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7 June 2005

## **AGREEMENT**

### **CONCERNING THE ADOPTION OF UNIFORM TECHNICAL PRESCRIPTIONS FOR WHEELED VEHICLES, EQUIPMENT AND PARTS WHICH CAN BE FITTED AND/OR BE USED ON WHEELED VEHICLES AND THE CONDITIONS FOR RECIPROCAL RECOGNITION OF APPROVALS GRANTED ON THE BASIS OF THESE PRESCRIPTIONS \*/**

(Revision 2, including the amendments which entered into force on 16 October 1995)

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#### **Addendum 102: Regulation No. 103**

#### **Amendment 2**

Supplement 2 - Date of entry into force: 4 April 2005

### **UNIFORM PROVISIONS CONCERNING THE APPROVAL OF REPLACEMENT CATALYTIC CONVERTERS FOR POWER-DRIVEN VEHICLES**



**UNITED NATIONS**

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\*/ Former title of the Agreement:

Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

GE.05-21534

Paragraph 1., amend to read:

"1. SCOPE

This Regulation applies to the type-approval, as separate technical units, of catalytic converters to be fitted in one or more types of motor vehicles of categories M<sub>1</sub> and N<sub>1</sub> as replacement parts."

Paragraph 2.1., amend to read:

"2.1. "Original equipment catalytic converter" means a catalytic converter or an assembly of catalytic converters covered by the type approval delivered for the vehicle and whose types are indicated in the documents related to Annex 2 of Regulation No. 83."

Insert a new paragraph 2.3., to read:

"2.3. "Original replacement catalytic converter" means a catalytic converter or an assembly of catalytic converters whose types are indicated in the documents related to Annex 2 of Regulation No. 83., but are offered in the market as separate technical units by the holder of the vehicle type-approval."

Paragraphs 2.3. and 2.4. (former), renumber as paragraphs 2.4. and 2.5.

Paragraph 2.5. (former), renumber as paragraph 2.6. and amend to read:

"2.6. "Approval of a replacement catalytic converter" means the approval of a converter intended to be fitted as a replacement part on one or more specific types of vehicles with regard to the limitation of pollutant emissions, noise level and effect on vehicle performance and, where applicable, on the on-board diagnostic (OBD)."

Insert a new paragraph 2.7., to read:

"2.7. "Deteriorated replacement catalytic converter" means a converter that has been aged or artificially deteriorated to such an extent that it fulfils the requirements laid out in paragraph 1. of Appendix 1 to Annex 11 of Regulation No. 83."

Insert new paragraphs 3.2.5. and 3.2.6., to read:

"3.2.5. Indication if the replacement catalytic converter is intended to be compatible with OBD requirements.

3.2.6. A model for the information document is given in Appendix 1."

Insert a new paragraph 3.3.3., to read:

"3.3.3. An additional sample of the type of the replacement catalytic converter, in the case of a replacement catalytic converter intended to be fitted to a vehicle equipped with an OBD system. This sample shall be clearly and indelibly marked with the applicant's trade name or mark and its commercial designation. It must have been deteriorated as defined in paragraph 2.7. above."

Insert new paragraphs 4.2. to 4.2.3., to read:

"4.2. Original replacement catalytic converters, which are of a type covered by paragraph 18. of Annex 2 of Regulation No. 83 and are intended for fitment to a vehicle to which the relevant type-approval document refers, do not need to be approved according to this Regulation provided they fulfil the requirements of paragraphs 4.2.1. and 4.2.2.

4.2.1. Marking

Original replacement catalytic converters shall bear at least the following identifications:

4.2.1.1. The vehicle manufacturer's name or trademark.

4.2.1.2. The make and identifying part number of the original replacement catalytic converter as recorded in the information mentioned in paragraph 4.2.3.

4.2.2. Documentation

Original replacement catalytic converters shall be accompanied by the following information:

4.2.2.1. The vehicle manufacturer's name or trade mark.

4.2.2.2. Make and identifying part number of the original replacement catalytic converter as recorded in the information mentioned in paragraph 4.2.3.

