

# UIC CODE

# 592-2

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6th edition, October 2004

*Translation*

# OR

## **Large containers for transport on wagons - Technical conditions to be fulfilled by large containers accepted for use in international traffic**

*Grands conteneurs pour transport sur wagons - Conditions techniques à remplir par les grands conteneurs admis en trafic combiné international*  
*Großcontainer für die Beförderung auf Güterwagen - Technische Bedingungen für die im internationalen kombinierten Ladungsverkehr zugelassenen Großcontainer*



UNION INTERNATIONALE DES CHEMINS DE FER  
INTERNATIONALER EISENBAHNVERBAND  
INTERNATIONAL UNION OF RAILWAYS

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## Leaflet to be classified in Volumes :

- IV - Operating (including RIV and RIC Regulations)
- V - Rolling Stock

## Application :

With effect from 1 July 1996, except as regards:

- point 3.1 (1 April 2001)
- point 3.2 (1 July 1999)
- point 6.1.2.1 (1 June 1997)
- Appendix D (1 October 2000)
- point D.1 (1 November 1999)

All members of the International Union of Railways

## Record of updates

**2nd edition, July 1973** and its amendment of 1 July 1974.

**3rd edition, July 1976** and its amendment of 1 July 1977.

**4th edition, July 1980** and its eight amendments.

**5th edition, July 1996**

**6th edition, October 2004** Retyped in FrameMaker, and updating of the leaflet in the light of the conclusions of SC25C concerning points: point 3.1 (conclusions, January 2001), point 3.2 (conclusions, January 1999), point 6.1.2.1 (conclusions, June 1997), Appendix D (conclusions, June 2000), and point D.1 (conclusions, June 1999).

Important: the articles (points) in this leaflet have been renumbered in the new edition. The first digit of each point has been increased by one (i.e. 0 becomes 1, 1 becomes 2, and so on). Please take account of this when using cross-references from other leaflets.

*The person responsible for this leaflet is named in the UIC Code*

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## Summary

This leaflet defines the technical characteristics and practical features of large containers for use in combined traffic.

It describes:

- the classes and categories of large containers.
- the handling characteristics,
- the identification markings, and
- the special conditions applying to large tank containers.

## o 1 - General

Large containers in classes 1, 2 and 3 are designed so that they may be carried by rail and handled by the same equipment as that used for ISO containers in accordance with *ISO 1496/1* (see [Bibliography - page 47](#)). At present, not all large containers with a maximum total weight > 30 480 kg and ≤ 34 000 kg can be handled with existing equipment.

Although the term "large containers" applies to containers with a volumetric capacity of more than 3 m<sup>3</sup> and a length of not less than 6 m, containers which are 2 438 mm, 2 500 mm and 2 600 mm wide and 2 991 mm long are included in this leaflet and not in *UIC Leaflet 590* (see [Bibliography - page 47](#)), owing to their gauge and the means used to handle them.

## 2 - Types, dimensions, weight

○ 2.1 - Large containers may be:

1. *ordinary*, i.e. with no special fittings appropriate to the type of goods to be carried. In this case, from the point of view of shape, they shall be of the open or closed type;
2. *special*, i.e. either specially constructed for the conveyance of certain types of goods or specially allocated for the transport of certain goods. In this case, from the point of view of shape, they may be any type: closed, open, with opening side walls, isothermal, refrigerated, tank, hopper, platform with or without superstructure for stowing goods transported, collapsible, etc.

○ 2.2 - Large containers shall belong to one of the following classes:

- Class 1: Containers measuring 2 438 mm in width, which may be lifted by their upper and lower parts and be stacked three high when loaded.
- Class 2: Containers measuring 2 500 mm in width, which may be lifted by their upper and lower parts and be stacked three high when loaded.
- Class 3: Temperature-controlled containers measuring not more than 2 600 mm in width, which may be lifted by their upper and lower parts and stacked three high when loaded.

Handling rules are specified in points 3.1 to 3.3 - page 8.

○ 2.3 - In order to be approved for international combined transport, large containers must, among other things, from the point of their dimensions (length, width, height), satisfy both Tables 1 and 2 - page 30 of Appendix H and the dimensions (length, width, height) for classes 1 to 3. Only these large containers may display the marking given in point 6.1 - page 11 and Appendix E - page 24.

**Class 1:**

In general:

Category	Length (in mm)	Width (in mm)	Height (in mm)
10/X	2 991 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	< 2 438
10/8	2 991 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$
20/X	6 058 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	< 2 438
20/8	6 058 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$
20/8 1/2	6 058 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 591 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$
30/X	9 125 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	< 2 438

Category	Length (in mm)	Width (in mm)	Height (in mm)
30/8	9 125 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$
30/8 1/2	9 125 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 591 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$
30/9 1/2	9 125 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 896 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$
40/X	12 192 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	< 2 438
40/8	12 192 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$
40/8 1/2	12 192 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 591 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$
40/9 1/2	12 192 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 438 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 896 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$

No accessory or fitting may exceed these overall dimensions.

However, a lower height, less than 2 438 mm (8'), is permitted for some types of containers: tanks, open top, platform containers with or without superstructure.

A height h, such that  $2\,591 \leq H \leq 2\,896$ , may be accepted in the case of special containers intended for the transport of goods which require an external height greater than 2 438 mm. These containers are denoted by the category indication:

...../ 8 1/2...../ 9 1/2

Acceptance of the containers mentioned in the previous paragraph for use in traffic is subject to special prior agreements between the railways concerned if loading the containers on a wagon would foul the gauge.

One of the marks given in Appendix I - page 37 should be applied to large containers of class 1. If this mark is applied it shall conform to the provisions of that Appendix.



### Class 2<sup>1</sup>:

Their overall dimensions shall be as follows:

Category	Length (in mm)	Width (in mm)	Height (in mm)
10	2 991 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 500 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 600 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$
20	6 058 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 500 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 600 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$
30	9 125 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 500 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 600 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$
40	12 192 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 500 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 600 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$

Large containers in class 2 must, with all their accessories and fittings, come within the gauge shown in point [B.1 - page 16](#).

For certain types of container, such as tanks, open top, platform containers with or without roof, a lower height, i.e. less than 2 600 mm, is allowed.

Large containers in class 2 shall be marked in accordance with point [J.1 - page 39](#).

### Class 3<sup>2</sup>:

Their overall dimensions shall be as follows:

Category	Length (in mm)	Width (in mm)	Max. height (in mm)
10	2 991 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$	2 600	2 600
20	6 058 $\begin{smallmatrix} 0 \\ -6 \end{smallmatrix}$	2 600	2 600
30	9 125 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 600	2 600
40	12 192 $\begin{smallmatrix} 0 \\ -10 \end{smallmatrix}$	2 600	2 600

Large containers in class 3, with all their accessories and fittings, must come within the gauge shown in point [B.2 - page 17](#).

Large containers of class 3 should carry the mark given in point [J.2 - page 40](#).

- 
1. For acceptance of class 2 containers on EWS, previous approval is necessary from them.
  2. For acceptance of class 3 containers on EWS, previous approval is necessary from them.

**R 2.4** - Large containers in category 40 may include a gooseneck tunnel, the dimensions of which are given in Appendix M - page 43.

**R 2.5** - It is recommended that the internal dimensions of closed large containers should not be less than the minimum values shown in the table below, in respect of the:

- length, width and height, when containers that belong to class 1 possess only one or two end openings;
- length and height, when class 1 containers also have one or more side openings;
- length, width and height, when class 2 containers have open side walls and/or an opening roof;
- length, when class 1 containers are provided with open side walls and/or an opening roof.

Category	Length (in mm)	Width (in mm)		Height (in mm)	
		Class 1	Class 2	Class 1	Class 2
10	2 802	2 330	2 440	2 197	2 350
20	5 867	2 330	2 440	2 197	2 350
30	8 931	2 330	2 440	2 197	2 350
40	11 998	2 330	2 440	2 197	2 350

**O 2.6** - In the case of class 1 ordinary closed large containers with only one or two end openings fitted with doors and, possibly, partial side openings, the end opening(s) shall not be less than 2 134 mm high and 2 286 mm wide. For class 2 containers, these dimensions shall be 2 261 mm for the height and 2 348 mm for the width.

Where a large container has opening, removable or fold-back equipment (e.g. roof, door, end walls), this equipment must be fitted with locking devices ensuring safety in transit in all circumstances.

It must be easy for a staff member at ground level to check, from the outside of a container on a wagon, that the devices are in the locked position.

Large containers with opening top must carry the distinctive mark defined in Appendix N - page 44 placed at the top right hand side on the side walls, below the other inscriptions.

- 2.7 - The maximum gross weight (tare + load) of large containers must not exceed the following maximum values:

Category	Maximum gross weight <sup>a</sup> (in kg)		
	1	2	3
10	10 160	10 160	10 160
20	30 480 <sup>a</sup>	30 480 <sup>a</sup>	30 480 <sup>a</sup>
30	30 480 <sup>a</sup>	30 480 <sup>a</sup>	30 480 <sup>a</sup>
40	30 480 <sup>a</sup>	30 480 <sup>a</sup>	30 480 <sup>a</sup>

a. For categories 20, 30 and 40. It is also possible to have a total maximum weight of 34 000 kg. For traffic going to PKP, ÖBB and CIE, prior agreement is necessary. No limitation on PKP and ÖBB lines for transit traffic.  
Bear in mind the capacity of the wagons and the cranes.

## 3 - Handling

- O **3.1** - In order to facilitate vertical handling by all types of appropriate lifting equipment, each large container in classes 1, 2, and 3 must be provided with four upper and four lower corner fittings.

It must be possible for each large container to be supported solely by its lower corner fittings.

When a large container is evenly loaded so that its total weight equals 1,8 times the maximum total weight in service laid down in point **2.7 - page 7**, no part of the base shall protrude more than 6 mm below the plane defined by the lower surfaces of the lower corner fittings.

The dimensions of the corner fittings and their position on large containers in class 1 are set out in Appendix **C - page 18**.

The upper corner fittings on containers in classes 2 and 3 must be designed in such a way as to respect the gauge shown in points **B.1** and **B.2 - page 17**.

The position and shape of their grooves shall be as specified in Appendix **C**.

The corner fittings must be designed and constructed in accordance with the test requirements for large containers given in Appendix **D - page 19**.

The four lower corner fittings shall also be used for securing large containers on the carrier wagons defined in *UIC Leaflet 571-4* (see **Bibliography - page 47**).

