



BS 3951 : Part 1 : Section 1.6 : 1985 ISO 6346-1984

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British Standard

Freight containers

Part 1. General

Section 1.6 Specification for coding, identification and marking

[ISO title: Freight containers — Coding, identification and marking]

Conteneurs pour le transport de marchandises

Partie 1. Généralités

Section 1.6 Codage, identification et marquage — Spécifications

Frachtcontainer

Teil 1. Allgemeines

Abschnitt 1.6 Kodierung, Bezeichnung und Kennzeichnung

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National foreword

This revised Section of this Part of BS 3951, which is one of a series relating to freight containers and which has been prepared under the direction of the Packaging and Freight Containers Standards Committee, supersedes BS 3951 : Part 1 : Section 1.6 : 1983, which is withdrawn.

This Section is identical with ISO 6346:1984 'Freight containers — Coding, identification and marking' including Amendment 1 published by the International Organization for Standardization (ISO)

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Where the words 'International Standard' appear, referring to this standard, they should be read as 'British Standard'.

Cross-references

International standard	Corresponding British Standard
	BS 3951 Freight containers Part 1. General
ISO 668 : 1988	Section 1.1 : 1989 Specification for series 1 freight containers : Classification, dimensions and ratings (Identical)
ISO 1496-3 : 1991	Part 2. Specification and testing of series 1 freight containers Section 2.3 : 1992 Tank containers for liquids, gases and pressurized dry bulk (Identical)
ISO 3166 : 1988	BS 5374 : 1989 Specification for codes for the representation of names of countries (Identical)

The Technical Committee has reviewed the relevant draft provisions of ISO 8323, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

Other British Standards giving information on freight containers are BS 5073 'Guide to stowage of goods in freight containers' and BS 5237 'Specification for lifting twistlocks'.

Additional information. This standard gives details, in annex H, of optional height marks for containers of height greater than 2.6 m (8.5 ft). Although the use of this particular mark is optional, it should be noted that to ensure clear passage by both road and rail, it is important that the driver of the carrying vehicle and/or the container terminal operator should be aware of the height of the container being transported.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

British Standard

Freight containers

Part 1. General

Section 1.6 Specification for coding, identification and marking

0 Introduction

This International Standard provides a system for the identification and presentation of information about freight containers. It is intended that the identification system be of general use, 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.

NOTE — The first edition of this International Standard was based on a combination of ISO 790, *Marking of series 1 freight containers* and ISO 2716, *Identification marking code for freight containers*, which it replaced.

1 Scope

1.1 This International Standard establishes :

- a) an 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,
 - optional marks which may be used for Automatic Machine Readable Information (AMRI) system purposes;
- b) a data coding system for country and container size and type with corresponding optional marks for the display of these;
- c) operational marks — mandatory and optional;
- d) physical presentation of marks.

1.2 The term "mandatory" and "optional" in this International Standard are used to differentiate between 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 International Standard relating to the mark shall be complied with.

The terms "mandatory" and "optional" do not refer to requirements of any regulatory body.

1.3 Exclusion : Temporary operational marks of any kind, permanent marks, data plates, etc. which may be required by intergovernmental agreement, national legislations or by non-governmental organizations other than ISO are not covered in this International Standard.

Neither does this International Standard 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.

NOTE — Containers marked in accordance with the previous edition of ISO 6346 (1981) need not be remarked.

2 Field of application

This International Standard applies to all standard freight containers covered by International Standards and should, wherever appropriate and practicable, be applied to containers other than those covered by International Standards.

3 References

ISO 668, *Series 1 freight containers — Classification, external dimensions and ratings*.

ISO 1496/3, *Series 1 freight containers — Specification and testing — Part 3: Tank containers for liquids and gases*.

ISO 3166, *Code for the representation of names of countries*.

ISO 8323, *Freight containers — Air/surface (intermodal) general purpose containers — Specification and tests*.¹⁾

NOTE — Some of the major international conventions whose container marking requirements are not covered in this International Standard are as follows :

- International Convention for Safe Containers (UN/IMO 1977).
- Customs Convention on Containers 1956 and 1972.
- Customs Convention on International Movement of Goods under Cover of TIR Carriets (TIR Convention) 1959 and 1976.

