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Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 series - Part 1: Environmental requirements, test set-up and safety aspects for cabinets, racks, subracks and chassis under indoor condition use and transportation

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See Eesti standard EVS-EN 61587-1:2017 sisaldab Euroopa standardi EN 61587-1:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 61587-1:2017 consists of the English text of the European standard EN 61587-1:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 21.04.2017.	Date of Availability of the European standard is 21.04.2017.
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ICS 31.240

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61587-1

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English Version

Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 series - Part 1: Environmental requirements, test set-up and safety aspects for cabinets, racks, subracks and chassis under indoor condition use and transportation (IEC 61587-1:2016)

Structures mécaniques pour équipement électronique - Essais pour les séries IEC 60917 et IEC 60297 - Partie 1: Exigences environnementales, montage d'essai et aspects liés à la sécurité des baies, bâtis, bacs à cartes et châssis dans des conditions d'utilisation intérieure ou de transport (IEC 61587-1:2016)

Mechanische Bauweisen für elektronische Einrichtungen - Prüfungen für die Reihen IEC 60917 und IEC 60297 - Teil 1: Umgebungsanforderungen, Prüfaufbau und Sicherheitsaspekte für Schränke, Gestelle, Baugruppenträger und Einschübe bei Bedingungen in Innenräumen und beim Transport (IEC 61587-1:2016)

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European foreword

The text of document 48D/623/FDIS, future edition 4 of IEC 61587-1, prepared by SC 48D “Mechanical structures for electrical and electronic equipment” of IEC/TC 48 “Electrical connectors and mechanical structures for electrical and electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61587-1:2017.

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)	2017-10-21
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2020-04-21

This document supersedes EN 61587-1:2012.

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Endorsement notice

The text of the International Standard IEC 61587-1:2016 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 60068 (series)	NOTE	Harmonized as EN 60068 (series).
IEC 60068-2-75	NOTE	Harmonized as EN 600068-2-75.
IEC 62262	NOTE	Harmonized as EN 62262.

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

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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.

Publication	Year	Title	EN/HD	Year
IEC 60068-1	-	Environmental testing -- Part 1: General and guidance	EN 60068-1	-
IEC 60068-2-1	-	Environmental testing -- Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing -- Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-6	-	Environmental testing -- Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-11	-	Basic environmental testing procedures - Part 2-11: Tests - Test Ka: Salt mist	EN 60068-2-11	-
IEC 60068-2-27	-	Environmental testing -- Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-30	-	Environmental testing -- Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	-
IEC 60068-2-42	-	Environmental testing -- Part 2-42: Tests - Test Kc: Sulphur dioxide test for contacts and connections	EN 60068-2-42	-
IEC 60068-2-43	-	Environmental testing -- Part 2-43: Tests - Test Kd: Hydrogen sulphide test for contacts and connections	EN 60068-2-43	-
IEC 60068-2-49	-	Environmental testing -- Part 2: Tests - Guidance to Test Kc: Sulphur dioxide test for contacts and connections	-	-
IEC 60068-2-52	-	Environmental testing -- Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)	EN 60068-2-52	-
IEC 60068-2-64	-	Environmental testing -- Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance	EN 60068-2-64	-
IEC 60297	series	Dimensions of mechanical structures of the 482,6 mm (19 in) series	-	series
IEC 60297-3-100	-	Mechanical structures for electronic equipment - Dimensions of mechanical structures of the 482,6 mm (19 in) series -- Part 3-100: Basic dimensions of front panels, subracks, chassis, racks and cabinets	EN 60297-3-100	-
IEC 60297-3-101	-	Mechanical structures for electronic equipment - Dimensions of mechanical structures of the 482,6 mm (19 in) series -- Part 3-101: Subracks and associated plug-in units	EN 60297-3-101	-

