



**Economic and Social
Council**

Distr.
GENERAL

ECE/TRANS/WP.29/2009/134
28 August 2009

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations

One-hundred-and-forty-ninth session
Geneva, 10 - 13 November 2009
Item 4.2.36 of the provisional agenda)

1958 AGREEMENT

Consideration of draft amendments to existing Regulations

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

Submitted by the representative of the European Community */

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). The modifications to the text of ECE/TRANS/WP.29/2009/57 are marked in bold characters or strikethrough. The amendments are based on the proposals of document No. WP.29-148-12 and observations of the editorial team responsible for the preparation and modification of the proposal.

*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

A. PROPOSAL

Paragraph 1.1., replace "covered by paragraph 1" by "**mentioned above**"

Paragraph 1.2., should be deleted.

Paragraph 2.1.1., amend to read:

"2.1.1. the equivalent inertia determined in relation to the reference mass as prescribed in Annex 4, paragraph 5.1. (**or Annex 4a, Table 1**) 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 4, **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 4 **and Annex 4a**;"

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

"... Annex 4 **or Annex 4a** to this Regulation ..."

Paragraph 3.4.8., amend to read:

"3.4.8. The application for type approval of ~~mono-fuel, bi-fuel and~~ flex-fuel vehicles shall comply with the additional requirements laid down in paragraphs 4.9.1. and 4.9.2."

Paragraph 5.2.3. Table A, everywhere for flex fuel vehicles with C.I. engines including hybrids, the test requirements "Yes" shall be replaced by "**Yes (B5 only)**"

Paragraph 5.3.1.3., amend to read:

"... described in Annex 4 **or Annex 4a**. The method used to collect and analyse the gases and ~~to remove and weigh~~ **to sample and analyse** the particulates shall be as prescribed."

Paragraph 5.3.1.4., Table 1 (Emission limits)

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

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

"5.3.5.1. **This test shall not be carried out on diesel vehicles.**

However ..."

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 **either** in Annex 4, Appendix 1 and illustrated in figure 1/1, ~~1/2 and 1/3~~ of the Appendix, **or paragraph 6.1.1. of Annex 4a, and illustrated in figure 1 of the same Annex.** The low ambient temperature test lasting a total of 780 seconds shall be carried out without interruption and start at engine cranking."

Paragraph 5.3.7.5., amend to read:

"5.3.7.5. The table in item ~~47~~ **2.2** to Annex 2 shall be completed."

Paragraph 9.3.1., amend to read:

"... 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 ..."

Paragraph 9.3.2., amend to read:

"9.3.2. In selecting the **geographic regions** for sampling vehicles, the manufacturer may select vehicles from a **region** 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** having the largest annual sales of a vehicle family within the **Contracting Party**). 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.**"

Paragraph 12.1.1., amend to read:

"12.1.1. **As from the official date of entry into force of the 06 series of amendments, no Contracting Party applying this Regulation shall refuse to grant approval under this Regulation as amended by the 06 series of amendments.**"

Paragraph 12.1.2.2., amended to read:

"12.1.2.2. With effect from 1 September 2011, Contracting Parties applying this Regulation shall grant approvals only if the vehicle type to be approved meets the requirements

of the 06 series of amendments to this Regulation with the ~~tightened~~ PM limit values according to the new measurement procedure **as specified in Annex 4a.**"

Paragraph 12.1.3.2., amended to read:

"12.1.3.2. With effect from 1 January 2013 in the case of category M, N₁ and N₂, Contracting Parties applying this Regulation shall grant approvals only if the vehicle type to be approved meets the requirements of the 06 series of amendments to this Regulation with the ~~tightened~~ PM limit values according to the new measurement procedure **as specified in Annex 4a.**"

Appendix 3.

Paragraph 4.1., amend to read:

"4.1. When a check on vehicles is deemed necessary, emission tests in accordance with Annex 4 **or 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~~ **paragraph 5.3.** of Annex 4 **or paragraph 6.3. or Annex 4a** to this Regulation will only be allowed if they are representative of normal driving.

