

# UIC CODE

# 592-4

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*Translation*

# OR

## **Swap bodies for grab handling and spreader gripping - Technical conditions**

*Caisses mobiles préhensibles par pinces et/ou palonniers agrippeurs - Conditions techniques  
Mittels Greifzangen und/oder Spreader aufnehmbare Wechselbehälter - Technische Bedingungen*



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

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

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## Summary

Swap bodies are the removable superstructures of road transport vehicles. Their dimensions and some of their fittings are standardised. This standardisation applies particularly to the dimensions, strength parameters, securing devices, of the road vehicle itself, of the wagon and of transshipment arrangements (grab-handling grooves, lower securing parts and, in special cases, upper securing parts).

# 1 - Swap bodies

## 1.1 - General arrangements

- 1.1.1 - The outer dimensions of swap bodies shall correspond to the values given in the table below, with due allowance made for the load diagrams of carrier wagons.

### 1.1.1.1 - Symmetrical dimensions

**NB :** If these swap bodies are provided with asymmetrical protrusions, the value of the largest protrusion shall be used as a basis for the two sides when determining the group number, taking the length range into account.

| Group No. <sup>a</sup> | Maximum length (in mm) <sup>b</sup> | Maximum overhang (in mm) | Distance between centres of securing devices (in mm) | Maximum overhang (in mm) | Securing devices | Width (in mm)                     | Maximum height of sides (in mm) |
|------------------------|-------------------------------------|--------------------------|--|--------------------------|------------------|-----------------------------------|---------------------------------|
| (20)                   | 6 058 (= 20')                       | 102,5                    | 5 853 ± 3  | 102,5                    | 20'              | 2 440<br>to<br>2 550 <sup>c</sup> | See <sup>d</sup>                |
| (21)                   | 6 250                               | 198,5                    | 5 853 ± 3  | 198,5                    |                  |                                   |                                 |
| 22                     | 7 150                               | 648,5                    | 5 853 ± 3  | 648,5                    |                  |                                   |                                 |
| 23                     | 7 450                               | 798,5                    | 5 853 ± 3  | 798,5                    |                  |                                   |                                 |
| 24                     | 7 820                               | 983,5                    | 5 853 ± 3  | 983,5                    |                  |                                   |                                 |
| (26)                   | 8 150                               | 1 148,5                  | 5 853 ± 3  | 1 148,5                  |                  |                                   |                                 |
| (30)                   | 9 125 (= 30')                       | 103,5                    | 8 918 ± 4  | 103,5                    | 30'              |                                   |                                 |
| (31)                   | 9 300                               | 191,0                    | 8 918 ± 4  | 191,0                    |                  |                                   |                                 |
| 40                     | 12 192 (= 40')                      | 103,5                    | 11 985 ± 5   | 103,5                    | 40'              |                                   |                                 |
| 42                     | 12 500                              | 257,5                    | 11 985 ± 5   | 257,5                    |                  |                                   |                                 |
| (44)                   | 13 100                              | 557,5                    | 11 985 ± 5   | 557,5                    |                  |                                   |                                 |
| (45)                   | 13 716 (= 45')                      | 865,5                    | 11 985 ± 5   | 865,5                    |                  |                                   |                                 |

a. Where necessary, three-figure sub-groups are allowed. Group members without () correspond to the CEN coding. Preference should be given to use of these swap bodies.

b. In the case of swap bodies with a distance of 30' and 40' between centres of securing devices and fitted with a protruding cooling unit, the latter shall be included in the overall length of the swap body.

c. The maximum width of 2 600 mm is permitted.

d. Each RU fixes the marking of swap bodies in accordance with UIC Leaflet 596-6.

### 1.1.1.2 - Asymmetrical dimensions

| Group No. <sup>a</sup> | Maximum length (in mm) <sup>b</sup> | Maximum overhang (in mm) | Distance between centres of securing devices (in mm) | Maximum overhang (in mm) | Securing devices | Width (in mm)                     | Maximum height of sides (in mm) |
|------------------------|-------------------------------------|--------------------------|--|--------------------------|------------------|-----------------------------------|---------------------------------|
| (60)                   | 8 543                               | 1 190                    | 5 853 ± 3  | 1 500                    | 20'              | 2 440<br>to<br>2 550 <sup>c</sup> | See <sup>d</sup>                |
| (81)                   | 9 275                               | 103,5                    | 8 918 ± 4  | 253,5                    | 30'              |                                   |                                 |
| (82)                   | 9 330                               | 103,5                    | 8 918 ± 4  | 308,5                    |                  |                                   |                                 |
| (84)                   | 10 040                              | 103,5                    | 8 918 ± 4  | 1 018,5                  |                  |                                   |                                 |
| (85)                   | 10 200                              | 103,5                    | 8 918 ± 4  | 1 178,5                  |                  |                                   |                                 |
| (86)                   | 10 900                              | 103,5                    | 8 918 ± 4  | 1 878,5                  |                  |                                   |                                 |
| (91)                   | 12 500                              | 103,5                    | 11 985 ± 5   | 411,5                    |                  |                                   |                                 |
| (94)                   | 12 750                              | 103,5                    | 11 985 ± 5   | 661,5                    |                  |                                   |                                 |
| (95)                   | 13 200                              | 257,5                    | 11 985 ± 5   | 957,5                    |                  |                                   |                                 |
| 96                     | 13 600                              | 715,5                    | 11 985 ± 5   | 900,5                    |                  |                                   |                                 |
| (97)                   | 14 040                              | 715,5                    | 11 985 ± 5   | 1 340,5                  |                  |                                   |                                 |

- a. Where necessary, three-figure sub-groups are allowed. Group members without ( ) correspond to the CEN coding. Preference should be given to use of these swap bodies.
- b. In the case of swap bodies with a distance of 30' and 40' between centres of securing devices and fitted with a protruding cooling unit, the latter shall be included in the overall length of the swap body.
- c. The maximum width of 2 600 mm is permitted.
- d. Each RU fixes the marking of swap bodies in accordance with UIC Leaflet 596-6.

- **1.1.2 - Swap bodies shall have four securing devices in the lower part of their frame, positioned as specified in Appendix A - page 14.**

The dimensions of the securing devices are given in Appendix B - page 15.

The lower openings of securing devices shall be positioned symmetrically, with respect to the longitudinal centre-line of the underframe. Their positions are given in Appendix A.

If the swap bodies are fitted with more than four lower securing devices, the securing devices used for rail transport shall be identified by means of a triangle pointed downward above the corner fitting concerned, as shown in Appendix C - page 16. If this is not possible (for example, because of the type of design), the securing devices to be used must be specifically marked using a contrasting colour. The same procedure shall be used for securing devices if their longitudinal arrangement is asymmetrical. The group number is determined from the securing devices earmarked for rail transport.



Swap bodies shall be fitted with side openings for the roping. For swap bodies in groups No. 20 to 29 and 60, the asymmetries accepted for side openings with respect to the centre-line of the underframe shall be those of securing devices and may be arranged in the same direction.

The side openings of units in all other group numbers shall be placed symmetrically with respect to the longitudinal and transverse centre-lines of the underframe.

They shall be arranged facing outwards on the side surfaces. Their dimensions and positions are set out in Appendix D - page 17.

The side openings of swap bodies in groups No. 30 to 45 and 81 to 97 may also be placed at a distance of  $5\,590^{+400}_{-200}$ . The existing side-openings located at a distance of 8 920 mm or 11 985 mm must be neutralised for rope-handling and only be used for visual checking of the correct pin position.

- **1.1.3** - During transport on fixed-recess wagons precluding the use of other bearings for swap bodies on carrier wagons between securing devices, swap bodies shall rest solely on their supporting plates fitted with pins, by means of their securing devices.

If, because of their design, the swap bodies in groups No. 40 to 49 and 91 to 99 also require an intermediate bearing during rail transport, this special requirement must be taken into account during the construction phase (position and strength of bearing points).

The location and dimensions of the intermediate bearing shall conform to Appendix E - page 18.

- **1.1.4** - Swap bodies without upper corner fittings shall be provided with grab-handling grooves, the position and dimensions of which conform to Appendices A - page 14 and F - page 19 or G - page 20. In other words, the handling grooves shall be symmetrically arranged, lengthwise (approximately 200 mm) and crosswise, with respect to the centreline of the swap body. This also applies to asymmetrical swap bodies.

The grab grooves for swap bodies in groups No. 20 to 29 shall always be lodged between the securing devices, also in case of permissible asymmetrical overhang.

These grooves must be designed to prevent the handling grabs sliding outside the grab zone during longitudinal travel of the swap body with respect to the lifting appliance. This is usually ensured by means of two lateral stops fixed 250 mm from either side of the centre-line of the grab-handling zone.

When this not possible (support legs, for example), the overall length of the zone concerned shall be raised from 500 to 850 mm, measured from the centre-line of the securing device, coupled with elimination of the longitudinal bar and part of the grab contact zone:

- over a depth less than 15 mm measured from the inner face of the safety bar, and
- in zones defined by (a) and (b) on the drawing in Appendix G.

In order to materialise their position, grab-handling grooves must be provided with a yellow strip 100 mm in height over their full length. For swap bodies painted yellow, a different contrasting colour shall be used.

- **1.1.5** - When swap bodies are provided with support legs, the locking systems for the support legs when retracted and folded-back must be designed securely to prevent any accidental release at all times, and ensure they can visually be checked from the outside, at least for the second transport security in accordance with standard EN 284, Appendix B (see Bibliography - page 43).

- **1.1.6** - Swap bodies with recesses to accommodate the forks of forklift trucks must, for constructional and testing purposes, comply with the provisions of *UIC Leaflet 592-2* (see [Bibliography - page 43](#)). These recesses shall not be permitted:

- for swap bodies with securing devices > 5 853 mm apart;
- for all tank swap bodies, irrespective of the gap between their securing devices.

- **1.1.7** - In addition to the usual strength provisions imposed by National Technical Services or equivalent agencies, swap bodies shall satisfy at minimum the test stipulated in Appendix **H** - [page 21](#).

Since swap bodies may be carried in both directions under SS conditions (120 km/h), their bodywork (especially the doors, bodywork components and their fastenings) must be able to withstand wind pressure, in particular, pressures or pressure drops occurring in tunnels or when passing other trains. In the case of sheeted swap bodies, the fastening of the sheet to the bodywork shall comply with the provisions of standard *CEN 12641-1 or -2* (see [Bibliography - page 43](#)). In the event of the walls being wholly or partly deficient or not rigid, devices must be provided to secure the load on the base structure of the swap body. The number and positioning of fastening points are specified in standard *EN 284, Appendix C* or in standard *EN 452, Appendix B* (see [Bibliography - page 43](#)).

Requests for prototype approval must be accompanied by a test certificate in accordance with *UIC Leaflet 592-3* (see [Bibliography - page 43](#)), clearly stating that the swap body meets the conditions stipulated. For later productions, a Certificate from the Manufacturer confirming compliance with the prototype must be submitted. This certificate must be renewed each time the body structure is modified.

**NB :** Tests shall be carried out by the RU, under its own direction or under the direction of a body authorised by it.

- R 1.1.8** - It is recommended that a box with minimum dimensions of 350 x 250 x 20 mm be fitted to the front of the swap bodies in order to house relevant documents.

- **1.1.9** - Swap bodies must be codified in accordance with the provisions of *UIC Leaflet 596-6* (see [Bibliography - page 43](#)), and must moreover bear the following identification plates and markings on both sides.

- **1.1.10** - Each swap body shall require permanent authorisation for conveyance on wagon, issued by the RU concerned, or under its responsibility by one or several agencies selected by it.

The acceptance procedure shall be defined by this RU which may, in this connection, insist on presentation, for each swap body, of a conformity certificate as provided for in the present point.

- **1.1.11** - If any type of swap body is provided with steps, each step shall be capable of withstanding a minimum load of 200 kg.

Swap bodies of whatever design, fitted with steps, shall bear an arrow-sign next to each step, as provided for in Appendix **I** - [page 29](#).

