
**Information processing — Volume and
file structure of CD-ROM for information
interchange**

AMENDMENT 1

*Traitement de l'information — Structure de volume et de fichier des
disques optiques compacts à mémoire fixe (CD-ROM) destinés à
l'échange d'information*
AMENDEMENT 1

ISO 9660:1988/Amd 1:2013

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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.

Amendment 1 to ISO 9660:1988 was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 23, *Digitally Recorded Media for Information Interchange and Storage*.

This amendment is intended to bring harmonization between ISO 9660 and widely used "Joliet Specification".

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AMENDMENT 1

In subclause 6.7 "Volume descriptors", after the line

- Supplementary Volume Descriptor

insert the following line.

- Enhanced Volume Descriptor

Add the following subclause 6.7.1.3 after subclause 6.7.1.2

6.7.1.3 The sequence may contain zero or more Enhanced Volume Descriptors (see 8.5) each recorded at least once.

An Enhanced Volume Descriptor shall describe the Volume Space, and identify the attributes of the volume, the locations of a Root Directory and of group Path Tables, and the number of volumes in the Volume Set. It shall also identify the coded graphic character set used within selected fields of this descriptor, and of the fields in associated File Descriptors, Directory Descriptors and Path Tables.

Renumber subclauses 6.7.1.3 to 6.7.1.4, 6.7.1.4 to 6.7.1.5, and 6.7.1.5 to 6.7.1.6.

In subclause 6.8.2 replace the following sentence

The root of the hierarchy, called the Root Directory, shall be a directory identified either in a Primary Volume Descriptor or in a Supplementary Volume Descriptor.

with

The root of the hierarchy, called the Root Directory, shall be a directory identified in a Primary Volume Descriptor, Supplementary Volume Descriptor or Enhanced Volume Descriptor.

In subclause 6.8.2.1 replace the following sentences

The number of levels in the hierarchy shall not exceed eight. In addition, for each file recorded, the sum of the following shall not exceed 255:

with

For a Directory Hierarchy identified in a Primary Volume Descriptor or in a Supplementary Volume Descriptor, the number of levels in the hierarchy shall not exceed eight. For a Directory Hierarchy identified in an Enhanced Volume Descriptor, the number of levels in the hierarchy may exceed eight. In addition, for each file recorded, the sum of the following shall not exceed 255:

In subclause 6.8.3 replace following sentence

Each additional Directory Hierarchy shall be identified in a Supplementary Volume Descriptor.

with

Each additional Directory Hierarchy shall be identified in a Supplementary Volume Descriptor or an Enhanced Volume Descriptor.

In subclause 6.9.1 replace following sentence

If two Directory Identifiers do not contain the same number of byte positions, the shorter Directory Identifier shall be treated as if it were padded on the right with all padding bytes set to (20), and as if both Directory Identifiers contained the identical number of byte positions.

with

If two Directory Identifiers do not contain the same number of byte positions, the shorter Directory Identifier shall be treated as if it were padded on the right with all padding bytes set to FILLER (see 7.4.3.2), and as if both Directory Identifiers contained the identical number of byte positions.

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Replace subclause 7.4.3 "Separators"

7.4.3 Separators

The characters separating the components of a File Identifier shall be

SEPARATOR 1 represented by the bit combination (2E)

SEPARATOR 2 represented by the bit combination (3B)

with

7.4.3 Separators and Filler

7.4.3.1 Separators

The characters separating the components of a File Identifier within a Directory Hierarchy that is identified in a Primary Volume Descriptor or in a Supplementary Volume Descriptor shall be

SEPARATOR 1 represented by the bit combination (2E)

SEPARATOR 2 represented by the bit combination (3B)

A File Identifier within a Directory Hierarchy that is identified in an Enhanced Volume Descriptor shall not be separated into components.

SEPARATORS are not specified for a File Identifier within a Directory Hierarchy that is identified in an Enhanced Volume Descriptor.

7.4.3.2 Filler

The character filling any byte position which is specified by this International Standard to be characters shall be referred to as FILLER.

Within a volume that is identified by a Primary Volume Descriptor or by a Supplementary Volume Descriptor, the bit combination of FILLER shall be (20).

Within a volume that is identified by an Enhanced Volume Descriptor, the bit combination of FILLER shall be subject to agreement between the originator and the recipient of the volume.

In following subclauses replace all "(20)" with "FILLER".

