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**Mehanske strukture za elektronsko opremo - Preskušanje za IEC 60917 in IEC 60297 - 1. del: Klimatski in mehanski preskusi ter varnostni vidiki za ohišja, stojala, okvire in šasije (IEC 61587-1:2007)**

Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 - Part 1: Climatic, mechanical tests and safety aspects for cabinets, racks, subracks and chassis (IEC 61587-1:2007)

**iTeh STANDARD PREVIEW**

Mechanische Bauweisen für elektronische Einrichtungen - Prüfungen für IEC 60917 und IEC 60297 - Teil 1: Klimatische, mechanische Prüfungen und Sicherheitsaspekte für Schränke, Gestelle, Baugruppenträger und Einschübe (IEC 61587-1:2007)

[https://standards.iteh.ai/catalog/standards/sist/07ba44a5-a131-4ce4-b6c3-](https://standards.iteh.ai/catalog/standards/sist/07ba44a5-a131-4ce4-b6c3-be76ebe19f0e/sist-en-61587-1-2008)

Structures mécaniques pour équipement électronique - Essais pour la CEI 60917 et la CEI 60297 - Partie 1: Essais climatiques, mécaniques et aspects de la sécurité des baies, bâtis, bacs a cartes et châssis (IEC 61587-1:2007)

**Ta slovenski standard je istoveten z: EN 61587-1:2007**

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**ICS:**

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Mehanske konstrukcije za elektronsko opremo

Mechanical structures for electronic equipment

**SIST EN 61587-1:2008**

**en,fr,de**

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English version

**Mechanical structures for electronic equipment -  
Tests for IEC 60917 and IEC 60297 -  
Part 1: Climatic, mechanical tests and safety aspects  
for cabinets, racks, subracks and chassis  
(IEC 61587-1:2007)**

Structures mécaniques  
pour équipement électronique -  
Essais pour la CEI 60917  
et la CEI 60297 -  
Partie 1: Essais climatiques, mécaniques  
et aspects de la sécurité des baies, bâtis,  
bacs à cartes et châssis  
(CEI 61587-1:2007)

Mechanische Bauweisen  
für elektronische Einrichtungen -  
Prüfungen für IEC 60917  
und IEC 60297 -  
Teil 1: Klimatische, mechanische  
Prüfungen und Sicherheitsaspekte  
für Schränke, Gestelle,  
Baugruppenträger und Einschübe  
(IEC 61587-1:2007)

[SIST EN 61587-1:2008](https://standards.iteh.ai/catalog/standards/sist/07ba44a5-a131-4ce4-b6c3-11eb-9000-000000000000/EN-61587-1-2007)

[https://standards.iteh.ai/catalog/standards/sist/07ba44a5-a131-4ce4-b6c3-](https://standards.iteh.ai/catalog/standards/sist/07ba44a5-a131-4ce4-b6c3-11eb-9000-000000000000/EN-61587-1-2007)

This European Standard was approved by CENELEC on 2007-04-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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**CENELEC**

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 48D/352/FDIS, future edition 2 of IEC 61587-1, prepared by SC 48D, Mechanical structures for electronic equipment, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61587-1 on 2007-04-01.

This European Standard supersedes EN 61587-1:1999.

This European Standard includes the following significant technical changes with respect to EN 61587-1:1999:

- Table 3: Performance levels for industrial atmosphere. In addition to the existing performance levels extended values (E) are implemented.
- Table 8: Vibration and shock performance levels for cabinets. Change of values in accordance to EN 60721-3-3 was necessary to meet the more practical test levels.
- Table 11: Vibration and shock performance levels for subracks. Change of values in accordance to EN 60721-3-3 was necessary to meet the more practical test levels.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2008-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-04-01

Annex ZA has been added by CENELEC [SIST EN 61587-1:2008](https://standards.iteh.ai/catalog/standards/sist/07ba44a5-a131-4ce4-b6c3-be76ebe19f0e/sist-en-61587-1-2008)  
<https://standards.iteh.ai/catalog/standards/sist/07ba44a5-a131-4ce4-b6c3-be76ebe19f0e/sist-en-61587-1-2008>

## Endorsement notice

The text of the International Standard IEC 61587-1:2007 was approved by CENELEC as a European Standard without any modification.

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1	- <sup>1)</sup>	Environmental testing - Part 1: General and guidance	EN 60068-1	1994 <sup>2)</sup>
IEC 60068-2-1	- <sup>1)</sup>	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007 <sup>2)</sup>
IEC 60068-2-2	- <sup>1)</sup>	Environmental testing - Part 2: Tests - Tests B: Dry heat	EN 60068-2-2	1993 <sup>2)</sup>
IEC 60068-2-6	- <sup>1)</sup>	Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	1995 <sup>2)</sup>
IEC 60068-2-11	- <sup>1)</sup>	Environmental testing - Part 2: Tests - Test Ka: Salt mist	EN 60068-2-11	1999 <sup>2)</sup>
IEC 60068-2-27	- <sup>1)</sup>	Basic environmental testing procedures - Part 2: Tests - Test Ea and guidance: Shock	EN 60068-2-27	1993 <sup>2)</sup>
IEC 60068-2-30	- <sup>1)</sup>	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	2005 <sup>2)</sup>
IEC 60068-2-42	- <sup>1)</sup>	Environmental testing - Part 2-42: Tests - Test Kc: Sulphur dioxide test for contacts and connections	EN 60068-2-42	2003 <sup>2)</sup>
IEC 60068-2-43	- <sup>1)</sup>	Environmental testing - Part 2-43: Tests - Test Kd: Hydrogen sulphide test for contacts and connections	EN 60068-2-43	2003 <sup>2)</sup>
IEC 60068-2-49	- <sup>1)</sup>	Environmental testing - Part 2: Tests - Guidance to Test Kc: Sulphur dioxide test for contacts and connections	-	-
IEC 60068-2-52	- <sup>1)</sup>	Environmental testing - Part 2: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)	EN 60068-2-52	1996 <sup>2)</sup>
IEC 60068-2-75	- <sup>1)</sup>	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997 <sup>2)</sup>
IEC 60297	Series	Dimensions of mechanical structures of the 482,6 mm (19 in) series	HD 493.1 S1	Series

