



INSPECTION, INTEGRITY AND CORROSION TRAINING

Repair and Alteration of Pressure Equipment and Piping

5 day course

Classroom, online or in-house

Course overview

Many leaks after a turnaround trace back to the fix itself: a weld deposited without preheat, a patch laid over an active crack, a clamp left on for years. Delegates first separate a repair from an alteration under API 510 and API 570, and set out who must authorise each and when rerating follows. ASME PCC 2 then supplies the methods: butt welded insert plates, fillet welded patches, weld buildup of thinned areas, full encirclement sleeves, leak box enclosures, bolted clamps and nonmetallic composite wraps. For each, delegates review the design checks, the limits of application and the planning of hot work on live lines, including burn through and hydrogen risk. Pressure testing and its permitted alternatives, the repair package documentation and how long a temporary fix may remain in place close the programme.

What you will learn

- Distinguish a repair from an alteration under API 510 and API 570
- Explain who must authorise and accept each type of work
- Select an appropriate ASME PCC 2 method for a given defect and service
- Apply the design checks for insert plates, patches, weld buildup and sleeves
- Evaluate leak boxes, clamps and composite wraps as temporary or permanent repairs
- Plan hot work on in service equipment, including burn through precautions
- Specify pressure testing or an acceptable alternative after repair
- Prepare a complete repair package for the equipment record

Who should attend

- Static equipment and integrity engineers
- Maintenance engineers who plan pressure equipment repairs
- Inspection engineers who approve repair methods
- Welding engineers and repair contractors
- Shutdown and turnaround managers

Course outline

- 01 Repairs, alterations and rerating under API 510 and API 570
- 02 Authorisation and acceptance of repair work
- 03 Welded insert plates and fillet welded patches
- 04 Weld buildup and full encirclement sleeves
- 05 Leak boxes and mechanical clamps
- 06 Nonmetallic composite repair systems
- 07 Hot work on live equipment
- 08 Pressure testing and its alternatives
- 09 Temporary repair limits and documentation

Upcoming dates



Dates	Venue	Format	Fee per delegate
2 to 6 November 2026	Online	Online	R8,500
30 November to 4 December 2026	Pretoria, South Africa	Classroom	R19,950
4 to 8 January 2027	Gaborone, Botswana	Classroom	R19,950
1 to 5 February 2027	Harare, Zimbabwe	Classroom	USD 1,325

Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 1,325** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afriScience.co.za, or WhatsApp us on **+27 63 479 1136**.

AfriScience Group | +27 61 536 6531 | info@afriScience.co.za | Pretoria, Gauteng, South Africa