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Freight containers — Coding, identification and marking

Conteneurs pour le transport de marchandises — Codage, identification et marquage

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 ISO documents 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 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).

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.

This document was prepared by Technical Committee ISO/TC 104, *Freight containers*, Subcommittee SC 4, *Identification and communication,* in collaboration with European Committee for Standardization (CEN) Technical Committee CEN/TC 119*, Intermodal loading units and Cargo securing (ILUCS),* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 6346:1995), which has been technically revised. It also incorporates the Amendment ISO 6346:1995/Amd 3:2012.

The main changes are as follows:

— Incorporation of previous amendments to the standard to include the provision of markings to identify containers with reduced stacking or racking;

— Inclusion of new markings to identify over width containers;

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.

Freight containers — Coding, identification and marking

1 Scope

1.1 This document provides a system for the identification and presentation of information about freight containers. The identification system is intended for general application, for example in documentation, control and communications (including automatic data processing systems), as well as for display on the containers themselves.

The methods of displaying identification and certain other data (including operational data) on containers by means of permanent marks are included.

1.2 This document specifies:

a) a container identification system, with an associated system for verifying the accuracy of its use, having:

   — mandatory marks for the presentation of the identification system for visual interpretation, and

   — features to be used in optional Automatic Equipment Identification (AEI) and electronic data interchange (EDI);

b) a coding system for data on container size and type, with corresponding marks for their display;

c) operational marks, both mandatory and optional;

d) physical presentation of marks on the container.

1.3 The terms “mandatory” and “optional” in this document are used to differentiate those ISO marking provisions which shall necessarily be fulfilled by all containers from those which are not required of all containers. The optional marks are included to further comprehension and promote uniform application of the optional mark. If a choice has been made to display an optional mark, the provisions laid down in this document relating to the mark shall be applied. The terms “mandatory” and “optional” do not refer to requirements of any regulatory body.

1.4 This document applies to all freight containers covered by International Standards ISO 668, parts 1 to 5 of ISO 1496, ISO 8323 and should, wherever appropriate and practicable, be applied:

— to containers other than those covered by the International Standards mentioned in Clause 2;

— to container-related and/or detachable equipment.

NOTE 1 Containers marked according to previous editions of ISO 6346 need not be re-marked.

1.5 This document does not cover temporary operational marks of any kind, permanent marks, data plates, etc. which may be required by intergovernmental agreements, national legislation or nongovernmental organizations.

NOTE 2 Some of the major international conventions whose container-marking requirements are not covered in this document are as follows:

— International Convention for Safe Containers (1972, as amended) (CSC), International Maritime Organization (IMO);

— Customs Convention on Containers 1956 and 1972, related to temporary admission and transport under customs seal.

— Convention on Temporary Admission (Istanbul, 26 June 1990), related to temporary admission.

It should not be assumed that this list is exhaustive.

This document does not cover the display of technical data on tank containers (see ISO 1496-3), nor does it, in any way, include identification marks or safety signs for items of cargo which may be carried in freight containers.

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 10374, *Freight containers — Automatic identification*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

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

4 Identification system and its associated marks

4.1 Identification system

4.1.1 General

The identification system shall consist only of the following elements, all of which shall be included:

— owner code: three letters (see 4.1.2);

— equipment category identifier: one letter (see 4.1.3);

— serial number: six numerals (see 4.1.4);

— check digit: one numeral (see 4.1.5).

4.1.2 Owner code

Reference (1) in Figures 1 to 4

The container owner's code shall consist of three capital letters, shall be unique and shall be registered with the Registration Authority.

The name and contact information of the Registration Authority for this document can be found at www.iso.org/maintenance_agencies.

4.1.3 Equipment category identifier

Reference (2) in Figures 1 to 4

The equipment category identifier consists of one capital letter of the Latin alphabet as follows:

— U for all freight containers;

— J for detachable freight container-related equipment;

— Z for trailers and chassis.

4.1.4 Serial number

Reference (3) in Figures 1 to 4

The container serial number shall consist of six Arabic numerals. If the series of significant numerals does not total six, they shall be preceded by sufficient zeroes to make up six numerals (for example, if the series of significant numerals is 1234, the serial number is 001234).

4.1.5 Check digit

*Re*ference (4) in Figures 1 to 4

The check digit provides a means of validating the transmission accuracy of the owner code and serial number and shall be determined as in Annex A. The check digit shall validate the owner code, equipment category identifier and serial number of the container.

