Reprint
as at 1 December 2017

Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004

(SR 2004/46)

Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004: revoked, on 1 December 2017, by regulation 4(1) of the Hazardous Substances (Health and Safety Reform Revocations) Regulations 2017 (LI 2017/233).

Silvia Cartwright, Governor-General

Order in Council

At Wellington this 1st day of March 2004

Present:
Her Excellency the Governor-General in Council

Pursuant to section 76(1) of the Hazardous Substances and New Organisms Act 1996, Her Excellency the Governor-General, acting on the advice and with the consent of the Executive Council (given on the recommendation of the Minister for the Environment made in compliance with section 141(1) of that Act), makes the following regulations.

Contents

Note

Changes authorised by subpart 2 of Part 2 of the Legislation Act 2012 have been made in this official reprint.

Note 4 at the end of this reprint provides a list of the amendments incorporated.

These regulations are administered by the Ministry for the Environment.

Part 1
Preliminary provisions

Part 2
Requirements applying to tanks and tank wagons

Part 3
Design, construction, and installation requirements for large tank wagons

Part 4
Requirements for large road tank wagons

Part 5
Requirements for smaller tank trailers that carry liquids

Regulations

1 Title

These regulations are the Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004.

Part 1
Preliminary provisions

2 Commencement

These regulations come into force on 26 March 2004.

3 Interpretation

In these regulations, unless the context otherwise requires,—

Act means the Hazardous Substances and New Organisms Act 1996

compressed gas has the same meaning as in regulation 3 of the Hazardous Substances (Compressed Gases) Regulations 2004

gas has the same meaning as in regulation 3 of the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001

liquid has the same meaning as in regulation 3 of the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001

low-hazard hazardous substance means a hazardous substance with a hazard classification other than class 1, 2.1.1A, 3.1A, 3.1B, 3.1C, 4, 5.1.1A, 5.1.1B, 5.1.1C, 5.1.2A, 5.2, 6.1A, 6.1B, 6.1C, 8.2A, 8.2B, 8.2C, or 9.1A

maximum filling level means the level to which a tank may be filled with a liquid when the temperature of that liquid is 15°C but that would allow each compartment of that tank to remain less than full if the temperature of that liquid were raised to 40°C

maximum obtainable pressure means the pressure of a hydrostatic head of liquid when the tank is full, plus—

(a) 30 kPa for tank compartments with a capacity exceeding 8 600 ℓ; or

(b) 20 kPa for tank compartments with a capacity not exceeding 8 600 ℓ

recommended operating pressure means the pressure at which the tank is designed to operate

tank means an enclosed receptacle permanently fixed to the chassis of a tank wagon; and includes—

(a) any compartments and all components or materials (including coatings) necessary for the tank to perform its containment function; and

(b) all parts affecting the structural integrity of the tank and the means of closing the tank

tank wagon means a vehicle, including (but not limited to)—

(a) a tank truck or refuelling unit, that—

  (i) has its own means of propulsion; and

  (ii) contains a tank; and

  (iii) is constructed for the primary purpose of the bulk transport of hazardous substances as a liquid or gas by road or rail; or

(b) a tank semi-trailer, tank trailer, or rail wagon that—

  (i) contains a tank; and

  (ii) is constructed for the primary purpose of the bulk transport of hazardous substances as a liquid or gas by rail or road

transportable container means a container that—

(a) is not fixed to a chassis; and

(b) can be unloaded at a destination or transferred to another transport mode; and

(c) is referred to in chapter 6.5 or chapter 6.7 of the UN Model Regulations

UN Model Regulations—

(a) means the 17th revised edition of the *UN Recommendations on the Transport of Dangerous Goods—Model Regulations* (2011); and

(b) includes any amendment to, or replacement of, material in the model regulations that has legal effect as part of these regulations under section 141B of the Act; but

(c) does not include any material that ceases to have legal effect as part of these regulations under section 141D of the Act.

Regulation 3 **compressed gas**: inserted, on 1 November 2012, by regulation 4(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 3 **low-hazard hazardous substance**: inserted, on 1 November 2012, by regulation 4(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 3 **maximum obtainable pressure**: amended, on 1 November 2012, by regulation 4(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 3 **UN Model Regulations**: replaced, on 1 November 2012, by regulation 4(3) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

4 Application of regulations

(1) Except as specified in subclauses (3) and (4), these regulations apply to any tank wagon whose construction commences after the commencement of these regulations.

(2) Subclauses (3) and (4) apply to any tank wagon, other than a tank trailer with a capacity of less than 2 000 ℓ, whose construction commenced before the commencement of these regulations unless that tank wagon complies with all other relevant regulations in these regulations.

(3) If a tank wagon is to be used to carry hazardous substances with the classifications 2.1.1, 3, or 5, the person in charge of that tank wagon must ensure that—

(a) the tank wagon is issued with a LAB number by the Chief Inspector of Dangerous Goods that authorises that tank wagon or type of tank wagon to carry those hazardous substances; or

(b) a letter or memorandum signed by the Chief Inspector of Dangerous Goods authorises that tank wagon or type of tank wagon to carry those hazardous substances; or

(c) a letter or memorandum signed by the Authority authorises that tank wagon or type of tank wagon to carry those hazardous substances.

