# Regulation (EC) No 79/2009 of the European Parliament and of the Council of 14 January 2009 on type-approval of hydrogen-powered motor vehicles, and amending Directive 2007/46/EC (Text with EEA relevance)

## REGULATION (EC) No 79/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

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on type-approval of hydrogen-powered motor vehicles, and amending Directive 2007/46/EC

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee[(1)],

Acting in accordance with the procedure laid down in Article 251 of the Treaty[(2)],

Whereas:

(1) The internal market comprises an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured. To that end, a comprehensive Community type-approval system for motor vehicles is in place. The technical requirements for the type-approval of motor vehicles with regard to hydrogen propulsion should be harmonised to avoid the adoption of different requirements in different Member States and to ensure the proper functioning of the internal market while, at the same time, ensuring a high level of environmental protection and public safety.

(2) This Regulation is a separate regulation for the purposes of the Community type-approval procedure provided for by Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles (Framework Directive)[(3)]. Therefore, Annexes IV, VI and XI to that Directive should be amended accordingly.

(3) Following the request of the European Parliament, a new regulatory approach has been applied to EC vehicle legislation. This Regulation should therefore lay down only fundamental provisions on requirements for the type-approval of hydrogen systems and components, whereas the technical specifications should be laid down by implementing measures adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission[(4)].

(4) In particular, the Commission should be empowered to establish the requirements and test procedures relating to new forms of hydrogen storage or usage, additional hydrogen components and the propulsion system. The Commission should also be empowered to establish specific procedures, tests and requirements with regard to the impact protection of hydrogen-powered vehicles and integrated system safety requirements. Since those measures are of general scope and are designed to amend non-essential elements of this Regulation by supplementing it with new non-essential elements, they must be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC.

(5) In the transport sector, one of the main aims should be a greater proportion of more environmentally friendly vehicles. Additional efforts should be undertaken in order to place more of those vehicles on the market. The introduction of vehicles with alternative fuels can significantly improve the quality of urban air and consequently also the state of public health.

(6) Hydrogen is considered as a clean way of powering vehicles for the future, on the way towards a pollution-free economy based on the reuse of raw materials and on renewable energy resources, as vehicles propelled with hydrogen emit neither carbon-based pollutants nor greenhouse gases. Since hydrogen is an energy vector and not an energy source, the climate-policy value of hydrogen power depends on the source from which the hydrogen is obtained. Care should therefore be taken that hydrogen fuel is produced in a sustainable manner, as far as possible from renewable energy resources, so that the overall environmental balance of introducing hydrogen as a fuel for motor vehicles is positive.

(7) The CARS 21 High Level Group stated in its final report that ‘efforts with a view to increasing international harmonisation of motor vehicle regulations should be maintained where appropriate, with a view to involve the key vehicle markets and to extend harmonisation to areas not yet covered, notably both in the framework of the 1958 and the 1998 Agreements of the UNECE’. In line with this recommendation, the Commission should continue to support the development of internationally harmonised requirements for motor vehicles under the auspices of UNECE. In particular, if a Global Technical Regulation (GTR) on hydrogen and fuel cell vehicles is adopted, the Commission should consider the possibility of adapting the requirements laid down in this Regulation to those established in the GTR.

(8) Hydrogen mixtures could be used as a transition fuel towards the use of pure hydrogen, to facilitate the introduction of hydrogen-powered vehicles in Member States where the natural gas infrastructure is good. The Commission should therefore develop requirements for the use of mixtures of hydrogen and natural gas/biomethane, especially a mixing ratio of hydrogen and gas which takes account of technical feasibility and environmental benefits.

(9) Defining the type-approval framework for hydrogen-powered vehicles would contribute to the confidence in the new technology of potential users and the public at large.

(10) Therefore, it is necessary to create an adequate framework in order to accelerate the placing on the market of vehicles with innovative propulsion technologies and vehicles which use alternative fuels with a low environmental impact.

(11) The majority of manufacturers are making important investments in the development of hydrogen technology and have already started to place such vehicles on the market. In the future, it is likely that the share of hydrogen-powered vehicles in the total fleet will increase. Therefore, the specification of common requirements concerning the safety of hydrogen-powered vehicles is necessary. As manufacturers might follow different approaches to the development of hydrogen-powered vehicles, it is necessary to establish safety requirements in a technology-neutral manner.

(12) It is necessary to establish those safety requirements for the hydrogen systems and their components which are necessary in order to obtain type-approval.

(13) For type-approval of hydrogen-powered vehicles, it is necessary to establish requirements for the installation of hydrogen systems and their components in the vehicle.

(14) Owing to the characteristics of the fuel, hydrogen-powered vehicles may require a specific treatment from rescue services. It is therefore necessary to lay down requirements for the clear and rapid identification of such vehicles, allowing the rescue services to be informed of the fuel stored on board the vehicle. Whilst the means of identification should be fit for that purpose it should, as far as possible, avoid being of a nature that is likely to give rise to concern among the public.

