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## Economic Commission for Europe

### Inland Transport Committee

### World Forum for Harmonization of Vehicle Regulations

#### 188th session

Geneva, 14-16 November 2022

Item 4.9.4. of the provisional agenda

#### 1958 Agreement:

Consideration of draft amendments to existing UN Regulations submitted by GRPE

## Proposal for Supplement 15 to the 07 series of amendments to UN Regulation No. 83 (Emissions of M1 and N1 vehicles)

### Submitted by the Working Party on Pollution and Energy \*

The text reproduced below was adopted by the Working Party on Pollution and Energy (GRPE) at its eighty-sixth session (ECE/TRANS/WP.29/GRSP/86, para. 23). It is based on ECE/TRANS/WP.29/GRPE/2022/10, ECE/TRANS/WP.29/GRPE/2022/13 and GRPE-86-12 as amended by Annex VI of the report. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration at their November 2022 sessions.

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\* In accordance with the programme of work of the Inland Transport Committee for 2022 as outlined in proposed programme budget for 2022 (A/76/6 (part V sect. 20) para 20.76), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



Paragraph 9.3.5.1., amend to read:

"9.3.5.1. When applying the statistical procedure defined in Appendix 4 to this Regulation (i.e. for tailpipe emissions), the number of sample lots shall depend on the annual production volume of an in-service family intended for sales in the contracting parties that apply this Regulation, as defined in Table 4.

Table 4  
Sample size

<i>Production Volume</i> - per calendar year (for tailpipe emission tests), - of vehicles of an OBD family with IUPR in the sampling period	<i>Number of sample lots</i>
Up to 100,000	1
100,001 to 200,000	2
Above 200,000	3

"

Add new paragraph 9.3.5.3., to read:

"9.3.5.3. In-service conformity checks for the Type I test (i.e. for tailpipe emissions) shall not be mandatory if the annual production volume of an in-service family intended for sales in the contracting parties that apply this Regulation was less than 5 000 vehicles for the previous year."

Appendix 2, paragraph 6., amend to read:

"6. Remarks

The following recursive formulae are useful for computing successive values of the test statistic:

$$\begin{aligned} \bar{d}_n &= \left(1 - \frac{1}{n}\right) \bar{d}_{n-1} + \frac{1}{n} d_n \\ V_n^2 &= \left(1 - \frac{1}{n}\right) V_{n-1}^2 + \frac{(\bar{d}_n - d_n)^2}{n-1} \\ (n &= 2, 3, \dots; \bar{d}_1 = d_1; V_1 = 0) \end{aligned}$$

..."

Annex 2

Paragraph 2.4., amend to read:

"2.4. Smoke opacity test results<sup>1,6</sup>

2.4.1. At steady speeds: See technical service test report number (if any): .....

2.4.2. Free acceleration tests

2.4.2.1. Measured value of the absorption coefficient (if any): ..... m<sup>-1</sup>

2.4.2.2. Corrected value of the absorption coefficient: ..... m<sup>-1</sup>

2.4.2.3. Location of the absorption coefficient symbol on the vehicle:.....

<sup>6</sup> Smoke opacity values according to provisions laid out in UN Regulation No. 24. "

Annex 4a

Appendix 1, paragraph 1., amend to read:

"1. Specification

1.1. General requirements

For test and measurement equipment that is compliant with the technical requirements of UN Regulation No. 154 original series or later version, the requirements on the technical equipment described in UN Regulation No. 154 may be followed, in all other cases the following requirements shall apply:

- 1.1.1. The dynamometer shall be capable of simulating road load within one of the following classifications: ..."

*Appendix 2, paragraph 1.2., amend to read:*

- "1.2. General requirements

For test and measurement equipment that is compliant with the technical requirements of UN Regulation No. 154 original series or later version, the requirements on the technical equipment described in UN Regulation No. 154 may be followed, in all other cases the following requirements shall apply:

..."

*Appendix 3, paragraph 1., amend to read:*

- "1. Specification

For test and measurement equipment that is compliant with the technical requirements of UN Regulation No. 154 original series or later version, the requirements on the technical equipment described in UN Regulation No. 154 may be followed, in all other cases the following requirements shall apply:

..."

