INTERNATIONAL STANDARD

ISO/IEC 10373-2

Third edition
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Identification cards — Test methods —

Part 2: Cards with magnetic stripes

Cartes d'identification — Méthodes d'essai —

Partie 2: Cartes à bandeaux magnétiques

Reference number
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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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.

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.

ISO/IEC 10373-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology,* Subcommittee SC 17, *Cards and personal identification.*

This third edition cancels and replaces the second edition (ISO/IEC 10373-2:2006), which has been technically revised. It also incorporates the Technical Corrigendum ISO/IEC 10373-2:2006/Cor1:2010.

The user is encouraged to review the entire standard for revisions and updates. The major changes made during this revision are listed below.

— References to ISO/IEC 7811-8 and ISO/IEC 8484 were added.

— Calibration of reference current for ISO/IEC 7811-2 has been added. This will result in a small offset in requirements from the existing 2006 edition but will be equivalent to the requirements as written originally.

— Test densities of 500 ftpi have been changed to 508 ftpi to more closely agree with actual values used.

— Requirements that are different for different base standards have been moved into tables in most cases.

— In 5.5.2.3, Note 2 contained a normative requirement so it was moved out of note.

— The 2 cases of Figure 14 have been combined and a table was given. Conflicting symmetry requirements were resolved by taking T1 = T2 ± 0,02 T1.

— Description of correcting reference values was clarified and terms were deleted since these were not used. Reference to older editions of base standards was deleted.

— Contents of the technical corrigendum have been incorporated.

ISO/IEC 10373 consists of the following parts, under the general title *Identification cards — Test methods*:

— *Part 1: General characteristics*

— *Part 2: Cards with magnetic stripes*

— *Part 3: Integrated circuit cards with contacts and related interface devices*

— *Part 5: Optical memory cards*

— *Part 6: Proximity cards*

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— *Part 7: Vicinity cards*

— *Part 8: USB-ICC*

— *Part 9: Optical memory cards — Holographic recording method*

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Identification cards — Test methods —

Part 2:
Cards with magnetic stripes

1 Scope

ISO/IEC 10373 defines test methods for characteristics of identification cards according to the definition given in ISO/IEC 7810. Each test method is cross-referenced to one or more base standards, for example ISO/IEC 7810, or one or more of the supplementary standards that define the information storage technologies employed in identification card applications.

This part of ISO/IEC 10373 defines test methods which are specific to magnetic stripe technology.

NOTE 1 Criteria for acceptability do not form part of this part of ISO/IEC 10373 but will be found in the International Standards mentioned above.

NOTE 2 Test methods described in this part of ISO/IEC 10373 are intended to be performed separately. A given card is not required to pass through all the tests sequentially.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1302, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*

ISO 2409, *Paints and varnishes — Cross-cut test*

ISO 3274, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Nominal characteristics of contact (stylus) instruments*

ISO 4288, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture*

ISO/IEC 7810, *Identification cards — Physical characteristics*

ISO/IEC 7811-2, *Identification cards — Recording technique — Part 2: Magnetic stripe — Low coercivity*

ISO/IEC 7811-6, *Identification cards — Recording technique — Part 6: Magnetic stripe — High coercivity*

ISO/IEC 7811-7, *Identification cards — Recording technique — Part 7: Magnetic stripe — High coercivity, high density*

ISO/IEC 7811-8, *Identification cards — Recording technique — Part 8: Magnetic stripe — Coercivity of 51,7 kA/m (650 Oe)*

ISO/IEC 8484, *Information technology — Magnetic stripes on savingsbooks*

IEC 60454-2, *Pressure-sensitive adhesive tapes for electrical purposes — Part 2: Methods of test*

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3 Terms and definitions

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

NOTE Static magnetic characteristics definitions were originally derived from IEC 50–221 (which has been replaced by IEC 60050–221) and ISO 31-5:1992 (which has been replaced by IEC 80000–6).

3.1
test method
method for testing characteristics of identification cards for the purpose of confirming their compliance with International Standards

3.2
testably functional
has survived the action of some potentially destructive influence to the extent that

a) any magnetic stripe present on the card shows a relationship between signal amplitudes before and after exposure that is in accordance with the base standard

b) any integrated circuit(s) present in the card continue to show an Answer to Reset response[1)] which conforms to the base standard

c) any contacts associated with any integrated circuit(s) present in the card continue to show electrical resistance and impedance which conform to the base standard

d) any optical memory present in the card continues to show optical characteristics which conform to the base standard

e) any contactless integrated circuit(s) in the card continue to operate as intended

3.3
warpage
deviation from flatness

3.4
flux transitions per millimetre
ft/mm
linear recording density applied to a track on a magnetic stripe

3.5
recording
creating a track of flux reversals according to a test method given in this part of ISO/IEC 10373, with the values of all applicable test parameters specified

3.6
encoding
creating a track of flux reversals whose spacing is modified, according to a coding scheme, to represent data

3.7
surface roughness
surface topology of an area of surface, qualified in the International Standards by reference to various resolution determinants and methods of calculation

3.8
amplitude measurements
⟨magnetic stripe⟩ measurement of read-back signal amplitude according to a test method given in this part of ISO/IEC 10373, with the values of all applicable test parameters specified

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1) This part of ISO/IEC 10373 does not define any test to establish the complete functioning of integrated circuit(s) cards. The test methods require only that the minimum functionality (testably functional) be verified. This can, in appropriate circumstances, be supplemented by further application-specific functionality criteria which are not available in the general case.

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