CONSIGLIO DELL'UNIONE EUROPEA

Bruxelles, 13 giugno 2008 (17.06)
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10574/08

Fascicolo interistituzionale: 2007/0214 (COD)

ENT 120
ENV 364
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NOTA PUNTO "I"

del:	Segretariato generale del Consiglio
al:	Comitato dei Rappresentanti Permanenti (Parte prima)
n. prop. Com:	13927/07 ENT 127 ENV 519 CODEC 1075
Oggetto:	Proposta di regolamento del Parlamento europeo e del Consiglio relativo all'omologazione di autoveicoli alimentati a idrogeno e che modifica la direttiva 2007/46/CE (AL) (Prima lettura) – Analisi di un pacchetto di compromesso della Presidenza in vista di un accordo in prima lettura con il Parlamento europeo

1. Il 10 ottobre 2007 la Commissione ha presentato la sua proposta.[1]

2. Il Gruppo "Armonizzazione tecnica" (Veicoli a motore) ha esaminato in varie riunioni la proposta della Commissione, nonché un certo numero di progetti di emendamento del Parlamento europeo alla proposta della Commissione.

3. Si sono svolte riunioni informali tra Parlamento europeo, Presidenza e Commissione per cercare di preparare la strada ad un accordo in prima lettura.

4. La mattina del 10 giugno 2008 una netta maggioranza qualificata delle delegazioni in seno al Gruppo del Consiglio ha potuto approvare orientamenti informali che permettono alla Presidenza di negoziare con il PE.

[1] Doc. 13927/07 ENT 127 ENV 519 CODEC 1075

5. In un trilogo informale svoltosi nel pomeriggio del 10 giugno 2008 i rappresentanti delle tre istituzioni hanno potuto concordare su un testo di compromesso [1] che è stato in seguito trasmesso alle delegazioni affinché trasmettano le loro osservazioni al Segretariato entro le ore 15.00 del 13 giugno 2008.

6. Il testo di compromesso figura nell'**allegato** del presente documento.

7. Il Parlamento europeo intende inserire questo punto nell'ordine del giorno della prima sessione plenaria di settembre (1-4 settembre).

Si invita il Comitato dei Rappresentanti Permanenti ad approvare il pacchetto di compromesso riportato nell'allegato del presente documento, nella prospettiva di raggiungere un accordo in prima lettura con il Parlamento europeo.

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[1] Doc. "Final Four-column" del Parlamento europeo dell'11 giugno (versione 2).

Final agreement

Proposal for a Regulation of the European Parliament and of the Council on type approval of hydrogen powered motor vehicles and amending Directive 2007/46/EC

Text in green: Amendment agreed on at the first and second informal trialogue meeting 4 June 2008 and 10 June 2008

Commission Proposal **COM (2007) 593 final**	**IMCO position** **27.05.08**	**Council Working Group** **30.04.08**	**Compromise text**
Proposal for a **REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL** **on type-approval of hydrogen powered motor vehicles and amending Directive 2007/46/EC**	Proposal for a **REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL** **on type-approval of hydrogen powered motor vehicles and amending Directive 2007/46/EC**	Proposal for a **REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL** **on type-approval of hydrogen powered motor vehicles and amending Directive 2007/46/EC**	
THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,	THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,	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 Commission1, Having regard to the opinion of the European Economic and Social Committee2, Acting in accordance with the procedure laid down in Article 251 of the Treaty3,	Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof, Having regard to the proposal from the Commission1, Having regard to the opinion of the European Economic and Social Committee2, Acting in accordance with the procedure laid down in Article 251 of the Treaty3,	Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof, Having regard to the proposal from the Commission[1] Having regard to the opinion of the European Economic and Social Committee[2] Acting in accordance with the procedure laid down in Article 251 of the Treaty[3]	

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Commission Proposal **COM (2007) 593 final**	**IMCO position** **27.05.08**	**Council Working Group** **30.04.08**	**Compromise text**
Whereas: _____ 1 OJ C , , p. . 2 OJ C , , p. . 3 OJ C , , p. .	Whereas: _____ 1 OJ C , , p. . 2 OJ C , , p. . 3 OJ C , , p. .	Whereas: _____ 1 OJ C , , p. . 2 OJ C , , p. . 3 OJ C , , p. .	
(1) The internal market comprises an area without internal frontiers in which the free movement of goods, persons, services and capital must be 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 requirements that differ from one Member State to another and to ensure the proper functioning of the internal market while, at the same time, providing for a high level of environmental protection and public safety.	(1) The internal market comprises an area without internal frontiers in which the free movement of goods, persons, services and capital must be 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 requirements that differ from one Member State to another and to ensure the proper functioning of the internal market while, at the same time, providing for a high level of environmental protection and public safety.	(1) The internal market comprises an area without internal frontiers in which the free movement of goods, persons, services and capital must be 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 requirements that differ from one Member State to another and to ensure the proper functioning of the internal market while, at the same time, providing for a high level of environmental protection and public safety.	
(2) This Regulation is a new separate Regulation in the context of the Community type-approval procedure under Directive […/…/EC] of the European Parliament and of the Council of [DATE] establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate	(2) This Regulation is a new separate Regulation in the context of the Community type-approval procedure under Directive […/…/EC] of the European Parliament and of the Council of [DATE] establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate	(2) This Regulation is a new separate Regulation in the context of the Community type-approval procedure under Directive [2007/46/*EC*] of the European Parliament and of the Council of **5 September 2007**[4] establishing a framework for the approval of motor vehicles and their trailers, and of systems,	(2) This Regulation is a new separate Regulation in the context of the Community type-approval procedure under Directive [2007/46/*EC*] of the European Parliament and of the Council of **5 September 2007**[4] establishing a framework for the approval of motor vehicles and their trailers, and of systems,

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technical units intended for such vehicles (Framework Directive)4. Therefore, Annexes IV, VI and XI to that Directive should be amended accordingly. ____ 4: [Proposal for the new 'Framework Directive' currently under adoption process. COM(2003)418 and COM(2004)738.]	technical units intended for such vehicles (Framework Directive)4. Therefore, Annexes IV, VI and XI to that Directive should be amended accordingly. ____ 4: [Proposal for the new 'Framework Directive' currently under adoption process. COM(2003)418 and COM(2004)738.]	components and separate technical units intended for such vehicles (Framework Directive). Therefore, Annexes IV, VI and XI to that Directive should be amended accordingly. _____ **[4] Directive 2007/46/EC (OJ L 263, 09.10.2007, p.1)**	components and separate technical units intended for such vehicles (Framework Directive). Therefore, Annexes IV, VI and XI to that Directive should be amended accordingly. _____ ***[4] Directive 2007/46/EC (OJ L 263, 09.10.2007, p.1)***
	Amendment 1		
(3) Following the request of the European Parliament, a new regulatory approach has been introduced in EU 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 following comitology procedures.	(3) Following the request of the European Parliament, a new regulatory approach has been introduced in EU 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 following ***a*** comitology procedure ***involving the European Parliament.***	(3) Following the request of the European Parliament, a new regulatory approach has been introduced in EU 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 the provisions of Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission.**	(3) Following the request of the European Parliament, a new regulatory approach has been introduced in EU 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 the provisions of Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission.***

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		(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 vehicles and integrated system safety requirements. Since those measures are of a general scope and are designed to amend non-essential elements of this Regulation and to supplement this Regulation by the addition of 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.	***(3a)*** 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 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.
	Amendment 2		
(4) In the transport sector, an increased share of more environmentally friendly vehicles should be aimed at and additional efforts should be undertaken in order to place more of those vehicles on the market. The introduction of vehicles with alternative fuels can produce a significant improvement in the urban air quality.	(4) In the transport sector, an increased share of more environmentally friendly vehicles should be aimed at and additional efforts should be undertaken in order to place more of those vehicles on the market. The introduction of vehicles with alternative fuels can produce a significant improvement in the urban air quality ***and consequently also in the state of public health***.	**(5)** In the transport sector, an increased share of more environmentally friendly vehicles should be aimed at and additional efforts should be undertaken in order to place more of those vehicles on the market. The introduction of vehicles with alternative fuels can produce a significant improvement in the urban air quality.	(4) In the transport sector, an increased share of more environmentally friendly vehicles should be aimed at and additional efforts should be undertaken in order to place more of those vehicles on the market. The introduction of vehicles with alternative fuels can produce a significant improvement in the urban air quality ***and consequently also in the state of public health***.

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	Amendment 3		
(5) Hydrogen is considered as a clean way of powering vehicles as vehicles propelled with hydrogen produce neither carbon based pollutants nor emissions of green-house gases from the tailpipe. However, care should be taken that the hydrogen fuel is produced in a sustainable manner, so that the overall environmental balance of introducing hydrogen as fuel for motor vehicles is positive.	(5) Hydrogen is considered as a clean way of powering vehicles ***for the future, on the way towards a pollution-free economy based on recycling,*** as vehicles propelled with hydrogen produce neither carbon-based pollutants nor emissions of green-house gases from the tailpipe. However, ***hydrogen is an energy vector and not an energy source, so the climate-policy value of hydrogen power depends on the source from which the hydrogen is obtained.*** Care should ***therefore*** be taken that the hydrogen fuel is produced in a sustainable manner, so that the overall environmental balance of introducing hydrogen as fuel for motor vehicles is positive.	**(6)** Hydrogen is considered as **the** clean way of powering vehicles **for the future, leading the way towards a pollution-free transport industry,** as vehicles propelled with hydrogen produce neither carbon based pollutants nor emissions of green-house gases from the tailpipe. However, **hydrogen is an energy vector and not an energy source, so the climate-policy value of hydrogen power depends on the source from which the hydrogen is obtained. C**are should **therefore** be taken that the hydrogen fuel is produced in a sustainable manner, so that the overall environmental balance of introducing hydrogen as fuel for motor vehicles is positive.	(5) Hydrogen is considered as a clean way of powering vehicles ***for the future, on the way towards a pollution-free economy based on the re-use of raw materials and renewable resources,*** as vehicles propelled with hydrogen produce neither carbon-based pollutants nor emissions of green-house gases from the tailpipe. However, ***hydrogen is an energy vector and not an energy source, so the climate-policy value of hydrogen power depends on the source from which the hydrogen is obtained.*** Care should ***therefore*** be taken that the hydrogen fuel is produced in a sustainable manner ***as far as possible from renewable energies***, so that the overall environmental balance of introducing hydrogen as fuel for motor vehicles is positive.
	Amendment 4		
	5a) The CARS 21 High Level Group final report1 stated 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	**(6a) The CARS 21 High Level Group final report stated 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**	***5a) The CARS 21 High Level Group final report1 stated 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***

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	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 of this Regulation to those of that GTR. ___ ***1 http://ec.europa.eu/enterprise /automotive/pagesbackground /competitiveness/cars21finalreport.pdf***	**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 of this Regulation to those of that GTR.**	***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 of this Regulation to those of that GTR.*** ___ ***1 http://ec.europa.eu/enterprise /automotive/pagesbackground /competitiveness/cars21finalreport.pdf***
	Amendment 5		
	(5b) Hydrogen mixtures could be used as a transition fuel to facilitate the introduction of hydrogen powered vehicles in countries where there is a good natural gas infrastructure. 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.	**(6b) Mixtures of hydrogen and natural gas and or biomethane could be used as a transition fuel to facilitate the introduction of hydrogen-powered vehicles in countries where there is a good natural gas infrastructure. The Commission should therefore be empowered to develop requirements for the use of mixtures of hydrogen and natural gas and or biomethane, especially a maximal allowance mixing ratio of hydrogen and natural gas and or biomethane which takes account of technical feasibility and environmental benefits.**	***(5b) Hydrogen mixtures could be used as a transition fuel towards the use of pure hydrogen, to facilitate the introduction of hydrogen powered vehicles in countries where there is a good natural gas infrastructure. 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.***

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(6) Defining the approval framework for vehicles using hydrogen would contribute to the confidence in the new technology for potential users and the public at large.	(6) Defining the approval framework for vehicles using hydrogen would contribute to the confidence in the new technology for potential users and the public at large.	(**7**) Defining the approval framework for vehicles using hydrogen would contribute to the confidence in the new technology for potential users and the public at large.	
(7) 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.	(7) 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.	(**8**) 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.	
	Amendment 6		
	(7a) In the future, hydrogen powered vehicles should be vehicles propelled by pure hydrogen produced as far as possible from renewable energies. Use of mixtures of hydrogen and natural gas/biomethane to propel vehicles must be no more than a transitional technology.		[deleted]
	Amendment 7		
(8) 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 future years, it is likely that the share of hydrogen powered vehicles will increase in the total fleet. Therefore, the specification of common requirements concerning the safety of	(8) 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 future years, it is likely that the share of hydrogen powered vehicles will increase in the total fleet. Therefore, the specification of common requirements concerning the safety of	(**9**) 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 future years, it is likely that the share of hydrogen powered vehicles will increase in the total fleet. Therefore, the specification of common requirements concerning the safety of	(8) 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 future years, it is likely that the share of hydrogen powered vehicles will increase in the total fleet. Therefore, the specification of common requirements concerning the safety of

