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**Elektronske komponente - Dolgoročno skladiščenje elektronskih polprevodniških elementov - 7. del: Mikroelektromehanski elementi (IEC 62435-7:2020)**

Electronic components - Long-term storage of electronic semiconductor devices - Part 7: Microelectromechanical devices (IEC 62435-7:2020)

Elektronische Bauteile - Langzeitlagerung elektronischer Halbleiterbauelemente - Teil 7: Bauelemente der Mikrosystemtechnik (IEC 62435-7:2020)

Composants électroniques - Stockage de longue durée des dispositifs électroniques à semiconducteurs - Partie 7: Dispositifs microélectromécaniques (IEC 62435-7:2020)

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**Ta slovenski standard je istoveten z: EN IEC 62435-7:2021**

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**ICS:**

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| 31.080.01 | Polprevodniški elementi (naprave) na splošno | Semiconductor devices in general |
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EUROPEAN STANDARD

EN IEC 62435-7

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Electronic components - Long-term storage of electronic  
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devices  
(IEC 62435-7:2020)

Composants électroniques - Stockage de longue durée des  
dispositifs électroniques à semiconducteurs - Partie 7:  
Dispositifs microélectromécaniques  
(IEC 62435-7:2020)

Elektronische Bauteile - Langzeitlagerung elektronischer  
Halbleiterbauelemente - Teil 7: Bauelemente der  
Mikrosystemtechnik  
(IEC 62435-7:2020)

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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 62435-7:2021 (E)****European foreword**

The text of document 47/2664/FDIS, future edition 1 of IEC 62435-7, prepared by IEC/TC 47 "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62435-7:2021.

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) 2021-10-08
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-01-08

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In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC/TR 62258-3 NOTE Harmonized as CLC/TR 62258-3

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## 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](http://www.cenelec.eu).

| <u>Publication</u> | <u>Year</u> | <u>Title</u>   | <u>EN/HD</u>     | <u>Year</u> |
|--------------------|-------------|--|------------------|-------------|
| IEC 60721-3-1      | -           | Classification of environmental conditions<br>- Part 3-1: Classification of groups of environmental parameters and their severities - Storage  | EN IEC 60721-3-1 | -           |
| IEC 60749-20       | -           | Semiconductor devices - Mechanical and climatic test methods - Part 20: Resistance of plastic encapsulated SMDs to the combined effect of moisture and soldering heat  | EN IEC 60749-20  | -           |
| IEC 60749-20-1     | -           | Semiconductor devices - Mechanical and climatic test methods - Part 20-1: Handling, packing, labelling and shipping of surface-mount devices sensitive to the combined effect of moisture and soldering heat | -                | -           |
| IEC 62435-2        | -           | Electronic components - Long-term storage of electronic semiconductor devices - Part 2: Deterioration mechanisms   | EN 62435-2       | -           |
| IEC 62435-3        | -           | Electronic components - Long-term storage of electronic semiconductor devices - Part 3: Data   | EN IEC 62435-3   | -           |
| IEC 62435-4        | -           | Electronic components - Long-term storage of electronic semiconductor devices - Part 4: Storage  | EN IEC 62435-4   | -           |
| IEC 62435-5        | -           | Electronic components - Long-term storage of electronic semiconductor devices - Part 5: Die and wafer devices  | EN 62435-5       | -           |

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IEC 62435-7

Edition 1.0 2020-12

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Electronic components – Long-term storage of electronic semiconductor devices –  
Part 7: Micro-electromechanical devices**

**Composants électroniques – Stockage de longue durée des dispositifs électroniques à semiconducteurs –  
Partie 7: Dispositifs microélectromécaniques**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRONIC COMPONENTS – LONG-TERM STORAGE  
OF ELECTRONIC SEMICONDUCTOR DEVICES –**
**Part 7: Micro-electromechanical devices**

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

| Draft        | Report on voting |
|--------------|------------------|
| 47/2664/FDIS | 47/2669/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 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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

A list of all parts in the IEC 62435 series, published under the general title *Electronic components – Long-term storage of electronic semiconductor devices*, 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 "<http://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.

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## INTRODUCTION

This document applies to the long-term storage of electronic components.

This is a standard for long-term storage (LTS) of electronic devices drawing on the best long-term storage practices currently known. For the purposes of this document, LTS is defined as any device storage whose duration may be more than 12 months for product scheduled for long duration storage. While intended to address the storage of unpackaged semiconductors and packaged electronic devices, nothing in this document precludes the storage of other items under the storage levels defined herein.

Although it has always existed to some extent, obsolescence of electronic components and particularly of integrated circuits, has become increasingly intense over the last few years.

Indeed, with the existing technological boom, the commercial life of a component has become very short compared with the life of industrial equipment such as that encountered in the aeronautical field, the railway industry or the energy sector.

The many solutions enabling obsolescence to be resolved are now identified. However, selecting one of these solutions should be preceded by a case-by-case technical and economic feasibility study, depending on whether storage is envisaged for field service or production, for example:

- remedial storage as soon as components are no longer marketed;
- preventive storage anticipating declaration of obsolescence.

Taking into account the expected life of some installations, sometimes covering several decades, the qualification times, and the unavailability costs, which can also be very high, the solution to be adopted to resolve obsolescence should often be rapidly implemented. This is why the solution retained in most cases consists in systematically storing components which are in the process of becoming obsolescent.

The technical risks of this solution are, a priori, fairly low. However, it requires perfect mastery of the implemented process and especially of the storage environment, although this mastery becomes critical when it comes to long-term storage.

All handling, protection, storage and test operations are recommended to be performed according to the state of the art.

The application of the approach proposed in this document in no way guarantees that the stored components are in perfect operating condition at the end of this storage. It only comprises a means of minimizing potential and probable degradation factors.

Some electronic device users have the need to store electronic devices for long periods of time. Lifetime buys are commonly made to support production runs of assemblies that well exceed the production timeframe of their individual parts. This puts the user in a situation requiring careful and adequate storage of such parts to maintain the as-received solderability and minimize any degradation effects to the part over time. Major degradation concerns are moisture, electrostatic fields, ultraviolet light, large variations in temperature, air-borne contaminants, and outgassing.