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Australian Standard™

Environmental testing

Part 2.18: Tests—Test R and guidance: Water

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 10 May 2003 and published on 16 May 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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Electricity Supply Association of Australia

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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 2.18 of that series.

This Standard is identical with, and has been reproduced from, IEC 60068-2-18:2000, *Environmental testing – Part 2-18: Tests – Test R and guidance: Water*.

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.

CONTENTS

Page

1 Scope and object 1
2 Normative references 1
3 Definitions 1
4 Survey of water tests 2
4.1 General 2
4.2 Description of Tests R: Water 2
5 Test Ra: Falling drops 3
5.1 Object 3
5.2 Method Ra 1: Artificial rain 3
5.2.1 General description of the test 3
5.2.2 Severities 4
5.2.3 Preconditioning 4
5.2.4 Initial measurements 4
5.2.5 Testing 4
5.2.6 Recovery 5
5.2.7 Final measurements 5
5.2.8 Information to be given in the relevant specification 6
5.3 Method Ra 2: Drip box 6
5.3.1 General description of the test 6
5.3.2 Severities 7
5.3.3 Preconditioning 7
5.3.4 Initial measurements 7
5.3.5 Testing 7
5.3.6 Recovery 7
5.3.7 Final measurements 7
5.3.8 Information to be given in the relevant specification 8
6 Test Rb: Impacting water 8
6.1 Object 8
6.2 Method Rb 1: Oscillating tube and spray nozzle 8
6.2.1 General description of the test 8
6.2.2 Method Rb 1.1: Oscillating tube 8
6.2.3 Method Rb 1.2: Spray nozzle 12
6.3 Method Rb 2: Water jet 14
6.3.1 General description of the test 14
6.3.2 Severities 15
6.3.3 Preconditioning 15
6.3.4 Initial measurements 15
6.3.5 Testing 15
6.3.6 Recovery 16
6.3.7 Final measurements 16
6.3.8 Information to be given in the relevant specification 16

Page

7 Test Rc: Immersion 16
7.1 Object 16
7.2 Method Rc 1: Water tank 17
7.2.1 General description 17
7.2.2 Severities 17
7.2.3 Preconditioning 17
7.2.4 Initial measurements 17
7.2.5 Testing 17
7.2.6 Recovery 17
7.2.7 Final measurements 18
7.2.8 Information to be given in the relevant specification 18
7.3 Method Rc 2: Pressurized water chamber 18
7.3.1 General description of the test 18
7.3.2 Severities 18
7.3.3 Preconditioning 18
7.3.4 Initial measurements 18
7.3.5 Testing 19
7.3.6 Recovery 19
7.3.7 Final measurements 19
7.3.8 Information to be given in the relevant specification 19
Annex A (informative) Water characteristics to be considered when writing the relevant specification 20
Annex B (informative) General guidance 22
Annex C (informative) Guidance for Test Ra 23
Annex D (informative) Guidance for Test Rb 27
Annex E (informative) Guidance for Test Rc 32

INTRODUCTION

It is the intention of this part of IEC 60068 to fulfil the function of a basic publication[1)] by making water tests available to product committees.

A number of water tests are described in other IEC publications. Some of them are well established, for example, the test for classification of the second characteristic numeral of the IP Code, clause 4 of IEC 60529.

This standard incorporates the majority of the most widely used tests, as well as making available further methods and increasing the number of severities.

1) IEC Guide 108:1994, *The relationship between technical committees with horizontal functions and product committees and the use of basic publications*

NOTES

STANDARDS AUSTRALIA

Australian Standard

Environmental testing
Part 2.18: Tests—Test R and guidance: Water

1 Scope and object

This part of IEC 60068 provides methods of test applicable to products which, during transportation, storage or in service, may be subjected to falling drops, impacting water or immersion. The primary purpose of water tests is to verify the ability of enclosures, covers and seals to maintain components and equipment in good working order after and, when necessary, under a standardized dropfield or immersion in water.

These tests are not corrosion tests and should not be considered and used as such.

The effects of a large temperature difference between the water and the specimen, such as increased water ingress resulting from pressure changes, as well as thermal shock, are not simulated.

Established water tests in other standards are not intended to simulate natural rainfall and their quoted intensities are too high to be adopted for that purpose. Therefore, in addition to the high-intensity severities, Test R includes an artificial rain test based upon natural conditions but not taking into account high wind speeds generally associated with natural rain.

Guidance is given on the applicability of the tests and the severities to be selected.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60068. For dated references, subsequent amendments to, or revisions of, these publications do not apply. However, parties to agreements based on this part of IEC 60068 are encouraged to investigate the possibility of applying the most recent edition of the normative documents indicated below. For undated references, the latest edition of the normative documents referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

3 Definitions

For the purposes of this part of IEC 60068, the following definitions apply.

3.1
rain
precipitation in the form of waterdrops. Both the amount that falls and the actual falling action of the waterdrops are often called rainfall

3.2
drizzle
precipitation in the form of very small, numerous and uniformly dispersed waterdrops that may appear to float while following air currents