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those vehicles is necessary.	those vehicles is necessary***. As manufacturers are following different approaches for the development of hydrogen powered vehicles in some cases, there is a need to establish the safety requirements in a technology-neutral manner.***	those vehicles is necessary. **As manufacturers are following different approaches for the development of hydrogen-powered vehicles in some cases, there is a need to establish the safety requirements in a technology-neutral manner.**	those vehicles is necessary***. As manufacturers are following different approaches for the development of hydrogen powered vehicles in some cases, there is a need to establish the safety requirements in a technology-neutral manner.***
(9) It is necessary to implement safety measures for the hydrogen system and its components to obtain type-approval.	(9) It is necessary to implement safety measures for the hydrogen system and its components to obtain type-approval.	(**10**) It is necessary to implement safety measures for the hydrogen system and its components to obtain type-approval.	
(10) It is necessary to take the installation of the hydrogen system and its components in the vehicle into account for the approval of the vehicle.	(10) It is necessary to take the installation of the hydrogen system and its components in the vehicle into account for the approval of the vehicle.	(1**1**) It is necessary to take the installation of the hydrogen system and its components in the vehicle into account for the approval of the vehicle.	
	Amendment 8		
(11) Due to the characteristics of the fuel, hydrogen powered vehicles may require a specific treatment from rescue services. It is, therefore, necessary to lay down vehicle labelling requirements to inform those services of the fuel stored on-board of the vehicle.	(11) *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 speedy identification of such vehicles*** to inform those services of the fuel stored *on board* the vehicle. ***Identification must not be allowed to lead to the stigmatisation of hydrogen powered vehicles.***	(1**2**) **Owing** to the characteristics of the fuel, hydrogen powered vehicles may require specific treatment from rescue services. It **might,** therefore, **be** necessary to lay down requirements **for the clear and speedy identification of such vehicles** to inform those services of the fuel stored on board the vehicle**. Whilst the identification should be fit for purpose it should, as far as possible, avoid being of a nature that is likely to concern the public.**	(11) *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*** to inform those services of the fuel stored *on board* the vehicle. ***Whilst the identification should be fit for purpose it should, as far as possible, avoid being of a nature that is likely to concern the public.***
(12) The manufactures should also take appropriate measures to prevent misfuelling of the vehicle.	(12) The manufactures should also take appropriate measures to prevent misfuelling of the vehicle.	(1**3**) The manufactures should also take appropriate measures to prevent misfuelling of the vehicle.	

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	Amendment 9		
	(12a) Hydrogen powered vehicles are unlikely to be successful on the market unless adequate filling station infrastructure is 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.	**(14) Hydrogen-powered vehicles are unlikely to be successful on the market unless adequate filling station infrastructure is 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.**	***12a) Hydrogen powered vehicles are unlikely to be successful on the market unless adequate filling station infrastructure is 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.***
(13) The measures necessary for the implementation of this Regulation should be 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 Commission5. ____ 5 OJ L184, 17.7.1999, p. 23. Decision as amended by Decision 2006/512/EC (OJ L200, 22.7.2006, p.11).	(13) The measures necessary for the implementation of this Regulation should be 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 Commission5. ____ 5 OJ L184, 17.7.1999, p. 23. Decision as amended by Decision 2006/512/EC (OJ L200, 22.7.2006, p.11).	(**15**) The measures necessary for the implementation of this Regulation should be 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[6]. _____ [6] OJ L184, 17.7.1999, p. 23. Decision as amended by Decision 2006/512/EC (OJ L200, 22.7.2006, p.11).	
(14) In particular, power should be conferred on the Commission to introduce requirements and test procedures relating to new forms of hydrogen storage or usage, additional hydrogen components and the propulsion system. Power should also be conferred on the Commission to establish specific procedures, tests and requirements with regard to the impact protection of	(14) In particular, power should be conferred on the Commission to introduce requirements and test procedures relating to new forms of hydrogen storage or usage, additional hydrogen components and the propulsion system. Power should also be conferred on the Commission to establish specific procedures, tests and requirements with regard to the impact protection of	**[ ]**	[recital 14 moved to recital 3a (Council recital 4)]

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hydrogen vehicles and integrated system safety requirements. Since those measures are of general scope and are designed to amend non-essential elements of this Regulation and to supplement this Regulation by the addition of 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.	hydrogen vehicles and integrated system safety requirements. Since those measures are of general scope and are designed to amend non-essential elements of this Regulation and to supplement this Regulation by the addition of 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.		
	Amendment 10		
	(14b) Innovative small vehicles, designated under EC type-approval legislation as L category vehicles, are considered as early adopters of hydrogen as a fuel. This is because introducing hydrogen for these vehicles requires less effort, as the technical challenge and level of investment required is not as high as with cars. The Commission should, no later than 1 January 2010, evaluate the possibility of regulating the type-approval of hydrogen L category vehicles.		***(14b) Innovative small vehicles, designated under EC type-approval legislation as L category vehicles, are considered as early adopters of hydrogen as a fuel. This is because introducing hydrogen for these vehicles requires less effort, as the technical challenge and level of investment required is not as high as with cars. The Commission should, no later than 1 January 2010, evaluate the possibility of regulating the type-approval of hydrogen L category vehicles.***
(15) The objectives of this Regulation, namely the realisation of the internal market through the introduction of common technical requirements concerning motor vehicles using hydrogen, cannot be sufficiently achieved by the Member States. Due to the scale of the action required the objectives can be better achieved at Community level. Therefore,	(15) The objectives of this Regulation, namely the realisation of the internal market through the introduction of common technical requirements concerning motor vehicles using hydrogen, cannot be sufficiently achieved by the Member States. Due to the scale of the action required the objectives can be better achieved at Community level. Therefore,	(16) The objectives of this Regulation, namely the realisation of the internal market through the introduction of common technical requirements concerning motor vehicles using hydrogen, cannot be sufficiently achieved by the Member States. Due to the scale of the action required the objectives can be better achieved at Community level. Therefore,	

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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 that Article, this Regulation does not go beyond what is necessary for that purpose,	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 that Article, this Regulation does not go beyond what is necessary for that purpose,	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 that Article, this Regulation does not go beyond what is necessary for that purpose,	
HAVE ADOPTED THIS REGULATION:		HAVE ADOPTED THIS REGULATION:	
Article 1 ***Subject matter***		*Article 1* ***Subject matter***	
This Regulation establishes the requirements for the type approval of 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.	This Regulation establishes the requirements for the type approval of 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.	This Regulation establishes the requirements for the type approval of 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***	***Article 2*** ***Scope***	*Article 2* ***Scope***	
This Regulation applies to: (1) hydrogen powered vehicles of categories M and N, including impact protection and electric safety of such vehicles;	This Regulation applies to: (1) hydrogen powered vehicles of categories M and N, including impact protection and electric safety of such vehicles;	This Regulation applies to: (1) hydrogen powered vehicles of categories M and N, including impact protection and electric safety of such vehicles;	
(2) hydrogen components designed for motor vehicles of categories M and N, listed in Annex I;	(2) hydrogen components designed for motor vehicles of categories M and N, listed in Annex I;	(2) hydrogen components designed for motor vehicles of categories M and N, listed in Annex I;	

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(3) hydrogen systems designed for motor vehicles of categories M and N, including new forms of hydrogen storage or usage.	(3) hydrogen systems designed for motor vehicles of categories M and N, including new forms of hydrogen storage or usage.	(3) hydrogen systems designed for motor vehicles of categories M and N, including new forms of hydrogen storage or usage.	
Article 3 *Definitions*	*Article 3* *Definitions*	*Article 3* ***Definitions***	
For the purposes of this Regulation, the following definitions shall apply:	For the purposes of this Regulation, the following definitions shall apply:	For the purposes of this Regulation, the following definitions shall apply:	
	Amendment 11		
(1) "hydrogen powered vehicle" means any motor vehicle that uses pure hydrogen or a mixture of hydrogen and natural gas as fuel to propel the vehicle;	(1) "hydrogen powered vehicle" means any motor vehicle that uses hydrogen as fuel to propel the vehicle;	(1) "hydrogen powered vehicle" means any motor vehicle that uses **[ ]** hydrogen **[ ] as fuel to propel the vehicle;**	(1) "hydrogen powered vehicle" means any motor vehicle that uses hydrogen as fuel to propel the vehicle;
(2) "propulsion system" means the internal combustion engine or fuel cell system used to propel the vehicle;	(2) "propulsion system" means the internal combustion engine or fuel cell system used to propel the vehicle;	(2) "propulsion system" means the internal combustion engine or fuel cell system used to propel the vehicle;	
(3) "hydrogen component" means the hydrogen container and all other parts of the vehicle that are in direct contact with hydrogen or which form part of a system installed because of the use of hydrogen;	(3) "hydrogen component" means the hydrogen container and all other parts of the vehicle that are in direct contact with hydrogen or which form part of a system installed because of the use of hydrogen;	(3) "hydrogen component" means the hydrogen container and all other parts of the vehicle that are in direct contact with hydrogen or which form part of a system installed because of the use of hydrogen;	
(4) "hydrogen system" means an assembly of hydrogen components and connecting parts fitted on hydrogen powered vehicles, excluding the propulsion systems or auxiliary power units;	(4) "hydrogen system" means an assembly of hydrogen components and connecting parts fitted on hydrogen powered vehicles, excluding the propulsion systems or auxiliary power units;	(4) "hydrogen system" means an assembly of hydrogen components and connecting parts fitted on hydrogen powered vehicles, excluding the propulsion systems or auxiliary power units;	

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(5) "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;	(5) "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;	(5) "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;	
(6) "Nominal Working Pressure" (NWP) means, in case of containers, the settled pressure at a uniform temperature of 288K (15°C) for a full container, or in case of other components, the pressure level at which a component typically operates;	(6) "Nominal Working Pressure" (NWP) means, in case of containers, the settled pressure at a uniform temperature of 288K (15°C) for a full container, or in case of other components, the pressure level at which a component typically operates;	(6) "Nominal Working Pressure" (NWP) means, in case of containers, the settled pressure at a uniform temperature of 288K (15°C) for a full container, or in case of other components, the pressure level at which a component typically operates;	
(7) "inner tank" means the part of the container designed to use liquid hydrogen that contains the cryogenic hydrogen.	(7) "inner tank" means the part of the container designed to use liquid hydrogen that contains the cryogenic hydrogen.	(7) "inner tank" means the part of the container designed to use liquid hydrogen that contains the cryogenic hydrogen.	
For the purposes of point 4, the following shall be considered as hydrogen systems:	For the purposes of point 4, the following shall be considered as hydrogen systems:	For the purposes of point 4, the following shall be considered as hydrogen systems:	
(a) usage monitoring and control system; (b) vehicle interface system; (c) excess flow system; (d) overpressure protection system; (e) heat exchanger failure detection system.	(a) usage monitoring and control system; (b) vehicle interface system; (c) excess flow system; (d) overpressure protection system; (e) heat exchanger failure detection system.	(a) usage monitoring and control system; (b) vehicle interface system; (c) excess flow system; (d) overpressure protection system; (e) heat exchanger failure detection system.	

