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

*Climatiseurs et pompes à chaleur air/air raccordés — Essais et
détermination des caractéristiques de performance*

Sample Document

get full document from standards.iteh.ai



Reference number
ISO 13253:2017(E)

© ISO 2017

Sample Document

get full document from standards.iteh.ai



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Symbols	4
5 Airflow setting	7
5.1 General	7
5.2 Indoor airflow setting	7
5.3 ESP for rating	7
5.4 Outdoor airflow	9
5.5 Unit supplied without indoor fan	9
6 Cooling tests	9
6.1 Cooling capacity tests	9
6.1.1 General conditions	9
6.1.2 Temperature conditions	10
6.1.3 Test conditions	11
6.2 Maximum cooling performance test	11
6.2.1 General conditions	11
6.2.2 Temperature conditions	11
6.2.3 Airflow conditions	12
6.2.4 Test conditions	12
6.2.5 Performance requirements	12
6.3 Minimum cooling performance test	13
6.3.1 General conditions	13
6.3.2 Temperature conditions	13
6.3.3 Airflow conditions	13
6.3.4 Test conditions	14
6.3.5 Performance requirements	14
6.4 Condensate control and enclosure sweat performance test	15
6.4.1 General conditions	15
6.4.2 Temperature conditions	15
6.4.3 Airflow conditions	15
6.4.4 Test conditions	15
6.4.5 Performance requirements	15
7 Heating tests	16
7.1 Heating capacity tests	16
7.1.1 General conditions	16
7.1.2 Temperature conditions	17
7.1.3 Airflow conditions	17
7.1.4 Defrost operation	18
7.1.5 Test procedure — General	18
7.1.6 Preconditioning period	19
7.1.7 Equilibrium period	19
7.1.8 Data collection period	19
7.1.9 Test procedure when a defrost cycle (whether automatically or manually initiated) ends the preconditioning period	20
7.1.10 Test procedure when a defrost cycle does not end the preconditioning period	20
7.1.11 Test procedure for transient tests	20
7.1.12 Heating capacity test results	22
7.2 Maximum heating performance test	22
7.2.1 General conditions	22
7.2.2 Temperature conditions	22

7.2.3	Airflow conditions	22
7.2.4	Test conditions	23
7.2.5	Performance requirements	23
7.3	Minimum heating performance test	23
7.3.1	General conditions	23
7.3.2	Temperature conditions	23
7.3.3	Airflow conditions	23
7.3.4	Test conditions	23
7.3.5	Performance requirements	24
7.4	Automatic defrost performance test	24
7.4.1	General conditions	24
7.4.2	Temperature conditions	24
7.4.3	Airflow conditions	24
7.4.4	Test conditions	24
7.4.5	Performance requirements	25
8	Test methods and uncertainties of measurement	25
8.1	Test methods	25
8.1.1	General	25
8.1.2	Calorimeter test method	25
8.1.3	Indoor air enthalpy method	25
8.1.4	Capacity tests	26
8.2	Uncertainty of measurement	26
8.3	Test tolerances for steady-state cooling and heating capacity tests	27
8.4	Test tolerances for performance tests	28
9	Test results	28
9.1	Capacity results	28
9.1.1	General	28
9.1.2	Adjustments	29
9.1.3	Cooling capacity calculations	29
9.1.4	Heating capacity calculations	29
9.2	Data to be recorded	30
9.3	Test report	33
9.3.1	General information	33
9.3.2	Capacity test results	33
9.3.3	Performance tests	33
10	Marking provisions	34
10.1	Nameplate requirements	34
10.2	Nameplate information	34
10.3	Split systems	34
11	Publication of ratings	34
11.1	Standard ratings	34
11.2	Other ratings	35
	Annex A (normative) Airflow settings for ducted units	36
	Annex B (normative) Test requirements	41
	Annex C (informative) Airflow measurement	48
	Annex D (normative) Calorimeter test method	54
	Annex E (normative) Indoor air enthalpy test method	62
	Annex F (informative) Refrigerant enthalpy test method	68
	Annex G (informative) Outdoor air enthalpy test method	70
	Annex H (informative) Indoor calorimeter confirmative test method	73
	Annex I (informative) Outdoor calorimeter confirmative test method	75

Annex J (informative) Balanced-type calorimeter confirmative test method	77
Annex K (informative) Cooling condensate measurements	78
Annex L (normative) Supplemental requirements when rating fan-less (coil-only) type units	79
Annex M (informative) Pictorial examples of the heating capacity test procedures given in 7.1	82
Bibliography	89

Sample Document

get full document from standards.iteh.ai

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 6, *Testing and rating of air-conditioners and heat pumps*.