(4) If a tank wagon is to be used to carry hazardous substances with the classifications 6 or 8, the person in charge of that tank wagon must ensure that a TSR number is issued by the Director General of Health that authorises that tank wagon or type of tank wagon to carry those hazardous substances.

(5) A tank wagon to which subclause (3) or subclause (4) applies must comply with regulations 6(2), 7(1), 7(3), 16, 38, 39, and 42.

Regulation 4(2): amended, on 23 September 2004, by regulation 3 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2004 (SR 2004/256).

Regulation 4(5): amended, on 1 November 2012, by regulation 5 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Part 2
Requirements applying to tanks and tank wagons

5 Application of Part 2

This Part applies to any tank or tank wagon that carries a hazardous substance of any hazard classification.

6 Compatibility

(1) A tank, the fittings, and any part of a tank wagon that could, in the normal course of operation, come into contact with a hazardous substance carried in that tank, must be designed and constructed using substances and materials that—

(a) are compatible with the hazardous substance; and

(b) are not listed in table 1 of Schedule 3 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001.

(2) If a tank is to be used to carry 2 or more hazardous substances that are not compatible with each other, the tank must be designed and constructed so that—

(a) different compartments of the tank are separated by double-wall bulkheads; and

(b) each compartment of the tank has a separate filling and discharge system.

(3) For the purposes of subclause (1), **compatible** means that—

(a) the substances or materials used in the construction of the tank are chemically inert when in contact with the hazardous substances carried in the tank at the range of temperatures and pressures at which the contact may occur; or

(b) if the substances or materials used in the construction of the tank chemically react with the hazardous substances carried in the tank,—

(i) the reaction does not cause or contribute to a fire or explosion, or generate a substance of a different hazardous property, nature, or degree; and

(ii) continuous or repeated exposure to the reaction does not soften, weaken, or otherwise affect the substances and materials used in the construction of the tank to the extent that the tank fails to meet any of the design or construction requirements specified in these regulations.

7 Marking

(1) Marking must be permanently attached to each tank or tank sub-frame that specifies—

(a) the design registration number issued by the Authority; and

(b) the recommended operating pressure for each part of the tank and fittings that are intended to operate at different pressures; and

(c) the maximum filling level of each tank compartment; and

(d) the maximum density of any liquids to be carried; and

(e) the material used to construct the tank; and

(f) the date of manufacture; and

(g) the manufacturer of the tank.

(2) If different hazardous substances are carried in different tank compartments, markings must be attached to the tank to identify—

(a) the hazardous substance contained in each tank compartment; and

(b) the hazardous properties of each hazardous substance in each tank compartment; and

(c) the tank connection and filling system to be used if more than 1 option is available.

(3) Markings must be attached to the tank or tank sub-frame that specify the name and contact details of the test certifier who certified the last in service test certificate for the tank wagon as complying with these regulations.

(4) *[Revoked]*

(5) *[Revoked]*

Regulation 7(4): revoked, on 1 November 2012, by regulation 6 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 7(5): revoked, on 1 November 2012, by regulation 6 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Part 3
Design, construction, and installation requirements for large tank wagons

8 Application of Part 3

This Part applies to a tank wagon that—

(a) carries a hazardous substance of any hazard classification; and

(b) has a tank capacity that is not less than 2 000 ℓ.

Regulation 8: amended, on 1 November 2012, by regulation 7(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 8(a): amended, on 1 November 2012, by regulation 7(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

9 Ability to withstand stress of load

(1) A tank must be designed and constructed to ensure that the tank, when undergoing stresses expected to be generated by the tank, its contents, and the fittings permanently attached to the tank, complies with the following conditions:

(a) when the tank is in an upright position,—

(i) if the tank contains a liquid hazardous substance, the loss of the liquid hazardous substance from the tank is not more than 0.1 ℓ per day; or

(ii) if the tank contains a gaseous hazardous substance, the loss of the gaseous hazardous substance from the tank is not visible by the appearance of bubbles when soapy water is applied to the surface of the tank:

(b) when the tank is inverted and resting on its top or rotated 90° about the longitudinal axis and resting on either side,—

(i) if the tank contains a liquid hazardous substance, the loss of the liquid hazardous substance from the tank is not more than 0.3 ℓ per day; or

(ii) if the tank contains a gaseous hazardous substance, the loss of the gaseous hazardous substance from the tank is not visible by the appearance of bubbles when soapy water is applied to the surface of the tank.

(2) For the purposes of calculating the design requirements in subclause (1),—

(a) the tank must be full; and

(b) the materials used to construct the tank must be calculated at twice their actual density; and

(c) the content carried must be calculated at twice its actual density or twice the density of water at 20°C, whichever is greater.

(3) If a tolerable exposure limit, environmental exposure limit, or workplace exposure standard set for a hazardous substance by the Authority in accordance with Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001 prescribes a level of permitted discharge lower than the losses referred to in subclauses (1)(a) and (b), the lower limit set by the Authority applies.

Regulation 9(1)(b)(i): amended, on 23 September 2004, by regulation 4 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2004 (SR 2004/256).