- **1.1.12** - Swap bodies, with overall dimensions exceeding 2 500 mm but not 2 600 mm, shall not be accepted for loading on fixed-recess wagons as defined in *UIC Leaflet 571-4* (see [Bibliography - page 43](#)).

Swap bodies with an overall width exceeding 2 500 mm but with an indent next to the securing devices giving a width of 2 500 mm, as provided for in Appendix J - page 30, may be accepted for loading on fixed-recess wagons of the type defined in *UIC Leaflet 571-4*, on condition they bear an additional plate (as provided for in Appendix K - page 31) next to the code-number plate.

- **1.1.13** - Swap bodies used in international customs-sealed freight transport shall conform with the regulations of existing Customs Agreements.
- **1.1.14** - Swap bodies for the carriage of dangerous goods shall comply with the relevant *RID* (see *Glossary* - page 42) provisions (for example: their safety coefficient must be 1,5 times the yield strength ( $\sigma_{0,2}$ )).
- **1.1.15** - Swap bodies which can be used for controlled-temperature transport must comply with *ATP* (see *Glossary* - page 42) regulations when they are used for traffic covered by this agreement, in which case they shall be marked as specified in *Annex 1, Appendix 4 to the ATP*.
- **1.1.16** - If the swap bodies incorporate service platforms or gangways, the latter must be fitted with slip-preventing and weatherproof flooring. If these same platforms and gangways are fitted with retractable/removable handrails, the locking mechanism of the latter must be positioned in a way enabling it to be controlled from the running plane.

## **1.2 - Additional provisions for special-purpose swap bodies**

### **1.2.1 - Swap tank containers**

- **1.2.1.1** - Unless otherwise stipulated in the *RID*, these tank containers must be capable of withstanding an internal pressure of 0,3 bar.
- **1.2.1.2** - Swap tank containers for the carriage of dangerous goods listed in the *RID* shall comply with *RID* regulations. The provisions in this leaflet shall also apply unless they are in contradiction with the *RID*.
- **1.2.1.3** - Filling and discharge devices, as well as any other apertures (except automatic venting devices) on swap tank containers, shall be so designed that they cannot open by themselves when closed.
  - **1.2.1.3.1** - Filling and emptying devices shall be protected by closures or screw caps.
  - **1.2.1.3.2** - The discharge devices shall be provided with a double closure, the inner one consisting of a closure which locks the discharge aperture, and the outer one consisting of a discharge stopcock or valve placed on the discharge pipe or directly attached to the receptacle.
  - R **1.2.1.3.3** - However, swap tank containers for the carriage of goods other than those listed in the *RID* may be provided with only one closure on condition the valve or stopcock forming the closure is directly attached to the discharge aperture of the lower tank; this aperture shall be situated in the lower middle part of the tank unless it is specially protected.
  - **1.2.1.3.4** - The bodies and handles of stopcocks shall be fastened so that they cannot be removed without use of force.
  - R **1.2.1.3.5** - It is recommended that the support frame of the receptacle or the underframe of the swap body be arranged so that it protrudes beyond the widest projections of the tanks and their equipment (dome, filling and discharge devices, etc.) to protect them against any damage.

It is recommended that swap tank containers be arranged so that they can preferably be emptied by pump or pressure-application rather than by gravity.

- **1.2.1.4 - Swap tank containers for the carriage of liquids which develop gases and which are not included in the RID, shall be designed and built so that the development of any gauge-pressure endangering the tank is prevented.**

If, to prevent development of such gauge pressure, the swap tank containers are fitted with automatic venting devices, they shall be built such that inward penetration of fire, leakage of liquids, unauthorised discharge, or smuggling, are prevented.

**NB :** Acceptance of the swap bodies mentioned in points 1.2.1.3.3, 1.2.1.3.5 and 1.2.1.4 for traffic on **Network Rail**, shall require special prior agreement.

- **1.2.2 - Swap bodies with tensioned or sliding side-sheeting**

**1.2.2.1 -** Swap bodies with tensioned or sliding side-sheeting must incorporate load-securing devices of the type specified in standard *EN 284, Appendix 1* for groups No. 20 to 29 and 60, and in standard *EN 452, Appendix 1* for groups No. 40 to 45 and 91 to 97. For groups No. 30, 31 and 81 to 86, corresponding conditions must be adapted.

**1.2.2.2 -** The sheet fastening equipment on the swap bodies must be designed to prevent any loosening or slackening during transport even under the impact of dynamic or aerodynamic forces.

**1.2.2.3 -** The coding plates, contrary to the provisions of *UIC Leaflet 596-6*, may be made of printed self-adhesive flexible sheets.

- **1.2.3 - Swap bodies with railings, sheets and hoops**

**1.2.3.1 -** At right angles to the roof, the hoops must protrude on both sides by a minimum of 40 mm into the brackets/sheath. They must also be made secure on all sides to prevent them from coming out.

**1.2.3.2 -** When horizontal, removable slats (in metal, wood or other materials) exist on the sides, they must overlap into the brackets of vertical stanchions in accordance with Appendix L - page 32.

- **1.2.4 - Van-type swap bodies**

Completely closed swap bodies, protected from bad weather by a rigid roof, rigid side and end walls and a floor, must incorporate at least one door for loading/unloading.

- **1.2.5 - Platform-type swap bodies**

Swap bodies of this type must be provided with securing devices as per point 1.2.2 - page 7 in their floor. Special floor designs that do not offer a level floor (for example, fixed cradles for coils) are not subjected to this obligation, but they must nevertheless incorporate load securing fixtures specific to the swap body and these fixtures must be subjected to the test set out in point H.4 - page 22.

**1.2.5.1 - With fixed or folding end walls**

During rail transport, these walls are generally in the raised position.

Loads on these platform-type swap bodies must not foul the clearance gauge in the longitudinal and transversal plane formed by the raised end walls.

If this type of swap body is carried in stacked form (bundle, etc.), *RIV* conditions must be observed, and the profile number given on the coding plate does not apply in this case.

Intermodal transport of these swap bodies when empty, in stacked form, may be governed by bi- or multilateral agreements. However, *RIV* conditions must be observed, to the extent that they are applicable.

### 1.2.5.2 - Without end walls

Swap bodies in this category do not bear a coding plate but an identifier plate on which the permissible profile number is replaced with the "Flat" marking. Loads on these swap bodies must first undergo a geometrical check. An example of identifier plate is given in Appendix M - page 33.

If these swap bodies are carried empty in stacked form (bundle, etc.), *RIV* conditions must then be observed.

If these swap bodies are carried by intermodal transport in stacked form (bundle, etc.), the conditions in point 1.2.5.1 must be observed to the extent that they are applicable.

## o 1.2.6 - Swap bodies adapted to the transport of concentrated loads

1.2.6.1 - Swap bodies adapted to the transport of concentrated loads must bear a corresponding marking on the side walls near the identification plate (see Fig. 4, Appendix S - page 41).

1.2.6.2 - Swap bodies specially equipped for the transport of steel coils must bear a marking comprising a load diagram specifying the maximum and minimum diameters for each cradle as well as the maximum permissible weight (see Fig. 5, Appendix S).

1.2.6.3 - These markings shall be used with immediate effect. For existing units, they shall be introduced within 6 years.

## o 1.3 - Swap bodies without upper corner fittings

The maximum gross weight shall be 36 000 kg irrespective of group number.

**NB :** Allowance must be made for the strength of wagons and handling gear.

## 1.4 - Stackable swap bodies with upper corner fittings

### 1.4.1 - General

**R** 1.4.1.1 - It is recommended that the lower part of swap bodies with a maximum gross weight > 30 480 kg but ≤ 34 000 kg be fitted with grab grooves so that they can be offloaded by means of lifting devices with grab pincers.

**NB :** In the absence of grab grooves, the strength of the pins of spreaders must be taken into consideration.

- **1.4.1.2** - Irrespective of their category, swap bodies with a maximum gross weight > 34 000 kg but ≤ 36 000 kg must incorporate grab grooves in accordance with point **1.1.4** - page 4.
- **1.4.1.3** - Swap bodies with upper corner fittings must obtain CSC approval (see Glossary - page 42) by carrying a CSC approval plate on their end wall.

#### **1.4.2 - Stackable swap bodies in accordance with EN standards**

(Reserved pending decisions by CEN TC119)

##### **1.4.2.1 - Stackable swap bodies with upper corner fittings and a maximum gross weight of 16 000 kg**

(Reserved pending decisions by CEN TC119)

##### **1.4.2.2 - Stackable swap bodies with upper corner fittings and a maximum gross weight of 34 000 kg**

(Reserved pending decisions by CEN TC119)

#### **1.4.3 - Stackable swap bodies as per UIC prescriptions**

UIC swap bodies comprise a recess  $\geq 6$  mm in the roof and of  $12,5_{-1,5}^{+5}$  mm in the floor. They shall have a maximum gross weight  $\leq 36$  000 kg. The total weight to be taken into account for the stacking test is still 36 000 kg, irrespective of the effective maximum gross weight. When defining the testing weight for continental traffic, stacking over three heights (with two other swap bodies successively placed on the lower swap body), corresponding to  $2,8 \times 36$  000 kg = 100 800 kg, shall be used as a basis. For this testing weight, the resulting stacking weight on the CSC approval plate is 56 000 kg. The upper and lower corner fittings must be positioned in accordance with *UIC Leaflet 592-2*.

When the swap body is uniformly loaded such that its total weight is 1,8 times its maximum gross weight, no part of its frame (floor) must foul by more than 6 mm the zone underneath the plane formed by the lower planes of the lower corner fittings.

##### **1.4.3.1 - Skeleton tank swap bodies**

In the case of skeleton tank swap bodies, the tank generally protrudes beyond the frame. For the purposes of securing them on combined transport wagons and transshipment at intermodal platforms, the frame shall be provided with upper and lower corner fittings. Clearances for transshipment must correspond exactly to those given in *UIC Leaflet 592-2*.

##### **1.4.3.2 - "Beam" tank swap bodies**

"Beam" tank swap bodies are appliances where the tank incorporates arms with integrated anchoring points that, in terms of design, dimensions and assembly, correspond to corner/securing fittings defined in *UIC Leaflet 592-2*. This type of tank swap bodies does not identify with any other underframe. Here too, the tank itself can exceed the level of securing devices/corner fittings.

##### **1.4.3.3 - "Box"-type swap bodies**

In terms of length and width, "box" swap bodies correspond to containers as defined in *UIC Leaflet 592-2*. Generally speaking, swap-body heights are variable and, as a matter of policy, they are coded in accordance with *UIC Leaflet 596-6*.

#### 1.4.3.4 - "Box"-type swap bodies with bilateral protrusions

These swap bodies may incorporate corner fittings with upper and lower angles and at the same time comprise lower and upper securing devices at distances stipulated for 10', 20', 30' and 40' containers, in accordance with *UIC Leaflet 592-2*. The lower and upper securing devices are vertically superimposed. The lateral clearances on the upper securing devices shall be superimposed in accordance with *UIC Leaflet 592-2*.

This type of swap body:

- may not be offloaded anywhere indiscriminately because of the need solely to use grip-spreaders with liftable front guide plates,
- may be coded in accordance with *UIC Leaflet 596-6*.



## 2 - Transport of swap bodies not UIC-compliant and solely intended for loading on special wagons

These are swap bodies that do not comply with the provisions of *UIC Leaflet 592-4, points 1 to 1.4* but which, under special conditions, may be rail-conveyed in the context of combined transport.

### o 2.1 - General

**2.1.1** - These swap bodies are coded as UL type XX and are allotted a number issued by the UIC sub-commission 2 on a centralised basis, according to Appendix **R - page 40**.

**2.1.2** - From the safety and operating standpoint, no rail traffic must be adversely affected by the movement of these swap bodies.

**2.1.3** - The swap bodies, at the very minimum, must easily withstand the strength test stipulated in Appendix **H - page 21** and in point **1.1.7 - page 5**, in addition to meeting all the other approval criteria.

**2.1.4** - Suitability of the swap body must be demonstrated through a practical test with the wagon used for the particular traffic and carrying a sample load, in the empty and laden state.

