

II

(Non-legislative acts)

REGULATIONS

COMMISSION DELEGATED REGULATION (EU) 2022/2236

of 20 June 2022

amending Annexes I, II, IV and V to Regulation (EU) 2018/858 of the European Parliament and of the Council as regards the technical requirements for vehicles produced in unlimited series, vehicles produced in small series, fully automated vehicles produced in small series and special purpose vehicles, and as regards software update

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC⁽¹⁾, and in particular Article 4(2), Article 5(3), Article 31(8) and Article 41(5) thereof,

Whereas:

- (1) For the purpose of CO₂ certification, as provided in Commission Implementing Regulation (EU) 2022/1362⁽²⁾, it is necessary to distinguish trailers and semi-trailers from link trailers used in European Modular System (EMS) combinations. In order to take into account technical progress and regulatory developments, new types of bodywork should be added to the list of vehicles of category O as set out in Annex I, Part C, point 5, to Regulation (EU) 2018/858.
- (2) The table set out in Annex II, Part I, to Regulation (EU) 2018/858 contains the list of requirements for EU type-approval of vehicles produced in unlimited series, with a list of corresponding regulatory acts. It is necessary to take into account technological and regulatory developments by updating some of the references in that table setting out the requirements for vehicles, systems, components and separate technical units. In particular, reference to Regulation (EU) 2019/2144 of the European Parliament and of the Council⁽³⁾ should be introduced. Furthermore, for reasons of legal clarity and simplification, it is appropriate to align the layout of that table to the one contained in Annex II to that Regulation.

⁽¹⁾ OJ L 151, 14.6.2018, p. 1.

⁽²⁾ Commission Implementing Regulation (EU) 2022/1362 of 1 August 2022 implementing Regulation (EC) No 595/2009 of the European Parliament and of the Council as regards the performance of heavy-duty trailers with regard to their influence on the CO₂ emissions, fuel consumption, energy consumption and zero emission driving range of motor vehicles and amending Implementing Regulation (EU) 2020/683 (OJ L 205, 5.8.2022, p. 145).

⁽³⁾ 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 (OJ L 325, 16.12.2019, p. 1).

- (3) The table set out in Annex II, Part I, Appendix 1, to Regulation (EU) 2018/858 contains the list of regulatory acts for EU type-approval of vehicles produced in small series pursuant to Article 41 of that Regulation. It is necessary to set out the technical requirements for the EU type-approval of such vehicles with respect to the systems provided for in Regulation (EU) 2019/2144 and in the delegated acts and implementing acts adopted pursuant to that Regulation. It is also necessary to set out the requirements that should apply to the EU whole-vehicle type approval of fully automated vehicles produced in small series to allow for a progressive but quick introduction of the technology in line with the application dates set out in Regulation (EU) 2019/2144. As a next stage, the Commission will continue the work to further develop and adopt by July 2024 the necessary requirements for the EU whole vehicle type approval of fully automated vehicles produced in unlimited series.
- (4) The tables set out in Annex II, Part III, Appendices 1 to 6, to Regulation (EU) 2018/858 contain the specific requirements for EU type-approval of special purpose vehicles. Those requirements should be amended to take into account Regulation (EU) 2019/2144 and the delegated acts and implementing acts adopted pursuant to that Regulation.
- (5) When setting out the requirements for vehicles produced in small series or special purpose vehicles, it is necessary to take into account the cases where the requirements provided for vehicles produced in large series are incompatible with the use or design of such vehicles, or where the additional burden imposed by them is disproportionate. For this reason, sufficient lead time should be provided to manufacturers of vehicles produced in small series and of special purpose vehicles to implement the requirements laid down in this Regulation. In addition, those requirements should first apply from 7 July 2024 to new types of vehicles and from 7 July 2026 for all new vehicles.
- (6) In accordance with Annex I to Regulation (EU) 2019/2144, some of the UN Regulations listed in the table set out in Annex II, Part II, to Regulation (EU) 2018/858 should apply for the purposes of EU type-approval. Therefore, it is no longer necessary to recognise such UN Regulations as an alternative to the regulatory acts listed in Part I of that Annex and, consequently, they should be removed from that table.
- (7) On the basis of Council Decision (EU) 2020/848 (⁴), the position taken on behalf of the European Union in the relevant Committees of the United Nations Economic Commission for Europe was in favour of UN Regulation No 156 – Uniform provisions concerning the approval of vehicles with regards to software update and software update management system [2021/388] (⁵), with the view to apply it for the purposes of EU type-approval. It is necessary to add UN Regulation No 156 to the list of regulatory acts setting out the requirements for the EU whole-vehicle type-approval. As Annex IV to Regulation (EU) 2018/858 contains the requirements relating to arrangements to ensure conformity of production, it is appropriate to introduce a reference to UN Regulation No 156 in that Annex, as part of the procedures and arrangements that manufacturers are to put in place to ensure the conformity and security of software update.
- (8) With technology development, motor vehicles are becoming increasingly complex using more electronic systems that require regular software update. Since such software update may affect the functioning of other approved systems and functionalities in the vehicles concerned, the manufacturers should establish a software update management system as part of their conformity of production process. Sufficient time should be provided to manufacturers to integrate such systems into the whole-vehicle type-approval and in particular in respect to new complete and new completed vehicles respectively.
- (9) For the purpose of the EU whole-vehicle type-approval of fully automated vehicles of categories M₂, M₃, N₂ and N₃, it is necessary to set out in Annex V to Regulation (EU) 2018/858 the quantitative annual limits that should apply to those vehicles.

(⁴) Council Decision (EU) 2020/848 of 16 June 2020 on the position to be taken on behalf of the European Union in the World Forum for Harmonisation of Vehicle Regulations of the United Nations Economic Commission for Europe as regards the proposals for modifications to UN Regulations Nos 13, 14, 16, 22, 30, 41, 78, 79, 83, 94, 95, 101, 108, 109, 117, 129, 137, 138, 140 and 152, as regards the proposals for modifications to Global Technical Regulations Nos 3, 6, 7, 16 and 19, as regards the proposal for amendments to Consolidated Resolution R.E.3. and as regards the proposals for five new UN Regulations in relation to safety, emissions and automation in the area of motor vehicles (OJ L 196, 19.6.2020, p. 5).

(⁵) OJ L 82, 9.3.2021, p. 60.

- (10) Annexes I, II, IV and V to Regulation (EU) 2018/858 should therefore be amended in accordance with the Annexes to this Regulation,

HAS ADOPTED THIS REGULATION:

Article 1

Amendments to Regulation (EU) 2018/858

Regulation (EU) 2018/858 is amended as follows:

- (1) Annex I is amended in accordance with Annex I to this Regulation;
- (2) Annex II is amended in accordance with Annex II to this Regulation;
- (3) Annex IV is amended in accordance with Annex III to this Regulation;
- (4) Annex V is amended in accordance with Annex IV to this Regulation.

Article 2

Transitional provisions

1. With effect from 6 July 2022, national authorities shall refuse to grant EU whole-vehicle type-approval or national type-approval to any new type of vehicles, where the manufacturer executes software updates that affect type approved characteristics of those vehicles after their registration, if such vehicles do not comply with Regulation (EU) 2018/858, as amended by Annex II to this Regulation with regard to software update.

2. With effect from 6 July 2022, national authorities shall not refuse to grant extension to EU whole-vehicle type-approval or national type-approval of vehicles, where the manufacturer executes software updates that affect type approved characteristics of those vehicles after their registration, if such vehicles comply with Regulation (EU) 2018/858, as amended by Annex II to this Regulation with regard to software update.

3. With effect from 7 July 2024, national authorities shall consider, on grounds relating to software update, certificates of conformity in respect to new vehicles to be no longer valid for the purposes of Article 48 of Regulation (EU) 2018/858, and shall prohibit the registration, placing on the market or entry into service of vehicles, where the manufacturer executes software updates that affect type approved characteristics of those vehicles after their registration, if such vehicles do not comply with Regulation (EU) 2018/858, as amended by Annex II to this Regulation with regard to software update.

4. With effect from 7 July 2024, national authorities shall refuse, on grounds relating to software update, to grant EU whole-vehicle type-approval or national type-approval to any new type of vehicles, if those vehicles do not comply with Regulation (EU) 2018/858, as amended by Annex II to this Regulation with regard to software update.

5. With effect from 7 July 2024, national authorities shall refuse to grant EU whole-vehicle type-approval for vehicles produced in small series or special purpose vehicles, if those vehicles do not comply with Regulation (EU) 2018/858, as amended by Annex II, point (2), Table 1, and point (4) to this Regulation.

6. With effect from 7 July 2026, national authorities shall consider certificates of conformity in respect to new vehicles produced in small series or special purpose vehicles to be no longer valid for the purposes of Article 48 of Regulation (EU) 2018/858, and shall prohibit the registration, placing on the market and entry into service of such vehicles, if those vehicles do not comply with Regulation (EU) 2018/858, as amended by Annex II, point (2), Table 1, and point (4) to this Regulation.

7. With effect from 7 July 2026, national authorities shall consider, on grounds relating to software update, certificates of conformity in respect to new complete vehicles to be no longer valid for the purposes of Article 48 of Regulation (EU) 2018/858, and shall prohibit the placing on the market, registration and entry into service of such vehicles, if they do not comply with Regulation (EU) 2018/858, as amended by Annex II to this Regulation with regard to software update.

8. With effect from 7 July 2029, national authorities shall consider, on grounds relating to software update, certificates of conformity in respect to new completed vehicles to be no longer valid for the purposes of Article 48 of Regulation (EU) 2018/858, and shall prohibit the registration, placing on the market and entry into service of such vehicles, if they do not comply with Regulation (EU) 2018/858, as amended by Annex II to this Regulation with regard to software update.

Article 3

Entry into force and application

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 be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 20 June 2022.

For the Commission

The President

Ursula VON DER LEYEN

ANNEX I

Annex I to Regulation (EU) 2018/858 is amended as follows:

- (1) in Part C, point 5, in the table, the following entries are added:

'5.5.	DF	Link semi-trailer	A semi-trailer with a fifth wheel mounted at the rear such that the link semi-trailer could tow another semi-trailer.
5.6.	DG	Link drawbar trailer	A drawbar trailer with a fifth wheel mounted at the rear such that the link trailer could tow another semi-trailer.'

- (2) in Appendix 2, the following row 32 is inserted:

'32. Drop-side tarpaulin;'

ANNEX II

Annex II to Regulation (EU) 2018/858 is amended as follows:

- (1) Part I is replaced by the following:

'PART I

Regulatory acts for EU type-approval of vehicles produced in unlimited series

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to the table for vehicles produced in unlimited series

X: Applies to the vehicle category, separate technical unit or component in accordance with the regulatory act as indicated

IF: Applies only if the system, separate technical unit or component is fitted to the vehicle in the respective vehicle category

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄	STU	Component
A	RESTRAINT SYSTEMS, CRASH TESTING, FUEL SYSTEM INTEGRITY AND HIGH VOLTAGE ELECTRICAL SAFETY													
A1	Interior fittings	Regulation (EU) 2019/2144	X											
A2	Seats and head restraints	Regulation (EU) 2019/2144	X	X	X	X	X	X						
A3	Bus seats	Regulation (EU) 2019/2144		X	X									X
A4	Safety-belt anchorages	Regulation (EU) 2019/2144	X	X	X	X	X	X						
A5	Safety-belts and restraint systems	Regulation (EU) 2019/2144	X	X	X	X	X	X					X	X
A6	Safety-belt reminders	Regulation (EU) 2019/2144	X	X	X	X	X	X						
A7	Partitioning systems	Regulation (EU) 2019/2144												X
A8	Child restraint anchorages	Regulation (EU) 2019/2144	X	IF X	IF X	IF X	IF X	IF X						
A9	Child restraint systems (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X					X	X
A10	Enhanced child restraint systems (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X					X	X
A11	Front underrun protection	Regulation (EU) 2019/2144					X	X					X	X
A12	Rear underrun protection	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X	X	X	X
A13	Lateral protection	Regulation (EU) 2019/2144					X	X			X	X		
A14	Fuel tank safety (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X	X		
A15	Liquified petroleum gas safety (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X						X

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄	STU	Component
A16	Compressed and liquified natural gas safety (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X						X
A17	Hydrogen safety (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X						X
A18	Hydrogen system material qualification (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X						X
A19	In-use electric safety (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X						X
A20	Frontal off-set impact	Regulation (EU) 2019/2144	X				X							
A21	Frontal full-width impact	Regulation (EU) 2019/2144	X				X							
A22	Protective steering	Regulation (EU) 2019/2144	X				X							X
A23	Replacement airbag	Regulation (EU) 2019/2144												X
A24	Cab impact	Regulation (EU) 2019/2144					X	X	X					
A25	Side impact	Regulation (EU) 2019/2144	X				X							
A26	Pole side impact	Regulation (EU) 2019/2144	X				X							
A27	Rear impact	Regulation (EU) 2019/2144	X				X							
A28	112-based eCall in-vehicles systems	Regulation (EU) 2015/758	X				X						X	X
B	VULNERABLE ROAD USERS, VISION AND VISIBILITY													
B1	Pedestrian leg and head protection	Regulation (EU) 2019/2144	X				X							
B2	Enlarged head impact zone	Regulation (EU) 2019/2144	X				X							

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄	STU	Component
D14	Light sources	Regulation (EU) 2019/2144												X
D15	Installation of light signalling, road illumination and retro-reflective devices	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X	X		
D16	Emergency stop signal	Regulation (EU) 2019/2144	X	X	X	X	X	X						
D17	Headlamp cleaners (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X						X
D18	Gear shift indicator	Regulation (EU) 2019/2144	X											
E	DRIVER AND SYSTEM BEHAVIOUR													
E1	Alcohol interlock installation facilitation	Regulation (EU) 2019/2144	X	X	X	X	X	X						
E2	Driver drowsiness and attention warning	Regulation (EU) 2019/2144	X	X	X	X	X	X						
E3	Advanced driver distraction warning	Regulation (EU) 2019/2144	X	X	X	X	X	X						
E4	Driver availability monitoring system (in case of automated vehicles)	Regulation (EU) 2019/2144	X	X	X	X	X	X						
E5	Event data recorder	Regulation (EU) 2019/2144	X	X	X	X	X	X						X
E6	Systems to replace driver's control (in case of automated vehicles)	Regulation (EU) 2019/2144	X	X	X	X	X	X						
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Regulation (EU) 2019/2144	X	X	X	X	X	X						

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄	STU	Component
F12	Mechanical couplings	Regulation (EU) 2019/2144	IF X	X	X	X	X	X	X					
F13	Vehicles intended for the transportation of dangerous goods (IF)	Regulation (EU) 2019/2144				X	X	X	X	X	X	X		
F14	General bus construction	Regulation (EU) 2019/2144		X	X									
F15	Bus strength of superstructure	Regulation (EU) 2019/2144		X	X									
F16	Flammability in buses	Regulation (EU) 2019/2144			X									X
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS													
G1	Sound level	Regulation (EU) No 540/2014	X	X	X	X	X	X					X	
G2	Tailpipe emissions of vehicle in lab	Regulation (EC) No 715/2007	X	X		X	X							X
G2a	Determination of specific CO ₂ emissions and fuel consumption of vehicle and device for monitoring on board the vehicle the consumption of fuel and/or electric energy	Regulation (EC) No 715/2007	X	X		X	X							X
G3	Tailpipe emissions of engine in lab	Regulation (EC) No 595/2009	X	X	X	X	X	X						X
G3a	Determination of specific CO ₂ emissions and fuel consumption of vehicle	Regulation (EC) No 595/2009			X		X	X						
G3b	Determination of specific energy efficiency performance of trailer	Regulation (EC) No 595/2009									X	X		

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄	STU	Component
H	ACCESS TO VEHICLE INFORMATION AND SOFTWARE UPDATE													
H1	Access to vehicle OBD information and vehicle repair and maintenance information	Regulation (EU) 2018/858, Articles 61 to 66 and Annex X.	X	X	X	X	X	X	X	X	X	X		
H2	Software update	Regulation (EU) 2018/858, Annex IV UN Regulation No 156	X	X	X	X	X	X	X	X	X	X		

The item and subject entries listed in the table above shall apply for the purpose of information to be provided in accordance with Commission Implementing Regulation (EU) 2020/683, Annex II, Part III from 6 December 2022 for new whole-vehicle type-approvals and from 6 December 2024 for existing approvals.

Compliance with Regulation (EU) 2019/2144 is mandatory, however, a separate type-approval under that Regulation is not foreseen as it represents the collection of individual items.

Compliance with items from G2 to G12 is mandatory, however, only one type-approval either under Regulation (EC) No 715/2007 or under Regulation (EC) No 595/2009 is foreseen depending on the scope.'

(2) Appendix 1 to Part I is replaced by the following:

'Appendix 1

EXPLANATORY NOTES

to the tables for vehicles produced in small series

The requirements laid down in Table 1 for "Small series scheme I" apply provided that:

- the vehicle type is not based on or derived from a vehicle produced in large series, including those for EU or third markets; and
- the manufacturer's combined number of units, of all its categories M and N vehicle types registered, made available on the market or entered into service annually in the Union does not exceed 1 500.

In all other cases, the requirements laid down in Table 1 for "Small series scheme II" and in Table 2 apply.

X: Full application of the regulatory act as follows:

- (a) a type-approval certificate shall be required;
- (b) tests and checks shall be conducted by the technical service or the manufacturer under the conditions laid down in Articles 67 to 81;
- (c) the test report shall be drafted in accordance with Annex III;
- (d) Conformity of Production shall be ensured.

A: Application of the regulatory act as follows:

- (a) all requirements of the regulatory act shall be fulfilled unless otherwise stated;
- (b) a type-approval certificate is not required;
- (c) tests and checks shall be conducted by the technical service or the manufacturer under the conditions laid down in Articles 67 to 81;
- (d) the test report shall be drafted in accordance with Annex III;
- (e) Conformity of Production shall be ensured.

B: Application of the regulatory act as follows:

Same as for explanatory note "A" with the exception that the tests and checks may be performed by the manufacturer themselves, subject to the agreement of the approval authority.

C: Application of the regulatory act as follows:

- (a) the technical requirements from the regulatory act shall be fulfilled, but with different transitional provision;
- (b) a type-approval certificate is not required;
- (c) tests and checks shall be conducted by the technical service or the manufacturer under the conditions laid down in Articles 67 to 81;
- (d) the test report shall be drafted in accordance with Annex III;
- (e) Conformity of Production shall be ensured.

IF: Systems, separate technical units or components shall meet the requirements if fitted to the vehicle

n/a: Not applicable

The specific provisions set out in Table 1 and Table 2 cannot be mixed or combined.

Table 1

Regulatory acts for EU type-approval of manually driven vehicles produced in small series pursuant to Article 41

Item	Subject	Regulatory act	Small series scheme I		Small series scheme II	
			M ₁	N ₁	M ₁	N ₁
A	RESTRAINT SYSTEMS, CRASH TESTING, FUEL SYSTEM INTEGRITY AND HIGH VOLTAGE ELECTRICAL SAFETY					
A1	Interior fittings	Regulation (EU) 2019/2144	B (a) Interior arrangement (i) Radii and protrusion requirements for switches, pull-knobs and the like, controls and general interior fittings. The requirements of paragraphs 5.1 to 5.6 of UN Regulation No 21 may be waived at the request of the manufacturer. The requirements of paragraph 5.2 of UN Regulation No 21 with the exception of paragraphs 5.2.3.1, 5.2.3.2 and 5.2.4 of that Regulation shall apply. (ii) Energy absorption tests on the upper dashboard. Energy absorption tests on the upper dashboard shall only be performed when the vehicle is not fitted with at least two front airbags or two static four-point harnesses. (iii) Energy absorption test on the rear part of the seats: not applicable (b) Power-operation of windows, roof-panel systems and partition systems. All requirements of paragraph 5.8 of UN Regulation No 21 shall apply.	not in scope	B	not in scope

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
A2	Seats and head restraints	Regulation (EU) 2019/2144	B (a) General requirements (i) Specifications Requirements of paragraph 5.2 of UN Regulation No 17 shall apply with the exception of paragraph 5.2.3 of that Regulation. (ii) Strength tests for seat backrest and head restraints. The requirements of paragraph 6.2 of UN Regulation No 17 shall apply. (iii) Unlocking and adjustment tests. The test shall be performed in accordance with the requirements of Annex 7 to UN Regulation No 17. (b) Head restraints (i) Specifications. Requirements of paragraphs 5.4, 5.5, 5.6, 5.10, 5.11 and 5.12 of UN Regulation No 17 shall apply with the exception of paragraph 5.5.2 of that Regulation. (ii) Strength tests on head restraints. The test prescribed in paragraph 6.4 of UN Regulation No 17 shall be performed. (c) Special requirements regarding the protection of occupants from displaced luggage. The requirements of Annex 9 to UN Regulation No 17 may be waived at the request of the manufacturer.	B	B	B

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
A3	Bus seats	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
A4	Safety-belt anchorages	Regulation (EU) 2019/2144	B	B	B	B
A5	Safety-belts and restraint systems	Regulation (EU) 2019/2144	(a) Components X (b) Installation requirements B	(a) Components X (b) Installation requirements B	(a) Components X (b) Installation requirements B	(a) Components X (b) Installation requirements B
A6	Safety-belt reminders	Regulation (EU) 2019/2144	B	B	B	B
A7	Partitioning systems	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
A8	Child restraint anchorages	Regulation (EU) 2019/2144	B	IF B	B	IF B
A9	Child restraint systems (IF)	Regulation (EU) 2019/2144	X	X	X	X
A10	Enhanced child restraint systems (IF)	Regulation (EU) 2019/2144	X	X	X	X
A11	Front underrun protection	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
A12	Rear underrun protection	Regulation (EU) 2019/2144	B	B	B	B
A13	Lateral protection	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
A14	Fuel tank safety (IF)	Regulation (EU) 2019/2144	B (a) Liquid fuel tanks (b) Installation in vehicle	B (a) Liquid fuel tanks (b) Installation in vehicle	B (a) Liquid fuel tanks (b) Installation in vehicle	B (a) Liquid fuel tanks (b) Installation in vehicle
A15	Liquified petroleum gas safety (IF)	Regulation (EU) 2019/2144	(a) Components X (b) Installation B	(a) Components X (b) Installation B	(a) Components X (b) Installation B	(a) Components X (b) Installation B
A16	Compressed and liquified natural gas safety (IF)	Regulation (EU) 2019/2144	(a) Components X (b) Installation B	(a) Components X (b) Installation B	(a) Components X (b) Installation B	(a) Components X (b) Installation B
A17	Hydrogen safety (IF)	Regulation (EU) 2019/2144	X	X	X	X
A18	Hydrogen system material qualification (IF)	Regulation (EU) 2019/2144	(a) Components X (b) Installation B	(a) Components X (b) Installation B	(a) Components X (b) Installation B	(a) Components X (b) Installation B
A19	In-use electric safety (IF)	Regulation (EU) 2019/2144	B	B	B	B
A20	Frontal off-set impact	Regulation (EU) 2019/2144	B Shall apply to vehicles fitted with front airbags. May comply with A21 Frontal full-width impact instead, at the choice of the manufacturer. Vehicles not fitted with airbags shall comply with A22 Protective steering (in full)	B Shall apply to vehicles fitted with front airbags. May comply with A21 Frontal full-width impact instead, at the choice of the manufacturer. Vehicles not fitted with airbags shall comply with A22 Protective steering (in full)	B	B Completed vehicles are deemed to comply with the frontal off-set impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase and the relevant restraint

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
				Completed vehicles are deemed to comply with the frontal off-set impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase and the relevant restraint systems have not been modified to the extent that it would result in a decrease of the level of safety, as agreed by the technical service.		systems have not been modified to the extent that it would result in a decrease of the level of safety, as agreed by the technical service.
A21	Frontal full-width impact	Regulation (EU) 2019/2144	B On voluntary basis	B On voluntary basis Completed vehicles are deemed to comply with the frontal full-width impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase and the relevant restraint systems have not been modified to the extent that it would result in a decrease of the level of safety, as agreed by the technical service.	B	B Completed vehicles are deemed to comply with the frontal full-width impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase and the relevant restraint systems have not been modified to the extent that it would result in a decrease of the level of safety, as agreed by the technical service.

