

Environmental testing - Part 2-55: Tests - Test Ee and guidance: Loose cargo testing including bounce (IEC 60068-2-55:2013)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English version

**Environmental testing -
Part 2-55: Tests -
Test Ee and guidance -
Loose cargo testing including bounce
(IEC 60068-2-55:2013)**

Essais d'environnement -
Partie 2-55: Essais -
Essai Ee et guide -
Essais de chargement sans arrimage y
compris l'essai de rebondissement
(CEI 60068-2-55:2013)

Umgebungseinflüsse -
Teil 2-55: Prüfverfahren -
Prüfung Ee und Leitfaden: Prüfung loser
Packstücke einschließlich Prellen
(IEC 60068-2-55:2013)

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CENELEC

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

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Foreword

The text of document 104/592/FDIS, future edition 2 of IEC 60068-2-55, prepared by IEC TC 104 "Environmental conditions, classification and methods of test" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60068-2-55:2013.

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) 2013-12-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-03-13

This document supersedes EN 60068-2-55:1993.

EN 60068-2-55:2013 includes the following significant technical changes with respect to EN 60068-2-55:1993:

This new edition allows for loose cargo testing in a more general sense. The test is no longer aligned with a special testing machine but allows for use of any suitable equipment such as electrodynamic or servo-hydraulic shaker tables. Moreover, sinusoidal and random vibration can be used. The previous rotation table motions are included in Annex A as historical methods.

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

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60068-2-55:2013 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 60068-2-27	NOTE	Harmonized as EN 60068-2-27.
IEC 60068-2-31	NOTE	Harmonized as EN 60068-2-31.
IEC 60068-5-2	NOTE	Harmonized as EN 60068-5-2.
ISO/IEC 17025	NOTE	Harmonized as EN ISO/IEC 17025.

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 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	-	Environmental testing - Part 1: General and guidance	EN 60068-1	-
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-64	-	Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance	EN 60068-2-64	-
IEC 60068-2-80	-	Environmental testing - Part 2-80: Tests - Test Fi: Vibration - Mixed mode	EN 60068-2-80	-
ISO 13355	-	Packaging - Complete, filled transport packages and unit loads - Vertical random vibration test	EN ISO 13355	-
ASTM D4169-09	-	Standard Practice for Performance Testing of - Shipping Containers and Systems		-

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	6
4 Requirements for the test apparatus	7
4.1 General test description	7
4.2 Characteristics of the testing machine	7
4.3 Motion of the platform.....	7
4.4 Tolerances on the horizontal accuracy of platform	8
4.5 Control	8
4.6 Mounting	8
4.7 Horizontal motion of specimen.....	8
5 Severities	8
5.1 Severity for sinusoidal motion of the platform	8
5.2 Severity for random motion of the platform	9
5.3 Severity for mixed mode motion of the platform	9
5.4 Severity for use of special bounce testing machines	9
6 Preconditioning	9
7 Initial measurements and functional performance test	9
8 Testing	9
9 Recovery	10
10 Final measurements	10
11 Information to be given in the relevant specification.....	11
12 Information to be given in the test report	11
Annex A (normative) Guidance	12
Annex B (informative) Comparison amongst impact tests	17
Bibliography.....	18
Figure A.1 – Typical arrangement of barriers and typical reference point positions	13
Figure A.2 – Basic drive motion of a mechanical bounce tester	14
Table B.1 – Comparison of different impact tests	17

INTRODUCTION

This test is applicable to specimens which, during transportation on the load-carrying platform of wheeled vehicles either not fastened down or with some degree of freedom, may be subjected to dynamic stresses resulting from random shock conditions (bounce). The test may also be used as a simple 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 and packages.

Although the test is performed using a vibrating platform, it is not considered as a vibration test, but as an impact test. Vibration tests should be conducted according to the appropriate standards from IEC 60068-2.

In Clause 11, specification writers will find a list of details to be considered for inclusion in specifications and, in Annex A, the necessary accompanying guidance.

ENVIRONMENTAL TESTING –

Part 2-55: Tests – Test Ee and guidance – Loose cargo testing including bounce

1 Scope

This part of IEC 60068 provides a standard procedure for determining the ability of a specimen to withstand specified severities of bounce, e. g. when transported as loose cargo on wheeled vehicles.

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 or packages. This test should not be used as a low-frequency vibration test.

Although primarily intended for electrotechnical products, this standard is not restricted to them and may be used in other fields where desired.

2 Normative references

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.

IEC 60068-1, *Environmental testing – Part 1: General and guidance*¹

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-64, *Environmental testing – Part 2-64: Tests – Test Fh: Vibration, broadband random and guidance*

IEC 60068-2-80, *Environmental testing – Part 2-80: Tests – Test Fi: Vibration – Mixed mode*

ISO 13355, *Packaging – Complete, filled transport packages and unit loads – Vertical random vibration test*

ASTM D4169-09, *Standard Practice for Performance Testing of Shipping Containers and Systems*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

bounce testing machine

testing machine with a vibrating platform driven by rotating shafts and eccentrics

Note 1 to entry: Bounce testing machines typically have a fixed displacement amplitude and a variable frequency.

¹ A new edition of IEC 60068-1 is currently under consideration.