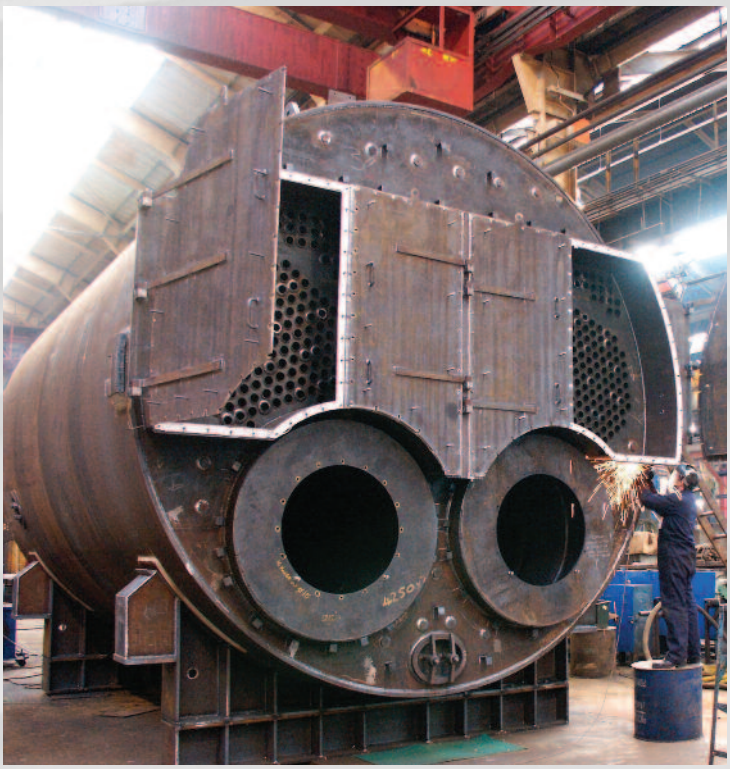
Hydrogen Induced Crack Resistant (HIC) Steel Plate

Brown McFarlane
Global Steel Solutions



Applications

- Condensers
- Dished ends
- Flanges
- Filters
- Heat exchangers
- Line pipe
- Pressure vessels
- Valves

Key Benefits

- Cut to size or profiled to drawing.
- Fully accredited quality systems to ISO 9001, 14001 and 18001.
- HIC resistance guaranteed by Industeel (part of Arcelor Mittal group)
- Over 15,000 tonnes supplied for worldwide projects.
- Sulphide Stress Cracking (SSC) resistance guaranteed by mill.
- Thickness 6 to 105mm, plates sizes up to 12m x 3m.
- Delivered worldwide by our international logistics organisation.

Brown McFarlane offers the widest range of carbon and stainless steel plate, available ex-stock.

It holds a complete range of CarElso HIC Premium+ plate tested for its resistance to hydrogen induced cracking (HIC).

Specifications/Grades

ASME/ASTM SA/A 516 grades 60/65/70. Normalised.

Guaranteed Results

Crack Length Ratio (CLR)	<5%
Crack Thickness Ratio (CTR)	<1.5%
Crack Sensitivity Ratio (CSR)	<0.5%

Tested to NACE TM 0284-03 Solution A

Certification EN10204, 3.2 Lloyds (Available for inspection and approval).

Compatible with the pressure vessel steel specification of all leading oil and gas companies, engineering companies and process licensors.

See the CarElso HIC Premium+ brochure for full details.

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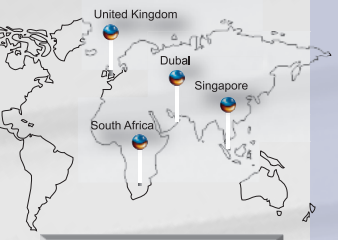

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Available Sizes

ASME/ASTM SA/A 516 Grades 60/65/70

Thickness:6/8/10/13/16/20/25/30/35/40mm	Length:12000mm	Width:2000/2500/3000mm
Thickness: 45/50mm	Length: 9000mm	Width: 2500/3000mm
Thickness: 55/60/65mm	Length: 7000mm	Width: 2000/2500mm
Thickness: 70/75/80mm	Length: 7000mm	Width: 2000/2500mm
Thickness: 90-105mm	Length: 6000mm	Width:3000mm

Chemical Analysis

Max Ceq 0.41% ≤ 50mm, 0.43% > 50mm

Max S 0.001%, P 0.008%, Nb 0.015%, V 0.005%, O 0.002%

All material is made with an Electric Arc Furnace, fully killed, vacuum degassed, with fine grain.

Mechanical Properties

Mechanical and HIC tests after simulated PWHT at 610°C (2 min/mm).
Ambient tensile properties as per standard.

Charpy impact test longitudinal and transverse direction

- At -51°C for thickness <= 25mm (20J average /16J individual)
- At -46°C for thickness >25mm (41J average /34J individual)

NDT

Ultrasonic testing control as per SA 578 level C
with +75mm pitch scanning and +100mm² max defect area.

General Supply Conditions

Normalized 920°C. The material surface is shot blasted to SA 2.5, with low-stress die stamping at two locations: head and foot of plate. In addition, material has identification paint markings on one end and shipping marks. Plates have continuous brand marked on the two long edges.

Additional Testing

We are able to offer supplementary testing to meet particular oil company specifications; this will be carried out by an independent test laboratory.

Processing

- High Definition Plasma: 16m x 4m
- Oxy/Propane: 50m x 6m
- Plate Rolling / Dished Ends

Quality steel plate suppliers to the world