IEC 60068-3-4

Edition 2.0 2023-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Environmental testing –
Part 3-4: Supporting documentation and guidance – Damp heat tests

Essais d'environnement –
Partie 3-4: Documentation d'accompagnement et recommandations – Essais de chaleur humide

IEC 60068-3-4:2023-06(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ENVIRONMENTAL TESTING –

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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 can 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.
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IEC 60068-3-4 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test. It is an International Standard.

This second edition cancels and replaces the first edition published in 2001. This edition constitutes a technical revision.

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

a) the requirements for distilled and deionized water have been revised;
b) recommendations for the cleaning procedure of test chambers have been included;
c) humidification systems (ultrasonic humidifiers and atomizers) have been added;
d) the description of water penetration mechanisms has been refined.

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

Draft	Report on voting
104/985/FDIS	104/1001/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,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Temperature and relative humidity (RH) of the air, in varying combinations, are climatic factors which act upon a product during storage, transportation and operation.

Meteorological measurements made over many years have shown that a relative humidity > 95 % combined with a temperature > 30 °C does not occur in free-air conditions over long periods, except in regions with extreme climates. In dwelling rooms and workshops temperatures of > 30 °C can occur but in most cases are combined with a lower relative humidity than in the open air.

Special conditions exist in certain wet rooms, for example in the chemical industry, metallurgical plants, mines, electroplating plants and laundries, where the temperature can reach 45 °C combined with a relative humidity up to saturation over long periods.

Certain equipment placed under particular conditions can be subjected to a relative humidity of more than 95 % at higher temperatures. This can happen when the equipment is placed in enclosures, such as vehicles, tents or aircraft cockpits, since this can result in intense heating through solar radiation while, because of inadequate ventilation, any humidity that can be developed will be retained permanently within the interior.

In rooms having several heat sources, temperatures and relative humidity can vary in different parts of the room.

To take these climatic factors over the lifetime of the product into account, environmental testing includes the practice of accelerated testing (see Clause 6).

Atmospheric pollution can intensify the effects of a damp climate on products. Attention is drawn to this fact because of its general importance, although pollutants are not contained in the atmospheres used for damp heat testing. If the effects of pollutants, for example corrosion and mould growth, are to be investigated, a suitable test from the IEC 60068-2 series should be used.