

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.

## 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  $\leq 34\,000$  kg can be handled with existing equipment.

Although the term "large containers" applies to containers with a volumetric capacity of more than  $3\text{ m}^3$  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<br>(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.

- O 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 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  $\leq 34\,000$  kg. Large containers with a total maximum weight  $> 30\,480$  kg and  $\leq 34\,000$  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.

## ◦ 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<br>00000 lbs |
| TARE      | 00000 kg<br>00000 lbs |

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.