10 Pressure resistance

(1) A tank that operates at pressure must be designed and constructed to ensure that the tank and fittings comply with the following conditions:

(a) it is able to withstand a pressure of not less than −7 kPa; and

(b) when operated at the maximum obtainable pressure, if the tank contains a liquid hazardous substance, the loss of the liquid hazardous substance from the tank is not more than 0.1 ℓ per day; and

(c) when operated at pressure, the pressure produced does not exceed the maximum obtainable pressure.

(2) A person who designs a tank and fittings must,—

(a) when calculating the maximum obtainable pressures, take the following matters into account:

(i) the intended vapour pressure and density of the hazardous substances to be carried:

(ii) ambient temperature fluctuations and temperature changes of the hazardous substances intended to be carried:

(iii) the temperatures generated by any heating and cooling system:

(iv) the substance transfer used:

(v) the pressure management capability of the tank; and

(b) ensure that each part of the tank and fittings is designed so that, if the part contains a liquid hazardous substance, it is capable of operation at a pressure at least as great as the maximum obtainable pressure for the part.

(3) For the purposes of subclause (2)(a)(ii), the temperature must be—

(a) not less than −10°C and not more than 40°C for a liquid; or

(b) not less than −20°C and not more than 40°C for a gas.

(4) Subclause (1) does not apply to a tank and fittings designed and constructed in accordance with the pressure requirements in the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999.

(5) A tank, tank compartment, or fittings carrying a hazardous substance with the classification of 2.1.1, 3, 4, or 5 must be designed and constructed to ensure that, when the tank is full and exposed to heat radiation of 15 kW/m^2 for a minimum of 10 minutes,—

(a) the internal pressure of the tank does not exceed the maximum obtainable pressure; and

(b) the tank compartments do not rupture.

(6) A tank or tank compartment carrying a hazardous substance with the classification of 3, 4, or 5 must be designed and constructed to ensure that the pressure can be equalised, within 2 s, between the filling pipes and the vapour space in the tank and the upper end of the dip tube and the vapour space in the tank.

Regulation 10(1)(b): substituted, on 23 September 2004, by regulation 5(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2004 (SR 2004/256).

Regulation 10(2)(b): replaced, on 1 November 2012, by regulation 8 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 10(6): amended, on 23 September 2004, by regulation 5(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2004 (SR 2004/256).

11 Fatigue resistance

(1) A tank must be designed and constructed to ensure that, after repeated filling and discharging of its contents,—

(a) if the tank contains a liquid hazardous substance, the loss of the liquid hazardous substance from the tank is not more than 0.1 ℓ per day; or

(b) if the tank contains a gaseous hazardous substance, the loss of the gaseous hazardous substance from the tank is not visible by the appearance of bubbles when soapy water is applied to the surface of the tank.

(2) The repeated filling and discharging from tanks must be checked in design or tested as follows:

(a) for a road tank wagon, by 5 000 000 pressure cycles from −7 kPa to the recommended operating pressure:

(b) for a rail tank wagon, by 500 000 pressure cycles from −7 kPa to the recommended operating pressure:

(3) A tank must be designed and constructed to be able to withstand fatigue stresses from movement while in transit produced by 5 000 000 cycles at the following amplitudes (where g is gravitational acceleration (9.81 m/s^2) and M is weight of tank, contents, and fittings (but excluding chassis)):

(a) vertical 0.6 g × M:

(b) longitudinal 0.4 g × M:

(c) lateral 0.4 g × M.

(4) For the purpose of the calculations in subclause (3), the mass for the fatigue test is,—

(a) at the maximum part of the load cycle, the sum of the mass of the empty tank plus the mass of the contents (assuming the tank is 100% full using the density of the contents or a density of 1000 kg/m^3, whichever is greater):

(b) at the minimum part of the load cycle, the mass is the empty tank only.

(5) Subclauses (1) and (3) do not apply to a tank (or its fittings) designed and constructed in accordance with the pressure requirements in the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999.

(6) Subclause (2) does not apply to a tank that contains a liquid hazardous substance at atmospheric pressure.

Regulation 11(2)(a): replaced, on 1 November 2012, by regulation 9(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 11(2)(b): replaced, on 1 November 2012, by regulation 9(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 11(3): amended, on 1 November 2012, by regulation 9(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 11(4)(a): amended, on 1 November 2012, by regulation 9(3) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 11(6): inserted, on 1 November 2012, by regulation 9(4) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

12 Corrosion resistance

A tank must have a wall thickness specified in the design that takes into account the tank's rate of corrosion to ensure that, during the lifetime of the tank wagon, the minimum wall thickness is not less than is necessary to meet the stress, pressure resistance, and fatigue resistance requirements in regulations 9 to 11.

13 Tank impact resistance

(1) A tank must be designed and constructed to ensure that, if the empty tank is struck from any direction by a 20 kg smooth, hard, spherical object with a radius of 85 mm at a speed of 5 m/s, and the tank later contains a liquid hazardous substance, the loss of the liquid hazardous substance from the tank is not more than 0.1 ℓ per day.

(2) Subclause (1) does not apply to a tank and fittings designed and constructed in accordance with the pressure requirements in the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999.

