Issued:	Enters into force:	Validity:
4 December 2024	9 December 2024	Until further notice

Legal basis:
Sections 7a, 16, 139, 143 and 144 of the Vehicles Act (82/2021).
Section 221 of the Act on Transport Services (320/2017)

Sanctions for non-compliance with this regulation are laid down in the following:
Sections 189, 191, 193, 194, 195 and 198 of the Vehicles Act (82/2021)

EU legislation to be implemented:
-

Amendment information:
Repeals the regulation of the Transport and Communications Agency of 22 August 2023 on modification of tractor propulsion system (TRAFICOM/285315/03.04.03.00/2022);

Modification of tractor propulsion system, tyres and rims

Contents

1 Scope

This Regulation applies to the modification of an engine of a vehicle of category T_1, T_2, C_1 or C_2 with a maximum design speed of 60 km/h when the propulsion is changed and to the replacement of the engine and demonstration of the conformity of these modifications in a registration or modification inspection.

This Regulation also applies to the modification of tyres and rims of a vehicle in category T_1, T_2, T_3, C_1, C_2 or C_3 with a maximum design speed of 60 km/h and to the demonstration of conformity of these modifications in a registration or modification inspection, and to the modification of tyres and rims of a vehicle in category T_1, T_2, T_3, C_1, C_2 or C_3 in accordance with section 9.1.2.

2 Definitions

In addition to the provisions of section 2 of the Vehicles Act (82/2021), this provision shall mean:

1) *by tyres for motor cars and their trailers*, tyres approved under UN Regulation 30, 54 or 117 and tyre-stud combinations intended for vehicles in category M and N and their trailers in accordance with regulation TRAFICOM/ 383441/03.04.03.00/2022 of the Finnish Transport and Communications Agency;

2) *by load-bearing structure*, structures and structural components of the frame or chassis that have a direct impact on the durability of the frame and that are subjected to forces acting on the frame or chassis; engine and transmission components operating as part of the vehicle body shall also be considered a load-bearing structure;

3) *by tyres for vehicles of category L,* tyres approved under UN Regulation 75;

4) *by tractors used in agriculture and forestry,* vehicles within the meaning of section 7 of the Act on Fuel Charges (1280/2003);

5) *by tyres for use in and approved for agriculture and forestry* approved under UN Regulation 106 or Regulation (EU) 2015/208 or other tyres intended for use in agriculture and forestry or tyres for power-driven machines or other tyres used for purposes of work that are not approved as tyres intended for cars and their trailers or as tyres for L-category vehicles;

6) by *natural gas,* fuels consisting mainly of methane;

7) *by tractor equipped as a power-driven machine*, a vehicle within the meaning of section 6, subsection 1, paragraphs 1 and 2 of the Act on Fuel Charges;

8) *by rated power,* the power notified for the engine of a vehicle by the vehicle manufacturer;

9) by *SCR* exhaust deNOx system with selective NOx reduction;

10) *by tyre width*, the metric width marked on the tyre; if this is not available, the nominal width checked against STRO (Scandinavian Tire & Rim Organization) or ETRTO (European Tyre and Rim Technical Organisation) standards;

11) *by a tyre's outer diameter*, the normal diameter indicated for the relevant tyre size in accordance with the STRO or ETRTO tyre standard;

12) by *power measurement certificate* a measurement report by the person concerned with graphical descriptors on the engine power measurement device, in which the engine power, torque and charge pressure values and speed data are recorded by the measuring instrument and identified as relating to the engine and vehicle concerned.

3 General requirements

The requirements that apply to a vehicle after modifications to its structure, other than those laid down in this regulation, are laid down in the Vehicles Act.

The modifications referred to in this Regulation shall be compared in relation to the vehicle before the change.

Engine modifications to the vehicle under this Regulation shall be presented in the modification inspection.

Modifications to tyres and rims made to a vehicle under this Regulation shall be presented for a modification inspection, unless otherwise provided or stipulated.

