

Draft

Order on vehicles in tests on vehicle combinations with double trailers¹⁾

Pursuant to Section 68(1), first sentence, Section 69(2), Section 70a(2), Section 84(1), Section 85(1), Section 118(13), first sentence, and (14), first sentence, and Section 134e of the Road Traffic Act, cf. Consolidation Act No 168 of 14 February 2023, as amended by Act No [XX], the following shall be determined by authorisation pursuant to Section 3(1) of Order No 664 of 30 May 2023 on the tasks, powers and right of appeal of the Road Safety Authority:

Scope

Section 1. This Order lays down the supplementary rules for vehicles which are part of tests on vehicle combinations with double trailers.

(2) The test includes a vehicle combination with double trailers consisting of lorries, fifth wheels, dollies and semi-trailers (A-Double), cf. Annex 1.

(3) Semi-trailers which are part of a vehicle combination with double trailers must be designed for the carriage of goods.

Section 2. The Danish Road Directorate issues an Order on the road network etc. on which driving with vehicle combinations with double trailers is allowed.

Definitions

Section 3. The following definitions apply for the purposes of this Order:

- 1) Vehicle combinations with double trailers: Long vehicle combinations of the EMS2 A-Double type, consisting of a lorry and three trailers, where the individual vehicles comply with the maximum length provisions in force.
- 2) Dolly: Rigid drawbar trailers designed for hauling semi-trailers.

¹⁾ A draft of this Order has been notified in accordance with Directive (EU) 2015/1535 of the European Parliament and of the Council laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (codification).

Coupling

Section 4. Vehicles that are part of a vehicle combination with double trailers must be registered for coupling that does not require a technical inspection, without prejudice to Section 5 to 7.

Section 5. If the towing lorry is foreign registered, the coupling must be carried out in accordance with the rules of the home country.

Section 6. If the towing lorry is Danish registered and coupled with one or more foreign registered trailers, the couplings shall be made in accordance with the rules set out in Section 22, since the trailers can be considered to be approved for 'hauling centre-axle trailers' or 'hauling semi-trailers', if the registration certificates contain information equivalent to that of the Danish registration certificates on permissible platform load, semi-trailers' total maximum axle load, trailers' maximum gross weight and V values.

Section 7. It shall be possible to check whether the couplings comply with Sections 5 and 6 on the basis of the vehicle registration certificates and the weighing of the vehicles.

(2) In case it does not appear in the registration certificates that the couplings are allowed, cf. (1), documentation from a roadworthiness testing centre stating that the vehicles can be technically and safely coupled together must be present in the vehicle when driving.

(3) If a lower vehicle combination mass is indicated in the foreign lorry's registration certificate than would be used when driving in Denmark, documentation from a roadworthiness testing centre for which vehicle combination mass is technically permissible must be present in the vehicle when driving.

Weights and dimensions

Section 8. The actual gross weight of a vehicle combination with double trailers shall not exceed

1. 60,000 kg if the distance between the front and rear axles of the vehicle combination is at least 19 m;
2. 72,000 kg if the distance between the front and rear axles of the vehicle combination is at least 27 m; and
3. the technically permissible vehicle combination mass guaranteed by the car manufacturer.

(2) The individual vehicles of a vehicle combination with double trailers shall never be loaded with more weight than they are registered or approved to carry.

(3) The individual trailers of a vehicle combination with double trailers shall never be loaded with more weight than their coupling equipment is registered or approved for.

(4) 20 % of the weight of the vehicle combination shall be able to rest on the driving wheels while starting. The axle load on each axle of the lorry may exceed the permissible axle load by up to 30 %, provided that it does not exceed the technically permissible axle load guaranteed by the manufacturer when starting. After starting, any unloaded axles shall be automatically lowered to the ground or loaded so that no axle load exceeds the permissible axle load, at the latest when the speed exceeds 30 km/h.

(5) Vehicle combinations with double trailers shall not comply with the requirement that the total actual axle load must not exceed 1.5 times the permissible laden mass of the lorry, cf. Order on detailed rules for vehicle fittings and equipment, Annex 1, paragraph, 3.01.200, No 4.

(6) Vehicle combinations with double trailers shall not comply with the requirement that 20 % of the weight of a combination of vehicles must rest on the driving wheels during normal driving, cf. Order on detailed rules for vehicle fittings and equipment, Annex 1, 3.01.200, No 5.

(7) Vehicle combinations with double trailers shall not comply with the requirement that the combination of vehicles must be able to turn within a swept circle with an outer radius of 12.50 m and inner radius of 5.30 m, cf. Order on detailed rules for vehicle fittings and equipment, Annex 1, 4.01.200, No 1.

Section 9. A vehicle combination with double trailers, both when laden and unladen, shall not have a length exceeding 32.00 m, without prejudice to (2).

(2) A vehicle combination with double trailers which is towed by a lorry using alternative propellants, zero-emission technology or fitted with approved aerodynamic devices or extended aerodynamic cabs shall not, both when laden and unladen, have a length exceeding 34.00 m provided that the excess is solely due to technical arrangements for the use of alternative propellants, zero-emission technology, approved aerodynamic devices or extended aerodynamic cabs.

(3) The length is measured on the longest protruding parts, with the exceptions set out in the Order on detailed rules for vehicle fittings and equipment, Annex 1, paragraph 3.02.001 (7).

Steering equipment

Section 10. All vehicles in a vehicle combination with double trailers shall be equipped with Electronic Stability Control (ESC).

Section 11. In the case of indirect or direct vision, there shall be a clear view along the inner side of the entire vehicle combination at a turn of 120° in a circle with an outer radius of 12.50 m.

Section 12. Self-tracking axles on trailers of a vehicle combination with double trailers shall be locked automatically no later than when the speed exceeds 40 km/h.

