

Editorial corrections for ECE/TRANS/WP.29/GRRF/2017/13

I. Proposal

Paragraph 4.3., shall read:

"4.3. The mechanical coupling devices or components shall be safe to operate and coupling and uncoupling shall be possible by one person without the use of tools. Coupling devices intended for trailers having a maximum technically permissible mass greater than 3.5 tonnes shall be of either one of the following type:

- Automatic coupling defined in **2.1.1.**, or
- Automated coupling and locking process were the initiated coupling process is automatically finalized and the locked position indicated in the drivers field of vision, or
- Manually locked and secured with no automatisation or selflocking device."

Paragraph 4.3., shall read:

"2.11. Symbols and definitions used in Annex 6 to this Regulation.

A_v = maximum permitted axle mass of the steered axle in tonnes in case of trailers with hinged drawbars.

C = mass of rigid drawbar trailer in tonnes – see paragraph 2.10.1. of this Regulation.

D = D value in kN - see paragraph 2.10.1. of this Regulation.

D_c = D_c value in kN for rigid drawbar trailers - see paragraph 2.10.1. of this Regulation.

R = mass of towed vehicle in tonnes - see paragraph 2.10.1. of this Regulation.

T = mass of towing vehicle in tonnes - see paragraph 2.10.1. of this Regulation.

~~F_s = static lifting force in kN.~~

F_h = horizontal component of test force in longitudinal axis of vehicle in kN.

F_v = vertical component of test force in kN.

S = static vertical mass in kg.

V = V -value in kN - see paragraph 2.10.3. of this Regulation.

g = acceleration due to gravity, assumed as 9.81 m/s².

v_{max} = v_{max} is the maximum design speed for which the coupling device resp. the vehicle is tested and approved with regards to this regulation

Subscripts:

O = maximum test force

U = minimum test force

s = static force

h = horizontal

p = pulsating

res = resultant

v = vertical
w = alternating force"

In annex 6, paragraph 1.7., the last formula shall read:

$$"F_v = g \cdot S + 0.3 \cdot V"$$

Annex 6 paragraph 3.3.6., shall read:

"3.3.6. Keeper plates (for all drawbar couplings of classes a, g and h, where present)
For ball, hook and piton-type couplings and equivalent devices, the keeper plate shall be tested using a static force of $F_v \text{ stat} = 0.6 \cdot D$ (vertically upwards). No cracks or fractures shall be allowed which affects the functioning of the coupling device."

Annex 6 paragraph 3.7.1., shall read:

"3.7.1. Drawbars shall be tested in the same way as drawbar couplings (see paragraph 3.3.1.). The Type Approval Authority or Technical Service may waive an endurance test if the simple design of a component makes a theoretical check of its strength possible.

The design forces for the theoretical verification shall be calculated as follows:

$$F_{vc} = 9.81 \cdot \frac{S}{1000} + 0.375 \cdot V$$

Where

V is the force amplitude given in paragraph 3.3.1.1.

F_{vc} is the calculated vertical load.

The permissible stresses shall be in accordance with 5.3. of ISO 7641-1:1983.

Permissible stress of weld shall not exceed [90 N/mm²]

For bended drawbars (e. g. swan neck) and for the drawbars of full trailers, the horizontal force component $F_{hp} = 1.0 \cdot D$ shall be taken into consideration."

II. Justification

4.3.: Wrong reference.

Annex 6, paragraph 1.7., 3.3.6. and 3.7.1.: The Term F_s is not needed and misleading. The vertical component of the test force is named F_v . This term should be used throughout the whole document concerning the vertical component of the test forces.