Unless otherwise specified below, the UN Regulations referred to in the regulation shall apply to the version in force at the time of entry into service of the vehicle or at a later date. If the UN Regulation has entered into force for the first time after the date of entry into service of the vehicle, the original version of the UN Regulation or the later UN Regulation shall apply.

4 Changes to registered information

In a modification inspection conducted after an engine modification, the vehicle must be weighed and the changed information on vehicle mass recorded in the register.

In a modification inspection, changes in the vehicle registration information and additional information related to changes to the propulsion and tyre sizes must be recorded in the vehicle registration information.

5 Replacement of the tractor engine

5.1 Replacement of internal combustion engine

The internal combustion engine of a tractor may be replaced with one meeting emission requirements in effect at the time the vehicle is commissioned or later, as provided above and in sections 7 and 8 of this Regulation.

5.2 Replacement of the electric motor

The tractor’s engine can be replaced by an electric motor.

If the vehicle’s engine is replaced by an electric motor, compliance with the requirements shall be demonstrated in a change roadworthiness test in accordance with Appendix 1.

The brake and power steering of a vehicle converted to an electrically operated vehicle may be converted by means of a separate pump without evidence of compliance with the braking or steering equipment requirements.

If the tractor’s engine is replaced with electric power, it must be ensured that the windscreen defrosting system ensures adequate visibility through the windscreen in cold weather.

6 Conversion of tractor engine to gas-powered

The tractor's engine may be modified to use liquefied or natural gas, or wood gas, wholly or in part under the conditions laid down in this paragraph, provided that:

1) it is a compression ignition engine approved in accordance with or prior to the emission requirements under stage III B as referred to in Article 4 of Directive 2000/25/EC of the European Parliament and of the Council on action to be taken against the emission of gaseous and particulate pollutants by engines intended to power agricultural or forestry tractors; or

2) it is a spark-ignition engine that is not subject to Directive 2000/25/EC of the European Parliament and of the Council on action to be taken against the emission of gaseous and particulate pollutants by engines intended to power agricultural or forestry tractors, or more recent emission requirements.

The emission requirements shall be deemed to be met if, after the modification, the vehicle complies with the emission measurement limit values for the engine in question in accordance with the provisions on criteria for periodic roadworthiness testing of vehicles in the context of a modification roadworthiness test. If the engine can be operated separately with two different fuels, the measurement shall be carried out twice using the vehicle separately with each fuel.

The SCR system may be retrofitted to the engine of the tractor. The engine's SCR system may be adapted to the engine using the new fuel or fuel mixture. The vehicle's particulate filter may be removed if the engine has been modified to use only natural gas. The catalytic converter in the vehicle shall not be removed, but shall be replaced with a catalytic converter suitable for the engine using the new fuel or fuel mixture. A report on the suitability of the replaced or modified SCR system or the replacement catalytic converter for the modified engine shall be presented to the inspector.

The series of amendments used for the modification shall be intended for use with the engine concerned, and a manufacturer's certificate for the series of amendments must be presented in the modification inspection. In addition, the series of amendments shall meet the requirements of UN Regulation 115. Parts complying with UN Regulation 67 must be used for the installation of LPG equipment and parts complying with UN Regulation 110 must be used for the installation of natural gas equipment. The installation of liquefied or natural gas equipment in accordance with the UN Regulations must be inspected at the gas installation company referred to in Chapter 6 of the Act on the Safe Handling of Dangerous Chemicals and Explosives (390/2005). The inspection shall result kin the production of a certificate showing that the gas installation company has:

1) checked that the retrofitted LPG or NG fuel tank and the fuel system components bear markings indicating compliance with the UN Regulation;

2) checked that the installation of the fuel tank complies with the UN Regulation; and

3) performed a retrofitting tightness check in accordance with the UN Regulation.

The gas equipment shall be permanently installed and shall not endanger the occupants of the vehicle or other road users.

7 Impact of the modification of an engine on power, speed and noise

The replacement of the engine referred to in this regulation shall not result in any increase in power. However, if the engine is converted to gas fuelled, the engine power shall not increase by more than 10 % of the original rated power.

The power equivalent to the peak power of an electric motor internal combustion engine shall be the maximum power of thirty minutes on the output shaft of the electric motor as laid down in UN Regulation 85.

A description of the power of the replaced engine shall be provided. An engine type-approval certificate, a certificate of conformity of the donor vehicle, an indication of the power recorded in the register of the donor vehicle, or a power measurement certificate shall be accepted as the description. If the tractor's engine is converted to liquid, natural gas or wood gas without replacing the engine, a power measurement certificate shall not be required.

If, on the basis of the time of its entry into service, the vehicle is not subject to the noise requirements, or where changes have been made to the silencer or parts of the silencer or components of the vehicle when an engine is being replaced or modified, the noise measurement carried out in the context of a modification roadworthiness test shall not exceed the following values:

a) 89 dB(A) tractor with an unladen mass in running order exceeding 1 500 kg;

b) 85 dB(A) tractor with an unladen mass in running order not exceeding 1 500 kg.

The measurement shall be carried out in accordance with the method referred to in point 1.3.2 of Annex II to Commission Delegated Regulation (EU) 2018/985 supplementing Regulation (EU) No 167/2013 of the European Parliament and of the Council as regards environmental and propulsion unit performance requirements for agricultural and forestry vehicles and their engines and repealing Commission Delegated Regulation (EU) 2015/96. The test conditions need not comply with the measurement conditions laid down in that Regulation. A sound level meter may be used as a measuring instrument in accordance with the regulations on the premises and equipment of the Finnish Transport and Communications Agency's inspection centre. If the tractor has been converted to electric, no noise measurement is required.

If the engine has been replaced or if changes have been made to the engine or transmission which may have an impact on the vehicle's design speed, the modification roadworthiness test shall include a statement that the tractor complies with the relevant design speed requirements.

The replacement of the engine of the vehicle or a change to propulsion shall not give rise to a failure report on the vehicle's on-board diagnostic system, if there is one. By way of derogation from the above, a vehicle converted to electric may be approved despite a failure affecting emissions as reported by the on-board diagnostic system.

8 Changes in the structure of the tractor in connection with an engine replacement or modification

A minor modification to the longitudinal and vertical position of the vehicle's engine by means of fastenings may be accepted in a modification roadworthiness test, provided that the engine is not part of the load-bearing structure. The installation direction of an internal combustion engine shall not be changed.

With the exception of the load-bearing structure, the roll-over protection structure or the cab structure, the body and bodywork may be modified if the structure does not deteriorate as a result of the changes.

If the engine is part of the load-bearing structure, a statement in accordance with demonstration method B in the Annex must be provided in the modification inspection, confirming that the structure will not be weakened by replacement of the engine.

A cast-iron load-bearing structure shall not be welded. Fasteners, lugs and brackets may be welded to non-cast iron load-bearing structures, the roll-over protection structure and cab structures, of these structures may be removed, provided that the strength of the load-bearing structure, roll-over structure or cab does not deteriorate as a result of the changes. Welding materials suitable for the base material and an appropriate welding method shall be used when welding. Added and modified fasteners, lugs, brackets and their joints must have a strong structure and take into account any increased strain resulting from the changes.

The outer surface structures of the tractor and the other corresponding design elements of the outer surface of the tractor may be replaced and modified as required by the replacement or modification of the engine, provided that the modifications do not increase the risk to safety, health or the environment.

9 Modification of tractor tyres and rims

9.1 Prerequisites for the modification of tyres and rims

Unless otherwise provided or stipulated, the tyres and rims of a tractor may be replaced without presenting the vehicle for a modification inspection on the conditions laid down in section 9.

A change in tyres or rims shall not affect the classification of the vehicle.

