Statens vegvesen

Appendix 2 – Proposal for amending regulations

Consultation on the proposal for regulations amending the motor vehicles regulations and the regulations on use of motor vehicles

Proposal for Regulations amending Regulations No. 1233 of 28 June 2022 on the approval of cars and trailers for cars (the Motor Vehicle Regulations), and amendments to Regulations of 25 January 1990 No. 92 on the use of vehicles.

Legal basis: Established by the Directorate of Public Roads. Laid down pursuant to Sections 13 and 14 of the Act of 18 June 1965 No. 4 relating to Road Traffic (Road Traffic Act), and by

delegation from the Ministry of Transport in the decision of 24 November 1980 No. 1.EEA reference: Annex II, Chapter I of the EEA Agreement.

I

The following amendments are made to the Regulations of 28 June 2022 no. 1233 on the approval of cars and trailers for cars (the Motor Vehicle Regulations) (changes in italics):

New *section 10-9 Mechanical coupling devices and components for vehicles in groups N2, N3, O3 and O4* shall read:

(1) Towing vehicles in groups N2, N3, O3 or O4 that have a coupling for towing trailers in groups O3 and O4 may be approved with coupling devices with characteristic values lower than the D, Dc, S, V or U values required by UN Regulation No. 55, taking into account technical masses for towing vehicles.
(2) The lowest characteristic values of the vehicle and the coupling device shall be recorded in the Vehicle Register.

Appendix 1, requirement area F12 – Mechanical coupling devices, new text is inserted under the first table:

The provision in Section 10-9 of these regulations applies as an alternative requirement for individual approval.

II

The following amendments are made to Regulations No. 92 of 25 January 1990 on the use of vehicles (the Regulations on the use of vehicles):

Section 1-2. Definitions shall read:

The definitions in the Road Traffic Act and in Regulations No. 91 of 25 January 1990 on requirements for vehicles, *Regulations of 19 February 1990 No. 119 on requirements for bicycles,* Regulations of 4 October 1994 No. 918 on technical requirements and approval of vehicles, parts and equipment (the Vehicle Regulations), *Regulations of 1 June 2016 No. 560 on the approval of mopeds and motorcycles (the Motorcycle Regulations), Regulations of 1 June 2016 No. 561 on the approval of tractors and trailers for tractors (the Regulations on Tractors), Regulations No. 1217 of 10 October 2013 on the approval and registration of amateur-built vehicles, Regulations of 25 May 2022 on requirements for small electric motor vehicles and Regulations of 28 June 2022 No. 1233 on the approval of cars and trailers for cars (the Motor Vehicle Regulations,* apply correspondingly to these Regulations.

Section 4-2. The towing of trailers and trailer equipment no. 3 and no. 4 first paragraph shall read:

3. A motor vehicle must not be used to tow a trailer or trailer equipment if its towbar is not of a type and size which has been approved for the trailer or trailer equipment in question, or if the towbar of the trailer or trailer equipment is not compatible with that of the motor vehicle. *A trailer in a modular road train must not be used to tow a trailer unless its towbar is of a type and size which has been approved for that trailer, or if the next trailer's towbar is not compatible to the towbar of the trailer in front.*

4. A motor vehicle must not be used to tow a trailer, *trailers in a modular road train or* trailer equipment with a total weight which is greater than the weight limit for a trailer set for the motor vehicle. *A trailer forming part of a modular road train must not be used to tow another trailer whose total current weight exceeds the maximum weight limit for that trailer.* The weight of the road-train set for the motor vehicle must not be exceeded*. Where characteristic performance values are stated, for the towbar and/or vehicle, the lower of these must not be exceeded.*

New *section 4-6. The calculation of forces acting on the towbar* shall read:

(1) For motor vehicles N2 and N3 connected to trailers O3 and O4, calculations can be made of the force acting on the towbar by the weight of the road-train or modular road train in use.

(2) The calculations shall be made in accordance with UN Regulation 55, Amendment Series 01, Supplement 07 or later, or in accordance with the formulas in Annex 2. Where the UN regulation states that technical weights must be used, the vehicles' current weights can be used to calculate the coupling forces.

(3) In addition to the definitions that follow from Sections 1-2 and 5-2, the following terms shall be understood as follows:

1. *Towbar,* both on towing vehicles and on towed vehicles, include mounting details against the frame, such as drawbars, drawbeams and mounting plates with or without horizontal sliding.

2. *Characteristic performance values of capacity* (D, DC, V, S, AV and U): the maximum forces for which the towbars are approved.