4.2 Identification marks

The use of marks in accordance with the identification system specified in 4.1, i.e. owner code, equipment category identifier, serial number and check digit, is mandatory for freight containers and recommended for all equipment as stated in 4.1.3. The characteristics (size, shape, layout, etc.) detailed in 7.1 and 7.2.1 shall be displayed as nearly as practicable in accordance with Clause 7, i.e., legible to the human eye.

5 Size and type codes and their associated marks

5.1 Purpose

The type and main external dimensions of the container shall be identified with codes marked on the container. Only those freight containers which conform with both the ISO top-handling capability and structural stacking requirements set forth in ISO 1496 shall be marked with size and type codes in accordance with 5.2.2 and 5.2.3.

5.2 Size and type codes

5.2.1 General

This information is mandatory for the marking of containers covered by the International Standards listed in Clause 2 and shall be coded as in 5.2.2 and 5.2.3.

The size and type codes, when displayed on the container, shall be used as a whole, i.e., the information must not be broken into its component parts.

The size and type codes shall be displayed in accordance with Clause 7.

5.2.2 Size: two alphanumeric characters

Reference (5) in Figures 1 to 4

The container size (i.e. external dimensions) shall be indicated by two characters as follows:

— First character: numeric or alphabetic character representing the length.

— Second character: numeric or alphabetic character representing the width and the height.

These two characters shall be determined in accordance with Annex D.

5.2.3 Type: two characters

Reference (6) in Figures 1 to 4

The container type and main characteristics shall be indicated by two characters as follows:

— First character: alphabetic character representing the container type.

— Second character: numeric or alphabetic character representing main characteristics related to the container type.

These two characters shall be selected in accordance with Annex E.

NOTE For the purpose of exchanging data when indication of the main characteristics is not essential, the "type group code designation" as shown in Annex E can be used.

6 Operational marks

6.1 General

The marks in this section are not intended to correspond to any particular code (e.g., for use in data transmission or any other purpose). They are solely intended as markings for use on freight containers to convey certain information or give visual warnings.

6.2 Mandatory operational marks

6.2.1 Maximum gross and tare masses

The maximum gross and tare masses shall be marked on a container as:

MAX GROSS	00 000 kg
	00 000 lb
TARE	00 000 kg
	00 000 lb

For safety reasons, containers tested in conformance with the approved methods specified in that part of ISO 1496 applicable to the type of container in question, i.e., parts 1, 2, 3, 4 or 5 of ISO 1496, shall be uniformly marked with the maximum gross mass used for those tests.

Furthermore, the "maximum gross mass" marked on the container in accordance with this document shall be identical to that shown on the CSC Safety Approval Plate.

As indicated above, the masses shall be expressed in both kilograms (kg) and pounds (lb).

NOTE 1 kg = 2 204 lb.

6.2.2 Air/surface container symbol

All air/surface containers shall display the symbol specified in Annex B.

6.2.3 Warning sign of overhead electrical danger

All containers equipped with ladders shall display a warning sign in accordance with the details given in Annex C.

6.2.4 Height mark for containers higher than 2,6 m (8 ft 6 in)

All containers higher than 2,6 m (8 ft 6 in) shall bear the following mandatory marks:

a) on both sides, a height mark similar to that described in Annex F;

b) an area of alternating black and yellow stripes on the top members of each end frame and side wall at each corner adjacent to the corner fitting, of 300 mm (12 in) minimum length, that can be seen from the ground or from the top. See Figure 5.

In addition, any other optional marks, such as a mirror image of the mark described in Annex F, may be displayed at any convenient location (e.g., front wall).

6.2.5 Width mark for containers with an overall width greater than 2 438 m (8 ft).

All containers with an overall width greater than 2 438 m (8 ft) shall bear a mark similar to that described in Annex G on the ends and the roof at both ends.

Where there is insufficient space to fit the marking on the ends or the roof, for example on tank containers, the marking shall be as wide as is practicable on the ends and may be omitted on the roof.

6.3 Optional operational mark (maximum mass of payload)

It is common industry practice to mark containers with maximum payload in addition to the maximum gross and tare masses.

If used, the maximum mass of payload should be marked on a container in accordance with the requirements of 6.2.1, positioned after the maximum gross and tare masses as follows:

MAX GROSS	**00 000 kg** **00 000 lb**
TARE	**00 000 kg** **00 000 lb**
PAYLOAD	**00 000 kg** **00 000 lb**

7 Physical display of marks

7.1 Size and colour of marks

The letters and numerals of the owner code, equipment category identifier, serial number and check digit shall be not less than 100 mm (4 in) high.

