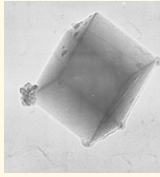


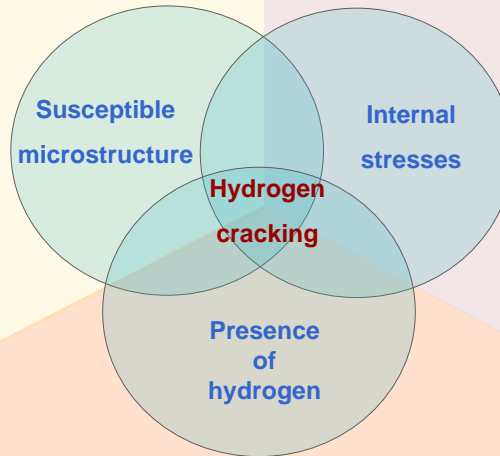
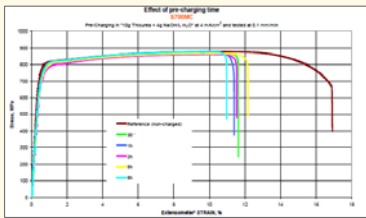
Hydrogen Cracking and Welds: the OCAS expertise



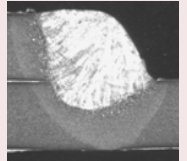
Sensitive, hardened microstructure (> 350 HV10)
 High strength materials (> 700 MPa)
 Hardenable steel (high carbon equivalent value)
 High thickness (> 50 mm)



OCAS helps you to...
 ...Decrease your materials' sensitivity by
 - designing **tailormade** structure
 - advanced materials **characterization**



Inherent to the welding process
 - Welding procedure
 - Pre- and postheating



OCAS helps you to...
 ... Develop a **welding procedure**
 ... Investigate the influence of **consumables**
 ... Perform **cracking tests**
 ... Optimize the **pre- and postheating**
 ... Perform **Welding simulations**
 ... Characterize the **microstructure and physical properties** of your welds

Internal hydrogen
 Process induced, linked to:
 - Welding process & consumables
 - Material condition (rust, oil, paint, ...)

External hydrogen
 Welds in hydrogen applications:
 - Gaseous hydrogen
 - Corrosive environment

OCAS helps you to...

✓ Quantify the **H₂-content** in your welds

✓ Evaluate the **sensitivity** of your welded structures

✓ Test your welds in **corrosive environments**

Determination of total & diffusible H₂

EN/ISO 3690 and AWS A4.3

Electrochemical in-situ charging

Tensile testing

Gaseous hydrogen at high pressure

Disc rupture test (ISO11114-4)

HIC & SSC

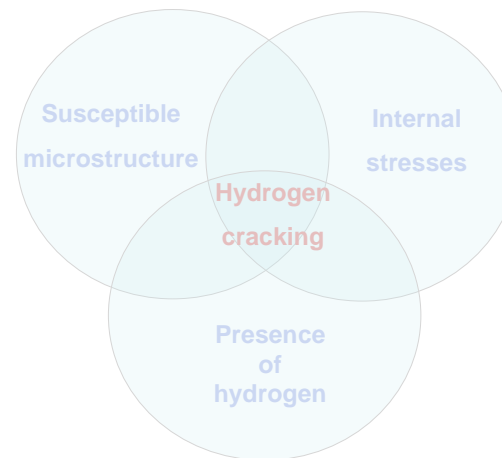
NACE tests (end 2010)

Hydrogen Cracking and Welds: the OCAS expertise



Your benefits:

- Fully equipped hydrogen lab for fundamental as well as applied research
- Standardized testing: EN/ISO 3690 and AWS A4.3, NACE0284, NACE0177 Method A&B, NACE TM-0198 and ISO 11114-4
- Experienced staff to provide customised recommendations to decrease the sensitivity to hydrogen embrittlement of your materials and welds
- Advanced material characterisation
- Extensive range of sample preparation equipment and testing facilities for metal sheet and plate in the range of 0.2 to 200 mm
- Quick and flexible processing of your tailor-made alloys



Full service:

- Easy access to highly specialised metallurgical equipment and skilled staff
- Your one-stop shop for welding matters, including optimised welding procedure, investigation of consumable influence, physical and numerical welding simulations, microstructure characterisation of the weld, optimisation of post- and pre heating
- Commitment to and partnership with your team in full confidentiality
- In-house state-of-the-art facilities for material's testing, including advanced sample preparation for e.g. cracking tests



Contact us
OCAS NV
John F. Kennedylaan 3, 9060 Zelzate
Belgium
+32 9 345 12 11
services@ocas.be
www.ocas.be

