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Identification cards — Physical characteristics

Cartes d'identification — Caractéristiques physiques

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Contents

Page

Foreword ... **iv**
Introduction ... **v**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Conformance ... **3**
5 Dimensions of card ... **3**
5.1 General ... 3
5.2 Card dimensions and tolerances ... 3
5.3 Card edges ... 5
6 Card construction ... **5**
7 Card materials ... **5**
8 Card characteristics ... **5**
8.1 Bending stiffness, ID-1 size card only ... 5
8.2 Toxicity ... 5
8.3 Resistance to chemicals ... 5
8.4 Card stability with temperature and humidity ... 6
8.5 Light ... 6
8.6 Durability ... 6
8.7 Peel strength ... 6
8.8 Adhesion or blocking ... 6
8.9 Opacity, ID-1 size card only ... 7
8.10 Overall card warpage, ID-1 size card only ... 7
8.11 Resistance to heat, ID-1 size card only ... 7
8.12 Surface distortions, raised and depressed areas ... 8
8.13 Contamination and interaction of card components ... 8
8.14 Dynamic bending stress, ID-1 size card only ... 8
9 Criteria for cards containing IC's ... **8**
9.1 General ... 8
9.2 X-rays ... 8
9.3 Static electricity ... 9
9.3.1 IC cards with contacts ... 9
9.3.2 Contactless IC cards ... 9
9.4 Operating temperature ... 9
9.5 Mechanical strength ... 9
9.5.1 General ... 9
9.5.2 Mechanical strength of cards with contacts (3 wheel test, ID-1 size card only) ... 9
9.5.3 Mechanical strength of contacts ... 9
9.6 Electrical surface resistance of contacts ... 9
9.7 IC and magnetic stripe electromagnetic interference ... 9
9.8 Resistance to chemicals ... 9
9.9 Antenna for contactless interface (ID-1 size card only) ... 10
9.10 Resistance to temperature and humidity ... 10
9.11 Dynamic torsion stress, ID-1 size card only ... 10
10 Card interface devices ... **10**
10.1 General ... 10
10.2 ESD robustness ... 10
Annex A (informative) **ID-000 size card as part of ID-1 size card** ... **11**
Bibliography ... **12**

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see http://patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

This fourth edition cancels and replaces the third edition (ISO/IEC 7810:2003), which has been technically revised. It also incorporates the Amendments ISO/IEC 7810:2003/Amd.1:2009 and ISO/IEC 7810:2003/Amd.2:2012.

The main changes compared to the previous edition are as follows:

— the test method and criteria for opacity has changed; previously the test method used a spectrophotometer and criteria included both visible and IR light; the present method uses 2 frequencies of only IR light and a reference material to establish compliance;

— criteria for cards containing certain types of IC's has been added (formerly these were in the specific IC card standards but as the same requirement applies to many types of IC cards they have been placed in this document);

— the heat deflection test (formerly Annex A) has been placed in ISO/IEC 10373-1;

— the clause on light exposure has additional explanation;

— the overall size tolerance of the ID-1 size returned card has changed (5.2);

— patch layer peel strength has been added and is lower than other values (8.7);

— address for availability of optical reference media has changed.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document defines the minimum physical requirements for the identification card and is used by the following identification card standards for recording technologies. Other standards not listed here may also refer to this document.

— ISO/IEC 7501 (all parts), *Identification cards — Machine readable travel documents*

— ISO/IEC 7811 (all parts), *Identification cards — Recording technique — Embossing and magnetic stripes*

— ISO/IEC 7812 (all parts), *Identification cards — Identification of issuers*

— ISO/IEC 7813, *Identification cards — Financial transaction cards*

— ISO/IEC 7816 (all parts), *Identification cards — Integrated circuit(s) cards with contacts*

— ISO/IEC 10373 (all parts), *Identification cards — Test methods*

— ISO/IEC 10536 (all parts), *Identification cards — Contactless integrated circuit(s) cards — Close-coupled cards*

— ISO/IEC 14443 (all parts), *Identification cards — Proximity integrated circuit(s) cards*

— ISO/IEC 15693 (all parts), *Identification cards — Vicinity integrated circuit(s) cards*

— ISO/IEC 11693-1, *Identification cards — Optical memory cards — Part 1: General characteristics*

— ISO/IEC 11694 (all parts), *Identification cards — Optical memory cards — Linear recording method*

— ISO/IEC 24789 (all parts), *Identification cards — Card service life*

— ISO/IEC 18328 (all parts), *Identification cards — ICC-managed devices*

NOTE Notes in this document are only used for giving additional information intended to assist in the understanding or use of this document and do not contain provisions or requirements to which it is necessary to conform in order to be able to claim compliance with this document.