*Appendix 4, paragraph 1., amend to read:*

- "1. Specification

For test and measurement equipment that is compliant with the technical requirements of UN Regulation No. 154 original series or later version, the requirements on the technical equipment described in UN Regulation No. 154 may be followed, in all other cases the following requirements shall apply:

..."

*Appendix 5, paragraph 1., amend to read:*

- "1. Specification

For test and measurement equipment that is compliant with the technical requirements of UN Regulation No. 154 original series or later version, the requirements on the technical equipment described in UN Regulation No. 154 may be followed, in all other cases the following requirements shall apply:

..."

*Appendix 6, paragraph 1., amend to read:*

- "1. Object

The method described in this appendix makes it possible to check that the simulated total inertia of the dynamometer is carried out satisfactorily in the running phase of the operating cycle. The manufacturer of the dynamometer shall specify a method for verifying the specifications according to paragraph 3. of this appendix.

In case of the equipment that meets UN Regulation No. 154 requirements, this application may not be required."

*Annex 7*

*Paragraph 4., amend to read:*

- "4. Test equipment for evaporative test

For test and measurement equipment that is compliant with the technical requirements of UN Regulation No. 154 original series or later version, the requirements on the technical equipment described in UN Regulation No. 154 may be followed, in all other cases the following requirements shall apply:

4.1. Chassis dynamometer

The chassis dynamometer shall meet the requirements of Appendix 1 to Annex 4a to this Regulation.

..."

*Appendix 1, paragraph 1., amend to read:*

"1. Calibration frequency and methods

For test and measurement equipment that is compliant with the technical requirements of UN Regulation No. 154 original series or later version, the requirements on the technical equipment described in UN Regulation No. 154 may be followed, in all other cases the following requirements shall apply:

..."

*Annex 11,*

*Paragraph 3.2.1.2., amend to read:*

"3.2.1.2. A manufacturer may disable any specific OBD monitor for a given driving cycle for ambient or engine temperatures below 266 K (-7° C) or at elevations over 2,500 metres above sea level provided the manufacturer submits data and/or an engineering evaluation which adequately demonstrate that monitoring would be unreliable when such conditions exist. A manufacturer may also request disablement of any specific OBD monitor at other ambient temperatures or other elevations if they demonstrate to the authority with data and/or an engineering evaluation that misdiagnosis would occur under such conditions. It is not necessary to illuminate the Malfunction Indicator (MI) if OBD thresholds are exceeded during a regeneration provided no defect is present. "

*Appendix 1, paragraph 6.5.3.2., amend to read:*

"6.5.3.2. Standards used for the transmission of OBD relevant information:

- (a) ISO 15031-5 "Road vehicles - communication between vehicles and external test equipment for emissions-related diagnostics – Part 5: Emissions-related diagnostic services", dated 1 April 2011 or SAE J1979 dated 23 February 2012;
- (b) ISO 15031-4 "Road vehicles – Communication between vehicle and external test equipment for emissions related diagnostics – Part 4: External test equipment", dated 1 June 2005 or SAE J1978 dated 30 April 2002;
- (c) ISO 15031-3 "Road vehicles – Communication between vehicle and external test equipment for emissions related diagnostics Part 3: Diagnostic connector and related electrical circuits: specification and use", dated 1 July 2004 or SAE J 1962 dated 26 July 2012;
- (d) ISO 15031-6 "Road vehicles – Communication between vehicle and external test equipment for emissions related diagnostics – Part 6: Diagnostic trouble code definitions", dated 13 August 2010 or SAE J2012 dated 7 March 2013;
- (e) ISO 27145 "Road vehicles – Implementation of World-Wide Harmonized On-Board Diagnostics (WWH-OBD)" dated 2012-08-15 with the restriction, that only 6.5.3.1.(a) may be used as a data link;

(f) SAE J 1979-2 "E/E Diagnostic Test Modes: OBDonUDS", April 2021.

The standards (e) or (f) may be used as an option instead of (a)."

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