



**SLOVENSKI STANDARD**  
**SIST EN 60068-2-55:2001**  
**01-september-2001**

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**Basic environmental testing procedures - Part 2: Tests - Test Ee and guidance:  
Bounce**

Basic environmental testing procedures -- Part 2: Tests - Test Ee and guidance: Bounce

Grundlegende Umweltprüfverfahren -- Teil 2: Prüfungen - Prüfung Ee und Leitfaden:  
Prellen

**iTeh STANDARD PREVIEW**

Essais fondamentaux climatiques et de robustesse mécanique -- Partie 2: Essais - Essai  
Ee et guide: Rebondissement

[SIST EN 60068-2-55:2001](https://standards.iteh.ai/catalog/standards/sist/08559c3f-2a49-4ec0-a2f4-8c0465ac5b16/sist-en-60068-2-55-2001)

**Ta slovenski standard je istoveten z: EN 60068-2-55:1993**

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**ICS:**

19.040	Preskušanje v zvezi z okoljem	Environmental testing
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<b>SIST EN 60068-2-55:2001</b>	<b>en</b>
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UDC 621.3:620.178

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Descriptors: Electricity, component, equipment, mechanical test, bounce, random shock, structural integrity, procedures, components specifications writing, equipment specifications writing

## ENGLISH VERSION

Basic environmental testing procedures  
Part 2: Tests  
Test Ee and guidance: Bounce  
(IEC 68-2-55:1987)

Essais fondamentaux climatiques  
et de robustesse mécanique  
Deuxième partie: Essais  
Essai Ee et guide:  
Rebondissement  
(CEI 68-2-55:1987)

Grundlegende Umweltprüfverfahren  
Teil 2: Prüfungen  
Prüfung Ee und Leitfaden:  
Prellen  
(IEC 68-2-55:1987)

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This European Standard was approved by CENELEC on 1993-03-09. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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

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### FOREWORD

At the request of CENELEC Reporting Secretariat SR 50A, HD 323.2.55 S1:1989 (IEC 68-2-55:1987) was submitted to the CENELEC voting procedure for conversion into a European Standard.

The text of the International Standard was approved by CENELEC as EN 60068-2-55 on 9 March 1993.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1994-03-01
- latest date of withdrawal of conflicting national standards (dow) -

Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative.

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The text of the International Standard IEC 68-2-55:1987 was approved by CENELEC as a European Standard without any modification.

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## ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD  
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
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68-1	1982*	Basic environmental testing procedures Part 1: General and guidance	HD 323.1 S1	1988
68-2-27	1987	Part 2: Tests - Test Ea and guidance: Shock	EN 60068-2-27	1993
68-2-29	1987	Test Eb and guidance: Bump	EN 60068-2-29	1993
68-2-31	1969	Test Ec: Drop and topple, primarily for equipment-type specimens	EN 60068-2-31*	1993
68-2-32	1975	Test Ed: Free fall	EN 60068-2-32*	1993

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## Other publication quoted:

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ISO 2041	1975	Vibration and shock - Vocabulary	SIST EN 60068-2-55:2001 <a href="https://standards.iteh.ai/catalog/standards/sist/08559c3f-2a49-4ec0-a2f4-8c0463ac5616/sist-en-60068-2-55-2001">https://standards.iteh.ai/catalog/standards/sist/08559c3f-2a49-4ec0-a2f4-8c0463ac5616/sist-en-60068-2-55-2001</a>	

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- \* IEC 68-1:1982 is superseded by IEC 68-1:1988 which is harmonized as HD 323.1 S2:1988  
EN 60068-2-31 includes A1:1982 to IEC 68-2-31  
EN 60068-2-32 includes A1:1982 + A2:1990 to IEC 68-2-32

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**NORME  
INTERNATIONALE  
INTERNATIONAL  
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**CEI  
IEC**

**60068-2-55**

Première édition  
First edition  
1987-11

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**BASIC SAFETY PUBLICATION  
PUBLICATION FONDAMENTALE DE SÉCURITÉ**

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**Essais fondamentaux climatiques  
et de robustesse mécanique –**

**Partie 2-55:  
Essais – Essai Ee et guide: Rebondissement**

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Basic environmental testing procedures –**

**Part 2-55: SIST EN 60068-2-55:2001**

**Tests – Test Ee and guidance: Bounce**  
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Pour prix, voir catalogue en vigueur*

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**BASIC ENVIRONMENTAL TESTING PROCEDURES –****Part 2: Tests – Test Ee and guidance: Bounce**

## FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

## PREFACE

This standard has been prepared by subcommittee 50A: Shock and vibration tests, of IEC technical committee 50: Environmental testing.