It should not be assumed that this list is exhaustive.

1) At present at the stage of draft.

4 Identification system and its associated marks

4.1 Identification system

The identification system shall consist of the following :

- owner code : four letters;
- serial number : six numerals;
- check digit : one numeral.

4.1.1 Owner code

The container owner code shall consist of four capital letters of the Latin alphabet of which the fourth letter shall be a U.

In order that owner codes are unique it is necessary for all codes to be registered with the International Container Bureau (BIC - Bureau international des conteneurs), either through the affiliated national registration organizations, where such exist (see annex J), or otherwise by direct contact with the following address :

Bureau international des conteneurs
38, Cours Albert 1^{er}
75008 Paris
France

While the actual processes of registration are performed by these bodies in consultation with each other, the overall responsibility for owner code assignments rests with ISO.

4.1.2 Serial number

The 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 significant series of numerals is 1234, the serial number should be 001234.)

4.1.3 Check digit

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 cover the owner code and serial number only.

4.2 Identification marks

4.2.1 Mandatory identification marks

The use of marks in accordance with the identification system specified in 4.1, i.e. owner code, serial number and check digit, is mandatory for freight containers. The characteristics (size, shape, layout, etc.) detailed in 7.1 and 7.2.1 shall be displayed as nearly as may be practicable in accordance with clause 7, i.e. capable of being read by the human eye.

4.2.2 Optional identification marks

Identification marking, additional to that covered in 4.2.1, may be provided for use with an Automatic Machine Readable Information (AMRI) system. Details of the various AMRI systems which could be used are not within the scope of this International Standard, but if an AMRI system is used, then the identification information it presents (or reproduces) shall correspond exactly to that detailed in 4.1.

5 Country, size and type codes and their associated marks

5.1 Codes: country, size and type

These codes may be marked on the containers themselves, on an optional basis, as indicated in 5.2.

They may be used in container document communications and data transmission systems as well as for other purposes.

5.1.1 Country code

When it is used, the country code shall be indicated by means of the alpha-2 code laid down in ISO 3166 (see annex D).

However, existing containers will have been marked according to the codes given in annex E; these codes may, therefore, continue to appear for some time.

5.1.2 Size and type code

When used, the size and type code shall comprise four Arabic numerals. The first two numerals, relating to dimensional characteristics, shall be selected from annex F. The second two numerals, relating to type characteristics, shall be selected from annex G.

It is recommended that the size and type code should be used as a whole, i.e. it should not be broken into its component parts either for data transmission or for display purposes, except where the full significance of the part of the code which may be used can be made absolutely clear to all parties concerned.

5.2 Marks: country, size and type

The use of marks on containers to denote country (i.e. country of registration of container owner code) and/or size and type codes is optional, and when used shall be displayed as shown in clause 7.

When a country code, as envisaged in 5.1, is marked on a container in close proximity to the owner code, serial number and check digit in any of the positions indicated in clause 7, it shall be taken to indicate the country in which the owner code was registered and shall have no other significance.

6 Operational marks

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

6.1 Mandatory operational marks

6.1.1 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 compliance with the approved methods specified in that part of ISO 1496 applicable to the type of container in question, shall be uniformly marked with that maximum gross mass used for the tests.

Furthermore, the "maximum gross mass" marked on the container in compliance with this International Standard shall be identical to that shown on the CSC¹⁾ Safety Approval Plate.

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

6.1.2 Air/surface container symbol

Details of this symbol are specified in annex B of this International Standard.

6.1.3 Warning sign of overhead electrical danger

This warning sign shall be displayed on all containers equipped with ladders. It shall be in accordance with the details given in annex C.

6.2 Optional operational marks

A height warning symbol may be displayed on containers having a height in excess of 2,6 m (8.5 ft).

If used, the symbol shall be in accordance with annex H.

7 Physical display of marks

7.1 Size and colour of marks

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

The letters and numerals for MAX GROSS and TARE 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 Mandatory marks

7.2.1.1.1 Identification marks

The layout of the owner code, serial number and check digit on containers shall preferably be shown in one single horizontal line, as described below (see also figure 1). Where constructional features of the container dictate otherwise, the layout may be vertical (see figure 2).