(3) *[Revoked]*

Regulation 13(1): replaced, on 1 November 2012, by regulation 10(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 13(3): revoked, on 1 November 2012, by regulation 10(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

14 Fittings impact resistance

Any fittings positioned below the upper liquid level of a full tank containing a liquid hazardous substance and any fittings on a tank containing a gaseous hazardous substance must be designed, constructed, and installed to ensure that, if the fittings are damaged or broken off,—

(a) if the tank contains a liquid hazardous substance, the loss of the liquid hazardous substance from the tank is not more than 0.1 ℓ per day; or

(b) if the tank contains a gaseous hazardous substance, the loss of the gaseous hazardous substance from the tank is not visible by the appearance of bubbles when soapy water is applied to the surface of the tank.

14A Maximum compartment size

(1) A compartment of a tank wagon that is a refuelling unit, other than a road tank wagon, must not have a capacity greater than 20 000 ℓ.

(2) A compartment of any other tank wagon, other than a compartment that contains a gaseous hazardous substance, must not have a capacity greater than 10 000 ℓ.

Regulation 14A: inserted, on 23 September 2004, by regulation 7 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2004 (SR 2004/256).

Regulation 14A(2): amended, on 1 November 2012, by regulation 11 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

15 Emergency preparedness

(1) A tank carrying a hazardous substance with the classification of 2.1.1, 3, 4, or 5 must be designed, constructed, and operated to ensure that, if a fire occurs in the load tank, the driver of the tank wagon is protected for not less than 1 minute.

(2) The means of motive power or propulsion of any road tank wagon must be designed and constructed to ensure that, if a fire occurs, the driver of the tank wagon is protected for not less than 1 minute.

(3) *[Revoked]*

(4) A tank carrying a hazardous substance with the classification of 2.1.1, 3, 4, or 5 must be designed and constructed to contain, and must have installed, in addition to the normal means of tank closure, an automatic heat-activated closing device that closes at a temperature not more than 80% of the auto-ignition temperature of the liquid at the tank outlets, for every valve that is used for transferring liquids.

Regulation 15(1): amended, on 1 November 2012, by regulation 12(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 15(1): amended, on 1 November 2012, by regulation 12(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 15(1): amended, on 1 November 2012, by regulation 12(3) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 15(2): amended, on 1 November 2012, by regulation 12(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 15(2): amended, on 1 November 2012, by regulation 12(3) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 15(3): revoked, on 1 November 2012, by regulation 12(4) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

16 Loss minimisation while transferring liquids or gases

(1) A tank must be designed and constructed with at least 2 means, that operate independently, to shut off the flow of a liquid hazardous substance or gaseous hazardous substance during transfer of the liquid or gas.

(2) Each means of shutting off the flow of a liquid hazardous substance or gaseous hazardous substance must—

(a) be able to be activated by the person in charge of transferring the liquid hazardous substance or gaseous hazardous substance from the tank within 10 s; and

(b) shut off the flow of the liquid hazardous substance or gaseous hazardous substance within 3 s of being activated.

(3) At least 1 means of shutting off the flow of a liquid hazardous substance or gaseous hazardous substance must shut off the flow at the tank wall and at least 1 other means must shut off the flow at the delivery connection.

(4) *[Revoked]*

(5) If a pump is installed as part of the tank wagon equipment for the transfer of the liquid hazardous substance or gaseous hazardous substance, an additional means of shutting off the pump must be designed, constructed, and installed that can be activated within 5 s by the person in charge of transferring the liquid hazardous substance or gaseous hazardous substance.

Regulation 16(3): amended, on 23 September 2004, by regulation 8(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2004 (SR 2004/256).

Regulation 16(4): revoked, on 23 September 2004, by regulation 8(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2004 (SR 2004/256).

17 Attachment of tank to chassis

The tank of a tank wagon must be designed and constructed to ensure that the attachment of the tank to the chassis is able to resist the forces specified in Schedule 1.

18 Minimising risk of possible ignition

(1) A tank wagon that carries a hazardous substance with the classification of 2.1.1, 3, or 4 must comply with the requirements set out in regulations 58, 60, and 61 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001.

(2) The electrical resistance between the tank of a road tank wagon that carries a hazardous substance with the classification of 2.1.1, 3, or 4 and any equipment or part of equipment permanently attached to any part of that tank wagon, including the chassis, must not exceed 10 Ω.

Regulation 18(1): amended, on 23 September 2004, by regulation 9 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2004 (SR 2004/256).

Part 4
Requirements for large road tank wagons

19 Application of Part 4

This Part applies to a road tank wagon that—

(a) carries a hazardous substance of any hazard classification; and

(b) has a tank capacity that is not less than 2 000 ℓ.

20 Vehicle fuel tank requirements

The fuel system and fuel tank of a road tank wagon must be designed, constructed, and installed so that fuel is not lost at the rate of more than 0.003 ℓ per minute when—

(a) the fuel system or fuel tank is exposed to heat radiation of 10 kW/m^2 for at least 1 minute; or

(b) the fuel system or fuel tank is in any position due to the road tank wagon rolling over.

21 Stability and manoeuvrability

(1) A road tank wagon must be designed and constructed so that when the tank is full it will not roll over when subjected to any of the following:

(a) a static roll threshold of 0.45 g:

(b) a maximum dynamic load transfer ratio of 0.6:

(c) a high speed transient off-tracking of 0.8 m.

