

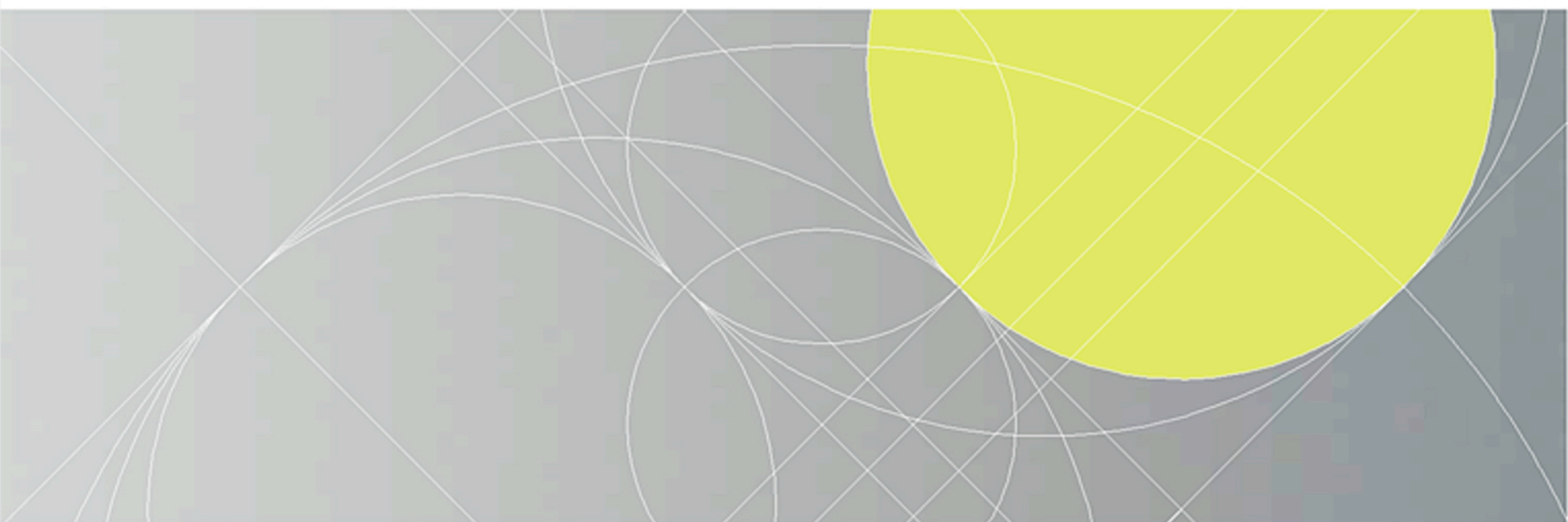
AS IEC 61032:2023
IEC 61032:1997



STANDARDS
Australia



Protection of persons and equipment by enclosures — Probes for verification



AS IEC 61032:2023

This Australian Standard ® was prepared by EL-026, Protective Enclosures and Environmental Testing for Electrical/Electronic Equipment. It was approved on behalf of the Council of Standards Australia on 19 April 2023.

This Standard was published on 12 May 2023.

The following are represented on Committee EL-026:

- Australian Industry Group
- Better Regulation Division (Fair Trading, SafeWork NSW, TestSafe)
- Consumer Electronics Suppliers Association
- Electrical Regulatory Authorities Council, Australia
- Energy Networks Australia
- Master Electricians Australia
- National Association of Testing Authorities Australia
- National Electrical and Communications Association
- VIPAC (Testing Interests Australia)

This Standard was issued in draft form for comment as DR AS IEC 61032:2022.

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ISBN 978 1 76139 154 5

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First published as AS IEC 61032:2023.



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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.

The objective of this document is to specify details and dimensions of test probes intended to verify the protection provided by enclosures with regard to —

- (a) protection of persons against access to hazardous parts inside the enclosure; and
- (b) protection of the equipment inside the enclosure against ingress of solid foreign objects.

This document brings together in publication object probes and access probes currently specified in other Standards, together with any new probes.

This document has the status of a basic safety publication in accordance with IEC Guide 104. The contents of the corrigendum of January 2003 have been included in the text.

This document is identical with, and has been reproduced from, IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PROTECTION OF PERSONS AND EQUIPMENT BY ENCLOSURES –
PROBES FOR VERIFICATION**

FOREWORD

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International Standard IEC 61032 has been prepared by IEC technical committee 70: Degrees of protection by enclosures.

This second edition cancels and replaces the first edition published in 1990 and constitutes a technical revision.

