Classification of environmental conditions - Part 2-1: Environmental conditions appearing in nature - Temperature and humidity

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 60721-2-1:2014 sisaldab Euroopa standardi EN 60721-2-1:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 60721-2-1:2014 consists of the English text of the European standard EN 60721-2-1:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.06.2014.	Date of Availability of the European standard is 20.06.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 19.040

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60721-2-1

June 2014

ICS 19.040

Supersedes HD 478.2.1 S1:1989

English Version

Classification of environmental conditions - Part 2-1: Environmental conditions appearing in nature - Temperature and Humidity (IEC 60721-2-1:2013)

Classification des conditions d'environnement - Partie 2-1: Conditions d'environnement présentes dans la nature - Température et humidité (CEI 60721-2-1:2013)

Klassifizierung von Umgebungsbedingungen - Teil 2-1: Natürliche Umgebungsbedingungen - Temperatur und Feuchte (IEC 60721-2-1:2013)

This European Standard was approved by CENELEC on 2013-07-30. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 60721-2-1:2014 E

Foreword

The text of document 104/610/FDIS, future edition 2 of IEC 60721-2-1, prepared by IEC/TC 104 "Environmental conditions, classification and methods of test" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60721-2-1:2014.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2014-12-20
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-07-30

This document supersedes HD 478.2.1 S1:1989.

EN 60721-2-1:2014 includes the following significant technical changes with respect to HD 478.2.1 S1:1989:

The main changes with respect to HD 478.2.1 S1:1989 are in the definitions of climate types.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60721-2-1:2013 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

Publication	Year	Title	EN/HD	Year
IEC 60721-1	1990	Classification of environmental conditions - Part 1: Environmental parameters and their severities	EN 60721-1[1)]	1995
IEC/TR 62130	-	Climatic field data including validation	-	-
MIL210		Extreme and Percentile Environmental Reference Tables (ExPERT) database (Version 1.0 July 1997)		
PEARCE, E.A., and SMITH, C.G.		The Hutchinson World Weather Guide by Helicon Publishing Ltd (ISBN 1-85986-342-6, 2000)		
KOTTEK, M., GRIESER, J., BECK, C., RUDOLF, B. and RUBEL, F.		World Map of the Köppen-Geiger climate classification updated: 2006, Meteorol. Z., 15, 259-263		

[1)] EN 60721-1 includes A1:1992 to IEC 60721-1.

CONTENTS

INTRODUCTION

Electrotechnical products are used in almost all areas of the world under varying climatic conditions and have to meet the stresses imposed by these climatic conditions with the necessary reliability. A detailed knowledge of the climatic conditions to which the product will be subjected is necessary in the design stage to ensure that reliability is met.

Data on open-air temperature and humidity have been collected and statistically processed for many years throughout the world. Such data is represented in this part of IEC 60721.

In addition to open-air temperature, temperature stresses on a product depend on a number of other environmental parameters, for example solar radiation, air velocity or heating from adjacent equipment.

The effects of humidity depend on temperature, temperature changes and impurities in the humid air.

In many cases the extremes of temperature and humidity are of great importance even if they occur for a short time. In other cases, where large time constants for heat or water penetration are involved, the mean values of temperature and humidity over a certain period may be more important.

It has therefore been considered useful to present here both the mean value over many years of the annual extreme values of temperature and humidity, which will occur only for short periods (a few hours), and the mean value over many years of the extreme daily mean values of temperature and humidity, which will occur for longer periods.

In order to cover cases where rare events need to be taken into account, the absolute extreme temperatures and humidity levels, observed over a period of many years, have also been presented.