

Australian Standard 2192-1978

HORIZONTAL STERILIZERS (DOWNWARD DISPLACEMENT PRESSURE STEAM TYPE)

[Title allocated by Defence Cataloguing Authority: STERILIZER, Horizontal, Downward Displacement Pressure Steam Type; NATO Supply Classification: 6530]



STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter



THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Allied Building Trades Federation of Australia
Australian Medical Association
Confederation of Australian Industry
Department of Construction
Department of Health, Queensland
Department of Public Health, Western Australia
Department of Labour and Industry
Departments of Public Works
Health Commission of New South Wales
Hospitals Department, South Australia
Hospitals and Charities Commission of Victoria
Institute of Hospital Engineers
Royal College of Pathologists of Australia
Sterilization and Disinfection Society of Victoria
Sterilizer Manufacturers Association of Australia
Sterilizing Research and Advisory Council of Australia
Subcontractors Association of New South Wales

This standard, prepared by Committee ME/3, Sterilizing Equipment, was approved on behalf of the Council of the Standards Association of Australia on 1 June 1978, and was published on 1 September 1978.

To keep abreast of progress in the industry concerned, Australian standards are regularly reviewed. Suggestions for improvements, addressed to the head office of the Association, are welcomed.

This standard was issued in draft form for public review as DR 76096.

AUSTRALIAN STANDARD SPECIFICATION

**HORIZONTAL
STERILIZERS
(DOWNWARD DISPLACEMENT
PRESSURE STEAM TYPE)**

AS 2192—1978

First published (as AS T54 and AS T55) ... 1971
Revised and issued as AS 2192 1978

**PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.**

ISBN 0 7262 1518 X

5
1
5
0
4

PREFACE

This standard was prepared by the Association's Committee on Sterilizing Equipment as the metrication and revision of AS T54—1971 and AS T55—1971, both of which it accordingly supersedes.

It applies to both jacketed and non-jacketed sterilizers, and the scope of the standard allows the manufacture of sterilizers for certain fluids, milk formulas, laboratory use and other such purposes where, by suitable controls, the same basic sterilizer may be used to cover a wide range of conditions.

The standard provides only for equipment supplied with steam heated independently of the sterilizer jacket or chamber. Emphasis in the standard is on safe and satisfactory design, but as much latitude as possible has been allowed to the individual sterilizer manufacturer to incorporate his own ideas.

Other Australian standards dealing with sterilizing equipment are as follows:

- | | |
|---------|---|
| AS 1410 | Pre-vacuum Pressure Steam Sterilizers (with Mechanical Air Removal) |
| AS 1714 | Ethylene Oxide Sterilizers (Using Ethylene Oxide/Dichlorodifluoromethane—12%/88% m/m Sterilizing Gas Mixture) |
| AS 1862 | Aeration Cabinets (For Use with Ethylene Oxide Sterilizers) |
| AS 2182 | Portable Electrically Heated Steam Sterilizers (Downward Displacement Pressure Steam Type) |

This standard may require reference to the following Australian and British standards:

- | | |
|---------|---|
| AS 1167 | Alloy Filler Rods for Brazing |
| AS 1169 | SAA Medical Agents and Gases Safety Code |
| AS 1192 | Electroplated Coatings of Nickel and Chromium |
| AS 1210 | SAA Unfired Pressure Vessels Code |
| AS 1250 | SAA Steel Structures Code |
| AS 1271 | Valves, Water Gauges and Other Fittings for Boilers and Unfired Pressure Vessels |
| AS 1324 | Air Filters for Use in Air Conditioning and General Ventilation |
| AS 1349 | Bourdon Tube Pressure and Vacuum Gauges |
| AS 1449 | Stainless and Heat-resisting Steel Plate, Sheet and Strip (Coils and Cut Lengths) |
| AS 1553 | Low Carbon Steel Covered Electrodes for Manual Metal-arc Welding |
| AS 1586 | Low Alloy Steel Covered Electrodes for Manual Metal-arc Welding |