The position of the lower corner fittings and the shape of their openings shall be as indicated in Appendix **C**. These dimensions must be adhered to in the service condition, and shall be checked in the course of the periodic tests called for by the international convention on the safety of containers (CSC).

- O **3.2** - Large containers in classes 1, 2 and 3 may be provided, with grooves at the bottom suitable for handling by grab-lifting appliances. This equipment is obligatory for containers with a total maximum weight > 30 480 kg and ≤ 34 000 kg. Large containers with a total maximum weight > 30 480 kg and ≤ 34 000 kg which because of their design cannot be asymmetrically loaded, do not need to have these grooves.

These grooves must comply with the provisions of Appendix **K - page 41**.

- R **3.3** - The lower part of large containers in categories 10 and 20 may, moreover, be fitted with fork recesses, i.e. recesses for handling by means of fork-lift trucks, when either empty or loaded. Containers in category 20 with a pair of such fork recesses may, furthermore, have a second pair for handling when empty only.

- O **3.4 - Fork-lift recesses**

These recesses, when provided, must conform to the provisions of Appendix **L - page 42**.

Fork-lift recesses are not allowed for:

- large containers in categories 30 and 40,
- tank containers.

## 4 - Conditions of strength in service

**4.1** - Each element of a large container, i.e. structure, floor, roof, end and side walls, must comply with the technical characteristics corresponding to the tests laid down in Appendix D - page 19.

**4.2** - Rigid walls, including openings fitted with doors, must nevertheless conform to the test requirements shown in Appendix D.

**4.3** - Where there are no such walls or parts thereof, or where they are insufficiently rigid, devices must be fitted in such a way as to ensure that the load is secured to the base structure of the container.

**4.4** - In order to be considered as fulfilling the conditions imposed in respect of strength in service, large containers must at least satisfy the tests laid down in Appendix D.

**4.5** - Conditions of strength and other regulations necessary to ensure complete safety for transport by rail may be drawn up later.

**4.6** - Stacking of large containers with a maximum total weight  $> 30\,480$  kg and  $\leq 34\,000$  kg can only be done with containers of this class and the same category, the total maximum reference weight still being 94 000 kg.

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## o 5 - Conveyance under customs seal

The 1972 UN/IMCO Customs agreement on containers lays down the technical conditions for containers which can be accepted for transport under customs seal, and specifies their acceptance procedure. These containers shall be fitted with a customs plate, as laid down in the aforesaid agreement.

## 6 - Markings

6.1 - Each large container must bear the following markings:

○ 6.1.1 - Railway-owned containers.



6.1.1.1 - The identification marking in accordance with the provisions of Appendix H - page 28 consisting of:

- on the first line:
  - a) the owner's code (3 letters);
  - b) a letter identifying the type of container:
    - U - for containers
    - I - for container equipment
    - Z - for semi-trailer frames;
  - c) the serial number (6 digits);
  - d) an "ISO" automatic check digit: placed in a rectangle;
- on the second line:
  - e) code indicating the main characteristics: (2 alphanumeric characters giving the dimensions length, width and height, and 2 alphanumeric characters indicating the type of large container, in accordance with Appendix H).

6.1.1.2 - The maximum gross weight in kilograms and pounds.

6.1.1.3 - The tare in kilograms and pounds.

6.1.1.4 -

- a) The  sign (see point E.1 - page 24) indicating that the large container fulfils the conditions prescribed in the leaflet and, below this sign, the numerical code (in accordance with *UIC Leaflet 920-1* (see Bibliography - page 47)) of the Railway having approved the container.
- b) The  sign (see point E.2 - page 24) indicating that the large container also meets *ISO 1496* (see Bibliography - page 47) and, under this sign, the numerical code (according to *UIC Leaflet 920-1*) of the Railway having approved the container. However, the gross maximum weight can be as high as the values specified in the table of point 2.7 - page 7.

6.1.1.5 - For containers in class 2, the distinctive mark shown in point J.1 - page 39.

6.1.1.6 - For containers in class 3, the distinctive mark shown in point J.2 - page 40.

6.1.2 - Large containers which, although they do not belong to a railway, have, nevertheless, been approved by a UIC member Railway.

**O 6.1.2.1** - The inscriptions set out in points 6.1.1.1 - page 11, paragraphs a, b, c, e, 6.1.1.2 to 6.1.1.6 - page 11 are mandatory.

**R 6.1.2.2** - The inscription set out in point 6.1.1.1, paragraph d, is recommended.

**O 6.2** - Special large containers must bear the following inscriptions in addition:

1. tank containers:
  - the plate for tank containers specified in *ISO Standard 1496 - III* (see Bibliography - page 47);
2. large containers suitable for the transport of dangerous goods:
  - the sign prescribed by the *RID*;
3. large containers with access ladders:
  - a sign in accordance with *point 23.2.7.3, plate 22 of the RIV*, adjacent to each ladder;
4. large containers suitable for the carriage of goods under controlled temperature conditions shall comply with the ATP regulations<sup>1</sup> if the equipment is likely to be used for the types of traffic to which this agreement applies and, in particular, they must bear the marks specified in *Appendix 1, Annex 4 of the ATP*. Appendix O - page 45 to this leaflet gives an example of this marking.

**R 6.3** - Example of identification marking:

**Example :** Closed large container in category 20/8½ (dimension code: 22), with passive ventilation in its upper part and an end door (type-G1 code), the owner-code being ABZ and the selected serial number being 1234:

ABZU 001234 3  
22 G1

**R 6.4** - In exceptional cases, where the specific characteristics of a large container (absence of any walls) do not allow adequate room for the different identification markings to be positioned as required, they may be placed on a single line in the following order:

**Example :**

ABZU 001234 3 22 G1

**O 6.5** - The maximum gross weight and tare must be given in the following form:

MAX GROSS	00000 kg 00000 lbs
TARE	00000 kg 00000 lbs

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1. Agreement relating to the international transport of perishable foodstuffs and to the special appliances to be used for this transport, drawn up by the United Nations Economic Commission for Europe.



For reasons of safety, containers tested according to the approved methods specified in Appendix D - page 19 to this leaflet must be marked uniformly with the MAXIMUM GROSS WEIGHT USED FOR TESTS. In addition, the maximum gross weight marked on the container in accordance with this leaflet must be identical to the maximum gross weight indicated on the C.S.C.<sup>1</sup> safety certification plate.

The inscriptions "MAX GROSS" and "TARE" may be supplemented by a translation into a language other than English.

○ **6.6** - All inscriptions must be legible and for classes 1, 2 and 3 in characters that are at least:

- 100 mm high for the identification marking,
- 50 mm high for the indications of the maximum gross weight and tare.


The width and thickness of these inscriptions shall be in proportion.

The minimum height of characters for class 4 containers with a total maximum weight between 30 480 kg and 34 000 kg shall be at least:

- 105 mm for the identification marking,
- 140 mm for the indications of the maximum gross weight and tare.

The width and thickness of these inscriptions shall be in proportion, and the indications must be displayed in black against a yellow or red background for ease of identification.

This marking shall be applied on the four walls of the large container.

○ **6.7** - Each large container bearing the  sign must also bear the sign "T" (see Appendix F - page 25) near the identification marking placed on each side wall.

Each large container with a maximum total weight > 30 480 kg and ≤ 34 000 kg shall carry on each of the side faces and on the end the sign given in Appendix P - page 46 ("SUPER HEAVY" in a triangle).

○ **6.8** - The position of the inscriptions and signs laid down in points 6.6 and 6.7 shall be in accordance with Appendix G - page 26, as far as possible.

Handling indications: (Reserved).

○ **6.9** - A label-holder, or a plate onto which labels may be stuck, with a space reserved for chalk markings, must be provided on one of the side walls of each large container.

○ **6.10** - Any part or accessory that may be fitted on a large container, especially advertising plates, must be fixed securely to avoid any displacement or the plates being wrenched off in transit.

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1. C.S.C.: International Convention on the Safety of Containers.

## 7 - Special conditions for certain types of large container - Large tank containers

If a container, of any type, is fitted with a ladder, each rung of this ladder must be capable of bearing a weight of at least 200 kg.

- **7.1** - The tanks must be capable of withstanding an internal pressure of 0,3 bar, in the absence of any more specific regulation in the *RID*.
- **7.2** - Tank containers intended for the transport of dangerous goods listed in the *RID* (*Appendix 1 to the CIM*) must fulfil the *RID* conditions. The conditions of this leaflet must also be met in so far as they do not conflict with the *RID*.
- **7.3** - If tank containers fulfil *RID* regulations, the sign it or iC shall be followed by the *RID* sign.
- **7.4** - The filling and emptying devices of tank containers and any other openings provided, except automatic ventilating appliances, must not, when closed, be capable of spontaneous opening.
- **7.5** - The filling and emptying devices must be protected by caps or covers.
- **7.6** - The emptying devices must have a dual action closing system consisting, on the inside, of a stop valve locking the emptying aperture, and, on the outside, of a cock or valve placed on the emptying pipe or directly on the tank itself.
- R **7.7** - However, tank containers for the conveyance of products other than those substances shown in *Appendix 1 to the CIM* may be fitted with only a single-action closing device, provided that the stop-valve or cock which it comprises lies immediately below the tank emptying aperture, and this must be located in the lower central part of the tank unless it is specially protected<sup>1</sup>.
- **7.8** - The domes of the cocks and their handles (keys) must be fixed in such a way that they cannot be removed without using force.
- R **7.9** - It is recommended that the carrying frame of the receptacles or the container underframe should protrude beyond any side projections of the tanks or their accessories (dome, filling and emptying devices, etc.) so as to protect them against any damage. They must, however, meet the permissible dimensions for length, width and height.
- R **7.10** - It is recommended that tank containers be constructed so that they may be emptied by pumping or pressure, in preference to any other gravity emptying method<sup>1</sup>.
- **7.11** - Tank containers for the conveyance of liquids giving off gases, other than those described in the *RID*, must be designed in such a way as to prevent any dangerous stress.
- **7.12** - If the tanks are fitted with automatic ventilation appliances to prevent such stress, they must be so designed as to prevent the penetration of flames, the leakage of drops of liquid, pilfering and smuggling<sup>1</sup>.

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1. In so far as the EWS companies are concerned, acceptance of the containers mentioned in points 7.4 and 7.11 for conveyance on their lines is subject to special prior agreements.

