

AS 1099.2.7—1990

IEC 68-2-7(1983)

Australian Standard[®]

**Basic environmental testing
procedures for electrotechnology**

**Part 2: Tests
1099.2.7: Test Ga—Acceleration,
steady state**

This Australian Standard was prepared by Committee ET/5, Environmental Testing Procedures. It was approved on behalf of the Council of Standards Australia on 6 December 1989 and published on 4 June 1990.

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
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First published as AS 1099.2Ga—1971.
Revised and redesignated AS 1099.2.7—1990.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 6085 1

PREFACE

This Standard was prepared by the Standards Australia Committee on Environmental Testing Procedures to supersede AS 1099.2Ga—1971 *Test Ga, Acceleration, steady state*. This edition is identical with and reproduced from IEC 68-2-7 as amended by AMDT No 1(1986).

The object of the Standard is to prove the structural suitability and the satisfactory performance of components, equipment and other electrotechnical products, when subjected to forces produced by steady acceleration in an environment other than gravity such as occurs in moving vehicles, rotating equipment or projectiles and to provide a test of structural integrity for certain electrical and electronic components.

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

<i>Reference to International Standards</i>	<i>Appropriate Australian Standard</i>
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
721 Classification of environmental conditions	—

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STANDARDS AUSTRALIA

Australian Standard

Basic Environmental Testing Procedures For Electrotechnology

Part 2: Tests

1099.2.7: Test Ga—Acceleration, steady state

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

1. Object

To prove the structural suitability and the satisfactory performance of components, equipment and other electrotechnical products, hereinafter referred to as “specimens”, when subjected to forces produced by steady acceleration environments (other than gravity) such as occur in moving vehicles, especially flying vehicles, rotating parts and projectiles, and to provide a test of structural integrity for certain components.

2. General

Equipment, components and other electrotechnical products intended to be installed in moving bodies will be subjected to forces caused by steady acceleration. Naturally, such an environment is most pronounced in flying vehicles and rotating machinery, although in certain conditions accelerations in land vehicles may be of significant magnitude.

In general, the accelerations encountered in service have different values along each of the major axes of the moving body, and, in addition, usually have different values in the opposite senses of each axis.

If the attitude of the specimen is not fixed with regard to the moving body, then the relevant specification should prescribe a level which may be applied along each of the major axes and senses of the specimen, having taken into account the maximum accelerations in different axes of the moving body.

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

3. Conditions for testing

3.1 Characteristics of the test apparatus

3.1.1 General

Acceleration conditions are applied by means of a centrifuge where the acceleration is directed towards the centre of the rotating system. In certain special cases, however, the specimen may be sensitive to gyroscopic couples, and it may only be possible to perform the test by using a machine capable of applying linear acceleration, in which case the relevant specification shall state this requirement.

3.1.2 Tangential acceleration

When increasing the rotational speed of a centrifuge from zero to the value necessary to achieve the specified acceleration, or when decreasing back to zero, the machine shall be so controlled that the specimen is not subjected to a value of tangential acceleration greater than 10% of the specified acceleration.