

Use of materials under demanding conditions

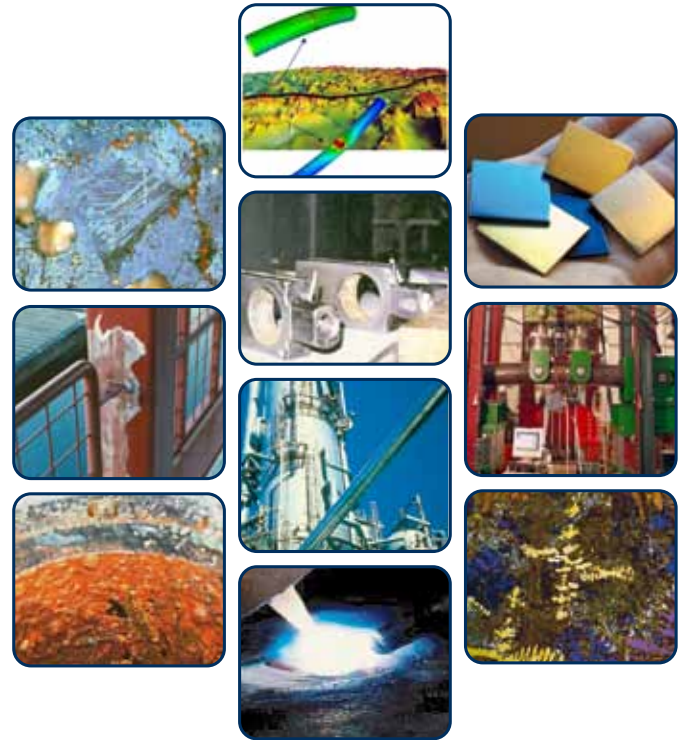
Our oil and gas industry was developed for hostile environments. Consequently, Norway has paved the way for use of steels (and other materials) under very demanding conditions. The development of materials and fabrication/joining technologies has been followed by development of standards and guidelines for safe implementation.

For more than 30 years our research group has pioneered the development of reliable procedures for precise assessments of materials degradation and fracture events in welded steel structures. The work has gained international recognition and has found its way into the continuing generation of new and improved national and international standards and guidelines. SINTEF is now performing research to be at the forefront with respect to implementation of "fully" computerized methodologies for degradation, deformation and fracture assessment

Our vision for the future is to improve the practical cooperation between materials specialists and industrial designers by continuing to develop numerical solutions that can be better integrated to meet their needs.

Our laboratory facilities:

- Materials Testing Laboratory
- Large Scale Testing Laboratory
- Structural Impact Laboratory
- Welding Laboratory
- Hyperbaric welding station
- Corrosion Laboratories (incl. Sea Water Laboratory)
- Metallographic Laboratories
- Electron Microscopy Laboratory
- Nanomechanical Laboratory



Offshore services:

- Materials selection and qualification
- Corrosion and corrosion protection
- Surface and coating technology
- Welding and weldability testing
- Underwater/hyperbaric welding
- Fatigue, fracture and general structural integrity assessments
- Dropped object and impact analysis
- Development of constitutive models/advanced material models for numerical assessments

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