

Regulation (EU) No 540/2014 of the European Parliament and of the Council of 16 April 2014 on the sound level of motor vehicles and of replacement silencing systems, and amending Directive 2007/46/EC and repealing Directive 70/157/EEC (Text with EEA relevance)

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ANNEX I

EU TYPE-APPROVAL IN RESPECT OF THE SOUND LEVEL OF A VEHICLE TYPE

1. APPLICATION FOR EU TYPE-APPROVAL OF A VEHICLE TYPE
  - 1.1. The application for EU type-approval pursuant to Article 7(1) and...
  - 1.2. A model for the information document is contained in Appendix...
  - 1.3. A vehicle representative of the type in respect of which...
  - 1.4. At the request of the technical service, a specimen of...
2. MARKINGS
  - 2.1. The exhaust and intake system components, excluding fixing hardware and...
    - 2.1.1. the trade mark or name of the manufacturer of the...
    - 2.1.2. the manufacturer's trade description.
  - 2.2. The markings referred to in points 2.1.1 and 2.1.2 shall...
3. GRANTING OF EU TYPE-APPROVAL OF A VEHICLE TYPE
  - 3.1. If the relevant requirements are satisfied, EU type-approval pursuant to...
  - 3.2. A model for the EU type-approval certificate is contained in...
  - 3.3. An approval number in accordance with Annex VII to Directive...
    - 3.3.1. If the vehicle type complies with the limit values of...
4. AMENDMENTS TO EU TYPE-APPROVALS
5. CONFORMITY OF PRODUCTION ARRANGEMENTS

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- 5.1. Measures to ensure the conformity of production arrangements shall be...
- 5.2. Special provisions:
  - 5.2.1. The tests laid down in Annex VI to this Regulation...
  - 5.2.2. The frequency of inspections referred to in point 3 of...

## Appendix 1

Information document No ... pursuant to Annex I of Directive 2007/46/EC relating to EU type-approval of a vehicle with respect to the permissible sound level

The following information, if applicable, shall be supplied in triplicate...

If the systems, components or separate technical units have electronic...

Date:

Signed:

Position in company:

- 0. GENERAL
  - 0.1. Make (trade name of manufacturer):
  - 0.2. Type:
  - 0.3. Means of identification of type, if marked on the vehicle...
    - 0.3.1. Location of that marking:
  - 0.4. Category of vehicle (c):
  - 0.5. Company name and address of manufacturer:
  - 0.8. Name(s) and address(es) of assembly plant(s):
  - 0.9. Name and address of the manufacturer's representative (if any):
- 1. GENERAL CONSTRUCTION CHARACTERISTICS OF THE VEHICLE
  - 1.1. Photographs and/or drawings of a representative vehicle:
  - 1.3. Number of axles and wheels (4):
    - 1.3.3. Powered axles (number, position, interconnection):
  - 1.6. Position and arrangement of the engine:
- 2. MASSES AND DIMENSIONS (f) (g) (7) (IN KG AND MM)...
  - 2.4. Range of vehicle dimensions (overall):
    - 2.4.1. For chassis without bodywork:
      - 2.4.1.1. Length (g5):
      - 2.4.1.2. Width (g7):
    - 2.4.2. For chassis with bodywork:
      - 2.4.2.1. Length (g5):
      - 2.4.2.2. Width (g7):
  - 2.6. Mass in running order (h)
  - 2.8. Technically permissible maximum laden mass stated by the manufacturer (i)...
- 3. POWER PLANT (q)
  - 3.1. Manufacturer of the engine:
    - 3.1.1. Manufacturer's engine code (as marked on the engine, or other...
  - 3.2. Internal combustion engine
    - 3.2.1.1. Working principle: positive ignition/compression ignition, cycle four-stroke/two-stroke/rotary (1)
    - 3.2.1.2. Number and arrangement of cylinders:

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- 3.2.1.2. ~~F~~iring order:
  - 3.2.1.3. Engine capacity (m): ... cm<sup>3</sup>
  - 3.2.1.8. Maximum net power (n): ... kW at ... min<sup>-1</sup> (manufacturer's...)
  - 3.2.4. Fuel feed
    - 3.2.4.2. By fuel injection (compression ignition only): yes/no (1)
    - 3.2.4.2.2. ~~W~~orking principle: Direct injection/pre-chamber/swirl chamber (1)
    - 3.2.4.2.4. ~~G~~overnor
      - 3.2.4.2.4.1. ~~T~~ype:
        - 3.2.4.2.4.1.1. ~~S~~peed at which cut-off starts under load: ... min<sup>-1</sup>
      - 3.2.4.3. By fuel injection (positive ignition only): yes/no (1)
      - 3.2.4.3.1. ~~W~~orking principle: Intake manifold (single-/multi-point (1))/direct injection/other (specify) (1)
  - 3.2.8. Intake system
    - 3.2.8.1. Pressure charger: yes/no (1)
    - 3.2.8.4.2. ~~A~~ir filter, drawings: or
    - 3.2.8.4.2. ~~M~~ake(s):
    - 3.2.8.4.2. ~~T~~ype(s):
    - 3.2.8.4.3. ~~I~~ntake silencer, drawings: or
    - 3.2.8.4.3. ~~M~~ake(s):
    - 3.2.8.4.3. ~~T~~ype(s):
  - 3.2.9. Silencing system
    - 3.2.9.2. Description and/or drawing of the silencing system:
    - 3.2.9.4. Exhaust silencer(s):
    - 3.2.9.5. Location of the exhaust outlet:
    - 3.2.9.6. Exhaust silencer containing fibrous materials:
  - 3.2.12.2. ~~C~~atalytic convertor: yes/no (1)
  - 3.2.12.2.2. ~~N~~umber of catalytic convertors and elements (provide the information below...)
  - 3.2.12.2.2. ~~P~~articulate trap: yes/no (1)
  - 3.3. Electric motor
    - 3.3.1. Type (winding, excitation):
      - 3.3.1.1. Maximum hourly output: ... kW
      - 3.3.1.2. Operating voltage: ... V
  - 3.4. Engines or motors or combinations thereof
    - 3.4.1. Hybrid electric vehicle: yes/no (1)
    - 3.4.2. Category of hybrid electric vehicle: off-vehicle charging/non off-vehicle charging (1)...
    - 3.4.3. Operating mode switch: with/without (1)
      - 3.4.3.1. Selectable modes
        - 3.4.3.1.1. ~~P~~ure electric: yes/no (1)
        - 3.4.3.1.2. ~~F~~uel consuming: yes/no (1)
        - 3.4.3.1.3. ~~H~~ybrid modes: yes/no (1) (if yes, short description):
    - 3.4.5. Electric motor (describe each type of electric motor separately)
      - 3.4.5.1. Make:
      - 3.4.5.2. Type:
        - 3.4.5.4. Maximum power: ... kW
4. TRANSMISSION (P)
  - 4.2. Type (mechanical, hydraulic, electric, etc.):
  - 4.6. Gear ratios
  - 4.7. Maximum vehicle design speed (in km/h) (q):
6. SUSPENSION
  - 6.6. Tyres and wheels

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- 6.6.1. Tyre/wheel combination(s)
- 6.6.2. Upper and lower limits of rolling radii
  - 6.6.2.1. Axle 1:
  - 6.6.2.2. Axle 2:
  - 6.6.2.3. Axle 3:
  - 6.6.2.4. Axle 4:
- 9. BODYWORK
  - 9.1. Type of bodywork using the codes defined in Part C...
  - 9.2. Materials used and method of construction:
- 12. MISCELLANEOUS
  - 12.5. Details of any non-engine devices designed to reduce noise (if...
  - 12.8. AVAS
    - 12.8.1. ....
    - 12.8.2. ....
  - 12.9. AVAS
    - 12.9.1. Approval number of a type of vehicle with regard to...
    - 12.9.2. Complete reference to the test results of AVAS sound emission...

## Appendix 2

### Model EU type-approval certificate

Stamp of approval authority  
 Communication concerning the  
 type-approval  
 extension of type-approval  
 refusal of type-approval  
 withdrawal of type-approval  
 of a type of a vehicle with regard to the...  
 Type-approval number:  
 Reason for extension:

### SECTION I

- 0.1. Make (trade name of manufacturer):
- 0.2. Type:
- 0.3. Means of identification of type if marked on the vehicle:...
- 0.3.1. Location of that marking:
- 0.4. Category of vehicle:
- 0.5. Company name and address of manufacturer:
- 0.8. Name(s) and address(es) of assembly plant(s):
- 0.9. Name and address of the manufacturer's representative (if any):

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## SECTION II

1. Additional information (where applicable): See Addendum
2. Technical service responsible for carrying out the tests:
3. Date of test report:
4. Number of test report:
5. Remarks (if any): See Addendum
6. Place:
7. Date:
8. Signature:

### Addendum

to EU type-approval certificate No ...