This third edition cancels and replaces the second edition (ISO 13253:2011), which has been technically revised.

Ducted air-conditioners and air-to-air heat pumps — Testing and rating for performance

1 Scope

This document specifies performance testing, the standard conditions and the test methods for determining the capacity and efficiency ratings of air-cooled, air-conditioners and air-to-air heat pumps.

This document is applicable to the following equipment:

- ducted air-cooled air conditioners and ducted air to air heat pumps.

This document is limited to

- residential, commercial and industrial single-package, and split-system air conditioners and heat pumps,
- factory-made, electrically driven and use mechanical compression,
- utilizing single, multiple and variable capacity components, and
- multiple split-system utilizing one or more refrigeration systems, one outdoor unit and one or more indoor units, controlled by a single thermostat/controller.

The requirements of testing and rating contained in this document are based on the use of matched assemblies.

This document is not applicable to the rating and testing of the following:

- a) water-source heat pumps or water-cooled air-conditioners;
- b) multi-split-system air-conditioners and air-to-air heat pumps (see ISO 15042 for testing of such equipment);
- c) mobile (windowless) units having a condenser exhaust duct;
- d) individual assemblies not constituting a complete refrigeration system;
- e) equipment using the absorption refrigeration cycle;
- f) non-ducted equipment (see ISO 5151 for testing of such equipment);
- g) ducted air conditioners and/or ducted heat pumps, rated at less than 8 kW and intended to operate at external static pressures of less than 25 Pa, controlled by a single thermostat/controller (refer to ISO 5151).

This document does not cover the determination of seasonal efficiencies, which can be required in some countries because they provide a better indication of efficiency under actual operating conditions.

NOTE Throughout this document, the terms “equipment” and “systems” mean “air-conditioners” and/or “heat pumps”.

2 Normative references

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. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC Guide 98-3, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

ISO 817, *Refrigerants — Designation and safety classification*

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

ducted air-conditioner

encased assembly or assemblies designed primarily to provide ducted delivery of conditioned air to an enclosed space, room or zone (conditioned space)

Note 1 to entry: It can be either single-package or split-system and comprises a primary source of refrigeration for cooling and dehumidification. It can also include means for heating other than a heat pump, as well as means for circulating, cleaning, humidifying, ventilating or exhausting air. Such equipment can be provided in more than one assembly; the separated assemblies (split-systems) of which are intended to be used together.

3.2

ducted heat pump

encased assembly or assemblies designed primarily to provide ducted delivery of conditioned air to an enclosed space, room or zone (conditioned space), including a prime source of refrigeration for heating

Note 1 to entry: It can be constructed to remove heat from the conditioned space and discharge it to a heat sink if cooling and dehumidification are desired from the same equipment. It can also include means for circulating, cleaning, humidifying, ventilating or exhausting air. Such equipment can be provided in more than one assembly; the separated assemblies (split-systems) of which are intended to be used together.

3.3

standard air

dry air at 20,0 °C and at a standard barometric pressure of 101,325 kPa, having a mass density of 1 204 kg/m³

3.4

total cooling capacity

amount of sensible and latent heat that the equipment can remove from the conditioned space in a defined interval of time

Note 1 to entry: Total cooling capacity is expressed in units of watts.

3.5

heating capacity

amount of heat that the equipment can add to the conditioned space (but not including supplementary heat) in a defined interval of time

Note 1 to entry: Heating capacity is expressed in units of watts.

3.6**latent cooling capacity****room dehumidifying capacity**

amount of latent heat that the equipment can remove from the conditioned space in a defined interval of time

Note 1 to entry: Latent cooling capacity and room dehumidifying capacity are expressed in units of watts.

3.7**sensible cooling capacity**

amount of sensible heat that the equipment can remove from the conditioned space in a defined interval of time

Note 1 to entry: Sensible cooling capacity is expressed in units of watts.

3.8**sensible heat ratio****SHR**

ratio of the *sensible cooling capacity* (3.7) to the *total cooling capacity* (3.4)

3.9**rated voltage**

voltage shown on the nameplate of the equipment

3.10**rated frequency**

frequency shown on the nameplate of the equipment

3.11**energy efficiency ratio****EER**

ratio of the *total cooling capacity* (3.4) to the *effective power input* (3.14) to the device at any given set of rating conditions

Note 1 to entry: Where the EER is stated without an indication of units, it is understood that it is derived from watts/watts.