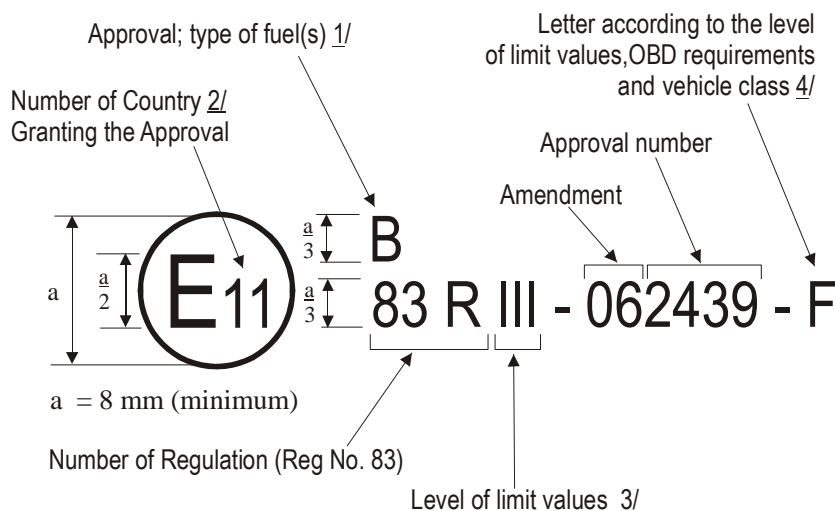
Annex 3.

Second paragraph of the introductory text., amend to read:

"Although in principle the provisions for approval follow fuel requirements, with respect to the time the approval has been granted, depending on engine type and reference weight of the vehicle, some transitional provisions regarding relaxed requirements for OBD functionality and higher threshold limit values for particulate matter (PM) could be applicable. Therefore, ~~vehicles with similar markings may not always have been approved with similar provisions. See paragraphs 3.3.2. and 12.2.3. of this Regulation for details~~ **an alphabetical character assigned according to Table 3 of this Annex should accompany the approval number, to distinguish between the set of requirements applicable to the vehicle.**"

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 062439. This marking indicates that the approval was given in accordance with the requirements of

Regulation No. 83, 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 (PI) engine and belonging to vehicle category M₁ or N_{1,I}.

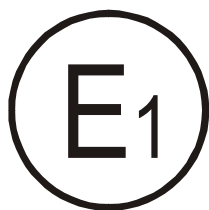
Furthermore, the accompanying letter (A) denotes also that for this approval, if the vehicle was fitted with a PI engine of direct-injection type (GDI), the measurement procedure for PM described in Annex 4 with corresponding limit value was used, and the revised particulate measurement procedure (as described in Annex 4a) with corresponding limit value, as well as the particle number limit value, were all waived. For such vehicles also, in case of category M vehicles with RW > 1760 kg, relaxed OBD threshold value (80 mg/km) for PM control was applied, if the type approval was made before 1.1.2011. Otherwise, normal OBD threshold value (50 mg/km) was applied.

However, in all cases the requirement of monitoring the reduction in the efficiency of the catalytic converter with respect to NO_x emissions was waived.



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 Sweden (E₅), pursuant to Regulation No. 83 under approval number 062439. This marking indicates that the approval was given in accordance with the requirements of Regulation No. 83, 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 (PI) engine and belonging to vehicle category N_{1,II}.

Furthermore, the accompanying letter (D) denotes also that for this approval, if the vehicle was fitted with a PI engine of direct-injection type (GDI), the measurement procedure for PM described in Annex 4 with corresponding limit value was used, and the revised particulate measurement procedure (as described in Annex 4a) with corresponding limit value, as well as the particle number limit value, were all waived. For such vehicles also normal OBD threshold value (50 mg/km) was applied. However, in all cases the requirement of monitoring the reduction in the efficiency of the catalytic converter with respect to NO_x emissions was waived.



B

83 RIII - 062439 - E

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 062439. This marking indicates that the approval was given in accordance with the requirements of Regulation No. 83, 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 (PI) engine and belonging to vehicle category N_{1,III} or N₂.

Furthermore, the accompanying letter (E) denotes also that for this approval, if the vehicle was fitted with a PI engine of direct-injection type (GDI), the measurement procedure for PM described in Annex 4 with corresponding limit value was used, and the revised particulate measurement procedure (as described in Annex 4a) with corresponding limit value, as well as the particle number limit value, were all waived. In that case also relaxed OBD threshold value (80 mg/km) for PM control, applicable to category N vehicles with RW > 1760 kg, was used, if the type approval was made before 1.1.2011. Otherwise, normal OBD threshold value (50 mg/km) was applied. However, in all cases the requirement of monitoring the reduction in the efficiency of the catalytic converter with respect to NO_x emissions was waived.



B

83 RIII - 062439 - F

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 marking 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 (F) 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 in the efficiency of the catalytic converter with respect to NOx emissions was waived.



