

Draft amendments to UNECE Regulation No. 29
(Passive safety for cargo vehicle cabin passengers)

Item 5.2 is to be changed in the following way:

- 5.2** The driver's cabin of cargo vehicles falling into categories N₁, N₂, N₃ must pass all tests described in Appendix 3 to this Regulation. The manufacturer can choose how many cabins will be provided for testing: one, two or three. However an N₁ vehicle designed on the basis of an M₁ vehicle that has been officially approved in accordance with Regulation No. 94 (or equivalent regulatory documents) needs only the back wall strength testing (test C).

Appendix 3 should read as follows:

Appendix 3
CONDITIONS OF TESTING

1. Doors
The doors of the cabin must be closed but not locked.
2. Engine
Engine or an imitation of the engine with identical mass, dimensions and mounting must be installed during test A.
3. Cabin mounting
Cabin must be mounted on the vehicle during test A. For tests B and C it is up to manufacturer's choice whether to install it on the vehicle or on a separate frame **or part of the frame**. The vehicle or its cabin must be mounted according to the requirements of Addendum 1 to this Appendix.
4. Front part strength (test A)
 - 4.1 Pendulum description
 - 4.1.1 The pendulum must be made of steel. Its weight must be equally distributed and range **from 1000 to 1500 kg**. The striking surface must be rectangular and flat. The width “l” of the striking surface must be **1000** mm and height “h” must be **600** mm. The edges the pendulum must be rounded and the radius of the curvature may not be less than 15 mm.
 - 4.1.2 **The pendulum must be rigid and hang freely on two chains, so that there would be at least b=800 mm distance between the chain attachment points. The minimum chain length measured from the hanger bracket axis to the geometric center of the pendulum must be 3 500 mm.**
 - 4.1.3 The pendulum must be placed so, that in vertical position:
 - 4.1.3.1 its front side would touch the frontmost part of the vehicle;
 - 4.1.3.2 its center of gravity must be located $c=50\pm 5$ mm away from the H(R) point;
 - 4.1.3.3 **The outer side rim of the pendulum must be placed between two parallel vertical planes separated by a=30 mm space. The inner plane must be parallel with the middle longitudinal plane and tangent to the outer surface of the driver's door.**

4.2 Test conditions

4.2.1 The pendulum must strike the cabin while moving from front to back. The strike direction must be horizontal and parallel with the middle longitudinal section of the vehicle. **(Fig. 1). The energy of the strike must equal 40 kJ for N₃, [30] kJ for N₂, and [25] kJ for N₁ vehicles**

4.2.2 **Test A may be skipped for N₁ cargo vehicles based on an already tested model that fulfills the requirements of Regulations No. 94.**

5. Roof strength (test B)

5.1 **The driver's cab must be tilted by 25 degrees against its longitudinal axis so that the driver's side would be lifted (Fig. 2)**

5.2 **The load must be applied through a suitably shaped rigid plate, the down side of which is uniformly greased.**

5.3 **The driver's cabin roof must endure static load P of $P=[K] P_{CH}$, where: P_{CH} is part of the vehicle's full load weight that falls to the front axle; K is the dynamic load coefficient. The maximum load that the upper part of cabin must endure is limited by 10 tons.**

5.4 **Test B may be skipped for N₁ cargo vehicles based on an already tested model that fulfills the requirements of Regulation No. 94 (or equivalent regulatory documents).**

6. Back wall strength (Test C).

6.1 Pendulum description

6.1.1 **The pendulum must be made of steel. Its weight "m" must be equally distributed and equal to 1000 kg. The striking surface must be rectangular and flat. The width "l" of the striking surface must be 1600 mm and the height "h" - 500 mm. The edges of the pendulum must be rounded and the radius of the curvature must not be less than 15 mm.**

6.1.2 **The pendulum must be rigid and hang freely on two chains, so that there would be at least $b=800$ mm distance between the attachment points of the chains. The minimum chain length "L" measured from the hanger bracket axis to the geometric center of the pendulum must be 3 500 mm.**

6.1.3 **The pendulum must be placed so that in vertical position:**

6.1.3.1 **its front side would touch the most protruding back part of the cabin;**

6.1.3.2 **its center must be placed in such way that it would imitate the impact of vehicle's own cargo during front collision.**

6.2 Test conditions:

The pendulum must strike the driver's cab from the back and be directed to the front (Fig. 3). The strike direction must be horizontal and parallel with the central longitudinal section plane of the vehicle. The center of the strike must coincide with the central axial plane of the back wall and be located in the middle point between the floor and the roof of the cabin. The energy of the strike must equal 30 kJ for N₃, [20] kJ for N₂, and [15] kJ for N₁ vehicles.

