

NOTE

This leaflet is part of a set which also includes :

Leaflet 627-3 : Inscriptions to be shown on powered units running on international services.

Leaflet 505-1 : Kinematic gauge for powered units used on international services.

INDEX

0 - SCOPE

1 - PROVISIONS

***0 - SCOPE**

The provisions set out below are applicable to the construction of internal combustion engined railcars intended to be used on international train-ferry services.

1 - PROVISIONS

***1.1** - Railcars must be constructed to comply with the provisions of UIC Leaflet 505-1 «Kinematic gauge for powered units used on international services». In addition, they must comply with the following provisions :

* When passing over the top of an approach ramp with an incline of 1/23, i.e. forming a broken angle of $\pm 2.5^\circ$ with the adjacent track, a distance of 60 mm must be maintained, when the vehicle is under maximum load, between the rigid parts of the body and the hump or hollow formed by the line intersecting the running level of the ramp and that of the adjacent track.

***1.2** - When coupled together, motor-coach trains must also be able to pass over these ramps with an incline of 1/23, i.e. with an incline angle of $\pm 2.5^\circ$ with the adjacent track.

***1.3** - When coupled together, railcars and motor-coach trains, made up of bogie vehicles, must be able to negotiate 120 m radius curves at the recognised speed laid down for the transshipping operation ; two-axle vehicles must be able to negotiate 90 m radius curves.

***1.4** - In addition, motor-coach trains must be able to negotiate reverse curves with radii of 150 m and 190 m and an intermediate straight section 12 m long.

* If, in order to fulfil this condition, it is necessary to use an additional buffer beam, the necessary space must be left in the neighbourhood of the buffers to enable it to be hooked on.

***1.5** - Railcars and motor-coach trains must be constructed so as to be able to negotiate a torsional deformation of 5° in relation to the horizontal in 24 m long ramps.

***1.6** - The total length (length over buffers) of internal combustion engined railcars, as well as that of driving trailers and intermediate coaches, must not exceed 26.4 m. If railcars are equipped with bogies, the distance between pivots must not be more than 19 m. The wheelbase of bogies must not exceed 4.5 m.

***1.7** - Railcars and all vehicles forming part of motor-coach trains must be provided, on each side, outside the sole-bars, with securing rings spaced about 5 m apart, which are strong enough to secure the vehicles until the springs are fully compressed.

* The internal dimensions of these rings must be 120 mm lengthwise and 85 mm breadthwise. These rings must be arranged so that the springs can be compressed by means of two cable hooks and their relevant tightening screws.

***1.8** - Railcars and motor-coach trains must be provided with arresting brackets near the rings, for the purpose of accommodating jacks serving to prevent any rolling movement of the vehicles likely to occur during conveyance by train ferry.

These arresting brackets shall be indicated by the «arresting bracket for ferry operation» sign, in accordance with UIC Leaflet 627-3. In the event of these arresting brackets also serving as lifting points, they shall be indicated by the «jacking point for lifting» sign, in accordance with UIC Leaflet 627-3.

* If railcars and motor-coach trains are equipped with air suspension, it must be possible to drain completely the air bellows so that the vehicles can rest on the emergency side bearers and that the rolling movements be eliminated.

*1.9 - Railcars and motor-coach trains must be equipped so that they can be shunted by any kind of powered unit fitted with normal hauling and buffing gear, either for the purpose of being loaded on to a train ferry by a propelling motion or unloaded by hauling.

It is recommended that, when it is necessary for motor-coach trains to be separated and placed on several tracks because of their total length, they shall be formed so that each individual part can run on to a train ferry under its own motive power.

1.10 - It is recommended that railcars, motor-coach trains and train ferries be fitted out to facilitate adequate use of heating, air conditioning and lighting installations during conveyance on train ferries.

In addition, the provision of a connection for a current supply at 220/380 V is recommended.

*1.11 - Railcars and motor-coach trains which comply with the above conditions shall bear the «enclosed anchor» sign, in accordance with UIC Leaflet 627-3.

*1.12 - Railcars and motor-coach trains, with a length over buffers not exceeding 23.5 m, which comply with the above conditions and are capable of running over ramps with an incline of 1/16 giving an incline angle of 3.5° , and which, in addition, are capable of negotiating two reverse curves of 120 m radius without any intermediate straight section, shall bear the «unenclosed anchor» sign, in accordance with UIC Leaflet 627-3.

* The angle formed with the adjacent tracks and the incline of the ramp during transshipment depend upon the height of the train ferry above water level.

The Railways shall agree upon the method used for the calculation of these values (e.g. by means of lowest water level tables). It is necessary to determine down to which water level, railcars and motor-coach trains bearing the sign complying with UIC Leaflet 627-3 can be transhipped.

*1.13 - Railcars and motor-coach trains which do not fulfil the above conditions can only be conveyed on train ferries after a prior agreement between the Railways concerned.

APPLICATION

As from 1 July 1980 as regards obligatory provisions.

All Railways belonging to the Union.

RECORD REFERENCES

Headings under which the question has been dealt with .

- Running of stock over ramps. Conditions to be fulfilled by Diesel rail-cars for negotiating ramps of train ferries, traversers, etc.

(5th Committee -R.S.- P.W. : Budapest, June 1958 - 5th-7th Committees : Paris, May 1961).

- Revision of Leaflet 627-5 «Regulations applicable to the construction of motor coaches powered by combustion engines accepted on international train ferry services».

(Traction and Rolling Stock Committees : Paris, June 1977).

- *Question 5/B/FIC* : Approval of the new version of Leaflet 627-5.

(Traction and Rolling Stock Committee : Paris, June 1979).

- Examination of comments on the draft leaflet 627-5.

(Working Party on Diesel Traction : Paris, January 1980).