AS 1099.2.29—1990
IEC 68-2-29(1987)

Australian Standard®

Basic environmental testing procedures for electrotechnology

Part 2: Tests
1099.2.29: Test Eb—Bump and guidance

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The following interests are represented on Committee:

Aerospace Technologies of Australia

Confederation of Australian Industry

Department of Administrative Services—Australian Construction Services

Department of Defence

Electricity Supply Association of Australia

National Association of Testing Authorities

Society of Automotive Engineers, Australia

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PREFACE

The Standard was prepared by the Standards Australia Committee on Environmental Testing Procedures to supersede AS 1099.2 Eb—1971, Test Eb, Bump. This edition is identical with and reproduced from IEC 68-2-29 (1987).

The object of the Standard is to determine the ability of a specimen to withstand specified severities of a standard bump test, applied to components, equipment and other electrotechnical products which during transportation or in use may be subjected to repetitive shocks. The bump test consists of subjecting the specimen on a bump tester, to repetitive shocks of a standard pulse shape with a specified peak acceleration and duration. The standard bump test may also be used as a means of establishing that the structural integrity of the design of a specimen is satisfactory, or as a means of quality control.

For the purpose of this Australian Standard the IEC Publication used herein should be modified as follows:

Reference to International Standards		*Appropriate Australian Standards*	
IEC		AS	
68	Basic environmental testing procedures	1099	Basic environmental testing procedures for electrotechnology
68-1	Part 1: General and Guidance	1099-1	Part 1: General
68-2	Part 2: Tests	1099-2	Part 2: Tests
68-2-31	Test Ec: Drop and topple, primarily for equipment type specimens	1099-2-31	Test Ec: Drop and topple primarily for equipment
68-2-32	Test Ed: Free fall	1099-2-32	Test Ed: Free fall
68-2-47	Mounting of components, equipment and other articles for dynamic tests.		
68-2-55	Test Ee and guidance: Bounce		
721	Classification of environmental conditions		
721-3-1	Part 3: Classification of groups of environmental parameters and their severities. Stationary use of weather protected locations.		
721-3-5	Part 3: Classification of groups of environmental parameters and their severities. Ground vehicle installations.		
ISO			
2041	Vibration and shock-Vocabulary	2606	Vibration and shock-Vocabulary.

CONTENTS

STANDARDS AUSTRALIA

Australian Standard

Basic Environmental Test Procedures For Electrotechnology

Part 2: Tests
1099.2.29: Test Eb—Bump and guidance

This Standard shall be read in conjunction with AS 1099.1, General

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 Appendix A the necessary guidance.

1. **Object**

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 A3.)

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 A3).

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 Appendix A and the clause numbers in the main part are also referred to in Appendix A.

This standard is to be used in conjunction with IEC Publication 68-1: Basic Environmental Testing Procedures, Part 1: General and Guidance.