AS 60068.2.31—2003
IEC 60068-2-31:1969
IEC 60068-2-31:1969/Amd 1:1982

Australian Standard™

Environmental testing

Part 2.31: Tests—Test Ec: Drop and topple, primarily for equipment-type specimens

Standards Australia

This Australian Standard was prepared by Committee EL-026, Protective Enclosures and Environmental Testing for Electric/Electronic Equipment. It was approved on behalf of the Council of Standards Australia on 10 April 2003 and published on 16 May 2003.

The following are represented on Committee EL-026:

Australian Chamber of Commerce and Industry

Australian Electrical and Electronic Manufacturer's Association

Electrical Compliance Testing Association

Electrical Regulatory Authorities Council

Electricity Supply Association of Australia

Testing Interests (Australia)

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-026, Protective Enclosures and Environmental Testing for Electric/Electronic Equipment to supersede AS 1099.2.31—1990, *Basic environmental testing procedures for electrotechnology* Part 2.31: *Test Ec—Drop and topple, primarily for equipment*.

The objective of this Standard is to provide the electrotechnology industry with a complete set of environmental test procedures published as a series under AS 60068 *Environmental testing*. This Standard is Part 2.31 of that series.

This Standard is identical with, and has been reproduced from, IEC 60068-2-31:1969, *Environmental testing—Part 2-31: Tests—Test Ec: Drop and topple, primarily for equipment-type specimens* incorporating Amendment 1:1982.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this international standard' should read 'this Australian Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) Any French text on figures should be ignored.

In this Standard, the following print types are used:

– requirements proper: in arial type;

– *test specifications: in italic type;*

– explanatory matter: in smaller arial type.

Any international Standard referenced should be replaced by an equivalent Australian Standard when one is available. The availability of equivalent Australian Standards can be determined either from the Standards Australia catalogue or from the Standards Australia website (www.standards.com.au).

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1 Object

To assess the effects upon a specimen of simple standard tests intended to be representative of the knocks and jolts likely to occur during repair work or rough handling in use on a table or bench.

Tests of this type may also be used to demonstrate a minimum degree of robustness for the purpose of assessing safety requirements.

This test is primarily intended for specimens not in their packing and for items in their transport cases, when the latter may be considered as part of the specimens themselves.

2 General

The test includes three distinct procedures:

a) Dropping on to a face (subclause 3.2.1).

b) Dropping on to a corner (subclause 3.2.2).

c) Toppling (or pushover) (subclause 3.2.3).

The purpose of each of these procedures is basically the same, but they represent different kinds of handling.

The test is not intended to be a precise test and a tolerance of ±10 % is allowed on the heights and angles prescribed in clause 3.

NOTE – For a more precise shock test, Test Ea: Shock (IEC 60068-2-27) should be used.

3 Testing procedures

3.1 Initial measurements

The specimen shall be visually examined and electrically and mechanically checked, as required by the relevant specification.

3.2 Conditioning

Having taken into account the manner in which the specimen will be handled in use and during repair, the relevant specification shall state the test procedure to be used and whether covers, cables, etc., are to be in position or not. The relevant specification shall also state whether the specimen is, or is not, operational during the test.

In the test procedures for dropping on to a face or corner, it is possible for the specimen to topple on to the next face instead of falling back on to the test face as intended. This shall be avoided by a suitable method.