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IEC 60297-3-107	-	Mechanical structures for electronic equipment - Dimensions of mechanical structures of the 482,6 mm (19 in) series -- Part 3-107: Dimensions of subracks and plug-in units, small form factor	EN 60297-3-107	-
IEC 60297-3-108	-	Mechanical structures for electronic equipment - Dimensions of mechanical structures of the 482,6 mm (19 in) series -- Part 108: Dimensions of R-type subracks and plug-in units	EN 60297-3-108	-
IEC 60512-1-1	-	Connectors for electronic equipment - Tests and measurements -- Part 1-1: General examination - Test 1a: Visual examination	EN 60512-1-1	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 60654-4	-	Operating conditions for industrial-process measurement and control equipment -- Part 4: Corrosive and erosive influences	EN 60654-4	-
IEC 60695-11-10	-	Fire hazard testing -- Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	-
IEC 60721-3-3	-	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	-
IEC 60917	series	Modular order for the development of mechanical structures for electronic equipment practices	EN 60917	series
IEC 60917-2-1	-	Modular order for the development of mechanical structures for electronic equipment practices -- Part 2: Sectional specification - Interface co-ordination dimensions for the 25 mm equipment practice -- Section 1: Detail specification - Dimensions for cabinets and racks	EN 60917-2-1	-
IEC 60917-2-2	-	Modular order for the development of mechanical structures for electronic equipment practices -- Part 2: Sectional specification - Interface co-ordination dimensions for the 25 mm equipment practice -- Section 2: Detail specification - Dimensions for subracks, chassis, backplanes, front panels and plug-in units	EN 60917-2-2	-
IEC 60917-2-3	-	Modular order for the development of mechanical structures for electronic equipment practices -- Part 2-3: Sectional specification - Interface co-ordination dimensions for the 25 mm equipment practice - Extended detail specification - Dimensions for subracks, chassis, backplanes, front panels and plug-in units	EN 60917-2-3	-
IEC 60950-1 (mod)	2005	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1	2006
-	-		+ A11	2009
+ A1 (mod)	2009		+ A1	2010
-	-		+ A12	2011
-	-		+ AC	2011
+ A2 (mod)	2013		+ A2	2013

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IEC 61010-1	-	Safety requirements for electrical equipment for measurement, control and laboratory use -- Part 1: General requirements	EN 61010-1	-
IEC 61373	-	Railway applications - Rolling stock equipment - Shock and vibration tests	EN 61373	-
IEC 61587-2	-	Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 -- Part 2: Seismic tests for cabinets and racks	EN 61587-2	-
IEC 61587-3	-	Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 - Part 3: Electromagnetic shielding performance tests for cabinets and subracks	EN 61587-3	-
IEC 61587-5	-	Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 - Part 5: Seismic tests for chassis, subracks, and plug-in units	EN 61587-5	-

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INTRODUCTION

The purpose of this standard is to provide a common methodology to perform and report conformance tests of IEC 60917 or IEC 60297 compliant cabinets, racks, subracks, chassis with integrated subracks and associated plug-in units under indoor condition use and transportation. Based upon the most recent specification/standard developments in the industry (such as PICMG, ANSI/VITA, ATIS, etc.) and to address new requirements, this edition 4 of IEC 61587-1 includes the following significant technical changes with respect to the previous edition:

a) Document title change to read: IEC 61587-1: Mechanical structures for electronic equipment – Tests for the IEC 60917 and IEC 60297 series – Part 1: Environmental requirements, test set-up and safety aspects for cabinets, racks, subracks and chassis under indoor condition use and transportation.

b) Total overhaul of Clause 7 “Mechanical tests” so as to make it compatible with legacy equipment (i.e., equipment commercially available prior to the publication of the standard). In particular:

   1) Subclause 7.2 “Tests for subracks or chassis with an integrated subrack and associated plug-in units” has been considerably expanded and provides for a more realistic intended use test environment (simulation of service condition).

   2) Subclause 7.2.1 “Static mechanical load tests of a subrack or a chassis with an integrated subrack” cabinet or rack static load test categories such as cabinets or racks with lifting eye test only and cabinets or racks without the use of lifting eyes have been added.

   3) Subclause 7.2.3 “Vibration and shock test of a mass loaded plug-in unit” has been updated to be in line with IEC 62262, which defines the way cabinets should be mounted when impact tests are carried out, the atmospheric conditions that should prevail, the number of impacts, and their distribution, and the physical size, dimensions, etc. of the various styles of hammers designed to produce the test energy level required.

c) Compatibility with IEC 61587-5.

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