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INTERNATIONAL STANDARD



**Environmental testing –
Part 2-18: Tests – Test R and guidance: Water**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENVIRONMENTAL TESTING –

Part 2-18: Tests – Test R and guidance: Water

FOREWORD

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

International Standard IEC 60068-2-18 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

This third edition cancels and replaces the second edition published in 2000. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) addition of the new test method Rb 3.

The text of this standard is based on the following documents:

FDIS	Report on voting
104/719/FDIS	104/722/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

~~It is the intention of this part of IEC 60068 to fulfil the function of a basic publication¹⁾ 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, of IEC 60529.

This document 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~~

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~~ **can** be subjected to falling **water** drops, impacting water, immersion **or high pressure water impact**. 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 drop field or immersion in water.

These tests are not corrosion tests and ~~should not~~ **cannot** 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)*~~

There are no normative references in this document.

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Environmental testing –
Part 2-18: Tests – Test R and guidance: Water**

**Essais d'environnement –
Partie 2-18: Essais – Essai R et guide: Eau**

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ENVIRONMENTAL TESTING –

Part 2-18: Tests – Test R and guidance: Water

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

ESSAIS D'ENVIRONNEMENT –

Partie 2-18: Essais – Essai R et guide: Eau

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La Norme internationale IEC 60068-2-18 a été établie par le comité d'études 104 de l'IEC: Conditions, classification et essais d'environnement.

Cette troisième édition annule et remplace la deuxième édition parue en 2000. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) ajout de la nouvelle méthode d'essai Rb 3.

Le texte de cette norme est issu des documents suivants:

FDIS	Rapport de vote
104/719/FDIS	104/722/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette norme.

Cette publication a été rédigée selon les Directives ISO/IEC, Partie 2.

Une liste de toutes les parties de la série IEC 60068, publiées sous le titre général *Essais d'environnement*, peut être consultée sur le site web de l'IEC.

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INTRODUCTION

Un certain nombre d'essais d'eau sont décrits dans d'autres publications de l'IEC. Certains sont bien établis, comme les essais de classification du deuxième chiffre caractéristique du code IP de l'IEC 60529.

Le présent document intègre la plupart des essais les plus largement utilisés. Il présente également d'autres méthodes et augmente le nombre des sévérités.

ESSAIS D'ENVIRONNEMENT –

Partie 2-18: Essais – Essai R et guide: Eau

1 Domaine d'application

La présente partie de l'IEC 60068 spécifie les méthodes d'essai applicables aux produits qui, pendant leur transport, leur stockage, ou alors qu'ils sont en service, peuvent être soumis à des chutes de gouttes d'eau, à des projections d'eau, à une immersion ou à des projections d'eau à haute pression. Le but premier des essais d'eau est de vérifier l'aptitude des enveloppes, des couvercles et des joints d'étanchéité à maintenir les composants et les matériels en bon état de marche après et, si besoin, pendant un arrosage par des gouttes d'eau ou une immersion dans l'eau normalisée.

Ces essais ne sont pas des essais de corrosion et ne peuvent pas être considérés ou utilisés comme tels.

Les essais d'eau déjà établis dans d'autres normes ne sont pas destinés à simuler les chutes de pluie naturelles et leurs intensités correspondantes sont trop élevées pour être utilisées dans ce but. En conséquence, en plus des sévérités de forte intensité, l'essai R comprend un essai de pluie artificielle basé sur des conditions naturelles, mais sans tenir compte des grands vents qui sont généralement associés à la pluie naturelle.

Des préconisations sont données sur l'applicabilité des essais et sur les sévérités à choisir.

2 Références normatives

Le présent document ne contient aucune référence normative.