



**SLOVENSKI STANDARD**  
**SIST EN 60068-2-11:2001**  
**01-september-2001**

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**Environmental testing - Part 2: Tests - Test Ka: Salt mist**

Environmental testing -- Part 2: Tests - Test Ka: Salt mist

Umweltprüfungen -- Teil 2: Prüfungen - Prüfung Ka: Salznebel

Essais d'environnement -- Partie 2: Essais - Essai Ka: Brouillard salin

**Ta slovenski standard je istoveten z: EN 60068-2-11:1999**

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**ICS:**

19.040      Preskušanje v zvezi z      Environmental testing  
                 okoljem

**SIST EN 60068-2-11:2001**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60068-2-11**

April 1999

ICS 19.040

Supersedes HD 323.2.11 S1:1988

English version

**Environmental testing**  
**Part 2: Tests - Test Ka: Salt mist**  
(IEC 60068-2-11:1981)

Essais d'environnement  
Partie 2: Essais  
Essai Ka: Brouillard salin  
(CEI 60068-2-11:1981)

Umweltprüfungen  
Teil 2: Prüfungen  
Prüfung Ka: Salznebel  
(IEC 60068-2-11:1981)

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This European Standard was approved by CENELEC on 1999-04-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

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### Foreword

The text of the International Standard IEC 60068-2-11:1981, prepared by SC 50B (transformed into IEC TC 104 "Environmental conditions, classification and methods of test), was approved by CENELEC as HD 323.2.11 S1 on 1985-06-27.

This Harmonization Document was submitted to the formal vote for conversion into a European Standard and was approved by CENELEC as EN 60068-2-11 on 1999-04-01.

The following date was fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2000-04-01

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### Endorsement notice

The text of the International Standard IEC 60068-2-11:1981 was approved by CENELEC as a European Standard without any modification.

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**NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD**

**CEI  
IEC**

**60068-2-11**

Troisième édition  
Third edition  
1981

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BASIC SAFETY PUBLICATION  
PUBLICATION FONDAMENTALE DE SÉCURITÉ

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**Essais fondamentaux climatiques  
et de robustesse mécanique –**

**Partie 2-11:  
Essais – Essai Ka: Brouillard salin**

**iTeh STANDARD PREVIEW**

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**Basic environmental testing procedures –**

**Part 2-11: SIST EN 60068-2-11:2001**

**Tests – Test Ka: Salt mist**  
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Международная Электротехническая Комиссия

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Pour prix, voir catalogue en vigueur*

**Publication 60068-2-11 de la CEI**  
(Troisième édition – 1981)

**Essais fondamentaux climatiques  
et de robustesse mécanique –**

Deuxième partie: Essais –  
Essai Ka: Brouillard salin

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(Third edition – 1981)

**Basic environmental  
testing procedures –**

Part 2: Tests –  
Test Ka: Salt mist

## CORRIGENDUM 1

Page 6

Correction in the French text only.

### 4 Brouillard salin

*Remplacer, la deuxième ligne du paragraphe 4.1.1, «oxyde de sodium» par «iodure de sodium».*

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## BASIC ENVIRONMENTAL TESTING PROCEDURES –

## Part 2: Tests – Test Ka: Salt mist

## 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 recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

## PREFACE

This standard has been prepared by subcommittee 50B: Climatic tests, of IEC technical committee 50: Environmental testing.

This third edition supersedes the second edition (1964) of Test Ka: Salt mist.

A first draft was discussed at the meeting held in Paris in 1979. As a result of this meeting, a new draft, Document 50B(Central Office)212 was submitted to the National Committees for approval under the Six Months' Rule in July 1979.

It has the status of a basic safety publication in accordance with IEC Guide 104.

The National Committees of the following countries voted explicitly in favour of publication:

Australia	Netherlands
Belgium	Norway
Brazil	Poland
Canada	Romania
China	South Africa
Czechoslovakia	(Republic of)
Finland	Spain
France	Sweden
Germany	Switzerland
Hungary	Turkey
Israel	United Kingdom
Italy	United States of
Korea (Democratic People's	America
Republic of)	

## BASIC ENVIRONMENTAL TESTING PROCEDURES

### Part 2: Tests — Test Ka: Salt mist

#### 1. Scope

This test is to be applied to compare the resistance to deterioration from salt mist of specimens of similar construction.

It is useful for evaluating the quality and the uniformity of protective coatings.

#### 2. General

The following restrictions shall be taken into account:

- a) the test is unsuitable as a general salt corrosion test;
- b) it is also considered to be unsuitable for the evaluation of individual specimens intended for use in salt-laden atmospheres.

For equipment and components, Test Kb is considered to provide more realistic conditions and to provide means of assessment of individual items. If however, for particular circumstances, the relevant specification requires this test (Ka) to be applied to individual specimens for qualification purposes, then the specimens should be tested as part of the overall assembly or equipment in which they are to be used and be complete with any protection devices (cases, covers, shields, etc.), as in practice.

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#### 3. Test apparatus

##### 3.1 Test chamber

The chamber for this test shall be constructed of such materials that will not influence the corrosive effects of the salt mist.

The detailed construction of the chamber, including the method of producing the mist, is optional provided that:

- a) the conditions in the chamber are within the limits specified;
- b) a sufficiently large volume with constant, homogeneous conditions (not affected by turbulence) is available; these conditions should not be influenced by the specimens under test;
- c) no direct spray impinges upon the specimens under test;
- d) drops of liquid accumulating on the ceiling, the walls or other parts cannot drip on the specimens;
- e) the chamber shall be properly vented to prevent pressure build-up and allow uniform distribution of salt fog. The discharge end of the vent shall be protected from squalls which can cause strong air currents in the chamber.

### 3.2 Atomizer(s)

The atomizer(s) used shall be of such a design and construction as to produce a finely divided, wet, dense mist. The atomizer(s) shall be made of material that is non-reactive to the salt solution.

## 4. Salt mist

### 4.1 Salt solution

#### 4.1.1 Concentration

The salt used for the test shall be high quality sodium chloride (NaCl) containing, when dry, not more than 0.1% sodium iodide and not more than 0.3% of total impurities.

The salt solution concentration shall be  $5 \pm 1\%$  by weight.

The solution shall be prepared by dissolving  $5 \pm 1$  parts by weight of salt in 95 parts by weight of distilled or demineralized water.

#### 4.1.2 pH value

The pH value of the solution shall be between 6.5 and 7.2, at a temperature of  $35 \pm 2$  °C.

The pH value shall be maintained within this range during conditioning; for this purpose, diluted hydrochloric acid or sodium hydroxide may be used to adjust the pH value provided that the concentrations of NaCl remains within the prescribed limits.

The pH shall be measured when preparing each new batch of solution.

The pH value may need to be adjusted, within the limits specified above, to meet the requirements of Clause 7.

#### 4.1.3 The sprayed solution shall not be re-used.

### 4.2 Air supply

The compressed air entering the atomizer(s) shall be essentially free from all impurities, such as oil and dust.

Means shall be provided to humidify and warm the compressed air as required to meet the operating conditions. The air pressure shall be suitable to produce a finely divided dense mist with the atomizer(s) used.

To ensure against clogging of the atomizer by salt deposition, it is recommended that the air have a relative humidity of at least 85% at the point of release from the nozzle. A satisfactory method is to pass the air in very fine bubbles through a tower containing heated water which shall be automatically maintained at a constant level. The temperature of this water should be at least 35 °C.

The permissible water temperature increases with increasing volume of air and with decreasing heat insulation of the chamber and the surroundings of the chamber.