

---

---

**Identification cards — Physical  
characteristics**

**AMENDMENT 1: Criteria for cards  
containing integrated circuits**

*Cartes d'identification — Caractéristiques physiques*

*AMENDEMENT 1: Critères pour les cartes contenant des circuits  
intégrés*

IECNORM.COM : Click to view the full PDF of ISO/IEC 7810:2003/AMD1:2009

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

IECNORM.COM : Click to view the full PDF of ISO/IEC 7810:2003/AMD1:2009



**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2009

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

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](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## 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 of all such patent rights.

Amendment 1 to ISO/IEC 7810:2003 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

It reflects a transfer of certain physical requirements from integrated circuit card standards (primarily ISO/IEC 14443-1).

IECNORM.COM : Click to view the full PDF of ISO/IEC 7810:2003/AMD1:2009

## Identification cards — Physical characteristics

### AMENDMENT 1: Criteria for cards containing integrated circuits

*Page v, Introduction*

Add the following after list item 6:

“7. Criteria for cards containing certain types of integrated circuit have been added.”

*Page 1, Clause 3*

Add the following to the list of normative references:

ISO/IEC 10373-3, *Identification cards — Test methods — Part 3: Integrated circuit cards with contacts and related interface devices*

ISO/IEC 10373-6, *Identification cards — Test methods — Part 6: Proximity cards*

ISO/IEC 10373-7, *Identification cards — Test methods — Part 7: Vicinity cards*

*Page 6*

Add the following new clause after 8.14:

## 9 Criteria for cards containing integrated circuits

The following characteristics only apply to cards containing integrated circuits (ICs).

### 9.1 X-rays

The card shall continue to operate as intended after exposure of any card surface to medium-energy X-radiation as described in the test methods in ISO/IEC 10373-1, with energy in the range of 70 keV to 140 keV, of a cumulative dose of 0,1 Gy per year.

NOTE This corresponds to approximately twice the maximum acceptable dose to which humans may be exposed annually.

### 9.2 Dynamic bending stress

When subjected to a total of 1 000 bending cycles, the card shall remain testably functional and shall not show any cracked part after testing the card in accordance with the test methods described in ISO/IEC 10373-1.

### 9.3 Dynamic torsional stress

When subjected to a total of 1 000 torsion cycles, the card shall remain testably functional and shall not show any cracked part after testing in accordance with the test methods described in ISO/IEC 10373-1.

## 9.4 Static electricity

### 9.4.1 Contact IC cards

The card shall not be damaged in normal use by a person charged with static electricity.

The performance of the card shall not be degraded by exposure to a static discharge in accordance with the test methods described in ISO/IEC 10373-3 between any contact and ground of a voltage of 2 kV through a resistance of 1 500 ohm from a capacitor of 100 pF.

### 9.4.2 Contactless IC cards

The card shall continue to operate as intended after testing in accordance with the static electricity test methods described in ISO/IEC 10373-6 and ISO/IEC 10373-7 with a test voltage of 6 kV.

NOTE The referenced test methods will eventually be moved to ISO/IEC 10373-1.

## 9.5 Operating temperature

The card shall operate as intended over an ambient temperature range of 0 °C to 50 °C.

IECNORM.COM : Click to view the full PDF of ISO/IEC 7810:2003/AMD1:2009