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Roller units for horizontal transshipment - Technical conditions governing their use in international traffic

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Transportbehälter für den horizontalen Umschlag - Technische Bedingungen für den Einsatz im internationalen Eisenbahnverkehr



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Summary

This leaflet sets out the technical conditions which must be met so that roller units basically designed for conveyance on road vehicles may also be carried without difficulty by rail.

The rules laid out in this document mainly cover permissible dimensions, securing devices on wagons, the strength of the roller units and their identification markings.

1 - General Comments

This leaflet sets out the technical conditions which must be met so that roller units basically designed for conveyance on road vehicles may also be carried without difficulty by rail.

The roller units described in this leaflet can only be transported by rail on special wagons.

As a general rule, there is no obligation on railways to undertake transshipment. Any exception to this rule shall be subject to specific agreements with railways in which the specific rules applicable under particular conditions shall be clearly defined.

The rules laid out in this document mainly cover permissible dimensions, securing devices on wagons, the strength of the roller units and their identification markings.

Containers and roller units already covered by *UIC Leaflets 592-2 to 592-4* (see Bibliography - page 28) do not fall within the scope of this leaflet.

o 2 - General conditions applicable to all roller units

2.1 - For each roller unit it is necessary to acquire permanent permission for conveyance on special wagons. This may be issued by the appropriate RU, or delegated to one or several bodies specified by the railway concerned.

The operation of the technical acceptance procedure is left to each individual RU which can demand a certificate for each roller unit to prove that it is in conformity with the provisions set out above (see point 2 - page 3).

2.2 - The maximum outside width shall be 2 600 mm, irrespective of the loading status.

NB : A maximum width of 2 600 mm is acceptable for refrigerator roller units.

2.3 - Roller units shall be provided with fittings enabling them to be secured or locked in position on the wagon.

The actual fitting or additional fittings provided on the roller unit shall guide and hold the unit in the intended loading position.

2.4 - Where roller units are provided with fittings specified in other leaflets (e.g. corner fittings, recesses for the location of grapples arms, standing gear) the provisions contained in those leaflets shall apply.

2.5 - Apart from the conditions imposed by the competent national technical authorities or other equivalent organisations, roller units shall at least meet the requirements of the tests specified in Appendix A - page 9.

Since roller units may be carried in both directions of travel under SS conditions (120 km/h), their bodywork¹ shall be capable of withstanding wind forces, in particular the negative and positive pressures which occur when trains pass one another in tunnels. Where a roller unit is sheeted, the sheet must be secured to the body in such a way as to provide all necessary safeguards in the event of failure of a securing tie (TIR fastening).

2.6 - Where roller units are fitted with moveable or folding panels (for example roof, doors, side walls) they must be fitted with fastenings that ensure they remain closed under all circumstances, in particular during carriage by rail.

Door and shutter fastenings or other such devices shall have additional safeguards to prevent accidental opening.

Likewise, non-mechanical (hydraulic, pneumatic etc.) systems for fastening doors, shutters, etc. shall be fitted with an extra mechanical safety device on the side in an easily visible position.

The closed position of door fastenings and the effectiveness of the additional safeguards provided must be easily verifiable by staff standing on the ground.

2.7 - Tests undertaken shall be covered by a standard type-approval certificate completed by the railway concerned in accordance with the Appendix B - page 12.

1. In particular the doors, body-frame members and their attachments.

2.8 - Roller units shall be classified as specified in *UIC Leaflet 596-6* (see Bibliography - page 28) and the level of compatibility shall be determined as indicated in point 3.3 - page 8. The identification marks should also be applied in accordance with Appendix C - page 13.

2.9 - Roller units used for international freight traffic conveyed under customs seal shall comply with the regulations of customs agreements in force.

2.10 - Roller units intended for refrigerated traffic shall comply with ATP regulations (see List of abbreviations - page 27) if they are required to carry traffic subject to this agreement and must, in particular, carry the markings specified in Appendix 1, Annexe 4 to the ATP. The Appendix E - page 20 to this leaflet shows an example of this means of identification.

2.11 - Roller units fitted with ladders shall be affixed with a sign corresponding to RIV Sheet 22 - plate 34 (see List of abbreviations - page 27) at the side of each ladder. Each rung of these ladders shall be able to withstand a weight of at least 200 kg.