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

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

It is recommended that one character space be provided between the third and fourth digit of the serial number (see figure 1).

For example, a general purpose container having a unique registered owner code of ABZU and a serial number of 001234 will have the layout as shown in figures 1 to 4.

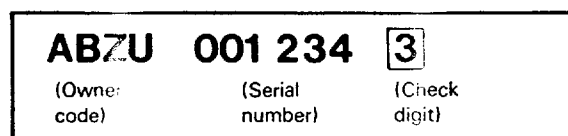


Figure 1 — Preferred horizontal layout for mandatory identification marks

1) International Convention for Safe Containers (CSC), UN/IMO.

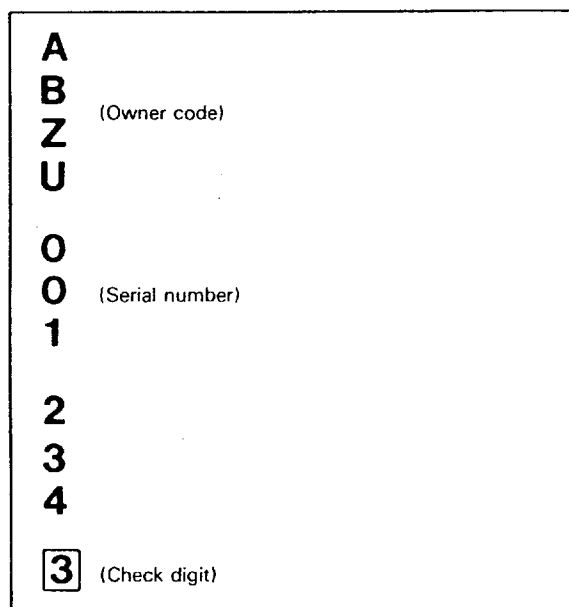


Figure 2 — Mandatory marks: preferred (single column) vertical layout

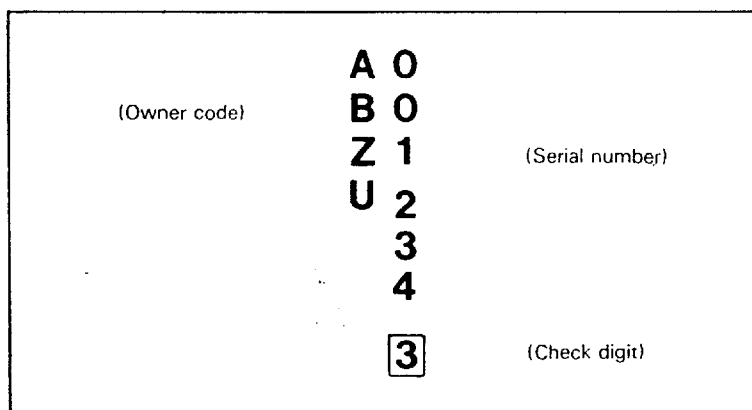


Figure 3 — Mandatory marks: alternative (double column) vertical layout

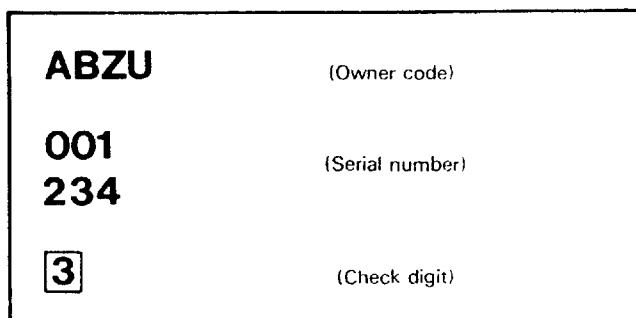


Figure 4 — Mandatory marks: alternative horizontal grouping layout

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7.2.1.1.2 Operational marks

The layout of maximum gross and tare masses shall be as stated in 6.1.1.

The layout of the air/surface container symbol shall be as stated in annex B.

The layout of the sign for warning of overhead electrical danger shall be as stated in annex C.

