

Corrigenda to the proposal for the 06 series of amendments to Regulation No. 83
(Emissions of M₁ and N₁ vehicles)

The text reproduced below was prepared by the representative of the European Community to align the requirements of Regulation No. 83 with those of the European Union Directives 715/2007/EC and 692/2008/EC (Euro 5 emissions level) on the basis of informal document WP.29-148-12, which was transmitted at the 148th session of the World Forum for Harmonization of Vehicle Regulations (WP.29). The document proposes amendments to the proposal for the 06 series of amendments to Regulations No. 83 as in document ECE/TRANS/WP.29/2009/57 (transposition of Euro 5/6) and the document ECE/TRANS/WP.29/2009/134. The modifications to the text of ECE/TRANS/WP.29/2009/57 and ECE/TRANS/WP.29/2009/134 are marked in bold characters or strikethrough. The amendments are based on the proposals of document No. WP.29-148-12 and the conclusions of the meeting held on Brussels with the participation of several interested Parties and Stakeholders. (EC, Germany, Finland, France, Hungary, the Netherlands and ACEA)

Paragraph 2.1.1., amend to read:

"2.1.1. the equivalent inertia determined in relation to the reference mass as prescribed in **Annex 4a, Table 3** and"

Paragraph 2.2., amend to read:

"2.2. "Reference mass" means the "unladen mass" of the vehicle increased by a uniform figure of 100 kg for test according to Annexes **4a** and 8;"

Paragraph 2.5., amend to read:

"2.5. "Particulate pollutants" means components of the exhaust gas which are removed from the diluted exhaust gas at a maximum temperature of 325 K (52 °C) by means of the filters described in **Annex 4a; Appendix 4**"

Paragraph 3.1.1., subparagraph (a), amend to read:

"... from the start of a Type I test as described in **Annex 4a** to this Regulation ..."

Paragraph 3.1.1., insert a new subparagraph (i)

“ (i) **A declaration by the manufacturer of the CO2 emission/fuel consumption of vehicle according to provisions laid out in Regulation No.101.**”

Paragraph 4.4.3., amend to read:

“4.4.3. The approval mark shall contain an additional character after the letter "R", the purpose of which is to distinguish the emission limit values for which the approval has been granted. For those approvals issued to indicate compliance with the limits for the Type I test detailed in **Table 1** in paragraph 5.3.1.4. of this Regulation, the letter "R" will be followed by the roman number **"III"**. **Furthermore, a capital letter (from J to M) should follow the type approval number. This letter should be chosen according to the Table 1 in Annex 3 to this Regulation.**”

Paragraph 5.2.3. Table A,

For bi-fuel vehicles with P.I. engines fuelled with Petrol (E5) or hydrogen, the test requirements "... (petrol only)" shall be replaced by "**...(petrol only)**"⁽²⁾",

and for flex fuel vehicles with C.I. engines including hybrids, the test requirements "Yes" shall be replaced by "**Yes (B5 only)**"⁽²⁾",

and the following footnote shall be added below the table:

“(2) **This provision is temporary, further requirements for biodiesel and hydrogen shall be proposed later on.**”:

“Table A. REQUIREMENTS

Application of test requirements for type approval and extensions

Reference fuel	Vehicles with positive ignition engines including hybrids								Vehicles with C.I. engines including hybrids	
	Mono fuel				Bi fuel ⁽¹⁾			Flex fuel ⁽¹⁾	Flex fuel	Mono fuel
	Petrol (E5)	LPG	NG/ Biomethane	Hydrogen	Petrol (E5)	Petrol (E5)	Petrol (E5)	Petrol (E5)	Diesel (B5)	Diesel (B5)
					LPG	NG/ Biomethane	Hydrogen	Ethanol (E85)	Biodiesel	
Gaseous pollutants (Type I test)	Yes	Yes	Yes		Yes (both fuels)	Yes (both fuels)	Yes (petrol only) ⁽²⁾	Yes (both fuels)	Yes (B5 only) ⁽²⁾	Yes
Particulates (Type I test)	Yes (direct injection)	-	-		Yes (direct injection) (petrol only)	Yes (direct injection) (petrol only)	Yes (direct injection) (petrol only) ⁽²⁾	Yes (direct injection) (both fuels)	Yes (B5 only) ⁽²⁾	Yes
Idle emissions (Type II test)	Yes	Yes	Yes		Yes (both fuels)	Yes (both fuels)	Yes (petrol only) ⁽²⁾	Yes (both fuels)	-	-
Crankcase emissions (Type III test)	Yes	Yes	Yes		Yes (petrol only)	Yes (petrol only)	Yes (petrol only) ⁽²⁾	Yes (petrol)	-	-
Evaporative emissions (Type IV test)	Yes	-	-		Yes (petrol only)	Yes (petrol only)	Yes (petrol only) ⁽²⁾	Yes (petrol)	-	-
Durability (Type V test)	Yes	Yes	Yes		Yes (petrol only)	Yes (petrol only)	Yes (petrol only) ⁽²⁾	Yes (petrol)	Yes (B5 only) ⁽²⁾	Yes
Low temperature emissions (Type VI test)	Yes	-	-		Yes (petrol only)	Yes (petrol only)	Yes (petrol only) ⁽²⁾	Yes (both fuels)	-	-
In-service conformity	Yes	Yes	Yes		Yes (both fuels)	Yes (both fuels)	Yes (petrol only) ⁽²⁾	Yes (both fuels)	Yes (B5 only) ⁽²⁾	Yes
On-board diagnostics	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes

(1) When a bi fuel vehicle is combined with a flex fuel vehicle, both test requirements are applicable.

(2) **This provision is temporary, further requirements for biodiesel and hydrogen shall be proposed later on.**”

Paragraph 5.3.1.3., amend to read:

"... Type I test as described in **Annex 4a**. The method used to collect and analyse the gases **is prescribed in Appendix 2 and 3 of Annex 4a**, and **the method to sample and analyse** the particulates shall be as prescribed **in Appendix 4 and 5 of Annex 4a.**"

Paragraph 5.3.1.4., amend to read:

Amend the header of the column "Mass of particulate matter⁽¹⁾ (PM)" to read "Mass of particulate matter (PM)", and

in the the column "Mass of particulate matter (PM)", delete limit value 5.0 in both subcolumns (for PI and DI engines), and retain only 4.5, and

delete footnotes (1) and (2), and renumber footnote (3) as footnote (1).

Table 1:
Emissions limits

Limit values																
		Reference mass (RM) (kg)	Mass of carbon monoxide (CO)		Mass of total hydrocarbons (THC)		Mass of non- methane hydrocarbons (NMHC)		Mass of oxides of nitrogen (NO _x)		Combined mass of hydrocarbons and oxides of nitrogen (THC + NO _x)		Mass of particulate matter ^(†) (PM)		Number of particles ^(‡) (P)	
			L ₁ (mg/km)		L ₂ (mg/km)		L ₃ (mg/km)		L ₄ (mg/km)		L ₂ + L ₃ (mg/km)		L ₅ (mg/km)		L ₆ (number/km)	
Category	Class		PI	CI	PI	CI	PI	CI	PI	CI	PI	CI	PI ⁽¹⁾ (1)	CI	PI	CI
M	-	All	1,000	500	100	-	68	-	60	180	-	230	5.0/4.5	5.0/4.5	-	6.0 x 10 ¹¹
N ₁	I	RM ≤ 1,305	1,000	500	100	-	68	-	60	180	-	230	5.0/4.5	5.0/4.5	-	6.0 x 10 ¹¹
	II	1,305 < RM ≤ 1,760	1,810	630	130	-	90	-	75	235	-	295	5.0/4.5	5.0/4.5	-	6.0 x 10 ¹¹
	III	1,760 < RM	2,270	740	160	-	108	-	82	280	-	350	5.0/4.5	5.0/4.5	-	6.0 x 10 ¹¹
N ₂	-	All	2,270	740	160	-	108	-	82	280	-	350	5.0/4.5	5.0/4.5	-	6.0 x 10 ¹¹
Key: PI = Positive Ignition, CI = Compression Ignition (1) A revised measurement procedure shall be introduced before the application of the 4.5 mg/km limit value. (2) A new measurement procedure shall be introduced before the application of the limit value. ^(†) (1) Positive ignition particulate mass standard shall apply only to vehicles with direct injection engines.																