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60512-1-1	- <sup>1)</sup>	Connectors for electronic equipment - Tests and measurements - Part 1-1: General examination - Test 1a: Visual examination	EN 60512-1-1	2002 <sup>2)</sup>
IEC 60529	- <sup>1)</sup>	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 <sup>2)</sup> 1993
IEC 60603-2	- <sup>1)</sup>	Connectors for frequencies below 3 MHz for use with printed boards - Part 2: Detail specification for two-part connectors with assessed quality, for printed boards, for basic grid of 2,54 mm (0,1 in) with common mounting features	EN 60603-2	1998 <sup>2)</sup>
IEC 60654-4	- <sup>1)</sup>	Operating conditions for industrial-process measurement and control equipment - Part 4: Corrosive and erosive influences	EN 60654-4	1997 <sup>2)</sup>
IEC 60721-3-3	- <sup>1)</sup>	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weatherprotected locations	EN 60721-3-3	1995 <sup>2)</sup>
IEC 60917	Series	Modular standard for the development of mechanical structures for electronic equipment practices	EN 60917	Series
IEC 60950-1 (mod)	- <sup>1)</sup>	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1	2006 <sup>2)</sup>
IEC 61010-1	- <sup>1)</sup>	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements	EN 61010-1 + corr. June	2001 <sup>2)</sup> 2002
IEC 61076-4-100	- <sup>1)</sup>	Connectors for electronic equipment - Part 4-100: Printed board connectors with assessed quality - Detail specification for two-part connector modules having a grid of 2,5 mm for printed boards and backplanes	EN 61076-4-100	2001 <sup>2)</sup>
IEC 61969-3	- <sup>1)</sup>	Mechanical structures for electronic equipment - Outdoor enclosures - Part 3: Sectional specification - Climatic, mechanical tests and safety aspects for cabinets and cases	EN 61969-3	2001 <sup>2)</sup>

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61587-1

Deuxième édition  
Second edition  
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**Structures mécaniques  
pour équipement électronique –  
Essais pour la CEI 60917 et la CEI 60297 –**

**Partie 1:**

**Essais climatiques, mécaniques et aspects de la  
sécurité des baies, bâtis, bacs à cartes et châssis**  
(standards.iteh.ai)

**Mechanical structures for electronic equipment –  
Tests for IEC 60917 and IEC 60297 –**

**Part 1:**

**Climatic, mechanical tests and safety aspects  
for cabinets, racks, subracks and chassis**

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International Electrotechnical Commission, 3, rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT –  
TESTS FOR IEC 60917 AND IEC 60297 –****Part 1: Climatic, mechanical tests and safety aspects  
for cabinets, racks, subracks and chassis**

## 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 61587-1 has been prepared by IEC sub-committee 48D: Mechanical structures for electronic equipment, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This second edition cancels and replaces the first edition published in 1999. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- 1) Table 3: Performance levels for industrial atmosphere. In addition to the existing performance levels extended values (E) are implemented.

- 2) Table 8: Vibration and shock performance levels for cabinets. Change of values in accordance to IEC 60721-3-3 was necessary to meet the more practical test levels.
- 3) Table 11: Vibration and shock performance levels for subracks: Change of values in accordance to IEC 60721-3-3 was necessary to meet the more practical test levels.

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

FDIS	Report on voting
48D/352/FDIS	48D/356/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.

A list of all parts of the IEC 61587 series, under the general title *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

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## MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT – TESTS FOR IEC 60917 AND IEC 60297 –

### Part 1: Climatic, mechanical tests and safety aspects for cabinets, racks, subracks and chassis

#### 1 Scope and object

This part of IEC 61587 specifies mechanical tests, climatic tests and safety aspects for cabinets, racks, subracks and chassis as defined in the standards of the IEC 60917 series and the IEC 60297 series for indoor applications. It applies in whole or part only to the mechanical structures of cabinets, racks, subracks and chassis, but it does not apply to electronic equipment or systems. Tests dedicated to outdoor enclosures are standardized in IEC 61969-3. Some suitable parts of IEC 61587-1 apply to IEC 61969-3.

The object of this standard is to ensure physical integrity and environmental performance in cabinets, racks, subracks and chassis, taking into account the need for different levels of performance in different applications. It is intended to give the user a level of confidence in the selection of performance levels to meet as close as possible the individual application requirements.

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#### 2 Normative references (standards.iteh.ai)

The following referenced documents are indispensable for the application 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 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-1, *Environmental testing – Part 2: Tests – Tests A: Cold*

IEC 60068-2-2, *Environmental testing – Part 2: Tests – Tests B: Dry heat*

IEC 60068-2-6, *Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-11, *Environmental testing – Part 2: Tests – Test Ka: Salt mist*

IEC 60068-2-27, *Environmental testing – Part 2: Tests – Test Ea and guidance: Shock*

IEC 60068-2-30, *Environmental testing – Part 2: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60068-2-42, *Environmental testing – Part 2-42: Tests – Test Kc: Sulphur dioxide test for contacts and connections*

IEC 60068-2-43, *Environmental testing – Part 2-43: Tests – Test Kd: Hydrogen sulphide test for contacts and connections*