

1 - SCOPE OF THIS LEAFLET

1.1 - These regulations shall apply to locomotives, railcars and multiple unit trains as well as to driving trailers for different types of traction, with the exception of steam traction.

The principles covered by these regulations shall also apply to shunting locomotives, regardless of their specific features (see UIC Leaflet 646).

1.2.- These regulations are :

- *obligatory* for all new stock liable to be used on international services and referred to in 1.1. ;

- *recommendatory* for all other new stock.

2 - PROTECTION AGAINST DESTRUCTIVE EXTERNAL FORCES

2.1 - The seats for the driver and the second man must be placed as high as possible above rail level.

2.2 - The walls, floor and roof must be able to withstand sufficiently any compression, bending or buckling when subjected to external forces.

2.2.1 - Drivers' cabs must be built as solidly as possible and incorporated in the body frame of the tractive unit, so that any deformations caused by impact will occur behind and, possibly, in front of the driver's cab.

In particular, the front side of the driver's cab must be sufficiently fitted into the body frame and capable of appreciably withstanding deformations, in the event of a collision, especially in the area between the head stocks and the bottom of the windows.

It is recommended that the structure be guaranteed against residual deformation when subjected to the following compression stresses :

	Locomotives	Railcars	Remarks
At the bottom of windows	300 kN	300 kN	Evenly distributed
At head stock level	2000 kN	1500 kN (UIC Leaflet 625-7)	Applied on both buffers
	2000 kN	1500 kN	Applied in the centre-line of automatic couplers

It is furthermore recommended that the front part of the tractive unit be fitted with devices which absorb the energy produced on impact in the best possible manner by buckling, even if the damage is permanent.

2.2.2 - The cab window and door frames must be very rigid ; the larger the opening, the more care should be taken to observe this regulation.

Openings should not be cut for the purpose of installing equipment, insofar as possible.

3 - PROTECTION AGAINST THE EFFECTS OF INERTIA INSIDE VEHICLES

3.1 - The internal fittings of drivers' cabs must be such that staff cannot be hurt by sharp edges, jutting objects, etc., when there are sudden changes in speed.

If this cannot be done, the objects must be covered with a shock-absorbing material.

3.1.1 - Special regulations describe the type of glazing to be used in drivers' cabs (see UIC leaflets 617-4 and 625-2).

3.2 - Motors and other heavy equipment installed inside the vehicle must be properly secured in place so that they will not break loose when there are sudden changes in speed.

In applying this regulation, it is accepted that, in service, the vehicle may be subjected to accelerations of ± 3 g.

4 - PROTECTION AGAINST OTHER SOURCES OF DANGER

4.1 - Drivers' cabs must not contain any components or equipment, which might constitute a danger to staff (electrocution, burns, explosion, toxic gases, etc.).

4.1.1 - Drivers' cabs must be devoid of any :

- naked conductors, unprotected high voltage equipment, etc.;
- boilers, unprotected boiler water-gauges, fuel tanks, etc..

4.1.2 - If directly-connected steam pressure-gauges are installed in drivers' cabs, then a choke must be placed in the steam supply pipe to limit the amount of steam which could be released inside the driver's cab if the pipe or the pressure-gauge were damaged.

4.2 - The external surface of the roof must be made of metal and must be connected electrically to the vehicle frame to provide an effective earthing system in the event of live wires falling on the roof from the contact line or the pantographs.

5 - EMERGENCY EXITS FOR DRIVERS' CABS

5.1 - Drivers' cabs at the ends of vehicles must have at least a door or a gangway giving easy access to a longitudinal corridor leading to the opposite end of the vehicle, in case of emergency.

If there is a door, it must open outwards from the driver's cab and close tightly - it must be as air-tight as possible - but it must be possible to open the door by simply pushing it or in any other manner which is simple and quick.

If there is any risk of obstruction (baggage, passengers), the door must be a sliding door or a swing-door which swings inwards and outwards.

5.1.1 - The exit must be easily accessible, not only to the driver, but also to the second man.

Furthermore, the seat(s), defined in UIC Leaflet 617-6, must not be a major obstacle to reaching the exit.

5.1.2 - It must be possible to exit from the driver's cab safely and without difficulty over a length of at least 2 m. The exit should measure at least 1800 mm in height, 500 mm in width and the door space should measure a minimum of 1700 mm x 430 mm.

6 - OTHER SAFETY MEASURES

FOR STAFF

6.1 - Doors on the sides of drivers' cabs must open inwards only.

APPLICATION

For obligatory provisions (see point 1):

1. with effect from 1.1.1977 for equipment to be designed,
2. with effect from 1.1.1982 for equipment to be built.

1.1.87
 The provisions of this leaflet are only valid for vehicles designed up to 31.12.85. In case of major transformation work on these vehicles, every effort must be made to apply the provisions of Leaflet 651. The provisions to be observed for vehicles designed as from 1.1.86 are those contained in Leaflet 651.

All Railways in the Union.

RECORD REFERENCES

Latest heading under which the question has been studied:

- Question 5/A/FIC - Revision of leaflets (Traction and Rolling Stock Committee, Dublin, June 1985; Paris, June 1986 - Sub-Committee for Motive Power Units, Paris January 1986, January 1987).