SLOVENSKI STANDARD
SIST EN 29171-1:1997

01-december-1997

Information technology - 130 mm optical disk cartridge, write once, for information interchange - Part 1: Unrecorded optical disk cartridge (ISO/IEC 9171-1:1990)

Information technology - 130 mm optical disk cartridge, write once, for information interchange - Part 1: Unrecorded optical disk cartridge (ISO/IEC 9171-1:1990)

Informationstechnik - 130 mm Optische Plattenspeicher - Einmal beschreibbar, für den Informationsaustausch - Teil 1: Unbeschriebene optische Platte (ISO/IEC 9171-2:1990)

Technologies de l'information - Cartouche de disque optique de 130 mm, non-réinscriptible, pour l'échange d'information - Partie 1: Cartouche de disque optique vierge (ISO/IEC 9171-1:1990)

Ta slovenski standard je istoveten z: **EN 29171-1:1993**

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EUROPEAN STANDARD

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Descriptors: Data processing, information interchange, document storage, optical disks, packing, testing conditions, dimensions, mechanical properties, optical properties, recording characteristics

English version

Information technology - 130 mm optical disk cartridge, write once, for information interchange - Part 1: Unrecorded optical disk cartridge (ISO/IEC 9171-1:1990)

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This European Standard was approved by CEN on 1993-02-09. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Foreword

The Technical Board has decided to submit the International Standard

ISO/IEC 9171-1:1990 "Information technology - 130 mm optical disk cartridge, write once, for information interchange - Part 1: Unrecorded optical disk cartridge"

for Formal Vote.

The Formal Vote was positive.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 1993, and conflicting national standards shall be withdrawn at the latest by September 1993.

In accordance with the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of this European Standard is identical to the text of the International Standard ISO/IEC 9171-1:1990 without any modifications.

INTERNATIONAL STANDARD

ISO/IEC 9171-1

First edition
1990-12-15

Information technology — 130 mm optical disk cartridge, write once, for information interchange —

Part 1: Unrecorded optical disk cartridge

Technologies de l'information — Cartouche de disque optique de 130 mm, non-réinscriptible, pour l'échange d'information —
Partie 1: Cartouche de disque optique vierge

Reference number
ISO/IEC 9171-1 : 1990 (E)

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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. 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.

International Standard ISO/IEC 9171-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

ISO/IEC 9171 consists of the following parts, under the general title: *Information technology — 130 mm optical disk cartridge, write once, for information interchange*:

Part 1: Unrecorded optical disk cartridge

Part 2: Recording format

Annexes C and D form an integral part of this part of ISO/IEC 9171. Annexes A and B are for information only.

INTRODUCTION

ISO/IEC 9171 specifies the characteristics of 130 mm optical disk cartridges (ODC) of the type providing for information to be written once and read many times. ISO/IEC 9171-2 specifies two formats for the physical disposition of the tracks and sectors, the error correction codes, the modulation methods used for recording and the quality of the recorded signals.

ISO/IEC 9171-1 and ISO/IEC 9171-2 together with a standard for volume and file structure provide for full data interchange between data processing systems.

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Information technology — 130 mm optical disk cartridge, write once, for information interchange —

Part 1:
Unrecorded optical disk cartridge

1 Scope

This part of ISO/IEC 9171 specifies

- definitions of essential concepts,
- the environment in which the characteristics are to be tested,
- the environments in which the cartridge is to be operated and stored,
- the mechanical, physical and dimensional characteristics of the case and of the optical disk,
- the optical characteristics and the recording characteristics for recording the information once and for reading it many times, so as to provide physical interchangeability between data processing systems.

2 Conformance

A 130 mm optical disk cartridge is in conformance with this part of ISO/IEC 9171 if it meets all the mandatory requirements specified therein.

3 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 9171. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 9171 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 683-13 *Heat treatable steels, alloy steels and free-cutting steels - Part 13 Wrought stainless steels*

IEC 950 *Safety of information technology equipment including electrical business equipment*

4 Definitions

For the purposes of this part of ISO/IEC 9171, the following definitions apply.

4.1 case: The housing for an optical disk, that protects the disk and facilitates disk interchange.

4.2 Clamping Zone: The annular part of the disk within which the clamping force is applied by the clamping device.

4.3 Control Track: A track containing the information on media parameters and format necessary for writing and reading the remaining tracks on the optical disk.

4.4 cyclic redundancy check (CRC): A method for detecting errors in data.

4.5 **defect management:** A method for handling defective areas on the disk.