7.2.1.2 Optional marks

7.2.1.2.1 Identification marks

The layout of the optional country code and size and type codes should, as far as practicable, be in a single horizontal line underneath the horizontal line giving the owner code, serial number and check digit (see figure 5).

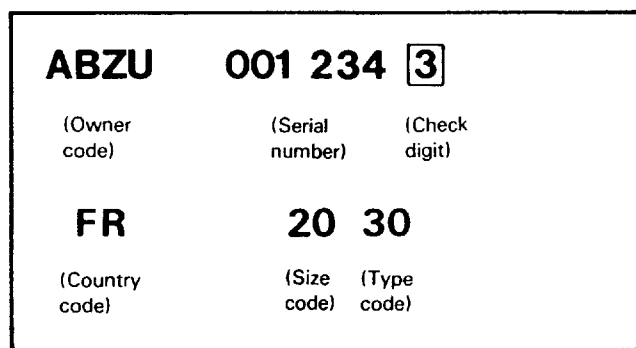


Figure 5 — Optional marks: when displayed with the preferred horizontal layout of mandatory marks

When the owner code, serial number and check digit are displayed vertically (see figures 2 and 3), the country, size and type codes should be placed adjacent to the mandatory marks (see figures 6 and 7).

On some special-purpose containers where a fully horizontal or fully vertical layout is not possible and the layout of the mandatory identification marks is horizontal (see figure 4), the country, size and type codes should be placed beneath the mandatory marks (see figure 8).

The size and type code should be used as a whole (see 5.1.2).

The layout of the code for the Automatic Machine Readable Information (AMRI) system is not stipulated, but the basic data required on an AMRI label shall be identical to the mandatory requirements of 4.1 and 4.2.2.

7.2.1.2.2 Operational marks

The layout of the optional mark "height marks for containers of height greater than 2,6 m (8.5 ft)" shall be as stated in annex H.

7.2.2 Location of marks

7.2.2.1 Mandatory marks

7.2.2.1.1 Identification marks

The mandatory marks of 4.1, i.e. owner code, serial number, and check digit, shall be positioned as far as practicable on the container as shown in figure 9.

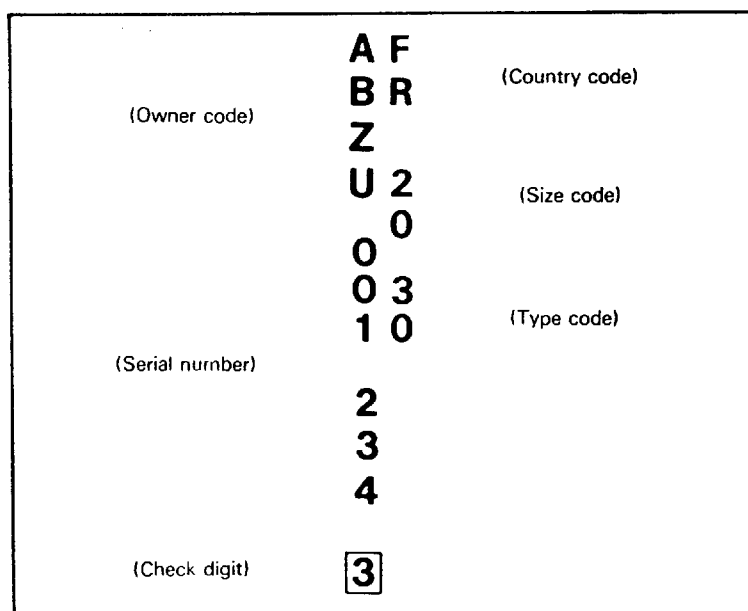


Figure 6 — Optional marks: when displayed with the preferred (single column) vertical layout of mandatory marks

