

EXOVA CORROSION CENTRE

MCF Data Sheet

1.0 INTRODUCTION

Exova Corrosion Centre is part of Exova, which has a world wide network of testing laboratories.

Exova Corrosion Centre, located in the West Midlands, UK, offers extensive facilities in a wide range of corrosion and associated fields, including:

Sour Service Testing
Intergranular Corrosion Tests
Pitting / Crevice Corrosion Tests
Consultancy & Failure investigations
Materials Selection
Electrochemistry.
Autoclave Testing.
Weldability Testing.

In addition to the Exova Corrosion Centre, Exova has a network of laboratories throughout the UK, Europe, America, Canada and the Middle / Far East with additional specialist Corrosion Test facilities in Italy (Milan), Norway (Sandnes / Stavanger), UAE (Abu Dhabi), USA (Houston) and Singapore.

Extensive coating test facilities are also available in the UK (Manchester), USA (Houston) and UAE (Abu Dhabi).

2.0 QUALITY ASSURANCE / ACCREDITATION

The laboratory is Accredited by UKAS to ISO/IEC 17025 and holds UKAS Accreditation (UKAS Laboratory No. 0700) for the specific tests detailed on the schedule, which is available on the UKAS website (www.ukas.org).

3.0 LABORATORY FACILITIES

3.1 Sour Service Testing

The laboratory has extensive sour service test facilities for conducting standard NACE TM0284 Hydrogen Inducted Cracking (HIC) tests, NACE TM0177 Sulphide Stress Cracking (SSC) tests, Stress Orientated Hydrogen Induced Cracking Tests (SOHIC) and Full Ring Tests to OTI 95 635.

NACE TM0284 HIC specimens in vessel.



NACE TM0177-Method A tensile test in progress.

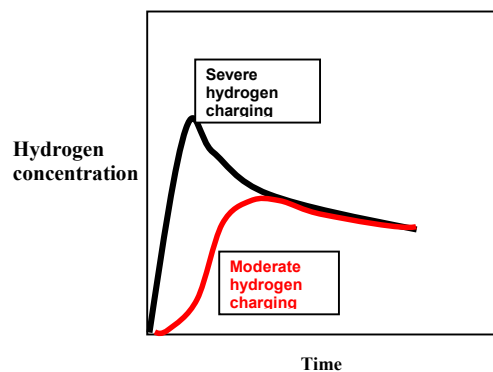
NACE TM0177-Method C C-ring tests in progress.



Full ring corrosion testing can be undertaken on pipe samples up to 54" in diameter with hydrogen permeation monitoring. This method provides a procedure for evaluating the HIC, SSC and SOHIC resistance of parent and welded pipes and has the advantage over 'small-scale' tests that all the residual stresses are retained.



Full ring tests in progress with hydrogen Permeation probes. measurements.



Results from hydrogen permeation

3.2 Intergranular Corrosion Testing

Intergranular corrosion testing is undertaken on stainless steels and nickel alloys to a variety of standards including ASTM A262, ASTM G28 and BS EN ISO 3651. All of the tests are accredited by UKAS.

3.3 Pitting and Crevice Corrosion Tests

The laboratory has extensive experience of evaluating the pitting and crevice corrosion resistance of corrosion resistance alloys (CRA's) in ferric chloride and seawater environments using immersion and electrochemical techniques.

3.4 Electrochemical Testing

The laboratory has a multi-channel zero-resistance ammeter (ZRA) and a range of potentiostats for undertaking electrochemical studies, including:

- Cyclic potentiodynamic testing
- Potentiostatic testing
- Galvanostatic testing
- Galvanic corrosion studies
- Preferential weld corrosion testing.
- Hydrogen charging studies.

3.5 Autoclave Testing

The laboratory can undertake autoclave corrosion testing at temperatures up to 200degC and at pressures up to 250 bar in a range of hastelloy autoclaves. In addition to the 12 autoclaves located at BCC, further autoclaves are available at the corrosion laboratories in Sandnes, Norway and in Houston, USA.

3.6 Weldability Testing

Exova can offer a complete weldability testing service from receipt of parent pipe material to issue of test certification. Non-destructive testing, mechanical testing and corrosion testing facilities are all available within Exova.

4.0 CORROSION LABORATORY CONTACTS

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