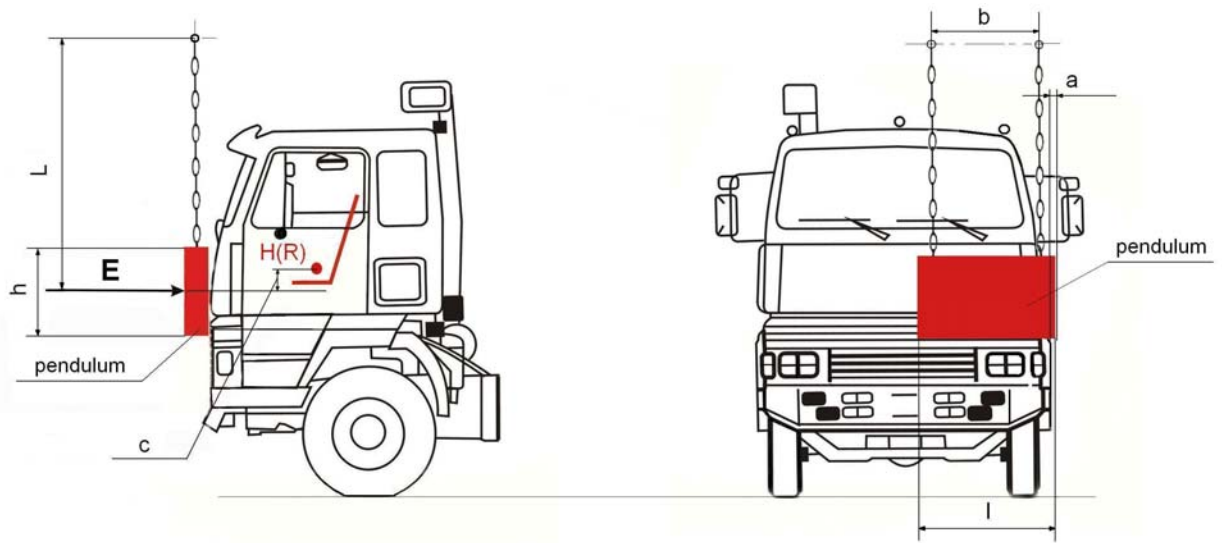
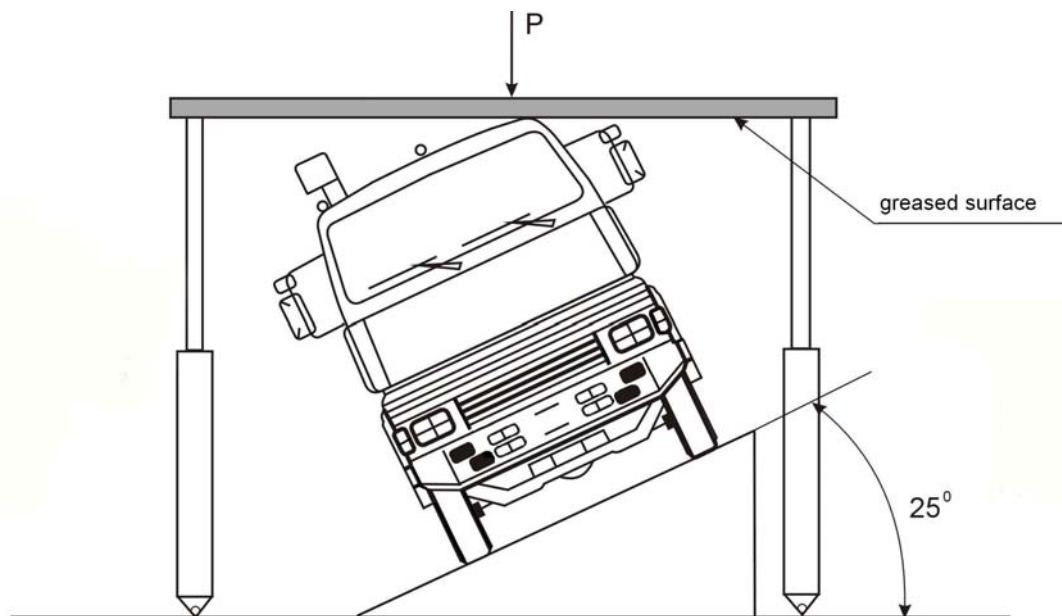
Fig.1. Front part strength testing (Test A)**Fig.2. Roof strength testing (Test B)**

Fig.3. Back part strength testing (Test C)