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
A22	Protective steering	Regulation (EU) 2019/2144	B Shall apply to vehicles that do not comply with A20 Frontal off-set impact or A21 Frontal full-width impact	B Shall apply to vehicles that do not comply with A20 Frontal off-set impact or A21 Frontal full-width impact	B	B
A23	Replacement airbag	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
A24	Cab impact	Regulation (EU) 2019/2144	not in scope	B Test A is required for vehicles with a maximum permissible mass of 1 500 kg or more if compliance with A20 Frontal off-set impact, A21 Frontal full-width impact or A22 Protective steering was not demonstrated. Test C is required only for vehicles which have a separate cab. Completed vehicles are deemed to comply with cab impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase.	not in scope	B Test A is deemed to be fulfilled by means of A20 Frontal off-set impact, A21 Frontal full-width impact or A22 Protective steering. Test C is required only for vehicles which have a separate cab. Completed vehicles are deemed to comply with cab impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase.

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
A25	Side impact	Regulation (EU) 2019/2144	B Head form test The manufacturer shall supply the technical service with suitable information concerning a possible impact of the head of the dummy against the structure of the vehicle or the side glazing, if made of laminated glazing. When such impact is proven likely to happen, then the partial test using the head form test described in paragraph 3.1 of Annex 8 to UN Regulation No 95 shall be conducted and the criterion specified in paragraph 5.2.1.1 of UN Regulation No 95 shall be met. In agreement with the technical service, the test procedure described in Annex 4 to UN Regulation No 21 may be used as an alternative to the test of UN Regulation No 95. Alternatively, a full-scale test in accordance with UN Regulation No 95 may be carried out.	B Head form test The manufacturer shall supply the technical service with suitable information concerning a possible impact of the head of the dummy against the structure of the vehicle or the side glazing, if made of laminated glazing. When such impact is proven likely to happen, then the partial test using the head form test described in paragraph 3.1 of Annex 8 to UN Regulation No 95 shall be conducted and the criterion specified in paragraph 5.2.1.1 of UN Regulation No 95 shall be met. In agreement with the technical service, the test procedure described in Annex 4 to UN Regulation No 21 may be used as an alternative to the test of UN Regulation No 95. Alternatively, a full-scale test in accordance with UN Regulation No 95 may be carried out.	B	B Completed vehicles are deemed to comply with side impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase and the relevant restraint systems have not been modified to the extent that it would result in a decrease of the level of safety, as agreed by the technical service.

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
				Completed vehicles are deemed to comply with side impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase and the relevant restraint systems have not been modified to the extent that it would result in a decrease of the level of safety, as agreed by the technical service.		
A26	Pole side impact	Regulation (EU) 2019/2144	n/a	n/a	B	B Completed vehicles are deemed to comply with the pole side impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase and the relevant restraint systems have not been modified to the extent that it would result in a decrease of the level of safety, as agreed by the technical service.

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
A27	Rear impact	Regulation (EU) 2019/2144	n/a	n/a	B	B Completed vehicles are deemed to comply with rear impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase.
A28	112-based eCall in-vehicles systems	Regulation (EU) 2015/758	n/a	n/a	n/a	n/a
B	VULNERABLE ROAD USERS, VISION AND VISIBILITY					
B1	Pedestrian leg and head protection	Regulation (EU) 2019/2144	C Date for refusal to grant EU type-approval: 7 January 2026 Date for the prohibition of the registration of vehicles: 7 July 2034	C Date for refusal to grant EU type-approval: 7 January 2026 Date for the prohibition of the registration of vehicles: 7 July 2034	C Date for refusal to grant EU type-approval: 7 January 2026 Date for the prohibition of the registration of vehicles: 7 July 2034	C Date for refusal to grant EU type-approval: 7 January 2026 Date for the prohibition of the registration of vehicles: 7 July 2034
B2	Enlarged head impact zone	Regulation (EU) 2019/2144	C Date for refusal to grant EU type-approval: 7 January 2026 Date for the prohibition of the registration of vehicles: 7 July 2034	C Date for refusal to grant EU type-approval: 7 January 2026 Date for the prohibition of the registration of vehicles: 7 July 2034	C Date for refusal to grant EU type-approval: 7 January 2026 Date for the prohibition of the registration of vehicles: 7 July 2034	C Date for refusal to grant EU type-approval: 7 January 2026 Date for the prohibition of the registration of vehicles: 7 July 2034

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
B3	Frontal protection system	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
B4	Advanced emergency braking for pedestrians and cyclists ahead	Regulation (EU) 2019/2144	IF B Date for refusal to grant EU type- approval: 7 July 2026 Date for the prohibition of the registration of vehicles: 7 July 2028	IF B Date for refusal to grant EU type- approval: 7 July 2026 Date for the prohibition of the registration of vehicles: 7 July 2028	B Not required for vehicles without a windscreen, with a foldable windscreen or with a windscreen where the maximum vertical distance between the top edge and lowest edge of the transparent surface does not exceed 300 mm (assessed excluding areas with less than 70 % transparency shade bands, dot-printed areas, text, graphics and transparent slots for regulatory sight lines) and where the R-point of the driver seat is not more than 450 mm from the ground level. Date for refusal to grant EU type- approval: 7 July 2026 Date for the prohibition of the registration of vehicles: 7 July 2028	B Not required for vehicles without a windscreen, with a foldable windscreen or with a windscreen where the maximum vertical distance between the top edge and lowest edge of the transparent surface does not exceed 300 mm (assessed excluding areas with less than 70 % transparency shade bands, dot-printed areas, text, graphics and transparent slots for regulatory sight lines) and where the R-point of the driver seat is not more than 450 mm from the ground level. Date for refusal to grant EU type-approval: 7 July 2026 Date for the prohibition of the registration of vehicles: 7 July 2028
B5	Pedestrian and cyclist collision warning	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
B6	Blind spot information system	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
B7	Reversing detection	Regulation (EU) 2019/2144	n/a	n/a	B	B
B8	Forward vision	Regulation (EU) 2019/2144	B	B Date for refusal to grant EU type- approval: 7 July 2026 Date for the prohibition of the registration of vehicles: 7 July 2028	B	B Date for refusal to grant EU type-approval: 7 July 2026 Date for the prohibition of the registration of vehicles: 7 July 2028
B9	Heavy-duty vehicles direct vision	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
B10	Safety glazing	Regulation (EU) 2019/2144	(a) Components X (b) Installation B	(a) Components X (b) Installation B	(a) Components X (b) Installation B	(a) Components X (b) Installation B
B11	Defrost/demist	Regulation (EU) 2019/2144	B Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	B Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	B Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	B Vehicles shall be fitted with an adequate windscreen defrosting and demisting device
B12	Wash/wipe	Regulation (EU) 2019/2144	B Vehicles shall be fitted with adequate windscreen washing and wiping devices	B Vehicles shall be fitted with adequate windscreen washing and wiping devices	B Vehicles shall be fitted with adequate windscreen washing and wiping devices	B Vehicles shall be fitted with adequate windscreen washing and wiping devices
B13	Indirect vision devices	Regulation (EU) 2019/2144	(a) Components X (b) Installation on vehicle B	(a) Components X (b) Installation on vehicle B	(a) Components X (b) Installation on vehicle B	(a) Components X (b) Installation on vehicle B
B14	Acoustic Vehicle Alerting Systems	Regulation (EU) No 540/2014	A	A	A	A

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
C	VEHICLE CHASSIS, BRAKING, TYRES AND STEERING					
C1	Steering equipment	Regulation (EU) 2019/2144	B	B	B	B
C2	Lane departure warning	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
C3	Emergency lane keeping	Regulation (EU) 2019/2144	IF B	IF B	B Not required for vehicles without a windscreen, with a foldable windscreen or with a windscreen where the maximum vertical distance between the top edge and lowest edge of the transparent surface does not exceed 300 mm (assessed excluding areas with less than 70 % transparency shade bands, dot-printed areas, text, graphics and transparent slots for regulatory sight lines) and where the R-point of the driver seat is not more than 450 mm from the ground level.	B Not required for vehicles without a windscreen, with a foldable windscreen or with a windscreen where the maximum vertical distance between the top edge and lowest edge of the transparent surface does not exceed 300 mm (assessed excluding areas with less than 70 % transparency shade bands, dot-printed areas, text, graphics and transparent slots for regulatory sight lines) and where the R-point of the driver seat is not more than 450 mm from the ground level.
C4	Braking	Regulation (EU) 2019/2144	A	A	A	A
C5	Replacement braking parts	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
C6	Brake assist	Regulation (EU) 2019/2144	IF B	IF B	B	B

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
C7	Stability control	Regulation (EU) 2019/2144	IF B	IF B	B	B
C8	Advanced emergency braking on heavy-duty vehicles	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
C9	Advanced emergency braking on light-duty vehicles	Regulation (EU) 2019/2144	IF B	IF B	B Not required for vehicles without a windscreens, with a foldable windscreens or with a windscreens where the maximum vertical distance between the top edge and lowest edge of the transparent surface does not exceed 300 mm (assessed excluding areas with less than 70 % transparency shade bands, dot-printed areas, text, graphics and transparent slots for regulatory sight lines) and where the R-point of the driver seat is not more than 450 mm from the ground level.	B Not required for vehicles without a windscreens, with a foldable windscreens or with a windscreens where the maximum vertical distance between the top edge and lowest edge of the transparent surface does not exceed 300 mm (assessed excluding areas with less than 70 % transparency shade bands, dot-printed areas, text, graphics and transparent slots for regulatory sight lines) and where the R-point of the driver seat is not more than 450 mm from the ground level.
C10	Tyre safety and environmental performance	Regulation (EU) 2019/2144	X	X	X	X
C11	Spare wheels and run-flat systems (IF)	Regulation (EU) 2019/2144	X	X	X	X
C12	Retreaded tyres	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
C13	Tyre pressure monitoring for light-duty vehicles	Regulation (EU) 2019/2144	n/a	n/a	B	B
C14	Tyre pressure monitoring for heavy-duty vehicles	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
C15	Tyre installation	Regulation (EU) 2019/2144	B	B	B	B
C16	Replacement wheels	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
D	ON-BOARD INSTRUMENTS, ELECTRICAL SYSTEM, VEHICLE LIGHTING AND PROTECTION AGAINST UNAUTHORISED USE, INCLUDING CYBERATTACKS					
D1	Audible warning	Regulation (EU) 2019/2144	(a) Components X (b) Installation on vehicle B			
D2	Radio interference (electromagnetic compatibility)	Regulation (EU) 2019/2144	B	B	B	B
D3	Protection against unauthorised use, immobiliser and alarm systems	Regulation (EU) 2019/2144	A The provisions of paragraph 8.3.1.1.1 of UN Regulation No 116 may be applied instead of paragraph 8.3.1.1.2 of that Regulation regardless of the type of powertrain. VAS: (a) Components X (b) Installation B	A The provisions of paragraph 8.3.1.1.1 of UN Regulation No 116 may be applied instead of paragraph 8.3.1.1.2 of that Regulation regardless of the type of powertrain. VAS: (a) Components X (b) Installation B	A The provisions of paragraph 8.3.1.1.1 of UN Regulation No 116 may be applied instead of paragraph 8.3.1.1.2 of that Regulation regardless of the type of powertrain. VAS: (a) Components X (b) Installation B	A The provisions of paragraph 8.3.1.1.1 of UN Regulation No 116 may be applied instead of paragraph 8.3.1.1.2 of that Regulation regardless of the type of powertrain. VAS: (a) Components X (b) Installation B

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
D4	Protection of vehicle against cyberattacks	Regulation (EU) 2019/2144	B Only for vehicles fitted with lane keeping system, adaptive cruise control or other likewise systems	B Only for vehicles fitted with lane keeping system, adaptive cruise control or other likewise systems	B	B
D5	Speedometer	Regulation (EU) 2019/2144	B	B	B	B
D6	Odometer	Regulation (EU) 2019/2144	B	B	B	B
D7	Speed limitation devices	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
D8	Intelligent speed assistance	Regulation (EU) 2019/2144	n/a	n/a	B Not required for vehicles without a windscreens, with a foldable windscreens or with a windscreens where the maximum vertical distance between the top edge and lowest edge of the transparent surface does not exceed 300 mm (assessed excluding areas with less than 70 % transparency shade bands, dot-printed areas, text, graphics and transparent slots for regulatory sight lines) and where the R-point of the driver seat is not more than 450 mm from the ground level.	B Not required for vehicles without a windscreens, with a foldable windscreens or with a windscreens where the maximum vertical distance between the top edge and lowest edge of the transparent surface does not exceed 300 mm (assessed excluding areas with less than 70 % transparency shade bands, dot-printed areas, text, graphics and transparent slots for regulatory sight lines) and where the R-point of the driver seat is not more than 450 mm from the ground level.

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
D9	Identification of controls, tell-tales and indicators	Regulation (EU) 2019/2144	A	A	A	A
D10	Heating systems	Regulation (EU) 2019/2144	B	B	B	B
D11	Light signalling devices	Regulation (EU) 2019/2144	X	X	X	X
D12	Road illumination devices	Regulation (EU) 2019/2144	X	X	X	X
D13	Retro-reflective devices	Regulation (EU) 2019/2144	X	X	X	X
D14	Light sources	Regulation (EU) 2019/2144	X	X	X	X
D15	Installation of light signalling, road illumination and retro-reflective devices	Regulation (EU) 2019/2144	B Daytime Running Lamps (DRL) shall be fitted to a new type of vehicle	B Daytime Running Lamps (DRL) shall be fitted to a new type of vehicle	B Daytime Running Lamps (DRL) shall be fitted to a new type of vehicle	B Daytime Running Lamps (DRL) shall be fitted to a new type of vehicle
D16	Emergency stop signal	Regulation (EU) 2019/2144	B Only for vehicles fitted with electronically controlled anti-lock braking system	B Only for vehicles fitted with electronically controlled anti-lock braking system	B	B
D17	Headlamp cleaners (IF)	Regulation (EU) 2019/2144	IF B	IF B	IF B	IF B
D18	Gear shift indicator	Regulation (EU) 2019/2144	n/a	not in scope	n/a	not in scope

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
E	DRIVER AND SYSTEM BEHAVIOUR					
E1	Alcohol interlock installation facilitation	Regulation (EU) 2019/2144	A	A	A	A
E2	Driver drowsiness and attention warning	Regulation (EU) 2019/2144	n/a	n/a	B	B
E3	Advanced driver distraction warning	Regulation (EU) 2019/2144	No requirement yet	No requirement yet	No requirement yet	No requirement yet
E4	Driver availability monitoring system (in case of automated vehicles)	Regulation (EU) 2019/2144	IF B	IF B	IF B	IF B
E5	Event data recorder	Regulation (EU) 2019/2144	n/a	n/a	B	B
E6	Systems to replace driver's control (in case of automated vehicles)	Regulation (EU) 2019/2144	IF B	No requirement yet	IF B	No requirement yet
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Regulation (EU) 2019/2144	IF B	No requirement yet	IF B	No requirement yet

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
E8	Platooning (IF)	Regulation (EU) 2019/2144	No requirement yet	No requirement yet	No requirement yet	No requirement yet
E9	Systems to provide safety information to other road users (in case of automated vehicles)	Regulation (EU) 2019/2144	No requirement yet	No requirement yet	No requirement yet	No requirement yet
F	GENERAL VEHICLE CONSTRUCTION AND FEATURES					
F1	Registration plate space	Regulation (EU) 2019/2144	B	B	B	B
F2	Reversing motion	Regulation (EU) 2019/2144	B Statement of compliance	B Statement of compliance	B Statement of compliance	B Statement of compliance
F3	Door latches and hinges	Regulation (EU) 2019/2144	B <ul style="list-style-type: none">(a) General requirements (Paragraph 5 of UN Regulation No 11) All the requirements shall apply.(b) Performance requirements (Paragraph 6 of UN Regulation No 11) Only the requirements of paragraph 6.1.5.4 and paragraph 6.3 of UN Regulation No 11 shall apply.	B <ul style="list-style-type: none">(a) General requirements (Paragraph 5 of UN Regulation No 11) All the requirements shall apply.(b) Performance requirements (Paragraph 6 of UN Regulation No 11) Only the requirements of paragraph 6.1.5.4 and paragraph 6.3 of UN Regulation No 11 shall apply.	B	B
F4	Door entry steps, handholds and running boards	Regulation (EU) 2019/2144	B	B	B	B

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
F5	External projections	Regulation (EU) 2019/2144	B (a) General specifications. The requirements of paragraph 5 of UN Regulation No 26 shall apply. (b) Particular specifications. The requirements of paragraph 6 of UN Regulation No 26 shall apply.	not in scope	B (a) General specifications. The requirements of paragraph 5 of UN Regulation No 26 shall apply. (b) Particular specifications. The requirements of paragraph 6 of UN Regulation No 26 shall apply.	not in scope
F6	External projections of commercial vehicle cabs	Regulation (EU) 2019/2144	not in scope	B (a) General specifications. The requirements of paragraph 5 of UN Regulation No 61 shall apply (b) Particular specifications. The requirements of paragraph 6 of UN Regulation No 61 shall apply.	not in scope	B (a) General specifications. The requirements of paragraph 5 of UN Regulation No 61 shall apply (b) Particular specifications. The requirements of paragraph 6 of UN Regulation No 61 shall apply.
F7	Statutory plate and vehicle identification number	Regulation (EU) 2019/2144	B	B	B	B
F8	Towing devices	Regulation (EU) 2019/2144	B	B	B	B
F9	Wheel guards	Regulation (EU) 2019/2144	B	not in scope	B	not in scope
F10	Spray suppression systems	Regulation (EU) 2019/2144	not in scope	B	not in scope	B
F11	Masses and dimensions	Regulation (EU) 2019/2144	B The hill start ability test of Regulation (EU) 2021/535, Annex XIII, Part 2, Section B, Point 5. may be waived at the request of the manufacturer.	B The hill start ability test of Regulation (EU) 2021/535, Annex XIII, Part 2, Section B, Point 5. may be waived at the request of the manufacturer.	B	B

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
F12	Mechanical couplings	Regulation (EU) 2019/2144	IF (a) Components X (b) Installation B	IF (a) Components X (b) Installation B	IF (a) Components X (b) Installation B	IF (a) Components X (b) Installation B
F13	Vehicles intended for the transportation of dangerous goods (IF)	Regulation (EU) 2019/2144	not in scope	A	not in scope	A
F14	General bus construction	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
F15	Bus strength of superstructure	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
F16	Flammability in buses	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS					
G1	Sound level	Regulation (EU) No 540/2014	A	A	A	A
G2	Tailpipe emissions of vehicle in lab	Regulation (EC) No 715/2007	A Where the vehicle manufacturer uses an engine from another manufacturer, bench test data from the engine manufacturer are accepted provided that the engine management system is identical (i.e. having at least the same electronic control unit (ECU)).	A Where the vehicle manufacturer uses an engine from another manufacturer, bench test data from the engine manufacturer are accepted provided that the engine management system is identical (i.e. having at least the same electronic control unit (ECU)).	A	A

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
			The power output test may be performed on a chassis dynamometer, taking into account the power loss in the transmission.	The power output test may be performed on a chassis dynamometer, taking into account the power loss in the transmission.		
G2a	Determination of specific CO ₂ emissions and fuel consumption of vehicle and device for monitoring on board the vehicle the consumption of fuel and/or electric energy	Regulation (EC) No 715/2007	A	A	A	A
G3	Tailpipe emissions of engine in lab	Regulation (EC) No 595/2009	A Where the vehicle manufacturer uses an engine from another manufacturer, bench test data from the engine manufacturer are accepted provided that the engine management system is identical (i.e. having at least the same electronic control unit (ECU)). The power output test may be performed on a chassis dynamometer, taking into account the power loss in the transmission.	A Where the vehicle manufacturer uses an engine from another manufacturer, bench test data from the engine manufacturer are accepted provided that the engine management system is identical (i.e. having at least the same electronic control unit (ECU)). The power output test may be performed on a chassis dynamometer, taking into account the power loss in the transmission.	A	A

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
G3a	Determination of specific CO ₂ emissions and fuel consumption of vehicle	Regulation (EC) No 595/2009	A	A	A	A
G3b	Determination of specific energy efficiency performance of trailer	Regulation (EC) No 595/2009	not in scope	not in scope	not in scope	not in scope
G4	Tailpipe emissions on the road	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	A	A	A	A
G5	Durability of tailpipe emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	A	A	A	A
G6	Crankcase emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	A	A	A	A
G7	Evaporative emissions	Regulation (EC) No 715/2007	A	A	A	A
G8	Low-temperature tailpipe emissions in lab	Regulation (EC) No 715/2007	A	A	A	A

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
G9	On-board diagnostics	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	The vehicle shall be fitted with an OBD system that shall be designed, constructed and installed as to enable it to identify types of deterioration or malfunction over the entire life of the vehicle and record at least the malfunction of the engine management system. The OBD-interface shall be able to communicate with commonly available diagnostic tools.	The vehicle shall be fitted with an OBD system that shall be designed, constructed and installed as to enable it to identify types of deterioration or malfunction over the entire life of the vehicle and record at least the malfunction of the engine management system. The OBD-interface shall be able to communicate with commonly available diagnostic tools.	A	A
G10	Absence of defeat device	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	A	A	A	A
G11	Auxiliary emissions strategies	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	A	A	A	A
G12	Anti-tampering	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	A	A	A	A
G13	Recyclability	Directive 2005/64/EC	n/a However, Annex V on prohibition of reuse of the specified component parts shall apply.	n/a However, Annex V on prohibition of reuse of the specified component parts shall apply.	n/a However, Annex V on prohibition of reuse of the specified component parts shall apply.	n/a However, Annex V on prohibition of reuse of the specified component parts shall apply.