4.2.2.3. The vehicles for which the original replacement catalytic converter is of a type covered by item 18. of Annex 2 of Regulation No. 83, including, where applicable, a marking to identify if the original replacement catalytic converter is suitable for fitting to a vehicle that is equipped with an on-board diagnostic (OBD) system.

4.2.2.4. Installation instructions, where necessary.

4.2.2.5. This information shall be provided either:

- as a leaflet accompanying the original replacement catalytic converter, or
- on the packaging in which the original replacement catalytic converter is sold, or

- by any other applicable means.

In any case, the information must be available in the product catalogue distributed to points of sale by the vehicle manufacturer.

- 4.2.3. The vehicle manufacturer shall provide to the technical service and/or approval authority the necessary information in electronic format which makes the link between the relevant part numbers and the type approval documentation.

This information shall contain:

- (i) make(s) and type(s) of vehicle.
- (ii) make(s) and type(s) of original replacement catalytic converter.
- (iii) part number(s) of original replacement catalytic converter.
- (iv) type-approval number of the relevant vehicle type(s)."

Paragraph 4.2., renumber as paragraph 4.3 and amend to read:

- "4.3. An approval number shall be assigned to each replacement catalytic converter type approved. Its first two digits (00 for the Regulation in its present form) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another type of replacement catalytic converter. The same approval number may cover the use of that replacement catalytic converter type on a number of different vehicle types."

Insert a new paragraphs 4.4.,to read:

- "4.4. When the applicant for type-approval can demonstrate to the type-approval authority or technical service that the replacement catalytic convert is of a type indicated in item 18 of Annex 2 to the 05 of amendments to Regulation No. 83, the granting of a type approval certificate shall not be dependent on the requirements specified in paragraph 5. having to be verified."

Paragraph 4.3. to 4.7. (former), renumber as paragraphs 4.5. to 4.9.

Paragraph 5.1.2., amend to read:

- "5.1.2. The installation of the replacement catalytic converter shall be at the exact position of the original equipment catalytic converter, and the position on the exhaust line of the oxygen probe(s) and other sensors, if applicable, shall not be modified."

Paragraph 5.2.3., amend to read:

"5.2.3. ...

The requirements regarding emissions of the vehicle(s) equipped with the replacement catalytic converter shall be deemed to be fulfilled if the results meet for each regulated pollutant (CO, HC, NO<sub>x</sub> and particulates) the following conditions:

- (1)  $M \leq 0.85S + 0.4G$
- (2)  $M \leq G$

where :

M: mean value of the emissions of one pollutant (CO, HC, NO<sub>x</sub> and particulates) or the sum of two pollutants (HC + NO<sub>x</sub>) obtained from the three type I tests with the replacement catalytic converter.

S: mean value of the emissions of one pollutant (CO, HC, NO<sub>x</sub> and particulates) or the sum of two pollutants (HC + NO<sub>x</sub>) obtained from the three type I tests with the original catalytic converter.

G: limit value of the emissions of one pollutant (CO, HC, NO<sub>x</sub> and particulates) or the sum of two pollutants (HC + NO<sub>x</sub>) according to the type approval of the vehicle(s) divided by - if applicable - the deterioration factors determined in accordance with paragraph 5.4. below.

Where approval is applied ..."

Paragraph 5.4., amend to read:

"5.4. Requirements regarding durability

The replacement catalytic converter shall comply with the requirements of paragraph 5.3.5. of Regulation No. 83 i.e. type V test or deterioration factors from the following table for the results of the type I tests.

Engine Category	Deterioration factors				
	CO	HC (1)	NO <sub>x</sub> (1)	HC+NO <sub>x</sub>	Particulars
Positive-ignition	1.2	1.2	1.2	1.2 (2)	-
Compression ignition	1.1	-	1.0	1.0	1.2

- (1) Applicable only to vehicles approved according to the 05 series of amendments to Regulation No. 83.
- (2) Applicable only to positive-ignition engined vehicles approved according to earlier than 05 series of amendments to Regulation No. 83."

Insert new paragraphs 5.5. to 5.5.5., to read:

"5.5. Requirements regarding OBD compatibility (applicable only to replacement catalytic converters intended to be fitted to vehicles equipped with an OBD system)

OBD compatibility demonstration is required only when the original catalyst was monitored in the original configuration.

