INTERNATIONAL STANDARD

IEC 60068-2-2

Fourth edition
1974

Basic environmental testing procedures –

Part 2:
Tests
Tests B: Dry heat

*This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.*

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

BASIC ENVIRONMENTAL TESTING PROCEDURES

Part 2: Tests — Tests B: Dry heat

FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendations and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

PREFACE

This recommendation has been prepared by Sub-Committee 50B, Climatic Tests, of I E C Technical Committee No. 50, Environmental Testing.

The present edition consists of the third edition (1966) of Test B: Dry heat, to which have been added Test Bc: Dry heat for heat-dissipating specimen with sudden change of temperature, and Test Bd: Dry heat for heat-dissipating specimen with gradual change of temperature.

A first draft was discussed during the meeting held in Washington in 1970. As a result of this meeting, a second draft, document 50B(Central Office)159, was submitted to the National Committees for approval under the Six Months' Rule in February 1971. Amendments, document 50B(Central Office)168, were submitted to the National Committees for approval under the Two Months' Procedure in July 1972.

The following countries voted explicitly in favour of publication:

Australia	Hungary	Romania
Belgium	Italy	South Africa (Republic of)
Canada	Japan	Sweden
Czechoslovakia	Netherlands	Switzerland
Denmark	Norway	Turkey
Finland	Portugal	United Kingdom
Germany		

The French National Committee submitted a negative vote which was not due to any disagreement with the technical content of the document, but because they considered that the format of presentation requested by the majority of the National Committees at the meeting of Sub-Committee 50B, in Leningrad, in 1971, is unduly complicated.

The French National Committee requested that this negative vote, and the reason for it, be recorded.

The United States National Committee voted for Tests Ba and Bb, but wished it to be recorded that they could not accept Tests Bc and Bd because they preferred to test with forced air circulation.

This recommendation should be read in conjunction with IEC Publications 68-1, Basic Environmental Testing Procedures, Part 1, General, and 68-3-1, Basic Environmental Testing Procedures, Part 3, Background Information, Section One: Cold and Dry Heat Tests.

HISTORICAL SURVEY OF TEST B: DRY HEAT

First edition (1954)

Contained one procedure only Test B: Dry heat, dealing with sudden change of temperature.

Second edition (1960)

Equivalent to the previous Test B; however, standard test temperature range extended to 200 °C.

Third edition (1966)

Introduced:

— Test Ba, equivalent to the previous Test B; however, standard test temperature range extended to 1 000 °C;
— Test Bb, a new method dealing with gradual change of temperature.

Fourth edition (1974)

Introduced:

— Test Ba, equivalent to the previous Test Ba;
— Test Bb, equivalent to the previous Test Bb;
— Test Bc, a new method dealing with sudden change of temperature for heat-dissipating specimens;
— Test Bd, a new method dealing with gradual change of temperature for heat-dissipating specimens.

For directly related recommendations, see:

Publication 68-1: General.

Publication 68-3-1: Background Information.
Section One: Cold and Dry Heat Tests.

RELATIONSHIP OF SUFFIXES BETWEEN TESTS A: COLD, AND TESTS B: DRY HEAT

The relationship of suffixes between Tests A: Cold, and Tests B: Dry heat, is shown in the following table:

Suffix letter	Tests A: Cold			Tests B: Dry heat		
	Specimen type	Temperature change	Specimen temperature at commencement of test duration	Specimen type	Temperature change	Specimen temperature at commencement of test duration
a	non heat	sudden	stabilized*	non heat	sudden	stabilized*
b	non heat	gradual	stabilized*	non heat	gradual	stabilized*
c	—	—	—	heat	sudden	stabilized*
d	heat	gradual	stabilized*	heat	gradual	stabilized*

* The specimens will normally reach temperature stability before commencement of test duration. In exceptional cases, this will not be so, and additional information will be required in the relevant specification. See Clause 1 of the Introduction and IEC Publication 68-3-1. (Amendments to cover these cases are under consideration.)

BASIC ENVIRONMENTAL TESTING PROCEDURES

Part 2: Tests — Tests B: Dry heat

INTRODUCTION

1. General

This publication deals with dry heat tests applicable both to heat-dissipating and non heat-dissipating specimens. For non heat-dissipating specimens, Tests Ba and Bb do not deviate essentially from earlier issues.

The object of the dry heat test is limited to the determination of the ability of components, equipment or other articles to be used or stored at high temperature.

These dry heat tests do not enable the ability of specimens to withstand or operate during temperature variations to be assessed. In this case, it would be necessary to use Test N: Change of temperature.

The dry heat tests are subdivided as follows:

Dry heat tests for non heat-dissipating specimens

— with sudden change of temperature, Ba;

— with gradual change of temperature, Bb.

Dry heat tests for heat-dissipating specimens

— with sudden change of temperature, Bc;

— with gradual change of temperature, Bd.

The procedures given in this publication are normally intended for specimens which achieve temperature stability during the performance of the test procedure.

The duration of the test commences at the time when temperature stability of the specimen has been reached.

For the exceptional cases when the specimen does not reach temperature stability during the performance of the test procedure, the duration of the test commences at the time when the test chamber reaches the test temperature.

The relevant specification shall define:

a) the rate of change of temperature in the test chamber;

b) the time at which the specimens are introduced into the test chamber;

c) the time at which the exposure commences;

d) the time at which the specimens are energized.

For these cases, the specification writer will find guidance on choosing the above four parameters in IEC Publication 68-3-1. (Amendments to cover these cases are under consideration.)