



Greenhouse and Energy Minimum Standards (Electric Water Heaters) Determination 2012¹

Greenhouse and Energy Minimum Standards Act 2012

I, MARK DREYFUS, Parliamentary Secretary for Climate Change and Energy Efficiency, make this Determination under section 23 of the *Greenhouse and Energy Minimum Standards Act 2012*.

Dated 25 October 2012

MARK DREYFUS

Parliamentary Secretary for Climate Change and Energy Efficiency

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1 Name of Determination

This Determination is the *Greenhouse and Energy Minimum Standards (Electric Water Heaters) Determination 2012*.

2 Commencement

This Determination comes into force on the day after it is registered.

3 Definitions

In this Determination:

Act means the *Greenhouse and Energy Minimum Standards Act 2012*.

AS 1056-1991 means *Australian Standard 1056-1991 Storage water heaters - Part 1: General requirements*, as it existed on the date this Determination came into force.

Note 1: AS 1056-1991 is available from Standards Australia Limited.

Note 2: AS 1056-1991 includes all amendments up to and including AS 1056-1991 /Amdt:5 made on 19 September 2005.

AS 1361-1995 means *Australian Standard 1361-1995 Electric heat-exchange water heaters — Part 1: For domestic applications*, as it existed on the date this Determination came into force.

Note 1: AS 1361-1995 is available from Standards Australia Limited.

Note 2: AS 1361-1995 includes all amendments up to and including AS 1361-1995 /Amdt:1 made on 14 September 2005.

AS/NZS 4234:2008 means *Australian/New Zealand Standard 4234:2008 Heated water systems – Calculation of energy consumption*, as it existed on the date this Determination came in to force.

Note 1: AS/NZS 4234:2008 is available from Standards Australia Limited.

Note 2: AS/NZS 4234:2008 includes all amendments up to and including AS/NZS 4234:2008 / Amdt: 2 made on 14 November 2011.

AS/NZS 4692.1:2005 means *Australian/New Zealand Standard 4692.1:2005 Electric water heaters - Part 1: Energy, consumption, performance and general requirements*, as it existed on the date this Determination came into force.

Note 1: AS/NZS 4692.1:2005 is available from Standards Australia Limited.

Note 2: AS/NZS 4692.1:2005 includes all amendments up to and including AS/NZS 4692.1:2005 /Amdt:1 made on 21 April 2011.

AS/NZS 4692.2:2005 means *Australian/New Zealand Standard 4692.2:2005 Electric water heaters - Part 2: Minimum Energy Performance Standard (MEPS) requirements and energy labelling*, as it existed on the date this Determination came into force.

Note: AS/NZS 4692.2:2005 is available from Standards Australia Limited.

Australian Standard means a standard that is published by Standards Australia Limited denoted by the letters "AS" and identifying numbers and/or letters.

Australian/New Zealand Standard means a standard that is jointly published by Standards Australia Limited and Standards New Zealand, is applicable in both countries and denoted by the letters "AS/NZS" and identifying numbers and/or letters.

CIE Standard means a standard that is published by, or on behalf of, the International Commission on Illumination.

heat loss has the same meaning as in clause 1.6.3 of AS/NZS 4692.2:2005.

heat storage volume means the total volume of water and heat transfer fluids within a heat exchange water heater.

Note: This is the same meaning as in subclause 1.4.11 of AS/NZS 4692.1:2005

hot water delivery means the quantity of hot water that can be drawn off continuously at a specified flow rate without exceeding a specified temperature drop or, in the case of a heat exchanger water heater, while exceeding a specified cold temperature rise.

Note: This is the same meaning as in subclause 1.4.14 of AS/NZS 4692.1:2005

IEC Standard means a standard that is published by, or on behalf of, the International Electrotechnical Commission.

mixed hot water delivery means the volume of water, at 45°C, that can be delivered at a constant energy flow rate.

Note: This is the same meaning as in subclause 1.4.15 of AS/NZS 4692.1:2005

rated hot water delivery means the value declared for the hot water delivery of the model by the manufacturer.

Note: This definition has been modified from the definition in subclause 1.6.4 of AS/NZS 4692.2:2005.

standard means an Australian Standard, an Australian/New Zealand Standard, a CIE Standard, an IEC Standard or any other equivalent document.