- AS 1588 Filler Rods for Welding
- AS 1722 Pipe Threads of Whitworth Form
Part 1—Sealing Pipe Threads
- AS 1829 Intrinsically Safe Electrical Apparatus for Explosive Atmospheres
- AS 1858 Electrodes and Fluxes for Submerged-arc Welding of Carbon and Low Alloy Steels
- AS 3000 SAA Wiring Rules
- AS C98 Flameproof Enclosures of Electrical Equipment for Explosive Atmospheres
- AS CB18 SAA Pressure Piping Code
Part 1—Ferrous Piping
- AS C100 Approval and Test Specification for Definitions and General Requirements for Electrical Materials and Equipment
- AS C200 Approval and Test Specification for Definitions and General Requirements for Electro-medical Equipment
- BS 970 Wrought Steels in the Form of Bars, Billets and Forgings
- BS 1041 Code for Temperature Measurement
- BS 1449 Steel Plate, Sheet and Strip
Part 2—Stainless and Heat Resisting Steel Plate, Sheet and Strip
- BS 1588 The Use of Thermal Insulating Materials in the Temperature Range 95°C to 230°C

©Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1978

Users of standards are reminded that copyright subsists in all SAA publications. No part of this publication may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing of the Standards Association of Australia.

CONTENTS

	<i>Page</i>
SECTION 1. SCOPE AND GENERAL	
1.1 Scope	6
1.2 Application	6
1.3 Expression of Pressure Values	6
SECTION 2. MATERIALS OF CONSTRUCTION	
2.1 General	7
2.2 Chamber and Jacket, Door Ring and Door	7
2.3 Materials for Connections Welded to the Chamber	8
2.4 Materials for Connections Welded to the Jacket	8
2.5 Pipework and Pipe Fittings	8
2.6 Welding Consumables	8
2.7 Frame	8
2.8 External Panels	8
SECTION 3. DESIGN	
3.1 Design Requirements	9
3.2 Internal Dimensions of the Chamber	9
3.3 Working Height	9
3.4 Mounting	10
3.5 Doors	10
3.6 Controls	11
3.7 Thermal Insulation	15
3.8 Connections and Fittings	15
3.9 Loading Equipment	18
3.10 Frame	18
3.11 External Panels	18
SECTION 4. CONSTRUCTION	
4.1 General	19
4.2 Welding	19
4.3 Jacket	19
4.4 Finish	19
4.5 Frame	19
4.6 External Panels	20

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard Specification for HORIZONTAL STERILIZERS (Downward Displacement Pressure Steam Type)

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This specification sets out requirements for horizontal, non-portable pressure steam sterilizers, both jacketed and non-jacketed, of the downward displacement type, for hospitals, hospital laboratories and non-industrial applications. Sterilizers covered by this specification are intended for use with steam supplied from a source heated independently of the sterilizer jacket or chamber.

1.2 APPLICATION. This specification applies to the design, manufacture and testing of sterilizers in the following categories:

- (a) Jacketed sterilizers supplied with saturated steam and operating at selected sterilizing temperatures up to 134°C (see Clause 3.8.9.4). Control of jacketed sterilizers may be fully automatic or manual, and by suitable additional controls or variations to the controls these sterilizers may be provided with the facilities to perform varying functions (see Clause 3.6).
- (b) Non-jacketed sterilizers supplied with saturated steam and operating at selected sterilizing temperatures up to 134°C (see Clause 3.8.9.4). Control of non-jacketed sterilizers may be fully automatic or manual, and by suitable additional controls or variations to the controls these sterilizers may be provided with the facilities to perform varying functions (see Clause 3.6)

NOTE: Although the types of sterilizers dealt with in this specification may be installed in rooms where flammable medical or other agents are used if complying with AS 1169, SAA Medical Agents and Gases Safety Code, and Section 5 of this specification, they are normally installed sufficiently remote to be outside the zone of risk. Consequently, special precautions against this risk are not provided as a normal requirement, but compliance with special precautions should be specified when sterilizers or associated components are to be installed within the zone of risk associated with the use of flammable agents.

1.3 EXPRESSION OF PRESSURE VALUES. Pressure values are gauge pressure at sea level unless otherwise specified.