(2) For the purposes of subclause (1),—

(a) **static roll threshold** means the maximum level of steady turning lateral acceleration a vehicle can tolerate without rollover, which is calculated as a proportion of g:

(b) **g** means the acceleration constant due to gravity:

(c) **dynamic load transfer ratio** means the ratio calculated by simulating the vehicle combination in a lane-changing manoeuvre in accordance with the process set out in the Society of Automotive Engineers standard J2179 (3 s and 90 km/h option):

(d) **high speed transient off-tracking** means the maximum lateral offset of the rear axis path (usually the trailer) with respect to the path of the steer axle determined during the lane change manoeuvre set out in the Society of Automotive Engineers standard J2179 (3 s and 90 km/h option).

22 Longitudinal surging

A road tank wagon with a compartment size of more than 8 600 ℓ must be designed and constructed so that, under a deceleration force of twice gravitational force, 50% or less of the force generated by the compartment filled to 65% of capacity is applied to the front most wall of the compartment.

23 Rear end collision protection

(1) A road tank wagon must be designed and constructed to ensure that a static load uniformly distributed across the central 1.5 m of the rear of the vehicle at an elevation not less than 500 mm and not more than 1 000 mm above the ground does not cause,—

(a) if the tank contains a liquid hazardous substance, the loss of a liquid hazardous substance from the tank at a rate of more than 0.1 ℓ per minute; or

(b) if the tank contains a gaseous hazardous substance, the loss of a gaseous hazardous substance that is identifiable by smell, sound, or sight as identified by the appearance of bubbles when soapy water is applied to the surface of the tank.

(2) For the purposes of subclause (1), the static load must not be more than twice the weight of the fully laden road tank wagon or 40 tonnes, whichever is the lesser.

24 Rear run-under by small vehicles

(1) A road tank wagon must be designed and constructed with a bumper or similar structure that can withstand a static load uniformly distributed across the central 1.5 m section of the rear of the vehicle vertically in line with the bumper at an elevation of not less than 300 mm and not more than 500 mm above the ground.

(2) For the purposes of subclause (1), the static load must be—

(a) the weight of the laden tank, if that weight is not less than 10 tonnes and not more than 20 tonnes; or

(b) 10 tonnes, if the weight of the laden tank is less than 10 tonnes; or

(c) 20 tonnes, if the weight of the laden tank is more than 20 tonnes.

Part 5
Requirements for smaller tank trailers that carry liquids

25 Application of Part 5

This Part applies to a road tank trailer that—

(a) carries a liquid hazardous substance of any hazard classification; and

(b) has a tank capacity that is less than 2 000 ℓ.

Regulation 25: amended, on 1 November 2012, by regulation 13(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 25(a): amended, on 1 November 2012, by regulation 13(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

26 Design, construction, installation, and operation requirements

Regulations 9, 10, 12, 17, 18, 21, and 23 apply to a road tank trailer.

27 Road tank trailer impact resistance

A road tank trailer must be designed and constructed to ensure that, if the tank is struck from any direction by a 15 kg smooth, hard, spherical object with a radius of 77 mm at a speed of 5 m/s,—

(a) the loss of a liquid hazardous substance from the tank is not more than 0.1 ℓ per day; and

(b) there is no release of a gas or vapour hazardous substance that is identifiable by smell, sound, or sight as identified by the appearance of bubbles when soapy water is applied to the surface of the tank.

28 Fittings impact resistance

Any fittings positioned below the upper liquid level of a full tank must be designed, constructed, and installed so that in the event of the tank being struck from any direction by a 15 kg smooth, hard, spherical object with a radius of 77 mm at a speed of 5 m/s,—

(a) liquid hazardous substances are not discharged from the tank at a rate of more than 0.03 ℓ per minute; and

(b) there is no release of a gas or vapour hazardous substance that is identifiable by smell, sound, or sight as identified by the appearance of bubbles when soapy water is applied to the surface of the tank.

29 Rear run-under

(1) A road tank trailer must be designed and constructed with a bumper or similar structure at an elevation of not less than 500 mm and not more than 600 mm above the ground that can withstand a static load uniformly distributed across the central 1.5 m section of the rear vehicle vertically in line with the bumper.

(2) For the purposes of subclause (1), the static load must be equal to the laden weight of the road tank trailer.

Part 6
Transportable containers

30 Application of Part 6

This Part applies to any transportable container that carries—

(a) a hazardous substance of any hazard classification; or

(b) a compressed gas.

Regulation 30: replaced, on 1 November 2012, by regulation 14 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

31 Requirements for UN approved containers

(1) A transportable container that complies with chapter 6.5 (intermediate bulk containers) of the UN Model Regulations may be used for the transport of a hazardous substance, but,—

(a) for a container manufactured in New Zealand, only if the container has the design test certificate required by Part 7 of these regulations; and

(b) where a hazardous substance other than a low-hazard hazardous substance is transported, and the hazardous substance is to be transferred to or from the container while the container remains attached to the deck of the vehicle, only if regulations 40, 41, 42, and 43 are complied with.

