



Enhanced HPHT sour testing facility

Designed and manufactured in-house by TWI

Custom-made high-pressure, high-temperature testing facility designed to emulate real-world conditions for oil and gas research.

Features and benefits

- All test vessels capable of performing aqueous corrosion testing beyond NACE Level VII conditions (ie NaCl conc. 25%, ppH₂S 35 bar, ppCO₂ 35 bar as defined by MR0175/ISO 15156-3) representing the most aggressive downhole conditions
- Testing and qualification of new materials and equipment
- Critical test data to develop new materials' 'safe-domain' diagrams for applications under elevated 'non-ideal' temperature and pressure conditions
- Obtain unique HPHT test data and gain advantage over current over-conservatism in testing (the fugacity issue) and associated materials selection

Some applications

- Develop safe operating limits for materials (eg casings, tubulars and seals) for use in aggressive environments
- Data to inform and develop design guidelines and standards
- Replication of extreme site conditions in laboratory conditions
- Accelerated testing
- Validation of materials and joining techniques for aggressive environments

Technical specification

- HPHT rig: seven-litre C276-lined autoclave (design rated to 2000 bar and 300°C)
- AMT rig: seven-litre C276-lined autoclave (design rated to 300 bar and 300°C) with mechanical testing capability (SSRT and uniaxial tensile; 50kN maximum with extension rate down to 0.01mm/hr)
- LVA rig: 35-litre lined autoclave (design rated to 300 bar and 300°C) for full-scale immersion testing of components such as C-rings