**2.1.5** - Before any traffic movement, all the players involved in the rail transport process (load-unit operator, wagon owner, and lessee of carrier wagons) must comply with the mandatory procedures governing the use of such units in international intermodal traffic by signing a multilateral agreement.

**2.1.6** - The multilateral agreement shall be drawn up by one of the RUs on whose lines the units concerned will be moved. This same RU shall apply to the relevant UIC body for the load-unit type-number and must check the test certificates underpinning delivery of the agreement.

**2.1.7** - The agreement signed by all the contractual partners shall be lodged with the RU. The processing of subsequent modifications/additions shall be the responsibility of the contracting RU as specified in Appendix **Q - page 37**.

### o 2.2 - Transport conditions

**2.2.1** - Swap bodies must bear, on each side, plates as per Appendix **P - page 36**.

**2.2.2** - Swap bodies may only be carried on railway vehicles designed for this type of traffic and bearing the appropriate marking on the side wall.

**2.2.3** - Swap bodies, loaded on carrier wagons marked accordingly, may only be routed over the lines of the RUs shown on the wagon marking plate as per Appendix **O - page 35**.

**2.2.4** - Consignments may only be transferred to other RUs at frontier points, loaded on trains identified prior to the start of traffic movements.

**2.2.5** - Departments involved in swap-body transport must be informed in writing, before the start of the traffic movement, of the characteristics of the load.



## 2.3 - Marking

**2.3.1** - These swap bodies are not encoded in accordance with *UIC Leaflet 596-6* procedure but are assigned a marking after completion of an identification process based on conditions agreed between the contractual partners. The identification plate must bear the following information:

- indication and marking of the securing devices required for rail conveyance,
- type of load,
- profile number,
- name of registering RU.

Other particulars on the identifier plate are listed in Appendix **P** - page 36.

**○ 2.3.2** - Wagons to be used shall also carry on both sides an identifier plate with the following indications:

- number and representative sketch of swap bodies loaded on the wagon,
- position of swap bodies on the wagon,
- loading type,
- marking of pins to be used,
- reference of RUs party to the contract.

### 2.3.3 - Identification procedure

The identification procedure is underpinned by technical tests and preliminary studies. The technical tests are conducted on the basis of, and in compliance with *UIC Leaflet 592-4*, to the extent that the transport units involved so permit.

A profile number fixed in writing shall be determined from drawings of the swap bodies and dimensional checks during tests on prototypes. Following or as part of technical tests with the swap body, a trial load on carrier wagons for this traffic must mandatorily be effected using the maximum gross laden weight of the swap body, also with the swap body when empty.

A report on the type of tests and on the tests carried out shall be drawn up in accordance with the Appendices to *UIC Leaflet 592-3*.

## 2.4 - Draft contract

After successful completion of the requisite checks and on presentation of the resulting written certificates, a multilateral contract shall be signed, containing the following particulars at the minimum:

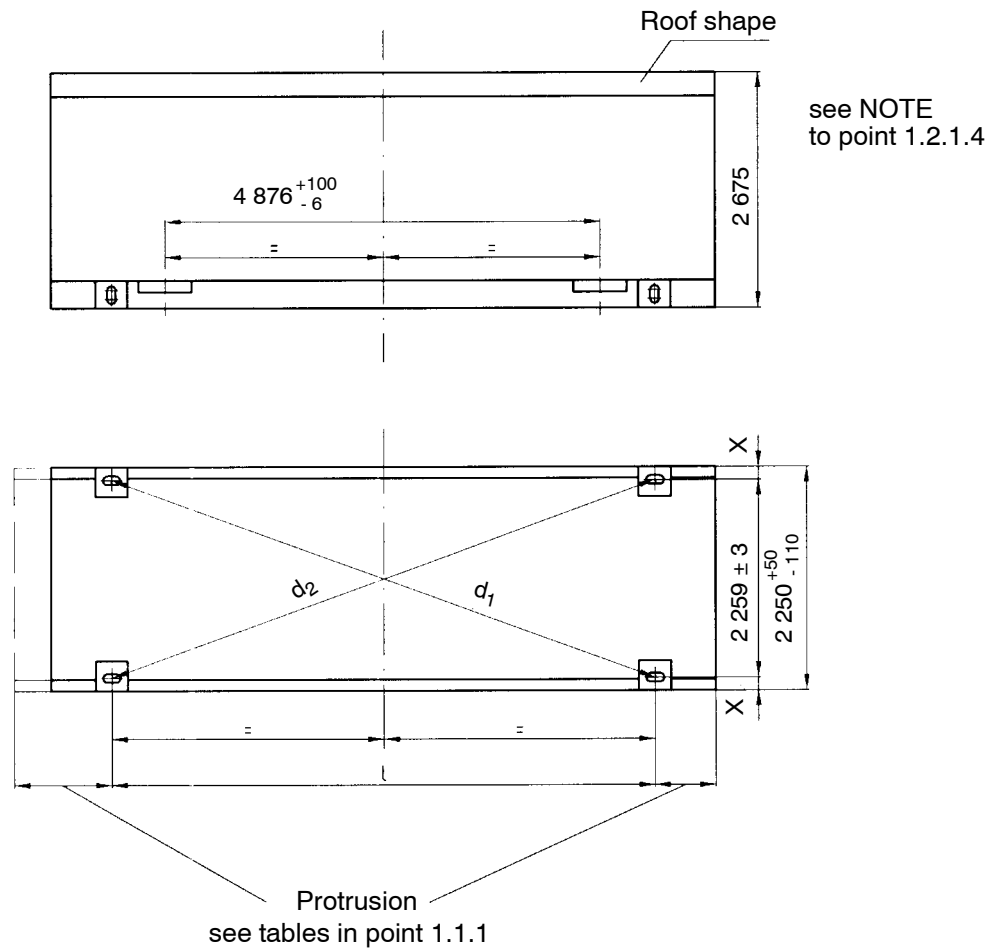
- Details of contractual partners
- Purpose of contract
- Definition of swap body
- Definition of carrier wagon to be used
- Obligations of swap-body operator
- Obligations of owner/registering party/lessee of the wagon to be used
- Duration of contract validity
- Procedures for contract termination
- Jurisdiction
- Language(s) of contract in case of dispute
- Jurisdiction applicable
- Place where original contract document is lodged.

The contract shall only come into force when all the contractual partners have initialed a document annexed to it. A second annex to the contract shall contain an exact list of the addresses of the contractual partners, valid at the time of signature of the said contract.

An example of the contract is given in Appendix [Q - page 37](#).

## Appendix A - Arrangement of securing devices and grab grooves for swap bodies

(see point 1.1.2 - page 3)

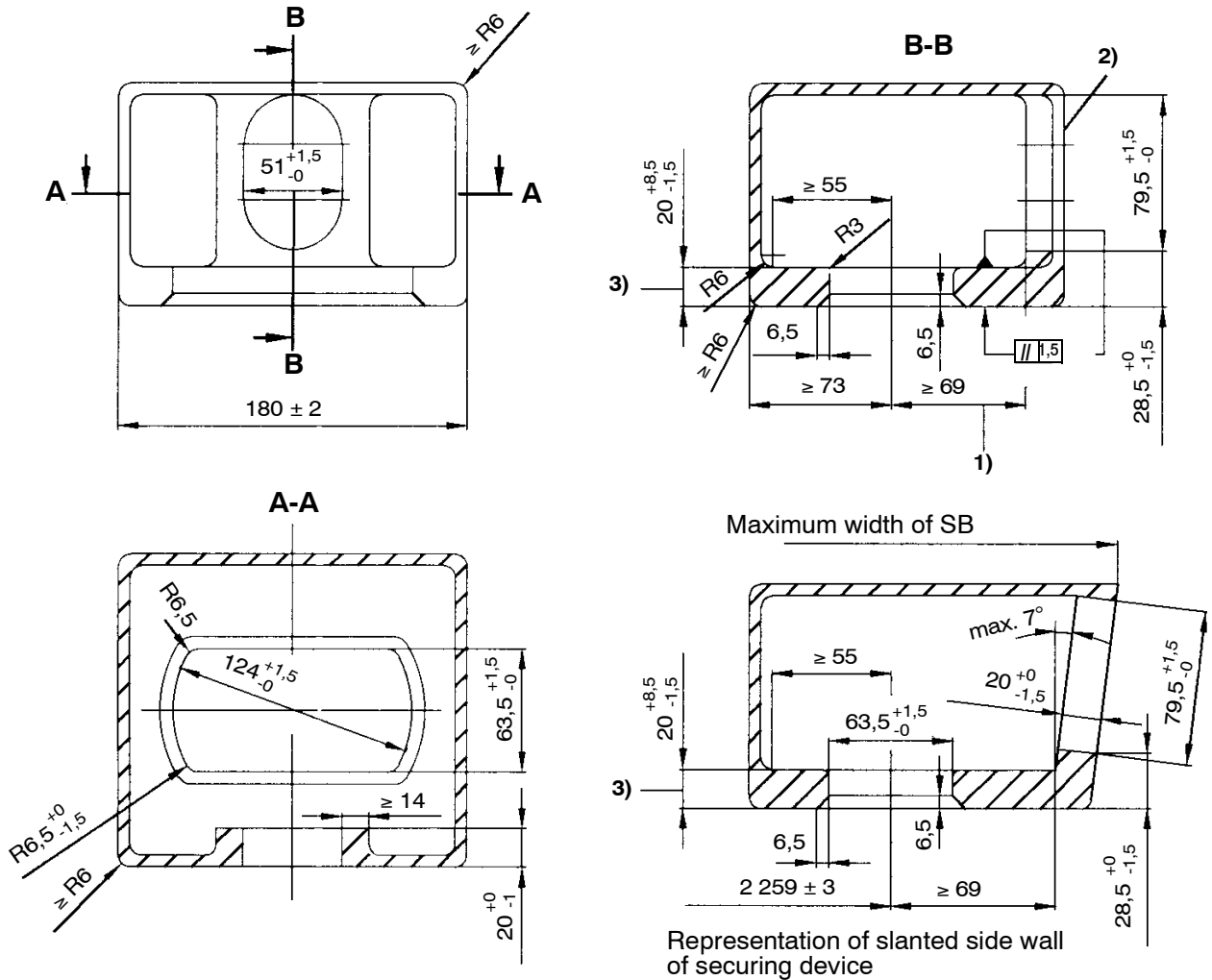


| Group No.            | Max. L                                  | $l$<br>(see <sup>a</sup> ) | Max. $d_1 - d_2$<br>(see <sup>a</sup> ) |
|----------------------|---|----------------------------|---|
| 20 to 29<br>60       | (see tables in point<br>1.1.1 - page 2) | 5 853 ± 3 mm               | 13 mm                                   |
| 30 to 39<br>81 to 89 |   | 8 918 ± 4 mm               | 16 mm                                   |
| 40 to 49<br>91 to 99 |   | 11 985 ± 5 mm              | 19 mm                                   |

a : values " $l$ " and " $d_1 - d_2$  max." also apply to swap bodies with asymmetrical sides (see tables in point 1.1.1).

## Appendix B - Lower securing devices on swap bodies

(see point 1.1.2 - page 3)



- 1) This dimension is functional. The requisite width must therefore be chosen in relation to the design.
- 2) The side-wall configuration depends on the outer profile of the swap body. For slanted walls, the angle of incline must not exceed 7°.
- 3) For swap bodies with a maximum gross weight > 16 000 kg, it is recommended that this dimension of 28,5<sup>+0</sup><sub>-1,5</sub> mm be observed.