4.6 **disk reference plane:** A plane defined by the perfectly flat annular surface of an ideal spindle on to which the clamping zone of the disk is clamped, and which is normal to the axis of rotation.

4.7 **entrance surface:** The surface of the disk on to which the optical beam first impinges.

4.8 **error correction code (ECC):** An error-detecting code designed to correct certain kinds of errors in data.

4.9 **format:** The arrangement or layout of the data on a medium.

4.10 **groove:** See 4.13.

4.11 **hub:** The central feature on the disk which interacts with the spindle of the disk drive to provide radial centring and the clamping force.

4.12 **interleaving:** The process of allocating the physical sequence of units of data so as to render the data more immune to burst errors.

4.13 **land and groove:** A trench-like feature of the disk, applied before the recording of any information, and used to define the track location. The groove is located nearer to the entrance surface than the land with which it is paired to form a track.

4.14 **mark:** A feature of the recording layer which may take the form of a hole, a pit, a bubble or any other type or form that can be sensed by the optical system. The pattern of marks represents the data on the disk.

4.15 **optical disk:** A disk that will accept and retain information in the form of marks in a recording layer, that can be read with an optical beam.

4.16 **optical disk cartridge (ODC):** A device consisting of a case containing an optical disk.

4.17 **recording layer:** A layer of the disk on, or in, which data is written during manufacture and/or use.

4.18 **Reed-Solomon code:** An error detection and/or correction code which is particularly suited to the correction of errors which occur in bursts or are strongly correlated.

4.19 **spindle:** The part of the disk drive which contacts the disk and/or hub.

4.20 **substrate:** A transparent layer of the disk, provided for mechanical protection of the recording layer, through which the optical beam accesses the recording layer.

4.21 **track:** The path which is followed by the focus of the optical beam during one revolution of the disk.

4.22 **track pitch:** The distance between adjacent track centrelines, measured in a radial direction.

5 General description

The optical disk cartridge which is the subject of this part of ISO/IEC 9171 consists of a case containing an optical disk. An optical beam is used to write data to, or to read data from, the disk.

A disk can be recordable either on one or on both sides.

The disk is intended for use in a drive with optical access from one side only. To gain access to the second side of a disk recordable on both sides, the cartridge must be reversed before insertion into the drive.

A disk recordable on one side only consists of a transparent protective layer acting as a substrate with a recording layer on one side and a hub on the other. The recording layer is accessed by an optical beam through the substrate. A disk recordable on both sides consists of two disks, each recordable on one side, and assembled together with the recording layers on the inside.

Other constructions are permitted but must have the same optical characteristics.

6 Environments

6.1 Testing environment

Unless otherwise specified, tests and measurements made on the optical disk cartridge to check the requirements of this part of ISO/IEC 9171 shall be carried out in an environment where the air immediately surrounding the optical disk cartridge is within the following conditions.

Temperature	23°C ± 2°C
Relative humidity	45% to 55%
Atmospheric pressure	100 kPa ± 3,5 kPa

Before testing the optical disk cartridge shall be conditioned in this environment for 48 h minimum. No condensation on or in the optical disk cartridge shall occur.

6.2 Operating environment

Optical disk cartridges used for data interchange shall be operated in an environment where the air immediately surrounding the optical disk cartridge is within the following conditions.

Temperature	10°C to 50°C
Relative humidity	10% to 80%
Wet bulb temperature	29°C max.
Atmospheric pressure	75 kPa to 105 kPa
Temperature gradient	10°C /h max.
Relative humidity gradient	10% /h max.
Air cleanliness	office environment (see Annex A)

No condensation on or in the optical disk cartridge shall be allowed to occur.

If an optical disk cartridge has been exposed during storage and/or transportation to conditions outside those given above, it shall be acclimatised in the operating environment for at least 2 h before use. In the operating environment an ODC shall be capable of withstanding a thermal shock of up to 20 °C when inserted into, or removed from, the drive.

6.3 Storage environments

Storage environment is the ambient condition to which the optical disk cartridge without any additional protective enclosure, is exposed when stored.

6.3.1 Short-term storage

For a maximum period of 14 consecutive days the optical disk cartridge shall not be exposed to environmental conditions outside those given below.

Temperature	-20°C to 55°C
Relative humidity	5% to 90%
Wet bulb temperature	29°C max.
Atmospheric pressure	75 kPa to 105 kPa
Temperature gradient	20°C /h max.
Relative humidity gradient	20% /h max.
Air cleanliness	office environment (see Annex A)

No condensation on or in the optical disk cartridge shall be allowed to occur.