The letters and numerals for MAX GROSS, TARE and, when used, PAYLOAD shall be not less than 50 mm (2 in) high.

All characters shall be of proportionate width and thickness, they shall be durable and in a colour contrasting with that of the container.

7.2 Layout and location of marks

The requirements of this clause are particularly applicable to containers of the “closed box” type. For containers of other types, all possible practicable steps should be taken to follow the marking layout and location given for the “closed box” type of container.

7.2.1 Layout of marks

7.2.1.1 General

The layout of the owner code, equipment category identifier, serial number and check digit on containers shall preferably be in one single horizontal line (see Figure 1). Where constructional features of the container dictate otherwise, the layout may be vertical (see Figure 2).

The layout of size and type codes should, as far as practicable, be in a single horizontal line underneath the horizontal line giving the owner code, equipment category identifier, serial number and check digit (see Figure 1).

When the owner code, equipment category identifier, serial number and check digit are displayed vertically, the size and type codes should be placed adjacent to the other mandatory marks (see Figure 2 and Figure 3).

If, on some special-purpose containers, a fully horizontal or fully vertical layout is not possible, the layout of the other mandatory identification marks shall be maintained in the horizontal or vertical groupings as specified below (see Figure 3 and Figure 4).

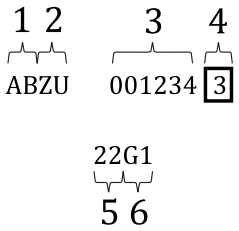
On those special-purpose containers where a fully horizontal or fully vertical layout is not possible and the layout of the other mandatory identification marks is horizontal, the size and type codes should be placed beneath the other mandatory marks (see Figure 4).

The size and type codes should be used as a whole (see 5.2).

The owner code and equipment category identifier shall be joined and shall be separated from the serial number by at least one character space. The serial number shall be separated from the check digit by one character space and the check digit shall be displayed in a box.

EXAMPLE

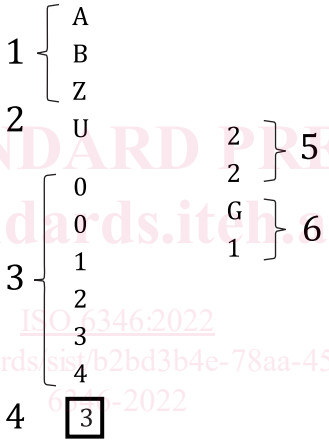
A general purpose container in accordance with ISO 1496, having passive vents at the upper part of the cargo space, a length of 6 068 mm, a width of 2 438 mm, a height of 2 591 mm, having a unique registered owner code of ABZ, an equipment category identifier of U and a serial number of 001234 will have the layout as shown in Figure 1 to Figure 4.



Key

1 owner's code
2 category identifier
3 serial number
4 check digit
5 size code
6 type code

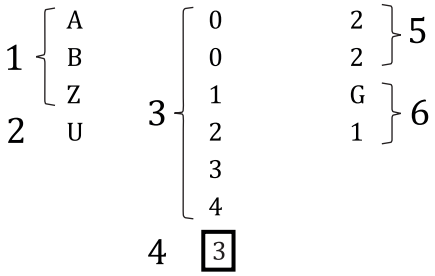
Figure 1 — Mandatory identification marks - preferred horizontal layout



Key

1 owner's code
2 category identifier
3 serial number
4 check digit
5 size code
6 type code

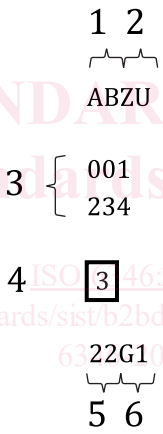
Figure 2 — Mandatory identification marks - preferred vertical layout



Key

1 owner's code
2 category identifier
3 serial number
4 check digit
5 size code
6 type code

Figure 3 — Mandatory identification marks - Alternative (multiple column) vertical layout



Key

1 owner's code
2 category identifier
3 serial number
4 check digit
5 size code
6 type code

Figure 4 — Mandatory identification marks - Alternative horizontal grouping layout

7.2.1.2 Mandatory operational marks

The layout of maximum gross and tare masses shall be as stated in 6.2.1.

The layout of the air/surface container symbol shall be as shown in Annex B.

The layout of the sign warning of overhead electrical danger shall be as shown in Annex C.

The layout of the height mark for containers having a height greater than 2,6 m shall be as stated in Annex F.