SVENSK STANDARD SS-EN 60068-2-27

Fastställd	Utgåva	Sida	Ansvarig kommitté
2009-06-29	2	1 (1+37)	SEK TK 104

Miljötålighetsprovning – Del 2-27: Provningsmetoder – Ea: Stöt, med vägledning

Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock

Som svensk standard gäller europastandarden EN 60068-2-27:2009. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60068-2-27:2009.

Nationellt förord

Europastandarden EN 60068-2-27:2009

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 60068-2-27, Fourth edition, 2008 - Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 60068-1.

Tidigare fastställd svensk standard SS-EN 60068-2-27, utgåva 1, 2001 och SS-EN 60068-2-29, utgåva 1, 2001, gäller ej fr o m 2012-05-01.

ICS 19.040

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60068-2-27

May 2009

ICS 19.040

Supersedes EN 60068-2-27:1993 and EN 60068-2-29:1993

English version

Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock

(IEC 60068-2-27:2008)

Essais d'environnement - Partie 2-27: Essais - Essai Ea et guide: Chocs (CEI 60068-2-27:2008)

Umgebungseinflüsse - Teil 2-27: Prüfverfahren - Prüfung Ea und Leitfaden: Schocken (IEC 60068-2-27:2008)

CENELEC

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

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 60068-2-27:2009 E

SEK Svensk Elstandard

Foreword

The text of document 104/448/FDIS, future edition 4 of IEC 60068-2-27, prepared by IEC TC 104, Environmental conditions, classification and methods of test, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60068-2-27 on 2009-04-22.

This European Standard supersedes EN 60068-2-27:1993 and EN 60068-2-29:1993.

The major technical changes with regard to EN 60068-2-27:1993 concern:

– the merging of EN 60068-2-29:1993 into this Part 2-27;

– the introduction of soft packaged specimens as defined in the IEC ad hoc working group document agreed in Stockholm:2000.

This standard is to be used in conjunction with EN 60068-1.

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)	2010-02-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-05-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60068-2-27:2008 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 60068-2-31	NOTE	Harmonized as EN 60068-2-31:2008 (not modified).
IEC 60068-2-81	NOTE	Harmonized as EN 60068-2-81:2003 (not modified).
ISO/IEC 17025	NOTE	Harmonized as EN ISO/IEC 17025:2005 (not modified).

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.

Publication	Year	Title	EN/HD	Year
IEC 60068-1	- [1)]	Environmental testing - Part 1: General and guidance	EN 60068-1	1994 [2)]
IEC 60068-2-47	2005	Environmental testing - Part 2-47: Tests - Mounting of specimens for vibration, impact and similar dynamic tests	EN 60068-2-47	2005
IEC 60068-2-55	- [1)]	Environmental testing - Part 2-55: Tests - Test Ee and guidance: Bounce	EN 60068-2-55	1993 [2)]
IEC 60721-3-1	- [1)]	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 1: Storage	EN 60721-3-1	1997 [2)]
IEC 60721-3-5	- [1)]	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 5: Ground vehicle installations	EN 60721-3-5	1997 [2)]
IEC Guide 104	- [1)]	The preparation of safety publications and the use of basic safety publications and group safety publications	–	–

[1)] Undated reference.

[2)] Valid edition at date of issue.

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INTRODUCTION

This part of IEC 60068 deals with components, equipments and other electrotechnical products, hereinafter referred to as “specimens”, which, during transportation, storage and handling, or in use, may be subjected either to conditions involving relatively infrequent non-repetitive or repetitive shocks. The shock test may also be used as a means of establishing the satisfactory design of a specimen in so far as its structural integrity is concerned and as a means of quality control. It consists of subjecting a specimen either to non-repetitive or repetitive shocks of standard pulse shapes with specified peak acceleration and duration.

Specification writers will find a list of details to be considered for inclusion in specifications in Clause 11. The necessary guidance is given in Annex A.

ENVIRONMENTAL TESTING –

Part 2-27: Tests – Test Ea and guidance: Shock

1 Scope

This part of IEC 60068 provides a standard procedure for determining the ability of a specimen to withstand specified severities of non-repetitive or repetitive shocks.

The purpose of this test is to reveal mechanical weakness and/or degradation in specified performances, or accumulated damage or degradation caused by shocks. In conjunction with the relevant specification, this may be used in some cases to determine the structural integrity of specimens or as a means of quality control (see Clause A.2).

This test is primarily intended for unpackaged specimens and for items in their transport case when the latter may be considered to be part of the specimen. If an item is to be tested unpackaged, it is referred to as a test specimen. However, if the item is packaged, then the item itself is referred to as a product and the item and its packaging together are referred to as a test specimen. When used in conjunction with IEC 60068-2-47, this standard may be used for testing packaged products. This possibility was included in the 2005 version of IEC 60068-2-47 for the first time.

This standard is written in terms of prescribed pulse shapes. Guidance for the selection and application of these pulses is given in Annex A and the characteristics of the different pulse shapes are discussed in Annex B.

Wherever possible, the test severity and the shape of the shock pulse applied to the specimen should be such as to reproduce the effects of the actual transport or operational environment to which the specimen will be subjected, or to satisfy the design requirements if the object of the test is to assess structural integrity (see Clauses A.2 and A.4).

For the purposes of this test, the specimen is always mounted to the fixture or the table of the shock testing machine during testing.

NOTE The term “shock testing machine” is used throughout this standard, but other means of applying pulse shapes are not excluded.

One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications.

2 Normative references

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, E*nvironmental testing – Part 1: General and guidance*

IEC 60068-2-47:2005, *Environmental testing – Part 2-47: Tests – Mounting of specimens for vibration, impact and similar dynamic tests*

IEC 60068-2-55, *Environmental testing – Part 2-55: Tests – Test Ee and guidance: Bounce*

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

IEC 60721-3-5, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 5: Ground vehicle installations*

Guide 104, *The preparation of safety publications and the use of basic safety publications and group safety publications*