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Article 4 ***Obligations of the Manufacturers***	*Article 4* ***Obligations of the Manufacturers***	*Article 4* ***Obligations of the Manufacturers***	
	Amendment 12		
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.	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***.	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**.	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***.
	Amendment 13		
2. For the purposes of the vehicle type approval, the manufacturers shall equip the hydrogen powered vehicles with hydrogen components and systems that are tested and installed in accordance with this Regulation.	2. For the purposes of the vehicle type approval, the manufacturers shall equip the hydrogen powered vehicles with hydrogen components and systems that are tested and installed in accordance with this Regulation ***and its implementing measures***.	2. For the purposes of the vehicle type approval, the manufacturers shall equip the hydrogen powered vehicles with hydrogen components and systems that **[ ] comply with the requirements set out in this regulation and its implementing measures** and **are** installed in accordance with this Regulation **and its implementing measures**.	2. For the purposes of the vehicle type approval, the manufacturers shall equip the hydrogen powered vehicles with hydrogen components and systems that ***comply with the requirements set out in this regulation and its implementing measures*** and ***are*** installed in accordance with this Regulation ***and its implementing measures.***
	Amendment 14		
3. For the purposes of the type approval of components and systems, the manufacturers shall ensure that hydrogen components and systems are tested in accordance with this Regulation.	3. For the purposes of the type approval of components and systems, the manufacturers shall ensure that hydrogen components and systems are tested in accordance with this Regulation ***and its implementing measures***.	3. For the purposes of the type approval of components and systems, the manufacturers shall ensure that hydrogen components and systems **comply with the requirements set out [ ]** in **[ ]** this Regulation **and its implementing**	3. For the purposes of the type approval of components and systems, the manufacturers shall ensure that hydrogen components and systems ***comply with the requirements set out*** in this Regulation *and its implementing measures.*

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		measures.	
4. Manufacturers shall provide to the approval authorities appropriate information about the vehicle specifications and test conditions.	4. Manufacturers shall provide to the approval authorities appropriate information about the vehicle specifications and test conditions.	4. Manufacturers shall provide to the approval authorities appropriate information about the vehicle specifications and test conditions.	
	Amendment 15		
5. Manufacturers shall provide information for ***periodic*** inspection of the hydrogen systems and components during the service life of the vehicle.	5. Manufacturers shall provide information for inspection of the hydrogen systems and components during the service life of the vehicle.	5. Manufacturers shall provide information for **[ ]** inspection of the hydrogen systems and components during the service life of the vehicle.	5. Manufacturers shall provide information for inspection of the hydrogen systems and components during the service life of the vehicle.
Article 5 ***General requirements for hydrogen components and systems***	*Article 5* ***General requirements for hydrogen components and systems***	*Article 5* ***General requirements for hydrogen components and systems***	
The manufacturers shall ensure that:	The manufacturers shall ensure that:	The manufacturers shall ensure that:	
(a) the hydrogen components and systems function in a correct and safe way and they reliably withstand the electrical, mechanical, thermal and chemical operating conditions without leaking or visibly deforming;	(a) the hydrogen components and systems function in a correct and safe way and they reliably withstand the electrical, mechanical, thermal and chemical operating conditions without leaking or visibly deforming;	(a) the hydrogen components and systems function in a correct and safe way and they reliably withstand the electrical, mechanical, thermal and chemical operating conditions without leaking or visibly deforming;	
(b) the hydrogen system is protected against over-pressurisation;	(b) the hydrogen system is protected against over-pressurisation;	(b) the hydrogen system is protected against over-pressurisation;	
(c) materials of those parts of the hydrogen components and systems, which are to be in direct contact with hydrogen are compatible with hydrogen;	(c) materials of those parts of the hydrogen components and systems, which are to be in direct contact with hydrogen are compatible with hydrogen;	(c) materials of those parts of the hydrogen components and systems, which are to be in direct contact with hydrogen are compatible with hydrogen;	

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	Amendment 16		
(d) hydrogen components and systems withstand expected temperatures and pressures during their lifetime;	(d) hydrogen components and systems withstand expected temperatures and pressures during their ***expected*** lifetime;	(d) hydrogen components and systems withstand expected temperatures and pressures during their **expected** lifetime;	(d) hydrogen components and systems withstand expected temperatures and pressures during their ***expected*** lifetime;
(e) hydrogen components and systems reliably withstand a range of operating temperatures laid down in the implementing measures;	(e) hydrogen components and systems reliably withstand a range of operating temperatures laid down in the implementing measures;	(e) hydrogen components and systems reliably withstand a range of operating temperatures laid down in the implementing measures;	
(f) hydrogen components are marked in accordance with the implementing measures;	(f) hydrogen components are marked in accordance with the implementing measures;	(f) hydrogen components are marked in accordance with the implementing measures;	
(g) all hydrogen components with directional flow have the flow direction clearly indicated.	(g) all hydrogen components with directional flow have the flow direction clearly indicated.	(g) all hydrogen components with directional flow have the flow direction clearly indicated.	
		(h) all hydrogen components and systems are designed in a way that they can be installed in accordance with the requirements set out in Annex VI.	***(ga) all hydrogen components and systems are designed in a way that they can be installed in accordance with the requirements set out in Annex VI.***
Article 6 ***Requirements for hydrogen containers designed to use liquid hydrogen***	*Article 6* ***Requirements for hydrogen containers designed to use liquid hydrogen***	*Article 6* ***Requirements for hydrogen containers designed to use liquid hydrogen***	
The hydrogen containers designed to use liquid hydrogen shall be tested in accordance with the test procedures set out in Annex II.	The hydrogen containers designed to use liquid hydrogen shall be tested in accordance with the test procedures set out in Annex II.	The hydrogen containers designed to use liquid hydrogen shall be tested in accordance with the test procedures set out in Annex II.	

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Article 7 ***Requirements for hydrogen components other than containers designed to use liquid hydrogen***	***Article 7*** ***Requirements for hydrogen components other than containers designed to use liquid hydrogen***	*Article 7* ***Requirements for hydrogen components other than containers designed to use liquid hydrogen***	
1. The hydrogen components other than containers designed to use liquid hydrogen shall be tested in accordance with the test procedures set out in Annex III with regard to their type.	1. The hydrogen components other than containers designed to use liquid hydrogen shall be tested in accordance with the test procedures set out in Annex III with regard to their type.	1. The hydrogen components other than containers designed to use liquid hydrogen shall be tested in accordance with the test procedures set out in Annex III with regard to their type.	
2. The pressure relief devices shall be designed in a way that ensures that the pressure in the inner tank or in other hydrogen components does not exceed a permissible value. The values shall be set in proportion to the Maximum Allowable Working Pressure (MAWP) of the hydrogen system. A safety system for heat exchangers shall be provided to detect their failure	2. The pressure relief devices shall be designed in a way that ensures that the pressure in the inner tank or in other hydrogen components does not exceed a permissible value. The values shall be set in proportion to the Maximum Allowable Working Pressure (MAWP) of the hydrogen system. A safety system for heat exchangers shall be provided to detect their failure	2. The pressure relief devices shall be designed in a way that ensures that the pressure in the inner tank or in other hydrogen components does not exceed a permissible value. The values shall be set in proportion to the Maximum Allowable Working Pressure (MAWP) of the hydrogen system. A safety system for heat exchangers shall be provided to detect their failure.	
Article 8 ***Requirements for hydrogen containers designed to use compressed (gaseous) hydrogen***	*Article 8* ***Requirements for hydrogen containers designed to use compressed (gaseous) hydrogen***	*Article 8* ***Requirements for hydrogen containers designed to use compressed (gaseous) hydrogen***	
1. The hydrogen containers designed for the use of compressed (gaseous) hydrogen shall be classified pursuant to point 1 of Annex IV.	1. The hydrogen containers designed for the use of compressed (gaseous) hydrogen shall be classified pursuant to point 1 of Annex IV.	1. The hydrogen containers designed for the use of compressed (gaseous) hydrogen shall be classified pursuant to point 1 of Annex IV.	
2. The containers referred to in paragraph 1 shall be tested in accordance with the test procedures set out in Annex	2. The containers referred to in paragraph 1 shall be tested in accordance with the test procedures set out in Annex	2. The containers referred to in paragraph 1 shall be tested in accordance with the test procedures set out in Annex	

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IV with regard to their type.	IV with regard to their type.	IV with regard to their type.	
	Amendment 17		
3. A detailed description of all principal material properties and tolerances used in the container design shall be provided, including the results of the tests to which the material has been submitted.	3. A detailed description of all principal material properties and tolerances used in the container design shall be provided, including the results of the tests to which the material has been ***subjected***.	3. A detailed description of all principal material properties and tolerances used in the container design shall be provided, including the results of the tests to which the material has been **[ ] subjected**.	3. A detailed description of all principal material properties and tolerances used in the container design shall be provided, including the results of the tests to which the material has been ***subjected***.
	Amendment 18		
4. The use of the mixture of gaseous hydrogen and natural gas as fuel is allowed.	***deleted***	**[ ]**	***deleted***
Article 9 ***Requirements for hydrogen components other than containers designed to use compressed (gaseous) hydrogen***	*Article 9* ***Requirements for hydrogen components other than containers designed to use compressed (gaseous) hydrogen***	*Article 9* ***Requirements for hydrogen components other than containers designed to use compressed (gaseous) hydrogen***	
1. The hydrogen components other than containers designed to use compressed (gaseous) hydrogen shall be tested in accordance with the test procedures set out in Annex V with regard to their type.	1. The hydrogen components other than containers designed to use compressed (gaseous) hydrogen shall be tested in accordance with the test procedures set out in Annex V with regard to their type.	1. The hydrogen components other than containers designed to use compressed (gaseous) hydrogen shall be tested in accordance with the test procedures set out in Annex V with regard to their type.	
	Amendment 19		
2. The use of the mixture of gaseous hydrogen and natural gas as fuel is allowed.	***deleted***	**[ ]**	***Deleted***

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Article 10 ***General requirements for the installation of hydrogen components and systems***	*Article 10* ***General requirements for the installation of hydrogen components and systems***	*Article 10* ***General requirements for the installation of hydrogen components and systems***	
The hydrogen components and systems shall be installed in accordance with the requirements laid down in Annex VI.	The hydrogen components and systems shall be installed in accordance with the requirements laid down in Annex VI.	The hydrogen components and systems shall be installed in accordance with the requirements laid down in Annex VI.	
Article 11 ***Timetable for application***	*Article 11* ***Timetable for application***	*Article 11* ***Timetable for application***	
	Amendment 20		
1. With effect from the date set out in the second paragraph of Article 15, the national authorities shall refuse, to grant EC type-approval or national type-approval in respect of new types of vehicles on grounds relating to hydrogen propulsion or, to grant EC component type-approval ***or national type-approval*** in respect of new types of hydrogen components or systems, which do not comply with the requirements set out in this Regulation.	1. With effect from the date set out in the second paragraph of Article 15, the national authorities shall refuse, to grant EC type-approval or national type-approval in respect of new types of vehicles on grounds relating to hydrogen propulsion or, to grant EC component type-approval or national type-approval in respect of new types of hydrogen components or systems, which do not comply with the requirements set out in this Regulation ***and its implementing measures***.	1. With effect from the date set out in the second paragraph of Article 15, the national authorities shall refuse, to grant EC type-approval or national type-approval in respect of new types of vehicles on grounds relating to hydrogen propulsion or, to grant EC component type-approval **[ ]** in respect of new types of hydrogen components or systems, which do not comply with the requirements set out in this Regulation **and its implementing measures**.	1. With effect from the date set out in the second paragraph of Article 15, the national authorities shall refuse, to grant EC type-approval or national type-approval in respect of new types of vehicles on grounds relating to hydrogen propulsion or, to grant EC component type-approval in respect of new types of hydrogen components or systems, which do not comply with the requirements set out in this Regulation ***and its implementing measures***.
	Amendment 21		
2. With effect from [date, 36 months from the date of entry into force] national authorities shall, on grounds relating to hydrogen propulsion in the case of new vehicles which do not comply with the requirements set out in this Regulation,	2. With effect from [date, 36 months from the date of entry into force] national authorities shall, on grounds relating to hydrogen propulsion in the case of new vehicles which do not comply with the requirements set out in this Regulation ***and***	2. With effect from [date, 36 months from the date of entry into force] national authorities shall, on grounds relating to hydrogen propulsion in the case of new vehicles which do not comply with the requirements set out in this Regulation **and**	2. With effect from [date, 36 months from the date of entry into force] national authorities shall, on grounds relating to hydrogen propulsion in the case of new vehicles which do not comply with the

