CarElso® HIC Premium+

Brown McFarlane
Global Steel Solutions

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

We hold a complete range of CarElso® HIC Premium + plate specifically manufactured for its resistance to Hydrogen Induced Cracking (HIC).

Key Benefits

- Meets pressure vessel steel specifications of all leading oil & gas companies, engineering companies and process licensors
- Meets NACE MR0175 / MR0103 / ISO 15156-2 requirements
- Enhanced weldability, low carbon equivalent
- Ex-stock availability with the largest available size range
- The full guarantee of the leading HIC resistant pressure vessel plates producer with more than 20 years' experience
- No compromise with safety

Hydrogen induced cracking is of such significance that numerous material specifications have been developed by oil companies and engineering companies. CarElso® HIC Premium+ is designed so that it is compatible with the most stringent of these including:-

- Petrobras N1706
- Saudi Aramco 01-SAMSS-016
- EEMUA 179
- Axens IN-43
- Shell MESC 74/125
- Shell DEP 31.22.10.32

Specifications/Grades

ASTM/ASME A/SA 516 grade 60/65/70 triple certified
Certification EN 10204 3.2

Plate Sizes

ISO 9001 Quality Management
FS 545789

Thicknesses from 6mm to 200mm:-

All positive tolerance, up to 4000mm wide and 14000mm long

Typical chemical composition of finished product

Chemistry

EAF steel making route, fully killed, vacuum degassed, fine grain practice
- max Ceq 0.41% up to 50mm, 0.43% above
- max S .0001%; P .0085; Nb .0.15%; V .005%; O .002%, B O .0005%

Segregation mitigation during casting, deep oxidation to avoid inclusions • Inclusions on shape controlled with no Ca treatment thanks to naturally low suphur, ultralow phospherous levels for enhanced in-service resistance

Mechanical Properties

- Mechanical test after 3 cycles simulated PWHT at 610°C 1hr / 25mm (minimum 1 hour)

Ambient tensile properties as per standard

- Charpy impact test longitudinal and transverse direction
- at -51°C for thickness ≤25mm (20J/16J)
- at -46°C for thickness ≤25mm (41J/34J up to 50mm and 27/20J above)

HIC

- SSC resistant according to NACE MR0175/ISO 15156-2 and NACE MR0103 (hardness ≤ 22HRC / 250HV10)
- HIC tested after 3 cycles simulated PWHT at 610° C 1hr / 25mm (minimum 1 hour)

as per NACE TM 0284-2003 solution A
per heat on thinnest and thickest plate

- Guarantee of max CLR 5% CTR 1.5% CSR 0.5%, on sample average and on each individual specimen, max crack length 5mm on each section - on the entire available thickness range
- ASTM E1268 microexamination on each HIC tested plate
- HIC resistance guaranteed after thermal stress relief

Delivery Conditions

- General requirements as per ASME SA20
- Normalized 920°
- Ultrasonic testing control as per SA 578 level C S1 (100%)
- Low-stress die stamping 2 locations: head and foot of plate
- Identification paint marking one end + shipping marks
- Continuous brand marked 2 long edges
- Surface shot blasted to SA 2.5

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Quality steel plate suppliers to the world

Brown McFarlane International

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