Paragraph 5.3.5.1., the first part of the paragraph, amend to read:

“5.3.5.1. **This test shall not be applied to compression ignition vehicles**

However, for compression ignition vehicles when applying for type approval, manufacturers shall present to the approval authority information showing that the NO_x aftertreatment device reaches a sufficiently high temperature for efficient operation within 400 seconds after a cold start at –7 °C as described in Type VI test.”

Paragraph 5.3.5.1.2., amend to read as follows:

"5.3.5.1.2. The test consists of the four elementary urban driving cycles of Part One of the Type I test. The Part One test is described in **paragraph 6.1.1. of Annex 4a, and illustrated in figure 1 of the same Annex.** The low ambient temperature ... "

Paragraph 9.3.1., amend to read the original text of the document ECE/TRANS/WP.29/2009/57:

“9.3.1. The information gathered by the manufacturer shall be sufficiently comprehensive to ensure that in-service performance can be assessed for normal conditions of use as defined in paragraph 9.2. The manufacturer's sampling shall be drawn from at least two **Contracting Parties with substantially different vehicle operating conditions** ~~geographic regions when substantially different vehicle operating conditions exist within the Contracting Party~~. Factors such as differences in fuels, ambient conditions, average road speeds, and urban/highway driving split shall be taken into consideration in the selection of the Contracting Parties.”

Paragraph 9.3.2., amend to read the original text of the document ECE/TRANS/WP.29/2009/57:

"9.3.2. In selecting the **Contracting Parties** ~~geographic regions~~ for sampling vehicles, the manufacturer may select vehicles from a ~~region~~ **Contracting Party** that is considered to be particularly representative. In this case, the manufacturer shall demonstrate to the approval authority which granted the type approval that the selection is representative (e.g. by the ~~region~~ **market** having the largest annual sales of a vehicle family within the ~~Contracting Party~~ **Community**). When an in-service family requires more than one sample lot to be tested as defined in paragraph 9.3.5., the vehicles in the second and third sample lots shall reflect different vehicle operating conditions from those selected for the first sample. ~~if such differences exist within the Contracting Party.~~"

Appendix 3,

Paragraph 4.1., amend to read:

"4.1. When a check on vehicles is deemed necessary, emission tests in accordance with **Annex 4a** to this Regulation are performed on pre-conditioned vehicles selected in accordance with the requirements of paragraphs 2. and 3. of this Appendix. Pre-conditioning cycles

additional to those specified in **Section 6.3. of Annex 4a** to this Regulation will only be allowed if they are representative of normal driving.”

Annex 1

Paragraph 1.1.1., renumber Paragraph 1.1.1. to 1.3.3.

Paragraph 2.1., renumber Paragraph 2.1. to 2.6.

Paragraph 2.2., renumber Paragraph 2.2. to 2.8.

Paragraph 3.2.9., delete first instance of paragraph 3.2.9.1.

Paragraph 3.2.9.4. renumber Paragraph 3.2.9.4. to 3.2.10.

Paragraph 3.2.12.2.5.1., amend to read:

“3.2.12.2.5.1. ~~Complete~~ Detailed description of the devices and their state of tune:”

Paragraph 3.2.12.2.6.4., amend to read:

“3.2.12.2.6.4. Regeneration system/method. Description and/or drawing:..... “

Paragraph 6.6.1., amend to read :

“(a) for all tyre options indicate size designation, load-capacity index, speed category symbol, ~~rolling resistance to ISO 28580 (where applicable)]”~~”