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consider the certificates of conformity to be no longer valid for the purposes of Article 26 of Directive […/…/EC] and shall prohibit the registration, sale and entry into service of such vehicles, and, in the case of new hydrogen components or systems which do not comply with the requirements set out in this Regulation, shall prohibit their sale and entry into service.	***its implementing measures***, consider the certificates of conformity to be no longer valid for the purposes of Article 26 of Directive […/…/EC] and shall prohibit the registration, sale and entry into service of such vehicles, and, in the case of new hydrogen components or systems which do not comply with the requirements set out in this Regulation ***and its implementing measures***, shall prohibit their sale and entry into service.	**its implementing measures**, consider the certificates of conformity to be no longer valid for the purposes of Article 26 of **Directive 2007/46/EC** and shall prohibit the registration, sale and entry into service of such vehicles, and, in the case of new hydrogen components or systems which do not comply with the requirements set out in this Regulation **and its implementing measures**, shall prohibit their sale and entry into service.	requirements set out in this Regulation ***and its implementing measures***, consider the certificates of conformity to be no longer valid for the purposes of Article 26 of Directive ***2007/46/EC*** and shall prohibit the registration, sale and entry into service of such vehicles, and, in the case of new hydrogen components or systems which do not comply with the requirements set out in this Regulation ***and its implementing measures***, shall prohibit their sale and entry into service
	Amendment 22		
3. Without prejudice to paragraphs 1 and 2 of this Article, and subject to the entry into force of the implementing measures adopted pursuant to Article 12(1), if a manufacturer so requests, national authorities may not, on grounds relating to hydrogen propulsion refuse to grant EC type-approval, or national type approval for a new type of vehicle or a new type of hydrogen component or system, or prohibit the registration, sale or entry into service of a new vehicle or prohibit the sale or entry into service of a new hydrogen component or system, where the vehicle, component or system concerned complies with the requirements set out in this Regulation.	3. Without prejudice to paragraphs 1 and 2 of this Article, and subject to the entry into force of the implementing measures adopted pursuant to Article 12(1), if a manufacturer so requests, national authorities may not, on grounds relating to hydrogen propulsion, refuse to grant EC type-approval, or national *type-approval,* for a new type of vehicle, or ***EC type-approval for*** a new type of hydrogen component or system, or prohibit the registration, sale or entry into service of a new vehicle or prohibit the sale or entry into service of a new hydrogen component or system, where the vehicle, component or system concerned complies with the requirements set out in this Regulation ***and its implementing measures***.	3. Without prejudice to paragraphs 1 and 2 of this Article, and subject to the entry into force of the implementing measures adopted pursuant to Article 12(1), if a manufacturer so requests, national authorities may not, on grounds relating to hydrogen propulsion refuse to grant EC type-approval, or national type approval for a new type of vehicle or **EC type-approval for** a new type of hydrogen component or system, or prohibit the registration, sale or entry into service of a new vehicle or prohibit the sale or entry into service of a new hydrogen component or system, where the vehicle, component or system concerned complies with the requirements set out in this Regulation **and its implementing measures**.	3. Without prejudice to paragraphs 1 and 2 of this Article, and subject to the entry into force of the implementing measures adopted pursuant to Article 12(1), if a manufacturer so requests, national authorities may not, on grounds relating to hydrogen propulsion, refuse to grant EC type-approval, or national *type-approval,* for a new type of vehicle, or ***EC type-approval for*** a new type of hydrogen component or system, or prohibit the registration, sale or entry into service of a new vehicle or prohibit the sale or entry into service of a new hydrogen component or system, where the vehicle, component or system concerned complies with the requirements set out in this Regulation ***and its implementing measures***.

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Article 12 ***Implementing measures***	***Article 12*** ***Implementing measures***	*Article 12* ***Implementing measures***	
	Amendment 23		
1. The Commission shall, in accordance with the procedure referred to in Article 39(9) of Directive [2007/…/EC], adopt the following implementing measures: (a) the administrative provisions for the EC type-approval of vehicles with regard to the hydrogen propulsion, and of hydrogen components and systems; (b) the information to be provided by manufacturers for the purposes of type-approval and **periodic** inspection referred to in Article 4(4) and (5); (c) the detailed rules for the test procedures set out in Annexes II to V; (d) the detailed rules for hydrogen components and systems set out in Annex VI; (e) the requirements for the safe and reliable functioning of hydrogen components and systems as set out in Article 5.	1. The Commission shall adopt the following implementing measures: (a) the administrative provisions for the EC type-approval of vehicles with regard to the hydrogen propulsion, and of hydrogen components and systems; (b) the information to be provided by manufacturers for the purposes of type-approval and periodic inspection referred to in Article 4(4) and (5); (c) the detailed rules for the test procedures set out in Annexes II to V; (d) the detailed rules for hydrogen components and systems set out in Annex VI, ***particularly the clear and speedy identification of vehicles for rescue services in accordance with point 15 of that Annex***; (e) the requirements for the safe and reliable functioning of hydrogen components and systems as set out in Article 5.	1. The Commission shall **[]** adopt the following implementing measures: (a) the administrative provisions for the EC type-approval of vehicles with regard to the hydrogen propulsion, and of hydrogen components and systems; (b) the information to be provided by manufacturers for the purposes of type-approval and **[ ]** inspection referred to in Article 4(4) and (5); (c) the detailed rules for the test procedures set out in Annexes II to V; (d) the detailed rules for hydrogen components and systems set out in Annex VI; (e) the requirements for the safe and reliable functioning of hydrogen components and systems as set out in Article 5.	1. The Commission shall adopt the following implementing measures: (a) the administrative provisions for the EC type-approval of vehicles with regard to the hydrogen propulsion, and of hydrogen components and systems; (b) the information to be provided by manufacturers for the purposes of type-approval and inspection referred to in Article 4(4) and (5); (c) the detailed rules for the test procedures set out in Annexes II to V; (d) the detailed rules for hydrogen components and systems set out in Annex VI; (e) the requirements for the safe and reliable functioning of hydrogen components and systems as set out in Article 5; ***(ea) the detailed rules for labelling or other means of clear and rapid identification of the vehicle as set out in Annex VI point 15***

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	These measures, designed to amend non-essential elements of this Regulation by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 40(2) of Directive 2007/46/EC.	**Those measures, designed to amend non-essential elements of this Regulation, by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 40(2) of Directive 2007/46/EC**	***Those measures, designed to amend non-essential elements of this Regulation by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 40(2) of Directive 2007/46/EC.***
	Amendment 24		
2. The Commission may, in accordance with the procedure referred to in Article 39(9) of Directive [2007/…/EC], adopt the following implementing measures:	2. The Commission may adopt the following implementing measures:	2. The Commission may **[ ]** adopt the following implementing measures.	2. The Commission may adopt the following implementing measures.
(a) specific technical requirements for the application of Article 8(4) and Article 9(2);	(a) specific technical requirements for the application of Article 8(4) and Article 9(2);	(a) **[ ]**	(a) **(deleted)**
(b) specification for the requirements relating to any of the following:	(b) specification for the requirements relating to any of the following:	(b) specification for the requirements relating to any of the following:	(b) specification for the requirements relating to any of the following:
	– use of pure hydrogen or a mixture of hydrogen and natural gas/biomethane;	**- use of pure hydrogen or mixture of hydrogen and natural gas/ biomethane;**	***- use of pure hydrogen or a mixture of hydrogen and natural gas/ biomethane;***
- new forms of hydrogen storage or usage;	- new forms of hydrogen storage or usage;	- new forms of hydrogen storage or usage;	- new forms of hydrogen storage or usage;
- impact protection of the vehicle;	- impact protection of the vehicle ***with regard to the integrity of hydrogen components and systems;***	- impact protection of the vehicle **with regard to the integrity of hydrogen components and systems**;	- impact protection of the vehicle ***with regard to the integrity of hydrogen components and systems;***
- integrated system safety requirements, covering at least detection of leakage and the requirements relating to purge gas;	- integrated system safety requirements, covering at least detection of leakage and the requirements relating to purge gas;	- integrated system safety requirements, covering at least detection of leakage and the requirements relating to purge gas;	- integrated system safety requirements, covering at least detection of leakage and the requirements relating to purge gas;
- electrical isolation and electric safety;			

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	- electrical isolation and electric safety;	- electrical isolation and electric safety; **- labelling or other means of identification of the vehicle**	- electrical isolation and electric safety; (c) other measures necessary for the application of this Regulation.
(c) other measures necessary for the application of this Regulation.	(c) other measures necessary for the application of this Regulation.	(c) other measures necessary for the application of this Regulation.	
	These measures, designed to amend non-essential elements of this Regulation by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 40(2) of Directive 2007/46/EC.	**Those measures, designed to amend non-essential elements of this regulation, || by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 40(2) of Directive 2007/46/EC.**	***Those measures, designed to amend non-essential elements of this Regulation by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 40(2) of Directive 2007/46/EC.***
Article 13 ***Amendments to Directive 2007/46/EC***	*Article 13* ***Amendments to Directive 2007/46/EC***	*Article 13* ***Amendments to Directive 2007/46/EC***	
Annexes IV, VI and XI to Directive 2007/46/EC are amended in accordance with Annex VII to this Regulation.	Annexes IV, VI and XI to Directive 2007/46/EC are amended in accordance with Annex VII to this Regulation.	Annexes IV, VI and XI to Directive 2007/46/EC are amended in accordance with Annex VII to this Regulation.	
Article 14 ***Sanctions for non-compliance***	*Article 14* ***Sanctions for non-compliance***	*Article 14* ***Sanctions for non-compliance***	
	Amendment 25		
1. Member States shall lay down the provisions on penalties applicable for infringement by manufacturers of the provisions of the present Regulation and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective,	1. Member States shall lay down the provisions on penalties applicable for infringement by manufacturers of the provisions of *this* Regulation ***and its implementing measures*** and shall take all measures necessary to ensure that they are implemented. The penalties provided for	1. Member States shall lay down the provisions on penalties applicable for infringement by manufacturers of the provisions of the present Regulation **and its implementing measures** and shall take all measures necessary to ensure that they are implemented. The penalties provided	1. Member States shall lay down the provisions on penalties applicable for infringement by manufacturers of the provisions of *this* Regulation ***and its implementing measures*** and shall take all measures necessary to ensure that they are implemented. The penalties provided for

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proportionate and dissuasive. Member States shall notify those provisions to the Commission no later than [date, eighteen months after entry into force of this Regulation] and shall notify it without delay of any subsequent amendment affecting them.	must be effective, proportionate and dissuasive. Member States shall notify those provisions to the Commission no later than [date, eighteen months after *the date of* entry into force of this Regulation] and shall notify it without delay of any subsequent amendment affecting them.	for must be effective, proportionate and dissuasive. Member States shall notify those provisions to the Commission no later than [*date, eighteen months after entry into force of this Regulation*] and shall notify it without delay of any subsequent amendment affecting them.	must be effective, proportionate and dissuasive. Member States shall notify those provisions to the Commission no later than [date, eighteen months after *the date of* entry into force of this Regulation] and shall notify it without delay of any subsequent amendment affecting them.
2. The types of infringements which are subject to a penalty shall include: (a) making false declarations during the approval procedures or procedures leading to a recall; (b) falsifying test results for type approval or in-use compliance; (c) withholding data or technical specifications which could lead to recall or withdrawal of type approval; (d) refusal to provide access to information; (e) use of defeat devices.	2. The types of infringements which are subject to a penalty shall include: (a) making false declarations during the approval procedures or procedures leading to a recall; (b) falsifying test results for type approval or in-use compliance; (c) withholding data or technical specifications which could lead to recall or withdrawal of type approval; (d) refusal to provide access to information; (e) use of defeat devices.	2. The types of infringements which are subject to a penalty shall include: (a) making false declarations during the approval procedures or procedures leading to a recall; (b) falsifying test results for type approval or in-use compliance; (c) withholding data or technical specifications which could lead to recall or withdrawal of type approval; (d) refusal to provide access to information; (e) use of defeat devices.	
Article 15 ***Entry into force***	*Article 15* ***Entry into force***	*Article 15* ***Entry into force***	
This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.	This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.	This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.	This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

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It shall apply from [DATE - 24 months after entry into force], with the exception of Article 11(3) which shall apply from the date of entry into force. This Regulation shall be binding in its entirety and directly applicable in all Member States.	It shall apply from [DATE - 24 months after entry into force], with the exception of Article 11(3) which shall apply from the date of entry into force. This Regulation shall be binding in its entirety and directly applicable in all Member States.	It shall apply from *[DATE - 24 months after entry into force],* with the exception of Article 11(3) **and 12** which shall apply from the date of entry into force. This Regulation shall be binding in its entirety and directly applicable in all Member States.	It shall apply from *[DATE - 24 months after entry into force],* with the exception of Article 11(3) ***and 12*** which shall apply from the date of entry into force. This Regulation shall be binding in its entirety and directly applicable in all Member States.
Done at Brussels, […] For the European Parliament tThe President […] For the Council The President […]	Done at Brussels, […] For the European Parliament tThe President […] For the Council The President […]	Done at Brussels, […] For the European Parliament The President […] For the Council The President […]	
ANNEX I **List of components subject to type approval**		**ANNEX I** **List of components subject to type approval**	
	Amendment 26		
The following hydrogen components are subject to type-approval:	***Where fitted,*** the following hydrogen components are subject to type-approval:	**If fitted**, the following hydrogen components are subject to type-approval:	***If fitted,*** the following hydrogen components are subject to type-approval:

