



**NSAI**  
Standards

Irish Standard  
I.S. EN 60721-2-3:2014

# Classification of environmental conditions - Part 2-3: Environmental conditions appearing in nature - Air pressure

**I.S. EN 60721-2-3:2014**

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EUROPEAN STANDARD

**EN 60721-2-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2014

ICS 19.040

Supersedes HD 478.2.3 S1:1990

English Version

**Classification of environmental conditions - Part 2-3:  
Environmental conditions appearing in nature - Air pressure  
(IEC 60721-2-3:2013)**

Classification des conditions d'environnement -  
Partie 2-3: Conditions d'environnement présentes dans la  
nature - Pression atmosphérique  
(CEI 60721-2-3:2013)

Klassifizierung von Umgebungsbedingungen -  
Teil 2-3: Natürliche Umgebungsbedingungen - Luftdruck  
(IEC 60721-2-3:2013)

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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**

## Foreword

The text of document 104/611/FDIS, future edition 2 of IEC 60721-2-3, 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 60721-2-3:2014.

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-07-24

This document supersedes HD 478.2.3 S1:1990.

EN 60721-2-3:2014 includes the following significant technical changes with respect to HD 478.2.3 S1:1990:

- removal of figures for decreasing cooling efficiency for altitude;
- simplification of Table 1;
- additional formula for calculating air pressure from altitude.

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

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**IEC 60721-2-3**

Edition 2.0 2013-06

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

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**Classification of environmental conditions –  
Part 2-3: Environmental conditions appearing in nature – Air pressure**

**Classification des conditions d'environnement –  
Partie 2-3: Conditions d'environnement présentes dans la nature – Pression  
atmosphérique**





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**IEC 60721-2-3**

Edition 2.0 2013-06

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### CLASSIFICATION OF ENVIRONMENTAL CONDITIONS –

#### Part 2-3: Environmental conditions appearing in nature – Air pressure

#### FOREWORD

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International Standard IEC 60721-2-3 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 1987, and constitutes a technical revision.

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

- removal of figures for decreasing cooling efficiency for altitude;
- simplification of Table 1;
- additional formula for calculating air pressure from altitude.

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

FDIS	Report on voting
104/611/FDIS	104/615/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 2-3: Environmental conditions appearing in nature – Air pressure

#### 1 Scope

This part of IEC 60721 presents a selection of different values of air pressure appearing in nature. It is intended to be used as part of the background material when selecting appropriate severities of air pressure for product applications, which products are liable to be exposed during storage, transportation and use.

#### 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 Air pressure effects

##### 4.1 General

When selecting severities of the parameter air pressure for product application, the values given in IEC 60721-1 should be applied.

Air pressure can affect products in various ways, the most important of which are as follows:

##### 4.2 Air pressure lower than normal

Low air pressure occurring at altitudes above sea-level can affect products as follows:

- leakage of gases or fluids from gasket-sealed containers;
- rupture of pressurized containers;
- change of physical and chemical properties of low density materials;
- erratic operation or malfunction of equipment from arcing or corona as the breakdown voltage between two electrodes in air decreases with pressure (the breakdown voltage of air in a uniform electric field depends on the product of the gas pressure and the electrode spacing for a given electrode shape and material (Paschen's law));
- decreased efficiency of heat dissipation by convection and conduction in air;
- acceleration of effects due essentially to temperature, for example volatilization of plasticizers, evaporation of lubricants, etc.

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