Note: Several other words and expressions used in this Determination have the meaning given by section 5 of the Act. For example:

- category A product
- covered by
- family of models
- GEMS
- GEMS labelling requirements
- GEMS level requirements
- model
- product classes

4 Interpretation

Applicable definitions of terms or phrases

- (1) If a term or phrase is not defined under the Act, the Regulations to the Act or in this Determination, but the term is defined in a standard mentioned specifically in section 3 of this Determination, the term or phrase is to be read for the purposes of this Determination as having the meaning of the term under the relevant standard.

Note: Notwithstanding this, for convenience to users, some of the key terms for ascertaining if a product is covered by this Determination are defined in this Determination.

Applicable version of documents incorporated into standards

- (2) For the purposes of this Determination the applicable version of any document, including a standard, that:
 - (a) is referred to in a standard under the heading ‘Referenced Documents’, or under an equivalent heading in a standard; and
 - (b) must be applied to give effect to this Determination or a standard referred to in this Determination,

is the version of the document, including a standard, that existed at the date this Determination came into force.

Note: For example subclause 2.2.1.2 of AS/NZS 4692.2:2005 provides that the requirements for rated hot water delivery, as set out in AS/NZS 4692.1:2005, shall be met by each individual unit. The applicable version of AS/NZS 4692.1:2005 is the version that existed at the date this Determination came into force.

5 Specified product classes covered by this Determination

- (1) This Determination covers electric water heaters in the product classes set out at subsection (2) that:
 - (a) are storage water heaters with rated hot water delivery up to 630 litres, including the storage component of:
 - (i) solar water heaters;
 - (ii) heat pump water heaters; and
 - (iii) indirectly heated systems; or
 - (b) are heat exchange water heaters of a heat storage volume up to 710 litres; or
 - (c) are water heaters that use electric resistive heating as the primary energy source.

Note 1: This subsection reflects the scope specified in clause 1.1 of AS/NZS 4692.1:2005.

Note 2: This subsection specifies products that are covered by the Determination. See subsection (3) for products that are not covered.

- (2) The product classes are as follows:

Product class	Products covered by the class
Class 1	Electric un-vented displacement water heaters with a rated hot water delivery of up to 630 litres inclusive.
Class 2	Electric vented displacement water heaters with a rated hot water delivery from 25 litres to 630 litres inclusive.
Class 3	Electric heat exchange water heaters with a heat storage volume from 45 litres to 710 litres inclusive.

- (3) For subsection 23 (2) of the Act, this Determination does not cover:
- (a) water heaters that use electric-resistive heating to provide less than 50 per cent of the energy supplied in a typical year (for example, heat pump water heaters and solar water heaters) when simulated to AS/NZS 4234:2008. Simulation to AS/NZS 4234:2008 must be carried out using climate zone 3 with an energy delivery of 22.5 MJ/day for an electric boosting heating unit and an energisation profile specified by the manufacturer;
 - (b) vented water heaters, with an attached feed tank, that have a hot water delivery of less than 125 litres; or
 - (c) water heaters that are not intended for electric power grid connection, including water heaters for use in vehicles and marine applications.

Note: This subsection reflects the exclusions specified in clause 1.4 of AS/NZS 4692.2:2005.

- (4) In this section:
a water heater is:
- (a) un-vented if the required venting to atmosphere is controlled by a relief valve; and

Note: This is the same meaning as in subclause 1.4.26 of AS/NZS 4692.1:2005.

- (b) vented if it is open to the atmosphere so that under no conditions of use can the pressure at the surface of the water be other than atmospheric.

Note: This is the same meaning as in subclause 1.4.8 of AS/NZS 4692.1:2005.

displacement water heater means a storage water heater into which water is fed into the container displacing the hot water as it is drawn off.

heat exchanger means a system to transfer heat from a heat transfer fluid to the supply water..

Note 1: This definition is not intended to apply to water heat exchangers in water heaters where heating of stored or supplied water is via a combustion process.

Note 2: This is the same meaning as in subclause 1.4.9 of AS/NZS 4692.1:2005

heat exchange water heater means a water heater in which potable water is heated by a heat transfer system that maintains a physical separation between a primary heat transfer fluid (which may be distilled, demineralised or potable water, specific refrigerants or chemicals) and potable water.

Note 1: The heat transfer fluid may be heated by means such as electricity, solar, gas or other energy sources. In most cases the primary heat transfer fluid (which stores energy) is in a container (usually vented), and the heat exchanger (which extracts heat from the primary heat transfer fluid) is usually un-vented.