## Appendix C - Marking of securing devices for use during rail transport

(see point 1.1.2 - page 3)

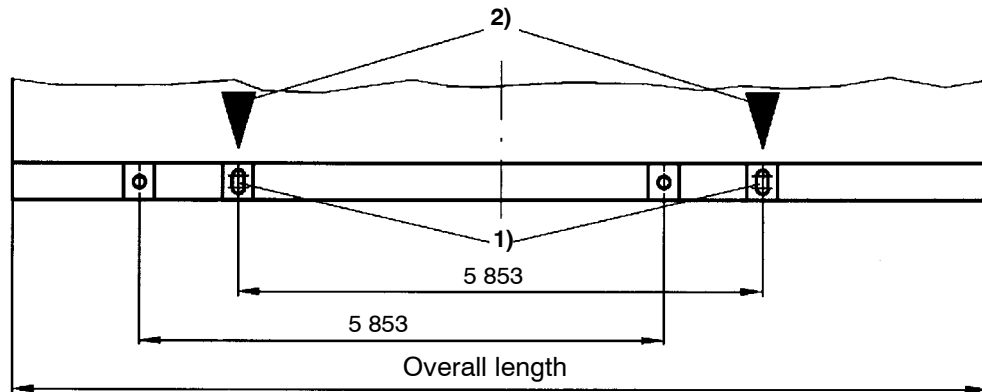


Fig. 1 - Swap bodies with over 4 floor-mounted securing devices

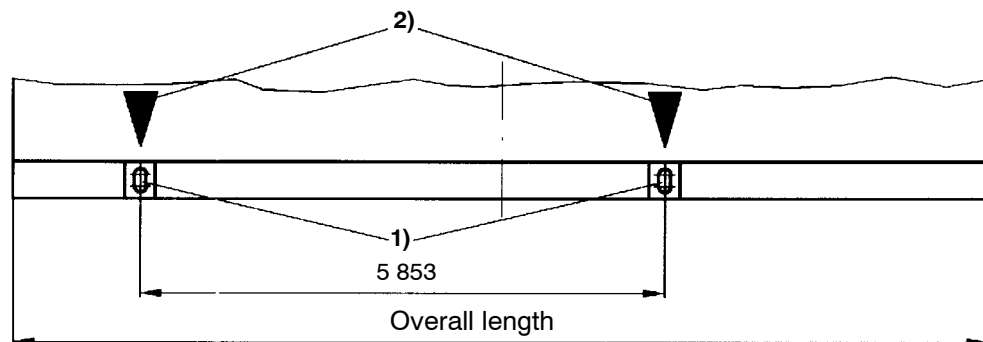
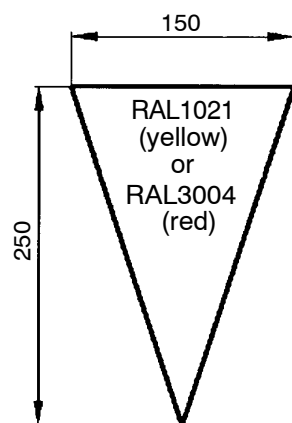


Fig. 2 - Swap bodies with floor-mounted asymmetrical securing devices



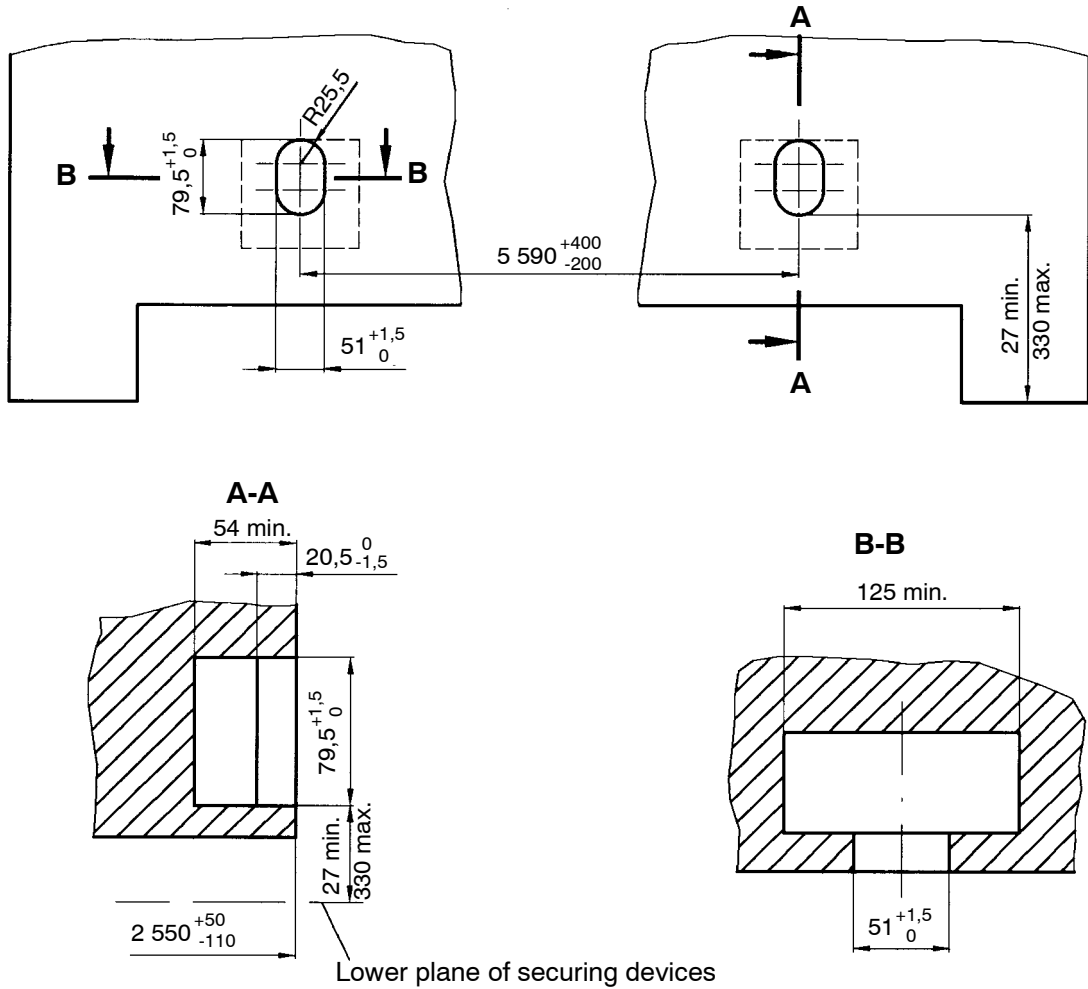
Legend:

- 1) Securing devices for rail conveyance
- 2) Marking of securing devices for use during transport

Fig. 3 - Implementation of marking 2)

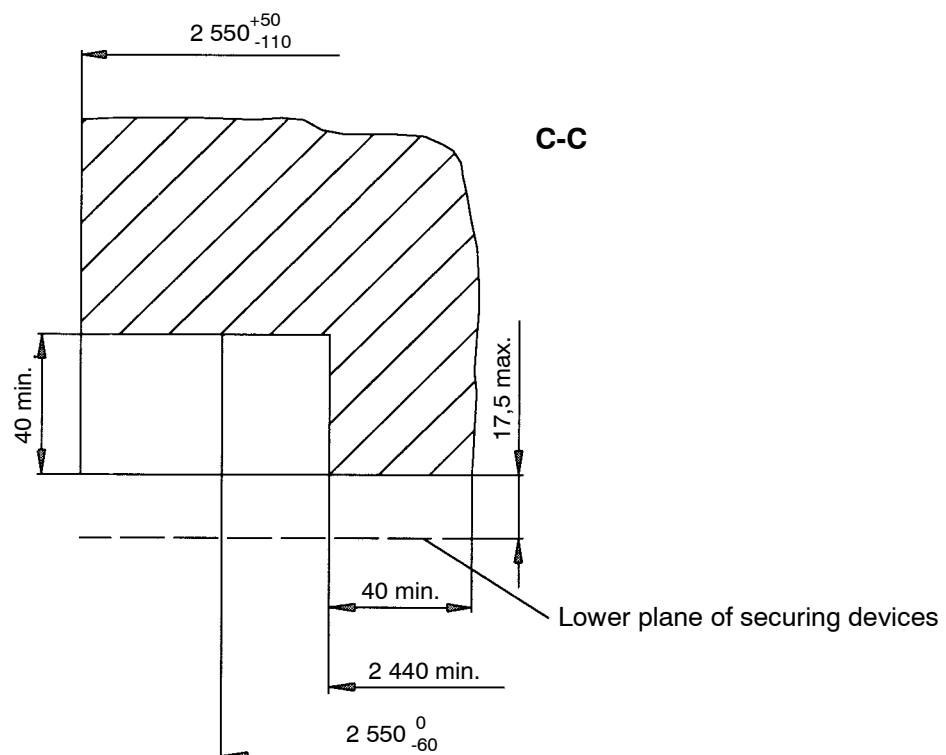
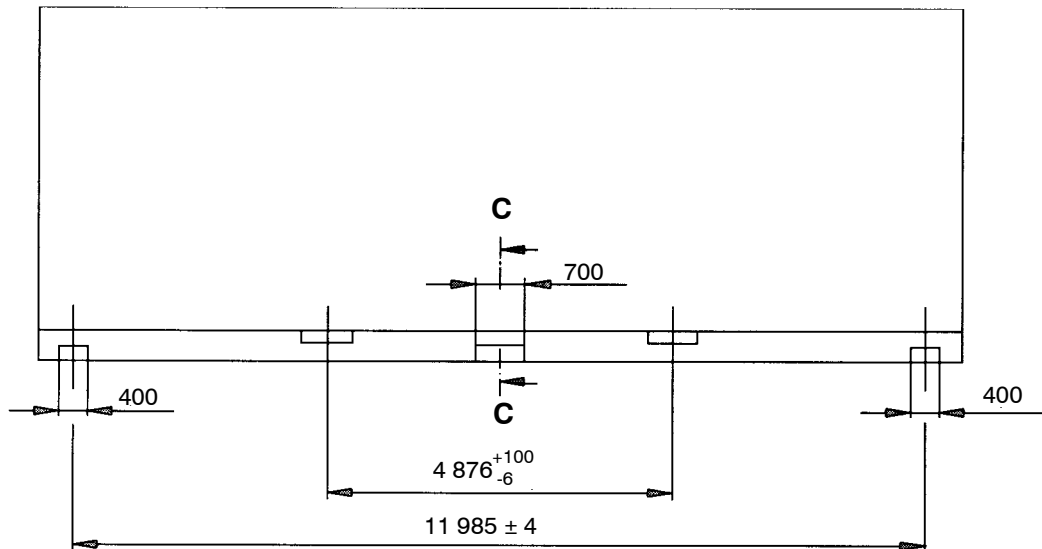
## Appendix D - Side openings for swap-body roping

(see point 1.1.2 - page 3)



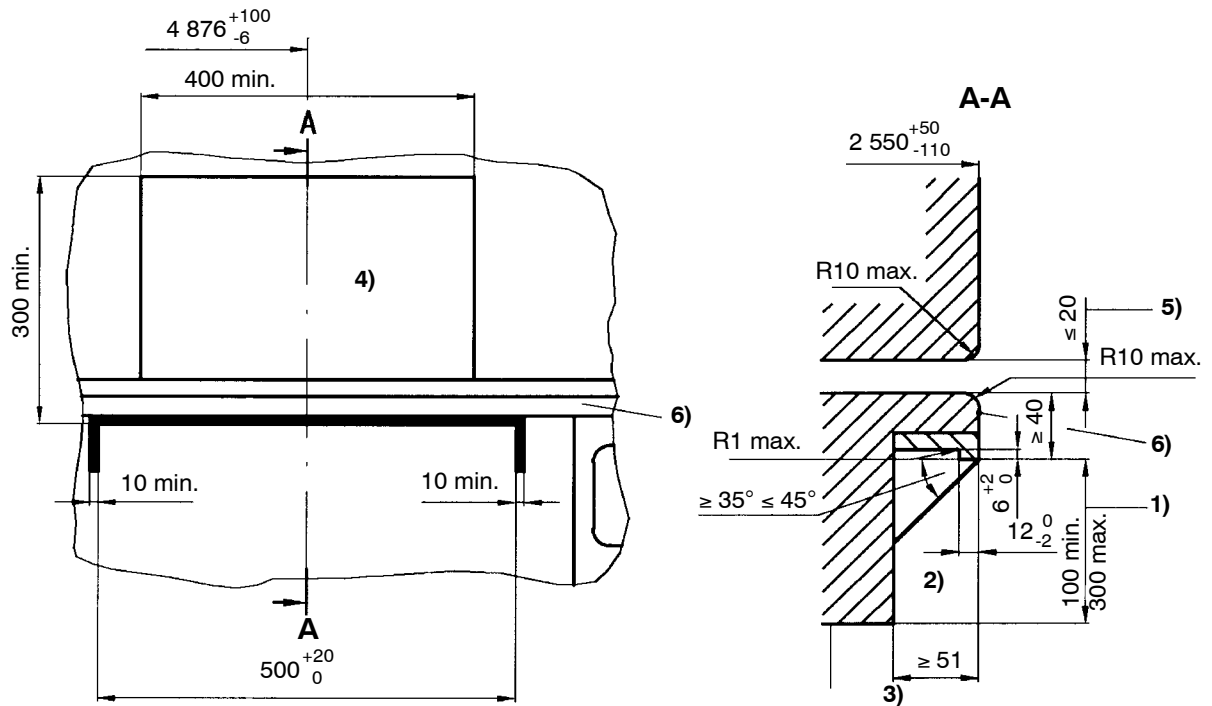
## Appendix E - Intermediate brackets for swap bodies in groups No. 40 to 49 and 91 to 99

