Irish Standard
I.S. EN 60721-2-2:2013

Classification of environmental conditions -- Part 2-2: Environmental conditions appearing in nature -- Precipitation and wind (IEC 60721-2 -2:2012 (EQV))

I.S. EN 60721-2-2:2013

Incorporating amendments/corrigenda issued since publication:

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:	*This document is based on:*	*Published:*
HD 478.2.2 S1:1990	EN 60721-2-2:2013 HD 478.2.2 S1:1990	2 August, 2013 2 January, 1990

This document was published
under the authority of the NSAI and comes into effect on:

12 August, 2013

ICS number:
19.040

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Údarás um Chaighdeáin Náisiúnta na hÉireann

I.S. EN 60721-2-2:2013

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60721-2-2

August 2013

ICS 19.040

Supersedes HD 478.2.2 S1:1990

English version

Classification of environmental conditions - Part 2-2: Environmental conditions appearing in nature - Precipitation and wind

(IEC 60721-2-2:2012)

Classification des conditions d'environnement - Partie 2-2: Conditions d'environnement présentes dans la nature - Précipitations et vent (CEI 60721-2-2:2012)

Klassifizierung von Umgebungsbedingungen - Teil 2-2: Natürliche Umgebungsbedingungen - Niederschlag und Wind (IEC 60721-2-2:2012)

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CENELEC

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

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Ref. No. EN 60721-2-2:2013 E

Foreword

The text of document 104/583/FDIS, future edition 2 of IEC 60721-2-2, 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 60721-2-2:2013.

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)	2014-02-02
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-01-17

This document supersedes HD 478.2.2 S1:1990.

EN 60721-2-2:2013 includes the following significant technical changes with respect to HD 478.2.2 S1:1990:

– subclause Precipitation: simplified; data not possible to validate are removed;

– subclause Wind: text rewritten;

– Table 1 simplified and aligned with definition used by [1];

– subclause Hail: data added; formula changed; formula for impact energy added;

– subclause Snow: text changed and aligned with definitions used by [1];

– Table 3 removed;

– subclause Normal rain: text has been modified and numeric values removed;

– subclause Driving rain: text has been modified and numeric values removed;

– subclause Formation of ice: text has been modified and numeric values removed;

– subclause Drifting snow: text added;

– subclause Wind force: formula changed;

– Figures 1 to 5 removed.

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 60721-2-2:2012 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60721-1	-	Classification of environmental conditions - Part 1: Environmental parameters and their severities	EN 60721-1	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CLASSIFICATION OF ENVIRONMENTAL CONDITIONS –

Part 2-2: Environmental conditions appearing in nature – Precipitation and wind

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60721-2-2 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

This second edition cancels and replaces the first edition, published in 1988, and constitutes a technical revision.

The main changes with regard to the previous edition are as follows:

– subclause Precipitation: simplified; data not possible to validate are removed;
– subclause Wind: text rewritten;
– Table 1 simplified and aligned with definition used by [1][1];
– subclause Hail: data added; formula changed; formula for impact energy added;

[1] References in square brackets refer to the Bibliography.

– subclause Snow: text changed and aligned with definitions used by [1];
– Table 3 removed;
– subclause Normal rain: text has been modified and numeric values removed;
– subclause Driving rain: text has been modified and numeric values removed;
– subclause Formation of ice: text has been modified and numeric values removed;
– subclause Drifting snow: text added;
– subclause Wind force: formula changed;
– Figure 1 to 5 removed.

The text of this standard is based on the following documents:

FDIS	Report on voting
104/583/FDIS	104/596/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60068 series, under the general title *Classification of environmental conditions,* can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

CLASSIFICATION OF ENVIRONMENTAL CONDITIONS –

Part 2-2: Environmental conditions appearing in nature – Precipitation and wind

1 Scope

This part of IEC 60721 presents fundamental properties, quantities for characterization, and a classification of environmental conditions dependent on precipitation and wind relevant for electrotechnical products.

It is intended to be used as background material when selecting appropriate severities of parameters related to precipitation and wind for product applications.

When selecting severities of parameters related to precipitation and wind for product application, the values given in IEC 60721-1 should be applied.

2 Normative references

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.

IEC 60721-1, *Classification of environmental conditions – Part 1: Environmental parameters and their severities.*

3 Terms and definitions

Terms and definitions are defined, in context, throughout the present standard.

4 General

4.1 Introductory remark

The atmosphere of the Earth is in permanent motion. It is locally heated, cooled and moistened. The resulting gradients in density create high and low pressure areas. The equalizing winds do not blow directly from high to low pressure areas, but are deflected by Coriolis force due to the rotation of the Earth.

The continuous horizontal movement may cause slow upward motion over wide areas, or surface heating may give more localized updrafts in thermals. The air cannot maintain its water content in vaporous form if the reduction of pressure and temperature is sufficient, and precipitation may form. As an example, an air mass at +20 °C temperature is able to contain water in a quantity of 17,3 g/m^3 in vaporous form. If it cools to 0 °C the maximum water content is only 4,8 g/m^3.

4.2 Precipitation

The specific kind of precipitation (rain, hail or snow) is a result of complicated processes in the clouds.