Note 2: This is the same meaning as in subclause 1.4.8 of AS/NZS 4692.1:2005.

heat pump water heater means a water heater with a mechanical device, which uses cyclic adiabatic compression of a vapour, followed by expansion, to force phase changes, which result in heating of the water through a heat exchange process (also known as vapour compression type water heater).

Note: This is the same meaning as in subclause 1.4.1 of AS/NZS 4692.1:2005.

solar water heater means a system normally consisting of a collector and a container, which may be integral, close coupled or remote, where water (or a water-based heat-exchange fluid) is heated by means of radiant energy from the sun. Water or fluid heated in the solar collector may be circulated using the thermosyphon principle or pumped. It is common for solar water heaters to be fitted with or connected to a supplementary heating energy source.

Note: This is the same meaning as in subclause 1.4.23 of AS/NZS 4692.1:2005.

storage water heater means:

- (a) an appliance that incorporates a thermally insulated container in which the water is heated and stored for subsequent use; or

Note: This is the same meaning as in subclause 1.4.24 of AS/NZS 4692.1:2005

- (b) a heat exchange water heater with a heat exchanger when the volume of heated water, which is subsequently delivered as hot water, is greater than the volume of the heat transfer fluid.

Note: This is the same meaning as in subclause 1.4.8 of AS/NZS 4692.1:2005.

6 GEMS level requirements

Energy use and greenhouse gas production

- (1) For paragraphs 24 (1) (a) and 25 (a) of the Act, the specified energy use requirements are the requirements mentioned in:
 - (a) for products in product class 1, subclause 2.2.1.3 of AS/NZS 4692.2:2005 (maximum allowable heat loss); and
 - (b) for products in product class 2, subclause 2.2.2.3 of AS/NZS 4692.2:2005 (maximum allowable heat loss); and
 - (c) for products in product class 3, subclause 2.2.3.3 of AS/NZS 4692.2:2005 (maximum allowable heat loss).

Conducting tests

- (2) For paragraphs 24 (1) (a) and 25 (b) of the Act, the specified requirements for conducting tests are the requirements mentioned in:

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- (a) for products in product classes 1 and 2, Appendix C of AS/NZS 4692.1:2005 or Appendix B of AS 1056-1991; and
 - (b) for products in product class 3, Appendix C of AS/NZS 4692.1:2005 or Appendix C of AS 1361-1995.

7 GEMS labelling requirements

There are no GEMS labelling requirements for products covered by this Determination.

8 Other GEMS requirements

Product performance

- (1) For subsection 24 (2) and paragraph 27 (1) (b) of the Act, the specified requirements relating to product performance for products covered by this Determination are the requirements mentioned in:
 - (a) for products in product class 1, subclause 2.2.1.2 of AS/NZS 4692.2:2005 (rated hot water delivery);
 - (b) for products in product class 2, subclause 2.2.2.2 of AS/NZS 4692.2:2005 (rated hot water delivery);
 - (c) for products in product class 3, subclause 2.2.3.2 of AS/NZS 4692.2:2005 (heat storage volume and hot water delivery); and
 - (d) for products in all product classes, clause 2.4 of AS/NZS 4692.2:2005 (rated mixed hot water delivery) where a claim is made by the supplier in respect to rated mixed hot water delivery.

Conducting tests

- (2) For subsection 24 (2) and paragraph 27 (1) (e) of the Act, the specified requirements for conducting tests in relation to paragraph 27 (1) (b) of the Act are the requirements mentioned in:
 - (a) for products in product classes 1 and 2, Appendix D of AS/NZS 4692.1:2005 or Appendix C of AS 1056-1991 (rated hot water delivery); and
 - (b) for products in product class 3, subclause 6.2 of AS/NZS 4692.1:2005 (heat storage volume and hot water delivery); and
 - (c) for products in all product classes, Appendix E of AS/NZS 4692.1:2005 (rated mixed hot water delivery), where claimed.

9 Families of models

For section 28 of the Act, the specified circumstances in which two or more models of products covered by this Determination are in the same family of models are the circumstances mentioned in subclause 1.6.2 of AS/NZS 4692.2:2005

10 Product Categories

For section 29 of the Act, the products covered by this Determination are category A products.

Note

1. All legislative instruments and compilations are registered on the Federal Register of Legislative Instruments kept under the *Legislative Instruments Act 2003*. See <http://www.frli.gov.au>.