(see point 1.1.3 - page 4)



## Appendix F - Arrangement and provision of grab-handling grooves on swap bodies

(see point 1.1.4 - page 4)

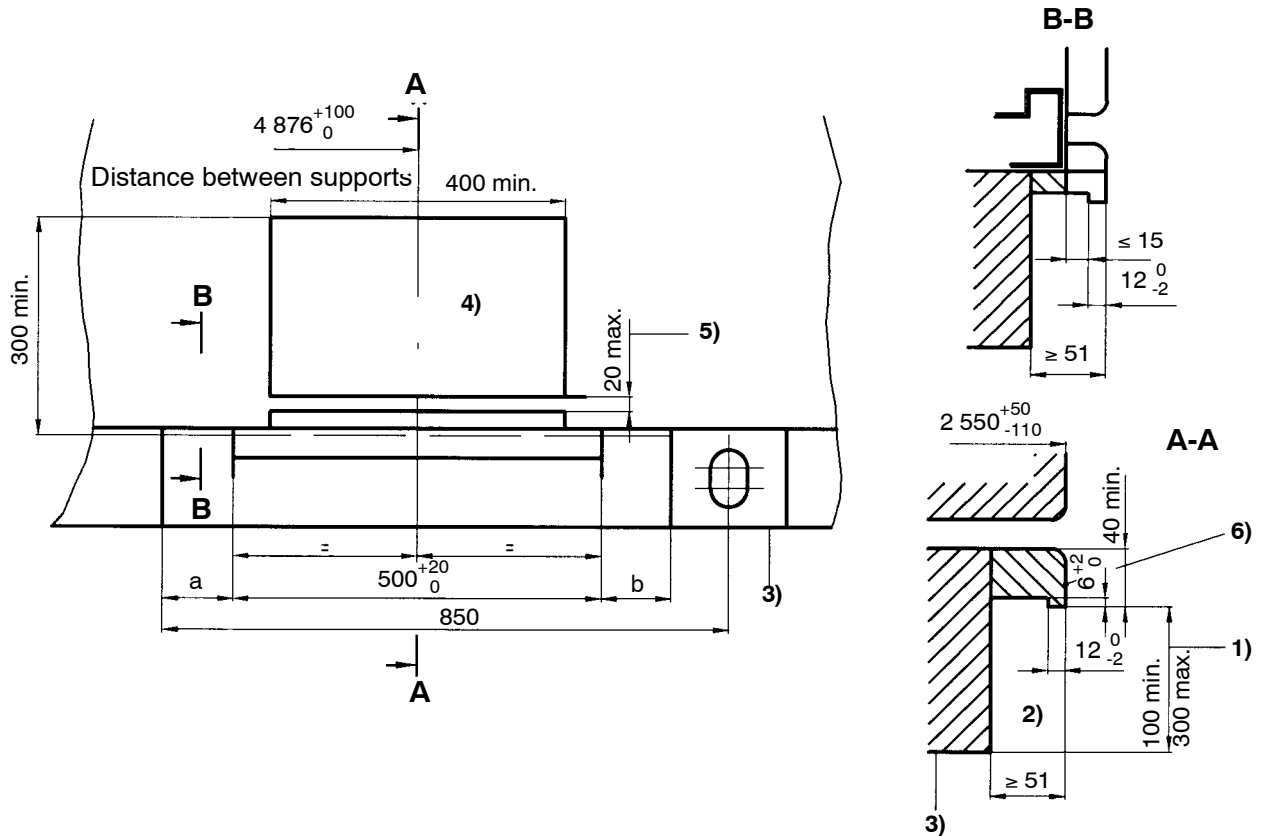


- 1) It is recommended that this dimension be given a value in excess of 100 mm. The greater the clearance allowed underneath the safety bar, the easier it will be for handling grabs to be correctly positioned for lifting.
- 2) No rigid or mobile part must be allowed to foul this zone.
- 3) Plan of the lower faces of the fastening devices.
- 4) It is recommended that a plate be affixed to this section of the partition over the whole length of the grab zone, to ensure protection of the side wall. This plate must not protrude beyond the bearing plane of the grab-handling groove.
- 5) Distance allowed between the grab lifting surface and the inner edge of the side wall: 20 mm maximum.
- 6) Side bearing-surface of grab-handling zone.



## Appendix G - Arrangement and provision of grab-handling grooves on swap bodies in groups No. 20 to 29 and 60

(see point 1.1.4 - page 4)



- 1) It is recommended that this dimension be given a value in excess of 100 mm. The greater the clearance allowed underneath the safety bar, the easier it will be for handling grabs to be correctly positioned for lifting.
- 2) No rigid or mobile part must be allowed to foul this zone. Plus 10 mm (= 61 min.) if the support stands are located close to the grab-handling zone.
- 3) Plan of the lower faces of the fastening devices.
- 4) It is recommended that a plate be affixed to this section of the partition over the whole length of the grab zone, to ensure protection of the side wall. This plate must not protrude beyond the bearing plane of the grab-handling groove.
- 5) Distance allowed between the grab lifting surface and the inner edge of the side wall: 20 mm maximum.
- 6) Side bearing-surface of grab-handling zone.

## Appendix H - Tests with swap bodies - Operating mode and results

(see point 1.1.7 - page 5)

The technical characteristics of each swap body shall at minimum match those of swap bodies meeting the following criteria.

The swap body tested shall be considered satisfactory if, after each of the tests numbered 1 to 6, it shows no trace of anomaly or deformation making it unfit for use, and providing the dimensional specifications of the leaflet concerning handling, fastening and interchangeability are observed.

For swap bodies of identical design, it is accepted that only one unit need be subjected to the whole range of tests mentioned below, on condition that the approving RU has secured every assurance that the other swap bodies have the same technical characteristics as the unit tested. Any modification to the drawing or manufacturing methods shall be referred to the RU concerned for a decision as to whether part or all of the tests should be repeated. For all static-load tests, the test load must be applied during 5 minutes minimum.

In the following tests, the letters R and P denote:

R = permissible overall weight (taking account of point H.7.1 - page 26)

P = useful load.

### H.1 - Test to check the resistance to stresses during transit

The purpose of this test is to ensure that the basic structure and floor structure of the swap body are capable of withstanding stresses encountered during rail transport.

**NB :** When the test is performed, the swap body test load must be uniformly distributed. In case of swap bodies adapted to the transport of concentrated loads, the test loads must be applied accordingly.

#### H.1.1 - Swap body without intermediate bearing

The swap body, with its load uniformly distributed such that its total weight does not exceed 1,5 R, shall rest on 4 rigid stands placed beneath each bottom-fastening element. These stands shall be on the same level, centred under the fastening elements and shall have approximately the same dimensions as them. It must be possible for the swap body to sag freely.

In the case of swap bodies with groups No. 40 to 49 and 91 to 99, without intermediate bearing, the total uniformly laden weight shall be 2 R under identical test conditions.

#### H.1.2 - Swap bodies (groups No. 40 to 49 and 91 to 99) with intermediate bearing

The test shall be carried on 4 stands with 1,5 R as in point H.1.1. Moreover, during a second test, stands for the intermediate bearing shall be placed at the same level as those of the end-positioned ones. During the test, the pressure exerted on either side of the intermediate bearings shall not exceed the maximum value of 75 kN.

When a test cannot be performed under the conditions stipulated in point [H.1.2 - page 21](#), the approving body shall be free to accept the manufacturer's own calculations.

## H.2 - Bottom-lifting test

This test is designed to prove that the swap body can be lifted from the bottom roping apertures. The swap body, with its load uniformly distributed so that its total load equals 1,5 R shall be lifted - without any undue acceleration or deceleration - through the roping apertures provided for this deceleration. Lifting forces shall act more or less in vertical mode.

**NB :** The CSC Agreement, which stipulates a 2 R lifting test for containers, is not applicable to swap bodies.

The lifting device shall not exert any thrust on the side walls of the swap body. The straining lines of the lifting forces shall be located 38 mm from the side walls of the swap body.

## H.3 - Grab-lifting and dimensional-control test

This test is designed to prove the ability of the swap body to withstand forces resulting from grab lifting.

The swap body, with its load uniformly distributed such that the total weight should not exceed 1,25 R, shall be lifted by means of grabs or similar appliances, inserted in the grooves located in the area identified in Appendices [F - page 19](#) and [G - page 20](#). The bearing surface shall measure approximately 30 x 260 mm.

**NB :** The CSC Agreement, which stipulates a 2 R lifting test for containers, is not applicable to swap bodies.

The dimensions of grab-handling grooves shall be checked after this test.

## H.4 - Longitudinal fatigue test

This test is designed to prove the ability of the base structure of the swap body to withstand external longitudinal forces under dynamic rail transport conditions (acceleration of 2 g). The test shall be carried out under the conditions set out in points [H.4.1](#) or [H.4.2](#).

### H.4.1 - Static longitudinal fatigue test

The swap body, with its load uniformly distributed such that the total weight does not exceed 1 R, shall be secured longitudinally on its rigid anchor points through the lower corner fittings of one of its ends. The swap body shall be subjected to a longitudinal force of 2 R acting initially in tensile mode and then in compression mode on the bottom apertures of the bottom fastening elements at the other end.

### H.4.2 - Dynamic longitudinal fatigue test

The swap body, with its load uniformly distributed (1 R) using material filling-up the available inside space as much as possible, shall be positioned centrally on a carrier wagon. The wagon shall then be accelerated until an acceleration force of 2 g can be measured with a 16 Hz filter on the securing device during impact against a 80 t stationary wagon. This test shall be performed in both running directions, so that the rear securing devices are mounted first, followed by the front securing devices.

## **H.5 - End wall test**

This test is designed to check the ability of the swap body superstructure to withstand dynamic stresses during rail transport (2 g deceleration). The test shall be performed in accordance with the conditions stipulated in points [H.5.1](#) or [H.5.2](#).

### **H.5.1 - Static strength test of end walls**

The test shall be performed on the two end walls if one of them incorporates a door. Only one end wall shall be tested if the two walls are of symmetrical design.

The inner surface of each end wall shall be packed with an evenly-distributed load equal to 0,4 P. When the end walls are subjected to individual tests, the supporting forces must be applied to the floor structure.

### **H.5.2 - Dynamic strength test of end walls**

This test shall be performed concurrently with the test in point [H.4.2 - page 22](#). In both cases, impaction shall take place in the two directions under the conditions specified above.

## **H.6 - Strength test of side walls**

This test is designed to prove the ability of the swap body to withstand forces generated by transverse accelerations during ground transport.

### **H.6.1 - Strength test of side walls for swap bodies and vans**

A 0,3 P load uniformly distributed over the inner surface of each wall shall be applied. Only one side need be tested when the side walls are of symmetrical design.