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Identification cards — Physical characteristics

1 Scope

This document describes the characteristics for identification cards and the use of such cards for international interchange.

This document specifies the physical characteristics of identification cards including card materials, construction, characteristics and dimensions for four sizes of cards.

ISO/IEC 10373-1 and ISO/IEC 24789-2 specify the test procedures used to check cards against the parameters specified in this document.

This document specifies the requirements for cards and card interface devices used for identification. It takes into consideration both human and machine aspects and states minimum requirements.

It is the purpose of this document to provide criteria for the performance of cards. No consideration is given within this document to the amount of use, if any, experienced by the card prior to test.

NOTE 1 Numeric values in the SI and/or Imperial measurement system in this document have been rounded off and therefore are consistent with, but not exactly equal to, each other. Either system can be used, but intermixing or reconverting the two can result in errors. The original design was made using the Imperial measurement system.

NOTE 2 Thin flexible cards are not within the scope of this document (see the ISO/IEC 15457 series).

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.

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

ISO/IEC 10373-1[1)], *Identification cards — Test methods — Part 1: General characteristics*

ISO/IEC 24789-2, *Identification cards — Card service life — Part 2: Methods of evaluation*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) — Part 4-2: Testing and measurement techniques — Electrostatic discharge immunity test*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
identification card
card identifying its holder and issuer which may carry data required as input for the intended use of the card and for transactions based thereon

1) New edition under preparation. Stage at the time of publication: ISO/IEC DIS 10373-1:2019.

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3.2
signature panel
special material added to the card surface intended to have a signature applied

3.3
warpage
deviation from flatness

3.4
normal use
use as an *identification card* (3.1) involving equipment processes appropriate to the card technology, and storage as a personal document between equipment processes

3.5
ID-1
nominally 85,60 mm (3.370 in) wide by 53,98 mm (2.125 in) high by 0,76 mm (0.030 in) thick

3.6
ID-2
nominally 105,00 mm (4.134 in) wide by 74,00 mm (2.913 in) high by 0,76 mm (0.030 in) thick

3.7
ID-3
nominally 125,00 mm (4.921 in) wide by 88,00 mm (3.465 in) high by 0,76 mm (0.030 in) thick

3.8
raised area
area whose surface is raised above that of the surrounding card surface by addition of some feature such as a hologram, *signature panel* (3.2), magnetic stripe, photograph, *integrated circuit* (3.13) *contacts* (3.14), embossed characters, security elements, tactile elements, sensors, displays, buttons

3.9
unused card
card possessing all the components required for its intended purpose, which has not been subjected to any personalization or testing operation, and which has been stored in a clean environment at temperatures between 5 °C to 30 °C (41 °F to 86 °F) and humidity between 10 % to 90 % with no more than 48 h exposure to day-light without experiencing thermal shock

3.10
returned card
card which has been issued to the card holder and returned

3.11
ID-000
nominally 25 mm (0.984 in) wide by 15 mm (0.591 in) high by 0,76 mm (0.030 in) thick

3.12
opacity reference
reference card designated ORM 7810 used to establish opacity compliance

Note 1 to entry: Opacity reference cards can be ordered from Eclipse Laboratories, 1025 North Highway 3, Northfield, MN 55057, USA until at least 2027.

3.13
integrated circuit
electronic component designed to perform processing and/or memory functions

3.14
contact
conducting element ensuring galvanic continuity between *integrated circuit(s)* (3.13) and the external interfacing equipment

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3.15
ICC
ID-1 (3.5) size card containing one or more *integrated circuits* (3.13) independent of the interface

3.16
patch layer
die cut film applied during the card personalization process that is smaller than the *ID-1* (3.5) size height and width and does not extend to or beyond the edge of the card

3.17
personalized card
card possessing all the components required for its intended purpose which has been subjected to all personalization and finishing operations that has not been issued to the cardholder

3.18
operate as intended
operate in the manner described by the manufacturer's specification in accordance with the applicable standards

4 Conformance

An identification card is in conformance with this document if it meets all the mandatory requirements specified herein. Unless otherwise specified, default values apply. Failure to conform to specified criteria should be negotiated between the involved parties.

5 Dimensions of card

5.1 General

The following dimensions and tolerances apply to cards under the default test environment of 23 °C ± 3 °C (73 °F ± 5 °F) and 40 % to 60 % relative humidity.

5.2 Card dimensions and tolerances

All points on the edges of the card, except for the rounded corners, shall fall between two concentric, similarly aligned rectangles as defined in Figure 1 for maximum height and width, and minimum height and width. The corners shall be rounded with a radius as specified in Figure 1. One corner of the ID-000 size card shall have a bevel as shown in Figure 1. Care should be taken to avoid misalignment between the rounded corners and the straight edges of the card. The thickness of a card as defined here applies only to those parts of the card outside of any raised area.

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