IEC 60068-3-14

Edition 1.0 2025-07

INTERNATIONAL STANDARD

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

ICS 19.040

ISBN 978-2-8327-0577-3

IEC 60068-3-14:2025-07(en)

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FOREWORD

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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– withdrawn, or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.

1 Scope

This part of IEC 60068 describes a generic process for developing a climatic sequential test programme by sequencing test methods selected from the IEC 60068-2 series.

This generic process comprises a systematic approach to the development of a sequential environmental test programme.

A climatic sequential test is applicable to electrical, electromechanical or electronic equipment and devices, as well as their subassemblies, constituent parts and components. It can be customized according to specific product requirements and applications.

The process is designed for use by product designers, manufacturers and users.

The process is particularly relevant to electrical products which include components or materials that have the potential to degrade, as a consequence of environmental exposures.

2 Normative references

There are no normative references in this document.

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
cumulative effects
permanently remained consequences of environmental conditions imposed on a product after the environmental exposures are removed

3.2
hysteretic effects
gradually attenuated consequences of an environmental condition after the environmental exposure are removed

3.3
life cycle environmental profile
LCEP
design and test decision baseline document outlining real-world environmental conditions that a product or component will experience during usage-related events from its release/ manufacturing to the end of its useful life

Note 1 to entry: Examples of usage-related events are transportation, storage, operational usage and maintenance.