3. *Coupling forces* (D, Dc, V, S and U): the calculated forces applied to the towbar by the weights of the relevant combination or modular combination in use.

(4) The calculations can be used if the towbar is:

1. type-approved and fitted in accordance with Directive 94/20/EC of the European Parliament and of the Council of 30 May 1994, as amended, on towbars for motor vehicles and for trailers and their attachment to such vehicles, or

2. type-approved and installed in accordance with UN Regulation 55.01 or later series of amendments, or

3. has been approved and installed in accordance with Regulation No. 817 of 5 July 2012 on the approval of cars and trailers for cars (the Vehicle Regulations) or the Regulations of 28 June 2022 on the approval of cars and trailers for cars (the Vehicle Regulations), cf. nos. 1 and 2 above.

(5) The towbar is considered to be of sufficient strength for use by the vehicle combination or modular vehicle combination in question if the calculated coupling forces based on the current weights do not exceed any of the characteristic performance values.

(6) Traceable calculations made with the calculator available on the Norwegian Public Roads Administration's website can be used as an alternative to the control authority performing the calculations in connection with a roadside inspection.

New *Appendix 2. Formulas for calculations in accordance with section 4-6* shall read:

Formulas for road-trains (all weights are current weights and are stated in tonnes).

1. **Tractor unit N2 and N3 with a semi-trailer O3 and O4**

$$D = g\frac{0{,}6 * T * R}{T + R - U}kN$$

D=Horizontal load on the towbar between the tractor and semi-trailer in kN (turntable/kingpin).
T=Current weight of the tractor.
R=Current weight of semi-trailer, including the weight of kingpin.
U=Current weight of kingpin.

2. **Truck N2 and N3 connected to a trailer O3 and O4**

$$D = g\frac{T * R}{T + R}kN$$

D=Horizontal load on towbar coupling between truck and trailer in kN (tow part/tow part).
T=Current weight of the truck
R=Current weight of the trailer

3. **Truck N2 and N3 connected to a trailer O3 and O4**

$$D_c = g\frac{T * C}{T + C}kN$$

Dc=Horizontal load on the towbar between truck and trailer in kN (tow part/tow part).
T=Current weight of the truck
C=Current total weight of the trailer axles

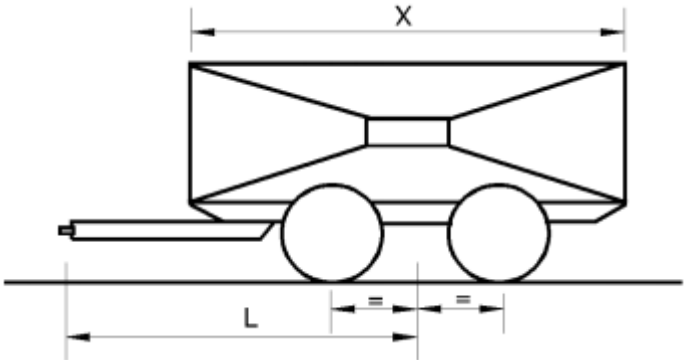
$$V = a * C\frac{X^2}{L^2}kN$$

- If is less than 1.0, the value 1.0 shall be used.$\frac{X^2}{L^2}$

C=Actual total weight of the trailer axles
a= an equivalent vertical acceleration at the towbar, depending on the suspension system on the rear axle of the truck:

a= 1.8m/s2 for air suspension (or suspension with equivalent characteristics)
a= 2.4m/s2 for other spring types (e.g. leaf suspension)

X= The length of the trailer's loading area in metres (see figure). L= The distance from the centre of the trailer's tow eye to the centre of the axle composition in metres (see figure).



Formulas for modular road train (all weights are current weights and are stated in tonnes).

1. **Trucks N2 and N3 connected to a "dolly" with a semi-trailer O3 and O4 (type 1)**

   Dc value of towbar between truck and dolly with stiff hitch (hitch part/drawbar part):

   $$D_C = g\frac{M_1 * M_2}{M_1 + M_2}\,kN$$

   V-value of towbar between truck and dolly with stiff hitch (tow part/drawbar part):

   $$V = Max\left(\frac{54}{L^2}; 5\frac{M_3}{L}\right)kN$$

   (The largest value of is used). $\frac{54}{L^2} og\, 5\frac{M_3}{L}$

   D-value for the towbar between dolly and semi-trailer (turntable/kingpin).

   $$D = 0{,}5\,g\frac{M_4\left(M_6 + 0{,}08\,M_4\right)}{M_4 + M_6 - M_5}\,kN$$

   M1 = current weight of the truck.
   M2 = total current weight of dolly + connected semi-trailer. M3 = current weight of dolly with semi-trailer attached.
   M4 = total current weight of the truck + unladen weight of dolly. M5 = the current weight of the semi-trailer's kingpin.
   M6 = M5 (current weight of kingpin) + current weight of semi-trailer wheels.