### **H.6.2 - Side-wall strength test for tilt-type swap bodies**

A 0,24 P load uniformly distributed over the inner surface of each side wall shall be applied. The maximum height at which this partial load is applicable shall be the top of the curtains. Moreover, an evenly distributed load of 0,06 P shall be applied to the inner surface of each side wall. The minimum height at which this partial load is applicable shall be the bottom edge of the lowest slats, and the maximum height for load application shall be the upper edge of the top slats. The tarpaulin frame can be made to contribute to load resistance.

### **H.6.3 - Strength test of side walls for curtain-only swap bodies**

A uniformly distributed load of 0,3 P shall be applied on the inner surface of each side wall. The maximum height of load application shall be the top edge of the curtains. If linkage chains for the side walls are used in service, they may be positioned during the test.

## **H.6.4 - Strength of side walls of swap bodies with sliding side sheets or side sheets with tensioning mechanism**

This type of swap body is not subjected to any side-wall strength testing given that the side sheets are only used to protect against bad weather and must not be subjected to any side pressures exerted by the load. However, it must be demonstrated through testing that sheet anchoring equipment prevents sheet slackening or opening due to static and dynamic loads.

### **Safety-testing of the closing of sliding sheets**

The swap body is open on both sides and,

- in the case of swap bodies from groups No. 20 to 26 and 60, is placed on its legs,
- in the case of swap bodies from groups No. 30 and 31, 40 to 45, 81 to 97, is placed on lower securing devices to permit deflection up to the lower level of bottom securing devices.

The swap body is loaded evenly so that its maximum gross mass is equal to R. The side sheets provided for transport are then closed on both sides. The swap body from groups No. 20 to 26 and 60 are then lifted, with legs raised, and the swap body is deposited with its floor on a flat surface. Swap bodies from groups No. 30 and 31, 40 to 45, 81 to 97 stay motionless when closed.

In the case of symmetrical swap bodies, a load of 3 kN is applied over a length of 300 mm in the middle part of a girder between end-walls or between supporting stanchions with the largest longitudinal distance. If the swap body is rigid-roofed, a load of 3 kN is applied over both sides centrally along the girder between end walls or between supporting stanchions with the largest longitudinal distance.

During this load application, the cover between the hook and closing ring of the locking equipment must again be 10 mm minimum.

## **H.6.5 - Floor strength test**

This test is designed to show whether a swap body can withstand concentrated dynamic loads caused by loading/offloading with forklift trucks or assimilated appliances.

The test shall be carried out with a rubber-tyred testing device for a 4 400 kg axle-load, in other words 2 200 kg per wheel. The nominal width of the wheels must be 180 mm and the distance between the two wheels must be 780 mm. In addition, the contact surface must then correspond to a rectangle of 185 mm (width of wheel) x 100 mm. Each wheel must have an effective contact surface of 142 cm<sup>2</sup> inside the above-mentioned zone. The testing device must be able to move over the entire floor area of the swap body. During the test, the swap body must rest on its four lower corner fittings over four plates of identical size so that the floor structure can deflect freely.

The device must remain at least 5 minutes over the least rigid area of the floor.

**H.6.6 - Additional tests for swap bodies**

(see point 1.2.1 - page 6)

Ordinary tank swap bodies are subjected to the tests specified in points H.1 - page 21, H.2, H.3 and H.4 - page 22, according to the set procedure.

However, in the case of tank swap bodies used for the conveyance of dangerous substances, the value of the test load in points H.1 and H.2 is 2 R.

**H.6.6.1 - Dynamic longitudinal loads**

The tank swap body is filled to a maximum 97% of its capacity with water or other adequate liquid. For the purposes of the test, it must be filled in such a way that the aggregate weight of the swap body + load = 1 R.

If, however, the load resulting from filling of the swap body is different from the load required for approval (aggregate weight) of the tank swap body, the acceleration or deceleration to be attained must then be adjusted according to the following formula:

$$G_1 = \frac{G \cdot R}{R_1}$$

|                |   |                              |
|----------------|---|------------------------------|
| G              | = | 2 g acceleration             |
| R              | = | Maximum gross weight         |
| G <sub>1</sub> | = | Modified acceleration        |
| R <sub>1</sub> | = | Reduced maximum gross weight |

**NB :**            G = 2 g  
                       2 g ≤ G<sub>1</sub> ≤ 6 g

During the test itself, the swap body rests with its 4 corner fittings or lower side girders on the wagon or corresponding securing legs over a flat surface.

The longitudinal axis of the tank swap body must be horizontal during impact. Forces must only be transmitted through the two lower holes of lower corner fittings located on the impact side.

The tank swap body is positioned centrally on a carrier wagon which is accelerated towards a 80 t standstill wagon in a way that allows a deceleration of 2 g or a higher acceleration to be measured on the lower corner fittings according to the above formula during a low-pass filtering of 16 Hz. This test must be performed in both directions.

The same test must be carried in respect of tank swap bodies used for the conveyance of dangerous products but the initial acceleration in this case shall be 3 g. The modified acceleration shall be determined according to limiting conditions 3 g ≤ G<sub>1</sub> ≤ 6 g.

## H.6.6.2 - Test for checking resistance to the effects of lateral inertia

The tank swap body is loaded with an aggregate mass (swap body + test load) = 1 R.

The transversal axis of the tank swap body must be positioned at an angle of:

- 30° in the case of non-dangerous products,
- 90° in the case of dangerous products,

relatively to the horizontal. It must be kept in this position for at least 5 minutes by means of brackets which, in horizontal and vertical mode, only immobilise the two corner fittings of the floor of the tank swap body, also using anchoring equipment which acts on the two securing devices at the upper end of the floor, in such a way that they only absorb horizontal forces.

Only one side is to be tested, except in cases where the end walls of the tank swap body are not symmetrical relatively to their vertical central axis.

## H.6.6.3 - Pressure test

(Only relevant for the tank of the tank swap body)

This test shall be carried out:

- on the prototype at the end of all the other tests,
- on each swap body in the series.

The tank shall be tested at a hydraulic pressure whose value, set by the relevant authorities, will determine the classification of the swap-body design.

Where multi-compartment tanks are concerned, each compartment must be tested at the testing pressure with the adjacent compartment empty and open.

No permanent deformation or anomaly likely to make the tank unsuitable for use must occur during the test.

## H.7 - Additional tests

Additional and/or modified tests are required for swap bodies according to point [1.4 - page 8](#).

For all swap-body static-load tests, the testing load must be applied for 5 minutes minimum.

### H.7.1 - Stacking test

This test is carried out to determine whether a swap body can, under conditions of accelerations which may occur during load, withstand two other swap bodies from the same series in the group. The aggregate weight applicable is 36 000 kg for all swap bodies. The testing weight, according to point [1.4.3 - page 9](#), is 100 800 kg.

The stacked weight is independent of the maximum gross weight .

## Procedure

The swap body for testing is placed with its lower corner fittings on four level plates.

The plates placed under the corner fittings must be more or less identical in size to the corner fittings. The swap-body floor must be loaded so that the aggregate weight of the swap body attains 1,8 R.

The plates are displaced horizontally in relation to the corner fittings by 25,4 mm transversally and 38 mm longitudinally.

The swap body is evenly loaded over all its corner frames with a force of 988,8 kN. This force can also be applied on two corner frames, in which case it amounts to 494,4 kN.

The loads must be applied using testing equipment with corner fittings as per *ISO Standard 1161* (see [Bibliography - page 43](#)) or similar fittings with same-shape openings (in other words, with identical outer dimensions, bevelled edges, rounded angles) as the base surface of the outer lower corner fittings as per *ISO Standard 1161*. When similar equipment is used, it must be implemented in a way that produces the same effect on the swap body for testing as if corner fittings had been used.

After the test, the swap body must not show any permanent set or other deformation that precludes its utilisation as originally intended. The dimensions required for handling, securing and transshipment purposes must be maintained.

### H.7.2 - Lifting by upper corner fittings

This test is designed to prove if stackable swap bodies can be raised using lifting gear acting vertically on the four longitudinal openings of the upper corner fittings.

The swap body is uniformly loaded to obtain an aggregate swap-body mass of 2 R. The swap body must be raised with caution through its four angles to avoid the occurrence of unduly-high acceleration and deceleration forces.

The swap body must be raised with vertically-acting lifting gear.

After the test, the swap body must not show any permanent set or other deformation that precludes its utilisation as originally intended. The dimensions required for handling, securing and transshipment purposes must be maintained.

### H.7.3 - Lifting by lower corner fittings (side openings of lower corner fittings)

This test must demonstrate if the swap body can be raised using hooking gear that can be affixed only to the lower corner fittings - on the longitudinal side outer openings - and secured to its bracket above the centre-part of the swap body.

The swap body is evenly loaded so that the aggregate swap-body mass corresponds to 2 R. The swap body must be raised with care via the four lower openings of the corner fittings to avoid the occurrence of unduly-high acceleration or deceleration forces.



Lifting forces are applied for the different groups according to the following angles:

- groups No. 20 to 26 and 60: 45°
- groups No. 30 and 31, 81 to 86: 37°
- groups No. 40 to 45, 91 to 97: 30°

relatively to the horizontal plane.

The distance between the working lines of lifting forces and the outer surfaces of the swap body must not be greater than 38 mm. During raising, the lifting gear must only act on the lower corner fittings.

After the test, the swap body must not show any permanent set or other deformation that precludes its utilisation as originally intended. The dimensions required for handling, securing and transshipment purposes must be maintained.

The same test must also be carried out with the other side apertures, arranged more towards the interior of the securing devices if the latter have ISO Standard-compatible lifting apertures.

#### **H.7.4 - Floor strength test**

This test must demonstrate whether a swap body can withstand concentrated dynamic loads caused by loading/unloading using forklift trucks or similar appliances.

The test must be carried out using rubber-tyred testing equipment with an axle-load of 5 460 kg, in other words 2 730 kg per wheel. The nominal width of the wheels must be 160 mm and the distance between the two wheels must be 760 mm. The contact surface must then correspond to a rectangle of 185 mm (wheel width) x 100 mm.

The effective contact surface of each wheel inside the above-mentioned zone must be 142 cm<sup>2</sup>. The testing equipment must be moved over the whole surface of the swap-body floor. During the test, the swap body must rest on its four lower corner fittings over four plates of similar size to allow the floor structure to deflect freely.

After the test, the swap body must not show any permanent deformation or other modification that precludes its utilisation as originally intended. The dimensions required for handling, securing and transshipment purposes must be maintained.

The testing equipment must remain at least 5 minutes over the least rigid area of the floor.