3.12**coefficient of performance****COP**

ratio of the *heating capacity* (3.5) to the *effective power input* (3.14) to the device at any given set of rating conditions

Note 1 to entry: Where the COP is stated without an indication of units, it is understood that it is derived from watts/watts.

3.13**total power input** P_t

average electrical power input to the equipment as measured during the test

Note 1 to entry: Total power input is expressed in units of watts.

3.14**effective power input** P_E

average electrical power input to the equipment, obtained from the following:

- the power input for operation of the compressor(s);
- the power input to electric heating devices used only for defrosting;

- the power input to all control and safety devices of the equipment;
- the power input for operation of all fans, whether provided with the equipment or not

Note 1 to entry: Effective power input is expressed in units of watts.

3.15

full-load operation

operation with the equipment and controls configured for the maximum continuous duty refrigeration capacity specified by the manufacturer and allowed by the unit controls

Note 1 to entry: Unless otherwise regulated by the automatic controls of the equipment, all indoor units and compressors are functioning during full-load operations.

4 Symbols

Symbol	Description	Unit
A_l	coefficient, heat leakage	J/(s·K)
A_n	nozzle area	m ²
c_{pa1}	specific heat of moist air entering indoor-side ^b	J/(kg ^b ·K)
c_{pa2}	specific heat of moist air leaving indoor-side ^b	J/(kg ^b ·K)
c_{pa3}	specific heat of moist air entering outdoor-side ^b	J/(kg ^b ·K)
c_{pa4}	specific heat of moist air leaving outdoor-side ^b	J/(kg ^b ·K)
c_{pw}	specific heat of water	J/(kg ^b ·K)
C	airflow coefficient	Pa/(m ³ /s) ²
C_d	nozzle discharge coefficient	— ^a
D_e	equivalent diameter	m
D_i	diameter of circular ducts, inlet	m
D_n	nozzle throat diameter	m
D_o	diameter of circular ducts, outlet	m
D_t	outside diameter of refrigerant tube	m
h_{a1}	specific enthalpy of air entering the indoor-side	J/kg ^b
h_{a2}	specific enthalpy of air leaving the indoor-side	J/kg ^b
h_{a3}	specific enthalpy of air entering the outdoor-side	J/kg ^b
h_{a4}	specific enthalpy of air leaving the outdoor-side	J/kg ^b
h_{f1}	specific enthalpy of refrigerant liquid entering expansion device	J/kg
h_{f2}	specific enthalpy of refrigerant liquid leaving condenser	J/kg
h_{g1}	specific enthalpy of refrigerant vapour entering compressor	J/kg
h_{g2}	specific enthalpy of refrigerant vapour leaving compressor	J/kg
h_{r1}	specific enthalpy of refrigerant entering the indoor-side	J/kg
h_{r2}	specific enthalpy of refrigerant leaving the indoor-side	J/kg
h_{w1}	specific enthalpy of water or steam supplied to the indoor side test chamber	J/kg
h_{w2}	specific enthalpy of condensed moisture leaving the indoor side test chamber	J/kg
h_{w3}	specific enthalpy of condensed moisture leaving outdoor-side test chamber	J/kg
h_{w4}	specific enthalpy of the water supplied to the outdoor side test chamber	J/kg
^a Dimensionless value. ^b It means the mass of dry air; the mass, kg of denominator in this unit is based on dry air (or DA). For units practically used in the air conditioning field, "kg (DA)" is very often used for denominator. Example: J/kg(DA), m ³ /kg(DA), kg/kg(DA). NOTE All parameters are in relation to the unit being tested unless specified otherwise.		