7.4.5, 8.4.20, 8.4.21, 8.4.22, 8.4.23, 8.4.24, 8.4.25, 8.5.14, 8.5.15, 8.5.16, 8.5.17, 8.5.18, 8.5.19, 9.3 a), 9.3 b)

Add the following lines at the end of subclause 7.4.4

The character in the fields of the following descriptors is the subject of an agreement between the originator and the recipient of the volume.

- Directory Records within a Directory Hierarchy that is identified in an Enhanced Volume Descriptor;
- Path Table Records within a Path Table Group identified in an Enhanced Volume Descriptor;
- Extended Attribute Records identified in a directory of a Directory Hierarchy that is identified in an Enhanced Volume Descriptor.

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In subclause 7.5.1 "File Identifier format" replace following line

This sequence shall meet the following requirements:

with

Within a Directory Hierarchy that is identified in a Primary Volume Descriptor or in a Supplementary Volume Descriptor, this sequence shall meet the following requirements:

Add the following lines at the end of subclause 7.5.1 "File Identifier format"

Within a Directory Hierarchy that is identified in an Enhanced Volume Descriptor, this sequence shall meet the following requirements:

- the Length of File Name shall not exceed 207.
- no SEPARATORS are specified.
- no File Name Extension is present.
- no File Version Number is present.

Within a Directory Hierarchy that is identified in an Enhanced Volume Descriptor, a File Identifier shall not be specified as certain character sequences. These sequences shall be subject to agreement between the originator and recipient of the volume.

NOTE - 207 (the maximum length of the File Name) is the 254 (the maximum Directory Record Length), subtracted by 33 (the minimum length of Directory Record excluding the File Identifier) and by 14 (the CD-ROM XA System Use Extension Information) (see PHILIPS and SONY, System Description CD-ROM XA, 1991-05).

Replace subclause 7.5.2 "File Identifier length"

7.5.2 File Identifier length

The length of the File Identifier shall be the sum of the following:

- if there is a File Name, the length of the File Name,*
- if there is a File Name Extension, the length of the File Name Extension,*
- the number of digits in the File Version Number,*
- 2 (the number of SEPARATORS).*

with

7.5.2 File Identifier length

The length of the File Identifier shall be the sum of the following:

- if there is a File Name, the length of the File Name,*
- if there is a File Name Extension, the length of the File Name Extension,*
- if there is a File Version Number, the number of digits in the File Version Number,*
- if SEPARATORS are specified, 2 (the number of SEPARATORS).*

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Add the following lines at the end of subclause 7.6.1 "Directory Identifier Format"

Within a volume identified by an Enhanced Volume Descriptor, a Directory Identifier can be sequence of characters rather than d-characters or d1-characters. The sequence shall be subject to agreement between the originator and recipient of the volume.

Replace subclause 7.6.3 "Directory Identifier length"

7.6.3 Directory Identifier length

The length of a Directory Identifier shall not exceed 31.

with

7.6.3 Directory Identifier length

Within a Directory Hierarchy that is identified in a Primary Volume Descriptor or in a Supplementary Volume Descriptor, the length of a Directory Identifier shall not exceed 31.

Within a Directory Hierarchy that is identified in an Enhanced Volume Descriptor, the length of a Directory Identifier shall not exceed 207.

*In subclause 8.1.1 "Volume Descriptor Type (BP 1)" replace the line
Number 2 shall mean that the Volume Descriptor is a Supplementary Volume Descriptor;*

with

Number 2 shall mean that the Volume Descriptor is a Supplementary Volume Descriptor or an Enhanced Volume Descriptor;

*In subclause 8.4.30 "File Structure Version (BP 882)" replace the line
1 shall indicate the structure of this International Standard.*

with

For a Primary Volume Descriptor or for a Supplementary Volume Descriptor, 1 shall indicate the structure of this International Standard. For an Enhanced Volume Descriptor, 2 shall indicate the structure of this International Standard.

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*In subclause 8.5 "Supplementary Volume Descriptor" replace the following line
8.5 Supplementary Volume Descriptor*

with

8.5 Supplementary Volume Descriptor and Enhanced Volume Descriptor

In subclause 8.5 replace the following description

The Supplementary Volume Descriptor shall identify the volume,

with

The Supplementary Volume Descriptor or the Enhanced Volume Descriptor shall identify the volume,

Replace the title of Table 6

Table 6 - Supplementary Volume Descriptor

with

Table 6 - Supplementary Volume Descriptor and Enhanced Volume Descriptor