(2) A transportable container that complies with chapter 6.7 (portable tanks and multiple-element gas containers) of the UN Model Regulations may be used for the transport of a hazardous substance or compressed gas if,—

(a) for a container manufactured in New Zealand, the container has the design test certificate required by Part 7 of these regulations; and

(b) the attachment of the container to the deck of the vehicle is able to resist the forces specified in Schedule 1 of these regulations; and

(c) 1 or both of the following apply:

(i) the container is transported when empty or when filled to the maximum recommended filling capacity:

(ii) the vehicle transporting the container complies with regulation 21; and

(d) where a hazardous substance other than a low-hazard hazardous substance is transported, and the hazardous substance is to be transferred to or from the container while the container remains attached to the deck of the vehicle, regulations 14, 15, 16, 18, 20, 23, 24, 40, 41, 42, and 43 are complied with.

(3) The regulations referred to in subclauses (1)(b) and (2)(c)(ii) and (d) apply as if the vehicle were a road tank wagon and the transportable container were a tank.

Regulation 31: replaced, on 1 November 2012, by regulation 15 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Part 7
Test certification

32 Requirements for issue of design test certificates

(1) A person designing a tank wagon or part of a tank wagon must obtain a design test certificate to certify that the tank wagon or part complies with the design requirements of these regulations.

(1A) However, a design test certificate is not required for a tank wagon with a tank capacity of less than 450 ℓ that carries a low-hazard hazardous substance.

(1B) A person designing a transportable container for manufacture and use in New Zealand must obtain a design test certificate to certify that the container complies with chapter 6.5 (intermediate bulk containers) or 6.7 (portable tanks and multiple-element gas containers) of the UN Model Regulations.

(2) Despite subclause (1) or (1B), a design is to be treated as a design for which a design test certificate was issued if,—

(a) in the case of a tank wagon design, the design is approved under regulation 4; or

(b) in the case of a transportable container design, the design—

(i) was approved by the chief inspector under the Dangerous Goods Act 1974; or

(ii) is approved by the Authority under Part 14 of the Act.

(3) An application for a design test certificate for a tank wagon, part of a tank wagon, or a transportable container must include the technical drawings, calculations, and specifications for—

(a) each design component set out in Schedule 2 if the certification is for the whole tank wagon; or

(b) each relevant component in Schedule 2 if the certification is for part of a tank wagon; or

(c) each design component set out in chapter 6.5 (intermediate bulk containers) or 6.7 (portable tanks and multiple-element gas containers) of the UN Model Regulations if the certification is for a transportable container.

(4) For the purposes of this regulation, a certificate of design verification issued under the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999 is a design test certificate for the components to which that certificate of design verification applies.

Regulation 32(1): replaced, on 1 November 2012, by regulation 16(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 32(1A): inserted, on 1 November 2012, by regulation 16(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 32(1B): inserted, on 1 November 2012, by regulation 16(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 32(2): amended, on 1 November 2012, by regulation 16(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 32(3)(b): amended, on 1 November 2012, by regulation 16(3) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 32(3)(c): inserted, on 1 November 2012, by regulation 16(4) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 32(4): amended, on 1 November 2012, by regulation 16(5) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

33 Requirements relating to design test certificates

A copy of a design test certificate must be given to the Authority by the test certifier as soon as practicable after the certificate is issued.

34 Record of designs

(1) The Authority must—

(a) keep a record of each design for which a design test certificate has been issued; and

(b) issue a number for each design.

(2) The Authority must record each design to which regulation 32(2) applies in the same manner as it records a design for which a test certificate has been issued.

35 Requirements for issue of pre-commissioning test certificates

(1) Before operating a tank wagon, a person must apply for a pre-commissioning test certificate.

(1A) However, a pre-commissioning test certificate is not required for a tank wagon—

(a) with a tank capacity of less than 450 ℓ that carries a low-hazard hazardous substance; or

(b) with a tank capacity of less than 2 000 ℓ that is manufactured by an approved fabricator in accordance with the terms and conditions of the fabricator's approval.

(2) A pre-commissioning test certificate may be issued if the test certifier is satisfied that—

(a) each component of the tank wagon specified in Schedule 2 as requiring a pre-commissioning test certificate has been constructed and installed in accordance with a design for which a design test certificate has been issued in accordance with regulation 32; and

(b) each compartment of the tank wagon that is likely to be operated under pressure complies with subclause (3).

(3) A tank compartment passes a pressure test if it does not crack or suffer any permanent distortion after application of one of the following tests:

(a) a 10-minute hydrostatic test conducted at 1.5 times the design pressure; or

(b) a 10-minute pneumatic test conducted at 1.25 times the design pressure, with adjacent compartments—

(i) empty in both instances; and

(ii) at atmospheric pressure; or

(c) a pressure test specified in a code of practice approved by the Authority under section 78 of the Act.

(4) The Authority may, upon written application by a person, give written notice to the person—

(a) approving the person as an approved fabricator; and

(b) specifying the terms and conditions of the approval, including the 1 or more tank wagon designs that the person is approved to manufacture.

(5) The Authority may, at any time, give written notice to an approved fabricator—

(a) revoking the approval; or

(b) changing the terms and conditions of the approval.

Regulation 35(1A): inserted, on 1 November 2012, by regulation 17(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 35(4): inserted, on 1 November 2012, by regulation 17(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 35(5): inserted, on 1 November 2012, by regulation 17(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

36 Requirements for issue and renewal of in-service test certificates

(1) A person in charge of a tank wagon must obtain an in-service test certificate for that tank wagon not more than 2 years after—

(a) either—

(i) the date of the pre-commissioning test certificate issued under regulation 35 for the tank wagon; or

(ii) the date of manufacture of the tank wagon, if the tank wagon did not require a pre-commissioning test certificate; or

(b) the date of the previous in-service test certificate issued under this regulation.