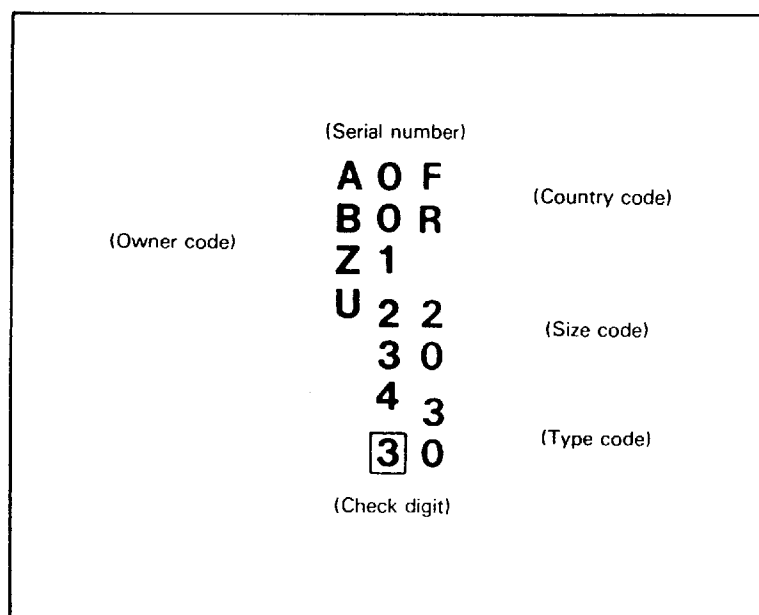


Figure 7 — Optional marks : when displayed with the alternative (double column) vertical layout of mandatory marks

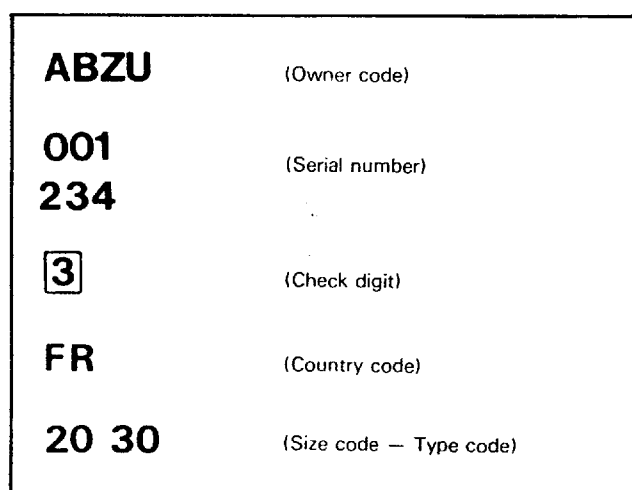


Figure 8 — Optional marks : when displayed with the alternative horizontal grouping layout of mandatory marks

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7.2.2.1.2 Operational marks

The mandatory operational marks of 6.1.1, i.e. maximum gross and tare masses shall be positioned as far as practicable on the container as shown in figure 9.

For the location of the air/surface container symbol, see annex B.

For location of the symbol for warning of overhead electrical danger, see annex C.

7.2.2.2 Optional marks

In accordance with 4.2.2, clause 5 and 6.2, the optional marks shall be located on the container as indicated in 7.2.2.2.1 to 7.2.2.2.4.

7.2.2.2.1 Identification marks

The optional marks of country, size and type code, when used, shall be located underneath or adjacent to the mandatory identification marks, as appropriate (see figures 5, 6, 7 or 8).

For the AMRI system, the AMRI label shall be positioned on the container such that it does not in any way interfere with the Human Readable Identification (HRI) system. For practical considerations, the mounting of AMRI labels on the container roof or bottom is not recommended.

7.2.2.2.2 Operational marks

The location of the height warning symbol is given in annex H.

7.2.2.2.3 Other marks

Marks, other than those stipulated by this International Standard, shall be so displayed on the container that they do not in any way interfere with marks described in this International Standard.

7.2.2.2.4 Where these optional marks involve the owner code, serial number and check digit, these marks shall be displayed as a whole without omitting any part.

