



IGO GROUP SAFETY STANDARD 25 - PRESSURISED VESSELS AND SYSTEMS

INDEPENDENCE GROUP NL





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1. INTENT

This standard details the requirements for minimising the risks arising from the uncontrolled release of energy associated with pressurised equipment.

2. APPLICATION

This standard shall apply to all IGO sites and projects (exploration, construction and development) and to all IGO employees, contractors (including sub-contractors) and visitors to IGO sites and projects. All IGO sites and projects shall comply with the provisions of this standard.

Where this standard identifies Australian and New Zealand Standards, IGO's international sites and projects shall ensure any other Standards relevant to the location meet the minimum requirements established through this standard.

The requirements in this standard shall be additional to the requirements as an item of fixed plant and equipment **IGO GSS20 Fixed Plant and Equipment** or as an item of mobile plant and equipment **IGO GSS21 Mobile Plant and Equipment**.

3. RISK ASSESSMENT

Risk assessments related to the design, design verification, specification, fabrication, inspection during fabrication, registration, purchase, installation, commissioning, operation, repair, modification, inspection, maintenance, testing and decommissioning of pressure vessels and systems shall be conducted for each site and project. The risk assessments shall be conducted in accordance with the **CMS ST-03 Risk Management**. Risk assessments shall be signed off and verified as per the requirements of *AS1210 Pressure vessels Appendix C: Risk management*.

All pressure vessels and associated systems shall undergo an operational risk assessment as part of the selection and approval process for site / project use. This shall involve operators and maintainers who would typically use the equipment and address at a minimum:

- The proposed tasks that it is going to be used for
- Its design and safety features
- How it is operated
- Ergonomics
- How it will interact with its surroundings
- The conditions (environmental, climatic etc.) in which it will be used
- Communications
- Behavioural factors
- Lifecycle and environmental costs including energy consumption and waste streams.

4. COMPRESSED GAS CYLINDERS

Sites shall maintain systems that ensure the safe transportation, handling, use and storage of gas cylinders in compliance with legal and other requirements. These systems shall include the requirements that:

- Any gas cylinder that is inspected is marked with a current inspection mark showing the date of the most recent inspection
- A gas cylinder is not filled with gas unless it bears a current inspection mark
- A gas cylinder is only filled with gas for which that cylinder is designed.

5. COMPLIANCE AND REGISTRATION

All pressure vessels and piping systems shall comply with relevant regulatory requirements. All documentation shall be for the 'As built' pressurised vessel and system.

Documentation shall include:

- A *Statement of Compliance*, technical data for the design manufacture and supply and any other documentation supporting compliance shall be obtained from the manufacturer / supplier (whether internal or external to IGO) and maintained by the owner
- Operating limits and capacities
- Detailed and general arrangement drawings
- Operator and maintenance manuals and instructions
- Installation, testing and dismantling procedures
- Manufacturer / supplier components and re-order list
- Safety devices including: relief devices, a means of safe isolation, an effective means of depressuring, restraints or clamps for flexible hoses or temporary piping and other– including those provided with the vessel and optional extras available
- Plant hazards – associated with the operation of the plant
- Registration certificates, where required

Information relating to the design, construction, purchase, contracting, use, maintenance or testing of pressure vessels and piping systems shall be maintained and readily available, this includes the information required by *AS1210 Pressure vessels Appendix E and Appendix F*.

Pressure vessels must be clearly marked with a unique identifier, maximum working pressure, content information and any other information required by an independent certifier.

A register / list of all pressure vessels shall be maintained for each site.

Alterations to pressure vessels and systems shall only be made in accordance with **CMS ST-12 Management of Change** which includes risk assessment. Associated documentation shall be updated as soon as practicable as part of this process.

6. ACCEPTANCE AT SITE AND PRE-USE REQUIREMENTS

Minimum requirements for the 'first time use' / commissioning of pressure vessels and systems shall include that:

- pressure vessels and systems identification and display markings are visible as required
- documented start-up / commissioning requirements have been defined

7. SAFE WORK PROCEDURES

Safe work procedures and operating manuals shall be supplied by the pressurised vessel and systems manufacturer or supplier as part of the compliance documentation provided with purchase / hire of the equipment.

Site / project specific standard work procedures and safe systems of work shall be developed and implemented for all relevant tasks and areas related to the operation and maintenance of the pressurised vessels and systems. Standard work procedures shall also be provided for:

- Operating pressure vessels and piping systems and equipment associated with pressure vessels and piping systems
- Handovers and checks made on vessels and systems prior to pressure testing
- Isolation, lockout, tag out, de-pressurising and re-pressuring
- Pressure testing
- Response to emergency conditions

A direct link between standard operating procedures and competency training and assessment materials shall be established.

8. INSPECTIONS, TESTING AND MAINTENANCE

There shall be a site system of maintenance, inspection and testing of pressure vessels and systems.

Maintenance, inspection and testing of all pressure vessels, piping systems and hoses shall be undertaken by competent persons in accordance with manufacturers specifications and be included in the site (or equipment providers') asset integrity / maintenance program.

Statutory inspections and testing shall be documented and carried out in accordance with legislative requirements.

Asset maintenance files / histories shall be maintained, accurate and available for the life of each asset. Registered plant files / histories shall be maintained as per legislative requirements.

Procedures (and / or work instructions) shall be developed for routine maintenance tasks.

9. MANAGEMENT OF CHANGE

Alterations to pressurised vessels and systems shall only be made in accordance with

Management of Change processes which includes risk assessment. Associated documentation shall be updated as soon as practicable as part of this process and shall include:

- Information from the change designer and change manufacturer that the plant is, so far as is reasonably practicable, without risks to health and safety to workers throughout the life of the plant
- Evidence that registrable fixed plant and equipment that has been changed has been design registered again and item registered again by competent persons prior to use

10. RECORDS

Records shall be maintained and available for plant that requires design or item registration, including records of all tests, inspections, maintenance, commissioning, decommissioning, dismantling and alterations of the plant.

These records must be kept for the period the plant is used or until control of the plant is relinquished.

11. TRAINING AND COMPETENCY

A system shall be implemented to ensure that persons maintaining plant or equipment are trained, competent and appropriately licensed. Designers, inspection bodies, certifiers, witnesses of tests, operation and maintenance shall be carried out by persons with appropriate competencies for the task.

Personnel working on or testing pressurised vessels and systems shall be trained in:

- JSEAs
- Isolations and lock out / tag out
- Emergency Response
- Standard work procedures.

Training programs should be practical and 'hands on' and take into account the particular needs of workers, for example literacy levels, work experience and specific skills required for safe use of the plant.

12. EMERGENCY MANAGEMENT

Any emergency instructions relating to an item of pressurised vessels and systems shall be clearly displayed on or near it.

13. PERFORMANCE MEASURES

Conformance with this standard will be assessed through regular audits and assessments.

14. RELATED DOCUMENTS

14.1 Common Management System Standards

- CMS ST-03 Risk Management
- CMS ST-10 Operations Integrity, Design, Construction and Commissioning
- CMS ST-12 Management of Change

14.2 HSES Standards and Guidelines

- IGO GSS20 Fixed Plant and Equipment
- IGO GSS21 Mobile Plant and Equipment

14.3 External Documents

| Standards | |
|-----------|----------------------------------------------|
| AS1210 | Pressure vessels Appendix C: Risk management |
| AS1210 | Pressure vessels Appendix E |
| AS1210 | Pressure vessels Appendix F |

15. DOCUMENT CONTROL

No amendments to this document may be made without the approval of the document owner.

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