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	Amendment 27		
(a) components designed to use liquid hydrogen: (1) container; (2) automatic valve (if first automatic valve downstream of the container or if a safety device); (3) check valve or non-return valve (if safety device); (4) flexible fuel line (if upstream of first automatic shut off valve or other safety devices); (5) heat exchanger (if upstream of first automatic shut off valve); (6) manual valve (if first manual valve downstream of the container or if a safety device); (7) pressure regulator (if upstream of first automatic shut off valve); (8) pressure relief valve; (9) pressure, temperature and flow sensor (if safety device); (10) refuelling connection or receptacle.	(a) components designed to use liquid hydrogen: (1) container; (2) automatic valve (if first automatic valve downstream of the container or if a safety device); (3) check valve or non-return valve (if safety device); (4) flexible fuel line (if upstream of first automatic shut off valve or other safety devices); (5) heat exchanger (if upstream of first automatic shut off valve); (6) manual valve (if first manual valve downstream of the container or if a safety device); (7) pressure regulator (if upstream of first automatic shut off valve); (8) pressure relief valve; (9) pressure, temperature and flow sensor (if safety device); (10) refuelling connection or receptacle.	(a) components designed to use liquid hydrogen: (1) container; (2) automatic **shut-off** valve **[]**; (3) check valve or non-return valve (if safety device); (4) flexible fuel line (if upstream of first automatic shut off valve or other safety devices); (5) **heat exchanger;** (6) manual **or automatic** valve **[]**; (7) **pressure regulator;** (8) pressure relief valve; (9) pressure, temperature and flow sensor (if safety device);	(a) components designed to use liquid hydrogen: (1) container; (2) automatic ***shut-off*** valve; (3) check valve or non-return valve (if safety device); (4) flexible fuel line (if upstream of first automatic shut off valve or other safety devices); (5) heat exchanger; (6) manual ***or automatic*** valve; (7) pressure regulator***;*** (8) pressure relief valve; (9) pressure, temperature and flow sensor (if safety device); (10) refuelling connection or receptacle; ***10(a) hydrogen leakage detection sensors.***

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	10(a) hydrogen leakage detection sensors.	(10) refuelling connection or receptacle.	
	Amendment 28		
(b) components designed to use compressed (gaseous) hydrogen: (1) container; (2) automatic valve; (3) container assembly (4) fittings; (5) flexible fuel line; (6) heat exchanger; (7) hydrogen filter; (8) manual valve; (9) non-return valve; (10) pressure regulator; (11) pressure relief device; (12) pressure relief valve;	(b) components designed to use compressed (gaseous) hydrogen ***at a nominal working pressure greater than 3,0 MPa:*** (1) container; (2) automatic valve; (3) container assembly (4) fittings; (5) flexible fuel line; (6) heat exchanger; (7) hydrogen filter; (8) manual valve; (9) non-return valve; (10) pressure regulator; (11) pressure relief device; (12) pressure relief valve;	(b) components designed to use compressed (gaseous) hydrogen **with a nominal system pressure of over 3.0 MPa**: (1) container; (2) automatic **shut-off** valve; (3) container assembly; (4) fittings; (5) flexible fuel line; (6) heat exchanger; (7) hydrogen filter; (8) manual **or automatic** valve; (9) non-return valve; (10) pressure regulator; (11) pressure relief device; (12) pressure relief valve;	(b) components designed to use compressed (gaseous) hydrogen ***with a nominal working pressure of over 3.0 MPa***: (1) container; (2) automatic ***shut-off*** valve; (3) container assembly; (4) fittings; (5) flexible fuel line; (6) heat exchanger; (7) hydrogen filter; (8) manual ***or automatic*** valve; (9) non-return valve; (10) pressure regulator; (11) pressure relief device;

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(13) receptacle; (14) removable storage system connector; (15) sensors (pressure or temperature or hydrogen or flow sensors) if used as a safety device.	(13) receptacle; (14) removable storage system connector; (15) sensors (pressure or temperature or hydrogen or flow sensors) if used as a safety device. ***(15a) hydrogen leakage detection sensors.***	(13) **refuelling connection or** receptacle; (14) removable storage system connector; (15) sensors (pressure or temperature or hydrogen or flow sensors) if used as a safety device; **(16) hydrogen leakage detection sensors.**	(12) pressure relief valve; (13) ***refuelling connection or*** receptacle; (14) removable storage system connector; (15) sensors (pressure or temperature or hydrogen or flow sensors) if used as a safety device; ***(15a) hydrogen leakage detection sensors.***
ANNEX II **Applicable test procedures for hydrogen containers designed for the use of liquid hydrogen**		**ANNEX II** **Applicable test procedures for hydrogen containers designed for the use of liquid hydrogen**	
[Table to be inserted, if relevant for amendments]			
The test procedures to be applied for the type-approval of hydrogen containers shall include:	The test procedures to be applied for the type-approval of hydrogen containers shall include:	The test procedures to be applied for the type-approval of hydrogen containers shall include:	

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(a) Burst test: The purpose of the test is to provide evidence that the hydrogen container does not fail before a specified level of high pressure, the burst pressure (safety factor multiplied by the MAWP) is exceeded. In order to obtain type-approval, the value of the real burst pressure in the test must exceed the required minimum burst pressure.	(a) Burst test: The purpose of the test is to provide evidence that the hydrogen container does not fail before a specified level of high pressure, the burst pressure (safety factor multiplied by the MAWP) is exceeded. In order to obtain type-approval, the value of the real burst pressure in the test must exceed the required minimum burst pressure.	(a) Burst test: The purpose of the test is to provide evidence that the hydrogen container does not fail before a specified level of high pressure, the burst pressure (safety factor multiplied by the MAWP) is exceeded. In order to obtain type-approval, the value of the real burst pressure in the test must exceed the required minimum burst pressure.	
(b) Bonfire test: The purpose of the test is to provide evidence that the container with its fire protection system does not burst when tested under the specified fire conditions.	(b) Bonfire test: The purpose of the test is to provide evidence that the container with its fire protection system does not burst when tested under the specified fire conditions.	(b) Bonfire test: The purpose of the test is to provide evidence that the container with its fire protection system does not burst when tested under the specified fire conditions.	
	Amendment 30		
(c) Maximum filling level test: The purpose of the test is to provide evidence that the level of hydrogen during the filling procedure never causes the opening of the pressure relief devices.	(c) Maximum filling level test: The purpose of the test is to provide evidence that ***the system that prevents overfilling of the container works properly and that*** the level of hydrogen during the filling procedure never causes the opening of the pressure relief devices.	(c) Maximum filling level test: The purpose of the test is to provide evidence that the **system, which prevents overfilling of the container, works adequately and that the** level of hydrogen during the filling procedure never causes the opening of the pressure relief devices.	(c) Maximum filling level test: The purpose of the test is to provide evidence that the ***system, which prevents overfilling of the container, works adequately and that the*** level of hydrogen during the filling procedure never causes the opening of the pressure relief devices.
(d) Pressure test: The purpose of the test is to provide evidence that the hydrogen container can withstand a specified level of high pressure. In order to prove this, the container shall be pressurized to a given value for a specified time. After the test the container shall not show any signs of visible permanent deformation or visible leaks.	(d) Pressure test: The purpose of the test is to provide evidence that the hydrogen container can withstand a specified level of high pressure. In order to prove this, the container shall be pressurized to a given value for a specified time. After the test the container shall not show any signs of visible permanent deformation or visible leaks.	(d)Pressure test: The purpose of the test is to provide evidence that the hydrogen container can withstand a specified level of high pressure. In order to prove this, the container shall be pressurized to a given value for a specified time. After the test the container shall not show any signs of visible permanent deformation or visible leaks.	

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(e) Leak test: The purpose of the test is to provide evidence that the hydrogen container does not show evidence of leakage under the specified conditions. In order to prove this, the container shall be pressurised to its nominal working pressure. It shall not show any evidence of leakage detected through cracks, pores or other similar defects.	(e) Leak test: The purpose of the test is to provide evidence that the hydrogen container does not show evidence of leakage under the specified conditions. In order to prove this, the container shall be pressurised to its nominal working pressure. It shall not show any evidence of leakage detected through cracks, pores or other similar defects.	**(e)** Leak test: The purpose of the test is to provide evidence that the hydrogen container does not show evidence of leakage under the specified conditions. In order to prove this, the container shall be pressurised to its nominal working pressure. It shall not show any evidence of leakage detected through cracks, pores or other similar defects.	
ANNEX III **Applicable test procedures for hydrogen components other than containers designed for the use of liquid hydrogen**	**ANNEX III** **Applicable test procedures for hydrogen components other than containers designed for the use of liquid hydrogen**	**ANNEX III** **Applicable test procedures for hydrogen components other than containers designed for the use of liquid hydrogen**	
[Table to be inserted, if relevant for amendments]			[In Annex III table, first column, fifth row] Refuelling connections ***or receptacles***
Subject to specific requirements for any of the hydrogen components, the test procedures to be applied for the type-approval of hydrogen components other than containers shall include:	Subject to specific requirements for any of the hydrogen components, the test procedures to be applied for the type-approval of hydrogen components other than containers shall include:	Subject to specific requirements for any of the hydrogen components, the test procedures to be applied for the type-approval of hydrogen components other than containers shall include:	
(a) Pressure test: The purpose of the test is to provide evidence that the hydrogen containing components can withstand a pressure, which is higher than the working pressure of the component. A hydrogen component shall not show any visible evidence of leak, deformation, rupture or cracks when the pressure is	(a) Pressure test: The purpose of the test is to provide evidence that the hydrogen containing components can withstand a pressure, which is higher than the working pressure of the component. A hydrogen component shall not show any visible evidence of leak, deformation, rupture or cracks when the pressure is	(a) Pressure test: The purpose of the test is to provide evidence that the hydrogen containing components can withstand a pressure, which is higher than the working pressure of the component. A hydrogen component shall not show any visible evidence of leak, deformation, rupture or cracks when the pressure is	

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increased to a certain rate.	increased to a certain rate.	increased to a certain rate.	
(b) External leakage test: The purpose of the test is to provide evidence that the hydrogen components are free from external leakage and shall not show evidence of porosity.	(b) External leakage test: The purpose of the test is to provide evidence that the hydrogen components are free from external leakage and shall not show evidence of porosity.	(b) External leakage test: The purpose of the test is to provide evidence that the hydrogen components are free from external leakage and shall not show evidence of porosity.	
	Amendment 31		
(c) Endurance test: The purpose of the test is to provide evidence that the hydrogen components are capable of reliable operation continuously. The test consists of carrying out a specific number of test cycles for the hydrogen component under various temperature and pressure conditions. A test cycle means the normal operation (i.e. one opening and one closing) of the hydrogen component.	(c) Endurance test: The purpose of the test is to provide evidence that the hydrogen components are capable of reliable operation continuously. The test consists of carrying out a specific number of test cycles for the hydrogen component under ***specified*** temperature and pressure conditions. A test cycle means the normal operation (i.e. one opening and one closing) of the hydrogen component.	(c) Endurance test: The purpose of the test is to provide evidence that the hydrogen components are capable of reliable operation continuously. The test consists of carrying out a specific number of test cycles for the hydrogen component under **specified** temperature and pressure conditions. A test cycle means the normal operation (i.e. one opening and one closing) of the hydrogen component.	(c) Endurance test: The purpose of the test is to provide evidence that the hydrogen components are capable of reliable operation continuously. The test consists of carrying out a specific number of test cycles for the hydrogen component under ***specified*** temperature and pressure conditions. A test cycle means the normal operation (i.e. one opening and one closing) of the hydrogen component.
(d) Operational test: The purpose of the test is to provide evidence that the hydrogen components are capable of operating reliably.	(d) Operational test: The purpose of the test is to provide evidence that the hydrogen components are capable of operating reliably.	(d) Operational test: The purpose of the test is to provide evidence that the hydrogen components are capable of operating reliably.	
(e) Corrosion resistance test: The purpose of the test is to provide evidence that the hydrogen components are capable of resisting corrosion. In order to prove	(e) Corrosion resistance test: The purpose of the test is to provide evidence that the hydrogen components are capable of resisting corrosion. In order to prove	(e) Corrosion resistance test: The purpose of the test is to provide evidence that the hydrogen components are capable of resisting corrosion. In order to prove	

