
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 61587-1:1999)

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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 61587-1:1999)**

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 61587-1:1999)

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 61587-1:1999)

This European Standard was approved by CENELEC on 1999-08-01. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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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/197/FDIS, future edition 1 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 1999-08-01.

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) 2000-05-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2002-08-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61587-1:1999 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**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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	1988	Environmental testing Part 1: General and guidance	EN 60068-1 ¹⁾	1994
IEC 60068-2-1	1990	Part 2: Tests - Tests A: Cold	EN 60068-2-1	1993
IEC 60068-2-2	1974	Part 2: Tests - Test B: Dry heat	EN 60068-2-2 ²⁾	1993
IEC 60068-2-6 + corr. March 1995	1995 1995	Part 2: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	1995
IEC 60068-2-11	1981	Part 2: Tests - Test Ka: Salt mist	EN 60068-2-11	1999
IEC 60068-2-27	1987	Part 2: Tests - Test Ea and guidance: Shock	EN 60068-2-27	1993
IEC 60068-2-30	1980	Part 2: Tests - Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle)	EN 60068-2-30 ³⁾	1999
IEC 60068-2-42	1982	Part 2: Tests - Test Kc: Sulphur dioxide test for contacts and connections	-	-
IEC 60068-2-43	1976	Part 2: Tests - Test Kd: Hydrogen sulphide test for contacts and connections	-	-
IEC 60068-2-49	1983	Part 2: Tests - Guidance to Test Kc: Sulphur dioxide test for contacts and connections	-	-
IEC 60068-2-75	1997	Part 2: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60297-1	1986	Dimensions of mechanical structures of the 482,6 mm (19 in) series Part 1: Panels and racks	HD 493.1 S1	1988
IEC 60297-2	1982	Part 2: Cabinets and pitches of rack structures	HD 493.2 S1	1988

1) EN 60068-1 includes the corrigendum October 1988 and A1:1992 to IEC 60068-1.

2) EN 60068-2-2 includes supplement A:1976 to IEC 60068-2-2.

3) EN 60068-2-30 includes A1:1985 to IEC 60068-2-30.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60297-3	1984	Part 3: Subracks and associated plug-in units	HD 493.3 S2 ⁴⁾	1993
IEC 60297-4	1995	Part 4: Subracks and associated plug-in units - Additional dimensions	EN 60297-4	1995
IEC 60512-2	1985	Electromechanical components for electronic equipment - Basic testing procedures and measuring methods Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 60603-2	1995	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
IEC 60654-4	1987	Operating conditions for industrial-process measurement and control equipment Part 4: Corrosive and erosive influences	EN 60654-4	1997
IEC 60707	1999	Flammability of solid non-metallic materials when exposed to flame sources - List of test methods	EN 60707	1999
IEC 60917-1	1998	Modular order for the development of mechanical structures for electronic equipment practices Part 1: Generic standard	EN 60917-1	1998
IEC 60917-2	1992	Part 2: Sectional specification - Interface co-ordination dimensions for the 25 mm equipment practice	EN 60917-2	1994
IEC 60917-2-1	1993	Section 1: Detail specification - Dimensions for cabinets and racks	EN 60917-2-1	1995

4) HD 493.3 S2 includes A1:1992 to IEC 60297-3.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60917-2-2	1994	Section 2: Detail specification - Dimensions for subracks, chassis, backplanes, front panels and plug-in units	EN 60917-2-2	1996
IEC 61010-1 (mod)	1990	Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements	EN 61010-1	1993
IEC 61076-4-100	1994	Connectors with assessed quality, for use in d.c., low frequency analogue and in digital high-speed data applications Part 4: Printed board connectors Section 100: Detail specification for two-part connector modules having a grid of 2,5 mm (0,098 in) for printed boards and backplanes	EN 61076-4-100	1998

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**Structures mécaniques pour équipement
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International Electrotechnical Commission
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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 IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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.

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

FDIS	Report on voting
48D/197/FDIS	48D/200/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.

IEC 61587 consists of the following parts under the general title *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
- Part 2: Seismic tests for cabinets and racks ¹⁾
- Part 3: Electromagnetic shielding performance tests for cabinets, racks and subracks ¹⁾

¹⁾ To be published.