Proposed amendments to the UNECE Regulation No. 29 on truck cab safety

December 2008
Geneva
Frontal impact

Current Regulations 29.02

**Impactor energy:**
- N ≤ 7.0 t – 29.4 kJ
- N > 7, From – 44.1 kJ;

**Impactor:**
- size: h=800 mm; l = 2500 mm
- mass m = 1500 ± 250 kg

**Impactor position:**
- c=50±5 mm (50 ±5 mm lower than the H point (R))
- beam suspension of the impactor, L≥3500 mm, b≥800 mm

**Alternative tests – Regulations 33.**

Proposed

N1 and N2 ≤ 7.5 t – Regulations 29 with the 02 series of amendments

**Alternative tests for N1 – Regulations 33 or 94.**

**Impactor energy:**
- N2 > 7.5t and N3 – 58.8 kJ*;

**Impactor:**
- size: h=800 mm; l ≥ 2500 mm
- mass m = 1500 – 2500 kg

**Impactor position:**
- c=50±5 mm (50 ±5 mm lower than point H (R))
- beam suspension of the impactor, L≥3500 mm, b≥800 mm

* - concerns only cab-over-engine and short bonnet vehicles; A truck is a bonnet truck if 75% or more of its engine length (excluding cooling systems) is located in front of the lowest rim of the wind shield. The length of the engine is limited by the clutch carter connector.
Vehicle impact energy during the tests conducted in accordance with different Regulations

- Regulations 33
- Regulations 94
- Regulations 29
  N2 > 7.5 t and N3 (proposed)
- Regulations 29 with amendments 02
Front pillar impact

Current Regulations 29.02

Proposed

N1 and N2 ≤ 7.5 t – Regulations 29 with the 02 series of amendments

**Impactor energy:**
- N2 > 7.5t and N3 – 29.4 kJ;

**Impactor:**
- size: d=[300 - 600] mm; l ≥ 2500 mm
- mass m = 1000 – 1500 kg

**Impactor position:**
- The impactor must hit at the middle height level of the wind shield;
- beam suspension of the impactor, L≥3500 mm, b≥800 mm
Roof Strength

Current Regulations 29.02

Static load:
\[ P = P_n \leq 98 \text{ kN} \]
where \( P_n \) is the full weight of the vehicle born by the front axle (axles) but not more than 98 kN;

Proposed

N1 and N2 \( \leq 7.5 \text{ t} \) – Regulations 29 with the 02 series of amendments

1-st test

Impactor energy:
- \( N_2 > 7.5 \text{ t} \) and \( N_3 = 17.6 \text{ kJ} \);

Impactor:
- size: \( h=800 \text{ mm}; l = 2500 \text{ mm} \)
- mass \( m = 1500 \pm 250 \text{ kg} \)

Impactor position:
- 20 degrees relative to the vertical plane
- beam suspension of the impactor, \( L \geq 3500 \text{ mm}, b \geq 800 \text{ mm} \)

2-nd test

Static load:
\[ P = P_n \leq 98 \text{ kN} \]
where \( P_n \) is the full weight of the vehicle born by the front axle (axles) but not more than 98 kN;
**Back Wall Strength**

**Current Regulations 29.02**

**Load:**
1.96 kN per one ton of the load

This test may be skipped if the manufacturer decides so.

**Proposed**

N1 and N2 ≤ 7.5 t – Regulations 29 with the 02 series of amendments

**Impactor energy:**
- N2 > 7.5t and N3 – 29.4 kJ;

**Impactor:**
- size: h=800 mm; l = 2500 mm
- mass m = 1500 ± 250 kg

**Impactor placement:**
- the center of the impact must coincide with the central axial plane of the back wall and be located in the midpoint between the floor and the roof of the cabin;
- beam suspension of the impactor L≥3500 mm, b≥800 mm
Thank you for attention!