(15) It is also important to set out the obligations of manufacturers concerning the adoption of appropriate measures to prevent misfuelling of hydrogen-powered vehicles.

(16) Hydrogen-powered vehicles are unlikely to be successful on the market unless adequate filling-station infrastructure is made available in Europe. The Commission should therefore look into suitable measures to support the establishment of a Europe-wide filling-station network for hydrogen-powered vehicles.

(17) Innovative small vehicles, designated under EC type-approval legislation as L category vehicles, are considered as early users of hydrogen as a fuel. Introducing hydrogen for these vehicles requires less effort, as the technical challenge and level of investment required is not as high as in the case of M and N category vehicles, as defined in Annex II to Directive 2007/46/EC. The Commission should, no later than 1 January 2010, evaluate the possibility of regulating the type-approval of hydrogen L category vehicles.

(18) Since the objective of this Regulation, namely the achievement of the internal market through the introduction of common technical requirements concerning motor vehicles using hydrogen, cannot be sufficiently achieved by the Member States and can therefore, by reason of its scale, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity, as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in

**Changes to legislation:** *There are currently no known outstanding effects for the Regulation (EC) No 79/2009 of the European Parliament and of the Council. (See end of Document for details)*

that Article, this Regulation does not go beyond what is necessary in order to achieve that objective,

HAVE ADOPTED THIS REGULATION:

*Article 1*

**Subject matter**

This Regulation establishes requirements for the type-approval of motor vehicles with regard to hydrogen propulsion and for the type-approval of hydrogen components and hydrogen systems. This Regulation also establishes requirements for the installation of such components and systems.

*Article 2*

**Scope**

This Regulation shall apply to:

1. hydrogen-powered vehicles of categories M and N, as defined in Section A of Annex II to Directive 2007/46/EC, including impact protection and the electric safety of such vehicles;

2. hydrogen components designed for motor vehicles of categories M and N, as listed in Annex I;

3. hydrogen systems designed for motor vehicles of categories M and N, including new forms of hydrogen storage or usage.

*Article 3*

**Definitions**

1 For the purposes of this Regulation, the following definitions shall apply:

a ‘hydrogen-powered vehicle’ means any motor vehicle that uses hydrogen as fuel to propel the vehicle;

b ‘propulsion system’ means the internal combustion engine or fuel cell system used to propel the vehicle;

c ‘hydrogen component’ means the hydrogen container and all other parts of the hydrogen-powered vehicle that are in direct contact with hydrogen or which form part of a hydrogen system;

d ‘hydrogen system’ means an assembly of hydrogen components and connecting parts fitted on hydrogen-powered vehicles, excluding the propulsion systems or auxiliary power units;

e ‘maximum allowable working pressure’ (MAWP) means the maximum pressure to which a component is designed to be subjected to and which is the basis for determining the strength of the component under consideration;

f ‘nominal working pressure’ (NWP) means, as regards containers, the settled pressure at a uniform temperature of 288K (15 °C) for a full container, or as regards other components, the pressure level at which a component typically operates;

g ‘inner tank’ means the part of the hydrogen container designed to use liquid hydrogen that contains the cryogenic hydrogen.

2 For the purposes of paragraph 1(d), ‘hydrogen systems’ shall include, *inter alia*, the following:

a usage monitoring and control systems;
b vehicle interface systems;
c excess flow systems;
d overpressure protection systems;
e heat exchanger failure detection systems.

*Article 4*

**Obligations of manufacturers**

1 Manufacturers shall demonstrate that all new hydrogen-powered vehicles sold, registered or put into service within the Community and all hydrogen components or hydrogen systems sold or put into service within the Community are type-approved in accordance with this Regulation and its implementing measures.

2 For the purposes of vehicle type-approval, manufacturers shall equip hydrogen-powered vehicles with hydrogen components and systems that comply with the requirements of this Regulation and its implementing measures and are installed in accordance with this Regulation and its implementing measures.

3 For the purposes of the type-approval of components and systems, manufacturers shall ensure that hydrogen components and systems comply with the requirements of this Regulation and its implementing measures.

4 Manufacturers shall provide the approval authorities with appropriate information concerning the vehicle specifications and test conditions.

5 Manufacturers shall provide information for the purposes of inspection of hydrogen components and systems during the service life of the vehicle.

*Article 5*

**General requirements for hydrogen components and systems**

Manufacturers shall ensure that:

(a) hydrogen components and systems function in a correct and safe way and reliably withstand electrical, mechanical, thermal and chemical operating conditions without leaking or visibly deforming;

(b) hydrogen systems are protected against over-pressurisation;

(c) the materials used for those parts of the hydrogen components and systems which are to be in direct contact with hydrogen are compatible with hydrogen;

(d) hydrogen components and systems reliably withstand expected temperatures and pressures during their expected lifetime;