2.12 - When all or part of the walls are non-existent or non-rigid, devices shall be fitted to enable the load to be secured on the base structure of the roller unit.

2.13 - Particular specifications for roller units intended to carry dangerous materials.

2.13.1 - Tanks shall be able to withstand an internal pressure of 0.3 bar.

2.13.2 - The filling and draining connections, as well as any other openings, with the exception of the automatic ventilation equipment, shall:

- when in the closed position, prevent any spontaneous opening, under the effect of a shock or an unintentional action,
- be arranged in such a way as to be protected against the risks of wrenching or of failure during transport or handling,
- be able to be sealed in the closed position,
- be able to be closed by screwed plugs, full flanges or comparable devices.

The filling and draining devices shall be protected by shields or covers.

It is recommended that tanks be equipped with filling and emptying devices on the top.

Tanks with bottom discharge facilities shall be fitted with a closing device which satisfies the following conditions:

- the closing device shall consist of a valve or tap,
- it shall be situated immediately below the discharge orifice of the tank,
- it shall be sufficiently protected by its position directly on the tank or by another method.

The arrangement of the drain pipes for bottom discharge shall enable them to be completely drained.

The body and handles of the drain taps shall be fixed in such a way that they cannot be removed except by force. The position and/or the direction of closing shall be unambiguously indicated.

It is recommended that the carrying frame of the tanks or the structure of the roller units should be designed such that it protrudes beyond the side parts of the tanks and their accessories (dome, filling and draining assembly etc.) so as to protect them against damage.

It is recommended that the tanks should be so designed that they can be drained preferably by pumping or by a pressurised system and not by gravity.

NB : The tanks referred to in points 2.13.2 and 2.13.3 require special authorisation before running on the UK network.

2.13.3 - Tank roller units used for the transport of liquids which give off gases other than those envisaged by the RID/ADR shall be designed so that any stress likely to cause damage is avoided.

If, to avoid this stress, the tanks are provided with automatic ventilation equipment, the latter shall be designed in such a way as to prevent the penetration of flames, the running out of liquid and any unauthorised sampling.

NB : The tanks referred to in points 2.13.2 and 2.13.3 require special authorisation before running on the UK network.

2.14 - Roller units intended for the transport of dangerous goods shall, moreover, meet the requirements of the RID.

The carrying frames of roll-off tanks shall meet the requirements concerning the design, fittings, commissioning of the prototype, checks and controls, as well as markings for tank units (section 6.8 of the RID).

3 - Conditions to be observed according to the transfer system(s) used

3.1 - General comments

Roller units for horizontal handling are units which have 2 side-bearers, one or several front-end grab handling fittings and one or two pairs of wheels at the rear. They may be loaded on special lorries and conveyed by road.

Each roller unit shall be fitted with at least one of the systems specified in point 3.2 and possibly with several depending on the compatibility criteria laid down in point 3.2.4 - page 7.

It is not necessary to use special devices for the horizontal transfer between the lorry and the wagon and vice versa.

3.2 - Roller units for one of the horizontal transfer systems using type 1 wagons of *UIC Leaflet 571-4, chapter 4* (see Bibliography - page 28) or equivalent.

3.2.1 - ACTS roller unit system (point E.1 - page 20)

System characteristics:

- length: max. 5 950 mm,
- folding grab-handling ring,
- saddle for chain attachment,
- additional railway rollers,
- longitudinal forces exerted on side-bearers.

The roller unit is slid onto the swivel frame once the frame has been swung out to receive it. A base plate serves to hold the unit. Railway rollers are used to facilitate loading on the swivel frame. Once the unit has slotted into place, these rollers are no longer under load and the roller unit will be borne by the side-bearers throughout its length on the swivel frame. When the unit has been positioned on the frame, the latter is realigned on the wagon centre-line and locked into position. Longitudinal forces are transmitted via the side bearers to two stops fixed to the wagon floor. This means that the side-bearers have to have a pre-set length of 5 850 mm and the maximum length of the roller unit is 5 950 mm. With arrangement A, to prevent lift at the rear and restrict lengthways movement of the roller unit on the swivel frame, two "U"-shaped stops placed flat at the end of the frame are provided so that the shaft or sections of the shaft of the railway rollers can fit into them. At the front, lift is prevented by means of a hook which fits into the chain attachment block.

With arrangement B, two pivoting clamps are provided as an additional protection against lifting. These hold the lower part of the side-bearer.