

Fiberglass Reinforced Plastic Engineering for Piping Systems

Online Course



- Self-paced
- 7 modules
- 9.5 hours
- English
- 1-yr access
- SPC121



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 involved with the design of FRP piping systems **a complete understanding** of FRP material properties and the associated engineering process."*

Program

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|----------|--|-------------|
| Module 1 | FRP Materials and Manufacturing | 2 hr 07 min |
| Module 2 | GRP Material and Strength Properties | 35 min |
| Module 3 | GRP code: ISO 14692 | 1 hr 22 min |
| Module 4 | Design and Analysis for FRP Systems | 1 hr 33 min |
| Module 5 | Underground Application of FRP | 1 hr 20 min |
| Module 6 | FRP Failure Theory & Product Qualification | 1 hr 17 min |
| Module 7 | FRP Piping Failure Case Studies | 1 hr 00 min |

Results

- Have a fundamental understanding of the material and its behavior
- Are familiar with the design of FRP pipes and joints
- Know methods for manufacturing of fiberglass products and their (dis)advantages
- Understand the qualification process for FRP products as per the ISO 14692
- Have a solid understanding of the design process and stress analysis of FRP systems
- Know the differences between steel and FRP and how this impacts pipe
- Have seen and discussed a multitude of real-life failures

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Provided by



Edwin Schimmel, MSc

Project Engineer, Dynaflow Research group

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

Fiberglass Reinforced Plastic (FRP) piping, also called Glass Reinforced Plastic (GRP) piping, is a cost-effective alternative to corrosion prone metallic piping and non-reinforced thermoplastics. However, the design of FRP systems requires specific knowledge as there are fundamental differences compared to the design of steel piping.

This course teaches you all the fundamentals required to design and work with FRP piping systems. After this course you have a solid understanding of the material properties and behavior for piping systems and you understand how this impacts designs. The engineering process is demonstrated, including pipe stress analysis. Also, a multitude of real-life field examples are discussed that illustrate critical aspects of FRP systems. In this course a great deal of attention is given to practical aspects of engineering FRP systems.

The course consists of 7 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

- Professionals involved with the design and realization of Fiberglass Reinforced Plastic piping systems
- Pipe stress engineers that work with FRP systems
- People that have experience with steel piping systems and get involved with FRP systems

Prerequisites

- No experience with FRP is required
- Basic understanding of (steel) piping systems is beneficial

Level Intermediate