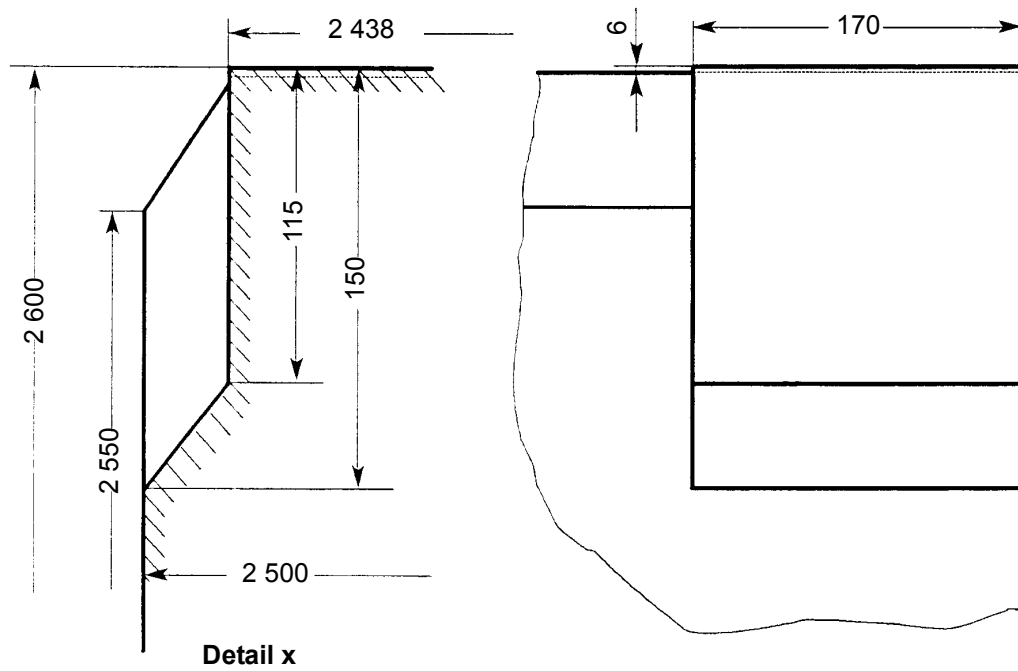
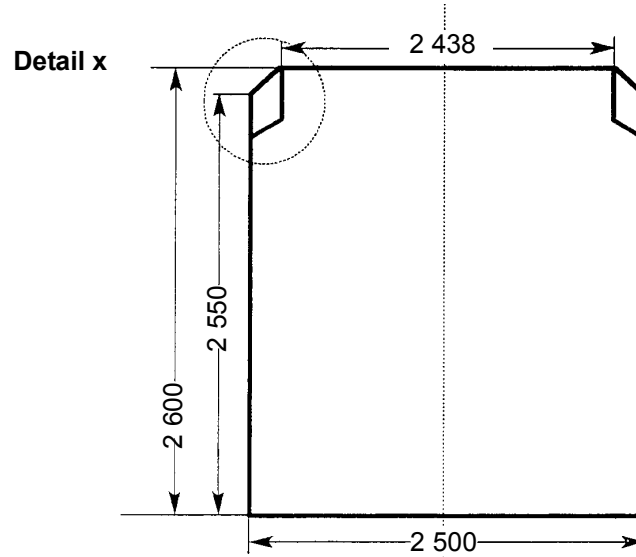
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## Appendix A - Reserved

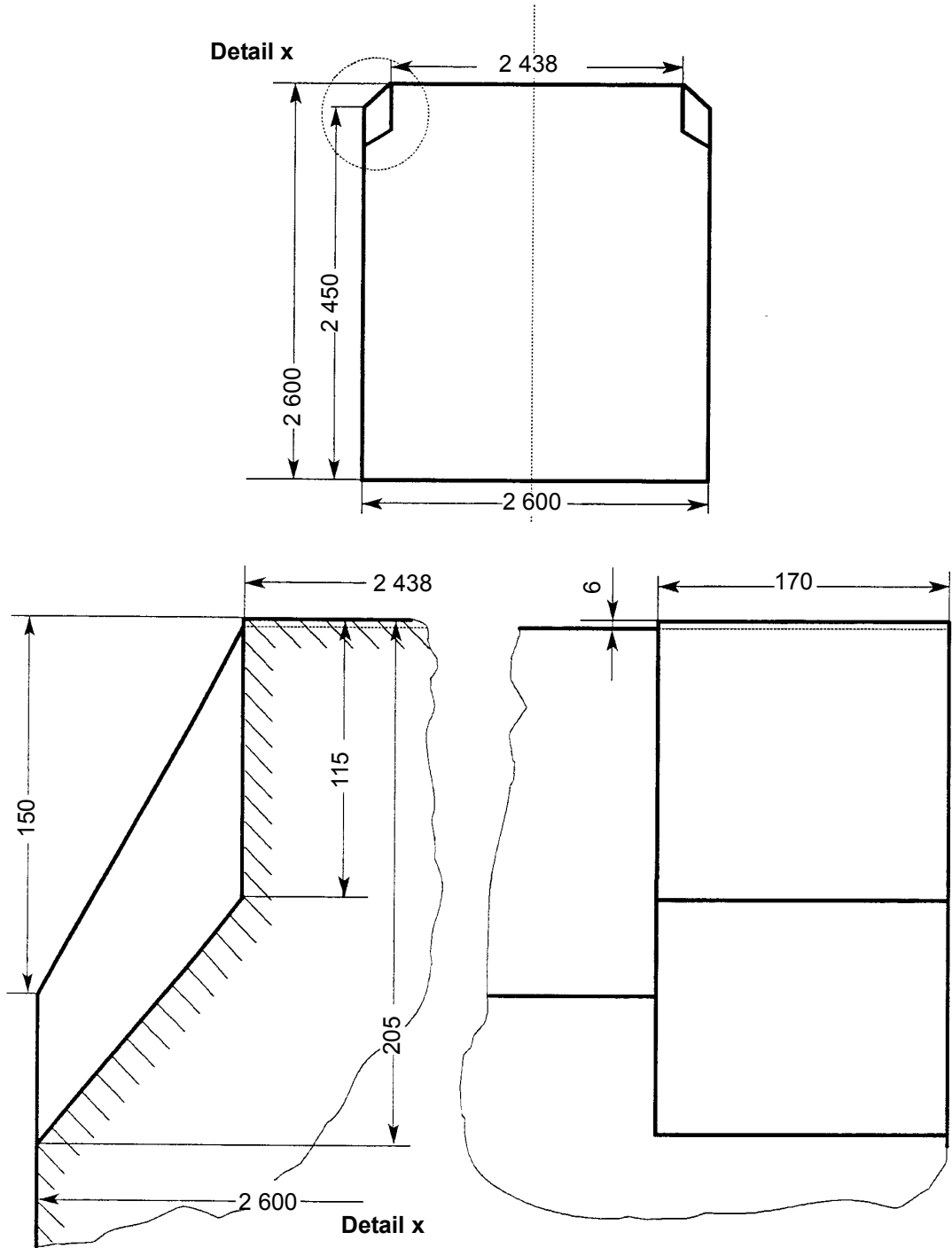
(Reserved)

## Appendix B - Gauge of large containers

### B.1 - Gauge of large containers in class 2 with a width of 2 500 mm

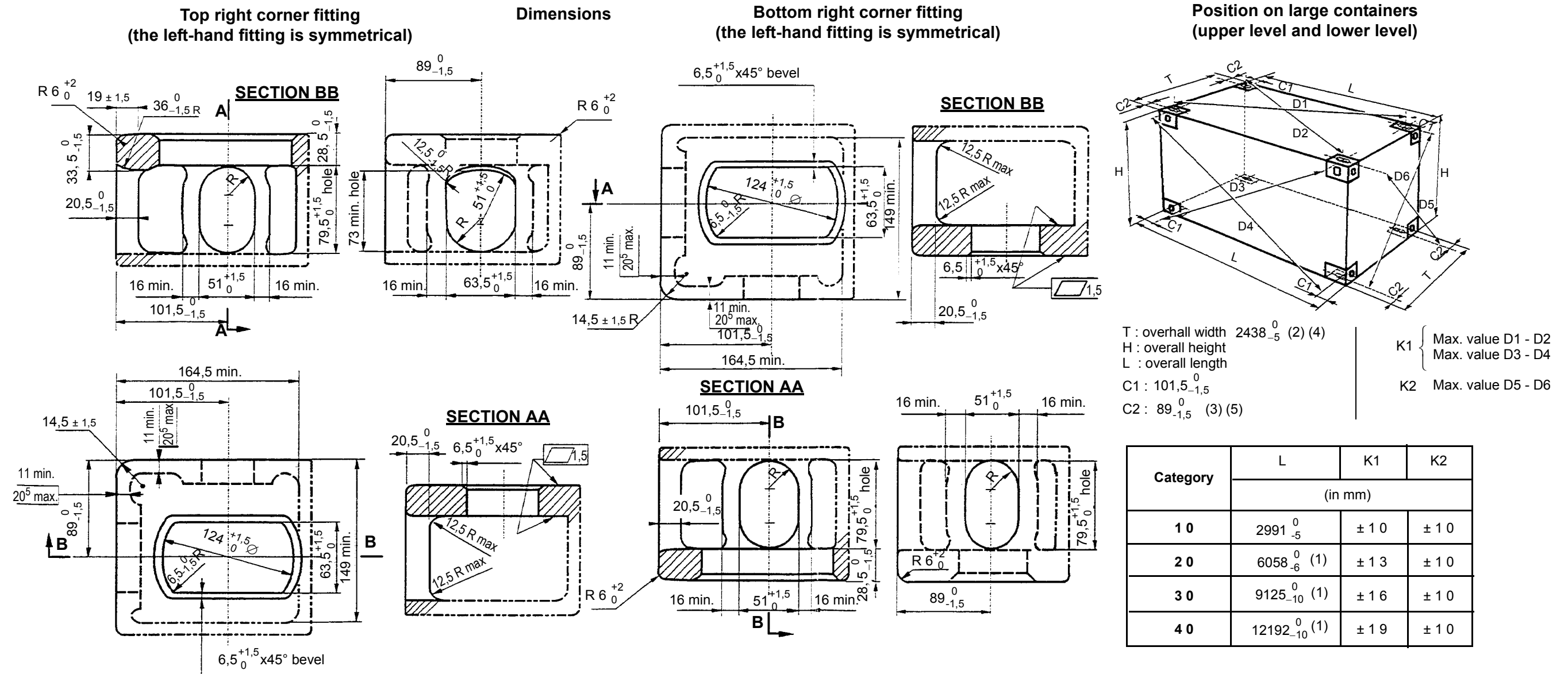


**B.2 - Gauge of large containers in class 3 with a width not exceeding 2 600 mm**



## Appendix C - Technical provisions relating to corner castings

(see point 3.1 - page 8)