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 Netherlands (E₄), 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.

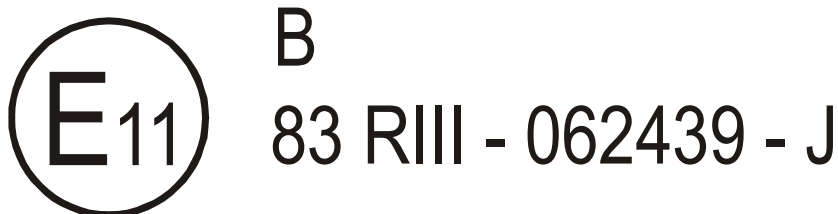
Furthermore, the accompanying letter (H) denotes that the vehicle belongs to vehicle class N_{1,II}, and if the vehicle was fitted with a PI engine of direct-injection type (GDI), both the revised particulate measurement procedure, determined in Annex 4a, as well as the corresponding limit value for 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 in the efficiency of the catalytic converter with respect to NOx emissions was waived.



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 Sweden (E₅), 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.

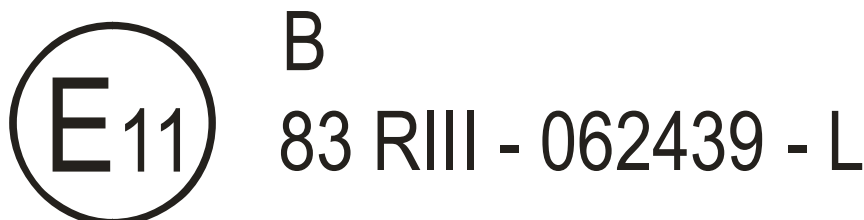
Furthermore, the accompanying letter (I) denotes that the vehicle belongs to vehicle category N_{1,III} or N₂, and if the vehicle was fitted with a PI engine of direct-injection type

(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 in the efficiency of the catalytic converter with respect to NOx emissions was waived.



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 NO_x 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 eries 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 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 compression-ignition engine, fuelled with either diesel fuel and biofuel or biofuel.

Furthermore, the accompanying letter (A) denotes also that the vehicle belongs to category M or N_{1,L}, and for this approval, the measurement procedure for PM described in Annex 4 with corresponding limit value was used, and the revised particulate measurement procedure (as described in Annex 4a) and corresponding limit value, as well as the particle number limit value, were both waived. Also, in case of category M vehicles with RW > 1760 kg, relaxed OBD threshold value (80 mg/km) for PM control was applied, if the type approval was made before 1.1.2011. Otherwise, normal OBD threshold value (50 mg/km) 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 Sweden (E₅), 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.

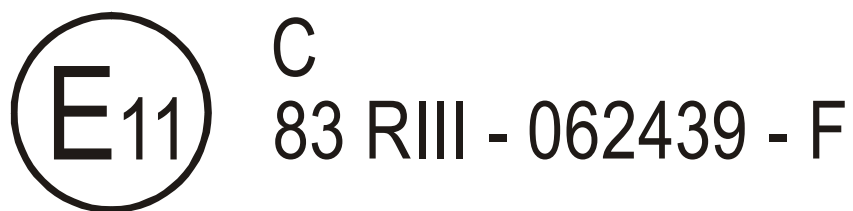
Furthermore, the accompanying letter (C) denotes also that the vehicle belongs to category M_{1G} to fulfil specific social needs, and for this approval, the measurement procedure for PM described in Annex 4 with corresponding limit value was used, and the revised particulate measurement procedure (as described in Annex 4a) and corresponding limit value, as well as the particle number limit value, were both waived. However, normal OBD threshold value (50 mg/km) for PM control 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 Italy (E₃), 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 (E) denotes also that the vehicle belongs to category N_{1,III} or N₂, and for this approval, the measurement procedure for PM described in Annex 4 with corresponding limit value was used, and the revised particulate measurement procedure (as described in Annex 4a) and corresponding limit value, as well as the particle number limit value, were both waived. Also relaxed OBD threshold value (80 mg/km) for PM control, applicable to category N vehicles with RW > 1760 kg, was used, if the type approval was made before 1.1.2011. Otherwise, normal OBD threshold value (50 mg/km) 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 Netherlands (E₄), 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 (F) denotes that the vehicle belongs to vehicle category M, or N_{1,I}, and for this approval, 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.



