[PSFY001] Pipe Stress (I)


About the course

The flexibility analysis of piping systems is carried out by skilled persons within engineering companies. The course is created and conducted by qualified professional engineers and is based on years of experience. The purpose of this course is to train engineers with some years of experience in the discipline of piping flexibility analysis.

Course outline

- Week 1: Introduction to flexibility analysis
- Week 2: Pipe stress classification. Failure theory. Admissible stress
- Week 3: Stress intensification coefficients
- Week 4: Basic piping support elements
- Week 5: Thermal expansion. Analysis of sustained case
- Week 6: Analysis of operation case: pipe racks
- Week 7: Analysis of operation case: static equipment
- Week 8: Analysis of operation case: piping
- Week 9: Analysis of flange leakage
- Week 10: Analysis of occasional loads: wind and earthquake
- Week 11: Introduction to dynamic analysis. Other pipe supports.
- Week 12: Final project

Course format

This course consists of some study material in pdf, multiple-choice tests and case studies. The course emphasis is laid on the solution of practical designs and calculations with the help of the tutor. The participant receives feedback form the instructor via the discussion forum and web conferences.

Prerequisites

Engineers or technicians with background in mechanical of materials.

González-Mazzocchin, Juan Carlos

Mechanical engineer with a MSc in Mechanical Engineering. He has been working as piping stress analyst for the last ten years, with extensive knowledge in cryogenics Piping systems and expansion joints. Currently work as piping leader for EPC projects in one of the most important engineering companies in Spain, Tecnicas Reunidas. Additionally he was professor of Mechanical Department at Simon Bolivar University (USB) in Venezuela, teaching courses such as, mechanical of materials, vibration control, dynamics and mechanical design. During his work at Simon Bolivar University he was a research advisor of the team Baja SAE USB and director of the laboratory of dynamics. He is a member of SAE International and has various scientific publications in international congress and papers in areas such as, applied numeric methods, noise and vibration control and teaching methodology. Was part of the review committee of mechanical division for ASME International Congress of 2007. In addition of the work experience related with piping stress analysis, he has carried out projects in areas such as, finite element analysis, noise and vibration control and mechanical design.

Oliver, Karen

Mechanical engineer with a MSc in Mechanical Engineering. He has been working as piping stress analyst and pipe support design for the last six years. Currently work as piping leader for EPC projects in one of the most important engineering companies in Spain, Tecnicas Reunidas. Additionally she has carried out projects in areas such as, noise and vibration control, occupational noise, development of noise maps and dynamic analysis of piping system. She was a research assistant at Simon Bolivar University (USB) in Venezuela, conducting activities in the areas of noise and vibration control and study of nonlinearities produced by the friction on piping system. She has various scientific publications in international congress.
and papers, such as, ASME.