Category	L	K1	K2
	(in mm)		
10	2991 <sup>0</sup> <sub>-5</sub>	± 10	± 10
20	6058 <sup>0</sup> <sub>-6</sub> (1)	± 13	± 10
30	9125 <sup>0</sup> <sub>-10</sub> (1)	± 16	± 10
40	12192 <sup>0</sup> <sub>-10</sub> (1)	± 19	± 10

- (1) For "T" platform containers in categories 20, 30 and 40, with incomplete superstructure and fixed ends, the length L in the upper part may reach 6068, 9135 and 12 202 mm when empty. With evenly distributed maximum load, the length L must not be less than 6042, 9105 and 12 172 mm.
- (2) For containers in class 2, this dimension shall be 2500<sup>0</sup><sub>-5</sub>
- (3) For containers in class 3, this dimension shall be 120<sup>0</sup><sub>-1,5</sub>
- (4) For containers in class 3, this dimension shall be 2600<sup>0</sup><sub>-5</sub>
- (5) For containers in class 3, this dimension shall be 170<sup>0</sup><sub>-1,5</sub>

- The upper surfaces of the upper corner fittings must project at least 6 mm beyond the "top" of the large container.
- The "top" of the large container means the highest level of the body of the container, e.g. the level of the top of the cover sheet.
- Edges which appear sharp on the drawing must be rounded, with inside and outside radii of 3<sup>0</sup><sub>-1,5</sub> mm.
- The broken lines (— — —) represent any additional walls which may be used to form a box section.

## Appendix D - Tests on large containers - Procedure and results

(see point 4.1 - page 9)

### General

Each large container must possess technical characteristics at least equivalent to those of the large containers satisfying the following tests.

After testing, the large container shall be regarded as satisfactory if it fulfils the following condition: after each of the tests numbered 1 to 10 it shows no anomalies or distortion rendering it unsuitable for use. Tank containers and hopper containers shall in addition satisfy tests 11 and 12. The dimensional provisions of this leaflet relating to handling, fastening and interchangeability shall be respected.

**NB :** for tests carried out with loaded large containers, the test load must be evenly distributed;

In the following articles, the symbols R and P represent the maximum gross weight and maximum pay-load respectively of the large container.

In the case of large containers of identical construction, it is acceptable for a single container to be used in all the following tests, provided the Railway required to give its approval has an assurance that the other large containers have technical characteristics which are at least equivalent to those of the large container tested. Any modification to the drawings or production methods must be submitted for approval to the Railway Enterprise concerned which will decide whether it is advisable to repeat the whole or part of the tests<sup>1</sup>.

### D.1 - Stacking test

This test is designed to prove the ability of the large container to withstand two other containers of the same category under the acceleration conditions encountered during handling operations.

The large container, evenly loaded so that its total weight is equal to 1,8 R, shall rest on four rigid stands placed respectively underneath each lower corner fitting. The stands must be on the same level, centred beneath the corner fittings and have approximately the same dimensions as the latter<sup>2</sup>.

On top of the large container being tested shall be placed a large container with the same dimensions and having a total mass of 1,8 x 30 480 kg. The two large containers must be stacked vertically one on top of the other, offset laterally by 25,4 mm and longitudinally by 38 mm in relation to the large container being tested.

The two large containers mentioned in the previous paragraph can be replaced by a vertical force of:

$$\frac{30\,480\text{ kg} \times 2,8 \times 9,81\text{ m/s}^2}{4 \times 1\,000} = 210\text{ kN}$$

applied to each of the 4 upper corner fittings of the large container being tested, either simultaneously on the 4 corner fittings or successively on the pairs of corner fittings at either end, by means of 4 pads

1. The tests shall be carried out either by the Railway Enterprise or under its supervision or under the supervision of an organisation authorised by it.
2. In the case of tank containers, the stacking test may be carried out with the containers empty.

with the same bearing surface as the corner fittings. These pads must be offset laterally by 25,4 mm and longitudinally by 38 mm in the same direction, in relation to the corner fittings of the large container tested. Their bearing surface must be kept horizontal during the test.

## **D.2 - Test for lifting by the top**

This test is designed to prove the ability of the container to be lifted by its upper corner fittings, as well as the ability of the base structure and floor to withstand the stresses produced by the pay-load during the lifting process.

The large container, evenly loaded so that its total weight is equal to 2 R, shall be lifted by means of the four upper corner fittings, without appreciable acceleration or deceleration.

The lifting forces must be applied:

- vertically, for large containers in categories 20, 30 and 40;
- at an angle of 30° from the vertical, for large containers in category 10.

The large container must remain suspended for at least five minutes.

## **D.3 - Test for lifting by the bottom**

This test is designed to prove the ability of a large container to withstand lifting by its lower corner fittings.

The large container, evenly loaded so that its total weight is equal to 2 R, shall be raised without appreciable acceleration or deceleration, by the side openings of the 4 lower corner fittings; the lifting forces shall be applied by using a swing bar above the roof, at an angle to the horizontal of:

- 30° in the case of large containers in category 40
- 37° in the case of large containers in category 30
- 45° in the case of large containers in category 20
- 60° in the case of large containers in category 10

Lifting devices using special parts inserted in the side openings of the corner fittings must not exert any thrust on the side walls of the large container. The lines of action of the lifting forces must be 38 mm from the external surfaces of the corresponding corner fittings.

The large container must remain suspended for at least five minutes.



#### **D.4 - Test for longitudinal stresses**

This test is designed to prove the ability of the base of the container to withstand external longitudinal stresses under the dynamic conditions of rail transport, which involve accelerations of 2 g.

The large container shall be fastened to two suitable anchorage points by means of the bottom openings of the lower corner fittings at one end.

The large container, evenly loaded so that its total weight is equal to R, shall be subjected to a longitudinal force of 2 R, first under traction, then under compression, applied to the bottom openings of the lower corner fittings at the end which is not anchored.

#### **D.5 - Testing of the walls (when provided)<sup>1</sup>**

This test is designed to prove the ability of the container to withstand the dynamic forces resulting from the conditions of clause [D.4 - page 21](#).

The test must be carried out on each end wall, if only one of them is fitted with doors. It may be carried out on a single wall when the design is symmetrical.

The internal surface of the container tested must be subjected to an evenly distributed force of 0,4 P.

The end walls of large containers with side openings must be tested separately. The force must be exerted on the base structure of the container tested.

#### **D.6 - Testing of side walls (when provided)**

The test is designed to prove the ability of the container to withstand the forces resulting from transversal accelerations that occur during land transport.

The test shall involve the separate application of an evenly distributed force of 0,3 P to the inside surface of each side wall, or a single wall when the design is symmetrical. The container tested must rest upon its corner fittings only.

#### **D.7 - Testing of roof (when provided)**

This test is designed to prove the ability of the container to withstand the weight of persons working upon its roof.

The weakest part of the roof of the large container is loaded with a weight of 300 kg evenly distributed over an area 600 mm x 300 mm.

When there are ramps or grills on the roof, these must be able to withstand the same tests.

---

1. In the case of a special large container, e.g. a tank container, this test should be replaced by a static or dynamic one enabling the stresses resulting from longitudinal accelerations of 2 g to be exerted on the whole container, the gross weight of which shall equal to R.

## **D.8 - Testing of floor (when a floor accessible to industrial trucks exists)**

This test shall be performed in addition to test no. 2 to prove the ability of the floor of the container to withstand the concentrated dynamic loads applied during loading or unloading by means of a truck or similar device.

The large container shall be empty and its lower corner fittings placed upon four bearers at the same level, allowing its base structure the possibility of buckling.

An industrial truck, one axle of which complies with the following conditions, shall be wheeled over the entire floor area:

- loads of 2 730 kg on each of the 2 wheels;
- a contact area of one wheel equivalent to 142 cm<sup>2</sup> with a width of 180 mm;
- distance between the wheels: approximately 760 mm.
- distance of 760 mm between the median axes of the surfaces of contact of the wheels

## **D.9 - Lifting test by fork-lift truck**

This test applies to large containers fitted with fork recesses.

The container, evenly loaded so that its gross weight equals 1,6 R, shall be placed on 2 horizontal bars, each 200 mm wide and penetrating  $1\,828 \pm 3$  mm into the fork recesses, this value being measured from the outer surface of the container wall. The bars must be centred in the recesses.

The container must remain lifted for five minutes.

## **D.10 - Grab lifting test**

This test is specified for large containers fitted with grooves for handling by grab-type lifting appliances.

The container, evenly loaded so that its total weight is equal to 1,25 R, shall be lifted by four lifting devices. The bearers of these devices shall be centred at the locations specified in Appendix **K - page 41** and each shall have a contact surface of 32 x 254 mm on which the guide must not encroach.

The container must remain lifted for five minutes.

## **D.11 - Internal stress test (applicable to tank, hopper or other containers)**

### **D.11.1 - Resistance to the effects of lateral inertia**

The container, loaded in such a way that its weight is equal to R, shall be placed with its transverse axis in the vertical position for a period of 5 minutes, using bearers placed under the lower sides of the corner fittings.

Asymmetrical containers shall be tested on each face.

No permanent deformation or irregularity rendering the container unsuitable for use shall occur during the test.

## **D.11.2 - Resistance to the effects of longitudinal inertia:**

The container shall be loaded in such a way that its total weight equals R and held, for a period of 5 minutes, with its longitudinal axis in the vertical position (a tolerance of 3° is allowed). It shall be kept in this position either:

- by means of bearers, placed under the lower end of the base structure of a large tank container, which support the lower corner fittings both vertically and horizontally, and by means of securing devices holding the upper corner fittings of the base structure in such a way as to ensure that only horizontal stresses are exerted, or
- by means of bearers placed under the four lower corner fittings.

The second method may be used for tank containers in which the tank is supported only by the base structure, or in cases where tests 4 and 7 are not deemed adequate by the competent authorities.

Asymmetrical containers shall be tested at each end. The test may also be carried out by appropriate methods ensuring that the large container and the tank are subject to only horizontal stresses.

No permanent deformation or irregularity rendering the container unsuitable for use shall occur during the test.

## **D.12 - Pressure test (for tank-containers or other pressurised containers)**

This test shall be carried out:

- on the prototype after all other tests,
- on each container in the production series.

