STATUTORY INSTRUMENTS

2025 No. 454

ROAD TRAFFIC

The Road Vehicles (Construction and Use) (Amendment) Regulations 2025

Made - - - -	*at 9:24 a.m. on 7th April 2025*
Laid before Parliament	*at 12:00 p.m. on 7th April 2025*
Coming into force - -	*29th April 2025*

The Secretary of State makes these Regulations in exercise of the powers conferred by section 41(1) and (5) of the Road Traffic Act 1988(**a**).

The Secretary of State has consulted with representative organisations in accordance with section 195(2) of that Act.

Citation, commencement and extent

1.—(1) These Regulations may be cited as the Road Vehicles (Construction and Use) (Amendment) Regulations 2025 and come into force on 29th April 2025.

(2) These Regulations extend to England and Wales and Scotland.

Amendment of the Road Vehicles (Construction and Use) Regulations 1986

2.—(1) The Road Vehicles (Construction and Use) Regulations 1986(**b**) are amended as follows.

(2) In regulation 94, for paragraph (2A) substitute—

"(2A) No person may use, or cause or permit to be used, on a road a vehicle that is fitted with a hydrogen fuel system or a natural gas fuel system unless—

(a) that vehicle has been approved under the Road Vehicles (Approval) Regulations 2020(**c**) for that system at the time of registration, or

(b) that vehicle meets the requirements in paragraph (2B) or (2C).

(2B) A vehicle meets the requirements of this paragraph if it—

(a) is designed and constructed, and not merely adapted, to be fuelled by hydrogen,

(b) complies with the Pressure Equipment (Safety) Regulations 2016(**d**),

(c) complies with Schedule 5A, and

(**a**) 1988 c. 52; section 41(1) was amended by section 43 of the Scotland Act 2016 (c. 11).
(**b**) S.I. 1986/1078, amended by S.I. 2017/881; there are other amending instruments but none is relevant.
(**c**) S.I. 2020/818; to which there are amendments not relevant to these Regulations.
(**d**) S.I. 2016/1105; amended by 2020 c. 29 and S.I. 2017/1206, 2018/966, 2019/696, 791, 1246, 2020/676, 678, 818, 852, 1112, 1460, 2021/1273, 2022/1393, 2024/490, 504, 696.

(d) is one of the following vehicles—

(i) an agricultural motor vehicle;

(ii) engineering plant;

(iii) a works truck.

(2C) A vehicle meets the requirements of this paragraph if it—

(a) is designed and constructed, and not merely adapted, to be fuelled by hydrogen,

(b) complies with Parts I and II of ECE Regulation 134, 134.01 or 134.02(**a**),

(c) complies with Schedule 5A, and

(d) is a category T tractor.".

(3) In Schedule 2 (Community Directives and ECE Regulations), in table 2 (ECE Regulations), after the entry relating to item 29, insert—

"30	134	134	15.6.2015	Hydrogen and fuel cell vehicles	-	-	-
31	134.01	134	15.6.2015	Hydrogen and fuel cell vehicles	7.1.2022	-	-
32	134.02	134	15.6.2015	Hydrogen and fuel cell vehicles	15.6.2024	-	-".

(4) After Schedule 5 (Gas Systems), insert—

"SCHEDULE 5A (see regulation 94)

HYDROGEN FUELLED MACHINERY

Definitions

1.—(1) In this Schedule—

"hydrogen-fuelled vehicle" means a vehicle that is specified in regulation 94(2B) or (2C) and that uses compressed gaseous hydrogen as a fuel to propel the vehicle.

(2) Other expressions that are used in this Schedule and that are defined in ECE Regulation 134.02 have the same meaning in this Schedule as they have in ECE Regulation 134.02.

Fuelling receptacle

2.—(1) A fuelling receptacle must be fitted to a hydrogen-fuelled vehicle.

(2) A fuelling receptacle fitted to a hydrogen-fuelled vehicle must—

(a) prevent reverse flow of gaseous hydrogen fuel to the atmosphere;

(b) have a label affixed close to the fuelling receptacle that shows—

(i) the fuel type,

(**a**) Copies of UNECE Regulation 134, 134.01 and 134.02 are available at http://www.unece.org/trans/main/wp29/wp29regs.html. Hard copies may be obtained from the Department for Transport, Great Minster House, 33 Horseferry Road, London, SW1P 4DR.

(ii) the maximum fuelling pressure,

(iii) the nominal working pressure, and

(iv) the date of removal from service of each container;

(c) be mounted on the hydrogen-fuelled vehicle to ensure positive locking of the fuel nozzle;

(d) be protected from tampering and ingress of dirt and water.

