INTERNATIONAL UNION OF RAILWAYS

| U I C CODE |
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| Leaflet to be classified in Volume : |
| VI - TRACTION |

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# REGULATIONS CONCERNING THE IMPACT WITHSTANDABILITY IN SERVICE OF COMBUSTION-ENGINED RAILCARS OR MULTIPLE UNIT TRAINS



## 1. Scope and obligatory character

1.1. These regulations apply to railcars and their trailers, coaches with a driving compartment and intermediate coaches of multiple unit trains.

1.2. These regulations are :

- *Obligatory* for the stock referred to in clause 1.1, built later than 1st January, 1966 and likely to be used on international services.
- *Recommendations* for other stock.

*(Reprint of 1-10-1987)*



## 2. Withstand ability of the bodies

2.1. The bodies of the vehicles shall be capable of withstanding, without permanent deformation and without exceeding the permissible values of the stresses in the various components, the forces defined below in 2.1.1 and 2.1.2.

2.1.1. A static horizontal compression force of 150t minimum, applied symmetrically at buffer level in relation to the median longitudinal vertical plane of the body, at the same time as a vertical load P1 is applied.

2.1.2. A vertical load of

P = k (P1 + P2 + P3) t,

P1=weight of the body in running order, i.e. including :

- the motor equipment, its auxiliaries and hydraulic systems when full,
- the electrical equipment, the heating equipment filled with water, the braking equipment and the kitchen equipment with crockery and linen,
- full supplies of Diesel fuel, oil, sand, drinking water, water for the heating system and for various uses, provisions, drinks, etc.,
- total mass of the train staff for driving, service and accompanying purposes, and of customs and frontier police staff, calculated on the basis of 80kg x the number of seats provided for such staff.

P2 = weight of passengers carried, calculated on the basis of :

2 x 80 kg x number of seats in the passenger compartments, P2 not being, in any case, less than:

S1 x 200 kg

S1 being the total area in square metres, of the passenger compartments, corridors, entrances and WC's, excluding service compartments.

P3 = weight of luggage as inscribed in the luggage compartment, P3 not being, in any case, less than :

S2 x 300 kg

S2 being the area of the luggage compartment including entrances.

k = 1.3, the coefficient applied to take the dynamic forces into account.

## 3. Withstand ability of the fixings of the motor equipment

3.1. The Diesel engines, generators, gear boxes, water and fuel storage tanks, and other heavy equipment, must be carefully fixed to their brackets to prevent them from breaking loose when sudden change of speed takes place.

3.2. The fixings must be designed to withstand the forces equivalent to an acceleration of 3g (g = acceleration due to gravity).

## 4. Energy absorbing capacity of buffing gear

The buffing gear of the vehicles must possess a minimum energy-absorption capacity ensuring that no damage results when the vehicles make contact, at a speed of 3.6 km/h (half walking pace), with a high inertia stop not provided with spring buffing gear.



## APPLICATION

With effect from 1January 1966 for obligatory provisions (see point 1).

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).