The tank shall be tested at a hydraulic pressure, the value of which shall be specified by the competent authorities, and shall determine the classification of the type of container.

If the tank has several compartments, each one shall be subjected to the test pressure, with the adjacent compartment empty, at atmospheric pressure.

No permanent deformation or irregularity rendering the container unsuitable for use shall occur during the test.

## Appendix E - Signs for large containers

(see point 6.1 - page 11)

**E.1 - Large containers accepted for international traffic as specified in point 6.1.1.4 - page 11, paragraph a)**

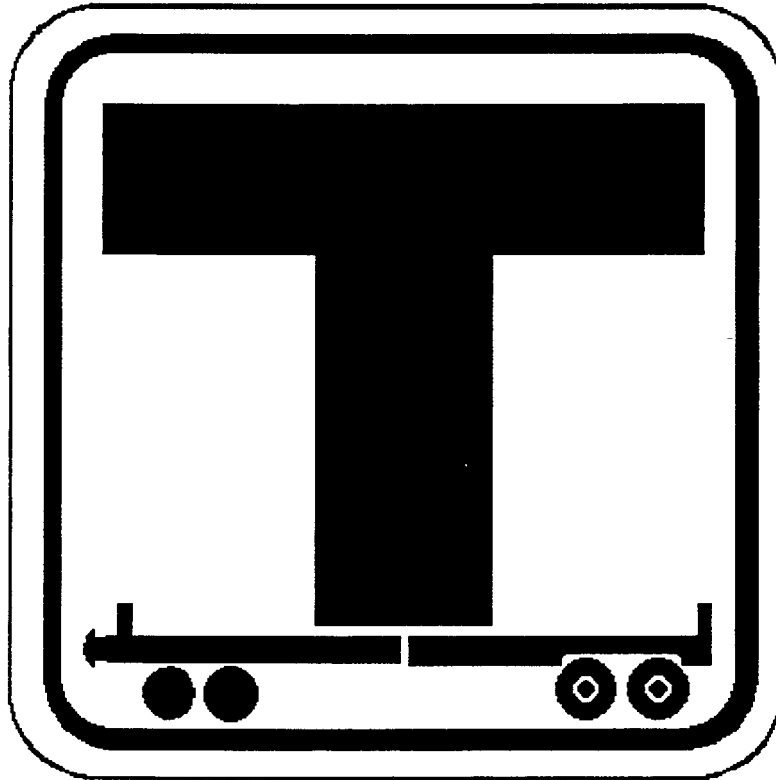


**E.2 - Large containers accepted for international traffic as specified in point 6.1.1.4 - page 11, paragraph b)**



## Appendix F - Distinctive sign for large containers

(see point 6.7 - page 13)

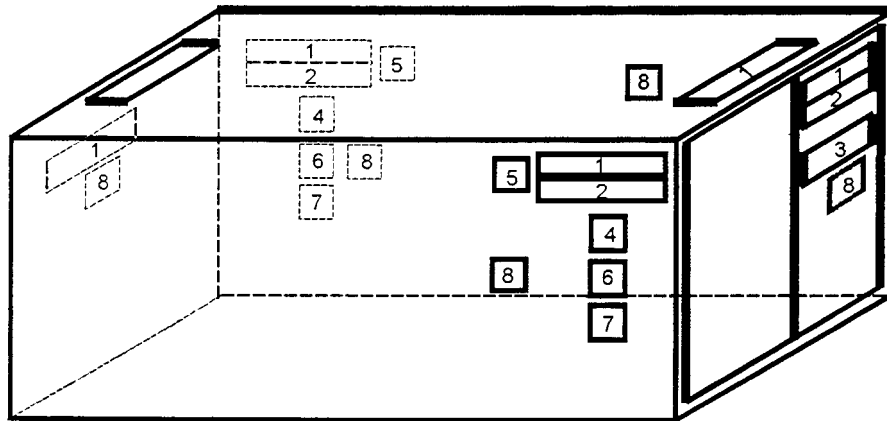


Outer dimensions of board: 300 x 300 mm

**NB :** in accordance with ISO standards, this sign must be painted in white characters and symbols on a blue background.

## Appendix G - Large containers - Diagram showing the marking layout

(see point 6.8 - page 13)



Explanation	Example
1: Owner's code, Serial Number, ISO check digit	ABZU 001234 <span style="border: 1px solid black; padding: 0 2px;">1</span>
2: Code of characteristics	22 G1
3: Maximum gross weight and tare	MAX GROSS 30 480 kg 67 200 lbs TARE 1 930 kg 4 256 lbs
4: <span style="border: 1px solid black; padding: 0 2px;">i</span> <span style="border: 1px solid black; padding: 0 2px;">t</span> or <span style="border: 1px solid black; padding: 0 2px;">i</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> sign and code of Railway which has granted approval	<span style="border: 1px solid black; padding: 0 2px;">i</span> <span style="border: 1px solid black; padding: 0 2px;">t</span> 81
5: <span style="border: 1px solid black; padding: 0 2px;">T</span> identification mark	<span style="border: 1px solid black; padding: 0 2px;">T</span>
6: ATP identification mark	FP-C 12-1979
7: Distinctive mark: Appendix I - page 37 or Appendix J - page 39	
8: Mark denoting large containers with a maximum weight of between 30 480 kg and 34 000 kg (Appendix P - page 46)	

Inscriptions 1, 2 and 3 shall be placed on the top right-hand end door(s). If there are none, they shall be placed on the top right hand area of one of the end walls.

Inscription 1 applied on the top (roof) of large containers shall be arranged in such a way that its base is nearest to the edges of the end walls of the container.

It is permissible for inscription 1 to be omitted from the top of the container if the design prevents its application (e.g. a container with a tarpaulin cover).

For containers with railway markings, inscriptions 1 and 2 must be supplemented with following signs:

1. for tank containers:
  - the sign for tank containers specified in *ISO Standard 1496 - III*;
2. for large containers which are suitable for the transport of dangerous goods:
  - the signs provided in the *RID*;
3. for large containers with ladders:
  - the *RIV*, *point 23.2.7.3* lightning flash, adjacent to each ladder.
4. If, in large containers suitable for transport under controlled temperature, some transport operations are carried out according to the ATP agreement<sup>1</sup>, the specifications to be met are those of the ATP and the marking shall be in accordance with *Appendix 1, Annex 4 of ATP*. Appendix 15 of this leaflet shows an example of this marking.

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1. "Agreement relative to international transport of perishable goods and for special vehicles to be used for the carriage of these goods" (prepared by the United Nations Economic Commission for Europe).

## Appendix H - Identification marking of large containers

(see point 6.1 - page 11)

### Foreword

The provisions of this Appendix comply with those of international Standard *ISO/CD 6346*. It is advisable to refer to that standard for any additional information, particularly in respect of points **H.4**, **H.5** and **H.6** - page 35.

### H.1 - Composition of the marking

The marking code must include the following components:

- |                                     |                           |
|-------------------------------------|---------------------------|
| - Owner's code                      | 3 letters                 |
| - Marking for the type of container | 1 letter                  |
| - Serial number                     | 6 digits                  |
| - "ISO" check digit                 | 1 digit (in box)          |
| - Dimensions code                   | 2 alphanumeric characters |
| - Type code                         | 2 alphanumeric characters |

### H.2 - Owner's code

The code of the owner (or operator) of the container shall consist of three capital roman letters.

To ensure that owners' codes are unique, it is necessary for all codes to be registered with the International Container Bureau (ICB) through its national registration offices in countries where such exist or, failing this, by contacting the ICB directly at the following address:

Bureau International des Conteneurs  
167, rue de Courcelles  
F 75017 - PARIS



### H.3 - Serial number

The serial number shall be made up of six Arabic numerals. If the number of significant digits does not total six, it shall be preceded by sufficient "0"s to make up six digits (e.g. if the significant number is 1234, the serial number shall be 001234).

### H.4 - Check digit

The ISO check digit relates exclusively to the 3 letters of the owner's code and the 6 digits of the serial number. It is determined in accordance with the ISO regulations, which differ from those used to calculate the check digit for railway-owned rolling stock registration numbers.

### H.5 - Code of characteristics

This code comprises:

- 2 alphanumeric characters giving the dimensions (length - width - height) as per tables 1 and 2 - page 30;
- 2 alphanumeric characters denoting the type of container see table 3 - page 31.

#### H.5.1 - Code of characteristics

Dimensions codes:

- length characteristic, table 1,
- width and height characteristic, table 2.

Table 1 :

Code	Length	
	mm	ft in
1	2 991	10'
2	6 058	20'
3	9 125	30'
4	12 192	40'
5	spare	
6	"	
7	"	
8	"	
9	"	
A	7 150	
B	7 315	24'
C	7 420	
D	7 430	24' 6"
E	7 800	
F	8 100	
G	12 500	41'
H	13 106	43'
K	13 600	
L	13 716	45'
M	14 630	48'
N	14 935	49'
P	16 154	
R	spare	
"	"	

Table 2 :

Width/Height mm (ft. in)	2 438 (8')	> 2 438 ≤ 2 500	> 2 500
2 438 (8')	0		
2 591 (8' 6")	2	C	L
2 743 (9')	4	D	M
2 895 (9' 6")	5	E	N
> 2 895 (9' 6")	6	F	P
1 295 (4' 3")	8		
≤ 1 219 (4')	9		

Containers in the shaded zones satisfy point 2.3 - page 3 and are accepted for international transport

**H.5.2 - Type code**

Table 3 :

Type		Characteristics	Code
0	General-purpose container (see notes 1 - page 35 and 13 - page 36)	Opening(s) at one or both end(s)	G 0
		Passive ventilation in upper part	G 1
		Opening(s) at one or both end(s), plus full opening(s) on one or both side walls	G 2
		Opening(s) at one or both end(s), plus partial opening(s) on one or both side walls	G 3
		Spare	G 4
		Spare	G 5
		Spare	G 6
		Spare	G 7
		Spare	G 8
		Spare	G 9
V	Closed container, mechanically ventilated (see note 13)	Non-mechanical ventilation system in upper and lower part of the loading space.	V 0
		Spare	V 1
		Mechanical ventilation system located inside the container	V 2
		Spare	V 3
		Mechanical ventilation system located outside the container	V 4
		Spare	V 5
		Spare	V 6
		Spare	V 7
		Spare	V 8
		Spare	V 9
B	Non-pressurised container for bulk solids	Closed	B 0
		Airtight	B 1
		Spare	B 2

Table 3 :

