

Regulation (EU) 2019/2144 of the European Parliament and of the Council of 27 November 2019 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/858 of the European Parliament and of the Council and repealing Regulations (EC) No 78/2009, (EC) No 79/2009 and (EC) No 661/2009 of the European Parliament and of the Council and Commission Regulations (EC) No 631/2009, (EU) No 406/2010, (EU) No 672/2010, (EU) No 1003/2010, (EU) No 1005/2010, (EU) No 1008/2010, (EU) No 1009/2010, (EU) No 19/2011, (EU) No 109/2011, (EU) No 458/2011, (EU) No 65/2012, (EU) No 130/2012, (EU) No 347/2012, (EU) No 351/2012, (EU) No 1230/2012 and (EU) 2015/166 (Text with EEA relevance)

CHAPTER II

OBLIGATIONS OF MANUFACTURERS

Article 4

General obligations and technical requirements

1 Manufacturers shall demonstrate that all new vehicles that are placed on the market, registered or entered into service, and all new systems, components and separate technical units that are placed on the market or entered into service, are type-approved in accordance with the requirements of this Regulation and of the delegated acts and implementing acts adopted pursuant to it.

2 Type-approval in accordance with the UN Regulations listed in Annex I shall be considered as EU type-approval in accordance with the requirements of this Regulation and of the delegated acts and implementing acts adopted pursuant to it.

3 The Commission is empowered to adopt delegated acts in accordance with Article 12 to amend Annex I in order to take account of technical progress and regulatory developments by introducing and updating references to the UN Regulations, and relevant series of amendments, that apply on a compulsory basis.

4 Manufacturers shall ensure that vehicles are designed, constructed and assembled so as to minimise the risk of injury to vehicle occupants and vulnerable road users.

5 Manufacturers shall also ensure that vehicles, systems, components and separate technical units comply with the applicable requirements listed in Annex II with effect from the dates specified in that Annex, with the detailed technical requirements and test procedures laid down in the delegated acts and with the uniform procedures and technical specifications laid down in the implementing acts adopted pursuant to this Regulation, including the requirements relating to:

- a restraint systems, crash testing, fuel system integrity and high voltage electrical safety;
- b vulnerable road users, vision and visibility;
- c vehicle chassis, braking, tyres and steering;

- d on-board instruments, electrical system, vehicle lighting and protection against unauthorised use including cyberattacks;
- e driver and system behaviour; and
- f general vehicle construction and features.

6 The Commission is empowered to adopt delegated acts in accordance with Article 12 to amend Annex II in order to take account of technical progress and regulatory developments, in particular in relation to the matters listed in points (a) to (f) of paragraph 5 of this Article as well as those referred to in points (a) to (g) of Article 6(1), Article 7(2), (3), (4) and (5), Article 9(2), (3) and (5) and Article 11(1), and with a view to ensuring a high level of general safety of vehicles, systems, components and separate technical units and a high level of protection of vehicle occupants and vulnerable road users, by introducing and updating references to UN Regulations, as well as to delegated acts and implementing acts.

7 The Commission shall by means of implementing acts adopt provisions concerning uniform procedures and technical specifications for the type-approval of vehicles, systems, components and separate technical units with regard to the requirements listed in Annex II.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 13(2). They shall be published at least 15 months before the applicable dates specified in Annex II.

Article 5

Specific provisions relating to tyre pressure monitoring systems and tyres

1 Vehicles shall be equipped with an accurate tyre pressure monitoring system capable, over a wide range of road and environmental conditions, of giving an in-vehicle warning to the driver when a loss of pressure occurs in a tyre.

2 Tyre pressure monitoring systems shall be designed to avoid resetting or recalibration at a low tyre pressure.

3 All tyres placed on the market shall meet the safety and environmental performance requirements set out in the relevant regulatory acts listed in Annex II.

4 The Commission shall by means of implementing acts adopt provisions concerning uniform procedures and technical specifications for:

- a the type-approval of vehicles with regard to their tyre pressure monitoring systems;
- b the type-approval of tyres, including technical specifications concerning their installation.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 13(2). They shall be published at least 15 months before the applicable dates specified in Annex II.

Article 6

Advanced vehicle systems for all motor vehicle categories

1 Motor vehicles shall be equipped with the following advanced vehicle systems:

- a intelligent speed assistance;
- b alcohol interlock installation facilitation;