Symbol	Description	Unit
h_{w5}	specific enthalpy of the condensed water (in the case of H1 test condition) and the frost, respectively (in the case of H2 or H3 test conditions) in the test unit	J/kg
K_1	latent heat of vaporization of water ($2\,460 \times 10^3$ J/kg at 15 °C)	J/kg
L	length of refrigerant line	m
L_d	length of duct	m
L_m	length to external static pressure measuring point	m
p_a	barometric pressure	kPa
p_c	test chamber equalization pressure	Pa
p_e	external static pressure (ESP)	Pa
p_{isc}	internal static pressure drop of the indoor coil cabinet assembly measured from the cooling capacity test	Pa
p_m	external static pressure (p_e during the blowing test)	Pa
p_n	absolute pressure at nozzle throat	Pa
p_v	velocity pressure at nozzle throat or static pressure difference across the nozzle	Pa
P_{fan}	estimated fan power to circulate indoor air	W
P_i	power input, indoor-side data	W
P_K	power input to the compressor	W
P_t	total power input to the equipment	W
q_m	air mass flow rate	kg/s
q_r	refrigerant flow rate	kg/s
q_{ro}	refrigerant and oil mixture flow rate	kg/s
q_v	air volume flow rate	m ³ /s
q_{vi}	air volume flow rate, outdoor-side	m ³ /s
q_{vo}	air volume flow rate, outdoor-side	m ³ /s
q_w	condenser water flow rate	kg/s
q_{wc}	rate at which water vapour is condensed by the equipment	kg/s
q_{wo}	water mass flow supplied to the outside test chamber for maintaining the test conditions	kg/s
Re	Reynolds number	— ^a
SHR	Sensible heat ratio	— ^a
T	thickness of tubing insulation	m
t_a	temperature, ambient of compressor calorimeter	°C
t_{a1}	temperature of air entering the indoor-side, dry bulb	°C
t_{a2}	temperature of air leaving the indoor-side, dry bulb	°C
t_{a3}	temperature of air entering the outdoor-side, dry bulb	°C
t_{a4}	temperature of air leaving the outdoor-side, dry bulb	°C
t_c	temperature of surface of condenser of the compressor calorimeter	°C
t_e	temperature of surface of evaporator of the compressor calorimeter	°C
t_{w1}	temperature of water entering condenser of the compressor calorimeter	°C
t_{w2}	temperature of water leaving condenser of the compressor calorimeter	°C
v_a	velocity of air, at nozzle	m/s

^a Dimensionless value.

^b It means the mass of dry air; the mass, kg of denominator in this unit is based on dry air (or DA). For units practically used in the air conditioning field, “kg (DA)” is very often used for denominator.

Example: J/kg(DA), m³/kg(DA), kg/kg(DA).

NOTE All parameters are in relation to the unit being tested unless specified otherwise.

Symbol	Description	Unit
v_n	specific volume of dry air portion of mixture at nozzle ^b	m ³ /kg ^b
v'_n	specific volume of dry air portion of mixture at nozzle	m ³ /kg
W_1	mass of cylinder and bleeder assembly, empty	g
W_3	mass of cylinder and bleeder assembly, with sample	g
W_5	mass of cylinder and bleeder assembly, with oil from sample	g
W_{i1}	specific humidity of air entering the indoor-side ^b	kg/kg ^b
W_{i2}	specific humidity of air leaving the indoor-side ^b	kg/kg ^b
W_n	specific humidity at nozzle inlet ^b	kg/kg ^b
W_r	water vapour (rate) condensed	kg/s
X_o	concentration of oil to refrigerant-oil mixture	— ^a
X_r	mass ratio, refrigerant to refrigerant-oil mixture	— ^a
Y	expansion factor	— ^a
α	pressure ratio	— ^a
α_a	Interconnecting tubing heat transfer coefficient	W/(m ² ·K)
λ	thermal conductivity	W/(m·K)
ν	kinematic viscosity of air	m ² /s
$\eta_{fan,i}$	estimated indoor fan static efficiency	— ^a
$\eta_{mot,i}$	estimated indoor motor efficiency	— ^a
$\sum P_{ic}$	other power input to the indoor side test chamber (e.g. illumination, electrical and thermal power input to the compensating device, heat balance of the humidification device)	W
$\sum P_{oc}$	sum of all total power input to the outdoor side test chamber, not including power to the equipment under test	W
ϕ_c	heat removed by the cooling coil in the outdoor-side test chamber	W
ϕ_{ci}	heat removed by cooling coil in the indoor-side test chamber	W
ϕ_d	latent cooling capacity (dehumidifying)	W
ϕ_e	heat input to evaporator of compressor calorimeter	W
ϕ_{hi}	heating capacity, indoor-side test chamber	W
ϕ_{ho}	heating capacity, outdoor-side test chamber	W
ϕ_{li}	heat leakage into the indoor side test chamber through walls, floor and ceiling	W
ϕ_{lo}	heat leakage out of the outdoor side test chamber through walls, floor and ceiling	W
ϕ_{lp}	heat leakage into the indoor-side test chamber through the partition separating the indoor-side from the outdoor-side	W
ϕ_L	line heat loss in interconnecting tubing	W
ϕ_{sci}	sensible cooling capacity, indoor-side	W
ϕ_{tc}	refrigerating capacity of a refrigerant compressor	W
ϕ_{tci}	total cooling capacity, indoor-side	W
ϕ_{tco}	total cooling capacity, outdoor-side	W
ϕ_{thi}	total heating capacity, indoor-side	W
ϕ_{tho}	total heating capacity, outdoor-side	W
^a Dimensionless value. ^b It means the mass of dry air; the mass, kg of denominator in this unit is based on dry air (or DA). For units practically used in the air conditioning field, “kg (DA)” is very often used for denominator. Example: J/kg(DA), m ³ /kg(DA), kg/kg(DA). NOTE All parameters are in relation to the unit being tested unless specified otherwise.		