(3) A fuelling receptacle fitted to a hydrogen-fuelled vehicle must not—

(a) be mounted within the external energy absorbing elements of the hydrogen-fuelled vehicle;

(b) be installed so that access for refilling is in the passenger compartment or an unventilated compartment.

Overpressure protection for the low pressure system

3.—(1) The compressed hydrogen storage system downstream of a pressure regulator must be protected against overpressure.

(2) Use of an overpressure protection device, including a pressure relief device, is sufficient to meet the requirement in sub-paragraph (1).

(3) The set pressure of an overpressure protection device must be lower than or equal to the maximum allowable working pressure for the appropriate section of the compressed hydrogen storage system.

Discharge from thermally-activated pressure relief devices

4.—(1) Compressed hydrogen gas discharge from a thermally-activated pressure relief device of a compressed hydrogen storage system must not be directed—

(a) into enclosed or semi-enclosed spaces;

(b) into or towards any vehicle wheel housing;

(c) towards each container;

(d) forward from the hydrogen-fuelled vehicle, or horizontally (parallel to the road) from the back or sides of the hydrogen-fuelled vehicle.

(2) If a thermally-activated pressure relief device of a compressed hydrogen storage system has a vent line, the outlet of this vent line must be protected by a cap.

Discharge from other pressure relief devices

5.—(1) The hydrogen gas discharge from other pressure relief devices that are not thermally-activated, including burst discs, must not be directed—

(a) towards exposed electrical terminals, exposed electrical switches or other ignition sources;

(b) into or towards the passenger compartment;

(c) into or towards any vehicle wheel housing;

(d) towards each container.

(2) At the hydrogen-fuelled vehicle exhaust system's point of discharge, the hydrogen concentration level must not exceed—

(a) 4.0% average by volume during any moving three-second time interval during normal operation, including start-up and shut-down;

(b) 8.0% at any time.

(3) The test procedure that must be followed, for determining the hydrogen concentration level in sub-paragraph (2), is the compliance test for the vehicle exhaust system in paragraph 4 of Annex 5 to ECE Regulation 134.02.

Protection against flammable conditions

6.—(1) Hydrogen leakage and permeation from the compressed hydrogen storage system must not directly vent into the passenger compartment, or into any enclosed or semi-enclosed spaces within the hydrogen-fuelled vehicle that contain unprotected ignition sources.

(2) Any single failure downstream of the main hydrogen shut-off valve must not result in accumulations in levels of hydrogen concentration in the passenger compartment.

(3) The requirement in sub-paragraph (2) is met if the hydrogen concentration in the passenger compartment does not exceed 1.0% by volume when tested in accordance with sub-paragraph (4).

(4) The test procedure for determining levels of hydrogen concentration in sub-paragraph (2) is the test procedure for integrity of enclosed spaces and detection systems in paragraph 3.2 of Annex 5 to ECE Regulation 134.02.

(5) If, during operation, the hydrogen concentration exceeds 3.0% by volume in the air in the enclosed or semi-enclosed spaces of the hydrogen-fuelled vehicle, a warning must be provided in accordance with paragraph 7.

(6) If, during operation, the hydrogen concentration exceeds 4.0% by volume in the air in the enclosed or semi-enclosed spaces of the hydrogen-fuelled vehicle, the main shut-off valve must be closed to isolate the compressed hydrogen storage system.

Signal warning to driver

7.—(1) A warning must be provided if the condition in paragraph 6(5) is met.

(2) The warning must be given by a visual signal or display text and must—

(a) be visible to the driver while the driver is in their designated seating position with their seat belt fastened;

(b) be yellow in colour if the detection system malfunctions;

(c) be red in colour if a single failure results in a hydrogen concentration exceeding 3.0% by volume in the air in the enclosed or semi-enclosed spaces of the hydrogen-fuelled vehicle;

(d) when illuminated, be visible to the driver under both daylight and night time driving conditions;

(e) remain illuminated if the ignition locking system is on the 'On' or 'Run' position, or if the propulsion system is activated, and—

(i) hydrogen concentration exceeds 3.0% by volume in the air in the enclosed or semi-enclosed spaces of the hydrogen-fuelled vehicle, or

(ii) a detection system malfunction exists.

Fuel system leakage

8.—(1) The hydrogen fuelling line, including piping and joints, that is downstream of any shut-off valves to the fuel cell system or the engine must not leak.

(2) Compliance with sub-paragraph (1) must be verified at nominal working pressure using the test procedure set out in paragraph 5 of Annex 5 to ECE Regulation 134.02.

