



**Structural Integrity**  
Associates, Inc.®

# PRESSURE VESSELS & SYSTEMS

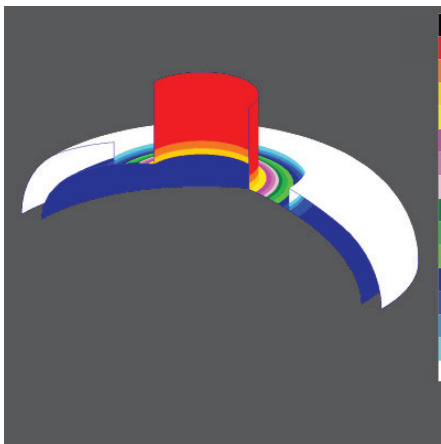
DESIGN, LIFE ASSESSMENT, ASSET MANAGEMENT AND INSPECTION

## SOLUTION

With market demand for the design, fitness-for-service, asset management and inspection of pressure equipment, Structural Integrity Associates, Inc. (SI) has been active in providing high quality, timely and cost-effective engineering services to fabricators and user's.



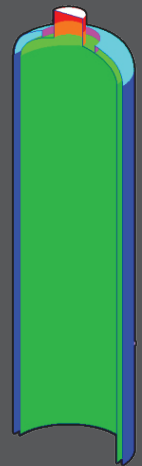
Jacketed Vessel  
Temperature Profile



Jacketed Vessel  
Thermal + Mechanical Stress Analysis

Our wide range of quality engineering services to support our clients include:

- Stress analyses, buckling analyses, vibration analyses, fatigue and fracture analyses, weld residual stress analyses, thermal hydraulic analyses, welding engineering, materials engineering, heat transfer analyses, fitness-for-service, nondestructive examination and training
- Designing of pressure vessels and systems
- Providing Registered Professional Engineer (RPE) certified design specifications and design reports for ASME Code Section VIII and B31 plant components
- Providing wind and seismic evaluation of pressure vessels and supports
- Supporting third-party reviews of engineering and fabrication records
- Providing engineering evaluations to re-rate in-service components
- Assessing the structural integrity of in-service components that contain damage or flaws such as general and local thin areas, pitting, grooves, dents, gouges, cracks, etc.



Finite Element Model -  
Heat Transfer Analysis

## ADVANCED DESIGN AND ANALYSIS CAPABILITIES FOR LONG TERM ASSET MANAGEMENT

We have many advanced tools and technologies that we use in asset management.

Some of our advanced tools and technologies include:

- Finite Element Analysis (Abaqus, Ansys®)
- Industry leading Fracture Mechanics Software including SI's pc-CRACK®
- Fitness-for-Service Assessment including API 579-1 / ASME FFS-1
- Environmental issues including Stress Corrosion Cracking
- High Pressure / High Temperature Equipment
- Autofrettage and Weld Residual Stress Analyses
- Hydrogen issues
- Flow Accelerated Corrosion (FAC)
- Pressure Vessel Design and Analysis Software



info@structint.com



www.structint.com



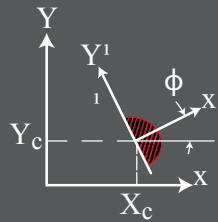
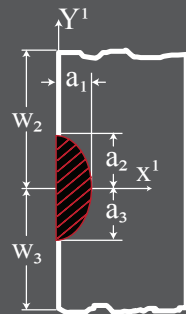
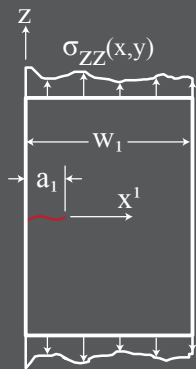
1-877-4SI-POWER  
1-877-474-7693



