

ANNEX VI

REQUIREMENTS TO LIMIT OFF-CYCLE EMISSIONS (OCE) AND IN-USE EMISSIONS

1. INTRODUCTION

- 1.1. This Annex sets out the performance requirements and prohibition of defeat strategies for engines and vehicles type-approved according to Regulation (EC) No 595/2009 and this Regulation so as to achieve effective control of emissions under a broad range of engine and ambient operating conditions encountered during normal in-use vehicle operation. This Annex also sets out the test procedures for testing off-cycle emissions during type-approval and in actual use of the vehicle.

2. DEFINITIONS

The definitions in Section 3 of Annex 10 to UN/ECE Regulation No 49 shall apply.

3. GENERAL REQUIREMENTS

- 3.1. The general requirements shall be those set out in Sections 4 and 4.1 of Annex 10 to UN/ECE Regulation No 49.

4. PERFORMANCE REQUIREMENTS

- 4.1. The performance requirements shall be those set out in Section 5 of Annex 10 to UN/ECE Regulation No 49 with the exceptions in points 4.1.1 to 4.1.4.

- 4.1.1. Section 5.1.2(a) of Annex 10 to UN/ECE Regulation No 49 shall be understood as follows:

- (a) its operation is substantially included in the applicable type-approval tests, including the off-cycle test procedures under Section 6 of Annex VI to Regulation (EU) No 582/2011 and the in-service provisions set out in Article 12 to Regulation (EU) No 582/2011.

- 4.1.2. Section 5.2.1. of Annex 10 to UN/ECE Regulation No 49 shall be understood as follows:

Exhaust emissions shall not exceed the applicable emission limits specified in point 4.1.3 of Annex VI to Regulation (EU) No 582/2011.

- 4.1.3. The applicable emission limits shall be the following:

- (a) for CO: 2 000 mg/kWh;

- (b) for THC: 220 mg/kWh;

- (c) for NO_x: 600 mg/kWh;

- (d) for PM: 16 mg/kWh.

- 4.1.4. Sections 5.2.2 and 5.2.3 of Annex 10 to UN/ECE Regulation No 49 shall not apply.

5. AMBIENT AND OPERATING CONDITIONS

- 5.1. The ambient and operating conditions for the purpose of this Annex shall be those set out in Section 6. of Annex 10 to UN/ECE Regulation No 49.

6. OFF-CYCLE LABORATORY TESTING AT TYPE-APPROVAL

6.1. The off-cycle test procedure during type-approval shall follow the World-harmonised Not-To-Exceed Methodology as described in Section 7 of Annex 10 to UN/ECE Regulation No 49 with the exceptions in points 6.1.1 to 6.1.6.

6.1.1. The off-cycle laboratory test requirements shall not apply for the type-approval of positive-ignition engine under Regulation (EC) No 595/2009 and this Regulation.

6.1.2. Section 7.2.1 of Annex 10 to UN/ECE Regulation No 49 shall be understood as follows:

To determine compliance with the WNTE emissions limits specified in Section 5.2, the engine shall be operated within the WNTE control area defined in Section 7.1 and its emissions shall be measured and integrated over a minimum period of 30 seconds. A WNTE event is defined as a single set of integrated emissions over the period of time. For example, if the engine operates for 65 consecutive seconds within the WNTE control area and ambient conditions this would constitute a single WNTE event and the emissions would be averaged over the full 65-second period. In the case of laboratory testing, the integrating period defined in Section 7.5 shall apply.

6.1.3. Section 7.3 of Annex 10 to UN/ECE Regulation No 49 shall be understood as follows:

In-use testing

Additional requirements with respect to in-use vehicle testing will be specified at a later stage in accordance with Article 14(3) to Regulation (EU) No 582/2011.

6.1.4. Section 7.5.4 of Annex 10 to UN/ECE Regulation No 49 shall be understood as follows:

The WNTE laboratory test shall meet the validation statistics of Section 7.8.7 of Annex 4B to UN/ECE Regulation No 49.

6.1.5. Section 7.5.5 of Annex 10 to UN/ECE Regulation No 49 shall be understood as follows:

The measurement of the emissions shall be carried out in accordance with Sections 7.5, 7.7 and 7.8 of Annex 4B to UN/ECE Regulation No 49.

6.1.6. Section 7.5.6 of Annex 10 to UN/ECE Regulation No 49 shall be understood as follows:

The calculation of the test results shall be carried out in accordance with Section 8 of Annex 4B to UN/ECE Regulation No 49.

7. WORLD-HARMONISED NOT-TO-EXCEED DEFICIENCIES

Section 8 of Annex 10 to UN/ECE shall not apply.

8. WORLD-HARMONISED NOT-TO-EXCEED EXEMPTIONS

Section 9 of Annex 10 to UN/ECE Regulation No 49 shall not apply.

9. STATEMENT OF OFF-CYCLE EMISSION COMPLIANCE

Section 10 of Annex 10 to UN/ECE Regulation No 49 shall be understood as follows:

In the application for type-approval, the manufacturer shall provide a statement that the engine family or vehicle complies with the requirements of Regulation (EU) No 582/2011 limiting off-

cycle emissions. In addition to this statement, compliance with the applicable emission limits and in use requirements shall be verified through additional tests.

9.1. Sections 10.1 and 10.2 of Annex 10 to UN/ECE Regulation No 49 shall apply.

10. DOCUMENTATION

The documentation shall be those specified in Section 11 of Annex 10 to UN/ECE Regulation No 49.