#### **H.7.5 - Transversal swap-body strength test**

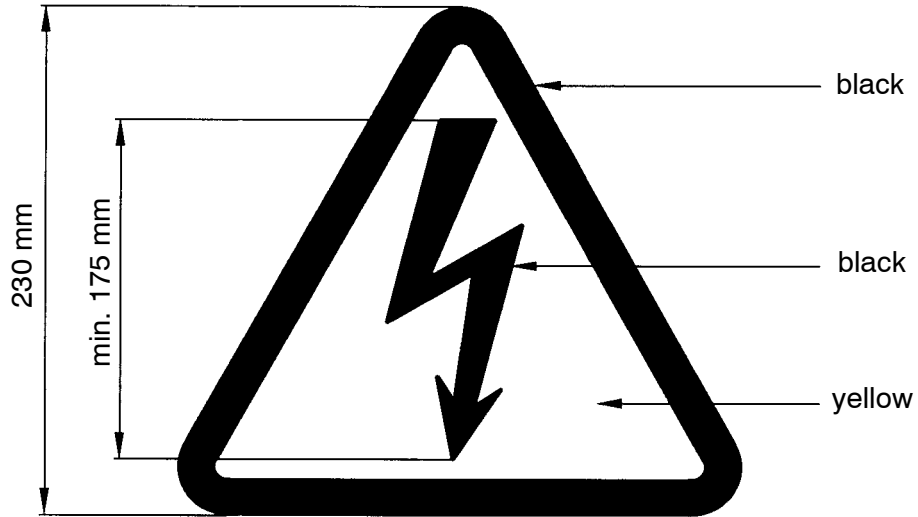
(Reserved pending CEN TC119 decisions)

#### **H.7.6 - Longitudinal swap-body strength test**

(Reserved pending CEN TC119 decisions)

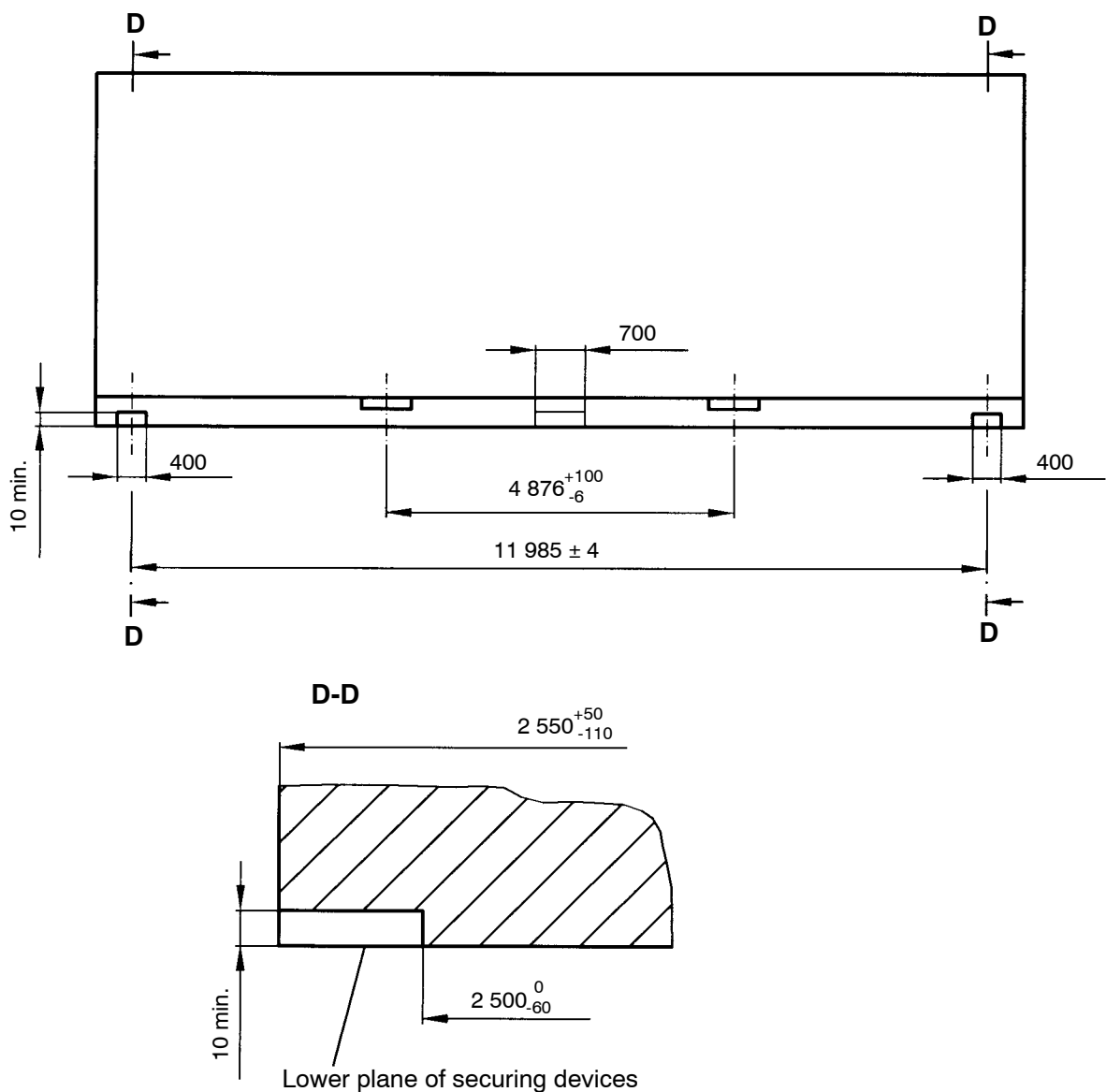
# Appendix I - Symbol for swap bodies with upper-part access steps

(see point 1.1.11 - page 5)



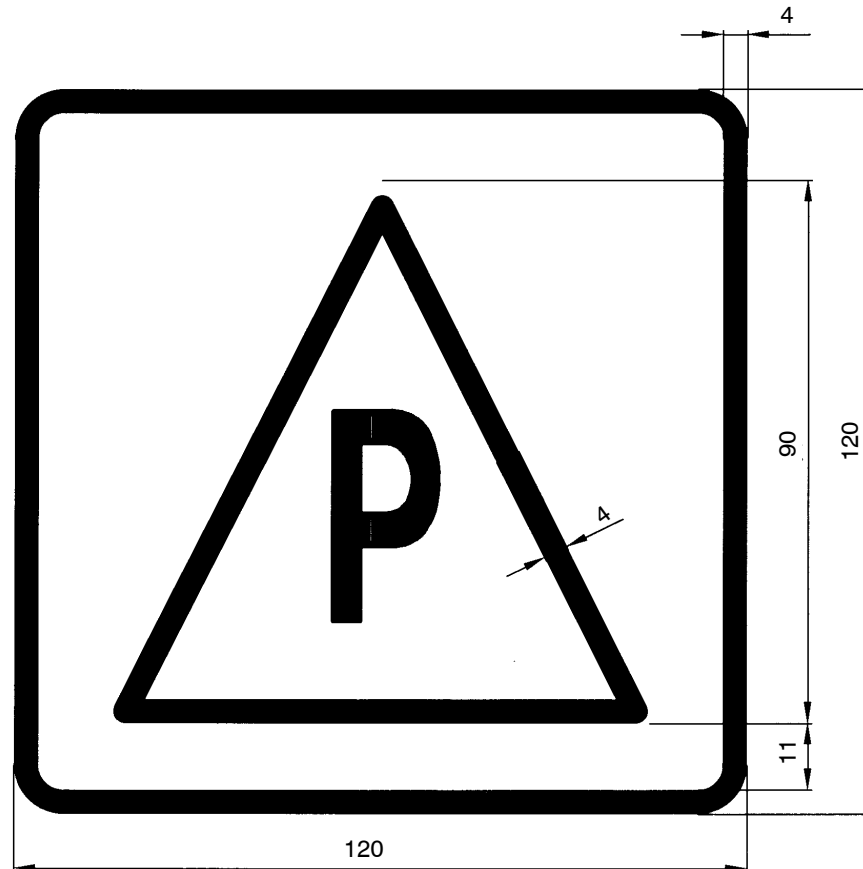
**Appendix J - Insert next to securing devices for the loading of swap bodies with overall width between 2 500 mm and 2 600 mm on fixed-recess wagons of the type defined in *UIC Leaflet 571-4***

(see point 1.1.12 - page 5)



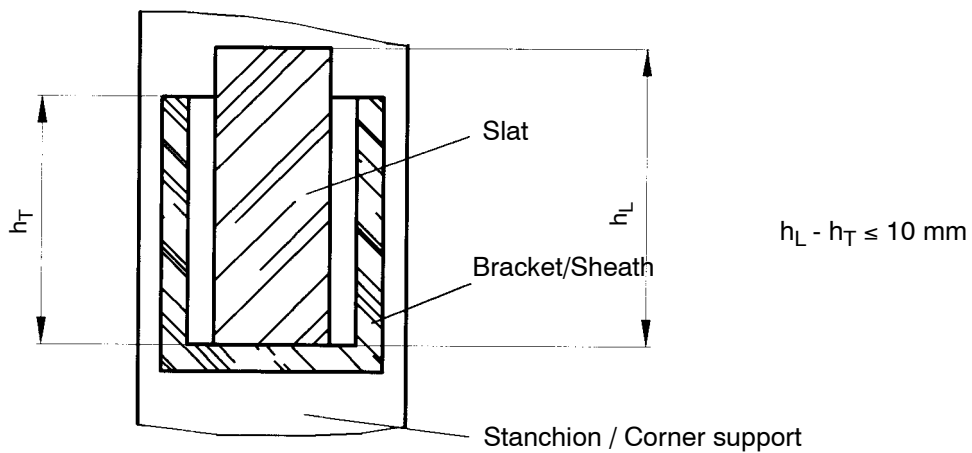
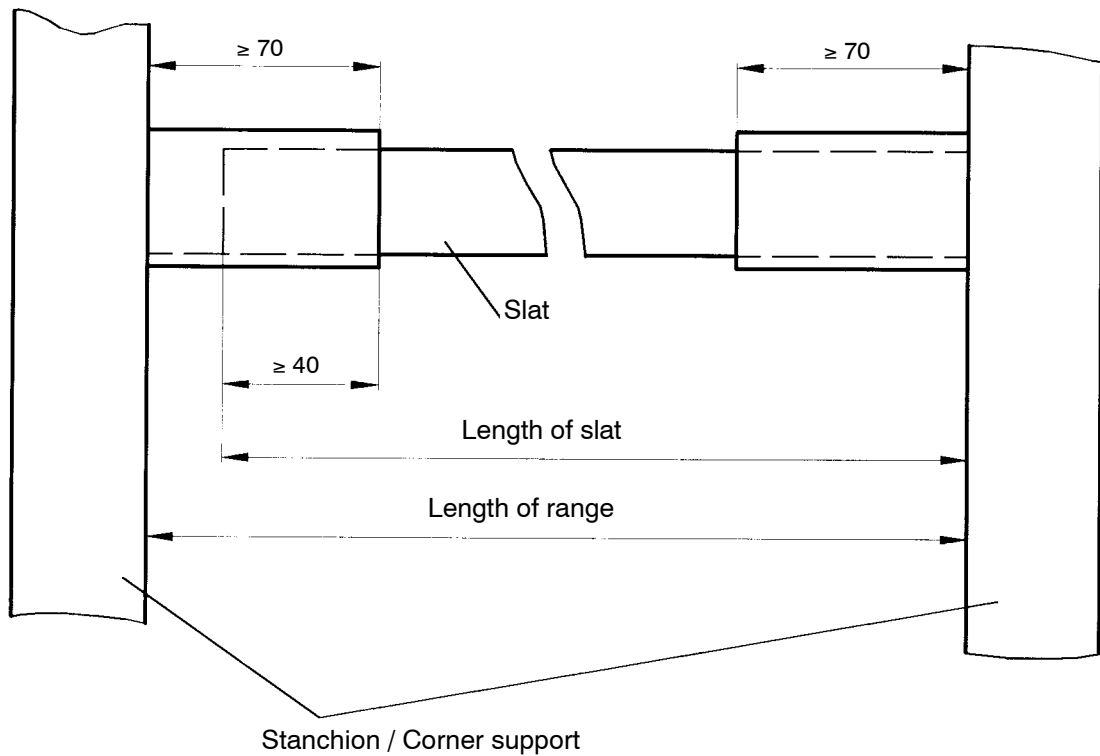
# Appendix K - Marking for swap bodies suitable for loading on fixed-recess wagons

(see point 1.1.12 - page 5)



