DEACON ENGINEERS

FITNESS FOR SERVICE

FFS is one of many services we offer our clients. We offer quick responses in emergency situations to provide clients with solutions and peace of mind.

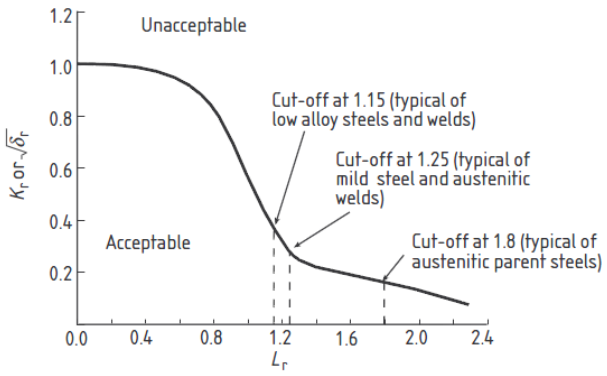
Our diverse experience in equipment design, manufacturing and application of specialist analytical tools ensures we provide safe, fit-for-purpose and sustainable solutions.

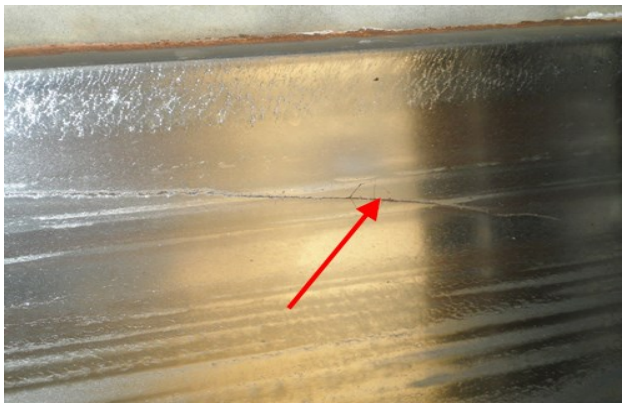
Fitness-for-service assessment is a multi-disciplinary engineering approach used to determine if equipment is fit to continue operation. The equipment may have excessive corrosion, propagating fatigue cracks, contain flaws, have sustained damage, or have aged so that it cannot be evaluated by use of the original construction codes. Our engineers provide solutions to our clients that enable them to continue the safe operation of their plant.

At Deacon Engineers we:

- Carry out onsite inspection and collect data related to the materials, products, structures or components that failed
- Use strain gauging for the determination of actual in-service stresses
- Have AICIP qualified inspectors to undertake pressure equipment inspections
- Undertake FFS assessments to API 579-1/ASME FFS-1 and BS 7910
- Provide FEA services utilising ANSYS and Abaqus
- Provide fatigue analysis using fe-safe™ and Verity™
- Conduct fracture analysis using Abaqus software, including 3D crack growth modelling
- Conduct precision 3D laser scanning of deformed surfaces
- Have staff trained to work on site at heights and in confined spaces

Deacon Engineers have produced a white paper discussing various aspects of fracture and fatigue crack growth in fitness for service assessments; please contact us if you would like to receive a copy of this white paper.





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FITNESS FOR SERVICE cont

Pressure Vessels

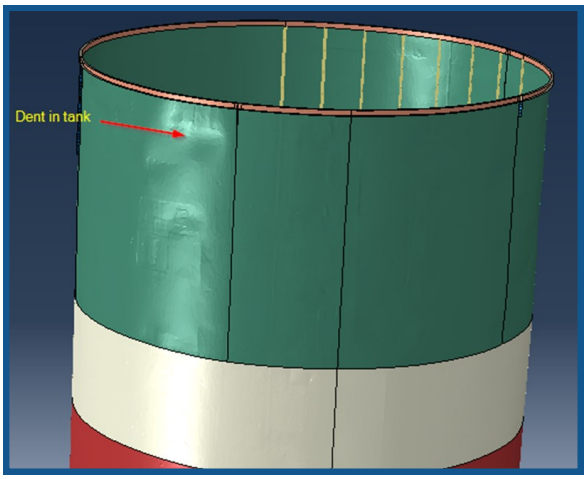
Not only are the designs pressure vessels to comply with appropriate codes and standards, the in-service operation also needs to ensure ongoing compliance.

Our services include:

- AICIP qualified inspectors to undertake pressure equipment inspections
- Weld, non-destructive testing (NDT) and post-weld heat treatment inspection
- Hazard Level Assessment
- Assessment of fatigue life and life extension possibilities for existing equipment
- Design services for modification and retrofitting of existing vessels for new duties or services
- Hazard identification
- Site measurement and drafting of existing facilities

Tanks

All tanks over their life result in localised buckles and deformation. At Deacon Engineers, we can assess your tanks to ensure they retain sufficient structural capacity whilst in service.



Our services include:

- 3D Laser scanning and reporting of tank surfaces
- Non-destructive testing (NDT)
- Structural assessment

Cranes and Lifting

All cranes are subject to 25 year structural inspections. This inspection extends to the crane rails and structure supporting the cranes.

Our services include:

- Structural assessment of cranes and structures in accordance with AS2550
- Structural analysis to AS3990 and AS4100
- NDT inspection
- Identifying critical areas of the structure requiring particular inspection