Type		Characteristics	Code
G	Pressurised container for bulk solids	For horizontal unloading	B 3
		Test pressure: 1,5 bar	
		Horizontal unloading	B 4
		Test pressure: 2,65 bar	
		Tilt discharging	B 5
		Test pressure: 1,5 bar	
		Tilt discharging	B 6
S	Purpose-built containers for specific payloads	For carriage of livestock	S 0
		For carriage of motor vehicles	S 1
		For live animals	S 2
		Spare	S 3
		Spare	S 4
R	Controlled-temperature container	Refrigerated	R 0
		Refrigerated and heated	R 1
		Refrigerated and heated	R 2
		By own energy source	R 3
		Spare	R 4
		Spare	R 5
		Spare	R 6
		Spare	R 7
		Spare	R 8
		Spare	R 9
H	Refrigerator container and/or heated with the air of removable equipment  (see notes 5 and 6 - page 35)	Refrigerated and/or heated with removable equipment placed outside, Heat transfer coefficient $K = 0,4 \text{ W/m}^2\text{°K}$	H 0
		Refrigerated and/or heated with removable equipment placed inside	H 1

Table 3 :

Type		Characteristics	Code
H	Insulated container (see note 2 - page 35)	Refrigerated and/or heated with removable equipment placed outside, Heat transfer coefficient $K = 0,7 \text{ W/m}^2\text{K}$	H 2
		Spare	H 3
		Spare	H 4
		Insulated	
		Heat transfer coefficient $K = 0,4 \text{ W/m}^2\text{K}$	H 5
		Insulated	
		Heat transfer coefficient $K = 0,7 \text{ W/m}^2\text{K}$	H 6
		Spare	H 7
		Spare	H 8
	Spare	H 9	
U	Container with top permanently open (see note 14 - page 36)	Opening(s) at one or both end(s)	U 0
		Opening(s) at one or both end(s), plus removable top-end cross-member(s)	U 1
		Opening(s) at one or both end(s), plus opening(s) in one or both side walls	U 2
		Opening(s) at one or both end(s), plus opening(s) in one or both side walls, plus removable top-end cross-member(s)	U 3
		Opening(s) at one or both extremities, plus a partial opening in one of the side walls and full opening in the other side wall	U 4
		Spare	U 5
		Spare	U 6
		Spare	U 7
		Spare	U 8
	Spare	U 9	

Table 3 :

Type		Characteristics	Code
P	Platform (container)	Platform (large container) (see note 8)	P 0
	Platform-based container with incomplete superstructure (see notes 7, 8 and 9 - page 35)		
	- fixed	Fixed and complete end frames	P 1
		Fixed corner posts, either independent or with removable cross-member	P 2
	- foldable	Complete and folding end frames	P 3
		Folding corner posts, either independent or with removable top cross-member	P 4
	Platform-based container with incomplete superstructure	With open top and open ends (skeleton)	P 5
		Spare	P 6
		Spare	P 7
		Spare	P 8
T	Tank container for non-dangerous liquid substances	Test pressure: 0,45 bar	T 0
		Test pressure: 1,5 bar	T 1
		Test pressure: 2,65 bar	T 2
	For dangerous liquid substances	Test pressure: 1,5 bar	T 3
		Test pressure: 2,65 bar	T 4
		Test pressure: 4,0 bar	T 5
		Test pressure: 6,0 bar	T 6
	For dangerous gaseous substances (see notes 10 - page 35, 11 and 12 - page 36)	Test pressure: 9,5 bar	T 7
		Test pressure: 22,0 bar	T 8
Test pressure (to be developed)		T 9	
A	Container for transport by air or land		A 0

## H.6 - Notes

1. **General purpose container or aerated/ventilated containers:** Containers other than insulated or tank containers or containers for solid bulk goods, for air transport or any other container for a specific purpose, that has a floor, walls and a roof which can be loaded at least through openings (doors) at one end and, in some cases, through additional openings and, in others, through ventilation apertures.
2. **Isothermal containers: Codes H5 to H9:** Containers with insulated walls, doors, floor and roof to restrict heat exchange between the inside and outside of the container.

When reference is made to this note, the temperatures maintained inside the containers should be in accordance with *ISO specification 1496/2, Series 1 containers - Specification and tests - Part 2: Thermal containers*.

3. **Insulated containers:** Isothermal containers with no cooling and/or heating devices.
4. **Heated containers:** Isothermal containers with heating equipment.
5. **Refrigerated containers:** Isothermal containers using either a renewable cooling agent or refrigerator equipment.
6. **Removable equipment:** Removable equipment: Refrigerator and/or heater equipment designed mainly to be fitted to or removed from containers during their transfer from one mode of transport to another. Such equipment may be placed "inside", i.e. within the maximum external dimensions of the container defined in *ISO 668*, or be located "outside", i.e. partly or entirely outside these same maximum external dimensions.
7. **Platform-type containers:** Containers with a base structure consisting of a flat platform which may be of curved design.
8. **Platform (container): Code P 0 :** Flat loading platforms without any superstructure whatsoever, but the basic length and width of which are the same as those of series 1 containers, with upper and lower corner fittings in the platform plane to enable the same lifting and securing devices to be used as for series 1 containers.
9. **Platform-type containers with incomplete superstructure:** Fitted with complete, fixed end frames or independent corner posts for which the provisions of *ISO 668* concerning the total upper length may be relaxed.
10. **Tank containers for liquids or gases (see paragraphs a and b hereafter):** Purpose built containers for the conveyance and distribution of bulk liquids or gases (taking account of the national and international regulations and codes applicable).
  - a. **Liquids:** Liquid substances with a vapour pressure not exceeding 3 bar (3 kgf/cm<sup>2</sup>) absolute at 50°C (42,67 lbf/im<sup>2</sup> absolute at 122°F).
  - b. **Gases:** Gases or vapours with a vapour pressure of more than 3 bar (same values as above).

11. **Test pressures** for tank containers and containers for bulk commodities: the test pressures given correspond to the minimum pressure for the category concerned. Any tank container or container for bulk commodities with a test pressure in between a given minimum value and the next pressure above should be placed in the lower category.
12. **Dangerous substances** are those substances classified as dangerous by the UN Committee of Experts on the carriage of dangerous goods or by the competent authorities.
13. **Openings:** Any hinged or removable panel, in a container designed as a structure capable of bearing a load, water-tight and reasonably air-tight.
14. **Open:** Description used solely when one or both sidewalls, one or both ends or the roof of a container remain permanently open.



## Appendix I - Distinctive mark for containers in class 1 at least 2 438 mm (8') in height

(see point 2.3 - page 3)

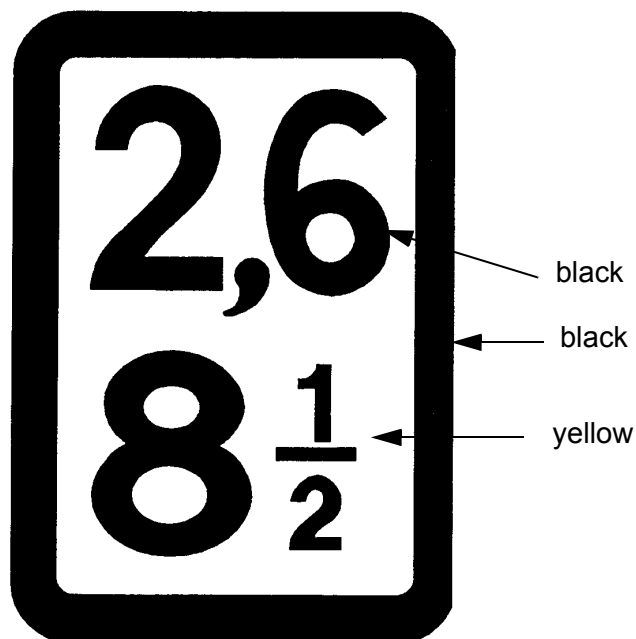
The upper set of figures gives the height in metres to one decimal place (0,1 m); this height must not be less than the actual height.

The lower set of figures gives the height in feet (rounded off to the nearest 1/4 ft); this height must not be less than the actual height.

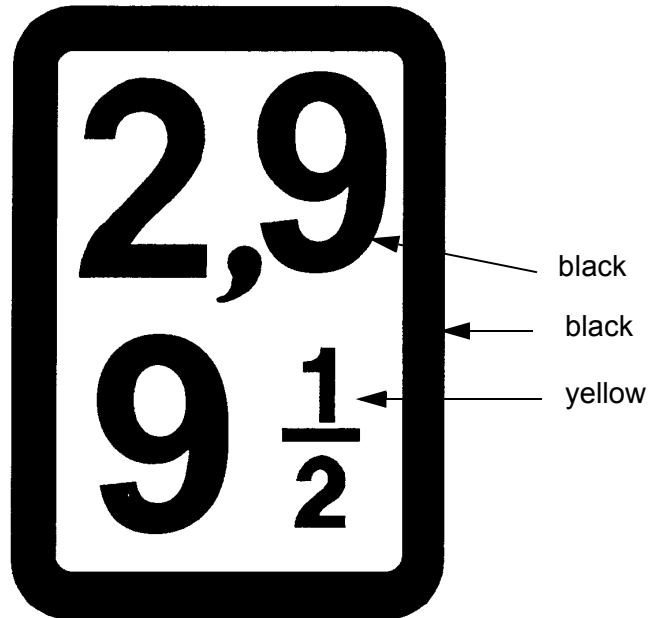
The dimensions of the mark, measured between the outside edges of the black frame, must not be less than 115 x 155 mm, and the figures must be as large as possible and easy to read.

The mark must be placed in two locations on each large container, no further than 1,2 m (4') from the top of the container and no further than 0,6 m (2') from the right-hand side of the container, under the identification mark.

