IEC 60721-3-3

Edition 3.0 2026-09

INTERNATIONAL STANDARD

AMENDMENT 1

Classification of environmental conditions - Part 3-3: Classification of groups of environmental parameters and their severities - Stationary use at weatherprotected locations

ICS 19.040

ISBN 978-2-8327-1480-5

IEC 60721-3-3:2019-05/AMD1:2026-09(en)

IEC Secretariat
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC
The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications
The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, …). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch
Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org
The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

Warning! Make sure that you obtained this publication from an authorized distributor.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

Classification of environmental conditions - Part 3-3: Classification of groups of environmental parameters and their severities - Stationary use at weatherprotected locations

AMENDMENT 1

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.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to IEC 60721-3-3:2019 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

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

Draft	Report on voting
104/1188/FDIS	104/1204/RVD

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

The language used for the development of this Amendment is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications/.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,
– withdrawn, or
– revised.

_____

Replace the existing text of 5.5 with the following new text:

5.5 Chemically active substances (C)

The contamination of the natural atmosphere is mainly caused by chemical emissions from industrial activities, motor-driven vehicles, and heating systems. A further chemical influence is caused by aerosols of sea and road salts. Contamination can affect the function and materials of products.

A categorization of these substances and their allowed concentrations can either be based on ISO 9223 or on the classification found in Annex C. Both categorizations have a different approach and application background. Depending on the application background, the appropriate categorization shall to be selected.

Replace the existing text of 5.7 with the following new text:

5.7 Mechanical conditions (M)

Mechanical conditions relate to the levels of vibration and shock that can exist at the location, for example as a result of normal operations, nearby vehicular movement. These conditions are specified in Table 5 and Figure 1, Figure 2 and Figure 3. See Annex B for the definition of seismic environment.

– 3M10 applies to locations experiencing insignificant levels of vibration and shock.
– 3M11 applies to locations experiencing low levels of vibration and insignificant levels of shock, such as those transmitted from air conditioning, machines or passing vehicles in the vicinity.
– 3M12 applies to locations experiencing moderate levels of vibration and shock, such as those close to machinery and conveyor belts.
– 3M13 applies to locations experiencing high levels of vibration and shock, such as those close to or on heavy machinery.
– 3M14 applies to locations experiencing extremely high levels of vibration and shock, such as those close to or on machinery such power hammers.

Replace the existing Table 5 with the following new Table 5*:*

Table 5 – Classification of mechanical conditions

Environmental parameter	Unit	Class						
		3M10	3M11	3M12	3M13		3M14	
a) Stationary vibration, sinusoidal:[a)]								
Displacement amplitude	mm	No	No	No	7	-	15	-
Acceleration amplitude	m/s^2				-	20	-	50
Frequency range	Hz				2 to 9	9 to 200	2 to 9	9 to 200
b) Stationary vibration, random*:* [b)]								
Acceleration power spectral density	$(m/s^2)^2/Hz$	No	0,01	0,1	3	1	10	5
Frequency range	Hz		5 to 200	5 to 200	5 to 200	200 to 2 000	5 to 200	200 to 2 000
c) Non-stationary vibration including shock*:* [c)]								
Shock		No	No	Figure 3, Curve 1 (equivalent to a half sine pulse of 20 m/s^2 and 11 ms duration)	Figure 3, Curve 2 (equivalent to a half sine pulse of 250 m/s^2 and 6 ms duration)		Figure 3, Curve 2 (equivalent to a half sine pulse of 250 m/s^2 and 6 ms duration)	

[a)] Vibration generated by rotating machinery is mainly of a complex sinusoidal nature, with pronounced low frequency content. In such cases the use of the "Stationary vibration, sinusoidal" severities will be appropriate.

[b)] High frequency vibrations, up to 2 000 Hz can be present at some locations. In such cases, and for certain types of equipment (e.g. electronics and small mechanisms), the use of "Stationary vibration, random" can be an appropriate alternative, especially when sources of vibration, other than rotating machinery, are predominant.

[c)] These shocks can occur simultaneously with the stationary vibration conditions.