			Small series scheme I		Small series scheme II	
Item	Subject	Regulatory act	M ₁	N ₁	M ₁	N ₁
G14	Air-conditioning systems	Directive 2006/40/EC	A	A	A	A
H	ACCESS TO VEHICLE INFORMATION AND SOFTWARE UPDATE					
H1	Access to vehicle OBD information and vehicle repair and maintenance information	Regulation (EU) 2018/858, Articles 61 to 66 and Annex X	X	X	X	X
H2	Software update	Regulation (EU) 2018/858 UN Regulation No 156	X	X	X	X

Table 2

Regulatory acts for EU type-approval of fully automated vehicles (as defined in Article 3(22) of Regulation (EU) 2019/2144) produced in small series pursuant to Article 41

Item	Subject	Regulatory act(the scope of the regulatory act remains unchanged)	Fully automated vehicles of categories N ₁ , N ₂ and N ₃ without driver seat and without occupants	Fully automated vehicles of categories N ₁ , N ₂ , N ₃ , M ₁ , M ₂ , M ₃ without driver seat, with occupants	Dual mode vehicles: vehicles with a driver seat designed and constructed to be driven by the driver in the "manual driving mode" and to be driven by the automated driving system (ADS) without any driver supervision in the "fully automated driving mode"	<p>Specific provisions to be applied if letter A is used (i.e. the approval is not possible under the regulatory act because it does not yet include specific requirements for fully automated vehicles)</p> <p>No provision shall apply if the vehicle category is not in the scope of the base regulatory act.</p>
A	RESTRAINT SYSTEMS, CRASH TESTING, FUEL SYSTEM INTEGRITY AND HIGH VOLTAGE ELECTRICAL SAFETY					
A1	Interior fittings	Regulation (EU) 2019/2144	not in scope	A	X for manual driving mode. A for fully automated driving mode	<p>All windows, roof-panels and partitions for use by occupants shall be equipped with an auto-reversing device in order to make a driver-controlled switch redundant.</p> <p>For bidirectional vehicles (i.e. vehicles with no distinguishable rear/front and that can be driven in both directions), requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.</p>
A2	Seats and head restraints	Regulation (EU) 2019/2144	n/a	X A (for bidirectional vehicles)	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.

A3	Bus seats	Regulation (EU) 2019/2144	n/a	X A (for bidirectional vehicles)	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
A4	Safety-belt anchorages	Regulation (EU) 2019/2144	n/a	A	X	For vehicle with no driver seat, any seat in the first seat row shall be considered to be a front passenger seat. Paragraphs 5.1.6.2.1 and 5.1.6.2.2 of UN Regulation No 14 are not applicable.
A5	Safety-belts and restraint systems	Regulation (EU) 2019/2144	n/a	A	X	For vehicles without driver seat, any seat in the first seat row shall be considered to be a front passenger seat.
A6	Safety-belt reminders	Regulation (EU) 2019/2144	n/a	A	X	For vehicles without driver seat, any seat in the first seat row shall be considered to be a front passenger seat. The safety-belt reminder signal shall be transmitted to the automated driving system (ADS) and the remote intervention operator (if applicable) as defined in Implementing Regulation (EU) 2022/1362.
A7	Partitioning systems	Regulation (EU) 2019/2144	equipment	equipment	equipment	
A8	Child restraint anchorages	Regulation (EU) 2019/2144	n/a	X	X	
A9	Child restraint systems (IF)	Regulation (EU) 2019/2144	n/a	X	X	
A10	Enhanced child restraint systems (IF)	Regulation (EU) 2019/2144	n/a	X	X	

A11	Front underrun protection	Regulation (EU) 2019/2144	X A (for bidirectional vehicles)	X A (for bidirectional vehicles)	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
A12	Rear underrun protection	Regulation (EU) 2019/2144	X A (for bidirectional vehicles)	X A (for bidirectional vehicles)	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
A13	Lateral protection	Regulation (EU) 2019/2144	X A (for bidirectional vehicles)	X A (for bidirectional vehicles)	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
A14	Fuel tank safety (IF)	Regulation (EU) 2019/2144	X	X	X	
A15	Liquified petroleum gas safety (IF)	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The required malfunction or fault indication shall be replaced by a signal transmitted to the automated driving system and remote intervention operator (if applicable).
A16	Compressed and liquified natural gas safety (IF)	Regulation (EU) 2019/2144	X	X	X	
A17	Hydrogen safety (IF)	Regulation (EU) 2019/2144	X	X	X	

A18	Hydrogen system material qualification (IF)	Regulation (EU) 2019/2144	X	X	X	
A19	In-use electric safety (IF)	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The requirements for passenger compartment shall not apply to N vehicles with no passenger. The indications normally given to the driver ' shall be sent to the ADS and the remote intervention operator (if applicable)
A20	Frontal off-set impact	Regulation (EU) 2019/2144	Not applicable	A n/a for vehicles below 30 km/h	X	The "R" point of the driver shall be considered to be the "R" point of the foremost passenger. If the vehicle has no steering wheel or pedal cluster, the positioning of the steering wheel and pedal cluster shall not be taken into account. If the vehicle does not contain a driver or/and a co-driver seat, these positions should not be tested. For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
A21	Frontal full-width impact	Regulation (EU) 2019/2144	n/a	A n/a for vehicles below 30 km/h	X	The "R" point of the driver shall be considered to be the "R" point of the foremost passenger. For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.

A22	Protective steering	Regulation (EU) 2019/2144	n/a	n/a	X	
A23	Replacement airbag	Regulation (EU) 2019/2144	n/a	equipment	equipment	
A24	Cab impact	Regulation (EU) 2019/2144	n/a	X A (for bidirectional vehicles)	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
A25	Side impact	Regulation (EU) 2019/2144	n/a	A n/a for vehicles below 30 km/h	X	The collision test will be carried out on the side or sides as agreed between the manufacturer and type approval authority. For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
A26	Pole side impact	Regulation (EU) 2019/2144	n/a	A n/a for vehicles below 30 km/h	X	The "R" point of the driver's seat shall be considered to be the "R" point of the foremost passenger seat. The dynamic pole side impact test will be carried out on the side or sides as agreed between the manufacturer and type approval authority. For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.

A27	Rear impact	Regulation (EU) 2019/2144	n/a	X A (for bidirectional vehicles)	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
A28	112-based eCall in-vehicles systems	Regulation (EU) 2015/758	n/a	A	X (for manual driving mode) A (for fully automated driving mode)	For fully automated driving mode, the ADS takes care of the functionality.
B VULNERABLE ROAD USERS, VISION AND VISIBILITY						
B1	Pedestrian leg and head protection	Regulation (EU) 2019/2144	X A (for bidirectional vehicles)	X A (for bidirectional vehicles)	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
B2	Enlarged head impact zone	Regulation (EU) 2019/2144	X A (for bidirectional vehicles)	X A (for bidirectional vehicles)	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
B3	Frontal protection system	Regulation (EU) 2019/2144	equipment	equipment	equipment	
B4	Advanced emergency braking for pedestrians and cyclists ahead	Regulation (EU) 2019/2144	n/a (functionality to be covered by the ADS)	n/a (functionality to be covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode) (functionality to be covered by the ADS)	

B5	Pedestrian and cyclist collision warning	Regulation (EU) 2019/2144	n/a (functionality to be covered by the ADS)	n/a (functionality to be covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode) (functionality to be covered by the ADS)	
B6	Blind spot information system	Regulation (EU) 2019/2144	n/a (functionality to be covered by the ADS)	n/a (functionality covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode) (functionality covered by the ADS)	
B7	Reversing detection	Regulation (EU) 2019/2144	n/a (functionality covered by the ADS)	n/a (functionality covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode) (functionality to be covered by the ADS)	
B8	Forward vision	Regulation (EU) 2019/2144	n/a	n/a	X (for manual driving mode) n/a (for fully automated driving mode) (functionality covered by the ADS)	
B9	Heavy-duty vehicles direct vision	Regulation (EU) 2019/2144	n/a (functionality covered by the ADS)	n/a (functionality covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode)	
B10	Safety glazing	Regulation (EU) 2019/2144	n/a	A	X	<p>Point 4.1.3 of Annex 24 is not applicable (no R-point available in relation to the installation of the windscreen).</p> <p>Any front exterior forward-facing glazing shall be regarded as windscreen.</p>

						For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
B11	Defrost/demist	Regulation (EU) 2019/2144	n/a	n/a	X (for manual driving mode) n/a (for fully automated driving mode) (functionality covered by the ADS)	
B12	Wash/wipe	Regulation (EU) 2019/2144	n/a	n/a	X (for manual driving mode) n/a (for fully automated driving mode)	
B13	Indirect vision devices	Regulation (EU) 2019/2144	n/a (functionality covered by the ADS)	n/a (functionality covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode)	
B14	Acoustic Vehicle Alerting Systems	Regulation (EU) No 540/2014	X	X	X	
C	VEHICLE CHASSIS, BRAKING, TYRES AND STEERING					
C1	Steering equipment	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The basic steering (mechanical) requirements apply however: — the requirements applicable to the steering control (e.g. max steering forces) are not applicable; — the failure provisions and performance at 5.3 are not relevant if there's no driver but the failure notification should be made (digitally) available to the ADS and the remote intervention operator (if applicable).

						— The provisions of Annex 6-complex electronic systems need to be fulfilled and may be covered by the ADS safety concept. The ADS shall take care of the tasks assigned to the driver and driver steering assistance system.
C2	Lane departure warning	Regulation (EU) 2019/2144	n/a (functionality covered by the ADS)	n/a (functionality covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode) (functionality covered by the ADS)	
C3	Emergency lane keeping	Regulation (EU) 2019/2144	n/a (functionality covered by the ADS)	n/a (functionality covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode)	
C4	Braking	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated mode)	<p>Activation of the brakes managed by the ADS in replacement of the driver and driver assistant systems.</p> <p>Each vehicle shall be fitted where applicable with</p> <ul style="list-style-type: none"> — a service braking system — a secondary braking system — a parking braking system — an endurance braking system. (for vehicle categories covered by UN Regulation No 13) <p>All Annexes to UN Regulation No 13, except for Annex 5 (Additional provisions applicable to certain vehicles as specified in the ADR), shall remain applicable.</p> <p>All muscular generated performances (e.g. secondary brake) shall be replaced by alternative supply. (to be performed by the ADS- need for a special test mode). Issue of failure to be covered (no driver as fallback).</p>

						<p>All the tell tales, indicators, warnings and information in accordance to UN Regulation No 13 or UN Regulation No 13-H (depending on the vehicle category) shall be sent to the ADS and the remote intervention operator (if applicable).</p> <p>When more than one control is required in UN Regulation No 13 (e.g. paragraph 5.2.1.2.1) this shall be replaced by two independent power sources. e.g. service brake activation and parking braking shall be activated by actuators with separated energy reserves, actuators and logic.</p> <p>The ADS safety concept shall cover the electronic systems of the braking system (including the interfaces and interactions with any other affected electronic systems of the vehicle).</p> <p>The ADS takes care of the tasks assigned to the driver and braking assistance systems.</p>
C5	Replacement braking parts	Regulation (EU) 2019/2144	equipment	equipment	equipment	
C6	Brake assist	Regulation (EU) 2019/2144	n/a (functionality covered by the ADS)	n/a(functionality covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode) (functionality covered by the ADS)	
C7	Stability control	Regulation (EU) 2019/2144	n/a (functionality covered by the ADS)	n/a (functionality covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode) (functionality covered by the ADS)	

C8	Advanced emergency braking on heavy-duty vehicles	Regulation (EU) 2019/2144	n/a (functionality covered by the ADS)	n/a (functionality covered by the ADS)	X (for manual driving mode) n/a (for fully automated driving mode) (functionality covered by the ADS)	
C9	Advanced emergency braking on light-duty vehicles	Regulation (EU) 2019/2144	n/a (functionality covered by the ADS)	n/a (functionality covered by the ADS)	X for manual driving mode Not applicable for fully automated driving mode (functionality covered by the ADS)	
C10	Tyre safety and environmental performance	Regulation (EU) 2019/2144	X	X	X	
C11	Spare wheels and run-flat systems (IF)	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated mode)	In the case of vehicles equipped with a Run-Flat Warning System the warning signal and the run-flat malfunction signal shall be replaced by signals transmitted to the ADS and the remote intervention operator (if applicable).
C12	Retreaded tyres	Regulation (EU) 2019/2144	equipment	equipment	equipment	
C13	Tyre pressure monitoring for light-duty vehicles	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The warning signal shall be sent to the ADS and the remote intervention operator (if applicable).
C14	Tyre pressure monitoring for heavy-duty vehicles	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The warning signal shall be sent to the ADS and the remote intervention operator (if applicable).

C15	Tyre installation	Regulation (EU) 2019/2144	A	A	X	The maximum speed warning label (in vehicle) shall not be required. The ADS shall not exceed the maximum speed capability of the tyres prescribed by the vehicle manufacturer.
C16	Replacement wheels	Regulation (EU) 2019/2144	equipment	equipment	equipment	
D	ON-BOARD INSTRUMENTS, ELECTRICAL SYSTEM, VEHICLE LIGHTING AND PROTECTION AGAINST UNAUTHORISED USE, INCLUDING CYBERATTACKS					
D1	Audible warning	Regulation (EU) 2019/2144	X	X	X	
D2	Radio interference (electromagnetic compatibility)	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	<p>Test mode needed.</p> <p>In addition to the requirements EMC tests described in Annexes 4 to 22 to UN Regulation No 10, the following procedure before and during initial EMC tests shall be followed:</p> <ol style="list-style-type: none"> When a fully automated vehicle with an ADS is EMC tested, the ADS functions should be switched on and also work in active mode. However certain limitations in use case can be observed. Therefore, before executing the EMC test, the type-approval authority needs to be consulted about the test program to agree about the Pass/Fail criteria proposal made by the EMC lab according to paragraph 6.1.2 of UN Regulation No 10. <p>Before testing the Technical Service has to prepare a test plan in conjunction with the manufacturer, which contains at least mode of operation, stimulated function(s), monitored function(s), pass/fail criterion (criteria) and intended emissions.</p>

						<p>2. The manufacturer of the vehicle or Electric/electronic subassembly (ESA) shall fill in the information according to UN Regulation 10, Annex 2A or 2B. The EMC lab shall make this available as an annex to the test report.</p> <p>3. In case if a remote intervention is used and could influence the behaviour of the vehicle the remote intervention should be part of the EMC test plan.</p> <p>4. When it's needed during the initial test, to install Ferrite blocks or aluminium foil on several elements to pass the EMC tests, it proves that the EMC design was weak and potentially prone to variation.</p> <p>Therefore the initial tests can never be used for further revision or extension for further vehicles or adding/changing ESAs (Electronic Sub-Assemblies) to the vehicle/DUTs.</p>
D3	Protection against unauthorised use, immobiliser and alarm systems	Regulation (EU) 2019/2144	X	X	X	
D4	Protection of vehicle against cyberattacks	Regulation (EU) 2019/2144	X	X	X	
D5	Speedometer	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	Requirements are not applicable except that the speed signal shall be send to the ADS
D6	Odometer	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The odometer signal shall be send to the ADS

D7	Speed limitation devices	Regulation (EU) 2019/2144	A	A	X (for manual driving mode A (for fully automated) driving mode)	Test mode needed. The speed management and limitation shall be ensured by ADS.
D8	Intelligent speed assistance	Regulation (EU) 2019/2144	n/a	n/a	X (for manual driving mode) n/a (for fully automated driving mode) (functionality covered by the ADS)	
D9	Identification of controls, tell-tales and indicators	Regulation (EU) 2019/2144	n/a	n/a	X (for manual driving mode) n/a (for fully automated driving mode)	
D10	Heating systems	Regulation (EU) 2019/2144	n/a	A	X (for manual driving mode) A (for fully automated driving mode)	In the case of part or parts of the heating system in the passenger compartment, and in the case of overheating, the temperature of the parts shall not exceed 110 °C (70 °C for M ₂ and 80 °C for M ₃). The activation and adjustment of the heating system can be managed by the ADS and/or passengers or remote intervention operator (if applicable).
D11	Light signalling devices	Regulation (EU) 2019/2144	X	X	X	
D12	Road illumination devices	Regulation (EU) 2019/2144	X	X	X	
D13	Retro-reflective devices	Regulation (EU) 2019/2144	X	X	X	
D14	Light sources	Regulation (EU) 2019/2144	X	X	X	

D15	Installation of light signalling, road illumination and retro-reflective devices	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The requirements shall remain the same, but in case of malfunctioning, the information shall be sent to ADS and the remote intervention operator (if applicable). The activation of the lights is managed by the ADS. For bidirectional vehicles, requirements shall be met in both directions unless it is incompatible with the use in agreement with the type-approval authority.
D16	Emergency stop signal	Regulation (EU) 2019/2144	X	X	X	
D17	Headlamp cleaners (IF)	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The control of the headlamp cleaner shall be managed by the ADS.
D18	Gear shift indicator	Regulation (EU) 2019/2144	n/a	n/a	X (for manual driving mode) n/a (for fully automated mode)	not in scope
E	DRIVER AND SYSTEM BEHAVIOUR					
E1	Alcohol interlock installation facilitation	Regulation (EU) 2019/2144	n/a	n/a	X (for manual driving mode) n/a (for fully automated driving mode)	
E2	Driver drowsiness and attention warning	Regulation (EU) 2019/2144	n/a	n/a	X (for manual driving mode) n/a (for fully automated driving mode)	
E3	Advanced driver distraction warning	Regulation (EU) 2019/2144	No requirement yet	No requirement yet	No requirement yet	

E4	Driver availability monitoring system (in case of automated vehicles)	Regulation (EU) 2019/2144	n/a	n/a	X	
E5	Event data recorder	Regulation (EU) 2019/2144	A	A	A for fully automated driving mode X for manual driving mode	Specific ADS data elements are covered in Implementing Regulation (EU) 2022/1362
E6	Systems to replace driver's control (in case of automated vehicles)	Regulation (EU) 2019/2144	X	X	X	Covered by Implementing Regulation (EU) 2022/1362
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Regulation (EU) 2019/2144	X	X	X	Covered by Implementing Regulation (EU) 2022/1362
E8	Platooning (IF)	Regulation (EU) 2019/2144	No requirement yet	No requirement yet	No requirement yet	No requirement yet
E9	Systems to provide safety information to other road users (in case of automated vehicles)	Regulation (EU) 2019/2144	X	X	X	Covered by Implementing Regulation (EU) 2022/1362
F	GENERAL VEHICLE CONSTRUCTION AND FEATURES					
F1	Registration plate space	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	For bidirectional vehicles, requirements shall be met in both directions unless it is incompatible with the use in agreement with the type-approval authority.

F2	Reversing motion	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The ADS shall also be tested for manouvrability (reverse gear). The ADS shall take care of the tasks assigned to the driver (e.g. activation of the reverse gear).
F3	Door latches and hinges	Regulation (EU) 2019/2144	n/a	A	X (for manual driving mode) A (for fully automated driving mode)	<p>The visual signal of the door closure warning system shall be replaced by a signal transmitted to the ADS and the remote intervention operator (if applicable).</p> <p>The equipment of side doors with locking devices shall be subject to the discretion of the manufacturer.</p> <p>The primary door controls which normally would be accessible by the driver, would need to be accessible either from a primary seating position (if applicable) or adjacent to each door.</p> <p>The ADS shall ensure that the vehicle can only move if doors are closed.</p>
F4	Door entry steps, handholds and running boards	Regulation (EU) 2019/2144	A	X	X	Vehicle access requirements do not apply where there is no vehicle cab.
F5	External projections	Regulation (EU) 2019/2144	not in scope	A	A (for fully automated driving mode)	<p>Sensors fitted to the ADS vehicle which are necessary to perform the Dynamic Driving Task can be excluded in a similar manner as camera monitor systems devices if they meet the general requirements on camera monitor devices in paragraph 6.2.2.1 of UN Regulation 46.</p> <p>The "R" point of the driver referred shall be considered to be the "R" point of the foremost passenger in case there is no driver seat.</p> <p>For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.</p>

F6	External projections of commercial vehicle cabs	Regulation (EU) 2019/2144	A	A	A	<p>Sensors fitted to the ADS vehicle which are necessary to perform the Dynamic Driving Task can be excluded in a similar manner as camera monitor systems devices if they meet the general requirements on camera monitor devices in paragraph 6.2.2.1 of UN Regulation 46.</p> <p>The “R” point of the driver referred shall be considered to be the “R” point of the foremost passenger in case there is no driver seat.</p> <p>For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.</p>
F7	Statutory plate and vehicle identification number	Regulation (EU) 2019/2144	X A for bidirectional vehicles	X A for bidirectional vehicles	X	For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
F8	Towing devices	Regulation (EU) 2019/2144	X	X	X	
F9	Wheel guards	Regulation (EU) 2019/2144	Not in scope	A	X (for manual driving mode) A (for fully automated mode)	Fully applicable. For bidirectional vehicles, requirements shall be met in both directions. Alternative requirements leading to an equivalent level of safety to the satisfaction of the type-approval authority are permitted if meeting all the requirements in both directions is incompatible with the bidirectional use.
F10	Spray suppression systems	Regulation (EU) 2019/2144	X	X	X	

F11	Masses and dimensions	Regulation (EU) 2019/2144	A	A.	A (for fully automated mode) X (for manual driving mode)	Mass in running order shall exclude mass of the driver if there is no on-board operator. The ADS sensors above 2 metres are not included in the maximum dimensions in accordance with the provisions of Regulation (EU) 2021/535, Annex XIII.
F12	Mechanical couplings	Regulation (EU) 2019/2144	A	A	X (for manual driving mode) A (for fully automated driving mode)	The indication to driver that the mechanical coupling is locked/unlocked shall be addressed to the ADS and the remote intervention operator (if applicable).
F13	Vehicles intended for the transportation of dangerous goods (IF)	Regulation (EU) 2019/2144	Not in scope	Not in scope	Not in scope	Fully automated vehicles intended for the transportation of dangerous goods cannot be approved.
F14	General bus construction	Regulation (EU) 2019/2144	Not in scope	A	X (for manual driving mode) A (for fully automated mode)	Buses without a roof and trolley buses are out of scope. In general the tasks normally expected by the driver under UN Regulation No 107 shall be covered in the ADS safety concept. The requirements of paragraphs 7.2.2.1.1, 7.2.2.1.2 and 7.2.2.1.3 as defined in Annex 3 to UN-Regulation No 107 shall not apply. All required information normally displayed or noticed to the driver or information to passengers in case of an emergency shall be transferred to the ADS, the on-board operator and the remote intervention operator (e.g. fire suppression system) The ADS shall take care of power operated doors.