In terms of shape and dimensions, the tyres and rims shall be compatible with one another according to STRO or ETRTO standards, or by virtue of the notification from the tyre and rim manufacturer. If these tyre-rim combinations are not covered by the above standards and the tyre and rim manufacturer’s notification is not available, a tubeless radial tyre intended for cars and their trailers as well as for L-category vehicles may only be fitted on a rim whose construction prevents the tyre bead from slipping off the rim seat.

9.1.1 Tractors used in agriculture and forestry and equipped as power-driven machines.

Registered and type-approved tyres and rims on tractors used in agriculture and forestry or equipped as power-driven machines may be changed for other tyres and rims if the modification is due to the fitting-out of the tractor for work-related purposes. However, the vehicle’s design speed may not be increased and the modification may not increase the risk to safety, health or the environment.

The outer diameter of the tyre may not be changed in such a way that the vehicle’s design speed is increased. An increase in the design speed of 3 km/h and a tolerance of 5% are permitted to take account of variations due to tyre size. The design speed may be reduced if the change does not affect the classification of the vehicle.

In addition to tyres specially designed for agricultural and forestry purposes as approved as such, tractors used in agriculture or forestry equipped as power-driven machines and steered by other means than a guide rod may also be fitted with vehicle tyres intended or approved for other uses, provided that their load capacity, speed endurance and other properties are suitable for the intended purpose of the vehicle.

9.1.2 Tractors used by the police, the rescue services, Finnish customs or the Finnish Border Guard

Tyres and rims of tractors used by the police, the rescue services, Finnish customs or the Finnish Border Guard may be changed from those registered or type-approved. The modification shall not increase the risk to safety, health, or the environment.

The outer diameter of the tyre may not be changed in such a way that the vehicle’s design speed is increased. An increase in the design speed of 3 km/h and a tolerance of 5% are permitted to take account of variations due to tyre size. The design speed may be reduced if the change does not affect the classification of the vehicle.

9.1.3 Tractors other than those referred to in section 9.1.1 or 9.1.2

For tractors other than those mentioned in section 9.1.1 or 9.1.2, the rims and tyres may be changed to tyre sizes other than those type-approved and notified by the manufacturer or previously recorded in the register, subject to the following conditions:

1) the outer diameter of the tyre may not change so that the design speed of the vehicle increases; an increase in the design speed of 3 km/h and a tolerance of 5% are permitted to take account of variations due to tyre size; the design speed may be reduced if the change does not affect the classification of the vehicle;

2) the speed endurance of the tyre may not be lower than the design speed of the vehicle;

3) a change of tyres or rims may not cause the overall width of a registered vehicle width to increase by more than 102 mm;

4) the change in the distance between track centres of each axle on the vehicle as a result of a change to the rims of a tractor fitted with a rollover protection structure or a safety cab may not exceed 102 mm, unless otherwise stated by the vehicle manufacturer;

5) the change in the distance between track centres of each axle on the vehicle as a result of a change to the rims of a tractor with no rollover protection structure or safety cab may not become narrower but may be widened by 77 mm, unless otherwise stated by the vehicle manufacturer;

6) A change in the distance between track centres of each axle due to a change of rim is permitted, provided that it does not affect the classification of the vehicle;

7) the nominal rim diameter may not be changed by more than 51 mm from what is recorded in the register according to the original type approval;

8) a tractor may be fitted with tyres intended for vehicles in category L with four or more wheels;

9) the ratio between the height of the cross section and the width of a tyre intended for cars and their trailers and fitted to a tractor may not be less than 50 %;

10) in addition to tyres specially designed and approved for agricultural and forestry purposes, tyres and rims for motor cars and their trailers may be fitted to the freely rotating axles of a tractor other than one steered by means of a guide rod;

11) the rims must be suitable for the wheel hubs; rims with oval bolt holes, suitable for different pitch circles, may not be fitted to a vehicle; matching sections intended to reduce the centre hole of the rim may be installed between the vehicle’s hub and the rim;

12) the modification shall be made in such a way that the tyres or rims do not, after the change, strike any other structures of the vehicle in any steering or suspension position;

13) the wheel guards or spray suppression system may be replaced or modified as required by a change to tyre size;

14) the requirements relating to wheel guards or spray suppression system must also be met after a change to tyre size.