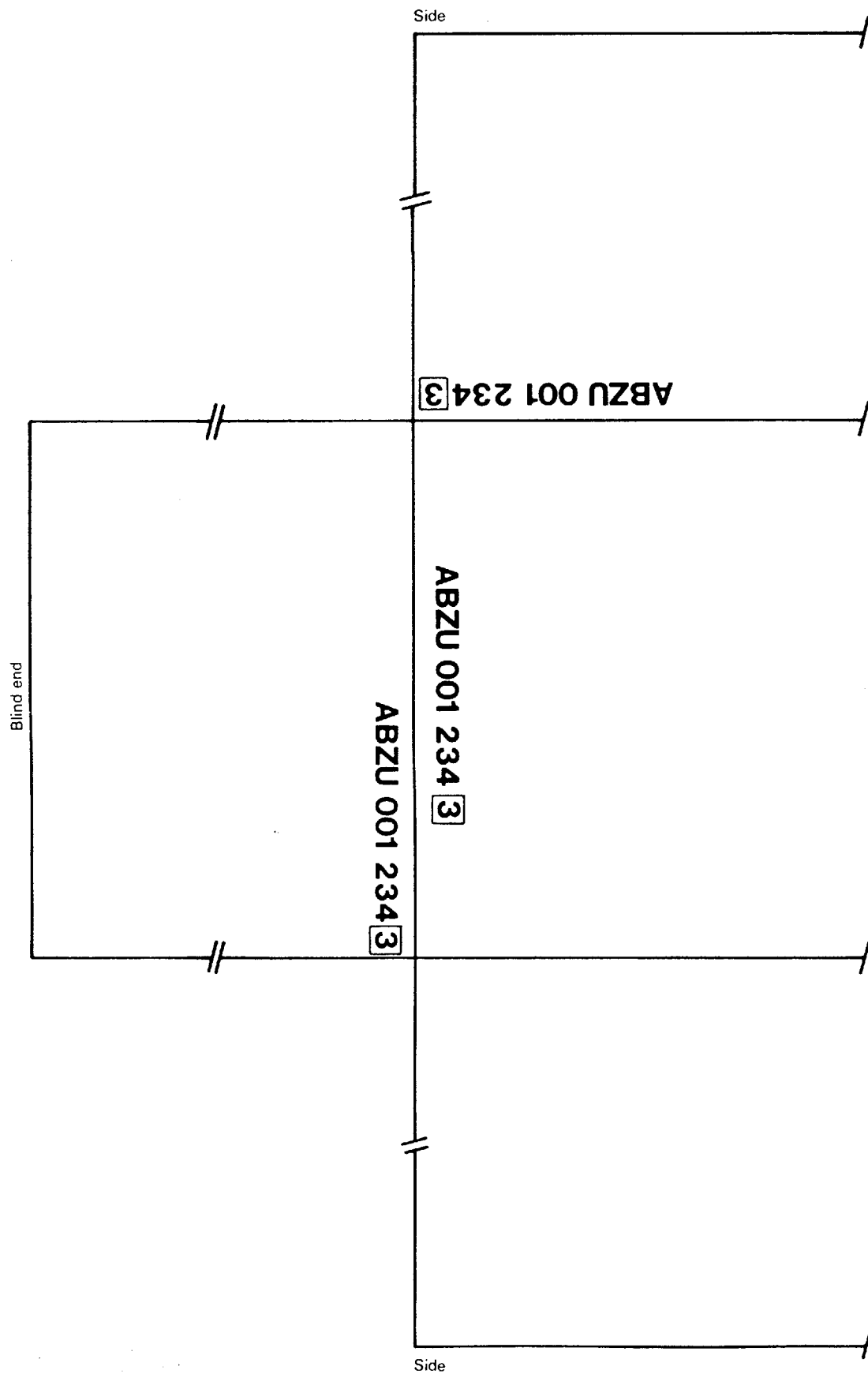


Figure 9 — Location of mandatory marks

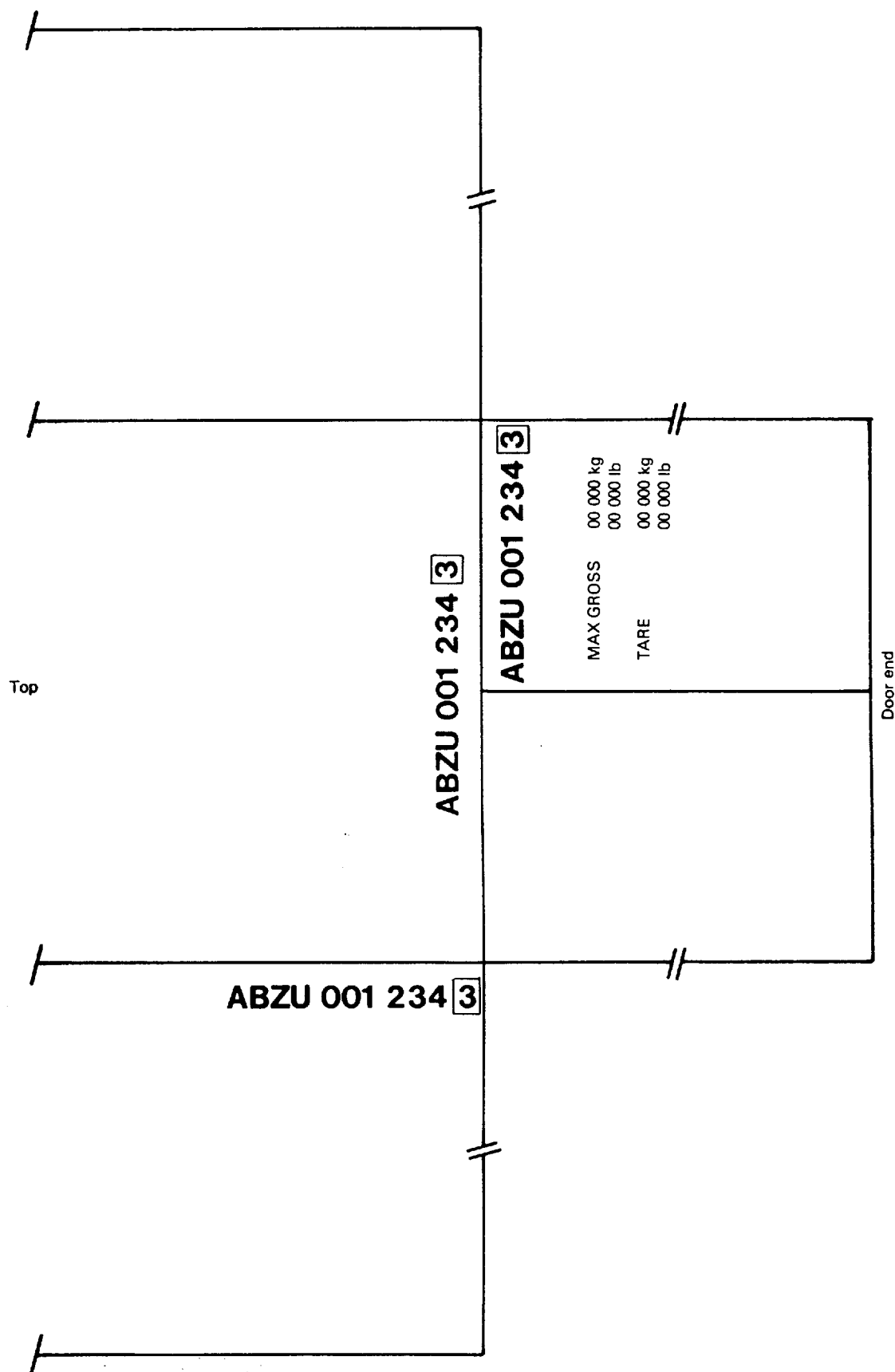


Figure 9 (concluded)

Annex A

Determination of check digit

A.1 Numeric equivalents of owner code and serial number

Each letter of the owner code and each numeral of the serial number shall be consecutively allocated a numeric value in accordance with table 1.

Table 1 — Equivalent values

Owner code				Serial number
Letter	Equivalent value	Letter	Equivalent value	Numeral or equivalent value ¹⁾
A	10	N	25	0
B	12	O	26	1
C	13	P	27	2
D	14	Q	28	3
E	15	R	29	4
F	16	S	30	5
G	17	T	31	6
H	18	U	32	7
I	19	V	34	8
J	20	W	35	9
K	21	X	36	
L	23	Y	37	
M	24	Z	38	

1) — The serial number and its equivalent value are identical.

NOTE — The equivalent values 11, 22 and 33 are omitted as they are multiples of the modulus (see A.3).