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this, the hydrogen components shall be submitted to contact with specified chemicals.	this, the hydrogen components shall be submitted to contact with specified chemicals.	this, the hydrogen components shall be submitted to contact with specified chemicals.	
(f) Resistance to dry-heat: The purpose of the test is to provide evidence that the non-metallic hydrogen components are capable of resisting high temperature. In order to prove this, the components shall be exposed to air at the maximum operating temperature.	(f) Resistance to dry-heat: The purpose of the test is to provide evidence that the non-metallic hydrogen components are capable of resisting high temperature. In order to prove this, the components shall be exposed to air at the maximum operating temperature.	(f) Resistance to dry-heat: The purpose of the test is to provide evidence that the non-metallic hydrogen components are capable of resisting high temperature. In order to prove this, the components shall be exposed to air at the maximum operating temperature.	
(g) Ozone ageing: The purpose of the test is to provide evidence that the non-metallic hydrogen components are capable of resisting ageing due to ozone. In order to prove this, the components shall be exposed to air with high ozone concentration.	(g) Ozone ageing: The purpose of the test is to provide evidence that the non-metallic hydrogen components are capable of resisting ageing due to ozone. In order to prove this, the components shall be exposed to air with high ozone concentration.	(g) Ozone ageing: The purpose of the test is to provide evidence that the non-metallic hydrogen components are capable of resisting ageing due to ozone. In order to prove this, the components shall be exposed to air with high ozone concentration.	
(h) Temperature cycle test: The purpose of the test is to provide evidence that the hydrogen components are capable of resisting high variations of temperature. In order to prove this, the hydrogen components shall be submitted to a temperature cycle of specified duration from the minimum operating temperature up to the maximum operating temperature.	(h) Temperature cycle test: The purpose of the test is to provide evidence that the hydrogen components are capable of resisting high variations of temperature. In order to prove this, the hydrogen components shall be submitted to a temperature cycle of specified duration from the minimum operating temperature up to the maximum operating temperature	(h) Temperature cycle test: The purpose of the test is to provide evidence that the hydrogen components are capable of resisting high variations of temperature. In order to prove this, the hydrogen components shall be submitted to a temperature cycle of specified duration from the minimum operating temperature up to the maximum operating temperature.	

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(i) Pressure cycle test: The purpose of the test is to provide evidence that the hydrogen components are capable of resisting high variations of pressure. In order to prove this, the hydrogen components shall be submitted to a pressure change from atmospheric pressure to the Maximum Allowable Working Pressure (MAWP) and shall decrease to atmospheric pressure within a short period of time.	(i) Pressure cycle test: The purpose of the test is to provide evidence that the hydrogen components are capable of resisting high variations of pressure. In order to prove this, the hydrogen components shall be submitted to a pressure change from atmospheric pressure to the Maximum Allowable Working Pressure (MAWP) and shall decrease to atmospheric pressure within a short period of time.	(i) Pressure cycle test: The purpose of the test is to provide evidence that the hydrogen components are capable of resisting high variations of pressure. In order to prove this, the hydrogen components shall be submitted to a pressure change from atmospheric pressure to the Maximum Allowable Working Pressure (MAWP) and shall decrease to atmospheric pressure within a short period of time.	
(j) Hydrogen compatibility test: The purpose of the test is to provide evidence that metallic hydrogen components (i.e. cylinders and valves) are not susceptible to hydrogen embrittlement. In hydrogen components that are subjected to frequent load cycles, conditions that can lead to local fatigue and the initiation and propagation of fatigue cracks in the structure shall be avoided.	(j) Hydrogen compatibility test: The purpose of the test is to provide evidence that metallic hydrogen components (i.e. cylinders and valves) are not susceptible to hydrogen embrittlement. In hydrogen components that are subjected to frequent load cycles, conditions that can lead to local fatigue and the initiation and propagation of fatigue cracks in the structure shall be avoided.	(j) Hydrogen compatibility test: The purpose of the test is to provide evidence that metallic hydrogen components (i.e. cylinders and valves) are not susceptible to hydrogen embrittlement. In hydrogen components that are subjected to frequent load cycles, conditions that can lead to local fatigue and the initiation and propagation of fatigue cracks in the structure shall be avoided.	
(k) Seat leakage test: The purpose of the test is to provide evidence that hydrogen components are free from leakage while installed in the hydrogen system.	(k) Seat leakage test: The purpose of the test is to provide evidence that hydrogen components are free from leakage while installed in the hydrogen system.	(k) Seat leakage test: The purpose of the test is to provide evidence that hydrogen components are free from leakage while installed in the hydrogen system.	

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ANNEX IV **Applicable test procedures for hydrogen containers designed for the use of compressed (gaseous) hydrogen**	**ANNEX IV** **Applicable test procedures for hydrogen containers designed for the use of compressed (gaseous) hydrogen**	**ANNEX IV** **Applicable test procedures for hydrogen containers designed for the use of compressed (gaseous) hydrogen**	
[Table to be inserted, if relevant for amendments]			
1. Classification of containers designed for the use of compressed (gaseous) hydrogen: Type 1 - Seamless metallic container Type 2 - Hoop wrapped container with a seamless metallic liner Type 3 - Fully wrapped container with a seamless or welded metallic liner Type 4 - Fully wrapped container with a non-metallic liner.	1. Classification of containers designed for the use of compressed (gaseous) hydrogen: Type 1 - Seamless metallic container Type 2 - Hoop wrapped container with a seamless metallic liner Type 3 - Fully wrapped container with a seamless or welded metallic liner Type 4 - Fully wrapped container with a non-metallic liner.	1. Classification of containers designed for the use of compressed (gaseous) hydrogen: Type 1 Seamless metallic container Type 2 Hoop wrapped container with a seamless metallic liner Type 3 Fully wrapped container with a seamless or welded metallic liner Type 4 Fully wrapped container with a non-metallic liner**.**	
2. The test procedures to be applied for the type-approval of those containers: (a) Burst test: The purpose of the test is to provide the value of the pressure at which the container bursts. In order to prove this, the container shall be pressurized to a given value, which should be higher than the nominal working pressure of the container. The burst pressure of the container shall exceed a specified pressure.	2. The test procedures to be applied for the type-approval of those containers: (a) Burst test: The purpose of the test is to provide the value of the pressure at which the container bursts. In order to prove this, the container shall be pressurized to a given value, which should be higher than the nominal working pressure of the container. The burst pressure of the container shall exceed a specified pressure.	2. The test procedures to be applied for the type-approval of those containers: (a) Burst test: The purpose of the test is to provide the value of the pressure at which the container bursts. In order to prove this, the container shall be pressurized to a given value, which should be higher than the nominal working pressure of the container. The burst pressure of the container shall exceed a	

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The burst pressure of the container shall be recorded and shall be kept by the manufacturer throughout the service life of the container. (b) Ambient temperature pressure cycle test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting high variations of pressure. In order to prove this, pressure cycles shall be carried out on the container until a failure occurs or until a specified number of cycles is reached by increasing and decreasing the pressure to a specified value. The containers shall not fail before reaching a specified number of cycles. The number of cycles to failure, along with the location and description of the failure shall be documented. The manufacturer shall keep the results throughout the service life of the container. (c) leak before break (LBB) performance test: The purpose of the test is to provide evidence that the hydrogen container fails by leakage before rupture. In order to prove this, pressure cycles shall be carried out on the container by increasing and decreasing the pressure to a specified value. The containers tested shall either fail by leakage or shall exceed a specified number of test cycles without failure. The number of cycles to failure, along with the location and description of the failure shall be recorded.	The burst pressure of the container shall be recorded and shall be kept by the manufacturer throughout the service life of the container. (b) Ambient temperature pressure cycle test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting high variations of pressure. In order to prove this, pressure cycles shall be carried out on the container until a failure occurs or until a specified number of cycles is reached by increasing and decreasing the pressure to a specified value. The containers shall not fail before reaching a specified number of cycles. The number of cycles to failure, along with the location and description of the failure shall be documented. The manufacturer shall keep the results throughout the service life of the container. (c) leak before break (LBB) performance test: The purpose of the test is to provide evidence that the hydrogen container fails by leakage before rupture. In order to prove this, pressure cycles shall be carried out on the container by increasing and decreasing the pressure to a specified value. The containers tested shall either fail by leakage or shall exceed a specified number of test cycles without failure. The number of cycles to failure, along with the location and description of the failure shall be recorded.	specified pressure. The burst pressure of the container shall be recorded and shall be kept by the manufacturer throughout the service life of the container. (b) Ambient temperature pressure cycle test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting high variations of pressure. In order to prove this, pressure cycles shall be carried out on the container until a failure occurs or until a specified number of cycles is reached by increasing and decreasing the pressure to a specified value. The containers shall not fail before reaching a specified number of cycles. The number of cycles to failure, along with the location and description of the failure shall be documented. The manufacturer shall keep the results throughout the service life of the container. (c) leak before break (LBB) performance test: The purpose of the test is to provide evidence that the hydrogen container fails by leakage before rupture. In order to prove this, pressure cycles shall be carried out on the container by increasing and decreasing the pressure to a specified value. The containers tested shall either fail by leakage or shall exceed a specified number of test cycles without failure. The number of cycles to failure, along with the location and description of the failure shall be recorded.	

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(d) Bonfire test: The purpose of the test is to provide evidence that the container with its fire protection system does not burst when tested under the specified fire conditions. The container, pressurized to working pressure shall only vent through the pressure relief device and shall not rupture.	(d) Bonfire test: The purpose of the test is to provide evidence that the container with its fire protection system does not burst when tested under the specified fire conditions. The container, pressurized to working pressure shall only vent through the pressure relief device and shall not rupture.	(d) Bonfire test: The purpose of the test is to provide evidence that the container with its fire protection system does not burst when tested under the specified fire conditions. The container, pressurized to working pressure shall only vent through the pressure relief device and shall not rupture.	
(e) Penetration test: The purpose of the test is to provide evidence that the container does not rupture when penetrated by a bullet. In order to prove this, the complete container with its protective coating shall be pressurized and penetrated by a bullet. The container shall not rupture.	(e) Penetration test: The purpose of the test is to provide evidence that the container does not rupture when penetrated by a bullet. In order to prove this, the complete container with its protective coating shall be pressurized and penetrated by a bullet. The container shall not rupture.	(e) Penetration test: The purpose of the test is to provide evidence that the container does not rupture when penetrated by a bullet. In order to prove this, the complete container with its protective coating shall be pressurized and penetrated by a bullet. The container shall not rupture.	
(f) Chemical exposure test: The purpose of the test is to provide evidence that the container can withstand exposure to the specified chemical substances. In order to prove this, the container shall be exposed to various chemical solutions. The pressure of the container shall be increased to a given value and a burst test shall be carried out. The container shall achieve a specified burst pressure, which shall be recorded.	(f) Chemical exposure test: The purpose of the test is to provide evidence that the container can withstand exposure to the specified chemical substances. In order to prove this, the container shall be exposed to various chemical solutions. The pressure of the container shall be increased to a given value and a burst test shall be carried out. The container shall achieve a specified burst pressure, which shall be recorded.	(f) Chemical exposure test: The purpose of the test is to provide evidence that the container can withstand exposure to the specified chemical substances. In order to prove this, the container shall be exposed to various chemical solutions. The pressure of the container shall be increased to a given value and a burst test shall be carried out. The container shall achieve a specified burst pressure, which shall be recorded.	
(g) Composite flaw tolerance test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting exposure to high pressure. In order to prove this, flaws of specified geometry shall be cut into the container	(g) Composite flaw tolerance test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting exposure to high pressure. In order to prove this, flaws of specified geometry shall be cut into the container	(g) Composite flaw tolerance test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting exposure to high pressure. In order to prove this, flaws of specified geometry shall be cut into the container sidewall and a specified number of	