   Current gross combination weight = M1+M2The truck's current trailer weight (weight towed by the lorry) M2.

2. **Tractor unit N2 and N3 with semi-trailer O3 and O4 coupled to a trailer O3 and O4 (type 2)**

   D-value for towbar between tractor unit and semi-trailer (turntable/kingpin):

$$D = 0{,}5\,g\,\frac{M_5\left(M_1 + 0{,}08\,M_5\right)}{M_1 + M_5 - M_4}\,kN$$

Dc value for towbar between semi-trailer and trailer (tow part/drawbar):

$$D_c = 0{,}65\,g\,\frac{M_3 * M_2}{M_3 + M_2}\,kN$$

M1 = current weight of tractor unit (with semi-trailer attached). M2 = current axle weight of trailer. M3 = total current weight of tractor unit + semi-trailer. M4 = the current weight of the semi-trailer's kingpin. M5 = M4 + total axle load of semi-trailer + trailer.

L= The distance from the centre of the trailer's tow eye to the centre of the axle composition in metres.

Current gross combination weight = M2+M3
The tractor unit's current trailer weight (weight towed by the lorry) M5.
Current trailer weight of the semi-trailer (weight towed by the semi-trailer) M2

V-value mechanical coupling between semi-trailer and trailer:

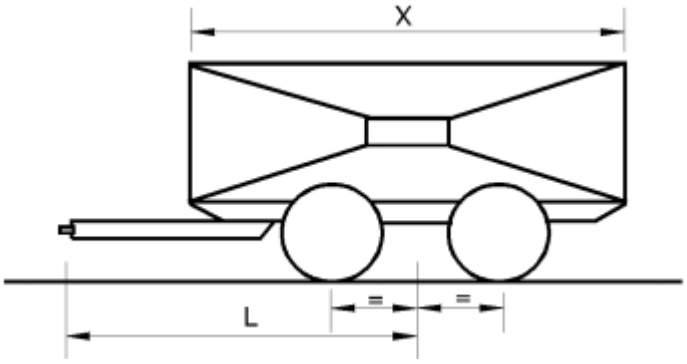
$$V = a * M_2\,\frac{X^2}{L^2}\,kN$$

- If is less than 1.0, the value 1.0 shall be used. $\frac{X^2}{L^2}$

M2 = current axle weight of trailer.
a= an equivalent vertical acceleration at the towbar, depending on the suspension system of the semi-trailer rear axle:

a= 1.8m/s2 for air suspension (or suspension with equivalent characteristics)a= 2.4m/s2 for other spring types (e.g. leaf suspension)

X= The length of the trailer's loading area in metres (see figure). L= The distance from the centre of the trailer's tow eye to the centre of the axle composition in metres (see figure).



3. Tractor unit N2 and N3 with semi-trailer (link trailer) O3 and O4 with swap container/cabinet connected to a semi-trailer O3 and O4 (type 3)

D-value on both the tractor and the link trailer's turntable:

$$D = 0{,}5g\,\frac{M_3\left(M_1 + 0{,}08\,M_3\right)}{M_1 + M_3 - M_2}$$

M1 = Current weight of the tractor unit (with link trailer attached).
M2 = Current weight of the link trailers kingpin.
M3 = M2 + total axle load on link trailer + semi-trailer.
M4 = total axle load on link trailer + semi-trailer
M5 = current weight of semi-trailers kingpin.
M6 = M5 + current axle load on semi-trailer.

Current gross combination weight = M1 + M_4.
The towing vehicle's current towing weight (weight towed by the towing vehicle) = M3.
The trailer's current trailer weight (weight that the link trailer tows) = M6.

III

The changes will take effect.1. februar 2026

[Do not write after the horizontal line below due to division shifts]

Norwegian Public Roads Administration
P.O. Box 1010 Nordre Ål
2605 LILLEHAMMER

Phone: (+47) 22 07 30 00
firmapost@vegvesen.no

www.vegvesen.no

Safer, greener and easier travel