Annex 2

Addendum to Type approval Communication

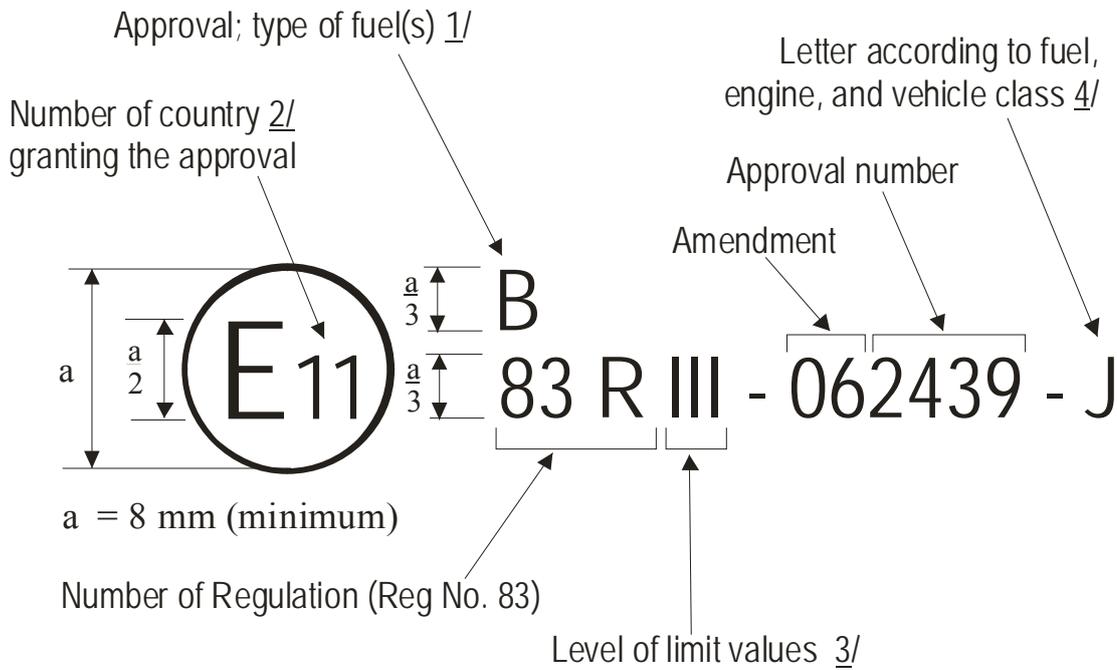
Paragraph 2.1., amend to read :

“2.1. Tailpipe emissions test results:.....”

Emissions classification: 06 series of amendments ~~/07 series of amendments~~ 2/”

Annex 3,

Replace the first figure of this annex, to read:



- 1/ B, C or D, according to type of fuel, paragraph 2.19. of this Regulation
- 2/ Number of country according to footnote in paragraph 4.4.1. of this Regulation
- 3/ III denotes limit values corresponding to Table 1, paragraph 5.3.1.4. of this Regulation
- 4/ According to Table 1 of this Annex

Amend the remaining parts of Annex 3, to read:

"The following graphs are practical examples of how the marking should be composed.

Approval B - Vehicles approved to the emission levels of gaseous pollutants required for feeding the engine with unleaded petrol only, or with unleaded petrol and LPG or NG/biomethane or biofuel.



The above approval mark affixed to a vehicle in conformity with paragraph 4. of this Regulation shows that the vehicle type concerned has been approved in the United Kingdom (E₁₁), pursuant to Regulation No. 83 under approval number 2439. This mark indicates that the approval was given in accordance with the requirements of this Regulation with the 06 series of amendments incorporated and satisfying the limits for the Type I test detailed in Table 1 in paragraph 5.3.1.4. of this Regulation for vehicles with positive-ignition engine (PI), fuelled either with unleaded petrol, or with unleaded petrol and LPG or NG/biomethane or biofuel.

Furthermore, the accompanying letter (J) denotes that the vehicle belongs to vehicle category M or N_{1,I}, and if the vehicle was fitted with a PI engine of direct-injection type (GDI), both the revised particulate measurement procedure, determined in Annex 4a, as well as the corresponding limit value for PM mass (Table 1 in paragraph 5.3.1.4. of this Regulation), were applied. If so, normal OBD threshold value (50 mg/km) for PM control was also applied. However, in all cases the requirement of monitoring the reduction efficiency of the catalytic converter with respect to NOx emissions was applied.



