SLOVENSKI STANDARD
SIST HD 437 S1:1998

01-oktober-1998

Standard conditions for use prior to and during the testing of solid electrical insulating materials (IEC 60212:1971)

Standard conditions for use prior to and during the testing of solid electrical insulating materials

Standardbedingungen für die Anwendung vor und während der Prüfung von festen Elektroisolierstoffen

Conditions normales à observer avant et pendant les essais de matériaux isolants électriques solides

Ta slovenski standard je istoveten z: **HD 437 S1:1984**

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Standard conditions for use prior to and during the testing of solid electrical insulating materials

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

STANDARD CONDITIONS FOR USE PRIOR TO AND DURING THE TESTING OF SOLID ELECTRICAL INSULATING MATERIALS

FOREWORD

1) The formal decisions or agreements of the I E C 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 this international unification, the I E C expresses the wish that all National Committees having as yet no national rules, when preparing such rules, should use the I E C recommendations as the fundamental basis for these rules in so far as national conditions will permit.

4) The desirability is recognized of extending international agreement on these matters through an endeavour to harmonize national standardization rules with these recommendations in so far as national conditions will permit. The National Committees pledge their influence towards that end.

PREFACE

This Recommendation was prepared by Sub-Committee 15A, Short-time Tests, of I E C Technical Committee No. 15, Insulating Materials.

It contains the first edition issued in 1966 with revised Tables I, II and III.

A first draft of the first edition was discussed at meetings held in New Delhi in 1960 and in Venice in 1963. As a result of this latter meeting, a new draft was prepared and submitted to the National Committees for approval under the Six Months' Rule in October 1963.

The following countries voted explicitly in favour of publication:

Austria	Italy
Belgium	Japan
Canada	Korea (Republic of)
China (People's Republic of)	Netherlands
Czechoslovakia	Norway
Denmark	Poland
Finland	Romania
France	Sweden
Germany	Switzerland
Hungary	Union of Soviet Socialist Republics
India	United Kingdom
Israel	United States of America

Drafts for the revision of the tables were discussed during the meeting held in London in 1968. As a result of this meeting, a draft was submitted to the National Committees for approval under the Six Months' Rule in May 1969. Amendments were submitted to the National Committees for approval under the Two Months' Procedure in October 1970.

The following countries voted explicitly in favour of publication:

Australia	Italy
Belgium	Netherlands
Canada	South Africa
Czechoslovakia	Sweden
Denmark	Switzerland
Finland	Turkey
France	Union of Soviet Socialist Republics
Germany	United Kingdom
Hungary	United States of America
Iran	Yugoslavia

STANDARD CONDITIONS FOR USE PRIOR TO AND DURING THE TESTING OF SOLID ELECTRICAL INSULATING MATERIALS

1. General

Certain properties of many materials are affected by the temperature or humidity, or both, of the atmospheres to which they are subjected. It is usually necessary, therefore, when testing electrical insulating materials, to control the ambient conditions, e.g., of temperature and humidity to which the specimens are subjected prior to test and the ambient conditions in which the specimens are actually tested.

When giving results of tests on electrical insulating materials likely to be affected by those factors, it is important that the relevant conditions to which the test specimens were exposed are quoted. Specifications for such materials should, therefore, specify the atmospheres to which the test specimens should be exposed before testing and the conditions under which the tests are to be made.

2. Scope

This Recommendation gives standard conditions of exposure time, temperature, atmospheric humidity and liquid immersion for use in testing electrical insulating materials. The range is sufficiently wide to enable suitable conditions to be selected so that either of the primary objects of conditioning can be achieved. These objects are:

a) To obtain greater reproducibility of test results by:

i) partly counteracting the variations of the properties of the material due to the past history of the test specimens (often known as " normalizing ", here called preconditioning), and

ii) ensuring uniformity of conditions during the testing.

b) To determine the influence of exposure to certain temperatures and humidities, or immersions in liquids, on the properties of a material by subjecting specimens to specified conditions before or during the test or both.

3. Definitions

For the purpose of this Recommendation, the following definitions of certain terms apply:

a) Preconditioning

The treatment of a specimen with the object of removing or partly counteracting the effect of its previous history with respect, principally, to the temperature and humidity to which it has been exposed. This treatment (sometimes known as " normalizing ") usually precedes conditioning of a specimen.

b) Conditioning (of a specimen)

The subjection of the specimen to an atmosphere of a specified relative humidity or complete immersion in water or other liquid, at a specified temperature for a specified period of time.

Note. — When the combination of temperature and humidity for conditioning is the same as that prescribed for preconditioning, the preconditioning and conditioning may be merged and the preconditioning may be said to take the place of conditioning.

c) The test conditions

The temperature and humidity of the atmosphere surrounding the specimen, or temperature and kind of liquid (for liquid immersion), at the time tests are carried out.

d) Standard reference atmosphere

The atmosphere to which values measured under any other atmospheric conditions are corrected by calculation.

e) Relative humidity

The ratio of the actual vapour pressure to the saturation vapour pressure at the same (dry bulb) temperature, expressed as a percentage.

4. Temperature and humidity (or liquid immersion) recommended for preconditioning, conditioning and testing

The recommended standard conditions of temperature and humidity (or liquid immersion) for preconditioning, conditioning and testing are given in Tables I and II, pages 15 and 17.

When preconditioning is required, one of the standard atmospheres or one of the dry-hot conditions given in Table I may be used for a time specified in the material specification, (e.g., 24 $\pm \frac{1}{2}$ hours). It is usual to specify 50 $\pm$ 2 °C with a relative humidity less than 20%.

5. Period of conditioning

The period of conditioning should be specified in the relevant material specification or test method. The period of conditioning will usually depend upon the type of material being tested.

In general, it is not intended that the period of conditioning shall be sufficient to enable the specimens to reach equilibrium with the surrounding atmosphere. The rate at which equilibrium is reached depends largely upon the nature and dimensions of the test specimens. Consequently, the period of exposure necessary to obtain equilibrium may in some cases (e.g., thin paper) be only a matter of a few minutes, but in others (such as hard rubber) it may be many months.

It is recommended that periods of conditioning be selected from the list given in Table III, page 17.

6. Procedures for atmospheric preconditioning, conditioning and testing

It is strongly recommended that, whenever possible, tests should be made on specimens in a room or in a suitable chamber in which the required conditions are maintained throughout the test.