						<p>The ADS shall take care of the reaction to fire as part of the ADS safety concept (e.g. emergency manoeuvre and transfer to the safe state), doors automatically unlocked when safe to do so.</p> <p>In case of emergency, the ADS shall take care of the emergency lighting system as part of the ADS safety concept. Once activated, the emergency lighting system shall remain active for at least 30 minutes. This active function shall be displayed as well to the remote intervention operator who may deactivate the emergency lighting system.</p> <p>The kneeling system shall in ADS operation automatically be actuated to achieve required step height. Also prevention system shall be part of the ADS safety concept to prevent the feet/legs of passengers boarding the vehicle from getting stuck underneath the vehicle during lowering process.</p>
F15	Bus strength of superstructure	Regulation (EU) 2019/2144	Not in scope	X	X	
F16	Flammability in buses	Regulation (EU) 2019/2144	Not in scope	X	X	
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS					
G1	Sound level	Regulation (EU) No 540/2014	A	A	X (for manual driving mode) A (for fully automated driving mode)	Test mode necessary. Manufacturer to define how to perform the test in accordance with the technical justification in agreement with technical service. Highest value measured in manual or/and in autonomous mode shall be considered for type approval.

						Vehicles having overall sound levels complying with the requirements in paragraph 6.2.8 of UNECE Regulation No 138(1) with a margin of +3 dB(A), are not required to be equipped with Acoustic Vehicle Alerting System (AVAS). The requirements laid down in paragraph 6.2.8 of that Regulation for one-third octave bands and the requirements laid down in paragraph 6.2.3 of that Regulation for the frequency shift as defined in paragraph 2.4 of that Regulation ("frequency shift") shall not apply to those vehicles to determine the need for AVAS independent whether the vehicles is driven in manual or autonomous mode during the test. The R point of the driver seat shall be considered to be the lowest R point of the passenger seats in the 1st seat row. Used test procedure/special arrangement to be recorded in the test report.
G2	Tailpipe emissions of vehicle in lab	Regulation (EC) No 715/2007	A	A	X (for manual driving mode) A (for fully automated driving mode)	The manufacturer shall define a test mode in order to allow testing on a chassis dynamometer and communicate the method to the relevant approval authorities. The required driver warning and inducement system shall be replaced by signals transmitted to the automated driving system, and remote intervention operator (if applicable). It shall be clearly indicated to the remote intervention operator when the inducement will be activated.
G2a	Determination of specific CO ₂ emissions and fuel consumption of vehicle and device for monitoring on board the vehicle the consumption of fuel and/or electric energy	Regulation (EC) No 715/2007	A	A	X (for manual driving mode) A (for fully automated driving mode)	The manufacturer shall define a test mode in order to allow testing on a chassis dynamometer and communicate the method to the relevant approval authorities.

G3	Tailpipe emissions of engine in lab	Regulation (EC) No 595/2009	A	A	X (for manual driving mode) A (for automated driving mode)	The required driver warning and inducement system shall be replaced by signals transmitted to the automated driving system and remote intervention operator (if applicable). It shall be clearly indicated to the remote intervention operator when the inducement will be activated.
G3a	Determination of specific CO ₂ emissions and fuel consumption of vehicle	Regulation (EC) No 595/2009	A	A	X (for manual driving mode) A (for automated driving mode)	The manufacturer shall define a test mode in order to perform the verification testing procedure and communicate the method to the relevant approval authorities.
G3b	Determination of specific energy efficiency performance of trailer	Regulation (EC) No 595/2009	Not in scope	Not in scope	Not in scope	Not in scope
G4	Tailipipe emissions on the road	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	A	A	X (for manual driving mode) A (for automated driving mode)	The manufacturer shall define a test mode in order to allow testing on the road and communicate the method to the relevant approval authorities. The required driver warning and inducement system shall be replaced by signals transmitted to the automated driving system, and remote intervention operator (if applicable). It shall be clearly indicated to the remote intervention operator when the inducement will be activated.
G5	Durability of tailpipe emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	A	A	X (for manual driving mode)	The manufacturer shall define a test mode in order to allow testing on the road and communicate the method to the relevant approval authorities.
G6	Crankcase emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	

G7	Evaporative emissions	Regulation (EC) No 715/2007	X	X	X	
G8	Low-temperature tailpipe emissions in lab	Regulation (EC) No 715/2007	A	A	X (for manual driving mode) A (for automated driving mode)	The manufacturer shall define a test mode in order to allow testing on a chassis dynamometer and communicate the method to the relevant approval authorities. The required driver warning and inducement system shall be replaced by signals transmitted to the automated driving system and remote intervention operator (if applicable). It shall be clearly indicated to the remote intervention operator when the inducement will be activated.
G9	On-board diagnostics	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	A	A	X (for manual driving mode) A (for automated driving mode)	The required Malfunction Indicator Light (MIL) shall be replaced by a signal transmitted to the automated driving system, and remote intervention operator (if applicable).
G10	Absence of defeat device	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	
G11	Auxiliary emissions strategies	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	
G12	Anti-tampering	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	
G13	Recyclability	Directive 2005/64/EC	X	X	X	

G14	Air-conditioning systems	Directive 2006/40/EC	n/a	X	X	
H	ACCESS TO VEHICLE INFORMATION AND SOFTWARE UPDATE					
H1	Access to vehicle OBD information and vehicle repair and maintenance information	Regulation (EU) 2018/858, Articles 61 to 66 and Annex X	X	X	X	
H2	Software update	Regulation (EU) 2018/858 UN Regulation No 156	X	X	X'	

(3) Part II is amended as follows:

(a) the following paragraph is added after the second paragraph below the title:

'Installation requirements laid down in a Directive or Regulation in the table of Part I shall apply also to components and separate technical units approved in accordance with the UN Regulations listed in the following table.';

(b) the table is replaced by the following:

Item	Subject	UN Regulation	Series of amendments
B14	Acoustic vehicle alerting system	138	01
G1	Sound level	51 59	03 01
G13	Recyclability (*)	133	00

(*) The requirements set out in Annex I to Directive 2005/64/EC shall apply.'

(4) Part III and its Appendices 1 to 6 are replaced by the following:

'PART III

List of regulatory acts setting out the requirements for the purpose of EU type-approval of special purpose vehicles

EXPLANATORY NOTES

to the tables in Appendices 1 to 6

X: Compliance with the regulatory act is required according to the vehicle category for which type-approval is sought. Any specific provisions noted in addition to this explanatory note shall be taken into account.

G: In case of multi-stage approval, compliance with the regulatory act according to which the base vehicle (e.g. the chassis of which was used to build the special purpose vehicle) has been type-approved shall be accepted. In this case, any vehicle systems, their features, parts, equipment, components and separate technical units that have been modified or added by the manufacturer, may be assessed against the base vehicle's requirements. Any specific provisions noted in addition to this explanatory note shall be taken into account.

A: The approval authority may agree to fully or partly grant exemptions upon the condition that the manufacturer demonstrates to the satisfaction of the technical service that the vehicle cannot meet the full set of requirements due to its special purpose. The manufacturer shall however endeavour to meet the requirements to the largest possible extent taking into account proportionality. Those exemptions shall be described in Part 2 of the vehicle EU type-approval certificate as well as under "remarks" in the Certificate of Conformity. Any specific provisions noted in addition to this explanatory note shall be taken into account.

Appendix 1

Motor-caravans, ambulances and hearses

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
A	RESTRAINT SYSTEMS, CRASH TESTING, FUEL SYSTEM INTEGRITY AND HIGH VOLTAGE ELECTRICAL SAFETY					
A1	Interior fittings	Regulation (EU) 2019/2144	G Application is limited to the passenger compartment in front of the transverse plane passing through the torso reference line of the 3-D H machine placed on the rearmost seat designated for normal use when the vehicle is used on a public road, as well as to the respective reference zones of each seating position designated for normal use as defined in the regulatory act when the vehicle type is subject to the requirements applicable to vehicle category M_1 . It does not apply to the patient compartment of ambulances Additional requirements for new types of ambulances: The patient compartment of ambulances shall comply with the requirements of EN 1789:2020 on Medical vehicles and their equipment – Road ambulances with the exception of Section 6.5, list of equipment. Proof of compliance shall be provided with a test report of the	G Application is limited to the passenger compartment in front of the transverse plane passing through the torso reference line of the 3-D H machine placed on the rearmost seat designated for normal use when the vehicle is used on a public road, as well as to the respective reference zones of each seating position designated for normal use as defined in the regulatory act when the vehicle type is subject to the requirements applicable to vehicle category M_1 . It does not apply to the patient compartment of ambulances Additional requirements for new types of ambulances: The patient compartment of ambulances shall comply with the requirements of EN 1789:2020 on Medical vehicles and their equipment – Road ambulances with the exception of Section 6.5, list of equipment. Proof of compliance shall be provided with a test report of the	n/a for the passenger or patient compartment Additional requirements for new types of ambulances: The patient compartment of ambulances shall comply with the requirements of EN 1789:2020 on Medical vehicles and their equipment – Road ambulances with the exception of Section 6.5, list of equipment. Proof of compliance shall be provided with a test report of the technical service and may be based on an assessment carried out by subcontractors or subsidiaries of the technical service in accordance with the provisions of Article 71. If a wheelchair space is foreseen, the requirements for wheelchair accessible vehicles (code SH) relating to the wheelchair tie-down and occupant restraint systems shall also apply.	n/a for the passenger or patient compartment Additional requirements for new types of ambulances: The patient compartment of ambulances shall comply with the requirements of EN 1789:2020 on Medical vehicles and their equipment – Road ambulances with the exception of Section 6.5, list of equipment. Proof of compliance shall be provided with a test report of the technical service and may be based on an assessment carried out by subcontractors or subsidiaries of the technical service in accordance with the provisions of Article 71. If a wheelchair space is foreseen, the requirements for wheelchair accessible vehicles (code SH) relating to the wheelchair tie-down and occupant restraint systems shall also apply.

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
			technical service and may be based on an assessment carried out by subcontractors or subsidiaries of the technical service in accordance with the provisions of Article 71. If a wheelchair space is foreseen, the requirements for wheelchair accessible vehicles (code SH) relating to the wheelchair tie-down and occupant restraint systems shall also apply.	technical service and may be based on an assessment carried out by subcontractors or subsidiaries of the technical service in accordance with the provisions of Article 71. If a wheelchair space is foreseen, the requirements for wheelchair accessible vehicles (code SH) relating to the wheelchair tie-down and occupant restraint systems shall also apply.		
A2	Seats and head restraints	Regulation (EU) 2019/2144	G Application is limited to seats designated for normal use when the vehicle is used on a public road. Seats that are not designated as such shall be clearly and permanently identified to users, either by means of a pictogram or a sign with an appropriate text. The energy dissipation and radii requirements are checked in accordance with paragraphs 5.2.3./5.2.4.2. and 5.2.4. of UN Regulation No 17 when the vehicle type is subject to the requirements applicable to vehicle category M_1 .	G Application is limited to seats designated for normal use when the vehicle is used on a public road. Seats that are not designated as such shall be clearly and permanently identified to users, either by means of a pictogram or a sign with an appropriate text. The energy dissipation and radii requirements are checked in accordance with paragraphs 5.2.3./5.2.4.2. and 5.2.4. of UN Regulation No 17 when the vehicle type is subject to the requirements applicable to vehicle category M_1 .	X Application limited to seats designated for normal use when the vehicle is used on a public road. Seats that are not designated as such shall be clearly and permanently identified to users, either by means of a pictogram or a sign with an appropriate text.	X Application limited to seats designated for normal use when the vehicle is used on a public road. Seats that are not designated as such shall be clearly and permanently identified to users, either by means of a pictogram or a sign with an appropriate text.

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
			The luggage retention requirements of UN Regulation No 17 (para. 1, point (c) and Annex 9) do not apply.	The luggage retention requirements of UN Regulation No 17 (para. 1, point (c) and Annex 9) do not apply.		
A3	Bus seats	Regulation (EU) 2019/2144	not in scope	not in scope	X Application limited to seats designated for normal use when the vehicle is used on a public road. Seats that are not designated as such shall be clearly and permanently identified to users, either by means of a pictogram or a sign with an appropriate text.	X Application limited to seats designated for normal use when the vehicle is used on a public road. Seats that are not designated as such shall be clearly and permanently identified to users, either by means of a pictogram or a sign with an appropriate text.
A4	Safety-belt anchorages	Regulation (EU) 2019/2144	X Application limited to seats designated for normal use when the vehicle is used on a public road.	G Application limited to seats designated for normal use when the vehicle is used on a public road. At least anchorages for lap belts are required in the rear seating positions.	X Application limited to seats designated for normal use when the vehicle is used on a public road. At least anchorages for lap belts are required in the rear seating positions.	X Application limited to seats designated for normal use when the vehicle is used on a public road. At least anchorages for lap belts are required in the rear seating positions.
A5	Safety-belts and restraint systems	Regulation (EU) 2019/2144	X Application limited to seats designated for normal use when the vehicle is used on a public road.	G Application limited to seats designated for normal use when the vehicle is used on a public road. At least lap belts are required in the rear seating positions.	G Application limited to seats designated for normal use when the vehicle is used on a public road. At least lap belts are required in the rear seating positions.	G Application limited to seats designated for normal use when the vehicle is used on a public road. At least lap belts are required in the rear seating positions.

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
A6	Safety-belt reminders	Regulation (EU) 2019/2144	X Not required for rear seats			
A7	Partitioning systems	Regulation (EU) 2019/2144	equipment	equipment	Equipment	equipment
A8	Child restraint anchorages	Regulation (EU) 2019/2144	G ISOFIX is not required on ambulances and hearses	G ISOFIX is not required on ambulances and hearses	IF	IF
A9	Child restraint systems (IF)	Regulation (EU) 2019/2144	equipment	equipment	Equipment	equipment
A10	Enhanced child restraint systems (IF)	Regulation (EU) 2019/2144	equipment	equipment	Equipment	equipment
A11	Front underrun protection	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
A12	Rear underrun protection	Regulation (EU) 2019/2144	X	X	X	X
A13	Lateral protection	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
A14	Fuel tank safety (IF)	Regulation (EU) 2019/2144	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible provided all installation requirements are met.	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible provided all installation requirements are met.	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible provided all installation requirements are met.	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible provided all installation requirements are met.

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
A15	Liquified petroleum gas safety (IF)	Regulation (EU) 2019/2144	X	G	G	X
A16	Compressed and liquified natural gas safety (IF)	Regulation (EU) 2019/2144	X	G	G	X
A17	Hydrogen safety (IF)	Regulation (EU) 2019/2144	X	G	G	X
A18	Hydrogen system material qualification (IF)	Regulation (EU) 2019/2144	X	X	X	X
A19	In-use electric safety (IF)	Regulation (EU) 2019/2144	X	G	X	X
A20	Frontal off-set impact	Regulation (EU) 2019/2144	X	<p>G</p> <p>Completed vehicles are deemed to comply with the frontal off-set impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, irrespective of the mass in running order increase, as part of a previous-stage type-approval and the relevant restraint systems have not been modified to the extent that it would result in a decrease of the level of safety, as agreed by the technical service.</p> <p>Completed vehicles on the basis of a type-approved incomplete chassis-cowl configuration are exempted from the full-scale crash test. However, it shall be demonstrated to the satisfaction of the technical service that there is no unacceptable risk of fuel</p>	not in scope	not in scope

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
				<p>system integrity failure or unacceptable risk of direct contact with live parts of high voltage propulsion systems, after a frontal impact.</p> <p>Virtual testing methods may be used in accordance with Annex VIII to Regulation (EU) 2018/858.</p>		
A21	Frontal full-width impact	Regulation (EU) 2019/2144	G	<p>G</p> <p>Completed vehicles are deemed to comply with the frontal full-width impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, irrespective of the mass in running order increase, as part of a previous-stage type-approval and the relevant restraint systems have not been modified to the extent that it would result in a decrease of the level of safety, as agreed by the technical service.</p> <p>Completed vehicles on the basis of a type-approved incomplete chassis-cowl configuration are exempted from the full-scale crash test. However, it shall be demonstrated to the satisfaction of the technical service that there is no unacceptable risk of fuel system integrity failure or unacceptable risk of direct contact with live parts of high voltage propulsion systems, after a frontal impact.</p> <p>Virtual testing methods may be</p>	not in scope	not in scope

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
				used in accordance with Annex VIII to Regulation (EU) 2018/858..		
A22	Protective steering	Regulation (EU) 2019/2144	X	G	not in scope	not in scope
A23	Replacement airbag	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
A24	Cab impact	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
A25	Side impact	Regulation (EU) 2019/2144	X	<p>G</p> <p>Completed vehicles are deemed to comply with the side impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, irrespective of the mass in running order increase, as part of a previous-stage type-approval.</p> <p>Completed vehicles on the basis of a type-approved incomplete chassis-cowl configuration are exempted from the full-scale crash test. However, it shall be demonstrated to the satisfaction of the technical service that there is no unacceptable risk of fuel system integrity failure or unacceptable risk of direct contact with live parts of high voltage propulsion systems, after a side impact.</p> <p>Virtual testing methods may be used in accordance with Annex VIII to Regulation (EU) 2018/858.</p>	not in scope	not in scope

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
A26	Pole side impact	Regulation (EU) 2019/2144	n/a	n/a	not in scope	not in scope
A27	Rear impact	Regulation (EU) 2019/2144	X	G Completed vehicles are deemed to comply with rear impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase	not in scope	not in scope
A28	112-based eCall in-vehicles systems	Regulation (EU) 2015/758	G	G	not in scope	not in scope
B VULNERABLE ROAD USERS, VISION AND VISIBILITY						
B1	Pedestrian leg and head protection	Regulation (EU) 2019/2144	X	G	not in scope	not in scope
B2	Enlarged head impact zone	Regulation (EU) 2019/2144	X	G Modifications to the interior fittings directly behind the windscreen do not have to be taken into account.	not in scope	not in scope
B3	Frontal protection system	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
B4	Advanced emergency braking for pedestrians and cyclists ahead	Regulation (EU) 2019/2144	X	G	not in scope	not in scope
B5	Pedestrian and cyclist collision warning	Regulation (EU) 2019/2144	not in scope	not in scope	X	X
B6	Blind spot information system	Regulation (EU) 2019/2144	not in scope	not in scope	X	X
B7	Reversing detection	Regulation (EU) 2019/2144	X	X	X	X

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
B8	Forward vision	Regulation (EU) 2019/2144	X	G	not in scope	not in scope
B9	Heavy-duty vehicles direct vision	Regulation (EU) 2019/2144	not in scope	not in scope	no requirements yet	no requirements yet
B10	Safety glazing	Regulation (EU) 2019/2144	X For all glazing other than the windscreens and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.	X For all glazing other than the windscreens and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.	X For all glazing other than the windscreens and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.	X For all glazing other than the windscreens and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.
B11	Defrost/demist	Regulation (EU) 2019/2144	G	G	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device
B12	Wash/wipe	Regulation (EU) 2019/2144	G	G	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	X Vehicles shall be fitted with adequate windscreen washing and wiping devices
B13	Indirect vision devices	Regulation (EU) 2019/2144	X	G	G	G
B14	Acoustic Vehicle Alerting Systems	Regulation (EU) No 540/2014	X	X	X	X
C	VEHICLE CHASSIS, BRAKING, TYRES AND STEERING					
C1	Steering equipment	Regulation (EU) 2019/2144	X	G	G	G

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
C2	Lane departure warning	Regulation (EU) 2019/2144	not in scope	not in scope	n/a	n/a
C3	Emergency lane keeping	Regulation (EU) 2019/2144	X	G May be a C2 Lane departure warning system in case this was applicable for the base vehicle.	not in scope	not in scope
C4	Braking	Regulation (EU) 2019/2144	G	G	G	G
C5	Replacement braking parts	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
C6	Brake assist	Regulation (EU) 2019/2144	X	G	not in scope	not in scope
C7	Stability control	Regulation (EU) 2019/2144	X	G In the case of modifications to the stability control system, included as part of a previous stage type-approval, that are likely to affect the function of that base vehicle's stability control system, it shall be demonstrated that the vehicle has not been rendered unsafe or unstable. This shall be proven by tests e.g. performing rapid double lane-change manoeuvres in each direction at 80 km/h with sufficient severity to cause intervention by the stability control system. These interventions shall be well-controlled and shall	n/a	n/a

