

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Solderless connections –
Part 3: Accessible insulation displacement (ID) connections – General
requirements, test methods and practical guidance**

**Connexions sans soudure –
Partie 3: Connexions autodénudantes accessibles – Règles générales, méthodes
d'essai et guide pratique**



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CONTENTS

FOREWORD	5
INTRODUCTION	7
1 Scope	9
2 Normative references	9
3 Terms and definitions	10
4 Workmanship	13
5 Prerequisites for basic test schedule	13
5.1 General	13
5.2 Prerequisites for accessible ID terminations	14
5.2.1 Accessible ID termination materials	14
5.2.2 Accessible ID termination dimensions	14
5.2.3 Accessible ID termination surface finishes	14
5.2.4 Accessible ID termination design features	14
5.3 Prerequisites for wires and conductors	14
5.3.1 Wires and conductors	14
5.3.2 Wire insulation	15
5.4 Accessible insulation displacement connections (accessible ID connections)	15
6 Testing	15
6.1 Introduction	15
6.2 General	15
6.3 Standard conditions for testing	16
6.4 Preconditioning	16
6.5 Recovery	16
6.6 Mounting of specimen	16
7 Tests	16
7.1 General examination	16
7.2 Mechanical tests	17
7.2.1 Transverse extraction force	17
7.2.2 Bending of the wire	18
7.2.3 Vibration	19
7.2.4 Repeated connection and disconnection, reusable accessible ID terminations	20
7.3 Electrical tests	20
7.3.1 General	20
7.3.2 Contact resistance	21
7.3.3 Electrical load and temperature	22
7.4 Climatic tests	22
7.4.1 General	22
7.4.2 Rapid change of temperature	22
7.4.3 Climatic sequence	22
7.4.4 Flowing mixed gas corrosion test	22
7.4.5 Damp heat, cyclic	23
8 Test schedules	23
8.1 General	23
8.1.1 Overview	23

8.1.2	ID connections with terminations suitable for a range of wire diameters	23
8.1.3	Multipole connectors	23
8.2	Basic test schedule	24
8.2.1	Généralités	24
8.2.2	Initial examination	24
8.2.3	Testing of accessible ID connections	24
8.3	Full test schedule	26
8.3.1	General	26
8.3.2	Initial examination	26
8.3.3	Testing of accessible ID connections	26
8.4	Flow charts	29
Annex A (informative)	Practical guidance	32
A.1	General information on accessible ID connections	32
A.1.1	General	32
A.1.2	Advantages of accessible ID connections	32
A.2	Current-carrying capacity	33
A.3	Tool information	33
A.3.1	Wire insertion tool	33
A.3.2	Wire extraction tool	33
A.3.3	Combination tool	33
A.4	Termination information	33
A.4.1	General	33
A.4.2	Design features	34
A.4.3	Materials	34
A.4.4	Surface finishes	34
A.5	Wire information	34
A.5.1	Type	34
A.5.2	Dimensions	34
A.5.3	Surface finishes	34
A.5.4	Insulation	34
A.6	Connection information	35
Annex B (informative)	Application examples	37
B.1	Examples for good IDCs or negative results (see Figure B.1 to Figure B.7)	37
B.2	Examples for good transversal micro section or negative results	39
	Bibliography	40
	Figure 1 – Example of accessible and non-accessible insulation displacement connection	7
	Figure 2 – Insulation displacement connection	11
	Figure 3 – Slot	12
	Figure 4 – Beam	13
	Figure 5 – Test arrangement, transverse extraction force	17
	Figure 6 – Test arrangement, bending of the wire	18
	Figure 7 – Test arrangement, vibration	19
	Figure 8 – Test arrangement, contact resistance	21
	Figure 9 – Basic test schedule (see 8.2)	30
	Figure 10 – Full test schedule (see 8.3)	31

Figure A.1 – Example of a single-type accessible ID termination with a solid round conductor.....	36
Figure B.1 – Example of correct and acceptable ID connections	37
Figure B.2 – Examples for good IDCs or negative results.....	37
Figure B.3 – Faulty IDC: damaged contacts	38
Figure B.4 – Requirements for open-ended IDCs	38
Figure B.5 – Faulty IDC: damaged wire.....	38
Figure B.6 – IDC: Wire position.....	39
Figure B.7 – IDC: transversal micro section	39
Table 1 – Minimum transverse extraction force	18
Table 2 – Vibration, preferred test severities	19
Table 3 – Contact resistance of accessible ID connections, maximum permitted values	21
Table 4 – Number of specimens required	24
Table 5 – Qualification test schedule – Test group 1	25
Table 6 – Qualification test schedule – Test group 2	25
Table 7 – Qualification test schedule – Test group 3	26
Table 8 – Qualification test schedule – Test group A.....	27
Table 9 – Qualification test schedule – Test group B.....	27
Table 10 – Qualification test schedule – Test group C	28
Table 11 – Qualification test schedule – Test group D	29
Table 12 – Qualification test schedule – Test group E.....	29

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOLDERLESS CONNECTIONS –**Part 3: Accessible insulation displacement (ID) connections –
General requirements, test methods and practical guidance**

FOREWORD

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International Standard IEC 60352-3 has been prepared by subcommittee 48B: Electrical connectors, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment.

This second edition cancels and replaces the first edition published in 1993. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Subclause 7.2.2: reduce the limit of duration of contact disturbance to 1 μ s.
- b) Subclause 7.2.3: reduce the limit of duration of contact disturbance to 1 μ s.
- c) Transferred Clauses 9 to 13 to Annex A (informative).
- d) The figures were revised for clarity.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
48B/2789/FDIS	48B/2802/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60352 series, published under the general title *Solderless connections*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The two following parts of IEC 60352 are available on solderless insulation displacement connections:

- Part 3: Accessible insulation displacement connections – General requirements, test methods and practical guidance;
- Part 4: Solderless non-accessible insulation displacement connections – General requirements, test methods and practical guidance.

NOTE In this document the term "insulation displacement" is abbreviated to "ID", for example "ID connection", "ID termination".

Figure 1 illustrates examples of accessible and non-accessible insulation displacement connections that clarify the difference among them.

Part 3 includes requirements and relevant tests (normative) as well as a practical guidance in Annex A (informative) for accessible ID connections.

Two test schedules are provided:

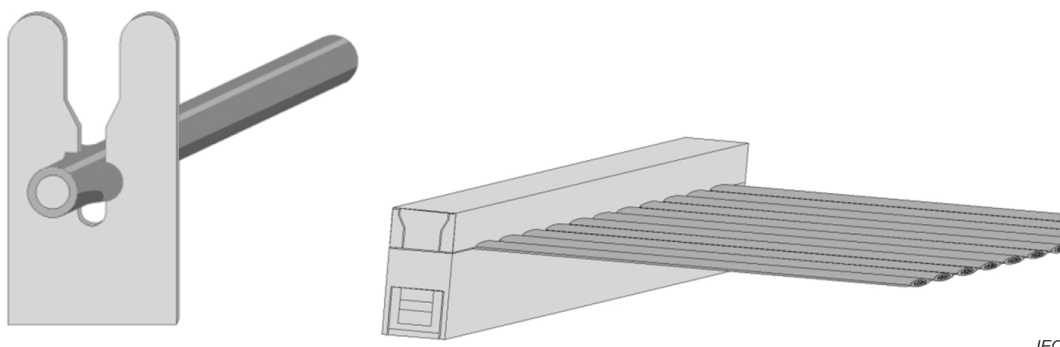
- the basic test schedule which applies to insulation displacement connections which conform to all prerequisites of Clause 5. It is derived from experience with successful applications of such connections;
- the full test schedule which applies to insulation displacement connections which do not fully conform to all prerequisites of Clause 5, for example which are manufactured using materials or finishes not included in Clause 5.

This philosophy permits cost and time effective performance verification using a limited basic test schedule for established insulation displacement connections and an expanded full test schedule for connections requiring more extensive performance validation.

The suitability of the accessible ID connection implies that the specified requirements and tests apply to all factors involved in producing a suitable ID connection, namely:

- the accessible ID termination, which may be part of a single-pole or multipole connector;
- the wire (or range of wires) for which the termination is suitable;
- the tools (if any) required to produce that type of solderless connection.

The practical guidance (informative Annex A) serves as a guideline for the required workmanship. Attention is drawn to the fact that some industries (e.g. automotive, aerospace, nuclear, military) may have specific workmanship standards and/or quality requirements, which are outside the scope of this standard.



IEC

Figure 1 – Example of accessible and non-accessible insulation displacement connection

IEC Guide 109 advocates the need to minimise the impact of a product on the natural environment throughout the product life cycle.

It is understood that some of the materials permitted in this document may have a negative environmental impact.

As technological advances lead to acceptable alternatives for these materials, they will be eliminated from the document.

SOLDERLESS CONNECTIONS –

Part 3: Accessible insulation displacement (ID) connections – General requirements, test methods and practical guidance

1 Scope

This part of IEC 60352 is applicable to ID connections which are accessible for tests and measurements according to Clauses 6 through 8 and which are made with:

- appropriately designed accessible ID terminations,
- wires having solid round conductors of 0,25 mm to 3,6 mm nominal diameter,
- wires having stranded conductors of 0,05 mm² to 10 mm² cross-sectional area,

for use in electrical and electronic equipment and components.

Information on materials and data from industrial experience is included in addition to the test procedures to provide electrically stable connections under prescribed environmental conditions.

There are different designs and materials for accessible ID terminations in use. For this reason only fundamental parameters of the termination are specified, while the performance requirements of the wire and the complete connection are specified in full detail.

The purpose of this document is:

- to determine the suitability of accessible ID connections under specified mechanical, electrical and atmospheric conditions;
- to provide a means of comparing test results when the tools used to make the connections, if any, are of different designs or manufacture.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60228, *Conductors of insulated cables*

IEC 60512-1, *Connectors for electrical and electronic equipment – Tests and measurements – Part 1: Generic specification*

IEC 60512-1-1, *Connectors for electronic equipment – Tests and measurements – Part 1-1: General examination – Test 1a: Visual examination*

IEC 60512-1-2, *Connectors for electronic equipment – Tests and measurements – Part 1-2: General examination – Test 1b: Examination of dimension and mass*

IEC 60512-2-1, *Connectors for electronic equipment – Part 2: Electrical continuity and contact resistance tests – Test 2a: Contact resistance – Millivolt level method*