AS 60068.2.29—2003
IEC 60068-2-29:1987

Australian Standard™

Environmental testing

Part 2.29: Tests—Test Eb and guidance: Bump

Standards Australia

This Australian Standard was prepared by Committee EL-026, Protective Enclosures and Environmental Testing for Electrical/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

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-026, Protective Enclosures and Environmental Testing for Electrical/Electronic Equipment to supersede AS 1099.2.29—1990, *Basic environmental testing procedures for electrotechnology* Part 2.29: *Test Eb—Bump and guidance*.

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 2.29 of that series.

This Standard is identical with, and has been reproduced from, IEC 60068-2-29:1987, *Environmental testing—Part 2-29: Tests—Test Eb and guidance: Bump*.

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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INTRODUCTION

This test is applicable to components, equipments and other electrotechnical products, hereinafter referred to as “specimens”, which, during transportation or in use, may be subjected to repetitive shocks. The bump 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 basically of subjecting, on a bump tester, a specimen to repetitive shocks of a standard pulse shape with specified peak acceleration and duration.

NOTE – The term “bump tester” is used throughout this standard but other means of applying “bumps” are not excluded.

Specification writers will find in clause 11 a list of details to be considered for inclusion in specifications and in annex A the necessary guidance.

STANDARDS AUSTRALIA

Australian Standard

Environmental testing
Part 2.29: Tests—Test Eb and guidance: Bump

1 Scope

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

2 General description

This standard is written in terms of a prescribed number of repetitive half-sine pulses with given peak acceleration and duration.

The purpose of the test is to reveal the accumulated damage or degradation caused by repetitive shocks, and to use the information, in conjunction with the relevant specification, to decide whether a specimen is acceptable or not. It may also be used, in some cases, to determine the structural integrity of specimens or as a means of quality control (see clause A.3.)

This test is primarily intended for unpackaged specimens and for items in their transport case when the latter may be considered as part of the specimen itself.

The bumps are not intended to reproduce those encountered in practice. Wherever possible, the test severity 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 clause A.3).

For the purpose of this test the specimen is always fastened to the fixture or the table of the bump tester during conditioning.

In order to facilitate the use of this standard, references are given in the main part where the reader is invited to refer to annex A and the clause numbers in the main part are also referred to in annex A.

This standard is to be used in conjunction with IEC 60068-1: Basic environmental testing procedures – Part 1: General and guidance.

3 Definitions

The terms used are generally defined in ISO 2041 or IEC 60068-1.

The following additional terms and definitions are also applicable for the purposes of this standard.

3.1 Fixing point

Part of the specimen in contact with the fixture or the table of the bump tester and which is normally used to fasten the specimen in service.