

Piping Stress & Flexibility Analysis Training

COURSE CONTENT

GET IN TOUCH



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About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

Multisoft Systems' Piping Stress & Flexibility Analysis training is designed to equip professionals with advanced skills and knowledge in evaluating the mechanical integrity of piping systems. This course covers fundamental and advanced concepts essential for ensuring the durability and reliability of pipelines in various industries.

Module 1: Mechanic of materials

- ✓ Definition of loads and their types
- ✓ Definition of stresses
- ✓ Materials mechanics
- ✓ Deformation
- ✓ Stiffness
- ✓ Hooke's law

Module 2: Stress/strain fundamentals

- ✓ Engineering stress-strain vs. true stress-strain
- ✓ Properties obtained by means of a stress-strain curve
- ✓ Types of stresses
- ✓ Failure modes
- ✓ Photoelasticity and Thermoelasticity

Module 3: Introduction to stress analysis

- ✓ Classification | Characteristics | Joinings | Materials
- ✓ Main piping organizations and codes
- ✓ Stress and flexibility analysis in piping systems
- ✓ Challenges of piping stress analysis
- ✓ Primary, secondary, tertiary stresses in piping systems
- ✓ In plane and Out plane
- ✓ Criteria for estimating stresses in piping systems
- ✓ Stress limits in piping systems according to codes

Module 4: Stress & flexibility analysis

- ✓ How do you increase flexibility in a piping system?
- ✓ Stages in a stress and flexibility analysis
- ✓ Thermal expansion in pipes

- ✓ Force induced by thermal expansion
- ✓ Induced stresses and strains
- ✓ Allowable stresses according to codes
- ✓ Simplified analytical calculations
- ✓ Stress and flexibility analysis with computers

Module 5: Considerations for the analysis

- ✓ Degrees of freedom
- ✓ Restrictions
- ✓ Mathematical and physical considerations of a calculation software
- ✓ Boundary conditions used in analysis
- ✓ Numerical methods
- ✓ Types of elements used in mathematical type simulations

Module 6: Stress analysis with computers

- ✓ Commercial software
- ✓ Considerations regarding the use of software
- ✓ Complementary calculations to stress and flexibility analysis