

Australian/New Zealand Standard™

**Solar and heat pump water heaters—
Design and construction**



AS/NZS 2712:2002

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CS-028, Solar Water Heaters. It was approved on behalf of the Council of Standards Australia on 26 June 2002 and on behalf of the Council of Standards New Zealand on 20 June 2002.

This Standard was published on 27 August 2002.

The following are represented on Committee CS-028:

Australian Chamber of Commerce and Industry
Australian Gas Association
Australian Industry Group
Australian and New Zealand Solar Energy Society
Energy Efficiency and Conservation Authority of New Zealand
Energy Management Association of New Zealand
James Cook University
Ministry of Energy and Utilities NSW
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This Standard was issued in draft form for comment as DR 01200.

Australian/New Zealand Standard™

Solar and heat pump water heaters— Design and construction

Originated as AS 2712—1984.
Previous edition 1993.
Jointly revised and designated as AS/NZS 2712:2000.
Reissued incorporating Amendment No. 1 (September 2005).

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Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 4699 3

PREFACE

This Standard was prepared by the Standards Australia Committee CS-028, Solar Water Heaters, to supersede AS 2712—1993, Solar water heaters—Design and construction.

This Standard incorporates Amendment No. 1 (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.

Although this Standard indicates compatibility with the requirements of AS 1056, *Storage water heaters* and Australian Gas Code AG 102, *Approval requirements for gas water heaters*, with respect to systems with gas supplementary heating, other supplementary heating systems admissible within the requirements of AS/NZS 3500.4, *National Plumbing and Drainage Code, Part 4: Hot water supply systems*, may be employed.

The objective of this Standard is to provide designers, manufacturers, installers and interested parties with the design and construction requirements of solar and heat pump hot water supply systems.

Given new developments in solar water heaters, in particular the use of plastics, it is the intention of the committee to review this standard and make revisions when appropriate. In particular, the issues of stagnation testing related to new materials is being reviewed and the incorporation of information on pump circulation systems commonly used in New Zealand when available.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	5
1.2 APPLICATION	5
1.3 REFERENCED DOCUMENTS	6
1.4 DEFINITIONS	7
1.5 COMPLIANCE WITH OTHER SPECIFICATIONS	9
1.6 SYSTEM PERFORMANCE.....	9
1.7 FACILITIES FOR MAINTENANCE.....	10
1.8 SYSTEMS WITH PRIMARY CIRCULATION	10
1.9 WATER PIPES.....	10
1.10 PRESSURE- AND TEMPERATURE-RELIEF VALVES.....	11
1.11 OVER-TEMPERATURE PROTECTIVE DEVICE.....	11
1.12 HEAT EXCHANGER UNITS	12
1.13 MATERIALS IN CONTACT WITH WATER	12
1.14 INSTRUCTIONS AND MARKING.....	12
SECTION 2 SUPPLEMENTARY ENERGY REQUIREMENTS	
2.1 SUPPLEMENTARY HEATING UNIT	15
2.2 THERMOSTAT	15
SECTION 3 CONTAINER	
3.1 SHELL	16
3.2 SACRIFICIAL ANODES.....	16
3.3 THERMAL INSULATION OF THE CONTAINER	16
3.4 CASING	16
3.5 ATTACHED FEED TANK	16
3.6 DRAIN HOLE	17
3.7 PROTECTION AGAINST INGRESS OF WATER.....	17
SECTION 4 COLLECTORS	
4.1 MATERIALS	18
4.2 BONDING OF ABSORBER TUBING.....	19
4.3 PAINTED ABSORBER SURFACES	19
4.4 GLAZING OF COLLECTORS	19
4.5 STAGNATION.....	19
4.6 IMPACT RESISTANCE	20
4.7 PROTECTION AGAINST INGRESS OF WATER.....	21
4.8 DRAIN HOLES.....	21
4.9 AIR VENT	21
4.10 PROTECTION AGAINST FREEZING.....	21
4.11 STRUCTURAL STRENGTH.....	21
SECTION 5 HEAT PUMP WATER HEATERS	
5.1 SCOPE	22
5.2 REFRIGERANT.....	22
5.3 DESIGN AND CONSTRUCTION	23
5.4 MARKING AND INSTRUCTION	24
5.5 TESTING	24

SECTION 6 TESTING

6.1	ROUTINE TESTING	25
6.2	TYPE TESTING.....	25

APPENDICES

A	REQUIREMENTS FOR HEAT EXCHANGE UNITS	27
B	STAGNATION TEST FOR COLLECTORS AND INTEGRAL COLLECTOR AND CONTAINER	30
C	IMPACT RESISTANCE TEST	35
D	TEST FOR WATER INGRESS AND RETENTION IN COLLECTORS.....	36
E	TEST FOR PROTECTION AGAINST FREEZING	39
F	METHOD FOR DETERMINATION OF TANK HEAT LOSS FROM RAISED ELEMENT TANKS.....	42
G	NO-LOAD SYSTEM PERFORMANCE TEST.....	44

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND**Australian/New Zealand Standard****Solar and heat pump water heaters—Design and construction****SECTION 1 SCOPE AND GENERAL****1.1 SCOPE**

This Standard specifies requirements for the design and construction of solar and heat pump hot water supply systems and/or components for household premises and for commercial and industrial installations comparable with household installations, intended to deliver potable water of acceptable quality. It covers systems with a volumetric storage capacity up to and including 700 L, including solar water heaters that primarily use metallic absorber plates in the collector(s).

NOTES:

- 1 This Standard may be used for a range of solar water heaters that utilize primarily plastics in the construction of the absorber plate.
- 2 It is intended that these products be covered by this Standard or alternatively the next revision of this Standard, which will include more specific test requirements for the evaluation of the construction of such appliances.

The Standard does not apply to solar hot water supply systems for space heating, swimming pool heating or for large buildings such as multiple dwelling buildings.

NOTES:

- 1 The requirements of this Standard are based on systems with fixed solar orientation and inclination, but they may be applied to tracking systems.
- 2 Rules for the installation of household solar hot water supply systems are given in AS/NZS 3500.4.2.

1.2 APPLICATION

This Standard is applicable to the following types of solar and heat pump hot water supply systems:

- (a) Solar collector with remote hot water container systems, with both components supplied as a complementary and rated system and with primary circuit piping arranged to suit site conditions.
- (b) Close-coupled or integral solar water heaters.
- (c) Solar-boosted heat pump water heaters.
- (d) Air source heat pump water heaters.

For solar water heaters, the primary water circuit flow between the collector and the container may be either thermosyphon or forced circulation for the type described in Item (a). Supplementary water heating may be incorporated in the solar water heater system and may be either integral with the solar water heater or remote from it.

For health and safety requirements the solar water heater shall comply with AS 3498.

Clauses 1.5, 1.12, 2.1 and 2.2 are not applicable to solar water heaters that do not have any supplementary heating, as is the case with solar preheaters.