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AS 1200 Supplement 1—1988

RULINGS TO THE SAA BOILER CODE

(Supplement to AS 1200—1988)

This Supplement was prepared by Committee ME/1, Boilers and Unfired Pressure Vessels. It was approved on behalf of the Council of the Standards Association of Australia on 17 February 1988 and published on 9 May 1988.

Review of Australian Standards. *To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up-to-date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.*

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Suggestions for improvements to Australian Standards, addressed to the head office of the Association, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

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PREFACE

This Supplement was prepared by the Association's Committee on Boilers and Unfired Pressure Vessels to supersede Doc 1200R, *Rulings to the SAA Boiler Code*, published in September 1981, and the additional Rulings published in March 1983 and March 1984. At the time of publication it contains all current Rulings on all the Standards that comprise AS 1200, *SAA Boiler Code.*

The committee has issued written Rulings to the Code for many years in an effort to clarify the intent of the Code, recognize new manufacturing techniques, assess the suitability of a product for use in its intended services, assess the latest design techniques, and cover other relevant matters. In some cases the enquiries have prompted a revision of the requirements in the relevant Standard while in other cases the subject of the enquiry was peculiar to that enquiry and therefore no recognition in the relevant Standard was made. (Prior to September 1981 when Doc 1200R was published, the Rulings were issued only to the enquirer, members of the committee, and the Inspecting Authorities.)

The committee has reviewed its policy for Rulings and has resolved that in future it will undertake consideration of only those matters which relate to interpretation of, or proposed changes to, the Standards for which it is responsible. In particular it will not consider or issue Rulings indicating approval of proprietary equipment, materials or components, as it does not have the resources or test facilities to consider or adjudicate on such matters.

Rulings will be reviewed periodically and will be withdrawn when their intent has been incorporated into relevant Standards or as otherwise determined by the committee.

The Rulings in this Supplement are all based on previously issued Rulings, in some cases without technical change, and in other cases with technical changes resulting from varied circumstances or the need to align with current policy. Some previously issued Rulings on the same subject have been replaced by one general Ruling.

It should be noted that a Ruling has no legal authority in its own right unless accepted by the relevant Inspecting Authority. Therefore, where it is intended to depart from the requirements given in the relevant Standard in accordance with a Ruling, guidance must be sought from the relevant Inspecting Authority on the acceptability and use of the particular Ruling for the matter in question. The Inspecting Authority may advise that the Ruling—

(a) is not sanctioned by that State or Territory;

(b) is sanctioned with additional provisos; or

(c) is acceptable as written.

When issued, the Rulings apply to the latest edition, including amendments, of the relevant Standard, or to the edition and amendment stated in the reply. Subsequent revision of a Standard may supersede a Ruling to that Standard.

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LIST OF RULINGS

ME/1/73-43	Cold stretched austenitic stainless steel vessels.
ME/1/88-1	Retention of backing strips in longitudinal joints in refrigeration vessels.
ME/1/88-2	Non-conforming longitudinal joint in refrigeration vessels.
ME/1/88-3	Internally fitted doors for beer tanks.
ME/1/88-4	Pressure containers for paint.
ME/1/88-5	Sugar processing vacuum pans and evaporators—tubeplate design and tube fixing.
ME/1/88-6	Fusion welded chlorine transport drums.
PV/E8008/22	Small safety valves.

RULING: ME/1/77-43

NOTE: This Ruling is currently under review and is included in this Supplement for information.

It must not be used without specific reference to the Inspecting Authority(ies) having jurisdiction in the State or Territory in which approval is required.

Subject: Cold Stretched Austenitic Stainless Steel Vessels.

Date Issued: 24 February 1977

Ruling: SAA Committee ME/1 considers that vessels may be constructed of austenitic stainless steel cold stretched during hydrostatic testing subject to the following:

1. *Application.*

   The use of cold stretched stainless steel vessels shall be limited to unfired pressure vessel applications for design temperatures not exceeding 100 °C and each vessel shall be used to contain only those substances known to have no deleterious effect on the type of stainless steel used in the construction of the vessel.

2. *Material.*

   The material used shall be restricted to one of the types of austenitic stainless steels listed in AS 1210 or an approved equivalent. The material shall be in the annealed condition. Test certificates shall be supplied with the material.

   High proof stress (e.g. high nitrogen bearing) austenitic stainless steels having a ratio of—

   $$\frac{\text{0.2 percent proof stress}}{\text{tensile strength}}$$

   exceeding 0.70 shall not be used.

3. *Shape of ends.*

   Ends shall be hemispherical or semi-ellipsoidal with a major/minor axis ratio not greater than 2 to 1.

4. *Design basis.*

   The design of the pressure parts of the vessel shall be based on the relevant formulae in AS 1210 using the following value for the design tensile strength (f):

   (a) for design temperatures up to and including 20 °C—

   the lesser of $\frac{\text{specified minimum tensile strength}}{2.25}$ and 230 MPa

   (b) for higher temperatures (up to and including 100 °C)—

   the above value shall be reduced pro-rata to 90 percent (of the value for 20 °C) at 100 °C.

   Particular care shall be taken to ensure that all attachments (nozzles, pads, etc) are designed, located and constructed so as to avoid excessive rigidity, restriction of expansion or excessive localized expansion, particularly in the circumferential direction.

   The vessel shall be checked in accordance with Supplement No 1 to AS 1210 to determine if a fatigue analysis is required.

5. *Construction requirements.*

   The vessel shall be constructed to the Class 1 requirements of AS 1210 except where this Ruling specifies other requirements.

   Plates used in the shell section shall be of the same nominal thickness.

   Circumferential reinforcement shall not be used.

6. *Hydrostatic testing.*

   The vessel shall be tested at a pressure necessary to achieve a minimum circumferential strain in the vessel of 0.5 percent, or at a pressure calculated in accordance with Equation 5.10.2 of AS 1210, whichever is greater.

   Under the hydrostatic test the circumferential strain (i.e. general increase in circumference at a position of minimum restraint) shall not exceed 5 percent.

7. *Marking.*

   In addition to the marking required by Section 7 of AS 1210, each vessel shall be clearly marked with the words '5% max. cold stretched'.

8. *General.*

   In all other respects the vessel shall comply with the requirements of AS 1210.

   The above requirements have been selected keeping in mind that the use of this material under the conditions specified in this Ruling has had limited recognition in national Standards for pressure vessels, and that modifications of the requirements may be made as a result of experience. The committee believes that it is desirable to gain experience safely and to limit possible extension to other vessels and materials at this stage.

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