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

Six Months' Rule	Report on voting
50A(CO)159	50A(CO)160

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

It has the status of a basic safety publication in accordance with IEC Guide 104.

The following IEC publications are quoted in this standard:

- Publications Nos. 68-1(1982): Basic environmental testing procedures – Part 1: General and guidance.
- 68-2-27 (1987): Part 2: Tests – Test Ea and guidance: Shock.
- 68 2-29 (1987): Test Eb and guidance: Bump.
- 68-2-31 (1969): Test Ec: Drop and topple, primarily for equipment-type specimens. Amendment 1 (1982).
- 68-2-32 (1975): Test Ed: Free fall. Amendment 1 (1982).

*Other publication quoted:*

ISO 2041 (1975): Vibration and shock – Vocabulary

## BASIC ENVIRONMENTAL TESTING PROCEDURES

### Part 2: Tests

#### Test Ee and guidance: Bounce

#### 0. Introduction

This test is applicable to components, equipment and other electro-technical products, hereinafter referred to as "specimens", which, during transportation on the load-carrying platform of vehicles either not fastened down or with some degree of freedom, may be subjected to dynamic stresses resulting from random shock conditions. The bounce test may also be used as a means of assessing the satisfactory design of a specimen so far as its structural integrity is concerned.

*Note.*- In practice, this test is primarily applicable to equipment-type specimens.

Specification writers will find in Clause 10 a list of details to be considered for inclusion in specifications and in Appendix A the necessary guidance.

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#### 1. Object

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[8e0463ac3616/sist-en-60068-2-55-2001](https://standards.iteh.ai/catalog/standards/sist/08559c3f-2a49-4ec0-a2f4-8e0463ac3616/sist-en-60068-2-55-2001)

To provide a standard procedure for determining the ability of a specimen to withstand specified severities of bounce.

#### 2. General description

This test is primarily intended for specimens prepared for transportation, including specimens in their transport case when the latter may be considered as part of the specimen itself (see also Sub-clause A7.2 of Appendix A).

Wherever possible, the test severity applied to the specimen shall be related to the operational environment to which the specimen will be subjected during transportation.

The relevant specification shall state the criteria upon which the acceptance or rejection of the specimen is to be based. Normally, for this test the specimen is not functioning and it is sufficient that it should survive the conditioning.

This standard is to be used in conjunction with IEC Publication 68-1.

### 3. Definitions

Generally the terms used are defined in ISO Standard 2041 or in IEC Publication 68-1. The following additional term and definition is also applicable for the purposes of this standard.

$g_n$ : standard acceleration due to the earth's gravity, which itself varies with altitude and geographical latitude.

*Note.*- For the purposes of this standard, the value of  $g_n$  is rounded up to the nearest unit, that is 10 m/s<sup>2</sup>.

### 4. Description of test apparatus

#### 4.1 *Characteristics of the bounce tester*

- a) The bounce tester shall consist of a horizontal platform coupled to shaft-driven eccentrics (see Figure 1, page 26).
- b) The platform shall be of  $25 \pm 1$  mm plywood firmly secured to a steel frame with appropriate barriers (see Sub-clause 4.6).
- c) The eccentrics shall produce a maximum peak-to-peak vertical displacement of the upper surface of the platform, measured in the region between the drive shafts, of  $25.5 \pm 0.5$  mm.
- d) The bounce tester when loaded with the specimen and any other necessary devices for the conditioning, shall also have the characteristics specified in the appropriate method (see Sub-clause 4.2).

#### 4.2 *Motion of the platform*

This shall be synchronous circular (Method A) or non-synchronous (Method B), as prescribed in Sub-clauses 4.2.1 and 4.2.2 respectively. A mechanism for producing the required motion is referred to in Clause A3 of Appendix A and shown in Figure 1.

##### 4.2.1 *Method A: Synchronous circular motion*

The motion of the platform of the bounce tester shall be such that each point of this platform describes a circle in the vertical plane with a diameter of  $25.5 \pm 0.5$  mm (see Sub-clause 4.3).

The peak acceleration of the platform shall be between  $1.1 g_n$  and  $1.2 g_n$ . This can be achieved with a mean shaft speed of  $285 \pm 3$  rev/min.

The specimen prepared as for transportation, with or without its transport case as prescribed by the relevant specification, shall be placed, without being attached, on the platform centrally between the drive shafts.