



BSI Standards Publication

Environmental testing

Part 3-14: Supporting documentation and guidance —
Developing a climatic sequential test

National foreword

This British Standard is the UK implementation of EN IEC 60068-3-14:2025. It is identical to IEC 60068-3-14:2025.

The UK participation in its preparation was entrusted to Technical Committee GEL/104, Environmental conditions, classification and testing.

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

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2025
Published by BSI Standards Limited 2025

ISBN 978 0 539 14516 8

ICS 19.040

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2025.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

English Version

Environmental testing - Part 3-14: Supporting documentation
and guidance - Developing a climatic sequential test
(IEC 60068-3-14:2025)

Essais d'environnement - Partie 3-14: Documentation
d'accompagnement et recommandations - Élaboration d'un
essai climatique séquentiel
(IEC 60068-3-14:2025)

Umgebungseinflüsse - Teil 3-14: Unterstützende
Dokumentation und Leitfaden - Entwickeln einer Klima-
Tests-Abfolge
(IEC 60068-3-14:2025)

This European Standard was approved by CENELEC on 2025-08-22. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 104/1100/FDIS, future edition 1 of IEC 60068-3-14, prepared by TC 104 "Environmental conditions, classification and methods of test" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60068-3-14:2025.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2026-09-30 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2028-09-30 document have to be withdrawn

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 60068-3-14:2025 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60068-1:2013	NOTE Approved as EN 60068-1:2014 (not modified)
IEC 60068-2 (series)	NOTE Approved as EN IEC 60068-2 (series)
IEC 60721-1	NOTE Approved as EN 60721-1
IEC 60721-2 (series)	NOTE Approved as EN 60721-2 (series)
IEC 60721-3 (series)	NOTE Approved as EN IEC 60721-3 (series)

CONTENTS

FOREWORD.....	2
INTRODUCTION.....	4
1 Scope.....	5
2 Normative references	5
3 Terms and definitions	5
4 Background	6
4.1 Environmental exposure sequence in life cycle	6
4.2 Failure mechanism under a sequential test	6
5 Introduction to the process	6
5.1 General.....	6
5.2 Stage 1: reviewing environmental requirements and compiling a provisional test sequence	7
5.3 Stage 2: establishing critical environments and refining sequence	7
5.4 Stage 3: preparing sequential test programme	7
5.5 Overall process.....	8
6 Stage 1: reviewing requirements and compiling provisional test sequence.....	8
6.1 Evaluating product life cycle	8
6.2 Evaluating environmental requirements.....	9
6.2.1 Identifying major phases.....	9
6.2.2 Determining typical environmental conditions	9
6.3 Compiling provisional list of critical environments	10
7 Stage 2: establishing critical environments and refining sequence.....	10
7.1 Consideration of the operational state of the product	10
7.2 Identification of potential failure modes	10
7.3 Identifying need for combined testing.....	11
7.4 Reviewing sensitivity of product to sequential environmental conditions.....	12
7.5 Consideration of sequential and non-sequential testing.....	13
8 Stage 3: preparing sequential test programme.....	13
8.1 General.....	13
8.2 Critical climatic tests	14
8.3 Combined climatic tests	14
8.4 Climatic sequential tests	15
8.5 Reviewing programme for technical credibility and cost effectiveness	15
Annex A (informative) Failure modes	17
A.1 General.....	17
A.2 Failure modes of electrical and electronic components	17
A.3 Failure modes of optics and sensors	19
A.4 Failure modes of power sources	19
Bibliography.....	20
Table 1 – Process to develop an environmental test sequence	8

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Environmental testing -
Part 3-14: Supporting documentation and guidance -
Developing a climatic sequential test****FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60068-3-14 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
104/1100/FDIS	104/1124/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 60068 series, published under the general title *Environmental testing*, can be found on the IEC website

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

The IEC 60068-2 series includes a variety of single and combined climatic condition tests. Some of these tests can give cumulative effects or hysteretic effects, causing the unit-under-test to deteriorate, and making it more vulnerable to subsequent tests. Thus, determining the sequence of tests has a significant influence on the conclusion of a composite test.

This subpart of IEC 60068-3 provides guidance for developing a climatic sequential test for a certain type of product (electrical, electromechanical or electronic equipment and devices, as well as their subassemblies, constituent parts and components). It is written for technicians, engineers and managers in environment testing, and for those who need to understand the results of climatic sequential tests.

With the increasing importance of the IEC Quality Assessment System for Electronic Components (IECQ), it has become necessary to define the test sequence more precisely than it could be done in IEC 60068-1:2013, Clause 7, in order to provide a satisfactory reproducibility of the test. This document describes in detail a composite test specifying a "climatic sequence" for product specimens. It includes guidance in informative annexes for specification writers and those performing the test.