AS/NZS 3823.4.2:2014
(Incorporating Amendment No. 1)

AS/NZS 3823.4.2:2014

Australian/New Zealand Standard™

# Performance of electrical appliances—Air conditioners and heat pumps

# Part 4.2: Air-cooled air conditioners and air-to-air heat pumps—Testing and calculating methods for seasonal performance factors—Heating seasonal performance factor (ISO 16358-2:2013, (MOD))



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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-056, Room Air Conditioners. It was approved on behalf of the Council of Standards Australia on 5 September 2014 and on behalf of the Council of Standards New Zealand on 12 September 2014.
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The following are represented on Committee EL-056:

Airconditioning and Refrigeration Equipment Manufacturers Association of Australia
Australian Building Codes Board
Australian Industry Group
CHOICE
Consumer Electronics Association of New Zealand
Consumer Electronics Suppliers Association
Department of Industry (Australian Government)
Electrical Compliance Testing Association
Energy Efficiency and Conservation Authority of New Zealand
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# PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-056, Room Air Conditioners.

*This Standard incorporates Amendment No. 1 (May 2017). 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.*

The objective of this Standard is to provide a method of testing and calculating the seasonal performance factor of equipment using temperature bin distributions modified for Australian and New Zealand conditions.

This Standard is an adoption with national modifications and has been reproduced from ISO 16358-2:2013, *Air-cooled air conditioners and air-to-air heat pumps—Testing and calculating methods for seasonal performance factors*, Part 2: *Heating seasonal performance factor*, and its Corrigendum 1:2013, which has been added immediately after the main source text. ISO 16358-3 has been varied as indicated to take account of Australian/New Zealand conditions. The modifications are specified in Appendix ZZ. Appendix ZA has been added to provide information on the development of the climate files for Australia and New Zealand.

A1

As this Standard is reproduced from an International Standard, the following applies:

(a) In the source text 'this part of ISO 16358' should read 'this Australian/New Zealand Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

| *Reference to International Standard* | | *Australian/New Zealand Standard* | |
|---|---|---|---|
| ISO | | AS/NZS | |
| 5151 | Non-ducted air conditioners and heat pumps—Testing and rating for performance | 3823 | Performance of electrical appliances—Airconditioners and heat pumps |
| | | 3823.1.1 | Part 1.1: Non-ducted airconditioners and heat pumps—Testing and rating for performance (ISO 5151:2010, MOD) |
| 13253 | Ducted air-conditioners and air-to-air heat pumps—Testing and rating for performance | 3823.1.2 | Part 1.2: Ducted airconditioners and air-to-air heat pumps—Testing and rating for performance (ISO 13253:2011, MOD) |
| 15042 | Multiple split-system air-conditioners and air-to-air heat pumps—Testing and rating for performance | 3823.1.4 | Part 1.4: Multiple split-system airconditioners and air-to-air heat pumps—Testing and rating for performance (ISO 15042:2011, MOD) |

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

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## Part 4.2:
## Air-cooled air conditioners and air-to-air heat pumps—Testing and calculating methods for seasonal performance factors—Heating seasonal performance factor (ISO 16358-2:2013, (MOD))

## 1 Scope

**1.1** This part of ISO 16358 specifies the testing and calculating methods for seasonal performance factor of equipment covered by ISO 5151, ISO 13253 and ISO 15042. For the purposes of this part of ISO 16358, it is assumed that any make-up heating will be provided by electric heaters running concurrently with the heat pump.

**1.2** This part of ISO 16358 also specifies the seasonal performance test conditions and the corresponding test procedures for determining the seasonal performance factor of equipment, as specified in 1.1, under mandatory test conditions and is intended for use only in marking, comparison, and certification purposes.

**1.3** This part of ISO 16358 does not apply to the testing and rating of:

a) water-source heat pumps or water-cooled air conditioners;

b) portable units having a condenser exhaust duct;

c) individual assemblies not constituting a complete refrigeration system; or

d) equipment using the absorption refrigeration cycle.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5151, *Non-ducted air conditioners and heat pumps — Testing and rating for performance*

ISO 13253, *Ducted air-conditioners and air-to-air heat pumps — Testing and rating for performance*

ISO 15042, *Multiple split-system air-conditioners and air-to-air heat pumps — Testing and rating for performance*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5151, ISO 13253, ISO 15042 and the following apply.

**3.1**
**defined heating load**, $L_h$
heat defined as heating demand for a given outdoor temperature