

Liquid chilling packages and heat pumps with electrically driven compressors — Cooling mode — Definitions, testing and requirements

The European Standard EN 12055:1998 has the status of a British Standard

ICS 27.080; 27.200

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents



Document Sharing Hub

National foreword

This British Standard is the English language version of EN 12055:1998.

The UK participation in its preparation was entrusted to Technical Committee RHE/17, Testing of heat pumps and air conditioners, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 13 and a back cover.

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 June 1998

© BSI 1998

ISBN 0 580 29128 6

Amendments issued since publication

Amd. No.	Date	Text affected

ICS 01.040.27; 27.080; 27.200

Descriptors: Coolers, refrigerating units, liquids, heat pumps, electric motors, definitions, design, performance tests, installation, testing conditions, electric power supply, calorific power measurements, information, marking

English version

Liquid chilling packages and heat pumps with electrically driven compressors — Cooling mode — Definitions, testing and requirements

Groupes refroidisseurs de liquide et pompes à chaleur avec compresseur entraîné par moteur électrique — Mode réfrigération — Définitions, essais et exigences

Flüssigkeitskuhlsätze und Wärmepumpen mit elektrisch angetriebenen Verdichtern — Kühlen — Definitionen, Prüfung und Anforderungen

This European Standard was approved by CEN on 30 November 1997.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

© 1998 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 113, Heat pumps and air conditioners, the secretariat of which is held by AENOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 1998, and conflicting national standards shall be withdrawn at the latest by July 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Contents

	Page
Foreword	2
1 Scope	3
2 Normative references	3
3 Definitions	3
4 Designations	4
4.1 Designation of temperatures of heat transfer media	4
4.2 Denomination of units	4
5 Rating test	5
5.1 Basic principles	5
5.2 Test installation	6
5.3 Uncertainties of measurement	6
5.4 Test conditions	6
5.5 Test procedure	9
6 Test report	9
6.1 General information	9
6.2 Additional information	9
6.3 Rating test	9
7 Marking	11
8 Requirements	11
8.1 General	11
8.2 Temperature operating range	11
8.3 Outside the operating range	11
8.4 Shutting off the heat transfer media flows	11
8.5 Complete power supply failure	11
9 Technical data sheet	12
9.1 General	12
9.2 General description	12
9.3 Performance characteristics	12
9.4 Electrical characteristics	12
9.5 Operating range	12
10 Instructions	12
10.1 General	12
10.2 Physical description	12
10.3 Instructions for installation	12
10.4 Instruction for maintenance	12
Annex A (informative) Part load operation	13
Annex B (informative) Conformance criteria	13
Annex C (informative) Bibliography	13

1 Scope

This European Standard specifies methods for testing and reporting of the rating and operational requirements and it specifies requirements for marking of liquid chilling packages, water/water and air/water heat pumps with electrically driven compressors when used for cooling or for cooling and heat recovery. When these units are used for heating, then Parts 1 to 4 of EN 255 apply.

This standard applies to factory-made units with integral condensers or for use with remote condensers.

In the case of units consisting of several parts, the standard applies only to those designed and supplied as a complete package, except for units with remote condensers.

Units having two or more indoor sections connected to a single outdoor unit (multiple split system liquid chilling packages or heat pumps) are excluded from this standard.

This standard is primarily intended for water and brine chilling packages, but can be used for other liquid subject to agreement.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 255-1, *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors — Heating mode — Part 1: Terms, definitions and designations.*

EN 255-2, *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors — Heating mode — Part 2: Testing and requirements for marking for space heating units.*

EN 255-3, *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors — Heating mode — Part 3: Testing and requirements for marking for sanitary hot water units.*

EN 255-4, *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors — Heating mode — Part 4: Requirements for space heating and sanitary hot water units.*

ENV 12102, *Air conditioners, heat pumps and dehumidifiers with electrically driven compressors — Measurement of airborne noise — Determination of the sound power level.*

EN 60335-2-40, *Safety of household and similar electrical appliances — Part 2: Particular requirements for electrical heat pumps, air conditioners and dehumidifiers.* (IEC 335-2-40:1992, modified)

EN 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements.* (IEC 204-1:1992, modified)

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1

liquid chilling package

a factory-made unit designed to cool liquid, using an evaporator, a vapour compressor, an integral or remote condenser and appropriate controls. It may have means for heating which can be reversing the refrigerating cycle, like a heat pump (see EN 255-1)

3.2

heat recovery

the use of the available heat from a unit whose primary control remains in the cooling mode, by means of an additional heat exchanger

3.3

heat recovery liquid chilling package

a factory-made unit as defined in 3.1 designed for the purpose of chilling liquid and recovering of heat

3.4

heat transfer medium

any medium (water, air ...) used for the transfer of the heat without change of state; it can be:

- the cooled liquid circulating in the evaporator;
- the cooling medium circulating in the condenser;
- the heat recovery medium circulating in the heat recovery heat exchanger.

3.5

evaporator

heat exchanger assembly which is designed to remove heat from the liquid to be cooled by evaporation of a refrigerant

NOTE In the case of a heat pump operating in the cooling mode, this will be the indoor heat exchanger, see EN 255-1.

3.6

condenser

heat exchanger assembly which is designed to transfer heat to the cooling medium by condensation of a refrigerant

NOTE In the case of a heat pump operating in the cooling mode, this will be the outdoor heat exchanger, see EN 255-1.