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
				improve the stability of the vehicle under those driving conditions in comparison to the stability of the vehicle with a disabled stability control system. All tests are subject to the agreement between the manufacturer and technical service.		
C8	Advanced emergency braking on heavy-duty vehicles	Regulation (EU) 2019/2144	not in scope	not in scope	n/a	n/a
C9	Advanced emergency braking on light-duty vehicles	Regulation (EU) 2019/2144	X	G	not in scope	not in scope
C10	Tyre safety and environmental performance	Regulation (EU) 2019/2144	X	G	G	G
C11	Spare wheels and run-flat systems (IF)	Regulation (EU) 2019/2144	X	X	not in scope	not in scope
C12	Retreaded tyres	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
C13	Tyre pressure monitoring for light-duty vehicles	Regulation (EU) 2019/2144	X	G	not in scope	not in scope

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
C14	Tyre pressure monitoring for heavy-duty vehicles	Regulation (EU) 2019/2144	not in scope	not in scope	X	X
C15	Tyre installation	Regulation (EU) 2019/2144	X	G	G	G
C16	Replacement wheels	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment
D	ON-BOARD INSTRUMENTS, ELECTRICAL SYSTEM, VEHICLE LIGHTING AND PROTECTION AGAINST UNAUTHORISED USE, INCLUDING CYBERATTACKS					
D1	Audible warning	Regulation (EU) 2019/2144	X	X	X	X
D2	Radio interference (electromagnetic compatibility)	Regulation (EU) 2019/2144	X	X	X	X
D3	Protection against unauthorised use, immobiliser and alarm systems	Regulation (EU) 2019/2144	X	G	IF G	IF G
D4	Protection of vehicle against cyberattacks	Regulation (EU) 2019/2144	X	X	X	X
D5	Speedometer	Regulation (EU) 2019/2144	X	X	X	X

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
D6	Odometer	Regulation (EU) 2019/2144	X	X	X	X
D7	Speed limitation devices	Regulation (EU) 2019/2144	not in scope	not in scope	X	X
D8	Intelligent speed assistance	Regulation (EU) 2019/2144	X	X	X	X
D9	Identification of controls, tell-tales and indicators	Regulation (EU) 2019/2144	X	X	X	X
D10	Heating systems	Regulation (EU) 2019/2144	X	X	X	X
D11	Light signalling devices	Regulation (EU) 2019/2144	X	X	X	X
D12	Road illumination devices	Regulation (EU) 2019/2144	X	X	X	X
D13	Retro-reflective devices	Regulation (EU) 2019/2144	X	X	X	X
D14	Light sources	Regulation (EU) 2019/2144	X	X	X	X
D15	Installation of light signalling, road illumination and retro-reflective devices	Regulation (EU) 2019/2144	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A + G for the cab A for the remaining part Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A + G for the cab A for the remaining part Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A + G for the cab A for the remaining part Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
D16	Emergency stop signal	Regulation (EU) 2019/2144	X	X	X Only for vehicles fitted with electronically controlled anti-lock braking system	X Only for vehicles fitted with electronically controlled anti-lock braking system
D17	Headlamp cleaners (IF)	Regulation (EU) 2019/2144	IF	IF	IF	IF
D18	Gear shift indicator	Regulation (EU) 2019/2144	G	G	not in scope	not in scope
E	DRIVER AND SYSTEM BEHAVIOUR					
E1	Alcohol interlock installation facilitation	Regulation (EU) 2019/2144	X	X	X	X
E2	Driver drowsiness and attention warning	Regulation (EU) 2019/2144	X	X	X	X
E3	Advanced driver distraction warning	Regulation (EU) 2019/2144	no requirement yet	no requirement yet	no requirement yet	no requirement yet
E4	Driver availability monitoring system (in case of automated vehicles)	Regulation (EU) 2019/2144	IF	IF	not in scope	not in scope
E5	Event data recorder	Regulation (EU) 2019/2144	X	G	no requirement yet	no requirement yet

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
E6	Systems to replace driver's control (in case of automated vehicles)	Regulation (EU) 2019/2144	IF	IF	no requirement yet	no requirement yet
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Regulation (EU) 2019/2144	IF	IF	no requirement yet	no requirement yet
E8	Platooning (IF)	Regulation (EU) 2019/2144	no requirement yet	no requirement yet	no requirement yet	no requirement yet
E9	Systems to provide safety information to other road users (in case of automated vehicles)	Regulation (EU) 2019/2144	no requirement yet	no requirement yet	no requirement yet	no requirement yet
F	GENERAL VEHICLE CONSTRUCTION AND FEATURES					
F1	Registration plate space	Regulation (EU) 2019/2144	X	X	X	X
F2	Reversing motion	Regulation (EU) 2019/2144	X	X	X	X

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
F3	Door latches and hinges	Regulation (EU) 2019/2144	X Application limited to doors giving access to seats designated for normal use when the vehicle is used on a public road and where the distance between the R-point of the seat and the average plane of the door surface, measured perpendicular to the longitudinal medium plane of the vehicle, does not exceed 500 mm.	G Application limited to doors giving access to seats designated for normal use when the vehicle is used on a public road and where the distance between the R-point of the seat and the average plane of the door surface, measured perpendicular to the longitudinal medium plane of the vehicle, does not exceed 500 mm. Completed vehicles on the basis of a type-approved incomplete chassis-cowl configuration are exempted from the general and performance requirements.	not in scope	not in scope
F4	Door entry steps, handholds and running boards	Regulation (EU) 2019/2144	X	X	not in scope	not in scope
F5	External projections	Regulation (EU) 2019/2144	G for the cab A for the remaining part The requirements on the protrusion of open windows do not apply to the living compartment	G for the cab A for the remaining part The requirements on the protrusion of open windows do not apply to the living compartment	not in scope	not in scope
F6	External projections of commercial vehicle cabs	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₁ ≤ 2 500 kg	M ₁ > 2 500 kg	M ₂	M ₃
F7	Statutory plate and vehicle identification number	Regulation (EU) 2019/2144	X	X	X	X
F8	Towing devices	Regulation (EU) 2019/2144	X Required for the front only, to be tested if fitted at the rear	X Required for the front only, to be tested if fitted at the rear	X Required for the front only, to be tested if fitted at the rear	X Required for the front only, to be tested if fitted at the rear
F9	Wheel guards	Regulation (EU) 2019/2144	G	G	not in scope	not in scope
F10	Spray suppression systems	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
F11	Masses and dimensions	Regulation (EU) 2019/2144	X	X	X	X
F12	Mechanical couplings	Regulation (EU) 2019/2144	IF X	IF G	IF G	IF G
F13	Vehicles intended for the transportation of dangerous goods (IF)	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope
F14	General bus construction	Regulation (EU) 2019/2144	not in scope	not in scope	A	A
F15	Bus strength of superstructure	Regulation (EU) 2019/2144	not in scope	not in scope	A	A
F16	Flammability in buses	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	G for the cab X for the remaining part

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS					
G1	Sound level	Regulation (EU) No 540/2014	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.
G2	Tailpipe emissions of vehicle in lab	Regulation (EC) No 715/2007	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. In the case of ambulances, an EU type-approval granted to the most representative base vehicle remains valid irrespective of a change in the reference weight. Motor-caravans and hearses: In the case of conversion of a vehicle (e.g. in a multi-stage type-approval process), the manufacturer responsible for the conversion needs to consult the original (complete or incomplete) vehicle manufacturer to get confirmation that the converted vehicle is covered by the emission approval of the original (complete or incomplete) vehicle. It is allowed for the reference mass of the converted vehicle to exceed 2 840 kg.	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. In the case of ambulances, an EU type-approval granted to the most representative base vehicle remains valid irrespective of a change in the reference weight. Motor-caravans and hearses: In the case of conversion of a vehicle (e.g. in a multi-stage type-approval process), the manufacturer responsible for the conversion needs to consult the original (complete or incomplete) vehicle manufacturer to get confirmation that the converted vehicle is covered by the emission approval of the original (complete or incomplete) vehicle. It is allowed for the reference mass of the converted vehicle to exceed 2 840 kg.	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. In the case of ambulances, an EU type-approval granted to the most representative base vehicle remains valid irrespective of a change in the reference weight. Motor-caravans and hearses: In the case of conversion of a vehicle (e.g. in a multi-stage type-approval process), the manufacturer responsible for the conversion needs to consult the original (complete or incomplete) vehicle manufacturer to get confirmation that the converted vehicle is covered by the emission approval of the original (complete or incomplete) vehicle. It is allowed for the reference mass of the converted vehicle to exceed 2 840 kg.	not in scope

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
G2a	Determination of specific CO ₂ emissions and fuel consumption of vehicle and device for monitoring on board the vehicle the consumption of fuel and/or electric energy	Regulation (EC) No 715/2007	<p>G</p> <p>In the case of multi-stage type-approval, the new CO₂ value shall be calculated in accordance with the CO₂ interpolation method, using the relevant data from the completed vehicle.</p> <p>Alternatively, the new CO₂ value shall be calculated on the basis of the parameters of the completed vehicle as specified in paragraph 3.2.4 of Annex B7 to UN Regulation 154 and using the road load matrix tool supplied by the manufacturer of the base vehicle. If the tool is not available or CO₂ interpolation is impractical, the CO₂ value of Vehicle High from the base vehicle shall be used, at the request of the manufacturer responsible for the conversion, and with the agreement of the approval authority.</p>	<p>G</p> <p>In the case of multi-stage type-approval, the new CO₂ value shall be calculated in accordance with the CO₂ interpolation method, using the relevant data from the completed vehicle.</p> <p>Alternatively, the new CO₂ value shall be calculated on the basis of the parameters of the completed vehicle as specified in paragraph 3.2.4 of Annex B7 to UN Regulation 154 and using the road load matrix tool supplied by the manufacturer of the base vehicle. If the tool is not available or CO₂ interpolation is impractical, the CO₂ value of Vehicle High from the base vehicle shall be used, at the request of the manufacturer responsible for the conversion, and with the agreement of the approval authority.</p>	<p>G</p> <p>In the case of multi-stage type-approval, the new CO₂ value shall be calculated in accordance with the CO₂ interpolation method, using the relevant data from the completed vehicle.</p> <p>Alternatively, the new CO₂ value shall be calculated on the basis of the parameters of the completed vehicle as specified in paragraph 3.2.4 of Annex B7 to UN Regulation 154 and using the road load matrix tool supplied by the manufacturer of the base vehicle. If the tool is not available or CO₂ interpolation is impractical, the CO₂ value of Vehicle High from the base vehicle shall be used, at the request of the manufacturer responsible for the conversion, and with the agreement of the approval authority.</p>	Not in scope
G3	Tailpipe emissions of engine in lab	Regulation (EC) No 595/2009	not in scope	<p>G</p> <p>Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.</p>	<p>G</p> <p>Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.</p>	<p>G</p> <p>Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.</p>
G3a	Determination of specific CO ₂ emissions and fuel consumption of vehicle	Regulation (EC) No 595/2009	Not in scope	Not in scope	Not in scope	Not in scope

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
G3b	Determination of specific energy efficiency performance of trailer	Regulation (EC) No 595/2009	Not in scope	Not in scope	Not in scope	Not in scope
G4	Tailpipe emissions on the road	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	<p>G</p> <p>Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.</p> <p>In the case of ambulances, an EU type-approval granted to the most representative base vehicle remains valid irrespective of a change in the reference weight.</p> <p>Motor-caravans and hearses:</p> <p>In the case of conversion of a vehicle (e.g. in a multi-stage type-approval process), the manufacturer responsible for the conversion needs to consult the original (complete or incomplete) vehicle manufacturer to get confirmation that the converted vehicle is covered by the emission approval of the original (complete or incomplete) vehicle. It is allowed for the reference mass of the converted vehicle to exceed 2 840 kg.</p>	<p>G</p> <p>Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.</p> <p>In the case of ambulances, an EU type-approval granted to the most representative base vehicle remains valid irrespective of a change in the reference weight.</p> <p>Motor-caravans and hearses:</p> <p>In the case of conversion of a vehicle (e.g. in a multi-stage type-approval process), the manufacturer responsible for the conversion needs to consult the original (complete or incomplete) vehicle manufacturer to get confirmation that the converted vehicle is covered by the emission approval of the original (complete or incomplete) vehicle. It is allowed for the reference mass of the converted vehicle to exceed 2 840 kg.</p>	G	G

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
G5	Durability of tailpipe emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G	G	G	G
G6	Crankcase emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G	G	G	G
G7	Evaporative emissions	Regulation (EC) No 715/2007	G	G	G	not in scope
G8	Low-temperature tail-pipe emissions in lab	Regulation (EC) No 715/2007	G	G	G	not in scope
G9	On-board diagnostics	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G	G	G	G
G10	Absence of defeat device	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G	G	G	G
G11	Auxiliary emissions strategies	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G	G	G	G

Item	Subject	Regulatory act	$M_1 \leq 2\ 500\ kg$	$M_1 > 2\ 500\ kg$	M_2	M_3
G12	Anti-tampering	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G	G	G	G
G13	Recyclability	Directive 2005/64/EC	n/a However, Annex V on prohibition of reuse of the specified component parts shall apply.	n/a However, Annex V on prohibition of reuse of the specified component parts shall apply.	not in scope	not in scope
G14	Air-conditioning systems	Directive 2006/40/EC	G	G	not in scope	not in scope
H	ACCESS TO VEHICLE INFORMATION AND SOFTWARE UPDATE					
H1	Access to vehicle OBD information and vehicle repair and maintenance information	Regulation (EU) 2018/858, Articles 61 to 66 and Annex X	X	X	X	X
H2	Software update	Regulation (EU) 2018/858 UN Regulation No 156	X	X	X	X

Appendix 2

Armoured vehicles

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
A10	Enhanced child restraint systems (IF)	Regulation (EU) 2019/2144	equipment									
A11	Front underrun protection	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope	X	X	not in scope	not in scope	not in scope	not in scope
A12	Rear underrun protection	Regulation (EU) 2019/2144	X	X	X	A	A	X	X	X	X	X
A13	Lateral protection	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope	X	X	not in scope	not in scope	X	X
A14	Fuel tank safety (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X	X
A15	Liquified petroleum gas safety (IF)	Regulation (EU) 2019/2144	A	A	A	A	A	A	not in scope	not in scope	not in scope	not in scope
A16	Compressed and liquified natural gas safety (IF)	Regulation (EU) 2019/2144	A	A	A	A	A	A	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
A17	Hydrogen safety (IF)	Regulation (EU) 2019/2144	A	A	A	A	A	A	not in scope	not in scope	not in scope	not in scope
A18	Hydrogen system material qualification (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
A19	In-use electric safety (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
A20	Frontal offset impact	Regulation (EU) 2019/2144	n/a	not in scope	not in scope	n/a	not in scope					
A21	Frontal full-width impact	Regulation (EU) 2019/2144	n/a	not in scope	not in scope	n/a	not in scope					
A22	Protective steering	Regulation (EU) 2019/2144	n/a	not in scope	not in scope	n/a	not in scope					
A23	Replacement airbag	Regulation (EU) 2019/2144	equipment									
A24	Cab impact	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	n/a	n/a	n/a	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
B5	Pedestrian and cyclist collision warning	Regulation (EU) 2019/2144	not in scope	A May be partly exempted if the necessary devices cannot be placed in the optimal position as to prevent them from being damaged, which prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	A May be partly exempted if the necessary devices cannot be placed in the optimal position as to prevent them from being damaged, which prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	not in scope	A May be partly exempted if the necessary devices cannot be placed in the optimal position as to prevent them from being damaged, which prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	A May be partly exempted if the necessary devices cannot be placed in the optimal position as to prevent them from being damaged, which prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	not in scope	not in scope	not in scope	not in scope
B6	Blind spot information system	Regulation (EU) 2019/2144	not in scope	A May be partly exempted if the necessary devices cannot be placed in the optimal position as to prevent them from being damaged, which prevents full compliance with the requirements	A May be partly exempted if the necessary devices cannot be placed in the optimal position as to prevent them from being damaged, which prevents full compliance with the requirements	not in scope	A May be partly exempted if the necessary devices cannot be placed in the optimal position as to prevent them from being damaged, which prevents full compliance with the requirements	A May be partly exempted if the necessary devices cannot be placed in the optimal position as to prevent them from being damaged, which prevents full compliance with the requirements	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
B9	Heavy-duty vehicles direct vision	Regulation (EU) 2019/2144	not in scope	no requirements yet	no requirements yet	not in scope	no requirements yet	no requirements yet	not in scope	not in scope	not in scope	not in scope
B10	Safety glazing	Regulation (EU) 2019/2144	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B11	Defrost/demist	Regulation (EU) 2019/2144	A	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	not in scope	not in scope	not in scope	not in scope
B12	Wash/wipe	Regulation (EU) 2019/2144	A	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	not in scope	not in scope	not in scope	not in scope
B13	Indirect vision devices	Regulation (EU) 2019/2144	A	A	A	A	A	A	not in scope	not in scope	not in scope	not in scope
B14	Acoustic Vehicle Alerting Systems	Regulation (EU) No 540/2014	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
C	VEHICLE CHASSIS, BRAKING, TYRES AND STEERING											
C1	Steering equipment	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X	X
C2	Lane departure warning	Regulation (EU) 2019/2144	not in scope	n/a	n/a	not in scope	n/a	n/a	not in scope	not in scope	not in scope	not in scope
C3	Emergency lane keeping	Regulation (EU) 2019/2144	n/a	not in scope	not in scope	n/a	not in scope					
C4	Braking	Regulation (EU) 2019/2144	G	G	G	G	G	G	X	X	X	X
C5	Replacement braking parts	Regulation (EU) 2019/2144	equipment									
C6	Brake assist	Regulation (EU) 2019/2144	n/a	not in scope	not in scope	n/a	not in scope					
C7	Stability control	Regulation (EU) 2019/2144	X	n/a	n/a	X	n/a	n/a	not in scope	not in scope	X	X
C8	Advanced emergency braking on heavy-duty vehicles	Regulation (EU) 2019/2144	not in scope	n/a	n/a	not in scope	n/a	n/a	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
C9	Advanced emergency braking on light-duty vehicles	Regulation (EU) 2019/2144	n/a	not in scope	not in scope	n/a	not in scope					
C10	Tyre safety and environmental performance	Regulation (EU) 2019/2144	A	A	A	A	A	A	A	A	A	A
C11	Spare wheels and run-flat systems (IF)	Regulation (EU) 2019/2144	A	not in scope	not in scope	A	not in scope					
C12	Retreaded tyres	Regulation (EU) 2019/2144	equipment									
C13	Tyre pressure monitoring for light-duty vehicles	Regulation (EU) 2019/2144	n/a	not in scope	not in scope	n/a	not in scope					
C14	Tyre pressure monitoring for heavy-duty vehicles	Regulation (EU) 2019/2144	not in scope	n/a	n/a	not in scope	n/a	n/a	not in scope	not in scope	n/a	n/a

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
C15	Tyre installation	Regulation (EU) 2019/2144	A	A	A	A	A	A	A	A	A	A
C16	Replacement wheels	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment
D	ON-BOARD INSTRUMENTS, ELECTRICAL SYSTEM, VEHICLE LIGHTING AND PROTECTION AGAINST UNAUTHORISED USE, INCLUDING CYBERATTACKS											
D1	Audible warning	Regulation (EU) 2019/2144	A Additional panic alarm devices are permitted	not in scope	not in scope	not in scope	not in scope					
D2	Radio interference (electro-magnetic compatibility)	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X	X
D3	Protection against unauthorised use, immobiliser and alarm systems	Regulation (EU) 2019/2144	X	IF G	IF G	X	IF G	IF G	not in scope	not in scope	not in scope	not in scope
D4	Protection of vehicle against cyberattacks	Regulation (EU) 2019/2144	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
D16	Emergency stop signal	Regulation (EU) 2019/2144	X	X Only for vehicles fitted with electronically controlled anti-lock braking system	X Only for vehicles fitted with electronically controlled anti-lock braking system	X	X Only for vehicles fitted with electronically controlled anti-lock braking system	X Only for vehicles fitted with electronically controlled anti-lock braking system	not in scope	not in scope	not in scope	not in scope
D17	Headlamp cleaners (IF)	Regulation (EU) 2019/2144	IF	IF	IF	IF	IF	IF	not in scope	not in scope	not in scope	not in scope
D18	Gear shift indicator	Regulation (EU) 2019/2144	G	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope

E DRIVER AND SYSTEM BEHAVIOUR

E1	Alcohol interlock installation facilitation	Regulation (EU) 2019/2144	A	A	A	A	A	A	not in scope	not in scope	not in scope	not in scope
E2	Driver drowsiness and attention warning	Regulation (EU) 2019/2144	A	A	A	A	A	A	not in scope	not in scope	not in scope	not in scope
E3	Advanced driver distraction warning	Regulation (EU) 2019/2144	no requirement yet	not in scope	not in scope	not in scope	not in scope					

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
E4	Driver availability monitoring system (in case of automated vehicles)	Regulation (EU) 2019/2144	IF	not in the scope	not in the scope	IF	not in the scope	not in the scope	not in scope	not in scope	not in scope	not in scope
E5	Event data recorder	Regulation (EU) 2019/2144	A	no requirement yet	no requirement yet	A	no requirement yet	no requirement yet	not in scope	not in scope	not in scope	not in scope
E6	Systems to replace driver's control (in case of automated vehicles)	Regulation (EU) 2019/2144	IF	no requirement yet	not in scope	not in scope	not in scope	not in scope				
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Regulation (EU) 2019/2144	IF	no requirement yet	not in scope	not in scope	not in scope	not in scope				
E8	Platooning (IF)	Regulation (EU) 2019/2144	no requirement yet	not in scope	not in scope	not in scope	not in scope					

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
F6	External projections of commercial vehicle cabs	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	A	A	A	not in scope	not in scope	not in scope	not in scope
F7	Statutory plate and vehicle identification number	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X	X
F8	Towing devices	Regulation (EU) 2019/2144	A	A	A	A	A	A	not in scope	not in scope	not in scope	not in scope
F9	Wheel guards	Regulation (EU) 2019/2144	G	not in scope								
F10	Spray suppression systems	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	X	X	X	X	X	X	X
F11	Masses and dimensions	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X	X
F12	Mechanical couplings	Regulation (EU) 2019/2144	IF X	X	X	X	X					