(1A) However, an in-service test certificate is not required for a tank wagon with a tank capacity of less than 2 000 ℓ that carries a low-hazard hazardous substance.

(2) An in-service test certificate may be issued by a test certifier for a tank wagon if the test certifier, after completing an external visual inspection of the tank's compartments, is satisfied that the tank and tank wagon comply with whichever of regulations 12, 16, 23, and 24 apply to them.

(3) An in-service test certificate may be issued by a test certifier if the test certifier is satisfied that the tank wagon and tank comply with Schedule 2.

(4) An in-service test certificate may not be issued in accordance with subclause (2) unless a test certificate has been issued for that tank wagon in accordance with subclause (3) or regulation 35 within the past 4 years.

(5) The Authority may allow the in-service test certificate issued in accordance with subclause (2) or subclause (3) to be issued at a later date than is specified in subclause (1) but that later date must not be more than—

(a) 5 years after the date of issue of the previous test certificate if the previous test certificate was issued in accordance with subclause (2); or

(b) 10 years after the date of issue of the previous test certificate if the previous test certificate was issued in accordance with subclause (3).

(6) The Authority, when exercising its discretion under subclause (5) must take into account—

(a) the maximum quantities and types of hazardous substances transported and the frequency of use of the tank wagon; and

(b) the review and monitoring systems in place for the management of hazardous substances and the tank wagon; and

(c) whether the person seeking the extension of time for renewal of the test certificate has promptly complied with the requirements of the Act and regulations made under the Act.

Regulation 36(1)(a): replaced, on 1 November 2012, by regulation 18(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 36(1A): inserted, on 1 November 2012, by regulation 18(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 36(2): replaced, on 1 November 2012, by regulation 18(3) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 36(5): amended, on 1 November 2012, by regulation 18(4) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 36(6): amended, on 1 November 2012, by regulation 18(5) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

37 Additional in-service test certificates

If a component of a tank wagon that requires an in-service test certificate in accordance with regulation 36 is repaired, altered, or subject to an accident and that component may no longer comply with the requirements of regulation 36, the tank wagon must not be used until test certificates are obtained in accordance with regulations 36(2) and (3).

Part 8
Operating requirements

38 Compatibility of hazardous substances carried

(1) This regulation applies to a tank wagon that carries a hazardous substance of any hazard classification.

(2) Before a tank wagon is used to carry a hazardous substance of any hazard classification that differs from a hazardous substance previously carried,—

(a) the tank wagon must be completely emptied of the previously carried substance; or

(b) the mixture of the hazardous substance with any residue of the previously carried substance remaining in the tank must not create a substance of a different hazardous property, nature, or degree.

39 Filling tank wagons

(1) This regulation applies to a tank wagon that—

(a) carries a liquid hazardous substance of any hazard classification; and

(b) has a tank capacity that is not less than 2 000 ℓ.

(2) A person in charge of a tank wagon must ensure that a tank compartment is not filled to a level beyond the maximum filling level.

40 Transfer of liquid or gaseous substances of any hazard classification

The person in charge of transferring a liquid hazardous substance or gaseous hazardous substance of any hazard classification to or from any tank wagon must—

(a) attend the tank wagon from the time the transfer of the hazardous substance commences and until it is completed; and

(b) ensure that the requirements of regulation 41 are met; and

(c) ensure that, from the time the transfer of the hazardous substance commences and until it is completed, the tank wagon does not move; and

(d) before the tank wagon is moved, ensure that all tank openings are securely closed when the transfer of hazardous substance is complete.

41 Supervision of tank wagons

(1) Despite regulations 56, 89, and 107 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001 and regulation 9 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001, the person in charge of a tank wagon that contains a liquid hazardous substance or gaseous hazardous substance of any hazard classification to which those regulations apply may leave that tank wagon unattended—

(a) in a transit depot; or

(b) in a hazardous substance location in compliance with the current test certificate required by the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001 for that hazard classification; or

(c) on a road or elsewhere for up to 5 minutes if the tank wagon is—

(i) at least 30 m away from all areas of high intensity land use other than roads; and

(ii) at least 8 m away from all areas of low intensity land use other than roads.

(1A) To avoid doubt, a tank wagon contains a hazardous substance for the purposes of subclause (1) if, after being emptied, it retains any of the hazardous substance as a flammable vapour.

(2) For the purposes of subclause (1), the terms **area of high intensity land use**, **area of low intensity land use**, and **transit depot** have the same meaning as in regulation 3 of the Hazardous Substance (Classes 1 to 5 Controls) Regulations 2001.

Regulation 41(1): amended, on 1 November 2012, by regulation 19(1) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 41(1): amended, on 1 November 2012, by regulation 19(2) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 41(1)(a): replaced, on 1 November 2012, by regulation 19(3) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 41(1)(b): replaced, on 1 November 2012, by regulation 19(3) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 41(1)(c): inserted, on 1 November 2012, by regulation 19(3) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation 41(1A): inserted, on 1 November 2012, by regulation 19(4) of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

42 Firefighting capability

(1) This regulation applies to a road tank wagon that—

(a) carries a hazardous substance of any hazard classification; and

(b) has a tank capacity of not less than 2 000 ℓ.

