AS 2593:2021

Australian STANDARD®

STANDARDS Australia

Boilers — Safety management and supervision systems

AS 2593:2021

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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
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This Standard was issued in draft form for comment as DR AS 2593:2019.

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Boilers — Safety management and supervision systems

Originated as AS 2593—1983 and part of AS 3653—1993.
Previous edition AS 2593—2004.
Sixth edition AS 2593:2021.

Preface

This Standard was prepared by the Australian members of Standards Australia/Standards New Zealand Committee ME-001, Pressure Equipment to supersede AS 2593—2004, *Boilers — Safety management and supervision systems*.

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

The inclusion of roles and responsibilities in AS 2593:2021 was approved by the Standards Development and Accreditation Committee on 4 February 2021, as a one-off exemption to the directives of Standardisation Guide 009, Preparation of Standards for Legislative Adoption.

The objective of this Standard is to —

(a) specify clear, safe, minimum requirements for the operation of all boilers and other devices;

(b) assist all parties involved in the provision of safe boilers and other devices;

(c) provide a basis for determination of the boiler attendance category with any supervision, checking, testing and maintenance with a view to support safety; and

(d) specify emission requirements that will support an overall reduction in greenhouse gas emissions from boilers.

The major changes made in this revision include —

(i) defining the criteria for different boiler attendance categories with limited attendance operation no longer being part of this Standard;

(ii) specifying that devices connected to the boiler, such as any economizer or superheater or deaerator, are also to be treated as part of any boiler in the attendance category;

(iii) defining the minimum safety requirements for any economizer or superheater or deaerator when connected to a boiler;

(iv) defining the minimum safety requirements for boilers with greater than 500 kW power output with a boiler attendance category of "unattended", to have only one flame safeguard of the continuous self-checking type equipped with a flame detector;

(v) defining the minimum criteria for feedwater pumps and feedwater tanks in relation to any necessary consideration of capacity and net positive suction head (NPSH) requirement;

(vi) defining the minimum criteria for feedwater tanks in relation to low-water safety devices fitted in the feed tank (or other feedwater storage device) for all boiler power outputs with a boiler attendance category of "unattended";

(vii) defining the requirements for automatic modulating water level control in all boilers exceeding 1 MW power output;

(viii) defining installation requirements for vertical boiler types fitted with down-fired packaged burners that include sufficient head room and mechanical lifting equipment to allow for safe and complete burner removal, and to provide platforms, walkways, stairways, and ladders to enable all round access to the boiler for its safe operation, inspection, maintenance and complete burner removal; and

(ix) specifying that the combustion equipment for all boilers is to be capable of effecting satisfactory combustion and provide for reduced greenhouse gas emissions.

Users of this Standard are reminded that it has no legal authority in its own right, but may acquire legal standing in one or more of the following circumstances:

(A) Adoption by a government authority.

(B) Adoption by a purchaser as a required standard of construction when placing a contract.

(C) Adoption where a manufacturer states that a boiler and other devices are in accordance with this Standard.

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 for information and guidance only.

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Boilers — Safety management and supervision systems

Section 1 Scope and general

1.1 Scope

This Standard specifies the requirements for the operation of boilers and other devices including any connected economizer or superheater or deaerator. It includes the special features within the control, management and supervision systems, associated valves and fittings, housing, access and installation for those boilers and other devices operating in the unattended or attended modes. It also details the checking, testing, supervision and maintenance requirements for each category of attendance to support continued safety.

1.2 Application

This Standard is intended to be used in the design, manufacture, use (with and without attendance) and modification of new and existing boilers as follows:

(a) Boilers for fixed land installations.

(b) Boilers having a design pressure as shown in Table 1.

(c) Boilers having a power output within the capacities specified in Table 1 for the boiler type and category.

(d) Boilers in accordance with the checking, testing, supervision and maintenance requirements specified in Table 1 for the boiler type and category.

(e) Boilers for the generation of steam, or other vapour, for which the types of boilers permitted are —

  (i) water-tube type or fire-tube type or combination of water-tube and fire-tube types or electric type or all boiler types up to 500 kW (see Table 1) for unattended operation; and

  (ii) any type of boiler for attended operation (see Table 1).

(f) Boilers for the heating of water or other liquids at a pressure above that of the atmosphere and to a temperature not less than the normal atmospheric boiling temperature of the liquid, for which application any type of boiler conforming to AS/NZS 1200 is permitted.

(g) Boilers having any of the following sources of energy input:

  (i) Gas fuel (mains or other gases).

  (ii) Oil fuel with a closed flashpoint greater than 23 °C.

  (iii) Solid fuels, including solid-fuel-in-suspension.

  (iv) Waste heat fluids.

  (v) Electric power.

  (vi) Solar energy.

NOTE 1 This Standard may also be applied to boilers outside the limits specified in Items (a) to (g) where equivalent safety and reliability are required by the owner.

NOTE 2 This Standard is not intended to apply to miniature boilers in accordance with AMBSC Code Parts 1, 2, 3 and 4.