



U.I.C. CODE

Leaflet to be classified in Volumes :

IV - OPERATING

V - ROLLING STOCK

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to be stuck on page 1, Leaflet No. 535 (1-1-73)

STANDARDISATION OF STEPS AND HANDRAILS ON WAGONS (I)

In order to ensure maximum protection for staff, the provisions in this leaflet shall be obligatory with regard to the following conditions :

For the types of wagons below,

- covered wagons Appendix I
- open high-sided wagons Appendix II
- flat wagons with flaps (2) Appendix III
- flat wagons without superstructure and
transcontainer wagons Appendix IV

all the provisions in the leaflet shall be applicable.

- (1) With effect from 1-1-73, the provisions of this leaflet shall only apply to wagons which will not be fitted with the automatic coupler.
- (2) Flat wagons with flaps of less than 400 mm high shall be treated as flat wagons without superstructure.

For other types of wagons accepted on international services, the provisions in Section A shall be applicable ; those in Sections B and C shall also be applicable insofar as the wagon construction allows.

NOTE : The provisions in Section B and in point 12 of Section C do not take into account the conditions required by the application of automatic coupling.
The study is in progress.

A. - General provisions

1. The end steps must be placed in such a way that the shunter may remain within the TU gauge during running (taking into account the reduction formula). The shunter must be able to go up and down the step, whilst running at walking speed, without risking his personal safety.

The wagons shall be provided with at least two end steps, arranged diagonally, and with corresponding handrails.

When the wagon is equipped with a screw brake operated from the ground, it must be provided with crossing steps and two end steps, at the same end.

In the latter case and also when the wagon is equipped with a screw brake with a platform accessible from both sides, it is recommended that a step should be fitted at the other end.

2. The steps, handrails and handles must be fixed by means of rivets or bolts fitted with a locked nut. In the latter case, castellated nuts fitted with split pins, or nuts locked in position by a welded lug, must be used, to the exclusion of any other locking method.

Fixing to the wagons by welding is allowed, however, in the case of intercommunicating gangways and their corresponding handles.

Fixing to the wagons by welding is only allowed under the following conditions :

- each Railway may only weld equipment on to its own wagons,
- the weld must be carried out in accordance with all regulations imposed by the Railway for safe welding (qualified staff, supervision of methods and materials used and of the work itself).

3. The clearance between the handrails and the nearest obstruction shall be at least 120 mm, except in the following two cases :

- a) handrails for shunters (number 21), for which the unobstructed space can be reduced to 100 mm ;
- b) handrails on the sliding doors of covered wagons (number 23), and handrails only used for gaining access to the floor, for which an unobstructed space of 50 mm only shall be allowed ;
- c) handrails of flat wagons without superstructure and of transcontainer wagons, for which a clearance of 100 mm only in relation to the load shall be allowed.

4. A system of perforated metal strips shall be used for the steps. However, the steps placed by the doors of covered wagons may be made of wood. Wooden steps must be provided with a stop at the sides of the rung.

5. The stirrup-shaped step shall only be used for gaining access to the floor (number 14) ; an angle-piece may be used.

6. Handrails shall be of round bar steel 20 mm in diameter.

B - Dimensions and position of steps

7. The steps at the ends of the wagons shall be 225 mm wide and 350 mm long, and shall be placed at a height of 590 mm above rail level (1). They shall be placed outside the end walls (number 11), as far as possible from the longitudinal centre line of the wagon.

In order to avoid the risk of injuring the shunter, a protective screen must be provided to cover any gaps opening up between the frame and the sliding underframe member on wagons fitted with shock absorbers (Appendix V) (2).

(1) This height is calculated on a buffer height of 1060 mm.

(2) To be published later on.

8. In the case of steps placed by the doors of covered wagons, the three alternatives given below may be used ; these regulations also apply to refrigerator, insulated and mechanically refrigerated wagons :

- a) steps 225 mm wide, 2 200 mm long and placed at a height of 615 mm above rail level (1) (number 12) ;
- b) steps 110 mm wide, at least 500 mm long and placed at a height of 615mm above rail level (1) (number 13) ;
- c) stirrup-shaped steps $\geq$ 50 mm wide, at least 500 mm long and placed at a height of 550 mm above rail level (1) (number 14) ;

In all three cases, the step must project 100 mm beyond the nearest side of the door opening.

9. The steps for gaining access to the brake platform shall be provided with two rungs staggered by 80 mm. They shall be 160 mm wide, with a length equivalent to the width of the access to the platform and increased, wherever possible, by 100 mm on each side, the lower rung being placed at a height of 615 mm (1) above rail level (number 15).

10. The crossing steps, three of which shall be provided, shall be 175mm wide and 250 mm long in the case of the two side steps, with a minimum of 750 mm for the centre step.

The two side steps shall be placed at a maximum height of 1 330 mm above rail level (1) ; the centre step shall be placed 1650 mm above rail level (1).

They shall be fixed to the end wall nearest to the screw brake control (number 18).

In order to walk over wagons without superstructure, the loading surface must be provided with a non-slip floor (for example, non-slip paint) at least 500 mm wide.

(1) This height is calculated on a buffer height of 1060 mm.