5 Airflow setting

5.1 General

The airflow rate shall be specified by the manufacturer. This flow rate shall be for full-load cooling and be expressed in cubic metres per second (m³/s) of standard air conditions, as defined in 3.3, and correspond with the compressor or compressors not operating.

P_{fan} is the estimated fan power required to circulate indoor air, in watts.

5.2 Indoor airflow setting

The airflow rate setting shall be made when only the fan is operating, at an ambient temperature between 20 °C to 30 °C and relative humidity between 30 % and 70 %. The airflow settings of the units shall be in accordance with Annex A for units supplied with a fan, and in accordance with Annex L for units supplied without a fan.

The rated airflow rate given by the manufacturer shall be set and the resulting external static pressure (ESP), p_e , measured. The measured ESP shall be not less than the ESP for rating, defined in Table 1. If the unit has an adjustable speed, it shall be adjusted to the lowest speed that provides the ESP for rating or greater.

5.3 ESP for rating

5.3.1 If the rated ESP specified by the manufacturer is greater than or equal to the minimum value given in Table 1, the specified rated ESP is used as the ESP for rating.

5.3.2 If the rated ESP specified by the manufacturer is less than the minimum value given in Table 1, and greater than or equal to 80 % of the maximum ESP, the specified rated ESP is used as the ESP for rating. The maximum ESP may either be specified by the manufacturer or be identified from fan curves provided by the manufacturer.

5.3.3 If the rated ESP specified by the manufacturer is less than the minimum value given in Table 1, and less than 80 % of the maximum ESP, the value of Table 1 or 80 % of the maximum ESP, whichever is less, is used as the ESP for rating.

5.3.4 If the rated ESP is not specified by the manufacturer, the value of Table 1 or 80 % of the maximum ESP, whichever is less, is used as the ESP for rating.

5.3.5 The process of selecting the ESP for rating is shown in Figure 1.

5.3.6 In the case that the determined ESP for rating is less than 25 Pa, the unit can be considered as a non-ducted unit and be tested in accordance with ISO 5151.

