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Miljötålighetsprovning – Del 2-31: Provningsmetoder – Ec: Fall och vältning

Environmental testing –

Part 2-31: Tests –

Test Ec: Rough handling shocks, primarily for equipment-type specimens

Som svensk standard gäller europastandarden EN 60068-2-31:2008. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60068-2-31:2008.

Nationellt förord

Europastandarden EN 60068-2-31:2008

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60068-2-31, Second edition, 2008 - Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 60068-2-31, utgåva 1, 2001 och SS-EN 60068-2-32, utgåva 1, 2001, gäller ej fr o m 2011-07-01.

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

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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.

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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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English version

**Environmental testing -
Part 2-31: Tests -
Test Ec: Rough handling shocks,
primarily for equipment-type specimens
(IEC 60068-2-31:2008)**

Essais d'environnement -
Partie 2-31: Essais -
Essai Ec: Choc lié à des
manutentions brutales,
essai destiné en premier lieu
aux matériels
(CEI 60068-2-31:2008)

Umgebungseinflüsse -
Teil 2-31: Prüfverfahren -
Prüfung Ec: Schocks durch
raue Handhabung,
vornehmlich für Geräte
(IEC 60068-2-31:2008)

This European Standard was approved by CENELEC on 2008-07-01. 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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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 104/458/FDIS, future edition 2 of IEC 60068-2-31, 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 60068-2-31 on 2008-07-01.

This European Standard supersedes EN 60068-2-31:1993 and EN 60068-2-32:1993.

The major changes with regard to EN 60068-2-31:1993 concern the introduction of soft packaging tests, where appropriate. EN 60068-2-31:2008 now incorporates EN 60068-2-32:1993.

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) | 2009-04-01 |
| – latest date by which the national standards conflicting
with the EN have to be withdrawn | (dow) | 2011-07-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60068-2-31:2008 was approved by CENELEC as a European Standard without any modification.

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 60068-2-27	- ¹⁾	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	-	-
IEC 60068-2-55	1987	Environmental testing - Part 2: Tests - Test Ee and guidance: Bounce	EN 60068-2-55	1993
IEC Guide 104	- ¹⁾	The preparation of safety publications and the - use of basic safety publications and group safety publications	-	-
ISO 48	2007	Rubber, vulcanized or thermoplastic - Determination of hardness (hardness between 10 IRHD and 100 IRHD)	-	-
ISO 4180-2	1980	Complete, filled transport packages - General rules for the compilation of performance test schedules - Part 2: Quantitative data	EN 24180-2	1992

¹⁾ Undated reference.

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ENVIRONMENTAL TESTING –

Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens

1 Scope

This part of IEC 60068 deals with a test procedure for simulating the effects of rough handling shocks, primarily in equipment-type specimens, the effects of knocks, jolts and falls which may be received during repair work or rough handling in operational use.

This procedure does not simulate the effects of impacts received during transportation as loosely constrained cargo. Where the effects of loose cargo transportation are to be assessed, test Ee: Bounce should be used. Also this procedure does not simulate the effects of shock applied to installed equipments. Where this effect is to be assessed refer to test Ea: Shock.

Testing should only be specified for equipment likely to receive such rough handling, for example those of small to medium size and mass, and should only be applied to those faces and corners where there is a risk of such treatment being encountered.

In general, equipment which is frequently handled and serviced (for example field equipment and unit spares) can be considered at risk, whereas equipment forming an integral part of a permanent installation would not normally be considered at risk and need not be tested.

Testing may not be applicable to fragile unprotected equipment of irregular shape (for example aircraft nose radar) which, when removed from the installation would be contained in a handling frame or jig. It may however be applicable to these items of equipment when they are in their transit case or in their handling frame or jig.

For equipment which stands only on one face (for example the normal base) the test is generally only applied to that face.

Shock tests are performed on the specimen when fixed to the test machine. Drop and topple, free fall, repeated free fall and bounce tests are performed with the specimen free.

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

IEC 60068-2-55:1987, *Environmental testing – Part 2-55: Tests – Test Ee and guidance: Bounce*

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

ISO 48:2007, *Rubber, vulcanized or thermoplastic – Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

[illegible]