AS/NZS 5141:2018

Australian/New Zealand Standard™

Residential heating and cooling systems—Minimum applications and requirements for energy efficiency, performance and comfort criteria

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

AS/NZS 5141:2018

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The following are represented on Committee EE-001:

Airconditioning & Refrigeration Equipment Manufacturers Association of Australia
Australian Ductwork Manufacturers Alliance
Australian Industry Group
Australian Institute of Refrigeration Air Conditioning and Heating
Australian Refrigeration Council
Climate Control Companies Association of NZ
Consumer Electronics Suppliers Association
E-Oz Energy Skills Australia
Gas Appliance Manufacturers Association of Australia
Institute of Refrigeration Heating & AirConditioning Engineers of New Zealand
Master Plumbers and Mechanical Services Association of Australia, Vic.
National Acoustic Laboratory
Office of Environment and Heritage
Refrigeration & Air Conditioning Contractors Association of Australia
TAFE NSW
Victorian Building Authority

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First published as AS/NZS 5141:2018.

Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EE-001, Residential Air Conditioning.

The objective of this Standard is to specify requirements for the design, selection, installation, commissioning and maintenance of residential heating and cooling systems to maximize operating energy efficiency within residential buildings. It also sets requirements to achieve prescribed performance and comfort criteria.

This Standard includes requirements for ducted systems.

It does not include design and performance requirements for evaporative coolers as defined by AS 2913.

The terms "normative" and "informative" are used in a Standard to define the application of the appendices to which they apply. A "normative" appendix is an integral part of a Standard, whereas an "informative" appendix is only for information and guidance. Statements expressed in mandatory terms in notes and footnotes to tables and figures are deemed to be requirements of this Standard.

Contents

Foreword

This Standard should be read in conjunction with laws and regulations related to the installation of residential air conditioners and gas heating appliances. These include:

(a) Noise level requirements

State and local authorities may impose noise control regulations that set limits on the noise level of air conditioners. It may be the responsibility of the user of the air conditioner, or the owner/occupier of the property in which the air conditioner is installed, to ensure that noise emitted due to the operation of the machine does not have an adverse impact on the amenity of neighbours. This Standard should be read in conjunction with state and local authority noise control requirements.

(b) Minimum Energy Performance (MEPS) requirements

Air conditioners installed in Australia and New Zealand are required to meet Minimum Energy Performance (MEPS) requirements and be registered on the government website www.energyrating.gov.au. Equipment installed to this Standard should meet MEPS requirements.

(c) Electrical and gas safety

In Australia, air conditioners and gas heaters for residential use are required to be registered by a responsible supplier on the Electrical Regulatory Authorities Council (ERAC) website under the Electrical Equipment Safety System (EESS) http://www.erac.gov.au/. In New Zealand, the air conditioner needs to either be registered on the EESS or the New Zealand supplier needs to have issued a Supplier Declaration of Compliance (SDoC) for the air conditioner. An air conditioner is required to display the Regulatory Compliance Mark (RCM) as evidence that the appliance conforms with applicable appliance Standards. Gas ducted heaters are required to conform with AS/NZS 5263.1.6 and be certified by a Conformity Assessment Body (CAB) with the certification number and CAB's certification label displayed on the heater. In New Zealand the heater is required to carry a compliance label. Equipment installed to this Standard should conform with the relevant electrical and gas safety requirements.

(d) The National Construction Code (NCC)

The Australian National Construction Code (NCC) specifies minimum R-Value requirements for heating and cooling ductwork based on climate zone and type of heating or cooling system. Ductwork and ductwork fittings should conform with NCC requirements.

(e) Refrigerant licensing

In Australia, practitioners installing or working on air conditioning systems that are designed to contain a controlled HFC, HCFC or CFC refrigerant are required to hold a relevant licence, granted under the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995. In New Zealand, practitioners transferring refrigerant into a pressure vessel are required to hold an Approved Filler Certificate for Class 2.2.1A refrigerant gas. Installers working with systems that are designed to contain a controlled HFC, HCFC or CFC refrigerant should hold the relevant refrigerant licences.

Commonwealth and State/Territory agencies may have additional requirements regarding installer licensing. Up-to-date information can be accessed via the appropriate agencies.

Commonwealth	Australian Refrigeration Council
ACT	Access Canberra — Construction and Workplace and Dangerous Substances Licensing
NSW	Fair Trading
NT	Electrical Workers and Contractors Licensing Board

QLD	Queensland Building and Construction Commission WorkCover Queensland
SA	Consumer and Business Services
TAS	Consumer, Business and Occupational Services Department of Justice
VIC	Energy Safe Victoria Victorian Building Authority
WA	Energy Safety — Department of Mines, Industry Regulation and Safety

(f) Installation (gasfitting) licensing

Installers working with systems that consume fuel gases are to hold the relevant gasfitting license.

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1 Scope and general

1.1 Scope

This Standard specifies the requirements for design, selection, installation, commissioning and maintenance of residential heating and cooling climate control systems.

1.2 Application

This Standard applies to all new installations, replacement installations and additions in residential buildings. The Standard applies to the following types of climate control systems:

(a) Ducted air conditioners and reverse-cycle heat pumps, including unitary and split systems (single-head and multi-ducted).

(b) Non-ducted air conditioners and reverse-cycle heat pumps, including single-head split systems, multi-split and unitary units.

(c) Gas-ducted air heaters, including add-on cooling.

1.3 Referenced documents

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 1170.4, *Structural design actions, Part 4: Earthquake actions in Australia*

AS 1668.2, *The use of ventilation and airconditioning in buildings, Part 2: Mechanical ventilation in buildings*

AS 4041, *Pressure piping*

AS 4254.1, *Ductwork for air-handling systems in buildings, Part 1: Flexible duct*

AS 4254.2, *Ductwork for air-handling systems in buildings, Part 2: Rigid duct*

AS 4426, *Thermal insulation of pipework, ductwork and equipment — Selection, installation and finish*

AS/NZS 1571, *Copper — Seamless tubes for airconditioning and refrigeration*

AS/NZS 2107, *Acoustics — Recommended design sound levels and reverberation times for building interiors*

AS/NZS 3000, *Wiring rules*

AS/NZS 3500, *Plumbing and drainage (series)*

AS/NZS 5149.1, *Refrigerating systems and heat pumps — Safety and environmental requirements, Part 1: Definitions, classification and selection criteria (ISO 5149-1:2014, MOD)*

AS/NZS 5149.2, *Refrigerating systems and heat pumps — Safety and environmental requirements, Part 2: Design, construction, testing, marking and documentation (ISO 5149-2:2014, MOD)*

AS/NZS 5149.3, *Refrigerating systems and heat pumps — Safety and environmental requirements, Part 3: Installation site (ISO 5149-3:2014, MOD)*