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
F13	Vehicles intended for the transportation of dangerous goods (IF)	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	X	X	X	X	X	X	X
F14	General bus construction	Regulation (EU) 2019/2144	not in scope	A	A	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope
F15	Bus strength of superstructure	Regulation (EU) 2019/2144	not in scope	A	A	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope
F16	Flammability in buses	Regulation (EU) 2019/2144	not in scope	not in scope	X	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS											
G1	Sound level	Regulation (EU) No 540/2014	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
G2	Tailpipe emissions of vehicle in lab	Regulation (EC) No 715/2007	X At the manufacturer's request Regulation (EC) No 715/2007 may apply to vehicles with a reference mass exceeding 2 840 kg.	X At the manufacturer's request Regulation (EC) No 715/2007 may apply to vehicles with a reference mass exceeding 2 840 kg.	not in scope	X At the manufacturer's request Regulation (EC) No 715/2007 may apply to vehicles with a reference mass exceeding 2 840 kg.	X At the manufacturer's request Regulation (EC) No 715/2007 may apply to vehicles with a reference mass exceeding 2 840 kg.	not in scope				

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
			The approval authority may only grant exemption(s) if the manufacturer demonstrates that the vehicle cannot meet the requirements due to its special purpose. The exemptions granted are to be described on the vehicle type-approval certificate and the certificate of conformity.	The approval authority may only grant exemption(s) if the manufacturer demonstrates that the vehicle cannot meet the requirements due to its special purpose. The exemptions granted are to be described on the vehicle type-approval certificate and the certificate of conformity.		The approval authority may only grant exemption(s) if the manufacturer demonstrates that the vehicle cannot meet the requirements due to its special purpose. The exemptions granted are to be described on the vehicle type-approval certificate and the certificate of conformity.	The approval authority may only grant exemption(s) if the manufacturer demonstrates that the vehicle cannot meet the requirements due to its special purpose. The exemptions granted are to be described on the vehicle type-approval certificate and the certificate of conformity.					
G2a	Determination of specific CO ₂ emissions and fuel consumption of vehicle and device for monitoring onboard the vehicle the consumption of fuel and/or electric energy	Regulation (EC) No 715/2007	X At the manufacturer's request Regulation (EC) No 715/2007 may apply to vehicles with a reference mass exceeding 2 840 kg.	X At the manufacturer's request Regulation (EC) No 715/2007 may apply to vehicles with a reference mass exceeding 2 840 kg.	not in scope	X At the manufacturer's request Regulation (EC) No 715/2007 may apply to vehicles with a reference mass exceeding 2 840 kg.	X At the manufacturer's request Regulation (EC) No 715/2007 may apply to vehicles with a reference mass exceeding 2 840 kg.	not in scope				

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
G3b	Determination of specific energy efficiency performance of trailer	Regulation (EC) No 595/2009	not in scope									
G4	Tailpipe emissions on the road	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
G5	Durability of tailpipe emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
G6	Crankcase emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
G7	Evaporative emissions	Regulation (EC) No 715/2007	X	X	not in scope	X	X	not in scope				
G8	Low-temperature tailpipe emissions in lab	Regulation (EC) No 715/2007	X	X	not in scope	X	X	not in scope				
G9	On-board diagnostics	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
G10	Absence of defeat device	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
G11	Auxiliary emissions strategies	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope

Appendix 3

Wheelchair-accessible vehicles

Item	Subject	Regulatory act	M ₁
A	RESTRAINT SYSTEMS, CRASH TESTING, FUEL SYSTEM INTEGRITY AND HIGH VOLTAGE ELECTRICAL SAFETY		
A1	Interior fittings	Regulation (EU) 2019/2144	<p>G</p> <p>Note G may be applied to those fittings in the interior of the vehicle that are not significantly affected by the modification, however, any added or modified fittings in the interior shall comply with the requirements as applicable for vehicle category M₁</p> <p>Application is limited to the passenger compartment in front of the transverse plane passing through the torso reference line of the 3-D H-point machine placed on the rearmost seat designated for normal use when the vehicle is used on a public road, as well as to the respective reference zones of each seating position designated for normal use as defined in the regulatory act when the vehicle type is subject to the requirements applicable to vehicle category M₁.</p>
A2	Seats and head restraints	Regulation (EU) 2019/2144	<p>G</p> <p>Note G may be applied to seats and head restraints of the vehicle that are not significantly affected by the modification, however, any added or modified fittings concerning seats and head restraints shall comply with the requirements as applicable for vehicle category M₁</p> <p>The energy dissipation and radii requirements of seats and head restraints are checked in accordance with paragraphs 5.2.3/5.2.4.2. and 5.2.4. of UN Regulation No 17 when the vehicle type is subject to the requirements applicable to vehicle category M₁.</p> <p>The longitudinal plane of the intended wheelchair-travelling position shall be parallel to the longitudinal plane of the vehicle.</p> <p>Appropriate information is to be made available to the vehicle owner that, in order to withstand the forces transmitted by the tie-down mechanism during the various driving conditions, a wheelchair with a structure meeting the relevant part of ISO 7176-19:2008/Amd 1:2015 (or later revisions) is recommended.</p> <p>The seats of the vehicle may be adapted without further testing, provided it can be demonstrated to the satisfaction of the technical service that their anchorages, mechanisms and head restraints provide an adequate level of performance.</p> <p>The luggage retention requirements of UN Regulation No 17 (para. 1, point (c) and Annex 9) do not apply.</p>
A3	Bus seats	Regulation (EU) 2019/2144	not in scope

Item	Subject	Regulatory act	M ₁
A4	Safety-belt anchorages	Regulation (EU) 2019/2144	<p>X</p> <p>Each wheelchair location shall be provided with anchorages to which a wheelchair tie-down and occupant restraint system (WTORS) is to be fitted, and that complies with the additional provisions for testing the wheelchair tie down and occupant restraint system set out below.</p> <p>1. Definitions</p> <p>1.1. Surrogate wheelchair (SWC) means a rigid, re-usable test wheelchair, as defined in Section 3 of international standard ISO 10542-1:2012.</p> <p>1.2. Point P means a representation of the position of the wheelchair occupant's hip when seated in the SWC, as defined in Section 3 of international standard ISO 10542-1:2012. At the request of the manufacturer, a heavier surrogate wheelchair may be used, provided it has the same dimensional characteristics and centre of gravity position as the prescribed version. The pneumatic tyres may be replaced with solid or foam-filled versions in the same size.</p> <p>1.3. WTORS means a wheelchair tie-down and occupant restraint system.</p> <p>2. General requirements</p> <p>2.1. Each wheelchair location shall be provided with anchorages to which a WTORS can be fitted.</p> <p>2.2. The wheelchair occupant's lower belt anchorages shall be located in accordance with paragraph 5.4.2.2 UN Regulation No 14, relative to Point P on the SWC, when placed in the travelling position designated by the manufacturer. The upper actual anchorage(s) shall be located at least 1 100 mm above the horizontal plane passing through the points of contact between the rear tyres of the SWC and the vehicle floor. That condition shall still be satisfied after the test carried out in accordance with points 3 or 4 below. Either point 3 or 4 shall apply.</p> <p>3. Static in-vehicle testing</p> <p>3.1. Wheelchair occupant restraint anchorages</p> <p>3.1.1. The wheelchair occupant restraint anchorages shall resist the static forces prescribed for occupant restraint anchorages in UN Regulation No 14, simultaneously with the static forces applied to the wheelchair tie-down anchorages as specified in point 3.2.</p> <p>3.2. Wheelchair tie-down anchorages The wheelchair tie-down anchorages shall resist the following forces, for at least 0,2 seconds, applied via the SWC (or a suitable surrogate wheelchair having a wheelbase, seat height and tie-down attachment points in accordance with the specification for the SWC), at a height of 300 +/- 100 mm from the surface on which the SWC rests:</p>

Item	Subject	Regulatory act	M ₁
			<p>3.2.1. In the case of a forward-facing wheelchair, a simultaneous force, coinciding with the force applied to the occupant restraint anchorages, of 24,5 kN; and</p> <p>3.2.2. a second test applying a static force of 8,2 kN directed towards the rear of the vehicle.</p> <p>3.2.3. In the case of a rearward-facing wheelchair, a simultaneous force, coincident with the force applied to the occupant restraint anchorages, of 8,2 kN, and</p> <p>3.2.4. a second test applying a static force of 24,5 kN directed towards the front of the vehicle</p> <p>4. Dynamic in-vehicle testing</p> <p>4.1. The full assembly of the WTORS system shall be tested by an in-vehicle dynamic test in accordance with points 5.2.2 and 5.2.3 and Annex A to international standard ISO 10542-1:2012, testing all components/anchorages simultaneously, using a vehicle body-in-white or representative structure.</p>
A5	Safety-belts and restraint systems	Regulation (EU) 2019/2144	<p>X</p> <p>Each wheelchair location is to be provided with an occupant restraint belt that complies with the additional provisions for testing the wheelchair tie down and occupant restraint system of set out below.</p> <p>When, due to the conversion, anchorage points for the safety belts need to be moved outside the tolerance provided for in paragraph 7.7.1 of UN Regulation No 16, the technical service shall check whether the alteration constitutes a worst-case or not. If that is the case, the test provided for in paragraph 7.7.1 of UN Regulation No 16 shall be performed. The test may be performed using components that have not undergone the conditioning test prescribed by UN Regulation No 16.</p> <p>1. Definitions</p> <p>1.1. Surrogate wheelchair (SWC) means a rigid, re-usable test wheelchair, as defined in Section 3 of international standard ISO 10542-1:2012.</p> <p>1.2. Point P means a representation of the position of the wheelchair occupant's hip when seated in the SWC, as defined in Section 3 of international standard ISO 10542-1:2012. At the request of the manufacturer, a heavier surrogate wheelchair may be used, provided it has the same dimensional characteristics and centre of gravity position as the prescribed version. The pneumatic tyres may be replaced with solid or foam-filled versions in the same size.</p> <p>1.3. WTORS means a wheelchair tie-down and occupant restraint system.</p>

Item	Subject	Regulatory act	M ₁
			<p>2. General requirements</p> <p>2.1. An assessment shall be made of the WTORS occupant belt to ensure compliance with paragraphs 8.2.2 to 8.2.2.4 and 8.3.1 to 8.3.4 of UN Regulation No 16. Either point 3. or 4. shall apply.</p> <p>3. Static in-vehicle testing</p> <p>3.1. Components of the system</p> <p>3.1.1. Where the WTORS anchorages have been tested statically in the vehicle, all components of the WTORS shall meet the relevant requirements of international standard ISO 10542-1:2012. However, the dynamic test specified in Annex A to, and points 5.2.2. and 5.2.3. of, international standard ISO 10542-1:2012 shall be carried out on the complete WTORS using the vehicle anchorage geometry instead of the test geometry specified in Annex A to international standard ISO 10542-1:2012. This may be carried out within the vehicle structure or on a surrogate structure representative of the vehicle's WTORS anchorage geometry. The location of each anchorage used for the test shall lie within the tolerance provided for in paragraph 7.7.1 of UN Regulation No 16, of its true position relative to Point P.</p> <p>3.1.2. Where the occupant restraint part of the WTORS is approved in accordance with UN Regulation No 16, it shall be subject to the dynamic test as part of the complete WTORS specified in point 3.1.1., however, the requirements of points 5.1, 5.3 and 5.4 of international standard ISO10542-1:2012 shall be considered to have been met.</p> <p>4. Dynamic in-vehicle testing</p> <p>4.1. Where the WTORS anchorages have been tested dynamically in the vehicle, the component parts of the WTORS shall meet the relevant requirements of international standard ISO 10542-1:2012, points 5.1, 5.3 and 5.4. These requirements shall be deemed to have been met in respect of the occupant restraint if it is approved in accordance with UN Regulation No 16.</p>
A6	Safety-belt reminders	Regulation (EU) 2019/2144	n/a
A7	Partitioning systems	Regulation (EU) 2019/2144	equipment
A8	Child restraint anchorages	Regulation (EU) 2019/2144	<p>IF</p> <p>The minimum number of ISOFIX child seat anchorages need not to be provided. In the case of a multi-stage type approval where an ISOFIX anchorage system has been affected by the conversion, either the system shall be re-tested or the anchorages shall be rendered unusable. In the latter case the ISOFIX labels shall be removed and appropriate information shall be provided in the vehicle owner's manual for the completed vehicle.</p>

Item	Subject	Regulatory act	M ₁
A9	Child restraint systems (IF)	Regulation (EU) 2019/2144	equipment
A10	Enhanced child restraint systems (IF)	Regulation (EU) 2019/2144	equipment
A11	Front underrun protection	Regulation (EU) 2019/2144	not in scope
A12	Rear underrun protection	Regulation (EU) 2019/2144	X
A13	Lateral protection	Regulation (EU) 2019/2144	not in scope
A14	Fuel tank safety (IF)	Regulation (EU) 2019/2144	X Modification of the routing, length of the refuelling duct, fuel hoses and fuel vapour pipes as well as re-positioning of the original tank and evaporative control devices provided by the manufacturer of the base vehicle is permissible without further testing provided the installation requirements of paragraphs 5.4, 5.5, 5.6, 5.7, 5.8, and 5.11 of UN Regulation No 34 are met, and provided that the technical service is satisfied, by visual inspection, that the essential requirements of paragraph 5.10 of that Regulation have been satisfied. In cases involving re-positioning of the original plastic tank, further testing in accordance with Annex 5 to UN Regulation No 34 is not required.
A15	Liquified petroleum gas safety (IF)	Regulation (EU) 2019/2144	G
A16	Compressed and liquified natural gas safety (IF)	Regulation (EU) 2019/2144	G
A17	Hydrogen safety (IF)	Regulation (EU) 2019/2144	G
A18	Hydrogen system material qualification (IF)	Regulation (EU) 2019/2144	X
A19	In-use electric safety (IF)	Regulation (EU) 2019/2144	G

Item	Subject	Regulatory act	M ₁
A20	Frontal off-set impact	Regulation (EU) 2019/2144	G Alternatively, a suitable torsion stiffness test, in which a torque is applied to the vehicle as close as practicable to the spring mounting points, with all doors, hatches and bonnet opened, shall demonstrate that the torsional stiffness is within ± 75 % of that of the unmodified previous-stage vehicle body. In addition, a bending stiffness test shall be carried out with the vehicle on level ground, in which all side and rear doors and hatches shall open normally when the vehicle is loaded to its technically maximum permissible laden mass.
A21	Frontal full-width impact	Regulation (EU) 2019/2144	G Alternatively, a suitable torsion stiffness test, in which a torque is applied to the vehicle as close as practicable to the spring mounting points, with all doors, hatches and bonnet opened, shall demonstrate that the torsional stiffness is within ± 75 % of that of the unmodified previous-stage vehicle body. In addition, a bending stiffness test shall be carried out with the vehicle on level ground, in which all side and rear doors and hatches shall open normally when the vehicle is loaded to its technically maximum permissible laden mass.
A22	Protective steering	Regulation (EU) 2019/2144	G n/a in case of modified steering systems for drivers with special needs
A23	Replacement airbag	Regulation (EU) 2019/2144	equipment
A24	Cab impact	Regulation (EU) 2019/2144	not in scope
A25	Side impact	Regulation (EU) 2019/2144	G Alternatively, a suitable torsion stiffness test, in which a torque is applied to the vehicle as close as practicable to the spring mounting points, with all doors, hatches and bonnet opened, shall demonstrate that the torsional stiffness is within ± 75 % of that of the unmodified previous-stage vehicle body. In addition, a bending stiffness test shall be carried out with the vehicle on level ground, in which all side and rear doors and hatches shall open normally when the vehicle is loaded to its technically maximum permissible laden mass.
A26	Pole side impact	Regulation (EU) 2019/2144	n/a
A27	Rear impact	Regulation (EU) 2019/2144	n/a
A28	112-based eCall in-vehicles systems	Regulation (EU) 2015/758	G

Item	Subject	Regulatory act	M ₁
B	VULNERABLE ROAD USERS, VISION AND VISIBILITY		
B1	Pedestrian leg and head protection	Regulation (EU) 2019/2144	G
B2	Enlarged head impact zone	Regulation (EU) 2019/2144	G Modifications to the interior fittings directly behind the windscreen do not have to be taken into account.
B3	Frontal protection system	Regulation (EU) 2019/2144	equipment
B4	Advanced emergency braking for pedestrians and cyclists ahead	Regulation (EU) 2019/2144	G n/a in case of modified braking systems for drivers with special needs
B5	Pedestrian and cyclist collision warning	Regulation (EU) 2019/2144	not in scope
B6	Blind spot information system	Regulation (EU) 2019/2144	not in scope
B7	Reversing detection	Regulation (EU) 2019/2144	A May be partly exempted if equipment for special needs passengers prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements
B8	Forward vision	Regulation (EU) 2019/2144	G
B9	Heavy-duty vehicles direct vision	Regulation (EU) 2019/2144	not in scope
B10	Safety glazing	Regulation (EU) 2019/2144	G
B11	Defrost/demist	Regulation (EU) 2019/2144	G
B12	Wash/wipe	Regulation (EU) 2019/2144	G
B13	Indirect vision devices	Regulation (EU) 2019/2144	X
B14	Acoustic Vehicle Alerting Systems	Regulation (EU) No 540/2014	X

Item	Subject	Regulatory act	M ₁
C	VEHICLE CHASSIS, BRAKING, TYRES AND STEERING		
C1	Steering equipment	Regulation (EU) 2019/2144	G
C2	Lane departure warning	Regulation (EU) 2019/2144	not in scope
C3	Emergency lane keeping	Regulation (EU) 2019/2144	G n/a in case of modified steering systems for drivers with special needs, or in case of modified braking system if the ELKS of the base vehicle acts on the braking system instead.
C4	Braking	Regulation (EU) 2019/2144	G
C5	Replacement braking parts	Regulation (EU) 2019/2144	equipment
C6	Brake assist	Regulation (EU) 2019/2144	G n/a in case of modified braking systems for drivers with special needs
C7	Stability control	Regulation (EU) 2019/2144	G In case of modifications to the stability control system included as part of a previous stage type-approval, which are likely to affect the function of that base vehicle's stability control system, it shall be demonstrated that the vehicle has not been rendered unsafe or unstable. This shall be proven by tests e.g. performing rapid double lane-change manoeuvres in each direction at 80 km/h with sufficient severity to cause intervention by the stability control system. These interventions shall be well-controlled and shall improve the stability of the vehicle under those driving conditions in comparison to the stability of the vehicle with, where practicable, a disabled stability control system. All tests are subject to the agreement between the manufacturer and technical service.
C8	Advanced emergency braking on heavy-duty vehicles	Regulation (EU) 2019/2144	not in scope
C9	Advanced emergency braking on light-duty vehicles	Regulation (EU) 2019/2144	G n/a in case of modified braking systems for drivers with special needs

Item	Subject	Regulatory act	M ₁
C10	Tyre safety and environmental performance	Regulation (EU) 2019/2144	X
C11	Spare wheels and run-flat systems (IF)	Regulation (EU) 2019/2144	X
C12	Retreaded tyres	Regulation (EU) 2019/2144	equipment
C13	Tyre pressure monitoring for light-duty vehicles	Regulation (EU) 2019/2144	G
C14	Tyre pressure monitoring for heavy-duty vehicles	Regulation (EU) 2019/2144	not in scope
C15	Tyre installation	Regulation (EU) 2019/2144	X
C16	Replacement wheels	Regulation (EU) 2019/2144	equipment
D	ON-BOARD INSTRUMENTS, ELECTRICAL SYSTEM, VEHICLE LIGHTING AND PROTECTION AGAINST UNAUTHORISED USE, INCLUDING CYBERATTACKS		
D1	Audible warning	Regulation (EU) 2019/2144	X
D2	Radio interference (electromagnetic compatibility)	Regulation (EU) 2019/2144	X
D3	Protection against unauthorised use, immobiliser and alarm systems	Regulation (EU) 2019/2144	X
D4	Protection of vehicle against cyberattacks	Regulation (EU) 2019/2144	X
D5	Speedometer	Regulation (EU) 2019/2144	X
D6	Odometer	Regulation (EU) 2019/2144	X
D7	Speed limitation devices	Regulation (EU) 2019/2144	not in scope

Item	Subject	Regulatory act	M ₁
D8	Intelligent speed assistance	Regulation (EU) 2019/2144	A May be partly exempted if equipment for special needs passengers prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements
D9	Identification of controls, tell-tales and indicators	Regulation (EU) 2019/2144	X
D10	Heating systems	Regulation (EU) 2019/2144	X
D11	Light signalling devices	Regulation (EU) 2019/2144	X
D12	Road illumination devices	Regulation (EU) 2019/2144	X
D13	Retro-reflective devices	Regulation (EU) 2019/2144	X
D14	Light sources	Regulation (EU) 2019/2144	X
D15	Installation of light signalling, road illumination and retro-reflective devices	Regulation (EU) 2019/2144	X
D16	Emergency stop signal	Regulation (EU) 2019/2144	X Only for vehicles fitted with electronically controlled anti-lock braking system
D17	Headlamp cleaners (IF)	Regulation (EU) 2019/2144	IF
D18	Gear shift indicator	Regulation (EU) 2019/2144	G
E	DRIVER AND SYSTEM BEHAVIOUR		
E1	Alcohol interlock installation facilitation	Regulation (EU) 2019/2144	A
E2	Driver drowsiness and attention warning	Regulation (EU) 2019/2144	A May be partly exempted if equipment for special needs passengers prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements

Item	Subject	Regulatory act	M ₁
E3	Advanced driver distraction warning	Regulation (EU) 2019/2144	No requirement yet
E4	Driver availability monitoring system (in case of automated vehicles)	Regulation (EU) 2019/2144	IF
E5	Event data recorder	Regulation (EU) 2019/2144	A May be partly exempted if equipment for special needs passengers prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements
E6	Systems to replace driver's control (in case of automated vehicles)	Regulation (EU) 2019/2144	IF
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Regulation (EU) 2019/2144	IF
E8	Platooning (IF)	Regulation (EU) 2019/2144	No requirement yet
E9	Systems to provide safety information to other road users (in case of automated vehicles)	Regulation (EU) 2019/2144	No requirement yet
F	GENERAL VEHICLE CONSTRUCTION AND FEATURES		
F1	Registration plate space	Regulation (EU) 2019/2144	X
F2	Reversing motion	Regulation (EU) 2019/2144	X
F3	Door latches and hinges	Regulation (EU) 2019/2144	X
F4	Door entry steps, handholds and running boards	Regulation (EU) 2019/2144	X