A.2 Weighting factor

Each numeric equivalent, determined in accordance with clause A.1, shall be multiplied by a weighting factor in the range 2^0 to 2^9 . The weighting factor 2^0 is applied to the first letter of the owner code, and then in increasing powers of 2 rising to 2^9 for the last digit of the serial number.

A.3 Modulus

The sum of the products obtained according to clause A.2 shall be divided by a modulus of value eleven.

A.4 Value of check digit

Table 2 indicates the check digit value corresponding to the remainder value of the division effected in conformity with clause A.3.

Table 2 — Check digit value

Remainder	Check digit
10	0
9	9
8	8
7	7
6	6
5	5
4	4
3	3
2	2
1	1
0	0

NOTE — Where it is required to avoid the duplication resulting from the value zero being assigned as a remainder of both 10 and 0, it is recommended that serial numbers resulting in remainders of 10 should not be used.

A.5 Example of the calculation of the check digit

Stage Calculation

I Owner code :

Serial number :

Z	E	P	U	0	0	3	7	2	5
---	---	---	---	---	---	---	---	---	---

II Equivalent factors :

38	15	27	32	0	0	3	7	2	5
----	----	----	----	---	---	---	---	---	---

III Weighting factors :

1	2	4	8	16	32	64	128	256	512
---	---	---	---	----	----	----	-----	-----	-----

IV Product of columns in lines II and III :

38	30	108	256	0	0	192	896	512	2560
----	----	-----	-----	---	---	-----	-----	-----	------

The sum of all the products in line IV = 4 592

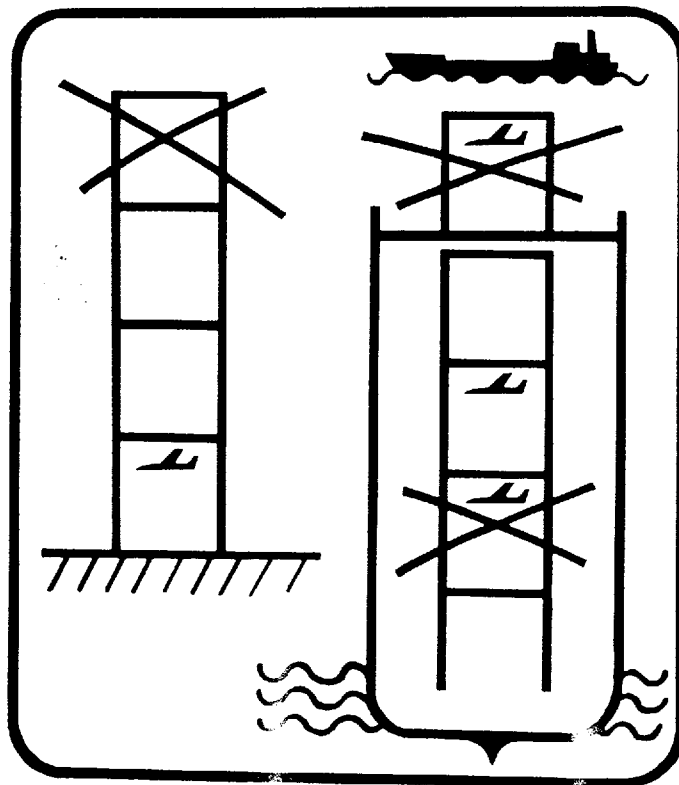
The sum divided by the modulus 11 = $417 \frac{5}{11}$

The remainder is "5" and, by referring to table 2, it is found that the check digit is 5 in this case.

Annex B

Symbol to denote air/surface container

To denote that the container is an air/surface container with stacking limitations, the following symbol shall be used.¹⁾



The aircraft in the symbol shall be at least 130 mm (5 in) high and 360 mm (14 in) long. The stacking symbol shall be at least 280 mm (11 in) high and 260 mm (10 in) wide. The recommended proportions should be used. The capital letters shall be at least 80 mm (3 in) high.

The colour of the symbol should be black. If the colour of the container is such that the symbol does not show clearly, a panel of a suitable colour, preferably white, should be provided as background.

1) The symbol shall be located in the top left-hand corner of the end walls, side walls and the roof, where appropriate (see ISO 8323).