

Australian Standard™

Storage water heaters

Part 1: General requirements

STANDARDS
Australia



This Australian Standard was prepared by Committee EL-020, Electric Water Heating Appliances. It was approved on behalf of the Council of Standards Australia on 8 February 1991.
This Standard was published on 15 April 1991.

The following are represented on Committee EL-020:

Australian Consumers Association
Australian Electrical and Electronic Manufacturer's Association
Australian Gas Association
Confederation of Australian Industry
Electricity Supply Association of Australia
Engineering and Water Supply Department, S.A.
Heat Exchange Water Heater Manufacturers Association
Metal Trades Industry Association of Australia

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Web Shop at www.standards.com.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

Australian Standards and other products and services developed by Standards Australia are published and distributed under contract by SAI Global, which operates the Standards Web Shop.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to the Chief Executive, Standards Australia, GPO Box 476, Sydney, NSW 2001.

This Standard was issued in draft form for comment as DR04389.

Australian Standard™

Storage water heaters

Part 1: General requirements

First published as part of AS C316—1957.
AS 1056—1977 revised and redesignated in part as AS 1056.1—
1987.

Second edition 1991.

Reissued incorporating Amendment No.1 (July 1992).

Reissued incorporating Amendment No.2 (December 1995).

Reissued incorporating Amendment No. 3 (August 1996).

Reissued incorporating Amendment No. 4 (January 2000).

Reissued incorporating Amendment No. 5 (September 2005).

COPYRIGHT

© Standards Australia

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7262 6812 7

PREFACE

This Standard was prepared by the Standards Australia Committee on Electric Water Heating Appliances to supersede the 1985 edition (thrice amended), to remove outdated references, to recognize changes to referenced Standards and Codes, to introduce requirements for the location of the boosting unit thermostat (see Clause 3.1.5.2), to amend the requirements for thermostat setting (see Clause 3.2.2), and to make it clear that safety valves are not lagged during testing (see Appendices B and C).

This Standard incorporates Amendment No. 1 (July 1992), Amendment No. 2 (December 1995), Amendment No. 3 (August 1996), Amendment No. 4 (January 2000) and Amendment No. 5 (September 2005). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

This Standard is one of a series covering storage water heaters as follows:

AS

1056	Storage water heaters
1056.1	Part 1: General requirements (this Standard)
1056.2	Part 2: Specific requirements for water heaters with single shells
1056.3	Part 3: Specific requirements for water heaters with composite shells
1056.4	Part 4: Calculations of energy consumption

A5 The amendment to this Standard includes key changes that will improve the accuracy of the existing methods of test for MEPS heat loss testing to acceptable levels.

AS/NZS 4692.1 sets out a new test method for MEPS heat loss testing.

This amended Standard will remain current until confidence and experience have been gained with AS/NZS 4692.1, after which time it will be superseded by AS/NZS 4692.1 and AS/NZS 4692.2.

The new regulatory Standard AS/NZS 4692.2 will allow testing to either the amended AS/NZS 1056.1 or AS/NZS 1361, whichever is applicable, or to AS/NZS 4692.1. MEPS levels, as defined under each test method, are provided in AS/NZS 4692.2. The key elements included in Amendment 5 are as follows:

- Energy correction and thermostat cut-out.
- Shielding of the water heater from other objects under test that have a temperature difference of greater than 5 K.
- Mounting the water heater on a wooden platform when testing. A cement sheet is also an acceptable mounting.
- 24 h stabilization plus 48 h test period.

Product specification to be supplied with the test report.

Frequency of sampling for air and water temperature measurements to be reduced to an acceptable period (5 min or less).

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	4
1.2 APPLICATION	4
1.3 REFERENCED DOCUMENTS	4
1.4 DEFINITIONS	5
1.5 COMPLIANCE WITH OTHER SPECIFICATIONS	9
1.6 RATED HOT-WATER DELIVERY/CAPACITY	9
1.7 FACILITIES FOR MAINTENANCE	9
1.8 CLEANLINESS IN MANUFACTURE	10
SECTION 2 CONSTRUCTION REQUIREMENTS	
2.1 FIXING OF HEATING UNITS TO SHELL	11
2.2 SACRIFICIAL ANODES	13
2.3 FITTINGS IN CONTACT WITH WATER	13
2.4 THERMAL INSULATION	13
2.5 CORSET	14
2.6 CASING	14
2.7 HYDROSTATIC OVERPRESSURE WITHSTAND	15
2.8 PRESSURE FATIGUE WITHSTAND (OF AN UNVENTED CONTAINER)	15
2.9 EXTERNAL TORQUE WITHSTAND	15
SECTION 3 ELECTRICAL COMPONENTS	
3.1 HEATING UNITS	16
3.2 THERMOSTATS AND THERMAL CUTOUTS	18
SECTION 4 FEED TANKS AND WATER FITTINGS	
4.1 ATTACHED FEED TANK	19
4.2 WATER FITTINGS	20
4.3 WATER PIPES	20
4.4 DRAINAGE FACILITIES	20
SECTION 5 MARKING AND INSTALLATION INSTRUCTIONS	
5.1 MARKING	21
5.2 INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE	21
SECTION 6 DETERMINATION OF COMPLIANCE	
6.1 TYPE TESTS	23
6.2 ROUTINE TESTS	23
APPENDICES	
A INFORMATION TO BE SUPPLIED WITH ENQUIRY AND ORDER	25
B METHOD FOR THE DETERMINATION OF HEAT LOSS	26
C METHOD FOR THE DETERMINATION OF HOT-WATER DELIVERY	30
D TYPICAL PRODUCT SPECIFICATION FOR A WATER HEATER	33

STANDARDS AUSTRALIA

Australian Standard
Storage water heaters

Part 1: General requirements

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for:

- (a) Storage water heaters heated solely by electricity (hereinafter called 'water heaters') having rated hot-water deliveries within the range 25 L to 630 L and having heating units of the tubular-sheathed immersion type or the bobbin type.

NOTE: Where non-electric supplementary heating, e.g. from a solar collector or a slow combustion stove, is used, additional requirements may be necessary.

- (b) Gas storage water heaters by cross-reference to Code AG 102 published by The Australian Gas Association and the Australian Liquefied Petroleum Gas Association (see Clauses 1.3.2 and 1.5.2).

This Standard does not apply to heat-exchange water heaters (see AS 1361).

NOTES:

- 1 Water heaters having deliveries in excess of 630 L generally have special requirements. Intending purchasers of such water heaters are advised to include in their specification such requirements of this Standard as are relevant to their needs.
- 2 For the installation of household type hot-water systems, see AS 3500.4.
- 3 Information to be supplied with enquiries and orders for electric water heaters is given in Appendix A.

1.2 APPLICATION

Electric water heaters shall comply with the relevant requirements of this Standard and with the requirements of the following Standards, as applicable:

- (a) Water heaters with single shells AS 1056.2.
 (b) Water heaters with composite shells AS 1056.3.

NOTE: A number of electricity supply authorities specify compliance with various performance and construction requirements of this Standard in order that the water heater be eligible for supply under certain tariffs.

1.3 REFERENCED DOCUMENTS**1.3.1 Standards**

The following Standards are referred to in this Standard:

AS

1056	Storage water heaters
1056.2	Part 2: Specific requirements for water heaters with single shells
1056.3	Part 3: Specific requirements for water heaters with composite shells