



2KG TRAINING

2KG TRAINING

API 579-1 ASME FFS-1: FITNESS-FOR-SERVICE

Presenter: Daniel Francis

ABOUT THE PRESENTER: Daniel Francis



Daniel Francis has practiced engineering in the design, fabrication, repair and fitness for service evaluation of pressure equipment for over 21 years in the petrochemical industry. Having vast experience with ASME pressure vessel Codes and Standards, his knowledge also spans other recognized standards such as API, EN13445, AD Merkblatt and BS-5500.

Daniel's work has spanned multiple geographical borders, including South Africa, Japan, China, India, Middle East, USA, Canada and several parts of Europe. This diverse international experience has exposed him to multiple regulatory frameworks and their applications to pressure equipment quality assurance and integrity assessment techniques.

As a specialist in advanced vessel design engineering, Daniel is skilled in stress analysis verifications and complex mechanical integrity evaluations such as creep, fatigue, dynamic response and fracture mechanics. With extensive experience in providing technical support to petrochemical operations, Daniel is talented in strategizing and scoping innovative and detailed mechanical engineering solutions to permit the safe continued operation of critical equipment.

Over the years, Daniel been instrumental in mentoring and training engineers in responsible pressure vessel design, evaluation and quality assurance. He has developed and presented practical programs to equip engineers, technicians and inspectors with critical knowledge and application of pressure vessel design and fitness for service standards.

Daniel is proficient in developing fit-for-purpose and realistic user specifications, and is an advisor to Operators on procedural requirements which ensure quality designs, fabrication, inspection, testing and maintenance of pressure equipment.

Daniel's ASME membership and participation in Boiler and Pressure Vessel Code Committee meetings helps translate the background to many of the Code rules, and allows advance knowledge of upcoming Code changes.

API 579-1 ASME FFS-: FITNESS-FOR-SERVICE

Part 1 (3 Days): 3 CPD Points

Part 2 (2 Days): 2 CPD Points

Both Parts (5 Days): 5 CPD Points

LIVE VIRTUAL CLASSROOM

2KG Training Live Virtual Courses offer participants the same instructors, training systems, course materials, personal support, and face-to-face engagement with instructors and other participants that they would expect to find in a conventional classroom.

The API 579 Fitness For Service Live Virtual Course brings participants together in a virtual classroom, where they receive training from an expert via a live video link. Participants are interconnected via audio and video, enabling them to interact both with the instructor and with their classmates. Learners can speak to their instructor at any time to ask questions, request assistance, and instructors can provide hands-on support.

WHO SHOULD ATTEND

This course is intended for technical professionals, supervisors and managers responsible for ensuring the integrity and cost-effective operation of in-service pressure equipment, storage tanks, piping and pipelines throughout their life cycle including design, operation, and maintenance in the petroleum, petrochemical, power, pulp and paper, mining, and other process industries. It is suitable for plant engineers and designers, corrosion and materials engineers, project engineers, plant reliability and integrity supervisors and engineers, inspection engineers and inspectors responsible for monitoring and assessing the condition of pressure equipment and piping systems.

Maintenance and operations supervisors and engineers responsible for shutdown work scope definition, planning and implementation; maintenance and repairs/alterations of pressure vessels, heat exchangers, storage tanks, piping and pipelines, project, and maintenance engineers who are responsible for the reliable design and operation will find the course of great benefit.

COURSE OBJECTIVE

This course will provide training in the fitness-for-service evaluation methods of the API 579-1/ASME FFS-1 standard. The participant will learn to apply the rules of the API/ASME 579 standard "Fitness-for-Service" to recognize degradation mechanisms, evaluate the integrity and remaining life of pressure vessels, tanks, piping systems and pipelines, make cost effective run-or-repair decisions, and select the appropriate repair options.

This course explains the Fitness-for-Service concepts and technologies and provides training on the application of API 579-1/ASME FFS-1, a standard jointly published by the American Petroleum Institute (API) and the American Society for Mechanical Engineers (ASME) that covers a wide range of flaw types and damage mechanisms. It is intended to supplement and augment the requirements in API 510, API 570 and API 653 to ensure safety and reliability of plant equipment.

DESCRIPTION

Fitness for service (FFS) assessments is an essential part of mechanical integrity engineering for operating facilities and service providers to such industries. ASME FFS-1 / API-579 provides assessment recommendations for various forms of in-service degradation. The procedures may be applied to pressure vessels, piping and storage tanks and is considered recognized and generally accepted good engineering practice.

When equipment repair is not a practical option, fitness for service assessments in accordance with this standard allows operators to continue production, safely, although original construction code limits rules may not be met or apply.

COURSE HIGHLIGHTS

This course is divided in two parts

Part One (3 days)

This part is appropriate for engineers and technicians fulfilling design, metallurgical, technical support, maintenance, inspection and engineering management roles. Delegates will learn about the engineering roles and responsibilities for reliable assessment, inspection and data requirements, the main philosophies of the FFS approach, and will also perform detailed assessments of some of the common forms of damage. The course includes in-class workshop exercises.

Course Outline:

- Introduction to the ASME FFS-1 / API 579-1 standard
- Roles and Responsibilities
- The FFS Engineering Assessment Procedure
- Brittle Fracture
- General Metal Loss
- Local Metal Loss
- Pitting Corrosion
- Fire Damage

Part Two (2 days)

This part is appropriate for engineers and technicians involved with design, metallurgical assessment and plant support activities. The advanced engineering assessment procedures for complex damage mechanisms are covered. The course includes in-class workshop exercises for certain degradation types.

Course Outline:

- Design by Analysis
- Hydrogen Blisters, HIC and SOHIC
- Weld Misalignment and Shell Distortions
- Crack-like flaws
- Creep
- Dents and Gouges
- Laminations
- Fatigue



Registration Form

How to register for the course:

1. Complete this registration form and fax it to Phindi Chauke: Tel: 011 325 0686 Fax: 011 325 0488 Email: phindi@2kg.co.za
2. Acknowledgement will be emailed to you.
3. Final confirmation and details will be faxed or emailed to you approximately 7 days before the commencement of the seminar.

Cancellation Policy:

By signing and returning the registration form, the authorizing signatory on behalf of the stated company is subject to the following terms and conditions.

- All cancellations must be received in writing
- Any cancellations received less than 3 working days before the date of the event, the full fee will be payable and no refunds or credit notes will be given.
- If a registered delegate does not cancel and fails to attend the Workshop, this will be treated as a cancellation and no refund or credit note will be issued.

Delegate information:

Title: _____ Surname: _____ Name: _____

Full Company name: _____ Job Title: _____

Postal Address (to which invoice must be sent): _____

Code: _____ VAT number: _____

Tel: () _____ fax: () _____

Cell: _____ Email: _____

Contact/ Accounts information:

Title: _____ Surname: _____ Name _____

Tel: () _____ fax: () _____

Cell: _____ Email: _____

Please tick the course that you would like to attend:

Conventional Classroom

- 2 – 6 June 2025, (5 Days)
Johannesburg
R21 500.00 (excl VAT)

Live Virtual Classroom

- 1 – 5 September 2025, (5 Days)
Live Virtual Classroom
R17 200.00 (excl VAT)

I have read and agreed to all the conditions of registration as stipulated in this brochure.

Signature

Date



2KG TRAINING

For more info and to register contact Phindi Chauke on tel: 011 325 0686 or cell: 071 125 6188 and email: phindi@2kg.co.za or visit www.2kg.co.za