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sidewall and a specified number of pressure cycles shall be carried out. The container shall not leak or rupture within a number of cycles, but may fail by leakage during the remaining test cycles. The number of cycles to failure, along with the location and description of the failure shall be recorded. (h) Accelerated stress rupture test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting exposure to high pressure and high temperatures at the limit of the allowable operating range for an extended period of time. In order to prove this, the container shall be exposed for a specified time to specified pressure and temperature conditions, and subsequently undergo a burst test as referred to under a). The container shall achieve a specified burst pressure. (i) Extreme temperature pressure cycle test: The purpose of the test is to provide evidence that the hydrogen container can withstand variations of pressure under different temperature conditions. In order to prove this, the container, free of any protective coating shall be hydrostatically cycle tested by subjecting it to extreme ambient conditions and then carrying out a leak test and a burst test as referred to under k) and a). The containers shall be cycle tested without showing evidence of rupture, leakage or fibre unravelling. The	sidewall and a specified number of pressure cycles shall be carried out. The container shall not leak or rupture within a number of cycles, but may fail by leakage during the remaining test cycles. The number of cycles to failure, along with the location and description of the failure shall be recorded. (h) Accelerated stress rupture test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting exposure to high pressure and high temperatures at the limit of the allowable operating range for an extended period of time. In order to prove this, the container shall be exposed for a specified time to specified pressure and temperature conditions, and subsequently undergo a burst test as referred to under a). The container shall achieve a specified burst pressure. (i) Extreme temperature pressure cycle test: The purpose of the test is to provide evidence that the hydrogen container can withstand variations of pressure under different temperature conditions. In order to prove this, the container, free of any protective coating shall be hydrostatically cycle tested by subjecting it to extreme ambient conditions and then carrying out a leak test and a burst test as referred to under k) and a). The containers shall be cycle tested without showing evidence of rupture, leakage or fibre unravelling. The	pressure cycles shall be carried out. The container shall not leak or rupture within a number of cycles, but may fail by leakage during the remaining test cycles. The number of cycles to failure, along with the location and description of the failure shall be recorded. (h) Accelerated stress rupture test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting exposure to high pressure and high temperatures at the limit of the allowable operating range for an extended period of time. In order to prove this, the container shall be exposed for a specified time to specified pressure and temperature conditions, and subsequently undergo a burst test as referred to under a). The container shall achieve a specified burst pressure. (i) Extreme temperature pressure cycle test: The purpose of the test is to provide evidence that the hydrogen container can withstand variations of pressure under different temperature conditions. In order to prove this, the container, free of any protective coating shall be hydrostatically cycle tested by subjecting it to extreme ambient conditions and then carrying out a leak test and a burst test as referred to under k) and a). The containers shall be cycle tested without showing evidence of rupture, leakage or fibre unravelling. The containers shall not burst at a specified	

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containers shall not burst at a specified pressure. (j) Impact damage test: The purpose of the test is to provide evidence that the hydrogen container remains operational after submitting it to the specified mechanical impacts. In order to prove this, the container shall be subjected to a drop test and a specified number of pressure cycles shall be carried out. The container shall not leak or rupture within a specified number of cycles, but may fail by leakage during the remaining test cycles. (k) Leak test: The purpose of the test is to provide evidence that the hydrogen container does not show evidence of leakage under the specified conditions. In order to prove this, the container shall be pressurised to its nominal working pressure. It shall not show any evidence of leakage detected through cracks, pores or similar defects. (l) Permeation test: The purpose of the test is to provide evidence that the hydrogen container does not permeate more than a specified rate. In order to prove this, the container shall be pressurized with hydrogen gas to nominal working pressure and then monitored for permeation in a closed chamber for a specified time under specified temperature conditions.	containers shall not burst at a specified pressure. (j) Impact damage test: The purpose of the test is to provide evidence that the hydrogen container remains operational after submitting it to the specified mechanical impacts. In order to prove this, the container shall be subjected to a drop test and a specified number of pressure cycles shall be carried out. The container shall not leak or rupture within a specified number of cycles, but may fail by leakage during the remaining test cycles. (k) Leak test: The purpose of the test is to provide evidence that the hydrogen container does not show evidence of leakage under the specified conditions. In order to prove this, the container shall be pressurised to its nominal working pressure. It shall not show any evidence of leakage detected through cracks, pores or similar defects. (l) Permeation test: The purpose of the test is to provide evidence that the hydrogen container does not permeate more than a specified rate. In order to prove this, the container shall be pressurized with hydrogen gas to nominal working pressure and then monitored for permeation in a closed chamber for a specified time under specified temperature conditions.	pressure. (j) Impact damage test: The purpose of the test is to provide evidence that the hydrogen container remains operational after submitting it to the specified mechanical impacts. In order to prove this, the container shall be subjected to a drop test and a specified number of pressure cycles shall be carried out. The container shall not leak or rupture within a specified number of cycles, but may fail by leakage during the remaining test cycles. (k) Leak test: The purpose of the test is to provide evidence that the hydrogen container does not show evidence of leakage under the specified conditions. In order to prove this, the container shall be pressurised to its nominal working pressure. It shall not show any evidence of leakage detected through cracks, pores or similar defects. (l) Permeation test: The purpose of the test is to provide evidence that the hydrogen container does not permeate more than a specified rate. In order to prove this, the container shall be pressurized with hydrogen gas to nominal working pressure and then monitored for permeation in a closed chamber for a specified time under specified temperature conditions.	

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(m) Boss torque test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting the specified torque. In order to prove this, a torque shall be applied to the container from different directions. Then, a leak test and a burst test as referred to under k) and a) above shall be carried out. The container shall meet the burst and leak test requirements. The applied torque, leakage and burst pressure shall be recorded. (n) Hydrogen gas cycle test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting high variations of pressure when hydrogen gas is used. In order to prove this, the container shall be subject to a number of pressure cycles with the use of hydrogen gas and a leak test as referred to under k) above. The deteriorations, such as fatigue cracking or electrostatic discharge of the container shall be inspected. The container shall meet leak test requirements. The container shall be free of any deterioration, such as fatigue cracking or electrostatic discharge.	(m) Boss torque test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting the specified torque. In order to prove this, a torque shall be applied to the container from different directions. Then, a leak test and a burst test as referred to under k) and a) above shall be carried out. The container shall meet the burst and leak test requirements. The applied torque, leakage and burst pressure shall be recorded. (n) Hydrogen gas cycle test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting high variations of pressure when hydrogen gas is used. In order to prove this, the container shall be subject to a number of pressure cycles with the use of hydrogen gas and a leak test as referred to under k) above. The deteriorations, such as fatigue cracking or electrostatic discharge of the container shall be inspected. The container shall meet leak test requirements. The container shall be free of any deterioration, such as fatigue cracking or electrostatic discharge.	(m) Boss torque test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting the specified torque. In order to prove this, a torque shall be applied to the container from different directions. Then, a leak test and a burst test as referred to under k) and a) above shall be carried out. The container shall meet the burst and leak test requirements. The applied torque, leakage and burst pressure shall be recorded. (n) Hydrogen gas cycle test: The purpose of the test is to provide evidence that the hydrogen container is capable of resisting high variations of pressure when hydrogen gas is used. In order to prove this, the container shall be subject to a number of pressure cycles with the use of hydrogen gas and a leak test as referred to under k) above. The deteriorations, such as fatigue cracking or electrostatic discharge of the container shall be inspected. The container shall meet leak test requirements. The container shall be free of any deterioration, such as fatigue cracking or electrostatic discharge.	
ANNEX V **Applicable test procedures for hydrogen components other than containers designed for the use of compressed**	**ANNEX V** **Applicable test procedures for hydrogen components other than containers designed for the use of compressed**	**ANNEX V** **Applicable test procedures for hydrogen components other than containers designed for the use of compressed**	

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(gaseous) hydrogen	**(gaseous) hydrogen**	**(gaseous) hydrogen**	
[Table to be inserted, if relevant for amendments]			[Annex V, table first column, eighth row] ***Refuelling connections or r***eceptacles
Subject to specific requirements for any of the hydrogen components, the test procedures to be applied for the type-approval of hydrogen components other than containers shall include: Material tests:	Subject to specific requirements for any of the hydrogen components, the test procedures to be applied for the type-approval of hydrogen components other than containers shall include: Material tests:	Subject to specific requirements for any of the hydrogen components, the test procedures to be applied for the type-approval of hydrogen components other than containers shall include: **1.** Material tests:	Subject to specific requirements for any of the hydrogen components, the test procedures to be applied for the type-approval of hydrogen components other than containers shall include: **1.** Material tests:
2.1. Hydrogen compatibility test set out in point (j) of Annex III.	2.1. Hydrogen compatibility test set out in point (j) of Annex III.	**1.1.** Hydrogen compatibility test set out in point (j) of Annex III.	**1.1.** Hydrogen compatibility test set out in point (j) of Annex III.
2.2. Ageing test: The purpose of the test is to check, whether the non-metallic material used in a hydrogen component can withstand ageing. No visible cracking of the test samples is allowed.	2.2. Ageing test: The purpose of the test is to check, whether the non-metallic material used in a hydrogen component can withstand ageing. No visible cracking of the test samples is allowed.	**1.2**. Ageing test: The purpose of the test is to check, whether the non-metallic material used in a hydrogen component can withstand ageing. No visible cracking of the test samples is allowed.	**1.2**. Ageing test: The purpose of the test is to check, whether the non-metallic material used in a hydrogen component can withstand ageing. No visible cracking of the test samples is allowed.
2.3. Ozone compatibility test: The purpose of the test is to check, whether the elastomer material of a hydrogen component is compatible with ozone exposure. No visible cracking of the test samples is allowed.	2.3. Ozone compatibility test: The purpose of the test is to check, whether the elastomer material of a hydrogen component is compatible with ozone exposure. No visible cracking of the test samples is allowed.	**1.3**. Ozone compatibility test: The purpose of the test is to check, whether the elastomer material of a hydrogen component is compatible with ozone exposure. No visible cracking of the test samples is allowed.	**1.3**. Ozone compatibility test: The purpose of the test is to check, whether the elastomer material of a hydrogen component is compatible with ozone exposure. No visible cracking of the test samples is allowed.
3. Corrosion resistance test set out in point (e) of Annex III.	3. Corrosion resistance test set out in point (e) of Annex III.	**2**. Corrosion resistance test set out in point (e) of Annex III.	**2**. Corrosion resistance test set out in point (e) of Annex III.
4. Endurance test set out in point (c)	4. Endurance test set out in point (c) of Annex III.	**3**. Endurance test set out in point (c)	**3**. Endurance test set out in point (c)

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of Annex III.		of Annex III.	of Annex III.
5. Hydraulic pressure cycle test set out in point (i) of Annex III. The hydrogen components shall not show visible sign of deformation or extrusion and shall fulfil the requirements of the internal and external leakage test.	5. Hydraulic pressure cycle test set out in point (i) of Annex III. The hydrogen components shall not show visible sign of deformation or extrusion and shall fulfil the requirements of the internal and external leakage test.	**4** Hydraulic pressure cycle test set out in point (i) of Annex III. The hydrogen components shall not show visible sign of deformation or extrusion and shall fulfil the requirements of the internal and external leakage test.	**4.** Hydraulic pressure cycle test set out in point (i) of Annex III. The hydrogen components shall not show visible sign of deformation or extrusion and shall fulfil the requirements of the internal and external leakage test.
6. Internal leakage test: The purpose of the internal leakage test is to provide evidence that the specified hydrogen components are free from internal leakage. In order to prove this, the hydrogen components shall be pressurized under different temperature conditions and observed for leakage. The hydrogen component shall stay bubble free and shall not leak internally at a higher rate than a specified number.	6. Internal leakage test: The purpose of the internal leakage test is to provide evidence that the specified hydrogen components are free from internal leakage. In order to prove this, the hydrogen components shall be pressurized under different temperature conditions and observed for leakage. The hydrogen component shall stay bubble free and shall not leak internally at a higher rate than a specified number.	**5**. Internal leakage test: The purpose of the internal leakage test is to provide evidence that the specified hydrogen components are free from internal leakage. In order to prove this, the hydrogen components shall be pressurized under different temperature conditions and observed for leakage. The hydrogen component shall stay bubble free and shall not leak internally at a higher rate than a specified number.	**5**. Internal leakage test: The purpose of the internal leakage test is to provide evidence that the specified hydrogen components are free from internal leakage. In order to prove this, the hydrogen components shall be pressurized under different temperature conditions and observed for leakage. The hydrogen component shall stay bubble free and shall not leak internally at a higher rate than a specified number.
7. External leakage test set out in point (b) of Annex III.	7. External leakage test set out in point (b) of Annex III.	**6**. External leakage test set out in point (b) of Annex III.	***6.*** External leakage test set out in point (b) of Annex III.
ANNEX VI **Requirements for the installation of hydrogen components and systems**	**ANNEX VI** **Requirements for the installation of hydrogen components and systems**	**ANNEX VI** **Requirements for the installation of hydrogen components and systems**	
1. The hydrogen system shall be installed such that it is protected against damage.	1. The hydrogen system shall be installed such that it is protected against damage.	1. The hydrogen system shall be installed such that it is protected against damage.	