9.2 Modifications permitted in a modification inspection

In addition to what is provided by law or stipulated elsewhere, a vehicle must be presented for a modification inspection in the case of a more major modification than that specified in section 9.1.

Changes to tyres and rims must also be presented for modification inspection, if:

1) in accordance with section 9.1.3, tyres intended for cars and their trailers are fitted to the driving axle of a tractor other than those steered by means of a guide rod;

2) the nominal rim diameter is changed by more than 51 mm, but not more than 77 mm, from what is recorded in the register according to the original type approval;

3) the installation of a tyre increases the overall width of the vehicle by more than 102 mm compared to the overall width of the vehicle recorded in the register.

In the case of a reduction in the design speed of a tractor fitted with a tachograph of more than 3 km/h and 5 % compared to what is recorded in the register or stated by the manufacturer, the vehicle shall be presented for a modification inspection and the tachograph calibrated.

10 Entry into force and transitional provisions

This provision enters into force on 9 December 2024.

Winter tyres for cars and their trailers fitted to a tractor steered by means of a guide rod before 9 December 2024 may remain fitted until 31 May 2025 if they meet the requirements of points 1–6, 9 and 11–14 of sections 9.1 and 9.1.3.

Jarkko Saarimäki
Director-General

Kimmo Pylväs
Deputy Director General

Annex 1 Requirements for the replacement of an electric motor

In the case of the replacement of the tractor's engine with an electric motor, the following requirements shall be demonstrated in the modification roadworthiness test, as follows, irrespective of the category of vehicle.

Subject	Requirement	Method of indication
Electromagnetic compatibility	(EU) No 2015/208, Article 19 and Annex XV UN Regulation 10 and, if the vehicle is to be powered by electricity, the 05 series of amendments or later	Sub-assembly B, Vehicle C
Safety of electrical systems	(EU) No 2015/208, Article 28, However, Annex IV to (EU) No 3/2014, the determination of hydrogen emissions, is not required.	H
Batteries	Article 31 of Regulation (EU) No 1322/2014	E

Descriptions of the means of demonstration:

X: By means of an EC or EU type-approval certificate granted by the approval authority in an EEA country or the Province of Åland, which is submitted by the applicant for approval, an ECE type-approval certificate granted by the approval authority of the State applying the relevant ECE Regulation or an endorsement demonstrating an approval compliant with these certificates. With regard to the items included in the relevant type-approval, the conformity of an EC or EU type-approved vehicle approved as incomplete, manufactured or complete may be demonstrated by an EC or EU type-approval certificate issued for the vehicle.

A: By means of a report issued by a designated technical service relating to its area of qualification.

H: By means of a report by an approved expert in the field that specifies the vehicle or vehicle type to be approved and the performed inspections, measurements, tests and calculations. Where the description is based on inspections, measurements, tests or calculations for a vehicle other than the vehicle to be approved, it shall indicate the vehicle inspected, measured, tested and for which calculations have been carried out, together with an indication of how the vehicle subject to the inspections, measurements, tests and calculations corresponds to the vehicle or vehicle type for approval.

B: By means of a certificate issued by the manufacturer or their representative that is based on tests, calculations and measurements. Where the calculations referred to in the certificate relate to a technical requirement whose fulfilment requires evidence of a physical test carried out when the EU, EC or UN type-approval is granted, the correctness of the calculations shall be verified by comparing the corresponding calculation with the results of the physical test. A detailed document demonstrating conformity must be specified in the certificate and, if necessary, presented upon request to the person performing the inspection of giving approval.

C: The applicant shall provide documentation assuring the roadworthiness test inspector the prescribed legal requirements are met.

E: The inspection of the vehicle during the roadworthiness test.

As an alternative to the level of requirements set out in the table, a higher-level demonstration method is also accepted in the following order: X, A, H, B, C, E.