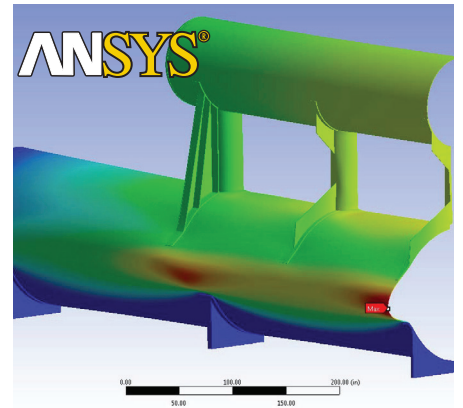
5215 Hellyer Avenue Suite 210  
San Jose, CA 95138

## STRUCTURAL INTEGRITY'S PRESSURE EQUIPMENT EXPERIENCE

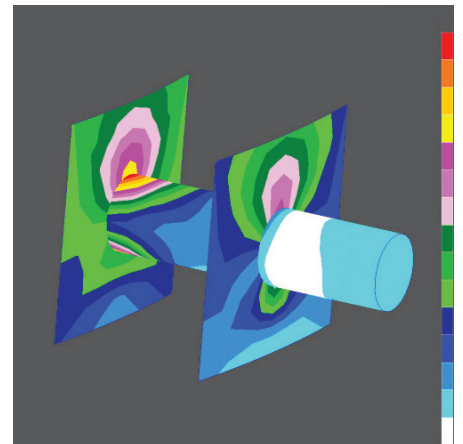
- Our impressive pressure equipment experience includes:
- Over 35 years in the design, manufacture, use and maintenance of pressure vessels and systems
- ASME Section VIII Pressure Vessels
- API Storage Tanks
- Fitness-for-Service (API 579-1 / ASME FFS-1)
- ASME B31.3 Process Piping Design
- Risk Based Hazard Mitigation and Inspection Planning
- Active ASME Code Participation and Leadership
- Pressure Vessel Inspection Code: Inservice Inspection - API 510
- National Board Inspection Code - NBIC
- Guide to Methods for Assessing the Acceptability of Flaws in Metallic Structures - BS 7910



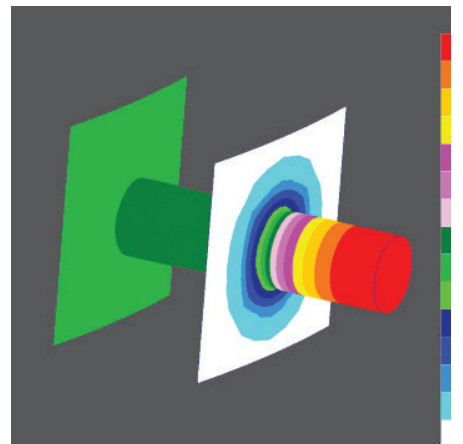
Fracture Mechanics



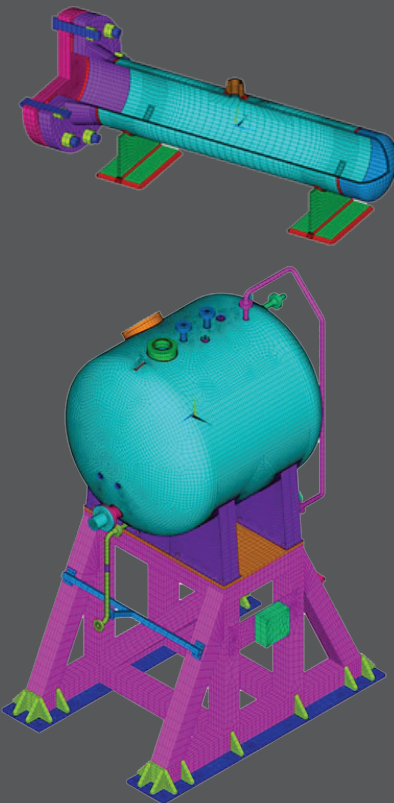
Deaerators



Close Up of Temperature Nozzle "T"  
Temperature Profile



Close Up of Temperature Nozzle "T"  
Thermal + Mechanical Stress Analysis



## THE STRUCTURAL INTEGRITY ADVANTAGE

Structural Integrity provides true integrated engineering solutions for Pressure Equipment by applying advanced engineering tools and inspection techniques. Our vast experience brings this together for solutions that can reduce life cycle cost, reduce down-time and extend equipment life.