5.5.1. The compatibility of the replacement catalytic converter with the OBD system shall be demonstrated by using the procedures described in the 05 series of amendments to Regulation No. 83, Annex 11, Appendix 1.

5.5.2. The provisions in the 05 series of amendments to Regulation No. 83, Annex 11, Appendix 1 applicable to components other than the catalytic converter shall not be applied.

5.5.3. The aftermarket manufacturer may use the same preconditioning and test procedure as used during the original type approval. In this case, the administrative departments shall provide, on request and on a non-discriminatory basis, Appendix 1 to the type approval communication which contains the number and type of preconditioning cycles and the type of test cycle used by the original equipment manufacturer for OBD testing of the catalytic converter.

5.5.4. In order to verify the correct installation and functioning of all other components monitored by the OBD system, the OBD system shall indicate no malfunction and have no stored fault codes prior to the installation of any of the replacement catalytic converters. An evaluation of the status of the OBD system at the end of the tests described in paragraph 5.2.1. may be used for this purpose.

5.5.5. The malfunction indicator (MI: see reference paragraph 2.5. of Annex 11 to the 05 series of amendments to Regulation No. 83) must not activate during vehicle operation required by paragraph 5.2.2."

Insert new paragraphs 11. to 11.2., to read:

"11. DOCUMENTATION

11.1. Each new replacement catalytic converter shall be accompanied by the following information:

11.1.1. The catalyst manufacturer's name or trade mark.

11.1.2. The vehicles (including year of manufacture) for which the replacement catalytic converter is approved, including, where applicable, a marking to identify if the replacement catalytic converter is suitable for fitting to a vehicle that is equipped with an on-board diagnostic (OBD) system.

11.1.3. Installation instructions, where necessary.

11.2. This information shall be provided either:

- (i) as a leaflet accompanying the replacement catalytic converter; or
- (ii) on the packaging in which the replacement catalytic converter is sold; or
- (iii) by any other applicable means.

In any case, the information must be available in the product catalogue distributed to points of sale by the manufacturer of replacement catalytic converters."

Insert a new Appendix 1, to read (see next pages).

Annex 1 , amend to read (see next pages):

"Appendix 1

INFORMATION DOCUMENT No..... RELATING TO THE TYPE  
APPROVAL OF  
REPLACEMENT CATALYTIC CONVERTERS

Any drawings must be supplied in appropriate scale and sufficient detail on size A4 or on a folder of A4 format. Photographs, if any, must show sufficient detail.

If the system, components or separate technical units have electronic controls, information concerning their performance must be supplied.

1. GENERAL

- 1.1. Make (trade name of manufacturer):
- 1.2. Type:
- 1.5. Name and address of manufacturer:
- 1.7. In the case of components and separate technical units, location and method of affixing of the ECE approval mark:
- 1.8. Address(es) of assembly plant(s):

2. DESCRIPTION OF THE DEVICE

- 2.1. Make and type of the replacement catalytic converter:
- 2.2. Drawings of the replacement catalytic converter, identifying in particular all the characteristics referred to in items 2.3. to 2.3.2. of this appendix:
- 2.3. Description of the vehicle type or types for which the replacement catalytic converter is intended:
  - 2.3.1. Number(s) and/or symbol(s) characterising the engine and vehicle type(s):
  - 2.3.2. Is the replacement catalytic converter intended to be compatible with OBD requirements: Yes / No (Strike out what does not apply).
- 2.4. Description and drawings showing the position of the replacement catalytic converter relative to the engine exhaust manifold(s):"





- 7.1. Has the replacement catalytic converter demonstrated compatibility with OBD requirements: Yes / No 2/
8. Location and method of affixing of the approval mark:
9. Submitted for approval on:
10. Technical Service responsible for approval tests:
  - 10.1. Date of test report:
  - 10.2. Number of test report:
11. Approval granted / extended / refused / withdrawn 2/
12. Place:
13. Date:
14. Signature:
15. Annexed to this communication is a list of documents in the approval file deposited at the administrative services having delivered the approval and which can be obtained upon request.

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1/ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

2/ Strike out what does not apply."

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