



Greenhouse and Energy Minimum Standards (Liquid-chilling Packages Using the Vapour Compression Cycle) 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 (Liquid-chilling Packages Using the Vapour Compression Cycle) 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/NZS 4776.1.1:2008 means *Australian/New Zealand Standard 4776.1.1:2008 Liquid-chilling packages using the vapour compression cycle - Part 1.1: Method of rating and testing for performance-rating*, as it existed on the date this Determination came into force.

Note 1: AS/NZS 4776.1.1:2008 is available from Standards Australia Limited.

AS/NZS 4776.1.2:2008 means *Australian/New Zealand Standard 4776.1.2:2008 Liquid-chilling packages using the vapour compression cycle. Part 1.2: Method of rating and testing for performance-testing*, as it existed on the date this Determination came into force..

Note 1: AS/NZS 4776.1.2:2008 is available from Standards Australia Limited.

AS/NZS 4776.2:2008 means *Australian/New Zealand Standard 4776.2:2008 Liquid-chilling packages using the vapour compression cycle. Part 2: Minimum energy performance standard (MEPS) and compliance requirements*, as it existed on the date this Determination came into force.

Note 1: AS/NZS 4776.2:2008 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 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.

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

liquid-chilling package means a factory-made and prefabricated assembly (not necessarily shipped as one package) of one or more compressors, condensers and evaporators, with interconnections and accessories, designed for the purpose of cooling water, and is a machine specifically designed to make use of a vapour compression refrigeration cycle to remove

heat from water and reject the heat to a cooling medium, usually air or water.

Note: This is the same meaning as in clause 4.10 of AS/NZS 4776.1.1:2008.

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, clause 5.1 of AS/NZS 4776.1.1:2008 provides that all tests for liquid-chilling package ratings shall be conducted in accordance with AS/NZS 4776.1.2:2008. The applicable version of AS/NZS 4776.1.2:2008 is the version that existed at the date this Determination came into force.

5 Specified product class covered by this Determination

- (1) This Determination covers air-cooled and water-cooled liquid-chilling packages with a cooling capacity of 350 kW or above.

Note 1: This subsection reflects the scope specified in clause 1 of AS/NZS 4776.1.1:2008.

Note 1: This subsection specifies products that are covered by the Determination. See subsection (3) for products that are not covered.

- (2) The products covered by this Determination form a single product class for the purposes of the Act.

- (3) For subsection 23 (2) of the Act, this Determination does not cover:

- (a) liquid-chilling packages driven other than by an electric motor;
- (b) air-cooled liquid-chilling packages with centrifugal fans;
- (c) liquid-chilling packages with remote condensers;
- (d) liquid-chilling packages for fluids other than water;
- (e) free cooling liquid-chilling packages (air cooled);
- (f) free cooling liquid-chilling packages (water cooled);
- (g) heat pump (reverse cycle) liquid-chilling packages; or
- (h) heat recovery liquid-chilling packages.

Note: This subsection reflects the exclusions specified in clause 1 of AS/NZS 4776.1.1:2008.

- (4) In this section:

centrifugal fan means a fan impeller that produces pressure from the centrifugal force (created by rotating the air column contained between the fan and blades) and kinetic energy imparted to the air by its velocity leaving the impeller.

condenser means a vapour condenser in a refrigeration system, where the refrigerant is liquefied and discharges its heat to the environment.

free cooling means how ambient air, temperature permitting, is used to cool the chilled water supply, utilising, for example, compressors, evaporators, condensers, as in a conventional air cooled chiller, but with the addition of an integral dry cooler circuit.

free cooling liquid-chilling package (air cooled) means a liquid-chilling package that has an additional integral free cooling circuit with a self-contained control system.

free cooling liquid-chilling package (water cooled) means a liquid-chilling package that has been designed with the appropriate controls and valves to be able to utilise condenser water which is at a temperature lower than the required leaving chilled water temperature, typically 10°C to 12.5°C to provide cooling without the need to run the compressor.

heat pump (reverse cycle) liquid-chilling package means a liquid-chilling package that has components and controls that enable the reverse of the flow of refrigerant so that the water leaving the evaporator vessel of the chiller is heated in the process rather than cooled.

heat recovery liquid-chilling package means a liquid-chilling package that has components and controls that allow for heat to be reclaimed from the refrigeration and to be used for such applications as heating water for use in the air conditioning or heating system. The chiller must be specifically designed to be able to heat water to a minimum 40°C.

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 section 5 of AS/NZS 4776.2:2008.

Conducting tests

- (2) For paragraphs 24 (1) (b) and 26 (b) of the Act, the requirements for conducting tests for products covered by this Determination are the requirements mentioned in:
 - (a) section 5 of AS/NZS 4776.1.1:2008 and
 - (b) sections 5 to 10 of AS/NZS 4776.1.2:2008.

7 GEMS labelling requirements

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

8 Other GEMS requirements

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

9 Families of models

- (1) For section 28 of the Act, the specified circumstances in which 2 or more models from a single product class covered by this Determination are in the same family of models, are when the models:
 - (a) are of a single brand; and
 - (b) rely on the same test report that sets out the results of testing conducted in accordance with section 6 of this Determination; and
 - (c) have the same physical characteristics that are relevant to complying with sections 6 and 7 of this Determination; and

(d) have the same energy performance characteristics that are relevant to complying with sections 6 and 7 of this Determination, including but not limited to:

- (i) rated energy consumption; and
- (ii) rated capacity; and
- (iii) energy efficiency.

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>.