Item	Subject	Regulatory act	M ₁
F5	External projections	Regulation (EU) 2019/2144	G Any boarding aids are considered only in the stowed position
F6	External projections of commercial vehicle cabs	Regulation (EU) 2019/2144	not in scope
F7	Statutory plate and vehicle identification number	Regulation (EU) 2019/2144	X
F8	Towing devices	Regulation (EU) 2019/2144	X Required for the front only, to be tested if fitted at the rear
F9	Wheel guards	Regulation (EU) 2019/2144	G
F10	Spray suppression systems	Regulation (EU) 2019/2144	not in scope
F11	Masses and dimensions	Regulation (EU) 2019/2144	X <p>For the purposes of calculations, the mass of the wheel-chair including the user is assumed to be 160 kg. The mass is concentrated at the P point of the surrogate wheelchair in its travelling position as declared by the manufacturer.</p> <p>It is permitted to temporarily limit the overall passenger capacity and to restrict the use of normal seating positions as a result of the actual transport of wheelchairs, with their users. In such case, the affected normal seating positions shall be clearly and permanently identified to users, either by means of a pictogram or a sign with an appropriate text. This shall be noted in Part 2 of the EU type-approval certificate as well as under "remarks" in the Certificate of Conformity as to allow inclusion of this information in on-board vehicle registration papers. In addition, the following shall be explained in the owner's manual for the completed vehicle: The meaning of any pictograms used to mark the affected seating positions, as well as a more detailed description of the specific restrictions, if necessary.</p>
F12	Mechanical couplings	Regulation (EU) 2019/2144	IF X
F13	Vehicles intended for the transportation of dangerous goods (IF)	Regulation (EU) 2019/2144	not in scope
F14	General bus construction	Regulation (EU) 2019/2144	not in scope

Item	Subject	Regulatory act	M ₁
F15	Bus strength of superstructure	Regulation (EU) 2019/2144	not in scope
F16	Flammability in buses	Regulation (EU) 2019/2144	not in scope
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS		
G1	Sound level	Regulation (EU) No 540/2014	G Modification of the exhaust system length is permitted without the need for retesting, provided that the exhaust back pressure remains similar.
G2	Tailpipe emissions of vehicle in lab	Regulation (EC) No 715/2007	G Modification in the exhaust system is permitted without any further test of tailpipe emissions provided that the emission control devices, including particulate filters (if any), are not affected. In case of conversion of a vehicle (e.g. in a multi-stage type-approval process), the manufacturer responsible for the conversion needs to consult the original (complete or incomplete) vehicle manufacturer to get confirmation that the converted vehicle is covered by the emission approval of the original (complete or incomplete) vehicle. In such a case it is acceptable if the reference mass of the converted vehicle will exceed 2 840 kg.
G2a	Determination of specific CO ₂ emissions and fuel consumption of vehicle and device for monitoring on board the vehicle the consumption of fuel and/or electric energy	Regulation (EC) No 715/2007	G Modification in the exhaust system is permitted without any further test of CO ₂ /fuel consumption provided that the emission control devices, including particulate filters (if any), are not affected. In the case of multi-stage type-approval, the new CO ₂ value shall be calculated in accordance with the CO ₂ interpolation method, using the relevant data from the completed vehicle. Alternatively, the new CO ₂ value shall be calculated on the basis of the parameters of the completed vehicle as specified in paragraph 3.2.4 of Annex B7 to UN Regulation 154 and using the road load matrix tool supplied by the manufacturer of the base vehicle. If the tool is not available or CO ₂ interpolation is impractical, the CO ₂ value of Vehicle High from the base vehicle shall be used, at the request of the manufacturer responsible for the conversion, and with the agreement of the approval authority.
G3	Tailpipe emissions of engine in lab	Regulation (EC) No 595/2009	X Modification in the exhaust system is permitted without any further test of tailpipe emissions and CO ₂ /fuel consumption provided that the emission control devices, including particulate filters (if any), are not affected. If the evaporative control devices are kept as fitted by the manufacturer of the original (complete or incomplete) vehicle, no new evaporative test is required on the modified vehicle.

Item	Subject	Regulatory act	M ₁
G3a	Determination of specific CO ₂ emissions and fuel consumption of vehicle	Regulation (EC) No 595/2009	Not in scope
G3b	Determination of specific energy efficiency performance of trailer	Regulation (EC) No 595/2009	Not in scope
G4	Tailpipe emissions on the road	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G In case of conversion of a vehicle (e.g. in a multi-stage type-approval process), the manufacturer responsible for the conversion needs to consult the original (complete or incomplete) vehicle manufacturer to get confirmation that the converted vehicle is covered by the emission approval of the original (complete or incomplete) vehicle. In such a case it is acceptable if the reference mass of the converted vehicle will exceed 2 840 kg.
G5	Durability of tailpipe emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G
G6	Crankcase emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G
G7	Evaporative emissions	Regulation (EC) No 715/2007	G If the evaporative control devices are kept as fitted by the manufacturer of the original (complete or incomplete) vehicle, no new evaporative test is required on the modified vehicle.
G8	Low-temperaturetailpipe emissions in lab	Regulation (EC) No 715/2007	G
G9	On-board diagnostics	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G
G10	Absence of defeat device	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G

Item	Subject	Regulatory act	M ₁
G11	Auxiliary emissions strategies	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G
G12	Anti-tampering	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	G
G13	Recyclability	Directive 2005/64/EC	n/a However, Annex V on prohibition of reuse of the specified component parts shall apply.
G14	Air-conditioning systems	Directive 2006/40/EC	G
H	ACCESS TO VEHICLE INFORMATION AND SOFTWARE UPDATE		
H1	Access to vehicle OBD information and vehicle repair and maintenance information	Regulation (EU) 2018/858, Articles 61 to 66 and Annex X	X
H2	Software update	Regulation (EU) 2018/858, Annex IV UN Regulation No 156	X

Appendix 4

Other special purpose vehicles

(including special group, multi-equipment carrier and trailer caravans)

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
A8	Child restraint anchorages	Regulation (EU) 2019/2144	IF	IF	IF	IF	IF	not in scope	not in scope	not in scope	not in scope
A9	Child restraint systems (IF)	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment
A10	Enhanced child restraint systems (IF)	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment
A11	Front underrun protection	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	X	X	not in scope	not in scope	not in scope	not in scope
A12	Rear underrun protection	Regulation (EU) 2019/2144	X	X	A	A	A	X	X	X	X
A13	Lateral protection	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	X	X	not in scope	not in scope	X	X
A14	Fuel tank safety (IF)	Regulation (EU) 2019/2144	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible	X Modification to the routing and length of the refuelling duct and re-positioning of the original tank inboard is permissible	X	X	X

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
			provided all installation requirements are met.								
A15	Liquified petroleum gas safety (IF)	Regulation (EU) 2019/2144	G	X	G	G	X	not in scope	not in scope	not in scope	not in scope
A16	Compressed and liquified natural gas safety (IF)	Regulation (EU) 2019/2144	G	X	G	G	X	not in scope	not in scope	not in scope	not in scope
A17	Hydrogen safety (IF)	Regulation (EU) 2019/2144	G	X	G	G	X	not in scope	not in scope	not in scope	not in scope
A18	Hydrogen system material qualification (IF)	Regulation (EU) 2019/2144	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
A19	In-use electric safety (IF)	Regulation (EU) 2019/2144	G	X	G	G	X	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
					type-approval, irrespective of the mass in running order increase.						
A22	Protective steering	Regulation (EU) 2019/2144	not in scope	not in scope	G	not in scope					
A23	Replace-ment airbag	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment	equipment	equip-ment	equip-ment	equip-ment	equip-ment
A24	Cab impact	Regulation (EU) 2019/2144	not in scope	not in scope	A + G Completed vehicles are deemed to comply with cab impact requirements provided that compliance has been demonstrated for at least the van or chassis-cab configuration, with appropriate powertrain, as part of a previous-stage type-approval, irrespective of the mass in running order increase.	A	A	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
B	VULNERABLE ROAD USERS, VISION AND VISIBILITY										
B1	Pedestrian leg and head protection	Regulation (EU) 2019/2144	not in scope	not in scope	A	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope
B2	Enlarged head impact zone	Regulation (EU) 2019/2144	not in scope	not in scope	A	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope
B3	Frontal protection system	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment
B4	Advanced emergency braking for pedestrians and cyclists ahead	Regulation (EU) 2019/2144	not in scope	not in scope	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope
B5	Pedestrian and cyclist collision warning	Regulation (EU) 2019/2144	X	X	not in scope	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
						requirements and may be fully exempted if it is impossible to meet these requirements	requirements and may be fully exempted if it is impossible to meet these requirements				
B6	Blind spot information system	Regulation (EU) 2019/2144	X	X	not in scope	X	X	not in scope	not in scope	not in scope	not in scope
B7	Reversing detection	Regulation (EU) 2019/2144	X	X	A May be partly exempted if non-removable equipment on the rear of the vehicle prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	A May be partly exempted if non-removable equipment on the rear of the vehicle prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	A May be partly exempted if non-removable equipment on the rear of the vehicle prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	not in scope	not in scope	not in scope	not in scope
B8	Forward vision	Regulation (EU) 2019/2144	not in scope	not in scope	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
					requirements and may be fully exempted if it is impossible to meet these requirements						
B9	Heavy-duty vehicles direct vision	Regulation (EU) 2019/2144	no requirements yet	no requirements yet	not in scope	no requirements yet	no requirements yet	not in scope	not in scope	not in scope	not in scope
B10	Safety glazing	Regulation (EU) 2019/2144	X For all glazing other than the windscreens and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.	X For all glazing other than the windscreens and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.	X For all glazing other than the windscreens and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.	X For all glazing other than the windscreens and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.	X For all glazing other than the windscreens and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.	X Glazing material may be either of safety glass or rigid plastic glazing.	X Glazing material may be either of safety glass or rigid plastic glazing.	X Glazing material may be either of safety glass or rigid plastic glazing.	X Glazing material may be either of safety glass or rigid plastic glazing.

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
B11	Defrost/demist	Regulation (EU) 2019/2144	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	not in scope	not in scope	not in scope	not in scope
B12	Wash/wipe	Regulation (EU) 2019/2144	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	not in scope	not in scope	not in scope	not in scope
B13	Indirect vision devices	Regulation (EU) 2019/2144	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
B14	Acoustic Vehicle Alerting Systems	Regulation (EU) No 540/2014	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
C	VEHICLE CHASSIS, BRAKING, TYRES AND STEERING										
C1	Steering equipment	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X
C2	Lane departure warning	Regulation (EU) 2019/2144	n/a	n/a	not in scope	n/a	n/a	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
C3	Emergency lane keeping	Regulation (EU) 2019/2144	not in scope	not in scope	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope
C4	Braking	Regulation (EU) 2019/2144	G	G	G Anti-lock braking system is not mandatory for vehicles with hydrostatic drive.	G Anti-lock braking system is not mandatory for vehicles with hydrostatic drive.	X	X	X	X	
C5	Replacement braking parts	Regulation (EU) 2019/2144	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment	equipment
C6	Brake assist	Regulation (EU) 2019/2144	not in scope	not in scope	A	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope
C7	Stability control	Regulation (EU) 2019/2144	n/a	n/a	n/a	n/a	n/a	not in scope	not in scope	X	X

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
D3	Protection against unauthorised use, immobiliser and alarm systems	Regulation (EU) 2019/2144	IF G	IF G	X	IF G	IF G	not in scope	not in scope	not in scope	not in scope
D4	Protection of vehicle against cyberattacks	Regulation (EU) 2019/2144	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
D5	Speedometer	Regulation (EU) 2019/2144	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
D6	Odometer	Regulation (EU) 2019/2144	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
D7	Speed limitation devices	Regulation (EU) 2019/2144	X	X	not in scope	X	X	not in scope	not in scope	not in scope	not in scope
D8	Intelligent speed assistance	Regulation (EU) 2019/2144	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	A May be partly exempted if non-removable equipment on the front of the cab prevents full compliance with the requirements and may be fully exempted if it is impossible to meet these requirements	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
D15	Installation of light signalling, road illumination and retro-reflective devices	Regulation (EU) 2019/2144	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
D16	Emergency stop signal	Regulation (EU) 2019/2144	X Only for vehicles fitted with electronically controlled anti-lock braking system	X Only for vehicles fitted with electronically controlled anti-lock braking system	X Only for vehicles fitted with electronically controlled anti-lock braking system	X Only for vehicles fitted with electronically controlled anti-lock braking system	X Only for vehicles fitted with electronically controlled anti-lock braking system	not in scope	not in scope	not in scope	not in scope
D17	Headlamp cleaners (IF)	Regulation (EU) 2019/2144	IF	IF	IF	IF	IF	not in scope	not in scope	not in scope	not in scope
D18	Gear shift indicator	Regulation (EU) 2019/2144	not in scope	not in scope	not in scope	not in scope	not in scope				
E	DRIVER AND SYSTEM BEHAVIOUR										
E1	Alcohol interlock installation facilitation	Regulation (EU) 2019/2144	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
E2	Driver drowsiness and attention warning	Regulation (EU) 2019/2144	A	A	A	A	A	not in scope	not in scope	not in scope	not in scope
E3	Advanced driver distraction warning	Regulation (EU) 2019/2144	no requirement yet	not in scope	not in scope	not in scope	not in scope				

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
E4	Driver availability monitoring system (in case of automated vehicles)	Regulation (EU) 2019/2144	not in scope	not in scope	IF	not in scope	not in scope	not in scope	not in scope	not in scope	not in scope
E5	Event data recorder	Regulation (EU) 2019/2144	no requirement yet	no requirement yet	A	no requirement yet	no requirement yet	not in scope	not in scope	not in scope	not in scope
E6	Systems to replace driver's control (in case of automated vehicles)	Regulation (EU) 2019/2144	no requirement yet	not in scope	not in scope	not in scope	not in scope				
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Regulation (EU) 2019/2144	no requirement yet	not in scope	not in scope	not in scope	not in scope				
E8	Platooning (IF)	Regulation (EU) 2019/2144	no requirement yet	not in scope	not in scope	not in scope	not in scope				

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
F4	Door entry steps, handholds and running boards	Regulation (EU) 2019/2144	X	X	B	B	B	not in scope	not in scope	not in scope	not in scope
F5	External projections	Regulation (EU) 2019/2144	not in scope								
F6	External projections of commercial vehicle cabs	Regulation (EU) 2019/2144	not in scope	not in scope	X	X	X	not in scope	not in scope	not in scope	not in scope
F7	Statutory plate and vehicle identification number	Regulation (EU) 2019/2144	X	X	X	X	X	X	X	X	X
F8	Towing devices	Regulation (EU) 2019/2144	A	A	A	A	A	not in scope	not in scope	not in scope	not in scope
F9	Wheel guards	Regulation (EU) 2019/2144	not in scope								
F10	Spray suppression systems	Regulation (EU) 2019/2144	not in scope	not in scope	X	X	X	X	X	X	X

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS										
G1	Sound level	Regulation (EU) No 540/2014	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	G Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	not in scope	not in scope	not in scope	not in scope
G2	Tailpipe emissions of vehicle in lab	Regulation (EC) No 715/2007	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	not in scope	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive.	not in scope	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
G2a	Determination of specific CO ₂ emissions and fuel consumption of vehicle and device for monitoring onboard the vehicle the consumption of fuel and/or electric energy	Regulation (EC) No 715/2007	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope
G3	Tailpipe emissions of engine in lab	Regulation (EC) No 595/2009	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive.	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
G3a	Determination of specific CO ₂ emissions and fuel consumption of vehicle	Regulation (EC) No 595/2009	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope
G3b	Determination of specific energy efficiency performance of trailer	Regulation (EC) No 595/2009	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope	Not in scope
G4	Tailpipe emissions on the road	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test. Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive.	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
G5	Durability of tailpipe emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	X Modification of exhaust system length after the last silencer not exceeding 2,0 m is permissible without any further test.	not in scope	not in scope	not in scope	not in scope
G6	Crankcase emissions	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
G7	Evaporative emissions	Regulation (EC) No 715/2007	X	not in scope	X	X	not in scope	not in scope	not in scope	not in scope	not in scope
G8	Low-temperature tailpipe emissions in lab	Regulation (EC) No 715/2007	X	not in scope	X	X	not in scope	not in scope	not in scope	not in scope	not in scope

Item	Subject	Regulatory act	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
G9	On-board diagnostics	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
G10	Absence of defeat device	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
G11	Auxiliary emissions strategies	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope
G12	Anti-tampering	Regulation (EC) No 715/2007 Regulation (EC) No 595/2009	X	X	X	X	X	not in scope	not in scope	not in scope	not in scope

Appendix 5

Mobile cranes

Item	Subject	Regulatory act	N ₃
A	RESTRAINT SYSTEMS, CRASH TESTING, FUEL SYSTEM INTEGRITY AND HIGH VOLTAGE ELECTRICAL SAFETY		
A1	Interior fittings	Regulation (EU) 2019/2144	not in scope
A2	Seats and head restraints	Regulation (EU) 2019/2144	X Application limited to seats designated for normal use when the vehicle is used on a public road. Seats that are not designated as such shall be clearly and permanently identified to users, either by means of a pictogram or a sign with an appropriate text.
A3	Bus seats	Regulation (EU) 2019/2144	not in scope
A4	Safety-belt anchorages	Regulation (EU) 2019/2144	X Application limited to seats designated for normal use when the vehicle is used on a public road.
A5	Safety-belts and restraint systems	Regulation (EU) 2019/2144	X Application limited to seats designated for normal use when the vehicle is used on a public road.
A6	Safety-belt reminders	Regulation (EU) 2019/2144	X
A7	Partitioning systems	Regulation (EU) 2019/2144	equipment
A8	Child restraint anchorages	Regulation (EU) 2019/2144	IF B
A9	Child restraint systems (IF)	Regulation (EU) 2019/2144	equipment
A10	Enhanced child restraint systems (IF)	Regulation (EU) 2019/2144	equipment
A11	Front underrun protection	Regulation (EU) 2019/2144	A Not required for vehicles meeting the provisions Annex I, Part A, point 4.3(b)(ii) and (iii), as well as point 4.3(c).
A12	Rear underrun protection	Regulation (EU) 2019/2144	A
A13	Lateral protection	Regulation (EU) 2019/2144	A
A14	Fuel tank safety (IF)	Regulation (EU) 2019/2144	A
A15	Liquified petroleum gas safety (IF)	Regulation (EU) 2019/2144	X

Item	Subject	Regulatory act	N ₃
A16	Compressed and liquified natural gas safety (IF)	Regulation (EU) 2019/2144	X
A17	Hydrogen safety (IF)	Regulation (EU) 2019/2144	X
A18	Hydrogen system material qualification (IF)	Regulation (EU) 2019/2144	X
A19	In-use electric safety (IF)	Regulation (EU) 2019/2144	X
A20	Frontal off-set impact	Regulation (EU) 2019/2144	not in scope
A21	Frontal full-width impact	Regulation (EU) 2019/2144	not in scope
A22	Protective steering	Regulation (EU) 2019/2144	not in scope
A23	Replacement airbag	Regulation (EU) 2019/2144	equipment
A24	Cab impact	Regulation (EU) 2019/2144	A
A25	Side impact	Regulation (EU) 2019/2144	not in scope
A26	Pole side impact	Regulation (EU) 2019/2144	not in scope
A27	Rear impact	Regulation (EU) 2019/2144	not in scope
A28	112-based eCall in-vehicles systems	Regulation (EU) 2015/758	not in scope
B	VULNERABLE ROAD USERS, VISION AND VISIBILITY		
B1	Pedestrian leg and head protection	Regulation (EU) 2019/2144	not in scope
B2	Enlarged head impact zone	Regulation (EU) 2019/2144	not in scope
B3	Frontal protection system	Regulation (EU) 2019/2144	equipment
B4	Advanced emergency braking for pedestrians and cyclists ahead	Regulation (EU) 2019/2144	not in scope
B5	Pedestrian and cyclist collision warning	Regulation (EU) 2019/2144	A
B6	Blind spot information system	Regulation (EU) 2019/2144	A
B7	Reversing detection	Regulation (EU) 2019/2144	A

Item	Subject	Regulatory act	N ₃
B8	Forward vision	Regulation (EU) 2019/2144	not in scope
B9	Heavy-duty vehicles direct vision	Regulation (EU) 2019/2144	no requirements yet
B10	Safety glazing	Regulation (EU) 2019/2144	X For all glazing other than the windscreen and side windows located forward of the driver's eye points, the material may be either of safety glass or rigid plastic glazing.
B11	Defrost/demist	Regulation (EU) 2019/2144	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device
B12	Wash/wipe	Regulation (EU) 2019/2144	X Vehicles shall be fitted with adequate windscreen washing and wiping devices
B13	Indirect vision devices	Regulation (EU) 2019/2144	X
B14	Acoustic Vehicle Alerting Systems	Regulation (EU) No 540/2014	X
C	VEHICLE CHASSIS, BRAKING, TYRES AND STEERING		
C1	Steering equipment	Regulation (EU) 2019/2144	X Crab steering allowed
C2	Lane departure warning	Regulation (EU) 2019/2144	n/a
C3	Emergency lane keeping	Regulation (EU) 2019/2144	not in scope
C4	Braking	Regulation (EU) 2019/2144	G Test to be performed only with the complete/completed vehicle. Vehicles up to 4 axles shall comply with all the requirements laid down in the relevant regulatory acts. Derogations are admitted for vehicles having more than 4 axles, provided that: (a) they are justified by the particular construction; and (b) all the braking performances, related to parking, service and secondary braking laid down in the relevant regulatory act are fulfilled. Anti-lock braking system is not mandatory for vehicles with hydrostatic drive.
C5	Replacement braking parts	Regulation (EU) 2019/2144	equipment
C6	Brake assist	Regulation (EU) 2019/2144	not in scope