### I.1 - Example of the marking for a large container with a total height $\geq 2\,438\text{ mm (8')} \leq 2\,591\text{ mm (8 1/2')}$



I.2 - Example of the marking for a large container with a total height  $\geq 2\,591$  mm (8 1/2')  $\leq 2\,896$  mm (9 1/2')



## Appendix J - Distinctive mark for large containers of classes 2 and 3 with a height $2\,438\text{ mm} < H \leq 2\,896\text{ mm}$

(see point 2.3 - page 3)

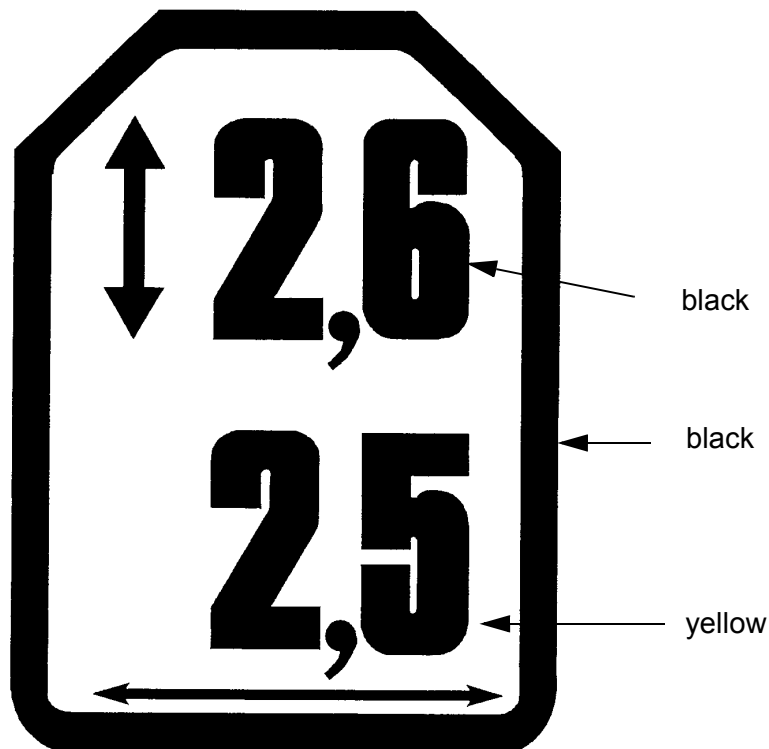
The upper set of figures gives the height in metres to one decimal place (0,1 m); this height must not be less than the actual height (the abbreviation "m" must not appear on the mark).

The lower set of figures gives the width in metres to one decimal place; this width must not be less than the actual width.

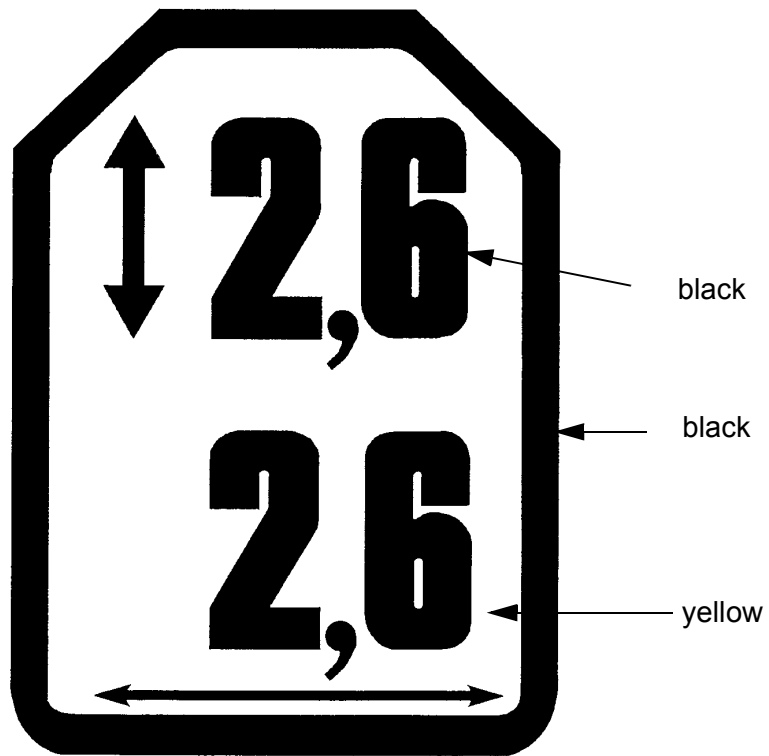
The dimensions of the mark, measured between the outside edges of the black frame, shall not be less than 115 x 155 mm, and the figures shall be as large as possible and easy to read.

The mark must be placed in two locations on each large container, no further than 1,2 m (4') from the top of the container, and no further than 0,6 m (2') from the side of the container, under the identification number.

### J.1 - Example 1: Distinctive mark for container of class 2



J.2 - Example 2: Distinctive mark for container of class 2



# Appendix K - Large containers - Grooves for handling by grab-type lifting appliances

(see point 3.2 - page 8)

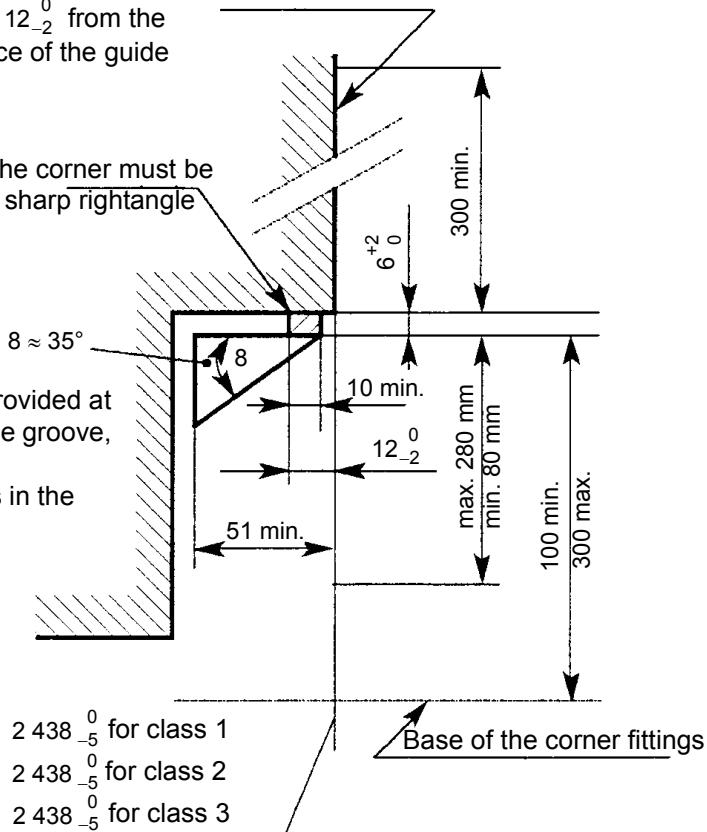
## Section XX

This part of the wall must not be more than  $12_{-2}^0$  from the internal surface of the guide

The corner must be a sharp rightangle

$8 \approx 35^\circ$

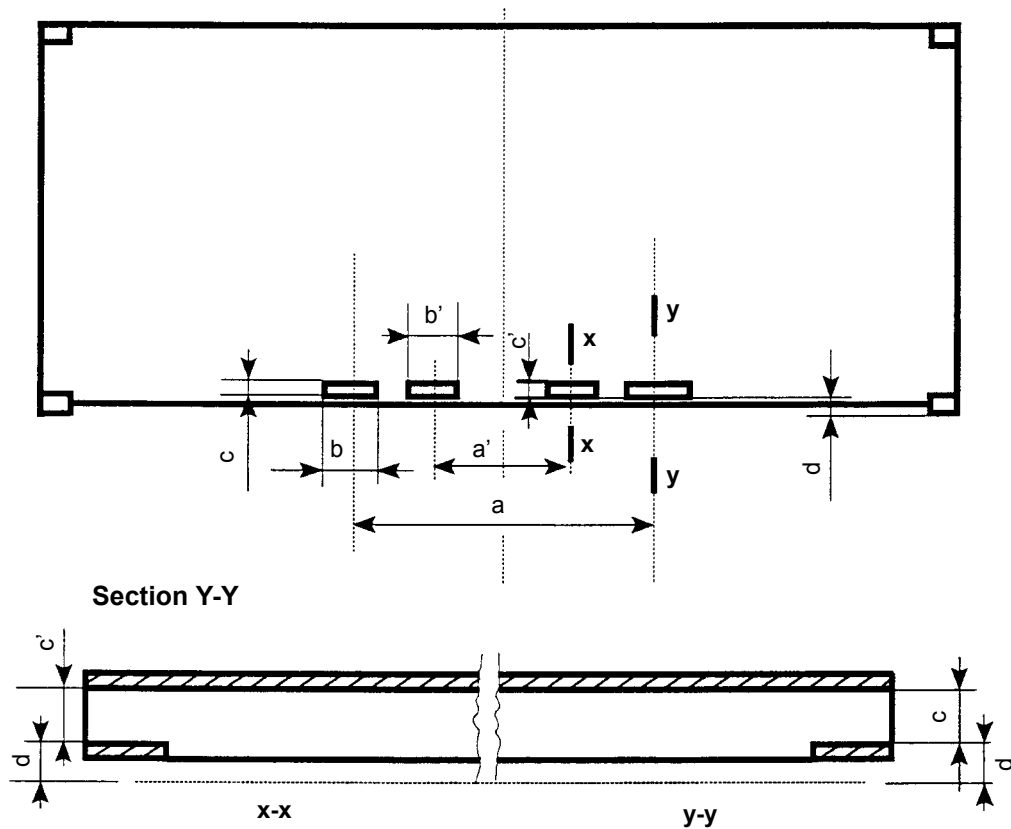
If stops are provided at the ends of the groove, they must be chamfered as in the drawings



## Appendix L - Fork recesses for large containers in categories 10 and 20

(see point 3.4 - page 8)

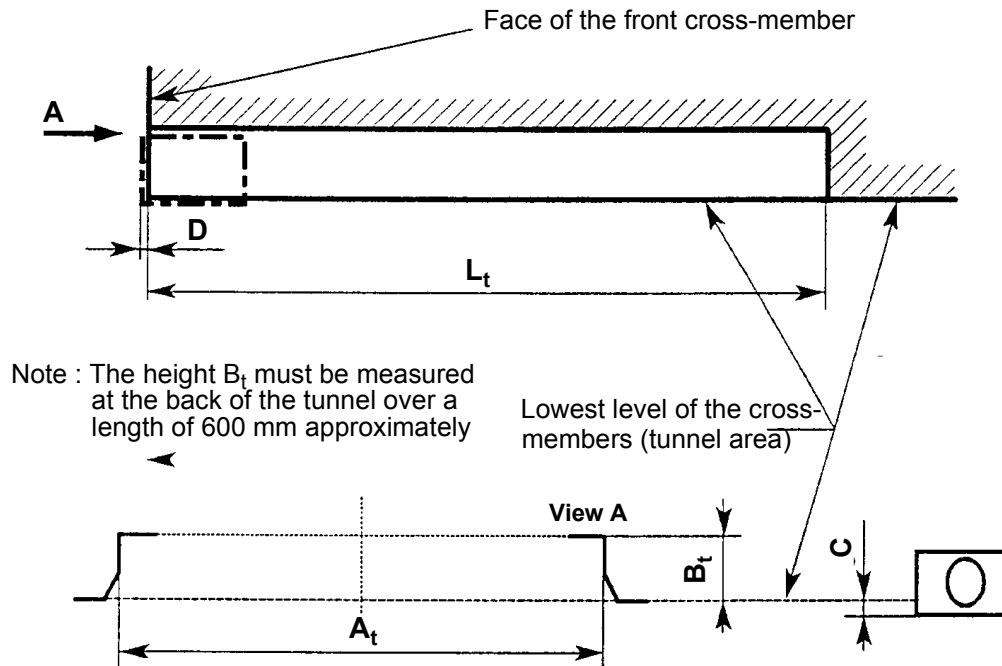
Locations and dimensions



Designation of container	Dimensions (in mm)			
	a	b	c	d
cat 20	2 050 ± 50	355 min	115 min	20 min
cat 10	900 ± 50	305 min	102 min	20 min
	a'	b'	c'	
cat 20	900 ± 50	305 min	102 min	

