

High Strength Quenched & Tempered Steel Plate



Brown McFarlane offer the widest range of carbon steel plate, available ex-stock.

High strength quenched and tempered steel plate has the advantage of giving high strength while offering weight reduction in fabrications. At Brown McFarlane we supply a range of sophisticated low alloy steel plates.

Specifications/Grades

- Quend 700
- EN10025
- S690QL
- S890QL
- S960QL

ASME /ASTM grades and specifications are available to order.

Hot forming

It is recommended that the Quend range of steels is NOT hot formed.

Machining

The Quend range can be machined and drilled using high-speed steel or cemented carbide tools. The approximate hardness of the Quend range can be obtained from the Ultimate Tensile Strength and is within the range 240-280 BHN.

Welding

Care should be taken to avoid hydrogen cracking and there are many factors to take into consideration before welding. Full technical guidance for welding is available from the sales/technical team at Brown McFarlane.

Applications

- Bridges
- Cranes
- Forklifts
- Industrial fans
- Military
- Mining equipment
- Quarrying equipment
- Mooring systems
- Offshore fabrications
- Piling
- Vehicle chassis

Key Benefits

- Cut to size.
- Excellent weldability.
- Full technical support for fabrication and design.
- Fully accredited quality systems to ISO 9001, 14001 and 18001.
- High strength to weight ratio significantly reduces weight of overall components.
- Increased critical component lifespan.
- Delivered worldwide by our international logistics organisation.

Available sizes

S690QL/S890QL/S960QL

Thickness: 6mm	Length: 12000mm	Width: 2500mm
Thickness: 8/10/12/12.5/15/16/20/22/25/30/32/35/40mm	Length: 12000mm	Width: 2000/2500/3000mm
Thickness: 45/50/55/60/65/70/75/80mm	Length: 6000mm	Width: 2000/2500/3000mm
Thickness: 90-130mm	Length: 5000mm	Width: 2500mm
Thickness: 140-200mm	Length: 5000mm	Width: 2500mm

Flame Cutting

Q&T steels can be cut satisfactorily using conventional oxy-fuel gas practices, in many cases without the need for preheat, as long as cutting procedures take into account plate thicknesses and CEV. Water jet, where no heat is generated, or plasma cutting can also be used. Care should be taken when cutting underwater as the quenching effect could result in a high hardness edge forming. With all thermal cutting processes care should be taken that cut edges are free from sharp notches.

Cold Bending

Q&T steels can be readily cold formed however the power required will be higher (70%) than that for mild steel of the same thickness. It is recommended that the largest possible bending radius should be used, and generally the inside radius should not be less than 3 times the plate thickness.

Bend axis vs. rolling direction	Minimum inside bending radius	Minimum die opening
Perpendicular	3t	8.5t
Parallel	4t	10t

Weldability and Toughness

	Thickness (mm)	Maximum CEV (%)	Impact Values (min)
EN10025 S690QL	8<t<50	0.65	30J @ -40°C
S690QL	50<t<100	0.77	
S690QL	100<t<150	0.83	
S890QL	0<t<50	0.72	30J @ -40°C
S890QL	50<t<150	0.82	

Mechanical Properties

	Yield MPa min	Tensile MPa	Elongation % min	
EN10025 S690QL	8<t<50	690	770 - 940	14
S690QL	50<t<100	650	760 - 930	14
S690QL	100<t<150	630	710 - 900	14
S890QL	8<t<50	890	940 - 1100	11
S890QL	50mm +	830	880 - 1100	11



Quality steel plate suppliers to the world

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