AS 3788:2024

Australian STANDARD®

STANDARDS Australia

Pressure equipment — In-service inspection

AS 3788:2024

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The following are represented on Committee ME-001:

Australasian Institute of Engineer Surveyors
Australian Aluminium Council
Australian Industry Group
Australian Institute for Non-Destructive Testing
Australian Institute for the Certification of Inspection Personnel
Australian Institute of Petroleum
Better Regulation Division (Fair Trading, SafeWork NSW, TestSafe)
Bureau of Steel Manufacturers of Australia
Compressed Air Association of Australasia
Energy Networks Australia
Engineers Australia
Gas Energy Australia
Materials Australia
National Association of Testing Authorities Australia
Office of Industrial Relations (QLD)
SafeWork SA
The Australasian Corrosion Association
Victorian WorkCover Authority (WorkSafe Victoria)
Weld Australia

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Pressure equipment — In-service inspection

Originated as AS 3788—1990.
Revised and redesignated as AS/NZS 3788:2001.
Previous edition 2006.
Revised and redesignated as AS 3788:2024.

Preface

This Standard was prepared by the Australian members of the joint Standards Australia/Standards New Zealand Committee ME-001, Pressure Equipment, to supersede AS/NZS 3788:2006.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this document as an Australian Standard rather than an Australian/New Zealand.

The objective of this document is to provide guidance on pressure equipment integrity management and assessment practices, consistent with current work health and safety laws.

The major changes in this edition are as follows:

(a) Revision of the text throughout to correct errors and anomalies.

(b) Clarification and revision of inspection management requirements.

(c) Revision of inspection requirements including risk-based inspection.

(d) Clarification of requirements for repairs, modifications, alterations and re-rating.

(e) Consolidation of appendices.

(f) Revision of roles and responsibilities, with some deleted and others retained.

(g) Update of the format to the current Standards Australia styling.

(h) Update of referenced documents and alignment.

The inclusion of roles and responsibilities in this document was approved by the Standards Australia Production Management Group (PMG) on 21 June 2022.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

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Pressure equipment — In-service inspection

Section 1 Scope and general

1.1 Scope

This document specifies the minimum requirements for in-service inspection and fitness for service of pressure and associated equipment. This includes repairs, modifications, alterations and re-rating of new and used equipment, manufactured anywhere, to any recognized Standard, for all stages of pressure equipment life from commissioning until disposal.

In particular, this document —

(a) specifies requirements for determining the inspection interval(s), scope and extent of in-service inspection for the pressure equipment owner, inspection bodies, inspectors and others, to help in assuring safe and economic operation;

(b) is concerned with inspection and assessment of the integrity of equipment in the pressure-envelope and supporting structures;

(c) provides requirements for carrying out repairs, modifications, alterations, and re-rating of pressure equipment; and

(d) in combination with AS 3873, AS 3892, and AS 3920, provides a process for assessing conformance to design, manufacture and/or manufacturing (and fitness for service) standards for the whole-of-pressure equipment life, assisting the parties concerned to comply with workplace health and safety, environmental and other relevant regulatory requirements associated with the operation of pressure equipment.

This document applies to, but is not limited to, pressure equipment covered by AS/NZS 1200 with hazard levels A to E as set out in AS 4343 or other national Standards. Typically, it includes the following:

(i) Boilers and associated pressure parts, controls and pipe work covered by AS 1228, AS 2593, the BS EN 12952 series, BS EN 12953-1, and ASME BPVC-I.

(ii) Pressure vessels and associated pressure parts, controls and pipe work covered by AS 1210, the EN 13445 series, ASME BPVC-VIII, AS 2971 (serially produced pressure vessels) and EN 286-1.

(iii) Pressure piping covered by AS 4041, ASME B31.1 and ASME B31.3.

(iv) Pressurized storage tanks built to API 620.

(v) Fired heaters.

(vi) Heritage boilers and pressure vessels.

(vii) Metallic and non-metallic pressure equipment.

(viii) Electrical switchgear and associated auxiliaries where pressure-retaining parts are primarily determined by stress comparable with AS 1210.

This document does not cover the following:

(A) Gas cylinders (refer to the AS 2030 series).

(B) “Rotating equipment” (pumps, compressors, turbines) and other pressure machines. The principles may be applied to the static pressure-envelope but not the rotating elements and shaft seals.

(C) Pneumatic and hydraulic actuators and similar equipment, other than fluid pressure accumulators.

(D) Hoses.

(E) Pressure pipelines in accordance with the AS/NZS 2885 series or equivalent.

(F) Atmospheric storage tanks.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 1210, *Pressure vessels*

AS 1228, *Pressure equipment — Boilers*

AS 1271, *Safety valves, other valves, liquid level gauges, and other fittings for boilers and unfired pressure vessels*

AS 1358, *Bursting discs and bursting disc devices — Application, selection, and installation*

AS 1796, *Pressure equipment — Qualification of welders, welding supervisors and welding inspectors*

AS 2337.1, *Gas cylinder test stations, Part 1: General requirements, inspections and tests — Gas cylinders*

AS 2706, *Numerical values*

AS 2809 (all parts), *Road tank vehicles for dangerous goods*

AS 2832.2, *Cathodic protection of metals, Part 2: Compact buried structures*

AS 3892, *Pressure equipment — Installation*

AS 3920, *Pressure equipment — Conformity assessment*

AS 3992, *Pressure equipment — Welding and brazing qualification*

AS 4037, *Pressure equipment — Examination and testing*

AS 4343, *Pressure equipment — Hazard levels*

AS 4458, *Pressure equipment — Manufacture*

AS 4942, *Pressure equipment — Glossary of terms*

AS ISO 9712, *Non-destructive testing — Qualification and certification of NDT personnel*

AS ISO 16809, *Non-destructive testing — Ultrasonic thickness measurement*

BS ISO 4126-2, *Safety devices for protection against excessive pressure – Part 2: Bursting disc safety devices*

1.3 Terms and definitions

For the purposes of this document, the terms and definitions in AS 4942 and the following apply.

1.3.1
commissioning
performing the necessary adjustments, tests and inspections to ensure pressure equipment is in working order in accordance with the requirements specified in the design