AS 60068.2.61—2003
IEC 60068-2-61:1991

Australian Standard™

Environmental testing

Part 2.61: Tests—Test Z/ABDM: Climatic sequence

[IEC title: Environmental testing—Part 2-61: Test methods—Test Z/ABDM: Climatic sequence]

Standards Australia

This Australian Standard was prepared by Committee EL-026, Protective Enclosures and Environmental Testing for Electrical/Electronic Equipment. It was approved on behalf of the Council of Standards Australia on 23 April 2003 and published on 19 June 2003.

The following are represented on Committee EL-026:

Australian Chamber of Commerce and Industry

Australian Electrical and Electronic Manufacturer's Association

Electrical Compliance Testing Association

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-026, Protective Enclosures and Environmental Testing for Electrical/Electronic Equipment.

The objective of this Standard is to provide the electrotechnology industry with a complete set of environmental test procedures published as a series under AS 60068 *Environmental testing*. This Standard is Part 2.61 of that series.

This Standard is identical with, and has been reproduced from, IEC 60068-2-61:1991, *Environmental testing—Part 2-61: Test methods—Test Z/ABDM: Climatic sequence*.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this international standard' should read 'this Australian Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) Any French text on figures should be ignored.

In this Standard, the following print types are used:

– requirements proper: in arial type;

– *test specifications: in italic type;*

– explanatory matter: in smaller arial type.

Any international Standard referenced should be replaced by an equivalent Australian Standard when one is available. The availability of equivalent Australian Standards can be determined either from the Standards Australia catalogue or from the Standards Australia website (www.standards.com.au).

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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INTRODUCTION

The value of a sequence of climatic tests, particularly for the testing of components, has been witnessed by the inclusion of a “climatic sequence” in IEC 60068-1 (see clause 7 with guidance in annex B).

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 could be done in clause 7 of IEC 60068-1 with the object of providing for satisfactory reproducibility of the test.

This International Standard describes in detail a composite test specifying a “climatic sequence” for specimens of products, primarily components, that is based on clause 7 of IEC 60068-1, and it includes guidance in informative annexes for specification writers and those performing the test.

NOTE – Test Z/ABDM is a “composite test” as defined in IEC 60068-1 rather than a “sequence” as defined in the same standard. Because of the well-established use of “sequence” in references to clause 7 of IEC 60068-1 it has been decided that “sequence” should continue to be used in referring to the operations in this composite test.

STANDARDS AUSTRALIA

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1 Scope

This International Standard provides standard composite test methods for determining the suitability of a specimen when subjected to environmental conditions consisting of a sequence of temperature, humidity and, where required, low air pressure environmental stresses.

The order of application of the stresses and conditions for the change from one step to the next have been chosen to accelerate and amplify degradation mechanisms of the same type as those observed under natural climatic conditions.

NOTE – Environmental conditions occurring in nature are classified in IEC 60721-2 and IEC 60721-3.

This standard may be applied to other electrotechnical products when the degradation mechanisms are the same and the specified requirements for testing can be satisfied. In other cases, it may form a basis for the writing of a similar test.

In this test, specimens are exposed to environmental tests in a standard order and categorized according to the basic code defined in annex A of IEC 60068-1 except that the third group of digits is used as an indication of the number of cycles in step 5 of the damp heat cyclic Test Db according to clause 6 in IEC 60068-2-30. In the climatic categories -/-/56, 40/-/-, etc., in this standard the dashes may be replaced by any of the standard values appropriate to the space as in the following examples: 55/100/56, 25/085/56, 40/085/21. Where any modification is necessary, the relevant specification shall provide the necessary information for each step in the selected method (see clause 8).

This test is frequently specified to follow other tests involving mechanical stress, for example tests for robustness of terminations, solderability, shock and vibration, as a means of determining whether the sealing of the specimen has been damaged.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60068-1: 1988, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-1: 1990, *Environmental testing – Part 2: Tests – Tests A: Cold*

IEC 60068-2-2: 1974, *Environmental testing – Part 2: Tests – Tests B: Dry heat*

IEC 60068-2-2A: 1976, *First supplement*

IEC 60068-2-13: 1983, *Environmental testing – Part 2: Tests – Test M: Low air pressure*

IEC 60068-2-28: 1980, *Environmental testing – Part 2: Tests – Guidance for damp heat tests*