

ISBN 978-0-626-28668-2

SANS 1125:2004

Edition 2.3

Any reference to SABS 1125 is deemed
to be a reference to this standard
(Government Notice No. 1373 of 8 November 2002)

SOUTH AFRICAN NATIONAL STANDARD

Room air conditioners and heat pumps

Published by SABS Standards Division
1 Dr Lategan Road Groenkloof ☒ Private Bag X191 Pretoria 0001
Tel: +27 12 428 7911 Fax: +27 12 344 1568
www.sabs.co.za
© SABS

SABS

SANS 1125:2004

Edition 2.3

Table of changes

Change No.	Date	Scope
Amdt 1	1997	Amended to require that the cooling capacity of the air conditioners and heat pumps be rated at sea level.
Amdt 2	2001	Amended to replace the reference to SABS 0192 with a reference to SABS ISO 3741.
Amdt 3	2004	Amended to extend the scope of the standard to cover three-phase air conditioners and to make provision for an increase in the cooling capacity of air conditioners, to update the definition of "acceptable", to add the requirement that the total cooling and heating capacity tests be followed by the maximum and minimum operating conditions tests, and to delete the noise rating and acoustical requirements.

Foreword

This South African standard was approved by National Committee SABS TC 75, *Performance of household and similar electrical appliances*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This document is referenced in *Compulsory specification for electrical and electronic apparatus, as published by Government Notice No. R. 574 (Government Gazette 31084) of 30 May 2008.*

This edition cancels and replaces edition 2.2 (SABS 1125:2001).

A vertical line in the margin shows where the text has been modified by amendment No. 3.

**Reaffirmed and reprinted in March 2013.
This document will be reviewed every five years
and be reaffirmed, amended, revised or withdrawn.**

Contents

Foreword

1	Scope	3
2	Normative references.....	3
3	Definitions	3
4	Design and construction	4
5	Instruction manual	4
6	Performance requirements	5
7	Inspection and methods of test.....	5
7.1	Inspection	5
7.2	Conditions for testing and rating	6
7.3	Endurance	6
7.4	Corrosion resistance	6
7.5	Deleted by amendment No. 3.	
8	Marking	6

Annexes

A	Deleted by amendment No. 3.	
B	Deleted by amendment No. 3.	
C	Deleted by amendment No. 3.	

SANS 1125:2004

Edition 2.3

This page is intentionally left blank

SANS 1125:2004
Edition 2.3

Room air conditioners and heat pumps

1 Scope

This standard specifies requirements for single-package and split-system non-ducted air conditioners that employ air-cooled and water-cooled condensers and for heat pumps that employ air-cooled condensers. It is limited to systems that utilize a single refrigeration circuit and have one evaporator and one condenser. It covers air conditioners that are intended for operation on an a.c. power supply, single-phase not exceeding 250 V to earth, and three-phase not exceeding 418 V to earth, with a frequency of 50 Hz, and that have a cooling capacity not exceeding 12 000 W.

Amdt 3

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. All standards are subject to revision, and since any reference to a standard is deemed to be a reference to the latest edition of that standard, parties to agreements based on this standard are encouraged to take steps to ensure the use of the most recent editions of the standards indicated below. Information on currently valid national and international standards can be obtained from the SABS Standards Division.

SANS 160, *Electric room heaters*.

SANS 5151/ISO 5151, *Non-ducted air conditioners and heat pumps – Testing and rating for performance*.

SANS 60335-2-40/IEC 60335-2-40, *Household and similar electrical appliances – Safety – Part 2-40: Particular requirements for electrical heat pumps, air conditioners and dehumidifiers*.

3 Definitions

For the purposes of this standard, the definitions given in SANS 5151 and the following definitions apply:

3.1

acceptable

acceptable to the authority administering this standard, or to the parties concluding the purchase contract, as relevant

Amdt 3

SANS 1125:2004

Edition 2.3

3.2

appliance

an electrically operated non-ducted air conditioner or heat pump

4 Design and construction

4.1 Materials and finishes

All surface finishes shall be durable, colourfast, scratch resistant, and resistant to damage from mechanical, electrical or thermal causes or the action of moisture. All parts used in the construction of an appliance shall have sufficient strength and rigidity to withstand normal conditions of handling, transportation and service, and shall be resistant to corrosion.

4.2 Openings

Louvres and other openings in an appliance shall be so located and so guarded or baffled (or both) that curtains, or other combustible material, cannot be drawn into contact with any moving part or with a heater element.

4.3 Condensate disposal

The appliance shall be so designed that it complies with the requirements of 6.4.

4.4 Heating devices

Air heating devices shall comply with the relevant requirements of SANS 160.

4.5 Heater controls

A heater control shall be so designed that the heater element is not energized when the condensing unit is operating:

- a) in the cooling cycle; or
- b) with the evaporator fan switched off; or
- c) both in the cooling cycle and with the evaporator fan switched off.

4.6 Compliance with international safety standards

An appliance shall comply with all the applicable requirements of SANS 60335-2-40.

5 Instruction manual

Instructions for the safe and effective installation, operation and maintenance of the appliance (in at least one of the official languages of the Republic of South Africa, preferably English) shall be provided with each appliance and shall include instructions for minimizing the noise generated by the appliance when the appliance is in operation.

SANS 1125:2004
Edition 2.3

6 Performance requirements

6.1 Total cooling capacity

When determined in accordance with SANS 5151, the total cooling capacity shall be at least 95 % of the value marked on the appliance. If the appliance is tested above sea level, the determined cooling capacity shall be increased by 0,24 % for each kilopascal of ambient air pressure below 101 kPa at the test site.

