AS/NZS 4776.1.1:2008

Australian/New Zealand Standard™

Liquid-chilling packages using the vapour compression cycle

Part 1.1: Method of rating and testing for performance—Rating

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME-086, Commercial Airconditioning Equipment. It was approved on behalf of the Council of Standards Australia on 9 September 2008 and on behalf of the Council of Standards New Zealand on 19 September 2008.
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The following are represented on Committee ME-086:

Airconditioning & Refrigeration Equipment Manufacturers Association of Australia
Australian Building Codes Board
Australian Greenhouse Office, Department of the Environment and Water Resources
Australian Institute of Refrigeration, Air Conditioning and Heating
Energy Efficiency and Conservation Authority of New Zealand
Engineers Australia

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-086, Commercial Air Conditioning. This document is based on ISO PWD 19298-1, *Liquid-chilling packages using the vapour compression cycle*, Part 1: *Method for rating for performance*.

This Standard is part of a series for liquid-chilling packages, as follows:

AS/NZS	
4776	Liquid-chilling packages using the vapour compression cycle
4776.1.1	Part 1.1: Method of rating and testing for performance—Rating (this Standard)
4776.1.2	Part 1.2: Method of rating and testing for performance—Testing
4776.2	Part 2: Minimum energy performance standard (MEPS) and compliance requirements

Part 1.1 of the series (this Part) is published with the express approval of the Australian Greenhouse Office, the Australian State and Territory regulatory authorities, and the Energy Efficiency and Conservation Authority of New Zealand, and it is structured to be suitable for reference in legislation in Australia and New Zealand.

In order for a manufacturer to comply with this Standard, conformance to both Part 1.1 and Part 1.2 is required. Agencies or companies that offer testing services only may use Part 1.2 of the Standard. The Standard is intended for use as the basis for certification programs in various geographic regions. This Standard may also be used for customer-specific tests conducted in appropriate test facilities; however, it is not intended for field testing.

Acknowledgment is due to the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) of the USA, whose Standards were reviewed during the development of this Standard. This Standard is a Joint Australian/New Zealand Standard and is not an AHRI Standard.

Statements expressed in mandatory terms in notes to figures are deemed to be requirements of this Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Liquid-chilling packages using the vapour compression cycle

Part 1.1: Method of rating and testing for performance—Rating

1 SCOPE

This Standard sets out a procedure for rating liquid-chilling packages used in applications with temperatures as described in Clause 5.3 and as defined in Clause 4.12. This Standard covers air- and water-cooled liquid-chilling packages of cooling capacity 350 kW and above.

This Standard does not cover—

(a) liquid-chilling packages driven by other than electric motors;

(b) air-cooled liquid-chilling packages with centrifugal fans;

(c) liquid-chilling packages with remote condensers; and

(d) liquid-chilling packages for fluids other than water.

This Standard covers full-load and part-load ratings to allow for an energy analysis of the unit in different applications.

2 OBJECTIVE

The objective of this Standard is to establish methods of rating the performance of factory-made liquid-chilling packages using the vapour compression cycle.

3 NORMATIVE REFERENCES

The following referenced documents are indispensable for the application of this Standard:

AS/NZS
1677 Refrigerating systems
1677.1 Part 1: Refrigerant classification

ARI
550/590 Water chilling packages using the vapor compression cycle

4 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

4.1 Air-cooled condenser

A refrigeration system component that condenses refrigerant vapour by rejecting heat to air circulated over its heat transfer surface, causing a rise in the air temperature. Desuperheating and subcooling of the refrigerant may occur as well.

4.2 Bubble point

The saturation temperature of the refrigerant liquid at a specified pressure (°C).