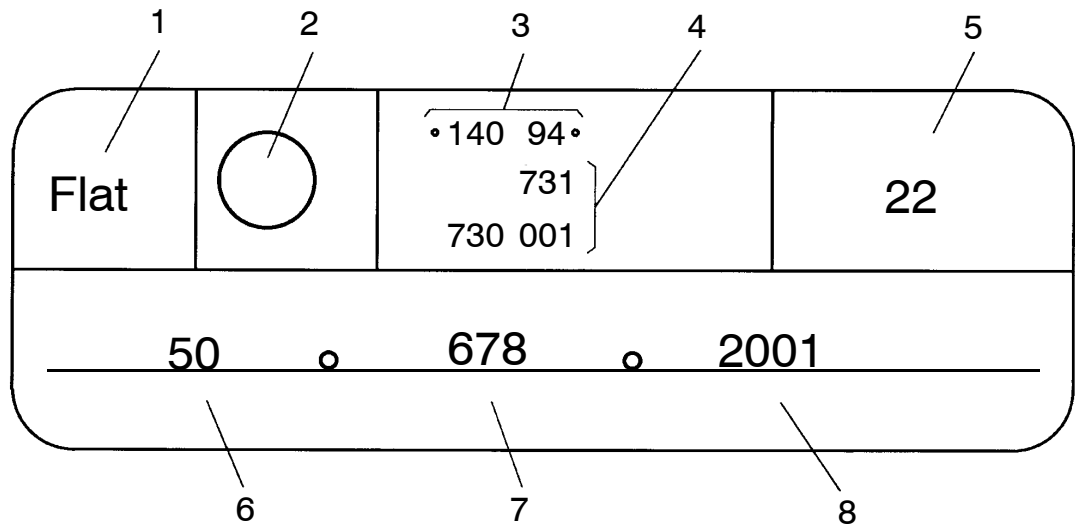
## Appendix L - Overlap, with dimensions, in the case of removable slats

(see point 1.2.3 - page 7)



## Appendix M - Identifier plate

(see point 1.2.5.2 - page 8)



- 1 Swap-body type
- 2 Agreement seal
- 3 Year of manufacture
- 4 Frame number
- 5 Length code
- 6 Nationality code of intermodal transport company
- 7 Code number of company within national intermodal transport
- 8 Number of loading unit within intermodal transport company

---

## **Appendix N - Stackable swap bodies**

### **N.1 - Maximum gross weight 16 000 kg**

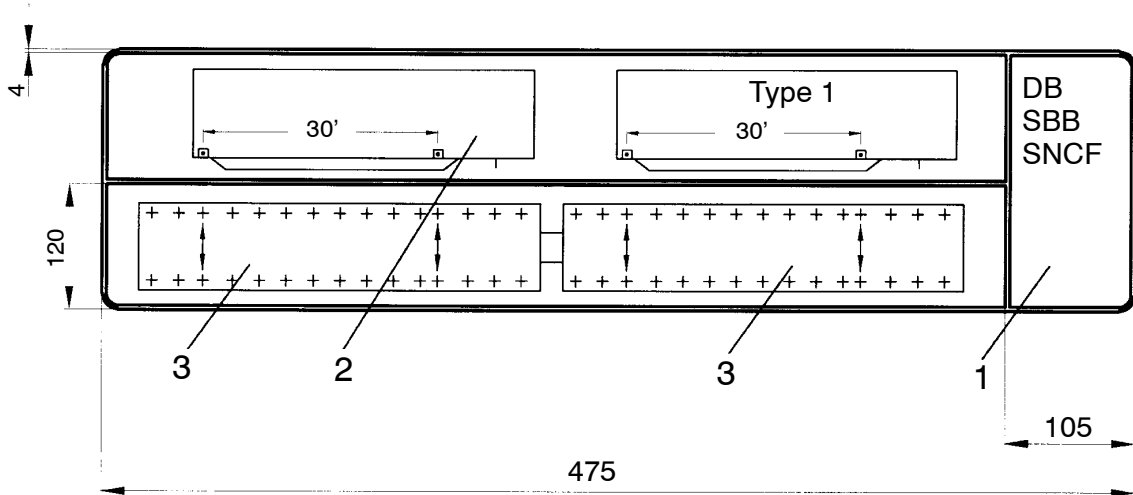
(see point 1.4.2.1 - page 9)

### **N.2 - Maximum gross weight 34 000 kg**

(see point 1.4.2.2 - page 9)

## Appendix O - Wagon marking plate

(see point 2.2 - page 11)

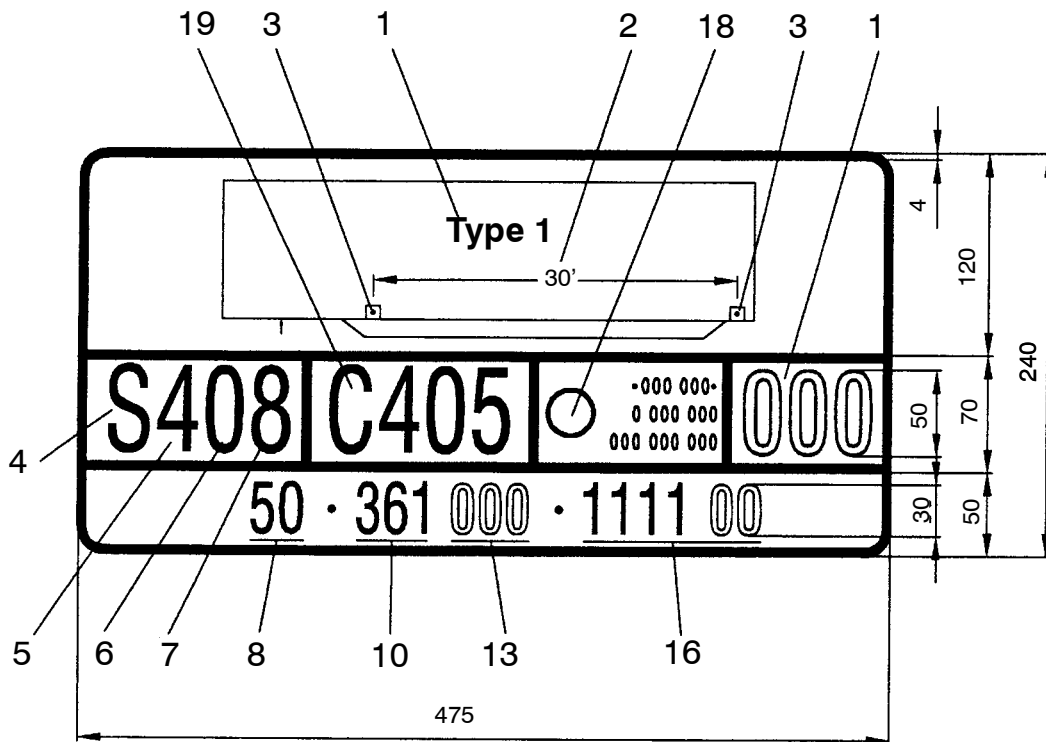


- 1 RUs party to the multilateral agreement
- 2 Number of swap-body type within the multilateral agreement
- 3 Loading instruction



## Appendix P - Identifier plate for swap bodies not UIC-compliant

(see point 2.3 - page 12)



|              |   |
|--------------|---|
| 1            | Type number   |
| 2            | Distance between securing devices                                     |
| 3            | Securing devices to be used   |
| 4            | Special profile according to <i>UIC Leaflet 596-6, Appendix 3.3</i>   |
| 5, 6         | Swap body with 2 550 mm maximum width                                 |
| 7            | 2 600 mm maximum width  |
| 8, (9)       | Nationality code of intermodal transport company                      |
| 10, (11, 12) | Combined number of owner within national intermodal transport company |
| 13, (14, 15) | Number of loading unit within intermodal transport company            |
| 16           | Open digits   |
| 17           | Length code   |
| 18           | Agreement seal  |
| 19           | Wagon compatibility code  |

## Appendix Q - Bi- /Multilateral Contract (Specimen Contract)

(see point 2.4 - page 13)

**Multilateral agreement covering the use  
of special loading units (type X)  
in intermodal transport  
between  
Railway Undertakings A, B, C  
or  
Company(ies) D, (C, E)  
and  
Company(ies)  
F and H plc**

### Q.1 - Purpose

This agreement shall mandatorily govern the procedures applicable when such loading units are used in international intermodal transport. These special loading units (see point Q.2) shall be used exclusively over routes pre-determined by the competent departments of the participating RUs, preferably for trainload traffic.

The agreement covering the different transport routes shall be drawn-up each time on request. Coordination for its (their) own transport shall be the responsibility of Company(ies) D, (C, E). Other Companies involved in intermodal transport may adhere to the agreement.

### Q.2 - Special loading units (LU)

These LUs shall be intermodal-transport LUs that do not meet the provisions of UIC leaflets in all their details and for which the usual approval/coding procedure does not apply. Railway operating safety must not be constrained by these LUs.

The technical features of these LUs and their dimensions shall require the swap bodies concerned to bear a specific marking.

The loading units of Company G shall be defined as type-X LUs.

The total laden weight shall be ..... kg.

A technical description of these units, including their specific marking plates, is given in Appendices A - page 14 and B - page 15.

The tests required for type-X LUs as well as their approval shall be managed by RU A on behalf of all the RUs party to the agreement. The test shall be carried out in accordance with *UIC Leaflet 592-4*.

## Q.3 - Carrier wagons

LU owners shall, depending on the route and on the profile of the lines involved, impose the use of special carrier wagons.

Type-X LUs may be conveyed on suitably-marked carrier wagons, in the loading position specified. The loading diagrams and wagon markings are defined in Appendices [C - page 16](#) and [D - page 17](#).

## Q.4 - Obligations of LU operator

Use shall be made solely of those LUs which, in terms of:

- their manufacture,
- their dimensions,
- their constructional features,

correspond to the prototype tested, approved and issued with a certificate.

Furthermore, the Operator shall undertake to:

- equip all LUs with special marking plates bearing clear and durable indications,
- load the LUs solely on the prescribed carrier wagons, making sure the maximum gross weight is not exceeded,
- monitor the LUs continuously from the technical standpoint and maintain them in faultless condition for rail conveyance.

Any modification to the LUs shall require the prior written approval of all parties to the agreement.

## Q.5 - Obligations of owners/registerers/lessees of carrier wagons

The owners/registerers/lessees of carrier wagons shall undertake, prior to transport, to fit the wagons concerned with the agreed marking plates.

Any modification of a carrier wagon to permit its possible use for LU conveyance shall require a prior agreement to be entered into by the parties to the agreement.

The owners/registerers/lessees of carrier wagons shall undertake to maintain these vehicles in faultless technical condition.

## Q.6 - Period of validity

This agreement shall be applicable from .... for an unspecified period.

## **Q.7 - Termination**

The present agreement may be terminated in writing - without this decision having to be substantiated - by one or several party(ies) with respect to one or several other party(ies) subject to a prior advice of ..... month(s) starting from the end of the month.

All the other parties shall be so informed simultaneously in writing.

## **Q.8 - Competent jurisdiction and law applicable**

The competent tribunal shall be that of city B. The law applicable shall be that of country A.

In case of disagreement, the contract languages shall be A and B.

The original of the contract document shall be lodged with RU A in city B.

## Appendix R - Checklist of type numbers for swap bodies which can only be conveyed under certain conditions

(see point 2.1 - page 11)

| Owner | Contractual RU | Date and signature | Dimensions | Certifying RU | Carrier wagon(s) usable | Type No. | Approving RU |
|-------|----------------|--------------------|------------|---------------|-------------------------|----------|--------------|
|       |                |                    |            |               |                         |          |              |

**Appendix S - Marking of swap bodies adapted to the transport of concentrated loads**

Max concentrated load  
0 000 Kg/m<sup>2</sup>

*Fig. 4 - Example of the marking of swap bodies adapted to the transport of concentrated loads*

|                        | 1     | 2     | 3     |
|------------------------|-------|-------|-------|
| <b>∅ min. (mm)</b>     | 1 130 | 1 130 | 1 130 |
| <b>∅ max. (mm)</b>     | 1 900 | 1 900 | 1 900 |
| <b>weight max. (t)</b> | X     | 30,5  | X     |
|                        | 15,5  | X     | 15,5  |
|                        | 10,5  | 10,5  | 10,5  |

*Fig. 5 - Example of the marking of swap bodies specially equipped for the transport of steel coils*

---

## Glossary

|            |  |
|------------|--|
| <b>ATP</b> | Agreement on the international carriage of perishable foodstuff and on the special equipment to be used for such carriage, drawn up by the United Nations Economic Commission for Europe |
| <b>CIM</b> | Uniform Rules concerning the Contract for the International Carriage of Goods by Rail (Appendix B to COTIF)  |
| <b>CSC</b> | International Convention for Safe Containers   |
| <b>RID</b> | Regulation concerning the International Carriage of Dangerous Goods by Rail (Appendix 1 to the CIM)  |

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