(2) A tank wagon must comply with any applicable requirements set out in regulations 21 to 24 of the Hazardous Substances (Emergency Management) Regulations 2001.

(3) A tank wagon that carries a hazardous substance with a hazard classification listed in Schedule 3 of the Hazardous Substances (Emergency Management) Regulations 2001 must have—

(a) at least 1 fire extinguisher in the tank wagon cab; and

(b) on each tank, either—

(i) at least 2 fire extinguishers; or

(ii) at least 1 fire extinguisher that has at least the equivalent capacity of 2 fire extinguishers that comply with the specifications set out in regulation 23 of the Hazardous Substances (Emergency Management) Regulations 2001.

(4) Fire extinguishers must be installed and located on a tank wagon in a way that the person in charge of the tank wagon is able to extract any extinguisher from its location and hold it ready for use within 10 s.

(5) Regulation 22(1) of the Hazardous Substance (Emergency Management) Regulations 2001 does not apply to road tank wagons with a tank capacity of not less than 2 000 ℓ.

43 Authorised persons

A person in charge of a road tank wagon with a tank capacity of not less than 2 000 ℓ must, at any time a hazardous substance (or residue of a hazardous substance) of any hazard classification is contained in the tank, ensure that no person is in or on the tank wagon except the persons—

(a) necessary for the operation of the tank wagon; and

(b) who carry out maintenance, inspection, training, or management duties.

Schedule 1
Forces able to be resisted by attachment of tank to chassis

rr 17, 31(2)(b)

Schedule 1 heading: amended, on 1 November 2012, by regulation 20 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Forces	Road	Rails
Vertically up	1 g × M	0.8 g × M
Vertically down	2 g × M	1.8 g × M
Lateral	1 g × M	0.3 g × M (but 0.65 g × M for sea transport)
Longitudinal	2 g × M	2.8 MN × T/G 2 g × M (for transportable containers)

g = acceleration constant due to gravity (9.81 m/s^2)

G = gross weight of tank, contents, chassis, and all associated equipment

M = weight of tank, contents, and fittings (but excluding chassis)

MN = meganewtons

T = weight of tank and contents

Schedule 2
Requirements for design, pre-commissioning, and in-service test certification

rr 32(3)(a) and (b), 35(2)(a), 36(3)

Schedule 2: replaced, on 1 November 2012, by regulation 21 of the Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285).

Regulation	Provision/component	Rail	Road (≥2 000 ℓ)	Road (<2 000 ℓ)
6(1) and (2)	Compatibility	D, PC	D, PC	D, PC
7	Marking	D, PC	D, PC, IS	D, PC, IS
9(1)(a)	Ability to withstand stress of load	D, PC, IS	D, PC, IS	D, PC, IS
9(1)(b)	Ability to withstand stress of load	D, PC	D, PC	D, PC
10(5) and (6)	Pressure resistance	D, PC	D, PC	D, PC
11	Fatigue resistance	D, PC	D, PC	
12	Corrosion resistance	D, PC, IS	D, PC, IS	D, PC, IS
13	Tank impact resistance	D, PC	D, PC	
14	Fittings impact resistance	D, PC	D, PC	
15(1) and (2)	Emergency preparedness		D, PC, IS	
16	Transfer of liquids or gases	D, PC, IS	D, PC, IS	
17	Attachment of tank to chassis	D, PC	D, PC	D, PC
18	Minimising risk of possible ignition		D, PC, IS	D, PC, IS
20	Vehicle fuel tank requirements		D, PC, IS	
21	Stability and manoeuvrability		D, PC	D, PC
22	Longitudinal surging		D, PC	
23	Rear end collision protection		D, PC, IS	D, PC, IS
24	Rear run-under by small vehicles		D, PC, IS	
28	Fittings impact resistance			D, PC
29	Rear run-under			D, PC, IS
35(3)	Tank compartment pressure test	PC	PC	PC

D = design test certification

IS = in-service test certification

PC = pre-commissioning test certification

Diane Morcom,
Clerk of the Executive Council.

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Reprints notes

1 General

This is a reprint of the Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004 that incorporates all the amendments to those regulations as at the date of the last amendment to them.

2 Legal status

Reprints are presumed to correctly state, as at the date of the reprint, the law enacted by the principal enactment and by any amendments to that enactment. Section 18 of the Legislation Act 2012 provides that this reprint, published in electronic form, has the status of an official version under section 17 of that Act. A printed version of the reprint produced directly from this official electronic version also has official status.

3 Editorial and format changes

Editorial and format changes to reprints are made using the powers under sections 24 to 26 of the Legislation Act 2012. See also http://www.pco.parliament.govt.nz/editorial-conventions/.

4 Amendments incorporated in this reprint

Hazardous Substances (Health and Safety Reform Revocations) Regulations 2017 (LI 2017/233): regulation 4(1)

Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2012 (SR 2012/285)

Hazardous Substances (Tank Wagons and Transportable Containers) Amendment Regulations 2004 (SR 2004/256)

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