

Specification for

# Safety of household and similar electrical appliances —

Part 102: Particular requirements —

Section 102.34 Motor-compressors

(Implementation of CENELEC HD 277 S1:1985 + A2:1995)

ICS 23.140

# Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Light Electrical Engineering Standards Committee (LEL/-), to Technical Committee LEL/161, upon which the following bodies were represented:

- Association of Control Manufacturers — TACMA (BEAMA Ltd.)
- Association of Manufacturers of Domestic Electrical Appliances
- British Electrotechnical Approvals Board
- British Gas plc
- British Lawn Mower Manufacturers' Federation
- British Retailers' Association
- Catering Equipment Manufacturers' Association
- Consumer Standards Advisory Committee of BSI
- Consumers' Association
- Department of Energy (Electricity Division)
- Department of Trade and Industry (Consumer Safety Unit, CA Division)
- ERA Technology Ltd.
- Economic Development Council
- Electric Cable Makers' Confederation
- Electrical Association for Women
- Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
- Electricity Supply Industry in England and Wales
- Fire Protection Association
- Home Office
- Institution of Electrical Engineers
- Lighting Industry Federation Ltd.
- Ministry of Defence
- Portable Electric Tool Manufacturers' Association
- Rotating Electrical Machines Association (BEAMA Ltd.)
- Small Electrical Appliances Marketing Association
- South of Scotland Electricity Board

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- British Refrigeration Association
- Food Freezer and Refrigerator Council
- Ice Cream Federation Limited
- Institute of Housing
- United Kingdom Association of Frozen Food Producers

This British Standard, having been prepared under the direction of the Light Electrical Engineering Standards Committee, was published under the authority of the Board of BSI and comes into effect on 30 April 1987

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The following BSI references relate to the work on this standard:  
Committee reference LEL/161  
Draft for comment 86/21429 DC

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## Foreword

This Section of BS 3456-2 has been prepared under the direction of Technical Committee CPL/61/3 (formerly LEL/161). It is aligned with the CENELEC<sup>1)</sup> Harmonization Document for motor-compressors, HD 277 S1:1985 including amendment A2:1995, which in turn is based on IEC<sup>2)</sup> Publication 335-2-34 (1980 — First edition) incorporating amendment 3:1992. Its number is directly related to the number of the equivalent Section of the IEC Publication.

It gives the particular requirements for motor-compressors and is to be read in conjunction with BS 3456-101:1987 “*General requirements*” which it supplements or modifies. The many references to Part 1 should be read as references to BS 3456-101 which is the implementation of the CENELEC Harmonization Document for the general requirements, HD 251 S3. In the original IEC text of the particular requirements the precise line numbers in the IEC Part 1 are given. The lines in Part 101 of BS 3456 are not numbered but sufficient information has been included in these particular requirements for the relevant matter in Part 101 to be identified. For ease of production the text of the IEC standard has been used, but has been modified as described below.

The CENELEC modifications that appear in HD 277 S1 have been included in the text in the appropriate positions and are indicated by a single side line in the margin of the page. References are included to items of the original IEC text which are given in Appendix X together with the justifications in the CENELEC Harmonization Document for the modifications.

A complete list of all national deviations to the CENELEC Harmonization Document is given in Appendix Y.

In this British Standard the following print types are used to differentiate between requirements, test specifications and explanatory matter.

Requirements: in roman type.

Test specifications: *in italic type*.

Explanatory matter: in small roman type.

In October 1995 CENELEC endorsed amendment 3 to IEC 335-2-34, which superseded amendments 1 (including corrigendum) and 2 to that standard. Amendment A1 to HD 277 S1 has thus been withdrawn, and as a consequence Amendment No. 1 to this Section of BS 3456-2 has been superseded by Amendment No. 2.

In the preface to IEC Publication 335-2-34 the following is stated.

“The object of this standard is to set up the particular safety requirements for sealed (hermetic and semi-hermetic type) motor-compressors, in order to avoid testing the same compressor over and over again in various types and models of refrigerating and air-conditioning equipment.

These requirements apply to sealed (hermetic and semi-hermetic type) motor-compressors and their associated starting and protection systems, tested separately under the most severe conditions which, within reasonable limits, could occur in the applications for which they are used.

In particular, the construction details, locked-rotor testing, overload short-circuit testing, etc. may be done separately on the compressor, thereby eliminating the need for reinvestigation and testing when the compressor is applied to many different appliances, and factory-built assemblies.

<sup>1)</sup> CENELEC = European Committee for Electrotechnical Standardization.