The above approval mark affixed to a vehicle in conformity with paragraph 4. of this Regulation shows that the vehicle type concerned has been approved in the United Kingdom (E₁₁), pursuant to Regulation No. 83 under approval number 2439. This mark indicates that the approval was given in accordance with the requirements of this Regulation with the 06 series of amendments incorporated and satisfying the limits for the Type I test detailed in Table 1 in paragraph 5.3.1.4. of this Regulation for vehicles with positive-ignition engine (PI), fuelled either with unleaded petrol, or with unleaded petrol and LPG or NG/biomethane or biofuel.

Furthermore, the accompanying letter (L) denotes that the vehicle belongs to vehicle category N_{1,II}, and if the vehicle was fitted with a PI engine of direct-injection type (GDI), both the revised particulate measurement procedure, determined in Annex 4a, as well as the corresponding limit value for PM mass (Table 1 in paragraph 5.3.1.4. of this Regulation), were applied. If so, normal OBD threshold value (50 mg/km) for PM control was also applied. However, in all cases the requirement of monitoring the reduction efficiency of the catalytic converter with respect to NOx emissions was applied.



The above approval mark affixed to a vehicle in conformity with paragraph 4. of this Regulation shows that the vehicle type concerned has been approved in Germany (E₁), pursuant to Regulation No. 83 under approval number 2439. This mark indicates that the approval was given in accordance with the requirements of this Regulation with the 06 series of amendments incorporated and satisfying the limits for the Type I test detailed in Table 1 in paragraph 5.3.1.4. of this Regulation for vehicles with positive-ignition engine (PI), fuelled either with unleaded petrol, or with unleaded petrol and LPG or NG/biomethane or biofuel.

Furthermore, the accompanying letter (M) denotes that the vehicle belongs to vehicle category N_{1,III} or N₂, and if the vehicle was fitted with a PI engine of direct-injection type (GDI), both the revised particulate measurement procedure, determined in Annex 4a, as well as the corresponding limit value for PM mass (Table 1 in paragraph 5.3.1.4. of this Regulation), were applied. If so, normal OBD threshold value (50 mg/km) for PM control was also applied. However, in all cases the requirement of monitoring the reduction efficiency of the catalytic converter with respect to NO_x emissions was applied.

Approval C - Vehicles fuelled with diesel fuel or which can be fuelled with either diesel fuel and biofuel or biofuel.



The above approval mark affixed to a vehicle in conformity with paragraph 4. of this Regulation shows that the vehicle type concerned has been approved in Germany (E₁), pursuant to Regulation No. 83 under approval number 2439. This mark indicates that the approval was given in accordance with the requirements of this Regulation with the 06 series of amendments incorporated and satisfying the limits for the Type I test detailed in Table 1 in paragraph 5.3.1.4. of this Regulation for vehicles with compression-ignition engine, fuelled with either diesel fuel and biofuel or biofuel.

Furthermore, the accompanying letter (M) denotes that the vehicle belongs to vehicle category N_{1,III} or N₂, and both the revised particulate measurement procedure, determined in Annex 4a, as well as the corresponding limit value for PM mass (Table 1 in paragraph 5.3.1.4. of this Regulation), were applied, along with normal OBD threshold value (50 mg/km) for PM control.

Approval D - Vehicles approved to the emission levels of gaseous pollutants required for feeding the engine with either LPG or NG/biomethane.



The above approval mark affixed to a vehicle in conformity with paragraph 4. of this Regulation shows that the vehicle type concerned has been approved in Germany (E₁), pursuant to Regulation No. 83 under approval number 2439. This mark indicates that the approval was given in accordance with the requirements of this Regulation with the 06 series of amendments incorporated and satisfying the limits for the Type I test detailed in Table 1 in

paragraph 5.3.1.4. of this Regulation for vehicles with a positive-ignition engine (PI), fuelled either with LPG or NG/biomethane (i.e. monofuel engine).

Furthermore, the accompanying letter (M) denotes that the vehicle belongs to vehicle category N_{1,III} or N₂, and if the vehicle was fitted with a PI engine of direct-injection type (GDI), both the revised particulate measurement procedure, determined in Annex 4a, as well as the corresponding limit value for PM mass (Table 1 in paragraph 5.3.1.4. of this Regulation), were both applied. If so, normal OBD threshold value (50 mg/km) for PM control was also applied. However, in all cases the requirement of monitoring the reduction efficiency of the catalytic converter with respect to NOx emissions was applied.”

