

We are also able to offer the following steel:

- **Wear and abrasion resistant steel plate – to 400 and 500HB**
- **High yield steel plate S690QL, S890QL and S960QL**
- **Shipbuilding plate to AH36, DH36 and EH36.**

Wear Resistant Plate

Wear resistant steel is used in areas where there is likely to be a high degree of abrasion or wear of the steel plate. Typical applications are in truck beds, attachments to diggers and earth movers and in processing applications in the mining industry.

The key quality for wear resistant steels is their hardness. We sell wear plate according to its hardness measured on the Brinnell Hardness Test – usually in 400HB and 500HB grades. If your specification is to the Rockwell Test we can also advise.

Steels with a high HB rating (Brinell Hardness) are intended for applications where wear or abrasion resistance is important. The benefit of using an abrasion resistant steel is that the working life of the plant, machinery or construction can be considerably extended. This can significantly improve the reliability, durability and safety of structures and equipment. It also helps to reduce the maintenance costs associated with wear and breakdown of plant.

400 HB steel is over 3 times harder than mild steel (120HB), but only a third as hard as stainless steel (1250HB). Example uses are for construction machinery, skips, bulldozers and excavators, buckets and conveyors.

The steel is quenched which provides wear resistance; in order to improve hardness it may also be tempered. Lower HB's generally provide good cold bending properties and good weldability. Weldability is not generally reduced as the hardness increases.

Wear resistant steels are not appropriate for use at temperatures over 250°C as the heat can cause changes to the material properties.

Testing is undertaken by firing a 10mm steel or tungsten carbide ball at 29kN and the size of the resulting indentation is measured. Tests are carried out according to EN ISO 6506 or ASTM E10.

400 HB

- Thickness: 3 - 120mm
- Width: 1500, 2000, 2055, 3000mm
- Length: up to 12000mm

500 HB

- Thickness: 5 – 100mm
- Width: 1500, 2000, 2055, 3000mm
- Length: up to 12000mm



Carbon and low alloy boiler and pressure vessel steel plate

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

High Yield Plate

High yield quenched and tempered steel plate to EN10025 Part 6 is available for construction purposes from Oakley Steel. We offer plates with yields of 690 MPa, 890 MPa and 960 MPa with thicknesses up to 200mm.

	S690QL (t=16mm)	S890QL (t=16mm)	S960QL (t=16mm)
Tensile Strength (MPa)	770 - 940	910 - 1100	980 - 1150
Yield Point (MPa)	690	890	960
Charpy V-Notch Test Temperature °C	0	0	0
Charpy V-Notch Test Energy J	50	50	50

S690 QL

- Thickness: 3 - 200mm
- Width: 1500, 2000, 2055, 3000mm
- Length: up to 12000mm

S890 QL

- Thickness: 4 - 120mm
- Width: 1500, 2000, 2055, 3000mm
- Length: up to 12000mm

S960 QL

- Thickness: 4 - 100mm
- Width: 1500, 2000, 2055, 3000mm
- Length: up to 12000mm

Shipbuilding Plate

Steel plates to ASTM A131 for shipbuilding are available from Oakley Steel.

A131 covers a number of different grades – some are ordinary strength A, B, D, CS and E, whilst others are higher strength – AH, DH, EH and FH. Oakley Steel supplies AH36, DH36 and EH36 which are chemically similar but which are tested as different temperatures for the Charpy V-Notch test.

The standard composition is as below for AH36, DH36 and EH36:

Element	% Composition
C	0.18
Mn	0.90 – 1.60
Si	0.1 – 0.5
P	0.035
S	0.035
Al	0.015
Nb	0.02 – 0.05
V	0.05 – 0.1
Ti	0.02
Cu	0.35
Cr	0.2
Ni	0.4
Mo	0.08

Maximum carbon equivalent values are 0.38 for plates less than 50mm thick and 0.4 for plates between 50mm and 100mm thick.

	AH36	DH36	EH36
Tensile Strength (ksi)	71 – 90	71 – 90	71 – 90
Tensile Strength (MPa)	490 – 620	490 – 620	490 – 620
Yield Point (ksi)	51	51	51
Yield Point (MPa)	355	355	355
Elongation in 200mm (%)	19	19	19
Elongation in 50mm (%)	22	22	22
Charpy V-Notch Test Temperature	0°C	-20°C	-40°C

AH36

- Thickness: 5 - 150mm
- Width: 1500, 2000, 2055, 3000mm
- Length: up to 12000mm

DH36

- Thickness: 5 - 150mm
- Width: 1500, 2000, 2055, 3000mm
- Length: up to 12000mm

EH36

- Thickness: 5 - 150mm
- Width: 1500, 2000, 2055, 3000mm
- Length: up to 12000mm

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