ENGINEERING TRAINER

DYNAFLOW RESEARCH GROUP.

Working with ASME VIII-2 chapter 5: "Design by Analysis"

Online Course

- 🖥 Self-paced
- ☰ 4 modules
- 🕐 3 hours
- 💬 English
- ↻ 1-yr access
- 🏷 SPC141

Learn from home
100% online training

Video Lectures
watch multiple times

Available 24/7
1-year unlimited access

Personal Certificate
to prove your knowledge

Course Objective

"To give engineers, that use FEM, a solid understanding of the assessments and compliance checks required as per ASME VIII-2 "Design by Analysis"."

Program

Module 1	Introduction to ASME VIII-2 Chapter 5	0.5 hr
Module 2	Evaluating Plastic Collapse and performing Stress Linearization	1 hr
Module 3	Ratcheting Failure Mode and Compliance Checks	1 hr
Module 4	Fatigue Failure Mode and Compliance Checks	1 hr
Module 5	Buckling & Local Failure and Compliance Checks	0.5 hr

Results

- ✓ Understand the General Definitions and Failure Mechanisms associated with ASME VIII-2 Ch. 5 (Design by Analysis) assessments
- ✓ Have a good overview of the code section
- ✓ Can perform Stress Categorization and are able to link results to failure mechanisms
- ✓ Have seen numerous practical examples with Shell and Brick Finite Element Models
- ✓ Know the concepts of Stress Linearization and are able to apply them
- ✓ Understand Fatigue Analysis using both Welded and Smooth Bar Methods

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Online Course

Provided by

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Mechanical, Piping, FEA, Flow

DYNAFLOW
RESEARCH
GROUP.

Dynaflow Research Group specializes in the advanced end of the engineering spectrum. Their work often requires a multi-disciplinary approach: encompassing the static and dynamic analysis of both fluids and gases, and mechanical components.

They are at their best when creative thinking and a practical approach are required to tackle a problem.

Course Summary

The ASME Boiler & Pressure Vessel section VIII code is the most frequently used pressure vessel design code in the world. Two design approaches are present in the code: design by rules and design by analysis. Design by Analysis in ASME VIII-2 Part 5 is used to complement the Design by Rules parts of the code. Why might this be necessary? Perhaps a feature is located too close to a discontinuity or has a non-standard configuration, perhaps a detailed fatigue calculation is required or loadings other than pressure are present?

This course covers how to conduct Design by Analysis code compliance checks for rupture, ratcheting, fatigue and buckling load cases. Topics such as the difference between primary or secondary stresses, the influence of weld type on fatigue life and obtaining the structural stress will be addressed using FEM software.

The course consists of 4 online modules based on video content. You receive 1-year unlimited access to the course and the discussions forum. This allows you to perform modules again when you need to refresh knowledge for your work projects.

Who should attend this course

- Those using Finite Element Analysis for pressure vessel design
- People involved in projects for which the ASME VIII-Div. 2 Design by Analysis is used
- People that need to read technical reports related to this topic
- Beginner and intermediate pressure vessel designers

Prerequisities

- Basic understanding of Finite Element Analysis

Level   Intermediate