(2) A dolly may have a guided or self-tracking axle.

(3) Semi-trailers after a dolly shall not be fitted with guided axles.

Brakes

Section 13. All vehicles in a vehicle combination with double trailers shall be fitted with anti-lock braking systems (ABS) and the Electronic Brake System (EBS).

(2) A trailer authorised to tow another trailer shall be equipped with a router so that the EBS brake signal can be used by both the towing trailer and the towed trailers.

Section 14. The performance of the parking brake shall be in accordance with Annex 4, paragraph 2.3, of UN Regulation No 13 on uniform provisions concerning the approval of vehicles of categories M, N and O with regard to braking.

(2) A lorry need not comply with the requirement of UN Regulation No 13, Annex 4, paragraph 2.3.2., if the parking braking system of the lorry is designed to transmit full brake pressure to the pneumatic control circuit of the trailer when the parking brake of the lorry is applied.

Marking

Section 15. Vehicle combinations with double trailers shall be fitted with a retro-reflective sign at the rear of the rear vehicle complying with the requirements of Annex 2.

(2) The sign shall be placed to the left of the centre line of the vehicle and not more than 2 metres above the ground measured to the bottom edge of the sign.

(3) The sign shall only be visible when the vehicle is used in a vehicle combination with double trailers.

Engine

Section 16. The engine of the towing vehicle shall have an engine power of at least 5.2 kW/tonne of the actual vehicle combination weight of the vehicle combination.

Bodywork, construction, etc.

Section 17. A vehicle combination with double trailers shall have a total of at least nine axles.

Section 18. A lorry used for hauling a vehicle combination with double trailers must have at least three axles.

Section 19. A semi-trailer in a vehicle combination with double trailers shall have at least two axles.

Section 20. A dolly in a vehicle combination with double trailers must have two axles.

(2) The semi-trailer platform of a dolly shall be placed on a spherical ring with limited turning possibility on either side of $20^{\circ} \pm 2^{\circ}$.

Section 21. Driving on roads other than motorways with trailers, which are fitted with aerodynamic devices, cf. Order on detailed rules for vehicle fittings and equipment, Annex 1(3.02.001)(2) and (7), which can be folded in or removed, may only take place with such devices in the folded and closed position.

Coupling devices

Section 22. Lorries, dollies and semi-trailers shall be registered with D and V values ensuring sufficient strength to withstand the stresses occurring during normal use and load on the vehicle.

(2) The coupling device of the lorry and the king pin of the front semi-trailer shall have a D value of at least 150 kN.

(3) The front semi-trailer shall be registered with additional information 'hauling centre-axle trailers'.

(4) The maximum V value indicated on the registration certificate of the front semi-trailer shall be at least 25 kN if the semi-trailer is air suspended and 34 kN if the semi-trailer is mechanically suspended.

(5) The chassis, drawbeam and coupling device of the front semi-trailer and the chassis, drawbar and coupling device of the dolly shall have a D_c value of at least 125 kN.

(6) The dolly shall be registered with additional information 'hauling semi-trailers'.

(7) The sum of the actual total axle loads of semi-trailers and the dolly shall not exceed the value of the total maximum axle load of the semi-trailer shown on the registration certificate of the lorry.

(8) The actual king pin load and total actual axle load of the rear semi-trailer shall not exceed the permissible platform load values and the total maximum axle load of the semi-trailer indicated in the registration certificate of the dolly.

(9) The semi-trailer platform and underframe of the dolly shall have a D value of at least 135 kN.

UN Regulations

Section 23. UN Regulations referred to in this Order shall not be introduced in the Danish Official Journal.

(2) UN Regulations referred to in (1) shall apply even if they are not available in Danish.

(3) UN Regulations can be found on the website of the United Nations Economic Commission for Europe, www.unece.org.

Checks

Section 24. When driving with a vehicle combination with double trailers, the registration certificate for each vehicle or a copy thereof and any other documentation or a copy thereof in accordance with Section 7(2) and (3), Section 8(1)(3) and (2) to (4) shall be present in the vehicle when driving, on paper or in electronic form, and shown to the police or Danish Road Traffic Authority at their request.

Penalties

Section 25. Infringements of Sections 4 to 7, Section 8(1) to (4), Section 9(1) and (2), Sections 10 to 21, Section 22(3) and (6) to (8), Section 24, and driving other types of vehicle combinations with double trailers than those referred to in Section 1(2) shall be punishable by a fine.

(2) For infringements of Section 8(1) to (4) and Section 22(7) and (8), the owner or user of the vehicle may, in accordance with Section 118(14), first sentence, be liable to a fine, even if the infringement cannot be attributed to the person concerned as intentional or negligent.

(3) Companies etc. (legal persons) may be rendered criminally liable in accordance with the provisions in Chapter 5 of the Penal Code.

Entry into force

Section 26. This Order shall enter into force on 1 January 2024.

Annex 1

Vehicle combinations with double trailers

The following type of vehicle combination is part of the test on vehicle combinations with double trailers and is covered by this Order, cf. Section 1(2):



Vehicle combinations with double trailers of the EMS2 A-Double type consisting of lorries, fifth wheels, dollies and semi-trailers. The axle configuration may differ from the above illustration.

Annex 2

Retro-reflective sign

The retro-reflective sign for a vehicle combination with double trailers, cf. Section 15, shall be made with yellow reflecting material surrounded by a red fluorescent edge. The sign shall have the following dimensions:

- 1) The width shall be at least 90 cm.
- 2) The height shall be at least 45 cm.
- 3) The red fluorescent edge shall be 4 cm.

The sign shall bear the following graphic illustration of a vehicle combination with double trailers and the text 'EMS2' with characters not less than 7.5 cm high:

