516 Grade 65**	A16 Grade 70
<b>Carbon (C) (Max)</b>			
≤12.5mm Thick	0.21	0.24	0.27
>12.5mm - ≤50mm Thick	0.23	0.26	0.28
>50mm - ≤100mm Thick	0.25	0.28	0.30
>100mm - ≤200mm Thick	0.27	0.29	0.31
>200mm Thick	0.27	0.29	0.31
<b>Manganese (Mn)</b>			
≤12.5mm Thick			
Heat Analysis	0.6-0.9	0.85-1.2	0.85-1.2
Product Analysis	0.55-0.98	0.79-1.3	0.79-1.3
>12.5mm Thick			
Heat Analysis	0.85-1.2	0.85-1.2	0.85-1.2
Product Analysis	0.79-1.3	0.79-1.3	0.79-1.3
<b>Phosphorous (P)(max)</b>	0.035	0.035	0.035
<b>Sulphur (S) (max)</b>	0.035	0.035	0.035
<b>Silicon (Si)</b>			
Heat Analysis	0.15-0.4	0.15-0.4	0.15-0.4
Product Analysis	0.13-0.45	0.13-0.45	0.13-0.45
Product Analysis	0.13-0.45	0.13-0.45	0.13-0.45

### Mechanical Properties

	A516 Grade 60	A 516 Grade 65**	A16 Grade 70
Tensile Strength (ksi)	60-80	65-85	70-90
Tensile Strength (MPa)	415-550	450-585	485-620
Yield Strength (ksi)	32	35	38
Yield Strength (MPa)	220	240	260
Elongation in 200mm (%)	21	19	17
Elongation in 50mm (%)	25	23	21
Max Thickness (mm)	205	205	205

\*subject to availability

\*\*A516 Grade 65 is only supplied with HIC resistance



## Carbon and low alloy boiler and pressure vessel steel plate

quality steel supplied for: oil & gas, petrochemical & process, construction & shipbuilding industries