## Appendix M - Dimensions of gooseneck tunnels (if envisaged)

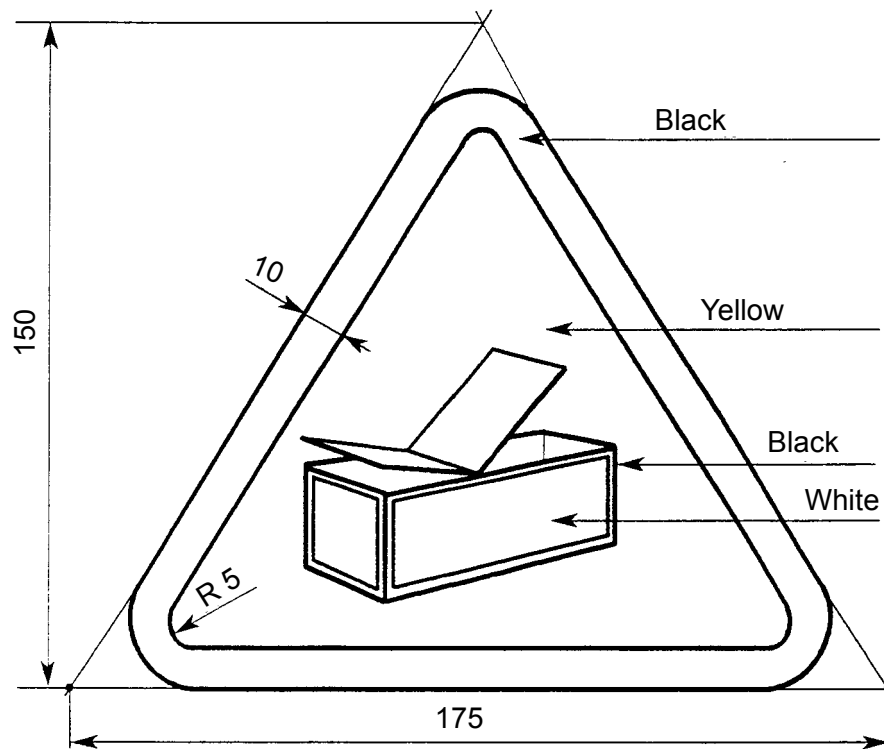
(see point 2.4 - page 6)



		Dimensions (in mm)
Length	$L_t$	3 150 min.
	$D$	$6 \begin{smallmatrix} +1 \\ -2 \end{smallmatrix}$
Width	$A_t$	$1\ 029 \begin{smallmatrix} +3 \\ 0 \end{smallmatrix}$
Height	$B_t$	$120 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$
	$C$	$12,5 \begin{smallmatrix} +5 \\ -1,5 \end{smallmatrix}$

# Appendix N - Distinctive mark for large containers with opening roof

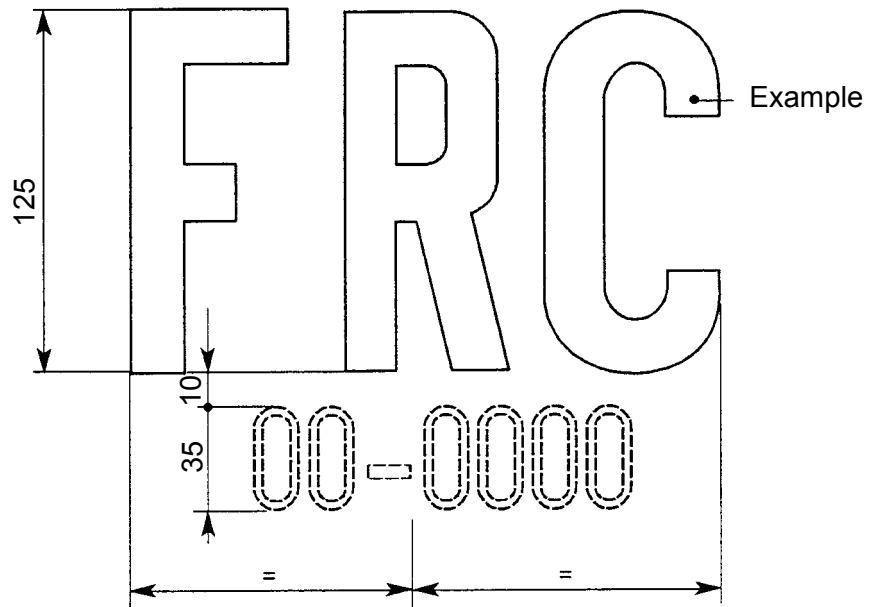
(see point 2.6 - page 6)





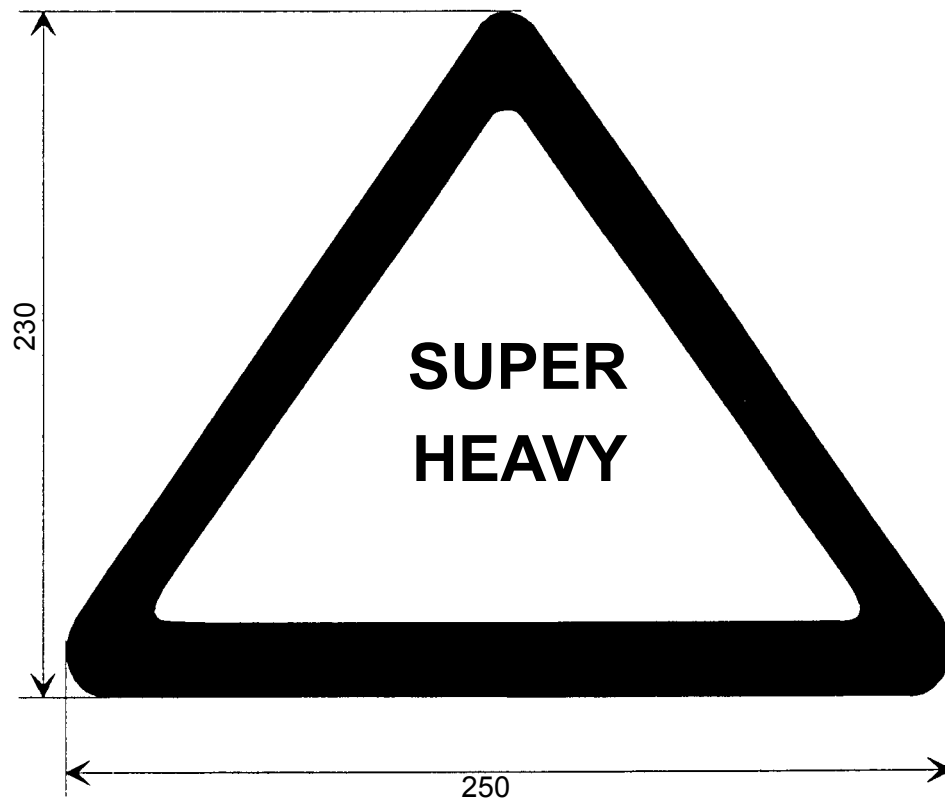
## Appendix O - Example of ATP marking

(see point 6.2 - page 12)



## Appendix P - Marking for large containers authorised for a maximum total weight of > 30 480 kg and $\leq$ 34 000 kg

(see point 6.7 - page 13)



**NB :** this sign must be yellow in colour against a dark background or red in colour against a light-coloured background.

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### **International Union of Railways (UIC)**

*UIC Leaflet 571-4: Standard wagons - Wagons for combined transport - Characteristics*, (4th edition under preparation)

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*UIC Leaflet 592-4: Swap bodies which can be handled by grabs - Technical conditions*, 2nd edition, September 2004

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*UIC Leaflet 920-1: Standard Numerical Coding of Railways*, 5th edition, March 2003

## 2. Minutes of meetings

### **International Union of Railways (UIC)**

*Rolling Stock Committee (Question 45 C 2.4 - Approval of the new edition of UIC Leaflet 592-2)*, March 1996

*Joint Subcommittee 25C "Combined Transport" (Question 45/C/FIC - Updating of UIC Leaflet 592-2, point 5.1.2)*, June 1997

*Joint Subcommittee 25C "Combined Transport" (Question 45/C/FIC - Approval of the amendment to point 2.2 of UIC Leaflet 592-2)*, January 1999

*Joint Subcommittee 25C "Combined Transport" (Question 45/C/FIC - Approval of the amendment to the text of point 1 of Appendix 4 of UIC Leaflet 592-2)*, June 1999

*Joint Subcommittee 25C "Combined Transport" (Question 45/C/FIC - Approval of the amendment to Appendix 4 of UIC Leaflet 592-2)*, June 2000

*Joint Subcommittee 25C "Combined Transport" (Question 45/C/FIC - Approval of the proposed addition to the text of section 2.1 of UIC Leaflet 592-2)*, January 2001

### 3. International standards

#### **International Organization for Standardization(ISO)**

*ISO 1496-I:1990 : Series 1 freight containers -- Specification and testing -- Part 1: General cargo containers for general purposes, 1990*

*ISO 1496-II:1996 : Series 1 freight containers -- Specification and testing -- Part 2: Thermal containers, 1996*

*ISO 1496-III:1995 : Series 1 freight containers -- Specification and testing -- Part 3: Tank containers for liquids, gases and pressurized dry bulk, 1995*

*ISO/CD 6346:1995 : Freight containers -- Coding, identification and marking, 1995*

*ISO 668:1995 : Series 1 freight containers -- Classification, dimensions and ratings, 1995*

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