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

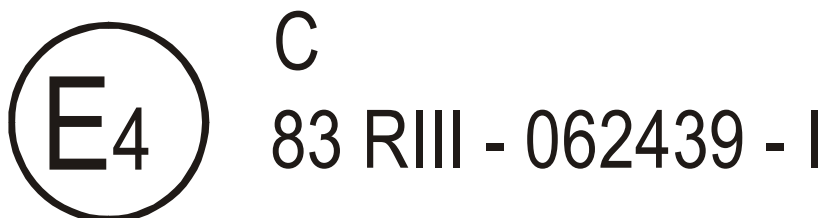
Regulation with the 06 series of amendments incorporated and satisfying the limits for the Type I test detailed in Table 1 in paragraph 5.3.1.4. of this Regulation for vehicles with compression-ignition engine, fuelled with either diesel fuel and biofuel or biofuel.

Furthermore, the accompanying letter (G) denotes that if the vehicle belongs to vehicle class M_1 to fulfil special social needs, and for this approval, 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.



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 Sweden (E_5), 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 (H) denotes that if the vehicle belongs to vehicle class $N_{1,II}$, and for this approval, 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.



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 Netherlands (E_4), 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 (I) denotes that the vehicle belongs to vehicle class N_{1,III} or N₂, and for this approval, 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.



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 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 a positive-ignition engine (PI), fuelled either with LPG or NG/biomethane (i.e. monofuel engine).

Furthermore, the accompanying letter (A) denotes also that the vehicle belongs to category M or N_{1,I}, and for this approval, if the vehicle was fitted with a PI engine of direct-injection type (GDI), the measurement procedure for PM described in Annex 4 with corresponding limit value was used, and the revised particulate measurement procedure (as described in Annex 4a) with corresponding limit value, as well as the particle number limit value, were all waived. Also, in case of category M vehicles with RW > 1760 kg, relaxed OBD threshold value (80 mg/km) for PM control was applied, if the type approval was made before 1.1.2011. Otherwise, normal OBD threshold value (50 mg/km) was applied. However, in all cases the requirement of monitoring the reduction in the efficiency of the catalytic converter with respect to NOx emissions was waived.



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 Sweden (E₅), 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 (D) denotes also that for this approval, if the vehicle was fitted with a PI engine of direct-injection type (GDI), the measurement procedure for PM described in Annex 4 with corresponding limit value was used, and the revised particulate measurement procedure (as described in Annex 4a) with corresponding limit value, as well as the particle number limit value, were both waived. For such vehicles also normal OBD threshold value (50 mg/km) was applied. However, in all cases the requirement of monitoring the reduction in the efficiency of the catalytic converter with respect to NOx emissions was waived.



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 a positive-ignition engine (PI), fuelled either with LPG or NG/biomethane (i.e. monofuel engine).

Furthermore, the accompanying letter (F) 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 both applied. For such vehicles also normal OBD threshold value (50 mg/km) for PM control was also applied. However, in all cases the requirement of monitoring the reduction in the efficiency of the catalytic converter with respect to NOx emissions was waived.



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 Sweden (E₅), 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 (H) denotes that the vehicle belongs to vehicle class 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 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 in the efficiency of the catalytic converter with respect to NOx emissions was waived.



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 NO_x emissions was applied.

Table 1

Letters with reference to level of limit values, OBD requirements and vehicle category

Character (fuel) ¹	Character (PM Limit value and OBD)	Limit value for PM ⁴ [mg/km]	OBD PM Limit value ⁴ [mg/km]	OBD NOx monitor ⁵	Vehicle category and class	Engine type	Implementation date: new types	Implementation date: new vehicles	Last date of registration
B, D C	A	5 ^[2]	50 [80] ⁶	no -	M, N ₁ class I.	PI CI	1.9.2009	1.1.2011	31.12.2012
C	B	5 ^[2]	50	-	M ₁ to fulfill specific social needs (excluding M _{1G})	CI	1.9.2009	1.1.2011	31.12.2012
C	C	5 ^[2]	50	-	M _{1G} to fulfill specific social needs	CI	1.9.2009	1.1.2011	31.08.2012
B, D C	D	5 ^[2]	50	no -	N ₁ class II	PI CI	1.9.2010	1.1.2012	31.12.2012
B, D C	E	5 ^[2]	50 [80] ⁶	no -	N ₁ class III, N ₂	PI CI	1.9.2010	1.1.2012	31.12.2012
B, D C	F	4.5 ^[3]	50	no -	M, N ₁ class I.	PI CI	1.9.2011	1.1.2013	31.12.2013
C	G	4.5 ^[3]	50	-	M ₁ to fulfill specific social needs (excluding M _{1G})	CI	1.9.2011	1.1.2013	31.12.2013
B, D C	H	4.5 ^[3]	50	no -	N ₁ class II	PI CI	1.9.2011	1.1.2013	31.12.2013
B, D C	I	4.5 ^[3]	50	no -	N ₁ class III, N ₂	PI CI	1.9.2011	1.1.2013	31.12.2013
B, D C	J	4.5 ^[3]	50	yes -	M, N ₁ class I.	PI CI	1.9.2011	1.1.2014	31.8.2015
C	K		50	-	M ₁ to fulfill specific social needs (excluding M _{1G})	CI	1.9.2011	1.1.2014	31.8.2015
B, D C	L	4.5 ^[3]	50	yes -	N ₁ class II	PI CI	1.9.2011	1.1.2014	31.8.2016
B, D C	M	4.5 ^[3]	50	yes -	N ₁ class III, N ₂	PI CI	1.9.2011	1.1.2014	31.8.2016