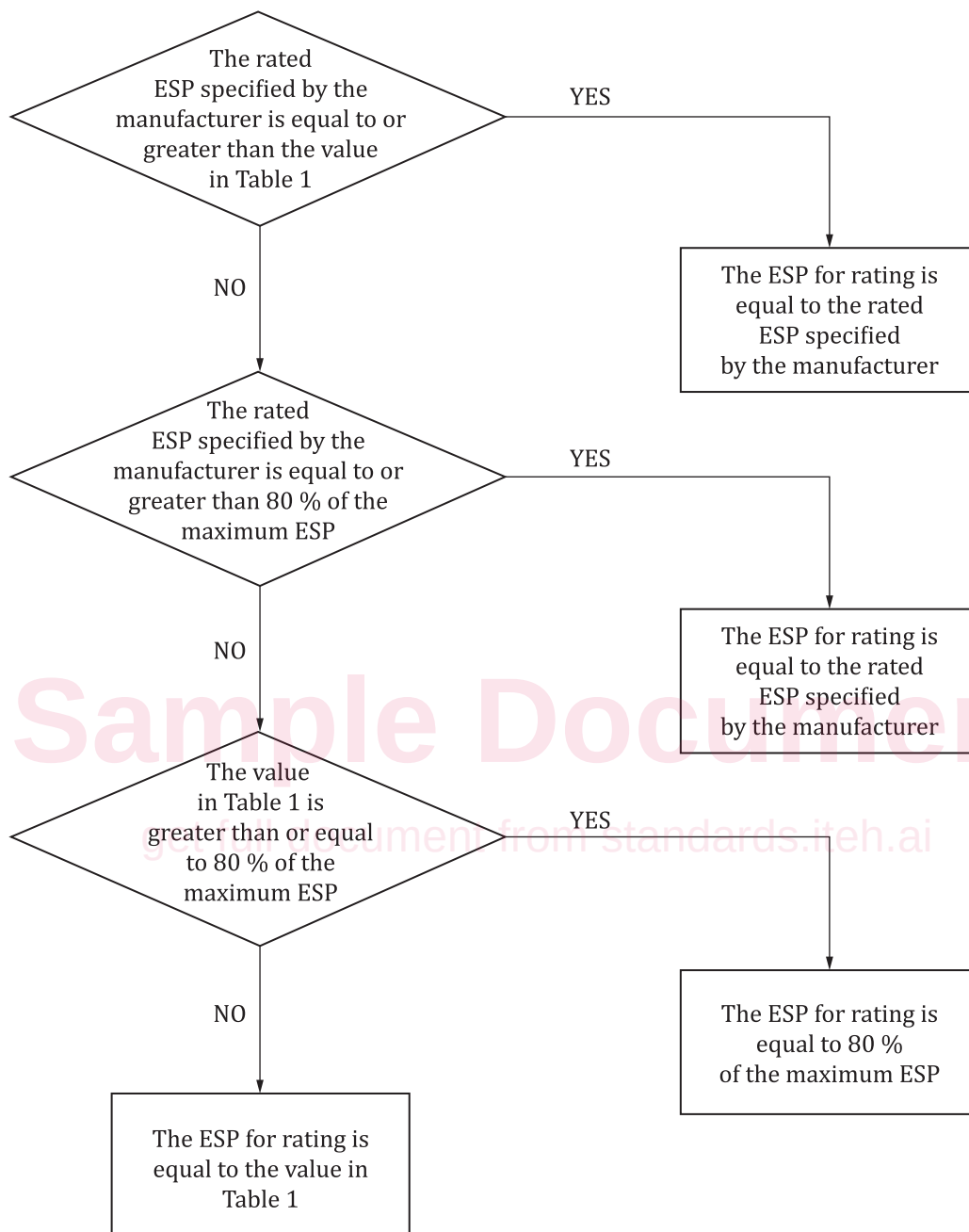


Figure 1 — Flowchart of selecting the ESP for rating

Table 1 — Pressure requirement for comfort air-conditioners

Standard capacity ratings kW	Minimum external static pressure ^a Pa
$0 < Q < 8$	25
$8 \leq Q < 12$	37
$12 \leq Q < 20$	50

^a For equipment tested without an air filter installed, the minimum ESP, p_e , shall be increased by 10 Pa.

Table 1 (continued)

Standard capacity ratings kW	Minimum external static pressure ^a Pa
$20 \leq Q < 30$	62
$30 \leq Q < 45$	75
$45 \leq Q < 82$	100
$82 \leq Q < 117$	125
$117 \leq Q < 147$	150
$Q > 147$	175
^a For equipment tested without an air filter installed, the minimum ESP, p_e , shall be increased by 10 Pa.	

5.4 Outdoor airflow

If the outdoor airflow is adjustable, all tests shall be conducted at the outdoor-side air quantity or fan control setting that is specified by the manufacturer. Where the fan is non-adjustable, all tests shall be conducted at the outdoor-side air volume flow rate inherent in the equipment when operated with the following in place: all of the resistance elements associated with inlets, louvers, and any ductwork and attachments considered by the manufacturer as normal installation practice. Once established, the outdoor-side air circuit of the equipment shall remain unchanged throughout all tests prescribed in document, except to adjust for any change caused by the attachment of the airflow measuring device when using the outdoor air enthalpy test method (see [G.2.1](#)).

5.5 Unit supplied without indoor fan

If no fan is supplied with the unit (i.e. coil only units), supplemental requirements given in [Annex L](#) also apply.

6 Cooling tests

6.1 Cooling capacity tests

6.1.1 General conditions

6.1.1.1 All equipment within the scope of this document shall have the cooling capacities and energy efficiency ratios (EERs) determined in accordance with the provisions of this document and rated at the cooling test conditions specified in [Table 2](#). All tests shall be carried out in accordance with the requirements of [Annex B](#) and the test methods specified in [Clause 8](#). All tests shall be conducted with the equipment functioning at full-load operation, as defined in [3.15](#). The electrical input values used for rating purposes shall be measured during the cooling capacity test.

6.1.1.2 If the manufacturer of equipment having a variable-speed compressor does not provide information on the full-load frequency and how to achieve it during a cooling capacity test, the equipment shall be operated with its thermostat or controller set to its minimum allowable temperature setting.