- c driver drowsiness and attention warning;
 - d advanced driver distraction warning;
 - e emergency stop signal;
 - f reversing detection; and
 - g event data recorder.
- 2 Intelligent speed assistance shall meet the following minimum requirements:
- a it shall be possible for the driver to be made aware through the accelerator control, or through dedicated, appropriate and effective feedback, that the applicable speed limit is exceeded;
 - b it shall be possible to switch off the system; information about the speed limit may still be provided, and intelligent speed assistance shall be in normal operation mode upon each activation of the vehicle master control switch;
 - c the dedicated and appropriate feedback shall be based on speed limit information obtained through the observation of road signs and signals, based on infrastructure signals or electronic map data, or both, made available in-vehicle;
 - d it shall not affect the possibility, for the drivers, of exceeding the system's prompted vehicle speed;
 - e its performance targets shall be set in order to avoid or minimise the error rate under real driving conditions.
- 3 Driver drowsiness and attention warning and advanced driver distraction warning systems shall be designed in such a way that those systems do not continuously record nor retain any data other than what is necessary in relation to the purposes for which they were collected or otherwise processed within the closed-loop system. Furthermore, those data shall not be accessible or made available to third parties at any time and shall be immediately deleted after processing. Those systems shall also be designed to avoid overlap and shall not prompt the driver separately and concurrently or in a confusing manner where one action triggers both systems.
- 4 Event data recorders shall meet the following requirements in particular:
- a the data that they are capable of recording and storing with respect of the period shortly before, during and immediately after a collision shall include the vehicle's speed, braking, position and tilt of the vehicle on the road, the state and rate of activation of all its safety systems, 112-based eCall in-vehicle system, brake activation and relevant input parameters of the on-board active safety and accident avoidance systems, with high level of accuracy and ensured survivability of data;
 - b they cannot be deactivated;
 - c the way in which they are capable of recording and storing data shall be such that:
 - (i) they operate on a closed-loop system;
 - (ii) the data that they collect is anonymised and protected against manipulation and misuse; and
 - (iii) the data that they collect enables precise vehicle type, variant and version, and in particular the active safety and accident avoidance systems fitted to the vehicle, to be identified; and
 - d the data that they are capable of recording can be made available to national authorities, on the basis of Union or national law, only for the purpose of accident research and analysis, including for the purposes of type approval of systems and components and in compliance with Regulation (EU) 2016/679, over a standardised interface.

5 An event data recorder shall not be capable of recording and storing the last four digits of the vehicle indicator section of the vehicle identification number or any other information which could allow the individual vehicle itself, its owner or holder, to be identified.

6 The Commission shall adopt delegated acts in accordance with Article 12 supplementing this Regulation by laying down detailed rules concerning the specific test procedures and technical requirements for:

- a the type-approval of vehicles with regard to the advanced vehicle systems listed in paragraph 1;
- b the type-approval of the advanced vehicle systems listed in points (a), (f) and (g) of paragraph 1 as separate technical units.

Those delegated acts shall be published at least 15 months before the applicable dates specified in Annex II.

Article 7

Specific requirements relating to passenger cars and light commercial vehicles

1 In addition to the other requirements of this Regulation and of the delegated acts and implementing acts adopted pursuant to it that are also applicable to vehicles of categories M₁ and N₁, vehicles of those categories shall meet the requirements set out in paragraphs 2 to 5 and the technical specifications set out in the implementing acts referred to in paragraph 6.

2 Vehicles of categories M₁ and N₁ shall be equipped with advanced emergency braking systems designed and fitted in two phases and providing for:

- a the detection of obstacles and moving vehicles ahead of the motor vehicle in the first phase;
- b extending the detection capability referred to in point (a) to also include pedestrians and cyclists ahead of the motor vehicle in the second phase.

3 Vehicles of categories M₁ and N₁ shall also be equipped with an emergency lane-keeping system.

4 Advanced emergency braking systems and emergency lane-keeping systems shall meet the following requirements in particular:

- a it shall only be possible to switch off such systems one at a time by a sequence of actions to be carried out by the driver;
- b the systems shall be in normal operation mode upon each activation of the vehicle master control switch;
- c it shall be possible to easily suppress audible warnings, but such action shall not at the same time suppress system functions other than audible warnings;
- d it shall be possible for the driver to override such systems.

5 Vehicles of categories M₁ and N₁ shall be designed and constructed to provide for an enlarged head impact protection zone with the aim of enhancing the protection of vulnerable road users and mitigating their potential injuries in the event of a collision.

6 The Commission shall by means of implementing acts adopt provisions concerning uniform procedures and technical specifications for the type-approval of vehicles with regard to the requirements laid down in paragraphs 2 to 5 of this Article.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 13(2). They shall be published at least 15 months before the applicable dates specified in Annex II.

Article 8

Frontal protection systems for passenger cars and light commercial vehicles

1 Frontal protection systems, whether fitted as original equipment to vehicles of categories M₁ and N₁ or made available on the market as separate technical units for such vehicles, shall comply with the requirements laid down in paragraph 2 and with the technical specifications set out in the implementing acts referred to in paragraph 3.

2 Frontal protection systems made available on the market as separate technical units shall be accompanied by a detailed list of the vehicle types, variants and versions for which the frontal protection system is type-approved, as well as by clear assembly instructions.