¹ According to paragraph 2.19. of this Regulation² Measured according to Annex 4 of this Regulation³ Measured according to Annex 4a of this Regulation⁴ Applicable only to vehicles with compression ignition (CI) engine or positive ignition engine (PI) with direct injection (GDI)⁵ Yes/no, refers only to vehicles with positive ignition engine (PI); see paragraph 3.3.3.1., of Annex 11.⁶ Until 1.1.2011 relaxed OBD threshold limit (80 mg/km) for PM mass is applied to M₁ and N, where RW >1760 kg; see paragraph 3.3.2., footnote (2), of Annex 11."

Annex 4, paragraph 8.2., subparagraph (e), amend to read:

"(e) For ethanol (E85) (C₁H_{2.74}O_{0.385}) d = 0.932 g/l"

Annex 4 - Appendix 1,

Paragraph 2. ELEMENTARY URBAN CYCLE (Part One)

Table 1.2, amend to read: (amended text in **bold** characters)

"Table 1.2

Elementary urban operating cycle on the chassis dynamometer (Part One)

No. of operation	Operation	Phase	Acceleration (m/s ²)	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox
					Operation (s)	Phase (s)		
1	Idling	1	0	0	11	11	11	6 s PM + 5 s K ₁ (*)
2	Acceleration	2	1.04	0-15	4	4	15	1
3	Steady speed	3	0	15	9	8	23	1
4	Deceleration	4	-0.69	15-10	2	5	25	1
5	Deceleration, clutch disengaged		-0.92	10-0	3		28	K ₁ (*)
6	Idling	5	0	0	21	21	49	16 s PM + 5 s K ₁ (*)
7	Acceleration	6	0.83	0-15	5	12	54	1
8	Gear change		15		2		56	
9	Acceleration		0.94	15-32	5		61	2
10	Steady speed	7	0	32	24	24	85	2
11	Deceleration	8	-0.75	32-10	8	11	93	2
12	Deceleration, clutch disengaged		-0.92	10-0	3		96	K ₂ (*)
13	Idling	9	0	0	21		117	16 s PM + 5 s K ₁

No. of operation	Operation	Phase	Acceleration (m/s ²)	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox
					Operation (s)	Phase (s)		
								(*)
14	Acceleration	10	0.83	0-15	5	26	122	1
15	Gear change			15	2		124	
16	Acceleration		0.62	15-35	9		133	2
17	Gear change			35	2		135	
18	Acceleration		0.52	35-50	8		143	3
19	Steady speed	11	0	50	12	12	155	3
20	Deceleration	12	-0.52	50-35	8	8	163	3
21	Steady speed	13	0	35	13	13	176	3
22	Gear change	14		35	2	12	178	
23	Deceleration		-0.99	35-10	7		185	2
24	Deceleration clutch disengaged		-0.92	10-0	3		188	K ₂ (*)
25	Idling	15	0	0	7	7	195	7 s PM (*)

(*) PM = gearbox in neutral, clutch engaged. K₁, K₂ = first or second gear engaged, clutch disengaged."