Additional installation requirements

9.—(1) Each container must be mounted in a position that is between two vertical planes that are located perpendicular to the centre line of the hydrogen-fuelled vehicle.

(2) The two vertical planes referred to in sub-paragraph (1) must be located at least—

(a) 200 mm rearward from the front edge of the hydrogen-fuelled vehicle, and

(b) 200 mm forward of the rear edge of the hydrogen-fuelled vehicle.

(3) Each container must be mounted in a position that is between the two vertical planes that are parallel to the centre line of the hydrogen-fuelled vehicle.

(4) The two vertical planes referred to in sub-paragraph (3) must be located at least 200 mm inside from the outermost edges of the hydrogen-fuelled vehicle in the proximity of each container.

(5) A hydrogen-fuelled vehicle that does not comply with sub-paragraphs (3) and (4) may still be considered compliant with the requirements of this paragraph if it has passed the lateral impact test specified in paragraph 7.2.4.3 of ECE Regulation 134.02.

(6) For the purposes of sub-paragraph (5)—

(a) the lateral impact test must be conducted by a Technical Service that is responsible for conducting approval tests and that has been communicated to the United Nations secretariat in accordance with paragraph 12 of ECE Regulation 134.02;

(b) the requirement for the compressed hydrogen storage system to be filled with hydrogen or helium in paragraph 1 of Part 1 or paragraph 1 of Part 2 of Annex 8 to ECE Regulation 134.02 does not need to be met if the following criteria are met instead—

(i) the compressed hydrogen storage system is empty or filled with an inert gas to a pressure below or equal to 20 bar for the purposes of the lateral impact test,

(ii) after the lateral impact test, any inert gas is removed and the compressed hydrogen storage system is repressurised to nominal working pressure with hydrogen or helium, before the Technical Service tests hydrogen gas leakage in accordance with paragraph 7.2.1 of ECE Regulation 134.02, and

(iii) for the purposes of sub-paragraph (ii), the time interval for starting measurement of hydrogen gas leakage is after the compressed hydrogen storage system has been repressurised with hydrogen or helium;

(c) demonstration of compliance through the calculation method described in paragraph 7.2.4.3 of ECE Regulation 134.02 is not permitted as an alternative to the lateral impact test.".

Signed by authority of the Secretary of State for Transport

Lilian Greenwood
Parliamentary Under Secretary of State
Department for Transport

At 9:24 a.m. on 7th April 2025

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations amend the Road Vehicles (Construction and Use) Regulations 1986 ("the 1986 Regulations") to enable the road use of hydrogen-fuelled non-road mobile machinery and category T tractors.

Regulation 94(2A) of the 1986 Regulations requires that, for vehicles fitted with a hydrogen or natural gas fuel system, the system must be approved under the Roads Vehicles (Approval) Regulations 2009 before it may be used.

Regulation 2 of these Regulations creates a new exemption by amending regulation 94(2A) to enable the road use of hydrogen-fuelled vehicles that meet the requirements specified in new paragraphs (2B) and (2C).

The requirements specified in new paragraph (2B) are that the vehicle must be an agricultural motor vehicle, engineering plant or a works truck, have been designed and constructed to be fuelled by hydrogen, and must comply with the Pressure Equipment (Safety) Regulations 2016 and the requirements in new Schedule 5A.

The requirements specified in new paragraph (2C) are that the vehicle must be a category T tractor, have been designed and constructed to be fuelled by hydrogen, and must comply with Parts I and II of UN Regulation 134, 134.01 or 134.02 and the requirements in new Schedule 5A.

New Schedule 5A sets out safety requirements for hydrogen-fuelled vehicles specified in regulation 94(2B) or (2C), including requirements relating to the fuelling receptacle, pressure relief devices, protection against flammable conditions, signal warnings to the driver, fuel system leakage and installation requirements.

Regulation 2 of these Regulations also updates the reference to the Road Vehicles (Approval) Regulations 2009 to refer to the Road Vehicles (Approval) Regulations 2020 instead.

UN Regulations are issued by the United Nations Economic Commission for Europe. Copies of UN Regulation 134, 134.01 and 134.02 may be obtained from the UNECE website: http://www.unece.org/trans/main/wp29/wp29regs.html. Hard copies may be obtained from the Department for Transport, Great Minster House, 33 Horseferry Road, London, SW1P 4DR.

A full impact assessment has not been produced for this instrument as no significant impact on the private, voluntary or public sector is foreseen.

An Explanatory Memorandum has been prepared and is available alongside this instrument at www.legislation.gov.uk, or from the Department for Transport, Great Minster House, 33 Horseferry Road, London, SW1P 4DR.

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