Item	Subject	Regulatory act	N ₃
C7	Stability control	Regulation (EU) 2019/2144	n/a
C8	Advanced emergency braking on heavy-duty vehicles	Regulation (EU) 2019/2144	n/a
C9	Advanced emergency braking on light-duty vehicles	Regulation (EU) 2019/2144	not in scope
C10	Tyre safety and environmental performance	Regulation (EU) 2019/2144	X
C11	Spare wheels and run-flat systems (IF)	Regulation (EU) 2019/2144	not in scope
C12	Retreaded tyres	Regulation (EU) 2019/2144	equipment
C13	Tyre pressure monitoring for light-duty vehicles	Regulation (EU) 2019/2144	not in scope
C14	Tyre pressure monitoring for heavy-duty vehicles	Regulation (EU) 2019/2144	n/a
C15	Tyre installation	Regulation (EU) 2019/2144	X
C16	Replacement wheels	Regulation (EU) 2019/2144	equipment
D	ON-BOARD INSTRUMENTS, ELECTRICAL SYSTEM, VEHICLE LIGHTING AND PROTECTION AGAINST UNAUTHORISED USE, INCLUDING CYBERATTACKS		
D1	Audible warning	Regulation (EU) 2019/2144	X
D2	Radio interference (electromagnetic compatibility)	Regulation (EU) 2019/2144	X
D3	Protection against unauthorised use, immobiliser and alarm systems	Regulation (EU) 2019/2144	IF G
D4	Protection of vehicle against cyberattacks	Regulation (EU) 2019/2144	X n/a in case of complete vehicle
D5	Speedometer	Regulation (EU) 2019/2144	X
D6	Odometer	Regulation (EU) 2019/2144	X
D7	Speed limitation devices	Regulation (EU) 2019/2144	X

Item	Subject	Regulatory act	N ₃
D8	Intelligent speed assistance	Regulation (EU) 2019/2144	A Only to be applied in case of a chassis-cab base vehicle and n/a in all other cases.
D9	Identification of controls, tell-tales and indicators	Regulation (EU) 2019/2144	X
D10	Heating systems	Regulation (EU) 2019/2144	X
D11	Light signalling devices	Regulation (EU) 2019/2144	X
D12	Road illumination devices	Regulation (EU) 2019/2144	X
D13	Retro-reflective devices	Regulation (EU) 2019/2144	X
D14	Light sources	Regulation (EU) 2019/2144	X
D15	Installation of light signalling, road illumination and retro-reflective devices	Regulation (EU) 2019/2144	A Provided that all mandatory lighting devices are installed
D16	Emergency stop signal	Regulation (EU) 2019/2144	X Only for vehicles fitted with electronically controlled anti-lock braking system
D17	Headlamp cleaners (IF)	Regulation (EU) 2019/2144	IF
D18	Gear shift indicator	Regulation (EU) 2019/2144	not in scope
E	DRIVER AND SYSTEM BEHAVIOUR		
E1	Alcohol interlock installation facilitation	Regulation (EU) 2019/2144	A Only to be applied in case of a chassis-cab base vehicle and n/a in all other cases.
E2	Driver drowsiness and attention warning	Regulation (EU) 2019/2144	n/a
E3	Advanced driver distraction warning	Regulation (EU) 2019/2144	no requirement yet
E4	Driver availability monitoring system (in case of automated vehicles)	Regulation (EU) 2019/2144	not in the scope
E5	Event data recorder	Regulation (EU) 2019/2144	no requirement yet

Item	Subject	Regulatory act	N ₃
E6	Systems to replace driver's control (in case of automated vehicles)	Regulation (EU) 2019/2144	no requirement yet
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Regulation (EU) 2019/2144	no requirement yet
E8	Platooning (IF)	Regulation (EU) 2019/2144	no requirement yet
E9	Systems to provide safety information to other road users (in case of automated vehicles)	Regulation (EU) 2019/2144	no requirement yet
F	GENERAL VEHICLE CONSTRUCTION AND FEATURES		
F1	Registration plate space	Regulation (EU) 2019/2144	X
F2	Reversing motion	Regulation (EU) 2019/2144	X
F3	Door latches and hinges	Regulation (EU) 2019/2144	not in scope
F4	Door entry steps, handholds and running boards	Regulation (EU) 2019/2144	A
F5	External projections	Regulation (EU) 2019/2144	not in scope
F6	External projections of commercial vehicle cabs	Regulation (EU) 2019/2144	A
F7	Statutory plate and vehicle identification number	Regulation (EU) 2019/2144	X
F8	Towing devices	Regulation (EU) 2019/2144	A
F9	Wheel guards	Regulation (EU) 2019/2144	not in scope
F10	Spray suppression systems	Regulation (EU) 2019/2144	A Not required for vehicles meeting the provisions Annex I, Part A, point 4.3(b)(ii) and (iii), as well as point 4.3(c).
F11	Masses and dimensions	Regulation (EU) 2019/2144	A
F12	Mechanical couplings	Regulation (EU) 2019/2144	IF X

Item	Subject	Regulatory act	N ₃
F13	Vehicles intended for the transportation of dangerous goods (IF)	Regulation (EU) 2019/2144	n/a
F14	General bus construction	Regulation (EU) 2019/2144	not in scope
F15	Bus strength of superstructure	Regulation (EU) 2019/2144	not in scope
F16	Flammability in buses	Regulation (EU) 2019/2144	not in scope
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS		
G1	Sound level	Regulation (EU) No 540/2014	<p>G</p> <p>Test to be performed only with the complete/completed vehicle. The vehicle can be tested in accordance with Directive 70/157/EEC, UN Regulation No 51.02 or Regulation (EC) No 540/2014. The following limit values are applicable, irrespective of the vehicle conditions such as engine type, gearbox type and any sub-classifications:</p> <ul style="list-style-type: none"> (a) 81 dB(A) for vehicles with an engine power of less than 75 kW; (b) 83 dB(A) for vehicles with an engine power of not less than 75 kW but less than 150 kW; (c) 84 dB(A) for vehicles with an engine power of not less than 150 kW.
G2	Tailpipe emissions of vehicle in lab	Regulation (EC) No 715/2007	not in scope
G2a	Determination of specific CO ₂ emissions and fuel consumption of vehicle and device for monitoring on board the vehicle the consumption of fuel and/or electric energy	Regulation (EC) No 715/2007	not in scope
G3	Tailpipe emissions of engine in lab	Regulation (EC) No 595/2009	<p>X</p> <p>Alternatively, Regulation (EU) 2016/1628 may apply.</p>
G3a	Determination of specific CO ₂ emissions and fuel consumption of vehicle	Regulation (EC) No 595/2009	Not in scope
G3b	Determination of specific energy efficiency performance of trailer	Regulation (EC) No 595/2009	Not in scope

Item	Subject	Regulatory act	N ₃
G4	Tailpipe emissions on the road	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may apply.
G5	Durability of tailpipe emissions	Regulation (EC) No 595/2009	not in scope
G6	Crankcase emissions	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may apply.
G7	Evaporative emissions	Regulation (EC) No 715/2007	not in scope
G8	Low-temperaturetailpipe emissions in lab	Regulation (EC) No 715/2007	not in scope
G9	On-board diagnostics	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may apply.
G10	Absence of defeat device	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may apply.
G11	Auxiliary emissions strategies	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may apply.
G12	Anti-tampering	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may apply.
G13	Recyclability	Directive 2005/64/EC	not in scope
G14	Air-conditioning systems	Directive 2006/40/EC	not in scope
H	ACCESS TO VEHICLE INFORMATION AND SOFTWARE UPDATE		
H1	Access to vehicle OBD information and vehicle repair and maintenance information	Regulation (EU) 2018/858, Articles 61 to 66 and Annex X	X
H2	Software update	Regulation (EU) 2018/858, Annex IV UN Regulation No 156	X

Appendix 6

Exceptional load transport vehicles

Item	Subject	Regulatory acts	N ₃	O ₄
A	RESTRAINT SYSTEMS, CRASH TESTING, FUEL SYSTEM INTEGRITY AND HIGH VOLTAGE ELECTRICAL SAFETY			
A1	Interior fittings	Regulation (EU) 2019/2144	not in scope	not in scope
A2	Seats and head restraints	Regulation (EU) 2019/2144	X Application limited to seats designated for normal use when the vehicle is used on a public road. Seats that are not designated as such shall be clearly and permanently identified to users, either by means of a pictogram or a sign with an appropriate text.	not in scope
A3	Bus seats	Regulation (EU) 2019/2144	not in scope	not in scope
A4	Safety-belt anchorages	Regulation (EU) 2019/2144	X Application limited to seats designated for normal use when the vehicle is used on a public road.	not in scope
A5	Safety-belts and restraint systems	Regulation (EU) 2019/2144	X Application limited to seats designated for normal use when the vehicle is used on a public road.	not in scope
A6	Safety-belt reminders	Regulation (EU) 2019/2144	X	not in scope
A7	Partitioning systems	Regulation (EU) 2019/2144	equipment	equipment
A8	Child restraint anchorages	Regulation (EU) 2019/2144	IF B	not in scope
A9	Child restraint systems (IF)	Regulation (EU) 2019/2144	equipment	equipment
A10	Enhanced child restraint systems (IF)	Regulation (EU) 2019/2144	equipment	equipment
A11	Front underrun protection	Regulation (EU) 2019/2144	A	not in scope
A12	Rear underrun protection	Regulation (EU) 2019/2144	A	A
A13	Lateral protection	Regulation (EU) 2019/2144	X	A

Item	Subject	Regulatory acts	N ₃	O ₄
A14	Fuel tank safety (IF)	Regulation (EU) 2019/2144	A	A
A15	Liquified petroleum gas safety (IF)	Regulation (EU) 2019/2144	X	not in scope
A16	Compressed and liquified natural gas safety (IF)	Regulation (EU) 2019/2144	X	not in scope
A17	Hydrogen safety (IF)	Regulation (EU) 2019/2144	X	not in scope
A18	Hydrogen system material qualification (IF)	Regulation (EU) 2019/2144	X	not in scope
A19	In-use electric safety (IF)	Regulation (EU) 2019/2144	X	not in scope
A20	Frontal off-set impact	Regulation (EU) 2019/2144	not in scope	not in scope
A21	Frontal full-width impact	Regulation (EU) 2019/2144	not in scope	not in scope
A22	Protective steering	Regulation (EU) 2019/2144	not in scope	not in scope
A23	Replacement airbag	Regulation (EU) 2019/2144	equipment	equipment
A24	Cab impact	Regulation (EU) 2019/2144	A	not in scope
A25	Side impact	Regulation (EU) 2019/2144	not in scope	not in scope
A26	Pole side impact	Regulation (EU) 2019/2144	not in scope	not in scope
A27	Rear impact	Regulation (EU) 2019/2144	not in scope	not in scope
A28	112-based eCall in-vehicles systems	Regulation (EU) 2015/758	not in scope	not in scope
B	VULNERABLE ROAD USERS, VISION AND VISIBILITY			
B1	Pedestrian leg and head protection	Regulation (EU) 2019/2144	not in scope	not in scope
B2	Enlarged head impact zone	Regulation (EU) 2019/2144	not in scope	not in scope
B3	Frontal protection system	Regulation (EU) 2019/2144	equipment	equipment
B4	Advanced emergency braking for pedestrians and cyclists ahead	Regulation (EU) 2019/2144	not in scope	not in scope

Item	Subject	Regulatory acts	N ₃	O ₄
B5	Pedestrian and cyclist collision warning	Regulation (EU) 2019/2144	X	not in scope
B6	Blind spot information system	Regulation (EU) 2019/2144	X	not in scope
B7	Reversing detection	Regulation (EU) 2019/2144	X	not in scope
B8	Forward vision	Regulation (EU) 2019/2144	not in scope	not in scope
B9	Heavy-duty vehicles direct vision	Regulation (EU) 2019/2144	no requirements yet	not in scope
B10	Safety glazing	Regulation (EU) 2019/2144	X	X Glazing material may be either of safety glass or rigid plastic glazing.
B11	Defrost/demist	Regulation (EU) 2019/2144	X Vehicles shall be fitted with an adequate windscreen defrosting and demisting device	not in scope
B12	Wash/wipe	Regulation (EU) 2019/2144	X Vehicles shall be fitted with adequate windscreen washing and wiping devices	not in scope
B13	Indirect vision devices	Regulation (EU) 2019/2144	X	not in scope
B14	Acoustic Vehicle Alerting Systems	Regulation (EU) No 540/2014	X	not in scope
C	VEHICLE CHASSIS, BRAKING, TYRES AND STEERING			
C1	Steering equipment	Regulation (EU) 2019/2144	X Crab steering allowed	X
C2	Lane departure warning	Regulation (EU) 2019/2144	n/a	not in scope
C3	Emergency lane keeping	Regulation (EU) 2019/2144	not in scope	not in scope
C4	Braking	Regulation (EU) 2019/2144	G Test to be performed only with the complete/completed vehicle. Vehicles up to 4 axles shall comply with all the requirements laid down in the relevant regulatory acts. Derogations are admitted for vehicles having more than 4 axles, provided that:	X

Item	Subject	Regulatory acts	N ₃	O ₄
			(a) they are justified by the particular construction; and (b) all the braking performances, related to parking, service and secondary braking laid down in the relevant regulatory act are fulfilled. Anti-lock braking system is not mandatory for vehicles with hydrostatic drive.	
C5	Replacement braking parts	Regulation (EU) 2019/2144	equipment	equipment
C6	Brake assist	Regulation (EU) 2019/2144	not in scope	not in scope
C7	Stability control	Regulation (EU) 2019/2144	n/a	X
C8	Advanced emergency braking on heavy-duty vehicles	Regulation (EU) 2019/2144	n/a	not in scope
C9	Advanced emergency braking on light-duty vehicles	Regulation (EU) 2019/2144	not in scope	not in scope
C10	Tyre safety and environmental performance	Regulation (EU) 2019/2144	X Tyres are to be type-approved in accordance with the requirements set out in UN Regulation No 117 even if the design speed of the vehicle is less than 80 km/h.	X Tyres are to be type-approved in accordance with the requirements set out in UN Regulation No 117 even if the design speed of the vehicle is less than 80 km/h.
C11	Spare wheels and run-flat systems (IF)	Regulation (EU) 2019/2144	not in scope	not in scope
C12	Retreaded tyres	Regulation (EU) 2019/2144	equipment	equipment
C13	Tyre pressure monitoring for light-duty vehicles	Regulation (EU) 2019/2144	not in scope	not in scope

Item	Subject	Regulatory acts	N ₃	O ₄
C14	Tyre pressure monitoring for heavy-duty vehicles	Regulation (EU) 2019/2144	A	A
C15	Tyre installation	Regulation (EU) 2019/2144	X	X Tyres are to be type-approved in accordance with the requirements set out in UN Regulation No 54 even if the design speed of the vehicle is less than 80 km/h. The load capacity may be adjusted in relation to the maximum design speed of the trailer in agreement with the tyre manufacturer.
C16	Replacement wheels	Regulation (EU) 2019/2144	equipment	equipment
D	ON-BOARD INSTRUMENTS, ELECTRICAL SYSTEM, VEHICLE LIGHTING AND PROTECTION AGAINST UNAUTHORISED USE, INCLUDING CYBERATTACKS			
D1	Audible warning	Regulation (EU) 2019/2144	X	not in scope
D2	Radio interference (electromagnetic compatibility)	Regulation (EU) 2019/2144	X	X
D3	Protection against unauthorised use, immobiliser and alarm systems	Regulation (EU) 2019/2144	IF G	not in scope
D4	Protection of vehicle against cyberattacks	Regulation (EU) 2019/2144	X	not in scope
D5	Speedometer	Regulation (EU) 2019/2144	X	not in scope
D6	Odometer	Regulation (EU) 2019/2144	X	not in scope
D7	Speed limitation devices	Regulation (EU) 2019/2144	X	not in scope

Item	Subject	Regulatory acts	N ₃	O ₄
D8	Intelligent speed assistance	Regulation (EU) 2019/2144	X	not in scope
D9	Identification of controls, tell-tales and indicators	Regulation (EU) 2019/2144	X	not in scope
D10	Heating systems	Regulation (EU) 2019/2144	X	X
D11	Light signalling devices	Regulation (EU) 2019/2144	X	X
D12	Road illumination devices	Regulation (EU) 2019/2144	X	X
D13	Retro-reflective devices	Regulation (EU) 2019/2144	X	X
D14	Light sources	Regulation (EU) 2019/2144	X	X
D15	Installation of light signalling, road illumination and retro-reflective devices	Regulation (EU) 2019/2144	X	A Provided that all mandatory lighting devices are installed and that the geometric visibility is not affected
D16	Emergency stop signal	Regulation (EU) 2019/2144	X Only for vehicles fitted with electronically controlled anti-lock braking system	not in scope
D17	Headlamp cleaners (IF)	Regulation (EU) 2019/2144	IF	not in scope
D18	Gear shift indicator	Regulation (EU) 2019/2144	not in scope	not in scope
E	DRIVER AND SYSTEM BEHAVIOUR			
E1	Alcohol interlock installation facilitation	Regulation (EU) 2019/2144	X	not in scope
E2	Driver drowsiness and attention warning	Regulation (EU) 2019/2144	A	not in scope
E3	Advanced driver distraction warning	Regulation (EU) 2019/2144	No requirement yet	not in scope
E4	Driver availability monitoring system (in case of automated vehicles)	Regulation (EU) 2019/2144	Not in the scope	not in scope

Item	Subject	Regulatory acts	N ₃	O ₄
E5	Event data recorder	Regulation (EU) 2019/2144	No requirement yet	not in scope
E6	Systems to replace driver's control (in case of automated vehicles)	Regulation (EU) 2019/2144	No requirement yet	not in scope
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Regulation (EU) 2019/2144	No requirement yet	not in scope
E8	Platooning (IF)	Regulation (EU) 2019/2144	No requirement yet	not in scope
E9	Systems to provide safety information to other road users (in case of automated vehicles)	Regulation (EU) 2019/2144	No requirement yet	not in scope
F	GENERAL VEHICLE CONSTRUCTION AND FEATURES			
F1	Registration plate space	Regulation (EU) 2019/2144	X	X
F2	Reversing motion	Regulation (EU) 2019/2144	X	not in scope
F3	Door latches and hinges	Regulation (EU) 2019/2144	not in scope	not in scope
F4	Door entry steps, handholds and running boards	Regulation (EU) 2019/2144	X	not in scope
F5	External projections	Regulation (EU) 2019/2144	not in scope	not in scope
F6	External projections of commercial vehicle cabs	Regulation (EU) 2019/2144	A	not in scope
F7	Statutory plate and vehicle identification number	Regulation (EU) 2019/2144	X	X
F8	Towing devices	Regulation (EU) 2019/2144	A	not in scope
F9	Wheel guards	Regulation (EU) 2019/2144	not in scope	not in scope
F10	Spray suppression systems	Regulation (EU) 2019/2144	X	A
F11	Masses and dimensions	Regulation (EU) 2019/2144	A	A

Item	Subject	Regulatory acts	N ₃	O ₄
F12	Mechanical couplings	Regulation (EU) 2019/2144	IF X	X
F13	Vehicles intended for the transportation of dangerous goods (IF)	Regulation (EU) 2019/2144	X	X
F14	General bus construction	Regulation (EU) 2019/2144	not in scope	not in scope
F15	Bus strength of superstructure	Regulation (EU) 2019/2144	not in scope	not in scope
F16	Flammability in buses	Regulation (EU) 2019/2144	not in scope	not in scope
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS			
G1	Sound level	Regulation (EU) No 540/2014	G Test to be performed only with the complete/completed vehicle. The vehicle can be tested in accordance with Directive 70/157/EEC, UN Regulation No 51.02 or Regulation (EC) No 540/2014. The following limit values are applicable, irrespective of the vehicle conditions such as engine type, gearbox type and any sub-classifications: (a) 81 dB(A) for vehicles with an engine power of less than 75 kW; (b) 83 dB(A) for vehicles with an engine power of not less than 75 kW but less than 150 kW; (c) 84 dB(A) for vehicles with an engine power of not less than 150 kW.	not in scope
G2	Tailpipe emissions of vehicle in lab	Regulation (EC) No 715/2007	not in scope	not in scope
G2a	Determination of specific CO ₂ emissions and fuel consumption of vehicle and device for monitoring on board the vehicle the consumption of fuel and/or electric energy	Regulation (EC) No 715/2007	not in scope	not in scope
G3	Tailpipe emissions of engine in lab	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive	not in scope

Item	Subject	Regulatory acts	N ₃	O ₄
G3a	Determination of specific CO ₂ emissions and fuel consumption of vehicle	Regulation (EC) No 595/2009	not in scope	not in scope
G3b	Determination of specific energy efficiency performance of trailer	Regulation (EC) No 595/2009	not in scope	not in scope
G4	Tailpipe emissions on the road	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive	not in scope
G5	Durability of tailpipe emissions	Regulation (EC) No 595/2009	X	not in scope
G6	Crankcase emissions	Regulation (EC) No 595/2009	X	not in scope
G7	Evaporative emissions	Regulation (EC) No 715/2007	not in scope	not in scope
G8	Low-temperature tailpipe emissions in lab	Regulation (EC) No 715/2007	not in scope	not in scope
G9	On-board diagnostics	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive	not in scope
G10	Absence of defeat device	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive	not in scope
G11	Auxiliary emissions strategies	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive	not in scope
G12	Anti-tampering	Regulation (EC) No 595/2009	X Alternatively, Regulation (EU) 2016/1628 may also apply to vehicles with hydrostatic drive	not in scope
G13	Recyclability	Directive 2005/64/EC	not in scope	not in scope
G14	Air-conditioning systems	Directive 2006/40/EC	not in scope	not in scope

Item	Subject	Regulatory acts	N ₃	O ₄
H	ACCESS TO VEHICLE INFORMATION AND SOFTWARE UPDATE			
H1	Access to vehicle OBD information and vehicle repair and maintenance information	Regulation (EU) 2018/858, Articles 61 to 66 and Annex X	X	X
H2	Software update	Regulation (EU) 2018/858, Annex IV UN Regulation No 156	X	X'

ANNEX III

In Annex IV to Regulation (EU) 2018/858, the following point 5 is added:

'5. Arrangements concerning software update

The software update management system of the manufacturer as well as the whole vehicle type shall comply with the requirements as set out in UN Regulation 156.'

ANNEX IV

In paragraph 1 of Annex V to Regulation (EU) 2018/858, the table is replaced by the following:

'Category	Units
M ₁	1 500
M ₂ , M ₃	0 until the date of application of the delegated acts referred to in Article 41(5). For fully automated vehicles produced in small series: 1 500 from 6 December 2022
N ₁	1 500
N ₂ , N ₃	0 until the date of application of the delegated acts referred to in Article 41(5). For fully automated vehicles produced in small series: 1 500 from 6 December 2022
O ₁ , O ₂	0
O ₃ , O ₄	0'