Paragraph 3. EXTRA-URBAN CYCLE (Part Two),

Table 1.3, amend to read: (amended text in **bold** characters)

"Table 1.3 Extra-urban cycle (Part Two) for the Type I test

No. of operation	Operation	Phase	Acceleration (m/s ²)	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox
					Operation (s)	Phase (s)		
1	Idling	1	0	0	20	20	20	K ₁ (1)
2	Acceleration	2	0.83	0-15	5	41	25	1
3	Gear change			15	2		27	-
4	Acceleration		0.62	15-35	9		36	2
5	Gear change			35	2		38	-
6	Acceleration		0.52	35-50	8		46	3
7	Gear change			50	2		48	-
8	Acceleration		0.43	50-70	13		61	4
9	Steady speed		3		70		50	50
10	Deceleration	4	-0.69	70-50	8	8	119	4 s.5 + 4 s.4

No. of operation	Operation	Phase	Acceleration (m/s ²)	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox
					Operation (s)	Phase (s)		
11	Steady speed	5		50	69	69	188	4
12	Acceleration	6	0.43	50-70	13	13	201	4
13	Steady speed	7	0	70	50	50	251	5
14	Acceleration	8	0.24	70-100	35	35	286	5
15	Steady speed (2)	9	0	100	30	30	316	5 (2)
16	Acceleration (2)	10	0.28	100-120	20	20	336	5 (2)
17	Steady speed (2)	11	0	120	10	20	346	5 (2)
18	Deceleration (2)	12	-0.69	120-80	16	34	362	5 (2)
19	Deceleration (2)		-1.04	80-50	8		370	5 (2)
20	Deceleration, clutch disengaged		1.39	50-0	10		380	K5 (1)
21	Idle	13	0	0	20	20	400	PM (1)

- (1) PM = gearbox on neutral, clutch engaged.
K₁, K₅ = first or fifth gear engaged, clutch disengaged
- (2) Additional gears can be used according to manufacturer recommendations if the vehicle is equipped with a transmission with more than five gears."

Annex 4, Appendix 5,

Paragraph 2.3.2., amend to read:

"2.3.2. The piping configuration, flow capacity of the CVS, and the temperature and specific humidity of the dilution air (which may be different from the vehicle combustion air source) shall be controlled so as to virtually eliminate water condensation in the system (a flow of 0.142 to 0.165 m³/s is sufficient for most vehicles)."

Annex 4a,

Paragraph 1., amend to read:

"1. APPLICABILITY

This annex is concurrent and interchangeable with Annex 4 in describing test procedures, and should yield to congruent results, excluding all issues related to particulate matter (PM), where the procedures are not comparable, and therefore separate limit values are issued in Table 1, in paragraph 5.3.1.4 of this Regulation, to be used in either case.

From 1 September 2011, this annex should replace Annex 4 for the approval of new types of vehicles. From 1 January 2013, Contracting Parties shall refuse on their territory the sale, registration or putting into service of new vehicles approved according to this Regulation, but not complying with this annex."

Tables 1 and 2, amend to read: (amended text in **bold** characters)

Table 1 - Elementary urban operating cycle on the chassis dynamometer (Part One)

No. of operation	Operation	Phase	Acceleration (m/s ²)	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox	
					Operation (s)	Phase (s)			
1	Idling	1	0	0	11	11	11	6 s PM + 5 s K ₁ (*)	
2	Acceleration	2	1.04	0-15	4	4	15	1	
3	Steady speed	3	0	15	9	8	23	1	
4	Deceleration	4	-0.69	15-10	2	5	25	1	
5	Deceleration, clutch disengaged		-0.92	10-0	3		28	K ₁ (*)	
6	Idling	5	0	0	21	21	49	16 s PM + 5 s K ₁ (*)	
7	Acceleration	6	0.83	0-15	5	12	54	1	
8	Gear change				15		2	56	
9	Acceleration		0.94	15-32	5		61	2	
10	Steady speed	7	0	32	24	24	85	2	
11	Deceleration	8	-0.75	32-10	8	11	93	2	
12	Deceleration, clutch disengaged		-0.92	10-0	3		96	K ₂ (*)	
13	Idling	9	0	0	21		117	16 s PM + 5 s K ₁ (*)	
14	Acceleration	10	0.83	0-15	5	26	122	1	
15	Gear change				15		2	124	
16	Acceleration		0.62	15-35	9		133	2	
17	Gear change				35		2	135	
18	Acceleration		0.52	35-50	8		143	3	
19	Steady speed	11	0	50	12	12	155	3	
20	Deceleration	12	-0.52	50-35	8	8	163	3	
21	Steady speed	13	0	35	13	13	176	3	
22	Gear change	14		35	2	12	178		
23	Deceleration		-0.99	35-10	7		185	2	
24	Deceleration clutch disengaged		-0.92	10-0	3		188	K ₂ (*)	
25	Idling	15	0	0	7	7	195	7 s PM (*)	

(*) PM = gearbox in neutral, clutch engaged. K₁, K₂ = first or second gear engaged, clutch disengaged.

