



MECHANICAL ENGINEERING: PRESSURE VESSEL SERVICES

Assessing the safety, availability and reliability of pressure vessels.

SERVICES

- Design consultation and review

BUSINESS CHALLENGE

Power plant, oil and gas, and other industry operators require high levels of confidence that their facilities will operate as intended. Failure of pressure vessels can result in unplanned shutdowns, deferred production, loss of revenue, as well as the release of hazardous chemicals that can cause catastrophic incidents, affecting the safety of the operators, members of the public, the environment and the asset itself.

Owners need their facilities to be designed and constructed in compliance with the relevant standards that meet the relevant legal as well as their own exacting requirements for operational, safety and environmental performance to minimise lifetime costs and mitigate the risk of failure. The pressure equipment regulation (PER) in South Africa further requires pressure vessel designs to be duly reviewed and signed off by an Authorised Inspection Authority (AIA).

SOLUTIONS

Design consultation

To mitigate the risk of pressure vessel failure predetermined procedures need to be followed before any vessel can be operated. Based on the particular vessel category, it may be required that a professional engineer reviews and approves the design before manufacturing can commence e.g. Category I and higher pressure vessels must be designed, manufactured and operated in accordance with a pre-approved design code like ASME VIII Division 1 and 2.



Bureau Veritas has the in-house capability to perform pressure vessel designs in accordance with a number of design codes. Our team of specialist engineers has vast experience in designing a comprehensive range of pressure vessels and heat exchangers. Our engineers are professionally registered and authorised to approve pressure vessel designs in accordance with SANS 347.

All pressure vessel drawings are produced in-house by our experienced draughting team. We utilise PV Elite, a software solution developed to enhance and expedite the design, analysis and evaluation process of pressure vessels, as well as for pressure parts such as shell and tube heat exchangers. Our comprehensive pressure vessel design solution encompasses all reports, drawings and assessments that are required for an AIA to review the design for manufacturing.

We are also able to perform independent design reviews of pressure vessels whereby our specialist engineers assess all safety aspects of the vessel design and verify compliance with international standards and requirements. The design appraisal is performed through a review of the design documents prepared by the designer or manufacturer, including the drawings, calculations, specifications and functional diagrams.

KEY BENEFITS

Bureau Veritas is recognised as an industry leader in pressure vessel design. Our Technical Centre has extensive experience in the design of pressure vessels for various industries.

Our review services include independent analysis such as checks on design calculations, detailed inspections of drawings and specifications.

INDUSTRIES

Some of the industries we service include the following:

- Oil and gas
- Power generation
- Industrial
- Natural gas and steam generation plants

TOOLS AND TRAINING

We perform technical pressure vessels analysis and provide training in the following:

- PV Elite