Amdt 1

6.2 Heating capacity of heat pumps

When determined in accordance with SANS 5151, the heating capacity shall be at least 95 % of the value marked on the appliance.

CAUTION: The total cooling and heating capacity tests shall be followed by the maximum and minimum operating conditions tests given in SANS 5151.

Amdt 3

6.3 Indoor discharge air-flow

When determined in accordance with SANS 5151, the room discharge flow of standard air shall be at least equal to the value marked on the appliance.

6.4 Condensate disposal

When an appliance is tested in accordance with SANS 5151, no condensed water shall drip, run or blow from the equipment. An appliance that rejects condensate to the condenser air shall dispose of all condensate and there shall be no dripping or blowing-off of water from the equipment such that the building or surroundings become wet.

6.5 Endurance

When tested in accordance with 7.3, an appliance shall operate without mechanical or electrical failure and without impairment of the general safety of the appliance. During the test period, the temperature rise of the specified parts and of the surroundings shall not exceed the limits given in SANS 60335-2-40.

6.6 Corrosion resistance

Ferrous parts whose functions require them to be protected against corrosion, shall be so protected that, when tested in accordance with 7.4, they show no sign of corrosion.

6.7 Deleted by amendment No. 3.

7 Inspection and methods of test

7.1 Inspection

Visually examine the appliance for compliance with all the relevant requirements of this standard for which tests to assess compliance are not given in 7.3 to 7.5 (inclusive).

SANS 1125:2004

Edition 2.3

7.2 Conditions for testing and rating

Generally, temperature, air-flow and test conditions shall be in accordance with SANS 5151. Use the outer case and outdoor louvre grill supplied by or specified by the manufacturer for all tests on an appliance.

NOTE Capacity testing may only be carried out if they are followed by the maximum and minimum operating conditions tests given in SANS 5151 (see 6.2). **Amdt 3**

7.3 Endurance

Operate the appliance continuously for 30 d at 1,1 times the maximum rated voltage and with the thermostat set to produce the maximum cooling effect. During the test, determine the temperature of the parts and the surroundings as specified in SANS 60335-2-40. Immediately after the test period, inspect the appliance for mechanical and electrical failure. Check for compliance with 6.5.

7.4 Corrosion resistance

Degrease the component to be tested by immersing it for 10 min in trichloroethylene. Remove the component from the trichloroethylene, allow it to dry and then immerse it for 10 min in a 100 g/L aqueous solution of ammonium chloride at a temperature of $20\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$. Remove the component from the solution and shake off excess drops of ammonium chloride solution, but do not dry the component. Then place the component for 10 min in a cabinet that contains air saturated with moisture at a temperature of $20\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$. Remove the component from the cabinet and inspect the surface of the component for signs of corrosion other than traces of rust on sharp edges or any yellowish film that is removable by rubbing with a soft, clean cloth. Check for compliance with 6.6.

7.5 Deleted by amendment No. 3.

8 Marking

In addition to the noise rating and the information required by compulsory specifications, each appliance shall be marked in accordance with the marking provisions required by SANS 5151.

Annex A

Deleted by amendment No. 3.

Annex B

Deleted by amendment No. 3.

Annex C

Deleted by amendment No. 3.

This page has been left blank intentionally

SABS – Standards Division

The objective of the SABS Standards Division is to develop, promote and maintain South African National Standards. This objective is incorporated in the Standards Act, 2008 (Act No. 8 of 2008).

Amendments and Revisions

South African National Standards are updated by amendment or revision. Users of South African National Standards should ensure that they possess the latest amendments or editions.

The SABS continuously strives to improve the quality of its products and services and would therefore be grateful if anyone finding an inaccuracy or ambiguity while using this standard would inform the secretary of the technical committee responsible, the identity of which can be found in the foreword.

The SABS offers an individual notification service, which ensures that subscribers automatically receive notification regarding amendments and revisions to South African National Standards.

Tel: +27 (0) 12 428 6883 Fax: +27 (0) 12 428 6928 E-mail: sales@sabs.co.za

Buying Standards

Contact the Sales Office for South African and international standards, which are available in both electronic and hard copy format.

Tel: +27 (0) 12 428 6883 Fax: +27 (0) 12 428 6928 E-mail: sales@sabs.co.za

South African National Standards are also available online from the SABS website <http://www.sabs.co.za>

Information on Standards

The Standards Information Centre provides a wide range of standards-related information on both national and international standards. The Centre also offers an individual updating service called INFOPLUS, which ensures that subscribers automatically receive notification regarding amendments to, and revisions of, international standards.

Tel: +27 (0) 12 428 7911 / 0861 27 7227 Fax: +27 (0) 12 428 6928 E-mail: info@sabs.co.za

Copyright

The copyright in a South African National Standard or any other publication published by the SABS Standards Division vests in the SABS or, in the case of a South African National Standard based on an international standard, in the organization from which the SABS adopted the standard under licence or membership agreement. In the latter case, the SABS has the obligation to protect such copyright. Unless exemption has been granted, no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means without prior written permission from the SABS Standards Division. This does not preclude the free use, in the course of implementing the standard, of necessary details such as symbols, and size, type or grade designations. If these details are to be used for any purpose other than implementation, prior written permission must be obtained.

Details and advice can be obtained from the Manager – Standards Sales and Information Services.

Tel: +27 (0) 12 428 6883 Fax: +27 (0) 12 428 6928 E-mail: sales@sabs.co.za