



ENGINEERING AND TECHNICAL TRAINING

Piping Systems Design and Stress Engineering

3 day course

Classroom, online or in-house

Course overview

A three day course on the design of process piping that will hold, expand and be supported correctly for its whole service life. Delegates work through piping design codes and material selection, pipe sizing and pressure drop, and flexibility and stress analysis for the combined thermal and pressure loads a system actually sees. Supports, expansion joints and anchor points are covered in detail, because they are where a sound stress calculation is most often undone by installation. Thermal expansion receives particular attention given the high ambient temperature installations common across the region. The course also builds the skill of reading and reviewing isometrics and general arrangement drawings, and closes on the failure modes that recur in refinery, mine and power plant piping and the design decisions that prevent them.

What you will learn

- Apply piping design codes to select pipe classes, fittings and supports
- Perform flexibility and stress analysis for thermal expansion and pressure loads
- Specify pipe supports, expansion joints and anchor points correctly
- Interpret piping isometrics and general arrangement drawings
- Identify common piping failure modes and design mitigations
- Assess nozzle loads and the equipment connections that constrain a layout
- Specify fabrication, inspection and pressure testing requirements

Who should attend

- Piping engineers
- Mechanical design engineers
- Project engineers
- Piping draughtsmen
- Plant engineers reviewing piping design packages

Course outline

- 01 Piping design codes and material selection
- 02 Pipe sizing and pressure drop calculations
- 03 Flexibility and stress analysis fundamentals
- 04 Nozzle loads and equipment connections
- 05 Pipe supports, expansion joints and anchoring
- 06 Reading and reviewing piping isometrics and layouts
- 07 Fabrication, inspection and pressure testing
- 08 Common piping failure modes and design safeguards

Upcoming dates

Dates	Venue	Format	Fee per delegate
23 to 25 September 2026	Cape Town, South Africa	Classroom	R14,950
5 to 7 October 2026	Accra, Ghana	Classroom	USD 995
11 to 13 November 2026	Online	Online	R6,500



Fees and how to register

This 3 day course is **R6,500** per delegate online, **R14,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 995** 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@afiscience.co.za, or WhatsApp us on **+27 63 479 1136**.

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