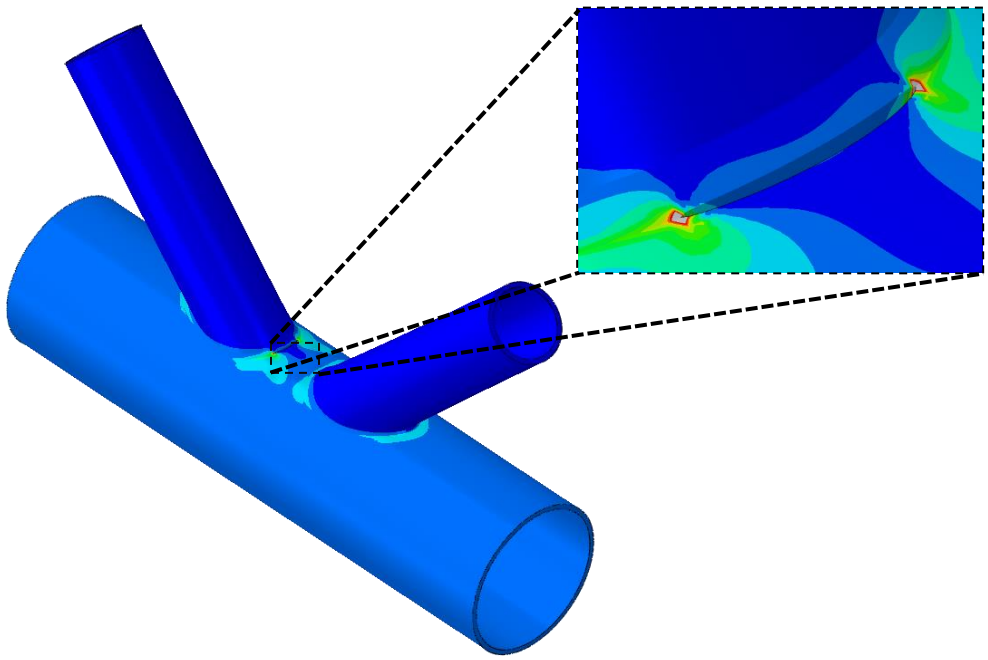
SERVICE PROFILE

Fracture Mechanics Assessment and Fitness for Service

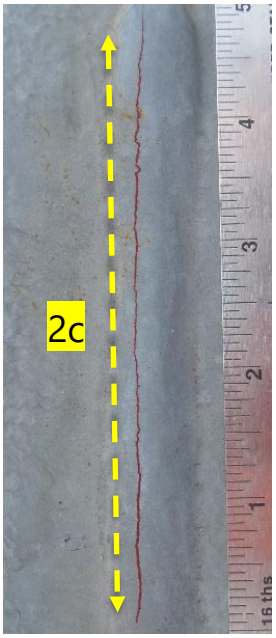


- Engineering criticality assessment to develop fabrication flaw acceptance criteria
- Estimation of remaining service life
- Estimation of remaining strength and ductility
- Third-party damage assessments
- Component testing
- Repair and retrofit design
- Peer review
- Influence risk-based inspection, mechanical integrity, and structural integrity programs
- Industry recommended practices used: API 579, BS 7910, and R6
- Forensic investigation
- Expert testimony

Having investigated and consulted on hundreds of metal structures and pressurized equipment facilities, our professionals are experienced providers of specialty evaluation services for all types of new and existing metal components. We leverage the combination of recognized industry techniques, nonlinear finite element modeling, laboratory testing, forensic field investigation, metallurgy, field instrumentation, nondestructive testing (NDT) inspection, and years of experience to provide a rapid assessment and actionable solutions for the client.

We help clients develop cost-effective solutions for their challenging new designs, existing infrastructure and facilities, and unexpected failures. We identify risks and safeguards to assist in preventing, controlling, and mitigating the effects of fabrication flaws, in-service deterioration (fatigue, corrosion, environmentally assisted cracking, creep), and unanticipated damage (third-party impact, fire, earthquakes). Our multidisciplinary approach combines knowledge of materials, inspection, fracture mechanics, nonlinear finite element modeling, testing, and years of experience to provide accurate and actionable solutions. We are world renowned for investigating failures and providing clients with accurate assessments. Our engineers provide services for bridges, buildings, cranes, dams, offshore structures, piping, pipelines, pressure vessels, proprietary components, tanks, and transportation structures.

Specific services we offer include developing fabrication flaw acceptance criteria, advising on material and weld requirements, helping clients develop inspection programs, providing component testing programs for fracture and fatigue challenges, retrofits design, and independent third-party reviews.



WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS