

Environmental testing —

Part 1: General and guidance

The European Standard EN 60068-1:1994 has the status of a British Standard

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee GEL/50, Environmental testing of electrotechnical products, upon which the following bodies were represented:

- Federation of the Electronics Industry
- GAMBICA (BEAMA Ltd.)
- Society of Environmental Engineers
- Society of Motor Manufacturers and Traders Ltd.

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

- AEA Technology
- Association of Manufacturers of Domestic Electrical Appliances
- BEAMA Ltd.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 June 1995

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National foreword

This British Standard has been prepared by Technical Committee GEL/50 and is the English Language version of EN 60068-1:1994 *Environmental testing — Part 1 General and guidance*, published by the European Committee for Electrotechnical Standardization (CENELEC). It is identical with IEC 60068-1:1988 together with its Corrigendum:1988 and Amendment 1:1992 published by the International Electrotechnical Commission (IEC).

This British Standard supersedes BS 2011-1.1:1989 which is withdrawn.

Cross-references

Publication referred to	Corresponding British Standard
	BS EN 60068 <i>Environmental testing</i>
	BS EN 60068-2 <i>Test methods</i>
EN 60068-2-27:1993 (IEC 68-2-27:1987)	BS EN 60068-2-27:1993 <i>Test Ea and guidance. Shock</i>
EN 60068-2-47:1993 (IEC 68-2-47:1982)	BS EN 60068-2-47:1993 <i>Tests. Mounting of components, equipment and other articles for dynamic tests including shock (Ea), bump (Eb), vibration (Fc and Fd) and steady-state acceleration (Ga) and guidance</i>
EN 60529:1991 (IEC 529:1976)	BS EN 60529:1992 <i>Specification for degrees of protection provided by enclosures (IP code)</i>
EN 60695: Series	BS EN 60695 <i>Fire hazard testing</i>
	BS 2011 <i>Environmental testing</i>
	Part 2.1 <i>Tests.</i>
HD 323.2.14 S2 ^a 1987 (IEC 68-2-14:1884)	Part 2.1N:1985 <i>Test N. Change of temperature</i>
HD 323.2.20 S3 ^b 1988 (IEC 68-2-20:1979)	Part 2.1T:1981 <i>Test T. Soldering</i>
HD 323.2.38 S1:1988 (IEC 68-2-38:1974)	Part 2.1Z/AD:1977 <i>Tests Z/AD. Composite temperature/humidity cyclic test</i>
HD 323.2.48 S1:1988 (IEC 68-2-48:1982)	Part 4:Miscellaneous Section 4.2:1984 <i>Guidance on the application of the tests of BS 2011 to simulate the effects of storage</i>
HD 323.3.1 S1:1988 (IEC 68-3-1A:1978)	Part 3 <i>Background information</i>
HD 444: Series (IEC 695: Series)	Section 3A & B: Supplement No. 1:1980
HD 478.2: Series (IEC 721-2: Series)	BS 6458 Series <i>Fire hazard testing for electrotechnical products</i>
HD 478.3: Series (IEC 721-3: Series)	BS 7527 Series <i>Classification of environmental conditions</i>
IEC 50(301):1983	BS EN 60721-3 Series <i>Classification of groups of environmental parameters and their severities</i>
EC 50(302):1983	BS 4727-1:Group 04:1986 <i>Measurement terminology</i>
IEC 50(303):1983	
	BS 2011 <i>Environmental testing</i>
	Part 3 <i>Background information</i>
IEC 68-3-1:1974	Sections 3A & B:1977 <i>Tests A (cold) and tests B (dry heat)</i>
	Part 4 <i>Miscellaneous</i>
IEC 68-4:1987	Section 4.4:1993 <i>Information for specification writers. Test summaries</i>

^a HD 323.2.14 S2 includes A1:1986 to IEC 68-2-14

^b HD 323.2.20 S3 includes A1:1986 + A2:1987 to IEC 68-2-20

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 EN title page, pages 2 to 20, 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.

Descriptors: Electricity, components, equipment, environmental testing, definitions, standard conditions, climatic sequence, climatic classification, procedures, components specifications writing, equipment specifications writing

English version

Environmental testing Part 1: General and guidance

(IEC 68-1:1988 + corrigendum 1988 + A1:1992)

Essais d'environnement
Partie 1: Généralités et guide
(CEI 68-1:1988 + corrigendum 1988 + A1:
1992)

Umweltprüfungen
Teil 1: Allgemeines und Leitfaden
(IEC 68-1:1988 + corrigendum 1988 + A2:
1992)

This European Standard was approved by CENELEC on 1994-09-01. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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

At the request of the 78th Technical Board of CENELEC, the International Standard IEC 68-1:1988, its corrigendum October 1988 and amendment 1:1992 were submitted to the CENELEC Unique Acceptance Procedure (UAP) in January 1994 for acceptance as a European Standard.

The text of the reference document was approved by CENELEC as EN 60068-1 on 1 September 1994.

This European Standard replaces HD 323.1 S2:1988.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1995-10-01
- latest date of withdrawal of conflicting national standards (dow) 1995-10-01

Annexes designated “normative” are part of the body of the standard. In this standard, annex ZA is normative.

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1 Introduction

1.1 IEC Publication 68 contains fundamental information on environmental testing procedures and severities of tests. In addition, Part 1 contains information on atmospheric conditions for measurement and testing.

It is intended to be used in those cases where a relevant specification for a certain type of product (electrical, electromechanical and electronic equipment and devices, their sub-assemblies and constituent parts and components), hereinafter referred to as “specimen”, has to be prepared, so as to achieve uniformity and reproducibility in the environmental testing of this product.

NOTE Although primarily intended for electrotechnical products, many of the environmental testing procedures in Part 2 of this publication are equally applicable to other industrial products.

The expression “environmental conditioning” or “environmental testing” covers the natural and artificial environments to which specimens may be exposed so that an assessment can be made of their performance under conditions of use, transport and storage to which they may be subjected in practice.

The requirements for the performance of specimens subjected to environmental conditioning are not covered by this publication. The relevant specification for the specimen under test defines the allowed performance limits during and after environmental testing.

When drafting a relevant specification or purchasing contract, only those tests should be specified that are necessary for the relevant specimen taking into account the technical and economic aspects.

IEC Publication 68 consists of:

a) this first Part (Publication 68-1) which deals with generalities;

NOTE Attention is drawn to Publication 68-2-48.

b) the second Part (Publication 68-2) published as separate booklets each dealing with a family of tests or a particular test or guidance for their application;

NOTE Attention is drawn to Publication 68-2-47.

c) the third Part (Publication 68-3) published as separate booklets each dealing with background information on a family of tests;

d) the fourth Part (Publication 68-4), giving information for specification writers, published in two sections of which the second, in loose-leaf form, contains summaries of all the current tests in Publication 68-2;

NOTE Fire hazard tests are separately published in IEC Publication 695.

1.2 The following historical survey gives the significant features of this and of the earlier editions:

First edition (1954)

Contained not only the general part but also many of the individual tests which now form part of the Publication 68-2 series.

Second edition (1960)

Format changed to Publication 68-1: General. Tests published separately as Publication 68-2 series. Degrees of severity were included for all tests.

Third edition (1968)

Degrees of severity dropped, many more definitions included which were amended and added to in Amendment No. 1, December 1972, and component climatic category introduced. The recovery clause (Sub-clause 5.4) was intended to apply to normal applications so that ALL SPECIMENS would be submitted to rigidly controlled conditions, unless otherwise specified. Supplement A was issued in December 1974 to add further definitions of combined and composite tests and sequences of tests.

Fourth edition (1978)

Amendment No. 1 and Supplement A to the third edition were incorporated in this edition and an amendment to standard recovery conditions, also including further recovery conditions with wider tolerances on temperature and humidity, was added to the original Sub-clause 5.4 of the third edition.

Fifth edition (1982)

This edition comprised the text of the fourth edition with the addition of Clause 10: Significance of the numerical value of a quantity, and of an appendix giving general guidance on environmental testing.

Sixth edition (1988)