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It should be isolated from heat sources in the vehicle.	It should be isolated from heat sources in the vehicle.	It should be isolated from heat sources in the vehicle.	
2. The hydrogen container may only be removed for replacement with a hydrogen container for the purpose of refuelling or for maintenance. In the case of internal combustion engine, the container shall not be installed in the engine compartment of the vehicle. It shall be adequately protected against any kind of corrosion.	2. The hydrogen container may only be removed for replacement with a hydrogen container for the purpose of refuelling or for maintenance. In the case of internal combustion engine, the container shall not be installed in the engine compartment of the vehicle. It shall be adequately protected against any kind of corrosion.	2. The hydrogen container may only be removed for replacement with a hydrogen container for the purpose of refuelling or for maintenance. In the case of internal combustion engine, the container shall not be installed in the engine compartment of the vehicle. It shall be adequately protected against any kind of corrosion.	
3. Measures have to be taken to prevent hydrogen leakage during refilling and to make sure that the removal of a removable hydrogen storage system is done safely.	3. Measures have to be taken to prevent hydrogen leakage during refilling and to make sure that the removal of a removable hydrogen storage system is done safely.	3. Measures have to be taken to prevent ***misfuelling of the vehicle***, hydrogen leakage during refilling and to make sure that the removal of a removable hydrogen storage system is done safely.	3. Measures have to be taken to prevent ***misfuelling of the vehicle*** hydrogen leakage during refilling and to make sure that the removal of a removable hydrogen storage system is done safely.
4. The refuelling connection shall be secured against maladjustment and shall be protected from dirt and water.	4. The refuelling connection shall be secured against maladjustment and shall be protected from dirt and water.	4. The refuelling connection **or receptacle** shall be secured against maladjustment and shall be protected from dirt and water. **The refuelling connection or receptacle shall be integrated with a non-return valve or a valve with the same function. If the refuelling connection is not mounted directly on the container, the refuelling line shall be secured by a non-return valve or a valve**	4. The refuelling connection ***or receptacle*** shall be secured against maladjustment and shall be protected from dirt and water. ***The refuelling connection or receptacle shall be integrated with a non-return valve or a valve with the same function. If the refuelling connection is not mounted directly on the container, the refuelling line shall be secured by a non-***

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		with the same function, mounted directly on or within the container.	***return valve or a valve with the same function, mounted directly on or within the container.***
5. The hydrogen container shall be mounted and fixed so that the specified accelerations can be absorbed without damage of the safety related parts when the hydrogen containers are full.	5. The hydrogen container shall be mounted and fixed so that the specified accelerations can be absorbed without damage of the safety related parts when the hydrogen containers are full.	5. The hydrogen container shall be mounted and fixed so that the specified accelerations can be absorbed without damage of the safety related parts when the hydrogen containers are full.	
6. The hydrogen fuel supply lines shall be secured with an automatic valve. The refuelling line shall be secured with a valve. The valves shall close if a malfunction of the hydrogen system requires so or any other event that results in the leakage of hydrogen occurs. When the propulsion system is switched off, the fuel supply from the container to the propulsion system shall be switched off and remain closed until the system is required to operate.	6. The hydrogen fuel supply lines shall be secured with an automatic valve. The refuelling line shall be secured with a valve. The valves shall close if a malfunction of the hydrogen system requires so or any other event that results in the leakage of hydrogen occurs. When the propulsion system is switched off, the fuel supply from the container to the propulsion system shall be switched off and remain closed until the system is required to operate.	The hydrogen fuel supply lines shall be secured with an automatic **shut-off** valve **mounted directly on or within the container**. **[]** The valve **[]** shall close if a malfunction of the hydrogen system requires so or any other event that results in the leakage of hydrogen occurs. When the propulsion system is switched off, the fuel supply from the container to the propulsion system shall be switched off and remain closed until the system is required to operate.	The hydrogen fuel supply lines shall be secured with an automatic ***shut-off*** valve ***mounted directly on or within the container***. The valve shall close if a malfunction of the hydrogen system requires so or any other event that results in the leakage of hydrogen occurs. When the propulsion system is switched off, the fuel supply from the container to the propulsion system shall be switched off and remain closed until the system is required to operate.
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	6a. In the event of an accident, an automatic shut-off valve shall interrupt the flow of gas from the container.	**7. In the event of accidents the [] automatic shut-off valve mounted directly on or within the container []shall interrupt the flow of gas from the container.**	***(6a). In the event of accidents the automatic shut-off valve mounted directly on or within the container shall interrupt the flow of gas from the container.***
7. No hydrogen component, including any protective materials that form part of such components, shall project beyond the outline of the vehicle or protective	7. No hydrogen component, including any protective materials that form part of such components, shall project beyond the outline of the vehicle or protective	8. No hydrogen component, including any protective materials that form part of such components, shall project beyond the outline of the vehicle or protective	

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structure. This shall not apply if a hydrogen component is adequately protected and no part of the hydrogen component is located outside this protective structure.	structure. This shall not apply if a hydrogen component is adequately protected and no part of the hydrogen component is located outside this protective structure.	structure. This shall not apply if a hydrogen component is adequately protected and no part of the hydrogen component is located outside this protective structure.	
8. The hydrogen system shall be installed such that it is protected against damage so far as is reasonably practical, such as damage due to moving vehicle components, impacts, grit or due to the loading or unloading of the vehicle or the shifting of loads.	8. The hydrogen system shall be installed such that it is protected against damage so far as is reasonably practical, such as damage due to moving vehicle components, impacts, grit or due to the loading or unloading of the vehicle or the shifting of loads.	9. The hydrogen system shall be installed such that it is protected against damage so far as is reasonably practical, such as damage due to moving vehicle components, impacts, grit or due to the loading or unloading of the vehicle or the shifting of loads.	
9. No hydrogen component shall be located near the exhaust of an internal combustion engine or other heat source, unless such components are adequately shielded against heat.	9. No hydrogen component shall be located near the exhaust of an internal combustion engine or other heat source, unless such components are adequately shielded against heat.	10. No hydrogen component shall be located near the exhaust of an internal combustion engine or other heat source, unless such components are adequately shielded against heat.	
10. The ventilating or heating system for the passenger compartment and places where leakage or accumulation of hydrogen is possible shall be designed so that hydrogen is not drawn into the vehicle .	10. The ventilating or heating system for the passenger compartment and places where leakage or accumulation of hydrogen is possible shall be designed so that hydrogen is not drawn into the vehicle .	11. The ventilating or heating system for the passenger compartment and places where leakage or accumulation of hydrogen is possible shall be designed so that hydrogen is not drawn into the vehicle.	
11. In the event of accidents, it shall be ensured so far as is reasonably practicable that the pressure relief device and the associated venting system remain capable of functioning. The venting system of the pressure relief device shall be adequately	11. In the event of accidents, it shall be ensured so far as is reasonably practicable that the pressure relief device and the associated venting system remain capable of functioning. The venting system of the pressure relief device shall be adequately	12. In the event of accidents, it shall be ensured so far as is reasonably practicable that the pressure relief device and the associated venting system remain capable of functioning. The venting system of the pressure relief device shall be adequately	

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protected against dirt and water.	protected against dirt and water.	protected against dirt and water.	
12. The passenger compartment of the vehicle shall be separated from the hydrogen system in order to avoid accumulation of hydrogen. It shall be ensured that any fuel leaking from the container or its accessories does not escape to the passenger compartment of the vehicle.	12. The passenger compartment of the vehicle shall be separated from the hydrogen system in order to avoid accumulation of hydrogen. It shall be ensured that any fuel leaking from the container or its accessories does not escape to the passenger compartment of the vehicle.	13. The passenger compartment of the vehicle shall be separated from the hydrogen system in order to avoid accumulation of hydrogen. It shall be ensured that any fuel leaking from the container or its accessories does not escape to the passenger compartment of the vehicle.	
	Amendment 33		
13. Hydrogen components that could leak hydrogen within the passenger or luggage compartment or other non-ventilated compartment shall be enclosed by a gas tight housing or by an equivalent solution ***as specified in the implementing legislation.***	13. Hydrogen components that could leak hydrogen within the passenger or luggage compartment or other non-ventilated compartment shall be enclosed by a gas tight housing or by an equivalent solution.	14. Hydrogen components that could leak hydrogen within the passenger or luggage compartment or other non-ventilated compartment shall be enclosed by a gas tight housing or by an equivalent solution as specified in the implementing legislation.	13. Hydrogen components that could leak hydrogen within the passenger or luggage compartment or other non-ventilated compartment shall be enclosed by a gas tight housing or by an equivalent solution as specified ***in the implementing measures***.
14. Electrically operated devices containing hydrogen shall be insulated in such a manner that no current passes through hydrogen containing parts, in order to prevent electric sparks in the case of a fracture. Metallic components of the hydrogen system shall have electrical continuity with the vehicles earth.	14. Electrically operated devices containing hydrogen shall be insulated in such a manner that no current passes through hydrogen containing parts, in order to prevent electric sparks in the case of a fracture. Metallic components of the hydrogen system shall have electrical continuity with the vehicles earth.	15. Electrically operated devices containing hydrogen shall be insulated in such a manner that no current passes through hydrogen containing parts, in order to prevent electric sparks in the case of a fracture. Metallic components of the hydrogen system shall have electrical continuity with the vehicles earth.	

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	Amendment 34		
15. Labels may be used to indicate to rescue services that liquid or compressed (gaseous) hydrogen is used.	15) ***It must be possible for*** rescue services ***to identify the*** hydrogen ***power source of a vehicle***.	16. Labels **or other means of identification as set out in the implementing measures, referred to in Article 12(2) last indent shall** be used**. Until such implementing measures are adopted, the manufacturer shall label the vehicle** to indicate to rescue services that **the vehicle is powered by hydrogen and that** liquid or compressed (gaseous) hydrogen is used.	15. Labels ***or other means of identification shall*** be used to indicate to rescue services ***that the vehicle is powered by hydrogen and*** that liquid or compressed (gaseous) hydrogen is used**.**
ANNEX VII **Amendments to Directive 2007/46/EC**	**ANNEX VII** **Amendments to Directive 2007/46/EC**	**ANNEX VII** **Amendments to Directive 2007/46/EC**	
1. In Annex IV, part I, in point 62 the following new line shall be added to the table:	1. In Annex IV, part I, in point 62 the following new line shall be added to the table:	1. In Annex IV, part I, in point 62 the following new line shall be added to the table:	
[Table to be inserted, if relevant for amendments]			
2. In the Appendix to Annex IV, part I in point 62 the following new line shall be added to the table:	2. In the Appendix to Annex IV, part I in point 62 the following new line shall be added to the table:	2. In the Appendix to Annex IV, part I in point 62 the following new line shall be added to the table:	
[Table to be inserted, if relevant for amendments]			
3. In the Appendix to Annex VI in point 62 the following new line shall be added to the table:	3. In the Appendix to Annex VI in point 62 the following new line shall be added to the table:	3. In the Appendix to Annex VI in point 62 the following new line shall be added to the table:	

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[Table to be inserted, if relevant for amendments]			
4. In Annex XI, Appendix 1, in point 62 the following new line shall be added to the table:	4. In Annex XI, Appendix 1, in point 62 the following new line shall be added to the table:	4. In Annex XI, Appendix 1, in point 62 the following new line shall be added to the table:	
[Table to be inserted, if relevant for amendments]			
5. In Annex XI, Appendix 2 in point 62 the following new line shall be added to the table:	5. In Annex XI, Appendix 2 in point 62 the following new line shall be added to the table:	5. In Annex XI, Appendix 2 in point 62 the following new line shall be added to the table:	
[Table to be inserted, if relevant for amendments]			
		6. In Annex XI, Appendix 3 in point 62 the following new line shall be added to the table:	***5a. In Annex XI, Appendix 3 in point 62 the following new line shall be added to the table:***
		[Table to be inserted]	[Table to be inserted]
6. In Annex XI, Appendix 3 in point 62 the following new line shall be added to the table:	6. In Annex XI, Appendix 3 in point 62 the following new line shall be added to the table:	**7.** In Annex XI, Appendix **4** in point 62 the following new line shall be added to the table:	6. In Annex XI, Appendix ***4*** in point 62 the following new line shall be added to the table:
	Amendment 35		
7. In Annex XI, Appendix 4 in point 62 the following new line shall be added to the table:	7. In Annex XI, ***Appendix 5*** in point 62 the following new line shall be added to the table:	**8**. In Annex XI, Appendix **5** in point **58** the following new line shall be added to the table:	7. In Annex XI, ***Appendix 5*** in point 62 the following new line shall be added to the table:

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[Table to be inserted, if relevant for amendments]			

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