EESTI STANDARD EVS-EN 60721-3-9:2002

Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 9: Microclimates inside products

EESTI STANDARDIKESKUS

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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60721-3-9:2002 sisaldab Euroopa standardi EN 60721-3-9:1993 ingliskeelset teksti.	This Estonian standard EVS-EN 60721-3-9:2002 consists of the English text of the European standard EN 60721-3-9:1993.
Standard on kinnitatud Eesti Standardikeskuse 18.12.2002 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 18.12.2002 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

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English version

Classification of environmental conditions Part 3: Classification of groups of environmental parameters and their severities Section 9 : Microclimates inside products

(IEC 721-3-9 : 1993)

Classification des conditions d'environnement
Partie 3 : Classification des groupements des agents d'environnement et de leurs sévérités
Section 9 : Microclimats à l'intérieur des produits
(CEI 721-3-9 : 1993)

Klassifizierung von Umweltbedingungen
Teil 3 : Klassen von Umwelteinflußgrößen und deren Grenzwerte
Hauptabschnitt 9 : Mikroklimate innerhalb von Erzeugnissen
(IEC 721-3-9 : 1993)

This European Standard was approved by CENELEC on 1993-07-06. 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.

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CENELEC

European Committee for Electrotechnical Standardization
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Foreword

The text of document 75 (CO) 80, as prepared by IEC Technical Committee No. 75 : Classification of environmental conditions, was submitted to the IEC-CENELEC parallel vote in October 1992.

The reference document was approved by CENELEC as EN 60721-3-9 on 6 July 1993.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1994-07-01
- latest date of withdrawal of conflicting national standards (dow) 1994-07-01

Annexes designated 'normative' are part of the body of the standard.

Annexes designated 'informative' are given only for information.

In this standard, annex A is informative and annex ZA is normative.

CONTENTS

CLASSIFICATION OF ENVIRONMENTAL CONDITIONS

Part 3: Classification of groups of environmental parameters and their severities
Section 9: Microclimates inside products

1 Scope

This section of IEC 721-3 defines classes of microclimatic conditions, to which components (basic parts, assemblies, built-in units) may be subjected inside products, which are used under the climatic conditions as classified in sections IEC 721-3-3 and IEC 721-3-4.

Characteristic parameters for the microclimates are high air temperature and high relative air humidity. Further parameters of the climatic classes e.g. low temperature may affect the components additionally, but have not been considered here.

A limited number of microclimatic classes is specified taking into consideration typical limiting high air temperatures of components.

The user of this standard should select the lowest class necessary for covering the intended use.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 721-3. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this section of IEC 721-3 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 721-1: 1990, *Classification of environmental conditions – Part 1: Environmental parameters and their severities*

IEC 721-2-1: 1982, *Classification of environmental conditions – Part 2: Environmental conditions appearing in nature – Section 1: Temperature and humidity*
Amendment 1 (1987)

IEC 721-3-0: 1984, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 0: Introduction*

Amendment 1 (1987)

IEC 721-3-3: 1987, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weatherprotected locations*
Amendment 1 (1991)

IEC 721-3-4: 1987, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 4: Stationary use at non-weatherprotected locations*
Amendment 1 (1991)

3 Definitions

In addition to the definitions in clause 3 of IEC 721-1 the following definitions apply to this standard:

3.1 **microclimate:** The climatic condition at the place where a component is installed in the product. Only air temperature and air humidity are taken into account.

3.2 **microclimatic class:** A classified microclimate designated by:

- the climatic class as specified in IEC 721-3-3 or IEC 721-3-4;
- the class of high air temperature (see table 1a);
- the optional class of limited relative air humidity, in relation to the climatic class severity (see table 1b).

4 General

Microclimates at the place where the components are installed in a product may differ significantly from the climatic conditions to which the product is subjected.

The microclimates describe the climatic conditions at the place where the component is installed in a product e.g. inside an enclosure. These are essentially the climatic classes specified in IEC 721-3-3 or IEC 721-3-4 but with the addition of severities of high air temperature and limited relative air humidity to account for external or appreciable self-generated heating during operation. Microclimates can also be used to designate the operational conditions for components.

When temperatures in excess of those of the environment itself occur inside a product, the relative air humidity and, therefore, also the humidity stress on the components is reduced. Even in environments with a relative air humidity as high as 100 %, the relative air humidity inside the product is reduced below 65 % by an excess temperature of 10 °C. Below this humidity level the corrosion effect of chemically active substances is very low.

The microclimates described concern the case of placing of components in enclosures with comparatively free access to the surrounding atmosphere. Difficult access of air (e.g. presence of non-tight seal of the enclosure) may produce more severe conditions as a