Furthermore, replace Table 1 with this Table

Table 1

Letters with reference to fuel, engine and vehicle category

Character	Vehicle category and class	Engine type
J	M, N₁ class I.	PI CI
K	M₁ to fulfill specific social needs (excluding M_{1G})	CI
L	N₁ class II	PI CI
M	N₁ class III, N₂	PI CI

Annex 4.

Delete this Annex 4 completely with all Appendices to Annex 4.

Annex 4a,

1. APPLICABILITY

Amend text to read:

This Annex effectively replaces former Annex 4.

Annex 4a, Appendix 7

4.1.2. Tyres, amend to read:

“The widest tyre shall be chosen. If there are more than three tyre sizes, the widest minus one shall be chosen.”

Annex 7,

Paragraph 4.1., amend to read:

"4.1. Chassis dynamometer

The chassis dynamometer shall meet the requirements of **Appendix 1 of Annex 4a.**"

Paragraph 5.2.1., amend to read:

"... Type I test as specified in **Annex 4a** ..."

Paragraph 5.4.1., amend to read:

"... Type I test as described in **Annex 4a** (cold start urban and extra urban test)..."

Annex 7 - Appendix 1,

Paragraph 3.2., amend to read:

3.2. Calibration of the HC analyser

"The analyser should be calibrated using propane in air and purified synthetic air. See **paragraph 3.2. of Annex 4a.**

Establish a calibration curve as described in paragraphs 4.1. to 4.5. of this appendix."

Annex 8,

Paragraph 2.1.1., amend to read:

"... requirements for the Type I test as specified in **Annex 4a**, ... "

Paragraph 2.2.1., amend to read:

"The requirements of **Appendix 1 of Annex 4a** apply. The dynamometer shall be adjusted to simulate the operation of a vehicle on the road at 266 K (-7 °C). Such adjustment may be based on a determination of the road load force profile at 266 K (-7 °C). Alternatively the driving resistance determined according to **Appendix 7 of Annex 4a** may be adjusted for a 10 per cent decrease of the coast-down time. The technical service may approve the use of other methods of determining the driving resistance."

Paragraph 2.2.2., amend to read:

"For calibration of the dynamometer the provisions of **Appendix 1 of Annex 4a** apply."

Paragraph 2.3.1., amend to read:

"2.3.1. The **provisions of Appendix 2 and Appendix 3 of Annex 4a** apply."

Paragraph 2.4.1., amend to read:

"The provisions of **Appendix 3 of Annex 4a** apply, but only for carbon monoxide, carbon dioxide, and **total** hydrocarbon testing."

Paragraph 2.4.2., amend to read:

"For calibrations of the analytical equipment the provisions of **Annex 4a** apply"

Paragraph 2.5.1., amend to read:

"The provisions of **paragraph 3 of Appendix 3 of Annex 4a** apply, where they are relevant."

Paragraph 2.6.1., amend to read:

"For equipment used for the measurement of volume, temperature, pressure and humidity the provisions in **paragraph 4.6 of Annex 4a** apply"

Paragraph 3.2., amend to read:

"The Part One urban driving cycle according to **Figure 1 in Annex 4a** ..."

Paragraph 3.2.1., amend to read:

"... operation of the first cycle shall be in accordance with **Table 1 and Figure 1 in Annex 4a** ..."

Paragraph 3.3.1., amend to read:

"For the test vehicle the provisions of paragraph **3.2 of Annex 4a** apply. For setting the equivalent inertia mass on the dynamometer the provisions of **paragraph 6.2.1 of Annex 4a** apply."

Paragraph 4.2.3., amend to read:

"... Parts One and Two **or corresponding Tables 1 and 2 and Figure 1 of Annex 4a**.
At the request of the ..."

Paragraph 4.2.5., amend to read:

"The drive-wheel tyre pressure shall be set in accordance with the provisions of **paragraph 6.2.3. of Annex 4a.**"

Paragraph 4.2.7., amend to read:

"... Part One cycle as described in **Table 1 and Figure 1 of Annex 4a.** ..."

Paragraph 5.1.1., amend to read:

"... Part One cycle (**Annex 4a, Table 1 and Figure 1**)..."