3 The Commission shall by means of implementing acts adopt provisions concerning uniform procedures and technical specifications for the type-approval of frontal protection systems, including technical specifications concerning their construction and installation.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 13(2). They shall be published at least 15 months before the applicable dates specified in Annex II.

Article 9

Specific requirements relating to buses and trucks

1 In addition to the other requirements of this Regulation and of the delegated acts and implementing acts adopted pursuant to it that are also applicable to vehicles of categories M₂, M₃, N₂ and N₃, vehicles of those categories shall meet the requirements laid down in paragraphs 2 to 5 and the technical specifications set out in the implementing acts referred to in paragraph 7. Vehicles of categories M₂ and M₃, shall also meet the requirement laid down in paragraph 6.

2 Vehicles of categories M₂, M₃, N₂ and N₃ shall be equipped with a lane departure warning system and an advanced emergency braking system, both of which shall comply with the the technical specifications set out in the implementing acts referred to in paragraph 7.

3 Vehicles of categories M₂, M₃, N₂ and N₃ shall be equipped with advanced systems that are capable of detecting pedestrians and cyclists located in close proximity to the front or nearside of the vehicle and of providing a warning or avoiding collision with such vulnerable road users.

4 With respect of systems referred to in paragraphs 2 and 3, they shall meet the following requirements in particular:

- a it shall only be possible to switch off such systems one at a time by a sequence of actions to be carried out by the driver;
- b the systems shall be in normal operation mode upon each activation of the vehicle master control switch;
- c it shall be possible to easily suppress audible warnings, but such action shall not at the same time suppress system functions other than audible warnings;
- d it shall be possible for the driver to override such systems.

5 Vehicles of categories M₂, M₃, N₂ and N₃ shall be designed and constructed to enhance the direct visibility of vulnerable road users from the driver seat, by reducing to the greatest possible extent the blind spots in front of and to the side of the driver, while taking into account the specificities of different categories of vehicles.

6 Vehicles of categories M₂ and M₃ with a capacity exceeding 22 passengers in addition to the driver and constructed with areas for standing passengers to allow frequent passenger movement shall be designed and constructed to be accessible by persons with reduced mobility, including wheelchair users.

7 The Commission shall by means of implementing acts adopt provisions concerning uniform procedures and technical specifications for:

- a the type-approval of vehicles with regard to the requirements laid down in paragraphs 2 to 5 of this Article;
- b the type-approval of the systems referred to in paragraph 3 of this Article as separate technical units.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 13(2).

Where those implementing acts concern the requirements laid down in paragraphs 2, 3 and 4 of this Article, they shall be published at least 15 months before the applicable dates specified in Annex II.

Where those implementing acts concern the requirements laid down in paragraph 5 of this Article, they shall be published at least 36 months before the applicable dates specified in Annex II.

Article 10

Specific requirements relating to hydrogen-powered vehicles

1 In addition to the other requirements of this Regulation and of the delegated acts and implementing acts adopted pursuant to it that are also applicable to vehicles of categories M and N, hydrogen-powered vehicles of those categories, their hydrogen systems and components of such systems shall comply with the technical specifications set out in the implementing acts referred to in paragraph 3.

2 Manufacturers shall ensure that hydrogen systems and hydrogen components are installed in accordance with the technical specifications set out in the implementing acts referred to in paragraph 3. Manufacturers shall also make available, if necessary information for the purposes of inspection of hydrogen systems and components during the service life of hydrogen-powered vehicles.

3 The Commission shall by means of implementing acts adopt provisions concerning uniform procedures and technical specifications for the type-approval of hydrogen-powered vehicles with regard to their hydrogen systems, including those with regard to material compatibility and fuelling receptacles, and for the type-approval of hydrogen components, including technical specifications for their installation.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 13(2). They shall be published at least 15 months before the applicable dates specified in Annex II.

Article 11

Specific requirements relating to automated vehicles and fully automated vehicles

1 In addition to the other requirements of this Regulation and of the delegated acts and implementing acts adopted pursuant to it that are applicable to vehicles of the respective categories, automated vehicles and fully automated vehicles shall comply with the technical specifications set out in the implementing acts referred to in paragraph 2 that relate to:

- a systems to replace the driver's control of the vehicle, including signalling, steering, accelerating and braking;
- b systems to provide the vehicle with real-time information on the state of the vehicle and the surrounding area;
- c driver availability monitoring systems;
- d event data recorders for automated vehicles;
- e harmonised format for the exchange of data for instance for multi-brand vehicle platooning;
- f systems to provide safety information to other road users.

However, those technical specifications relating to driver availability monitoring systems, referred to in point (c) of the first subparagraph, shall not apply to fully automated vehicles.

2 The Commission shall by means of implementing acts adopt provisions concerning uniform procedures and technical specifications for the systems and other items listed in points (a) to (f) of paragraph 1 of this Article, and for the type-approval of automated and fully automated vehicles with regard to those systems and other items in order to ensure the safe operation of automated and fully automated vehicles on public roads.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 13(2).