<sup>2)</sup> IEC = International Electrotechnical Commission.

Operational tests may also be conducted on the compressor separately in certain instances. The recommendations for this type testing are also provided. However, the test recommendations of the existing standards relevant to the kind of application such as IEC Publications 335-2-24, Part 2: Particular Requirements for Refrigerators and Food Freezers, and 378: Safety Requirements for the Electrical Equipment of Room Air-conditioners, may need to be conducted on the final application and used as the final determination of acceptability.”

NOTE For information see X.1.

Cross-references

| International Standards              | Corresponding British Standards                                                                                                                                 |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IEC 85:1984                          | BS 2757:1986 <i>Method for determining the thermal classification of electrical insulation</i><br>(Identical)                                                   |
| IEC 335-1:1976 }<br>HD 251 S3:1982 } | BS 3456 <i>Specification for safety of household and similar electrical appliances</i><br>Part 101:1987 <i>General requirements</i><br>(Technically equivalent) |
| IEC 335-2-24:1976                    | <sup>a</sup> Section 102.24:1987 <i>Refrigerators and food freezers</i><br>(Technically equivalent)                                                             |

<sup>a</sup> In preparation.

The Technical Committee has reviewed the specific requirements for motor winding temperatures in IEC 378 to which reference is made in 19.1 and has decided that they are acceptable for use in conjunction with this standard. A related British Standard for IEC 378 is BS 3456-2.34:1976 “Room air conditioners”.

With regard to the note to clause 30, IEC Publication 553 has been withdrawn and the text included in Amendment 4 to IEC Publication 335-1. HD 251 S3 includes Amendments 1 and 2 only at present so the note has no relevance to this British Standard.

NOTE *Typographical error.* In the title of clause 32, “Radiation toxicity” should read “Radiation, toxicity”.

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, pages i to iv, the HD title page, pages 2 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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ICS 23.140

Descriptors: Household electrical appliances, refrigerators and food freezers, motor compressors, protection against electric shock, protection against fire risk, protection against mechanical hazard

English version

## Safety of household and similar electrical appliances Part 2: Particular requirements for motor-compressors (includes amendment A2:1995)

(IEC 335-2-34:1980/A3:1992)

Sécurité des appareils électrodomestiques et  
analogues  
Partie 2: Règles particulières pour les  
moto-compresseurs  
(inclut l'amendement A2:1995)  
(CEI 335-2-34:1980/A3:1992)

Sicherheit elektrischer Geräte für den  
Hausgebrauch und ähnliche Zwecke  
Teil 2: Besondere Anforderungen für  
Motorverdichter  
(enthält Änderung A2:1995)  
(IEC 335-2-34:1980/A3:1992)

Harmonization Document HD 277 S1:1985 was approved by CENELEC on 1995-05-15. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

Up-to-date lists and bibliographical references concerning such national implementation may be obtained on application to the Central Secretariat or to any CENELEC member.

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

# CENELEC

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

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## Foreword

The proposal to endorse amendment 3:1992 to IEC 335-2-34:1980, document CLC/TC 61(SEC)906, was circulated under the CENELEC enquiry procedure in July 1993. This proposal was discussed during the Oslo meeting in April 1994, when it was decided to submit a draft for an amendment to the voting procedure.

The draft was circulated as prAB in October 1994 and was ratified by CENELEC as amendment A2 on 1995-05-15.

This amendment has been prepared by the secretariat of CENELEC Technical Committee TC 61.

The following dates are applicable:

- latest date of announcement of the amendment at national level (doa) 1995-10-01
- latest date of publication of a harmonized national standard (dop) 1996-01-01
- date of withdrawal of conflicting national standards (dow) 1998-01-01

For products which have complied with HD 277 S1:1985 including its amendment A1:1989 before 1998-01-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2003-01-01.

This amendment supplements or modifies the corresponding clauses of HD 277 S1 and its amendment.

As a consequence of endorsing amendment 3 to IEC 335-2-34 that supersedes amendment 1 (including corrigendum) and amendment 2 to IEC 335-2-34, amendment A1 to HD 277 S1 is withdrawn.

The modifications in the preface and subclauses **1.1**, **22.33** and **29.1** have their origin in the amendments 1 and 2 to the IEC standard.

HD 277 S1:1985 including this amendment has to be used in conjunction with HD 251 S3:1982 including its amendments A1:1985, A2:1987 and A3:1987.

There are no special national conditions causing a deviation from this amendment.

There are no national deviations from this amendment.