Paragraph 5.2.1.4., amend to read:

"The vehicle speed as measured from the dynamometer roll(s) shall be used (**paragraph 1.2.6. of Appendix 1 of Annex 4a.**)"

Paragraph 5.3.1., amend to read:

"The provisions of **paragraph 6.4., excluding 6.4.1.2., of Annex 4a** apply ..."

Paragraph 5.3.2., amend to read:

"...the provisions of **paragraph 6.5., excluding paragraph 6.5.2., of Annex 4a** apply. In..."

Paragraph 5.3.3., amend to read:

"... the provisions of **paragraph 6.6. of Annex 4a** apply."

Annex 9,

Paragraph 6.3.1.2., amend to read:

"... those described in **Appendix 7 of Annex 4a.**"

Paragraph 6.3.1.4., amend to read:

"... those described in **Annex 4a** ..."

Annex 11,

Paragraph 2.9., amend to read:

"Type I test" means the driving cycle (Parts One and Two) used for emission approvals, as detailed in **Tables 1 and 2 of Annex 4a.**"

Annex 11 - Appendix 1,

Paragraph 3.1., amend to read:

"The test vehicle shall meet the requirements of paragraph **3.2. of Annex 4a.**"

Paragraph 4.1., amend to read:

"... Type I test as described in paragraph **3.2. of Annex 4a.**"

Paragraph 5.1., amend to read:

"... the requirements of **Appendix 1 of Annex 4a.**"

Paragraph 6.1., amend to read:

"... the requirements of **Annex 4a.**"

Annex 12,

Paragraph 3.1.1.1., amend to read:

"... pre-conditioning cycle referred to in **paragraph 6.3. of Annex 4a** may be extended."

Annex 13,

Paragraph 3.1., amend to read:

"... calculations shall be carried out according to **Annex 4a, paragraphs 6.4. to 6.6. Determination of ...**"

Paragraph 3.2.1., amend to read:

"... preparation cycles in **paragraph 6.3. of Annex 4a ...**"

Paragraph 3.2.2., amend to read:

"... Type I test described in **Annex 4a ...**"

Paragraph 3.2.6., amend to read:

"... shall be calculated according to **Annex 4a, paragraph 6.6., ...**"

Annex 14,

Paragraph 1.2., amend to read:

"... shall be tested according to **Annex 4a, 5, ...**"

Paragraph 3.1.2.2.1., amend to read:

"... Part Two cycle described in **Table 2 (and Figure 3) of Annex 4a ...**"

Paragraph 3.1.2.5.3., amend to read:

"3.1.2.5.3. The vehicle shall be driven according to **provisions in Annex 4a**, or in case of special gear shifting strategy, according to the manufacturer's instructions, as incorporated in the drivers' handbook of production vehicles and indicated by a technical gear shift instrument (for drivers' information). For these vehicles the gear shifting points prescribed **in Annex 4a**) are not applied. For the pattern of the operating curve the description according to **paragraph 6.1.3. of Annex 4a** shall apply.

Paragraph 3.1.2.5.4., amend to read:

"The exhaust gases shall be analyzed according to **provisions in Annex 4a.**"

Paragraph 3.2.3.1.1., amend to read:

"... Part Two cycle described in **Table 2 and Figure 2 of Annex 4a...**"

Paragraph 3.2.3.4.3., amend to read:

"... the description according to paragraph **6.1.3.2. of Annex 4a** shall apply."

Paragraph 3.2.3.4.4., amend to read:

"The exhaust gases shall be analysed according to **provisions in Annex 4a.**"

Paragraph 3.4.1., amend to read:

"... tested in hybrid mode according to **Annex 4a**. If several hybrid ..."

Paragraph 3.4.3., amend to read:

"3.4.3. The vehicle shall be driven according to **Annex 4a**, or in case of special gear shifting strategy according to the manufacturer's instructions, as incorporated in the drivers' handbook of production vehicles and indicated by a technical gear shift instrument (for drivers information). For these vehicles the gear shifting points prescribed in **Annex 4a**, are not applied. For the pattern of the operating curve the description according to paragraph **6.1.3.2. of Annex 4a** shall apply."
