

STN	Technológia povrchovej montáže Časť 2: Požiadavky na prepravu a skladovanie súčiastok na povrchovú montáž (SMD) Pokyny na použitie	STN EN IEC 61760-2
		35 9310

Surface mounting technology - Part 2: Transportation and storage conditions of surface mounting devices (SMD) - Application guide

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/21

Obsahuje: EN IEC 61760-2:2021, IEC 61760-2:2021

Oznámením tejto normy sa od 20.08.2024 ruší
STN EN 61760-2 (35 9310) z februára 2008

133798



EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 61760-2

September 2021

ICS 31.240

Supersedes EN 61760-2:2007 and all of its amendments
and corrigenda (if any)

English Version

**Surface mounting technology - Part 2: Transportation and
storage conditions of surface mounting devices (SMD) -
Application guide
(IEC 61760-2:2021)**

Technique du montage en surface - Partie 2: Conditions de
transport et de stockage des composants pour montage en
surface (CMS) - Guide d'application
(IEC 61760-2:2021)

Oberflächenmontagetechnik - Teil 2: Transport- und
Lagerungsbedingungen von oberflächenmontierbaren
Bauelementen (SMD) - Anwendungsleitfaden
(IEC 61760-2:2021)

This European Standard was approved by CENELEC on 2021-08-20. 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, 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: Rue de la Science 23, B-1040 Brussels

EN IEC 61760-2:2021 (E)**European foreword**

The text of document 91/1666/CDV, future edition 3 of IEC 61760-2, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61760-2:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2022-05-20 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2024-08-20 document have to be withdrawn

This document supersedes EN 61760-2:2007 and all of its amendments and corrigenda (if any).

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 61760-2:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60286-3	NOTE Harmonized as EN IEC 60286-3
IEC 60286-4	NOTE Harmonized as EN 60286-4
IEC 60286-5	NOTE Harmonized as EN IEC 60286-5
IEC 60286-6	NOTE Harmonized as EN 60286-6
IEC 60749 (series)	NOTE Harmonized as EN 60749 (series)
IEC 60749-20-1:2019	NOTE Harmonized as EN IEC 60749-20-1:— ¹ (not modified)
IEC 61340-5-1	NOTE Harmonized as EN 61340-5-1
IEC 61760-4:2015	NOTE Harmonized as EN 61760-4:2015 (not modified)
IEC 62435 (series)	NOTE Harmonized as EN IEC 62435 (series)

¹ To be published. Stage at the time of publication: prEN IEC 60749-20-1:2019.

Annex ZA
(normative)**Normative references to international publications
with their corresponding European publications**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60721-3-1	2018	Classification of environmental conditions -EN IEC 60721-3-1 Part 3-1: Classification of groups of environmental parameters and their severities - Storage	EN IEC 60721-3-1	2018
IEC 60721-3-2	2018	Classification of environmental conditions -EN IEC 60721-3-2 Part 3-2: Classification of groups of environmental parameters and their severities - Transportation and handling	EN IEC 60721-3-2	2018



IEC 61760-2

Edition 3.0 2021-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Surface mounting technology –
Part 2: Transportation and storage conditions of surface mounting devices
(SMD) – Application guide**

**Technique du montage en surface –
Partie 2: Conditions de transport et de stockage des composants pour montage
en surface (CMS) – Guide d'application**





THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2021 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
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 online collection - oc.iec.ch

Discover our powerful search engine and read freely all the publications previews. 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 22 000 terminological entries in English and French, with equivalent terms in 18 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

IEC online collection - oc.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.



IEC 61760-2

Edition 3.0 2021-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Surface mounting technology –
Part 2: Transportation and storage conditions of surface mounting devices
(SMD) – Application guide**

**Technique du montage en surface –
Partie 2: Conditions de transport et de stockage des composants pour montage
en surface (CMS) – Guide d'application**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 31.240

ISBN 978-2-8322-1002-8

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions	5
4 General conditions.....	5
5 Transportation conditions.....	6
5.1 General transportation conditions	6
5.2 Special transportation conditions	6
5.2.1 General	6
5.2.2 Category 1 (advised for all products)	6
5.2.3 Category 2	7
6 Storage conditions.....	7
7 Related issues.....	8
Annex A (informative) Transportation and storage conditions	9
Annex X (informative) Cross-references for references to the previous edition of this document	14
Bibliography	15
Figure A.1 – Consolidation of mechanical conditions	12
Table A.1 – Classification of climatic conditions according to IEC 60721-3-2:2018, Table 1	10
Table A.2 – Classification of mechanical conditions according to IEC 60721-3-2:2018, Table 5	11
Table A.3 – Storage conditions according to IEC 60721-3-1:2018, Table 1	13
Table X.1 – Cross-references.....	14

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SURFACE MOUNTING TECHNOLOGY –

Part 2: Transportation and storage conditions of surface mounting devices (SMD) – Application guide

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) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 61760-2 has been prepared by IEC technical committee 91: Electronics assembly technology. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
91/1666/CDV	91/1708/RVC

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 International Standard 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/standardsdev/publications.

Cross-references for references from this edition 3 to the previous edition 2 of this document are listed in Annex X of this document.

A list of all parts in the IEC 61760 series, published under the general title *Surface mounting technology*, can be found on the IEC website.

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

SURFACE MOUNTING TECHNOLOGY –

Part 2: Transportation and storage conditions of surface mounting devices (SMD) – Application guide

1 Scope

This International Standard specifies the transportation and storage conditions for surface mounting devices (SMDs) that are fulfilled in order to enable trouble-free processing of surface mounting devices, both active and passive. (Conditions for printed boards are not taken into consideration.)

The object of this document is to ensure that users of SMDs receive and store products that can be further processed (e.g. positioned, soldered) without prejudice to quality and reliability. Improper transportation and storage of SMDs can cause deterioration and result in assembly problems such as poor solderability, delamination and "popcorning".

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60721-3-1:2018, *Classification of environmental conditions – Part 3-1: Classification of groups of environmental parameters and their severities – Storage*

IEC 60721-3-2:2018, *Classification of environmental conditions – Part 3-2: Classification of groups of environmental parameters and their severities – Transportation and handling*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN