
Identification cards — Test methods —

**Part 1:
General characteristics**

AMENDMENT 1

iTeh STANDARD PREVIEW
Cartes d'identification — Méthodes d'essai —
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Partie 1: Caractéristiques générales
AMENDEMENT 1

[ISO/IEC 10373-1:2006/Amd 1:2012](https://standards.iteh.ai/catalog/standards/sist/2da28ec2-0071-4151-86bb-4874a012f919/iso-iec-10373-1-2006-amd-1-2012)

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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Amendment 1 to ISO/IEC 10373-1 was prepared by Joint Technical Committee JTC1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

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Identification cards — Test methods —

Part 1: General characteristics

AMENDMENT 1

Page 1, Normative references

Add the following references:

ISO/IEC 7816-2, *Identification cards — Integrated circuit(s) cards with contacts — Part 2: Dimensions and location of the contacts*

IEC 60749-26, *Semiconductor devices — Mechanical and climatic test methods — Electrostatic discharge (ESD) sensitivity testing — Human body model (HBM)*

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Page 3, Terms and definitions

Add the following terms and definitions:
<https://standards.iteh.ai/catalog/standards/sist/2da28ec2-0071-4151-86bb-4874a012f919/iso-iec-10373-1-2006-amd-1-2012>

3.15

ICC

integrated circuit(s) card

3.16

typical protocol and application specific communication

any communication between a DUT and the corresponding test-apparatus based on protocol and application implemented in the DUT and representing its normal use

3.17

Test Scenario

defined typical protocol and application specific communication to be used with the test methods defined in this document

3.18

PICC

Proximity integrated circuit(s) card or object

Page 4, Clause 4

Add the following subclauses after 4.5.

4.6 Conventions for electrical measurements on ICCs with contacts

Potential differences are defined with respect to the GND contact of the ICC and currents flowing to the ICC are considered positive.

4.7 Apparatus for measurements on ICCs with contacts

4.7.1 Default ICC-holder, reference axes and default measurement position

When required by the test-method, the ICC shall be positioned in the default measurement position as subsequently defined.

The default measurement position requires the ICC to be positioned in an ICC-holder and flattened by a flattening plate. All Measurements using this default measurement position shall be relative to the reference axes defined in Figure Amd.1-1.

4.7.2 Default ICC-holder and reference axes:

The default ICC holder shall comply with Figure Amd.1-1:

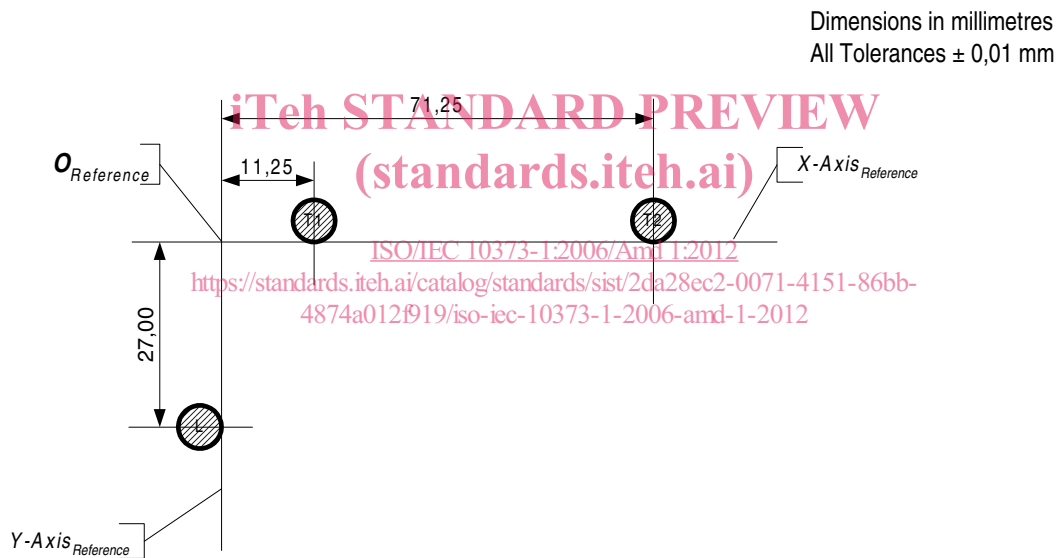
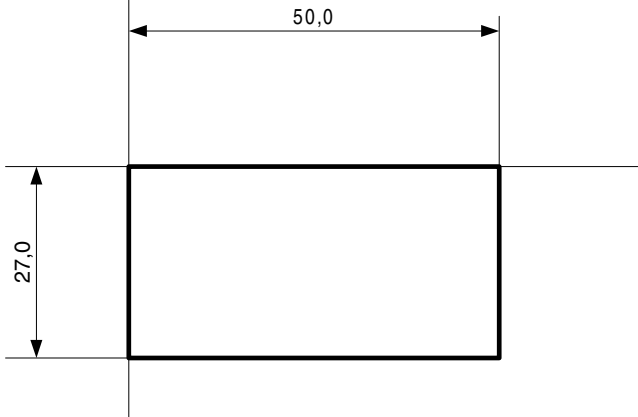


Figure Amd.1-1 — ICC-holder

4.7.3 Flattening Plate

The flattening plate shall comply with Figure Amd.1-2:

Dimensions in mm
All Tolerances $\pm 0,1$ mm

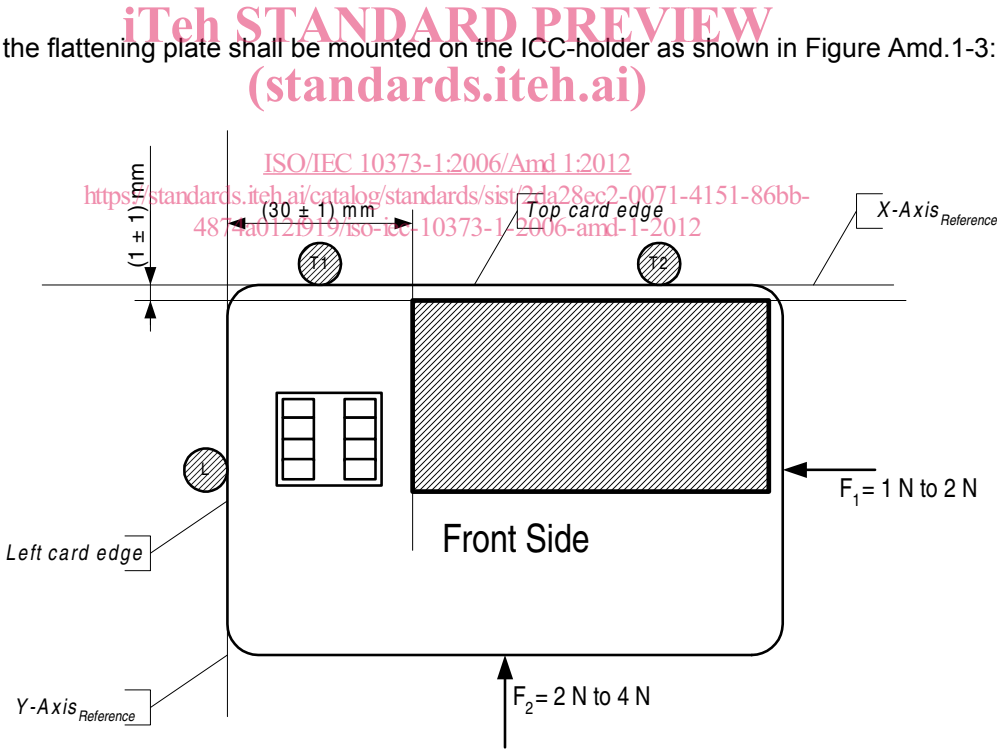


The surface roughness of the flattening plate shall be $R_a < 5 \mu\text{m}$.

Figure Amd.1-2 — Flattening plate

4.7.4 Default Measurement Position

The ICC and the flattening plate shall be mounted on the ICC-holder as shown in Figure Amd.1-3:



F_1 and F_2 are forces applied to the center of the right and the bottom edge of the card respectively to fix the card in the card-holder.
The flattening plate shall apply a force of $2,2 \text{ N} \pm 0,2 \text{ N}$ to the surface of the card

Figure Amd.1-3 — Position of ICC and flattening plate on ICC-holder

Page 9, 5.4.1.1.g)

Correct the formula for ethylene glycol to HOCH₂CH₂OH.

Page 23, Clause 5

After 5.16, add the following subclauses:

5.17 Dimension and Location of Contacts for ICCs with contacts

The purpose is to determine the compliance of the dimensions and the location of the ICC's contacts with ISO/IEC 7816-2.

5.17.1 Apparatus

An ICC-Holder and a flattening plate compliant with 4.7.1.

Any device capable of executing the procedure below with the defined accuracy.

5.17.2 Procedure

- a) Mount the ICC in the default measurement position as defined in 4.6.1.
- b) Construct two lines parallel to the X-Axis_{Reference} and two lines parallel to the Y-Axis_{Reference} on the ICC surface, forming the minimum contact area C1 as defined in ISO/IEC 7816-2 with an accuracy of equal to or better than 0,01 mm.
- c) Check if the rectangular area enclosed by the four lines is completely covered by contact metallization and note the result.
- d) Check if the metallization within the rectangular area enclosed by the four lines is connected to metallization in any other minimum contact area and note the result.
- e) Repeat b) to d) for the minimum contact areas C2 to C8.

5.17.3 Test report

The test report shall state for each observed minimum contact area, whether it is completely covered by contact metallization and if it is connected to metallization in any other minimum contact area.

5.18 Static electricity test for ICCs with contacts

IEC 60749-26 shall be used to test conformance with the static electricity requirements of the base standard.

5.18.1 Test Report

The test report shall state whether or not the card under test remained testably functional following the exposure.

5.19 Static electricity test for proximity and vicinity ICCs

The purpose of this test is to check the behaviour of the card IC in relation to electrostatic discharge (ESD) exposure in the test sample. The PICC or VICC under test is exposed to a simulated electrostatic discharge (ESD, human body model) and its basic operation checked following the exposure.

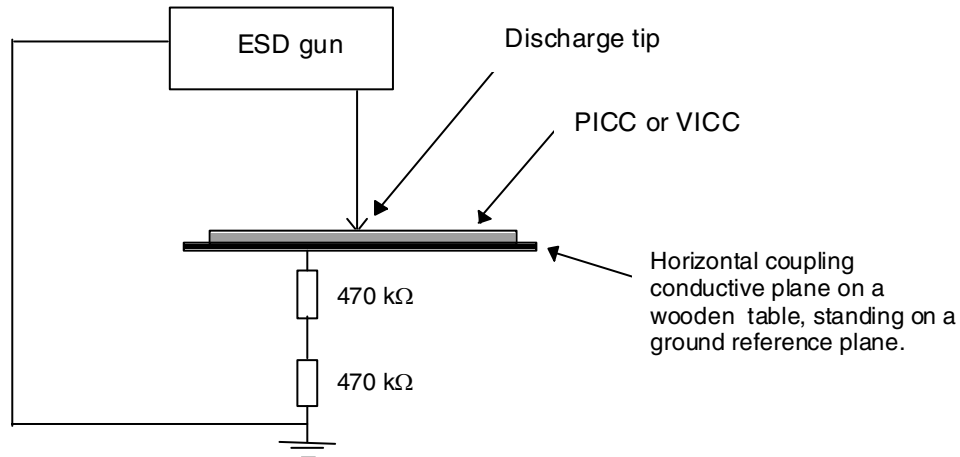


Figure Amd.1-4 — ESD test circuit

5.19.1 Apparatus

Refer to IEC 61000-4-2:1995.

a) Main specifications of the ESD generator:

- energy storage capacitance: $150 \text{ pF} \pm 10 \%$;
- discharge resistance: $330 \Omega \pm 10 \%$;
- charging resistance: between $50 \text{ M}\Omega$ and $100 \text{ M}\Omega$;
- rise time: $0,7 \text{ ns}$ to 1 ns .

b) Selected specifications from the optional items:

- type of equipment: table top equipment;
- discharge method: direct application of air discharge to the equipment under test;
- discharge electrodes of the ESD generator: Round tip probe of 8 mm diameter.

5.19.2 Test procedure

Connect the ground pin of the apparatus to the conductive plate upon which the PICC or VIVV is placed (see Figure Amd.1-4).

Apply the discharge successively in normal polarity to each of the 20 test zones shown in Figure Amd.1-5 ensuring that the discharge tip is not applied within 6 mm of the card perimeter (see the dashed boundary line in Figure Amd.1-5) and allowing a cool-down period between successive pulses of at least 10 s.

Repeat the procedure with reversed polarity.

WARNING — If the PICC or VICC includes contacts, the contacts shall face up and the zone which includes contacts shall not be exposed to this discharge.

Check that the PICC or VICC operates as intended at the end of the test.