It has the status of a basic safety publication in accordance with IEC Guide 104.

The text of this standard is based on the following documents:

FDIS	Report on voting
70/82/FDIS	70/85/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annexes A and B are for information only.

The contents of the corrigendum of January 2003 have been included in this copy.

PROTECTION OF PERSONS AND EQUIPMENT BY ENCLOSURES – PROBES FOR VERIFICATION

1 General

1.1 Scope and object

This International Standard specifies details and dimensions of test probes intended to verify the protection provided by enclosures with regard to:

- protection of persons against access to hazardous parts inside the enclosure;
- protection of the equipment inside the enclosure against ingress of solid foreign objects.

The object of this International Standard is:

- to bring together in one publication object probes and access probes currently specified in other standards, together with any necessary new probes;
- to guide technical committees in the selection of test probes;
- to encourage those concerned to specify test probes in accordance with those already specified in this International Standard rather than modify details and dimensions;
- to limit the further proliferation of types of test probe.

1.2 General recommendations

When selecting probes, priority should be given to IP code probes.

The use of other probes, particularly probes which are not specified in this International Standard, should be limited to cases where the use of an IP code probe is for some reason impractical.

NOTE 1 – The selection of a test probe for a particular purpose is the responsibility of the relevant technical committees.

NOTE 2 – Technical committees wishing to develop new probes or to modify existing probes should submit proposals to technical committee 70 for amendment of this standard.

Application of the probes, test conditions, acceptance conditions and the procedure in case of conflicting test results are the responsibility of the relevant product committee.

Certificates based on test probes conforming to the first edition of IEC 61032 should remain valid.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(826): 1982, *International Electrotechnical Vocabulary (IEV) – Chapter 826: Electrical installations of buildings*

IEC 60529: 1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60536: 1976, *Classification of electrical and electronic equipment with regard to protection against electric shock*

ISO 4287-1: 1984, *Surface roughness – Terminology – Part 1: Surface and its parameters*

3 Definitions

For the purpose of this International Standard the following definitions apply:

3.1 Enclosure

A part providing protection of equipment against certain external influences and, in any direction, protection against direct contact [IEV 826-03-12]

NOTE – This definition taken from the International Electrotechnical Vocabulary (IEV) needs the following additional explanations:

- a) Enclosures provide protection of persons or livestock against access to hazardous parts.
- b) Barriers, shapes of openings or any other means – whether attached to the enclosure or formed by the enclosed equipment – suitable to prevent or limit the penetration of the specified test probes are considered as a part of the enclosure, except when they can be removed without the use of a key or tool.

(see 3.1 of IEC 60529).

3.2 Hazardous part

A part that is hazardous to approach or touch (see 3.5 of IEC 60529).

3.2.1 Hazardous live part

A live-part which, under certain conditions of external influences, can give an electric shock (see 3.5.1 of IEC 60529).

3.2.2 Hazardous mechanical part

A moving part, other than a smooth rotating shaft, that is hazardous to touch (see 3.5.2 of IEC 60529).

3.2.3 Hazardous hot or glowing part

A hot or glowing part that is hazardous to touch.

3.3 Access probe

A test probe simulating in a conventional manner a part of a person or a tool, or the like, held by a person to verify adequate clearance from hazardous parts (see 3.8 of IEC 60529).

3.4 Object probe

A test probe simulating a solid foreign object to verify the possibility of ingress into an enclosure (see 3.9 of IEC 60529).

3.5 IP code probe

A test probe to verify the degrees of protection specified in IEC 60529.

3.6 Other probe

A test probe, different from IP code probes.

3.7 Adequate clearance for protection against access to hazardous parts

A distance to prevent contact or approach of an access probe to a hazardous part (see 3.7 of IEC 60529).

NOTE – The requirements to verify adequate clearance are specified in IEC 60529.

4 Classification of test probes

Test probes are classified as follows:

- a) according to their designation
 - IP code probes;
 - other probes;
- b) according to the kind of protection they are intended to check
 - access probes;
 - object probes;
- c) according to the specific hazard they are intended to check
 - probes mainly intended to be used to verify the protection of persons against access to hazardous live parts or hazardous mechanical parts;
 - probes specifically intended to be used to verify the protection of persons against access to hazardous mechanical parts;
 - probes mainly intended to be used to verify the protection of persons against access to internal parts involving thermal hazard, for instance internal hot or glowing parts;
 - probes intended to be used to verify the protection of equipment against ingress of solid foreign objects.