Table 2 - Extra-urban cycle (Part Two) for the Type I test

No. of operation	Operation	Phase	Acceleration (m/s ²)	Speed (km/h)	Duration of each		Cumulative time(s)	Gear to be used in the case of a manual gearbox
					Operation(s)	Phase(s)		
1	Idling	1	0	0	20	20	20	K ₁ (1)
2	Acceleration	2	0.83	0-15	5	41	25	1
3	Gear change		15	2	27		-	
4	Acceleration		0.62	15-35	9		36	2
5	Gear change		35	2	38		-	
6	Acceleration		0.52	35-50	8		46	3
7	Gear change		50	2	48		-	
8	Acceleration		0.43	50-70	13		61	4
9	Steady speed		3	0	70		50	50
10	Deceleration	4	-0.69	70-50	8	8	119	4 s.5 + 4 s.4
11	Steady speed	5	0	50	69	69	188	4
12	Acceleration	6	0.43	50-70	13	13	201	4
13	Steady speed	7	0	70	50	50	251	5
14	Acceleration	8	0.24	70-100	35	35	286	5
15	Steady speed (2)	9	0	100	30	30	316	5 (2)
16	Acceleration (2)	10	0.28	100-120	20	20	336	5 (2)
17	Steady speed (2)	11	0	120	10	20	346	5 (2)
18	Deceleration (2)	12	-0.69	120-80	16	34	362	5 (2)
19	Deceleration (2)		-1.04	80-50	8		370	5 (2)
20	Deceleration, clutch disengaged		1.39	50-0	10		380	K ₅ (1)
21	Idle	13	0	0	20	20	400	PM (1)

(1) PM = gearbox in neutral, clutch engaged. K₁, K₅ = first or second gear engaged, clutch disengaged

(2) Additional gears can be used according to manufacturer recommendations if the vehicle is equipped with a transmission with more than five gears."

Annex 7,

Paragraph 4.1., amend to read:

"4.1. Chassis dynamometer

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

Paragraph 5.2.1., amend to read:

"... Annex 4 **or Annex 4a** ..."

Paragraph 5.4.1., amend to read:

"... Annex 4 **or Annex 4a** ..."

Annex 7 - Appendix 1,

Paragraph 3.2., amend to read:

"...

The analyser ... of Annex 4 **or paragraph 3.2. of Annex 4a** ...

..."

Annex 8,

Paragraph 2.1.1., amend to read:

"... Annex 4 **or Annex 4a** ..."

Paragraph 2.2.1., amend to read:

" ... Appendix 3 of Annex 4 **or Appendix 1 of Annex 4a** ..."

Paragraph 2.2.2., amend to read:

" ... **Annex 4 or Appendix 1 of Annex 4a** ..."

Paragraph 2.3.1., amend to read:

"2.3.1. The **provisions** of paragraph 4.2. of Annex 4 and Appendix 5 to Annex 4 **or Appendix 2 and Appendix 3 of Annex 4a** apply."

Paragraph 2.4.1., amend to read:

"... Annex 4 **or Annex 4a** ..."

Paragraph 2.4.2., amend to read:

"... Annex 4 **or Annex 4a** ..."

Paragraph 2.5.1., amend to read:

"... Annex 4 **or paragraph 3 of Appendix 3 of Annex 4a** ... "

Paragraph 2.6.1., amend to read:

"... Annex 4 **or paragraph 4.6 of Annex 4a** ..."

Paragraph 3.2., amend to read:

" ... Annex 4, **Appendix 1 or Figure 1 in Annex 4a** ..."

Paragraph 3.2.1., amend to read:

"... Annex 4 **or Table 1 and Figure 1 in Annex 4a** ..."

Paragraph 3.3.1., amend to read:

"... of paragraph 3.1. of Annex 4 **or 3.2 of Annex 4a** ... paragraph 5.1. of Annex 4 **or 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 Figures 1 and 2 of Annex 4a**. At the request of the ..."

Paragraph 4.2.5., amend to read:

"... Annex 4 **or paragraph 6.2.3. of Annex 4a.**"

Paragraph 4.2.7., amend to read:

"... Annex 4, Appendix 1 **or in Table 1 and Figure 1 of Annex 4a**. The extent ..."

