STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Amendment No. 3
to
AS/NZS 3823.1.2:2001
Performance of electrical appliances—Airconditioners and heat pumps
Part 1.2: Test Methods—Ducted air conditioners and air-to-air heat pumps—Testing and rating of performance

REVISED TEXT

The 2001 edition of AS/NZS 3823.1.2 is amended as follows; the amendments should be inserted in the appropriate places.

SUMMARY: This Amendment applies to the Preface and Appendix ZZ.

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Preface

Add the following reference after AS/NZS 3823.1.1 (as inserted by Amendment No. 1 2002)

62301 Household electrical appliances—Measurement of standby power

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Clause 1.1

Delete Clause 1.1 as amended by Amendment No. 1 2002 and *replace* with the following:

This Standard specifies the conditions on which the capacity and energy consumption of factory-made residential, commercial and industrial electrically driven, mechanical-compression, single-package and split-system non-ducted airconditioners employing air-cooled condensers and non-ducted air-to-air heat pumps are based. The Standard also specifies the test methods to be applied for determining the capacity and efficiency ratings. This Standard covers equipment utilizing one or more refrigeration systems with one outdoor unit and one or more indoor units controlled by a single thermostat/controller. This Standard covers equipment utilizing single, multiple and variable capacity components.

NOTE: Air conditioners with water cooled condensers have been excluded from this part and are now covered under the requirements of AS/NZS 3823.1.3.

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Clause 1.4

Add the following new Clause:

This Standard does not cover the determination of seasonal efficiencies which may be required in some countries.

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Table 6

Delete the second test condition for test voltage and *replace* with the following:

(b) 90% of the lower rated voltage and 110% of the higher rated voltage except that where the higher rated voltage is 240 V, the maximum required test voltage shall be 253 V.

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Clause 6.2.1

Delete text and *replace* with the following:

Where possible equipment shall be rated for capacity by the calorimeter method. Where this is not possible, the indoor air-enthalpy test method may be used.

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Clause 6.6 and Clause 6.7

Add new Clauses 6.6 and 6.7 as follows:

6.6 Standby power and crank case heaters

6.6.1 *General*

Measurements of standby power and crank case heater power shall be undertaken in accordance with the procedures and instruments specified in AS/NZS 62301 and shall be determined for the following modes (as applicable) on the airconditioner:

(a) Off mode (where applicable).

(b) Passive standby mode (where applicable).

(c) Delay start mode (where applicable).

(d) Average crank case heater power for various outdoor conditions.

Power in each applicable mode shall be reported in Watts to the nearest 0.1 W or better.

6.6.2 *Off mode*

Where the air conditioner is not operational and where the air conditioner has no remote control or automatic program functions or these are inoperative. This mode is the lowest power consumption mode that cannot be switched off (influenced) by the user and that persists for an indefinite time when an appliance is connected to the mains electricity supply and used in accordance with the manufacturer's instructions. Measurements of crank case heaters (where present) shall be reported separately to this mode (see below) where possible.

NOTE: Products may use some power in off mode to supply electronic controls.

6.6.3 *Passive standby mode*

If present, where the airconditioner is not operational but where it has a remote control and/or is monitoring for a signal from a remote source or where there is a timer with some programming capability (e.g., timed or delay start). This mode includes those with remote communications capability where this facility is active. Where there are several possible power levels in this mode, the power for each shall be recorded with a description of its function. Measurements of crank case heaters (where present) shall be reported separately to this mode (see below) where possible.

6.6.4 *Delay start mode*

If present, is where the model has a separate user option that is used to delay the commencement operation (only where this function is not included as part of passive standby mode).

6.6.5 *Crank case heaters*

Where an airconditioner has a crankcase heater (a small resistive heater attached to the compressor sump or crankcase (the sump is where oil and some refrigerant collects when the unit is not operating)), the following readings shall be undertaken:

(a) Average heater power (Watts) with the section containing the compressor under a dry bulb ambient temperature of 20 deg C +/–2K.

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(b) Average heater power (Watts) with the section containing the compressor under a dry bulb ambient temperature of 7 deg C +/–2K.

Readings shall be measured over a period of not less than 3 hours. Where the heater exhibits any regular cyclic behaviour, a whole number of cycles shall be used to determine the average power.

Where the ambient temperature does not influence the power consumption of the crankcase heater the measurement may be conducted at any ambient temperature. Manufacturers may declare the values for (a) and (b) above based on measurements and knowledge of the control of the crankcase heater. For verification purposes a combination of analysis of the control system and measurements may be used to assess compliance, but a measurement at the specified conditions shall have precedence over any other method.

6.7 Testing airconditioners with variable output compressors

Some types of variable output capacity air conditioners may require the setting of non-user accessible controls to lock the output capacity at the rated capacity (or part load capacity) specified by the manufacturer. Where special tools or software are required to perform this function, the manufacturer shall provide the tools or software to the laboratory.

For 50% part load performance testing, in the absence of manufacturer's information a compressor speed of 50% of the rated compressor speed may be used.

Table 10

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Delete the words 'from rating conditions' from the heading in the third column and *delete* all '±' symbols from 3rd column. *Delete* the figures '0.5°C' (twice) from the 3rd column and *replace* with '0.6°C' (twice).

Clause 9.1.2

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Delete the text of the Clause and *replace* with the following:

The values of standard capacities shall be expressed in kilowatts (which may be rounded to the nearest 0.01 kW) or watts (which may be rounded to the nearest 10 W).