Paragraph 5.1.1., amend to read:

"... (Annex 4, Appendix 1, Figure 1/1 **or Annex 4a, Table 1 and Figure 1**)..."

Paragraph 5.2.1.4., amend to read:

"... Annex 4 **or paragraph 1.2.6. of Appendix 1 of Annex 4a.**"

Paragraph 5.3.1., amend to read:

"... Annex **or paragraph 6.4., excluding 6.4.1.2., of Annex 4a ...**"

Paragraph 5.3.2., amend to read:

"... Annex 4, **or paragraph 6.5., excluding paragraph 6.5.2., of Annex 4a ...**"

Paragraph 5.3.3., amend to read:

"... Annex 4 **or paragraph 6.6. of Annex 4a ...**"

Annex 9,

Paragraph 6.3.1.2., amend to read:

"... Annex 4 **or Appendix 7 of Annex 4a.**"

Paragraph 6.3.1.4., , add:

"... Annex 4 **or Annex 4a ...**"

Annex 10a,

Paragraph 1.1., amend to read:

"1.1. TECHNICAL data OF THE LPG REFERENCE FUELS USED FOR TESTING VEHICLES TO THE EMISSION LIMITS ~~GIVEN IN TABLE 1 IN PARAGRAPH 5.3.1.4. TYPE I TEST~~"

Annex 11,

Paragraph 2.9., amend to read:

"... Annex 4, Appendix 1 **or Tables 1 and 2 of Annex 4a.**"

Annex 11 - Appendix 1,

Paragraph 3.1., amend to read:

"... Annex 4 **or paragraph 3.2. of Annex 4a.**"

Paragraph 4.1., amend to read:

"... Annex 4 **or paragraph 3.2. of Annex 4a.**"

Paragraph 5.1., amend to read:

"... Annex 4 **or Appendix 1 of Annex 4a.**"

Paragraph 6.1., amend to read:

"... Annex 4 **or Annex 4a.**"

Annex 12,

Paragraph 3.1.1.1., amend to read:

"... Annex 4 **or paragraph 6.3. of Annex 4a ...**"

Annex 13,

Paragraph 3.1., amend to read:

"... Annex 4 **paragraphs 5., 6., 7. and 8, or to Annex 4a, paragraphs 6.4. to 6.6.**
Determination of ..."

Paragraph 3.2.1., amend to read:

"... Annex 4 **or paragraph 6.3. of Annex 4a ...**"

Paragraph 3.2.2., amend to read:

"... Annex 4 **or in Annex 4a ...**"

Paragraph 3.2.6., amend to read:

"... Annex 4 **or Annex 4a, paragraph 6.6., ...**"

Annex 14,

Paragraph 1.2., amend to read:

"... Annex 4/**Annex 4a, 5, ...**"

Paragraph 3.1.2.2.1., amend to read:

"... Annex 4 **or Table 2 of Annex 4a ...**"

Paragraph 3.1.2.5.3., amend to read:

"3.1.2.5.3. The vehicle shall be driven according to Annex 4, **or equivalent 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 4, Appendix 1 (**or in equivalent provisions in Annex 4a**) are not applied. For the pattern of the operating curve the description according to paragraph 2.3.3. in Annex 4 **or paragraph 6.1.3. of Annex 4a** shall apply.

Paragraph 3.1.2.5.4., amend to read:

"... Annex 4 **or equivalent provisions in Annex 4a.**"

Paragraph 3.2.3.1.1., amend to read:

"... Annex 4 (**or Table 2 and Figure 2 of Annex 4a**)..."

Paragraph 3.2.3.4.3., amend to read:

"... paragraph 2.3.3. in Annex 4 (**or paragraph 6.1.3.2. of Annex 4a**) shall apply."

Paragraph 3.2.3.4.4., amend to read:

"... Annex 4, **or corresponding provisions in Annex 4a .**"

Paragraph 3.4.1., amend to read:

"... Annex 4 (**or Annex 4a**). If several hybrid ..."

Paragraph 3.4.3., amend to read:

"3.4.3. The vehicle shall be driven according to Annex 4 (**or 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 4, Appendix 1 (**or Annex 4a**), are not applied. For the pattern of the operating curve the description according to paragraph 2.3.3. in Annex 4 (**or paragraph 6.1.3.2. of Annex 4a**) shall apply."