1. Additional information
  - 1.1. Power plant
    - 1.1.1. Manufacturer of the engine:
    - 1.1.2. Manufacturer's engine code:
    - 1.1.3. Maximum net power (g): ... kW at ... min<sup>-1</sup>...
    - 1.1.4. Pressure charger(s), make and type:
    - 1.1.5. Air filter, make and type:
    - 1.1.6. Intake silencer(s), make and type:
    - 1.1.7. Exhaust silencer(s), make and type:
    - 1.1.8. Catalyst(s), make and type:
    - 1.1.9. Particulate trap(s), make and type:
  - 1.2. Transmission
    - 1.2.1. Type (mechanical, hydraulic, electric, etc.):
  - 1.3. Non-engine devices designed to reduce noise:
2. Test results
  - 2.1. Sound level of moving vehicle: ... dB(A)
  - 2.2. Sound level of stationary vehicle: ... dB(A) at ... min<sup>-1</sup>...
    - 2.2.1. Sound level of compressed air, service brake: ... dB(A)
    - 2.2.1. Sound level of compressed air, parking brake: ... dB(A)
    - 2.2.1. Sound level of compressed air, during the pressure regulator actuation:...
  - 2.3. Data to facilitate in-use compliance test of hybrid electric vehicles, ...
    - 2.3.1. Gear (i) or position of the gear selector chosen for...
    - 2.3.2. Position of the operating switch during measurement  $L_{wot,(i)}$  (if switch...
    - 2.3.3. Pre-acceleration length IPA ... m
    - 2.3.4. Vehicle speed at the beginning of the acceleration ... km/h...
    - 2.3.5. Sound pressure level  $L_{wot,(i)}$  ... dB(A)
3. AVAS fitted: yes/no ( 1 )

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#### 4. Remarks...

### ANNEX II

#### METHODS AND INSTRUMENTS FOR MEASURING THE NOISE MADE BY MOTOR VEHICLES

1. METHODS OF MEASUREMENT
  - 1.1. The noise made by the vehicle type submitted for EU...
  - 1.2. The values measured in accordance with the tests set out...
2. MEASURING INSTRUMENTS
  - 2.1. Acoustic measurements
  - 2.2. Compliance with requirements
  - 2.3. Calibration of the entire Acoustic Measurement System for measurement session...
  - 2.4. Instrumentation for speed measurements
  - 2.5. Meteorological instrumentation
3. CONDITIONS OF MEASUREMENT
  - 3.1. Test Site and ambient conditions
    - 3.1.1. The surface of the test track and the dimensions of...
    - 3.1.2. Measurements shall not be made under adverse weather conditions. It...
  - 3.2. Vehicle
    - 3.2.1. The vehicle tested shall be representative of vehicles to be...
    - 3.2.2. At the applicant's request, the vehicle of a category M2,...
    - 3.2.3. Tyre rolling sound emissions are laid down in Regulation (EC)...
    - 3.2.4. Before the measurements are started, the engine shall be brought...
    - 3.2.5. If the vehicle is fitted with more than two-wheel drive,...
    - 3.2.6. If the vehicle is fitted with one or more fans...
    - 3.2.7. If the vehicle is equipped with a silencing system containing...
4. METHODS OF TESTING
  - 4.1. Measurement of noise of vehicles in motion
    - 4.1.1. General test conditions
    - 4.1.2. Specific test conditions for vehicles
      - 4.1.2.1. Vehicles of category M1,  $M2 \leq 3\,500$  kg, N1...
        - 4.1.2.1.1. Power to mass ratio index (PMR)
        - 4.1.2.1.2. Calculation of acceleration
          - 4.1.2.1.2.1. The calculation procedure for vehicles with manual transmission, automatic transmission,...
          - 4.1.2.1.2.2. The calculation procedure for vehicles with automatic transmissions, adaptive transmissions...
          - 4.1.2.1.2.3. Target acceleration
          - 4.1.2.1.2.4. Reference acceleration
        - 4.1.2.1.3. Partial power factor kP
        - 4.1.2.1.4. Gear ratio selection
          - 4.1.2.1.4.1. Vehicles with manual transmissions, automatic transmissions, adaptive transmissions or CVTs...

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- 4.1.2.1.4 Vehicles with automatic transmission, adaptive transmissions and CVTs tested with...
- 4.1.2.1.5 Acceleration test
- 4.1.2.1.6 Constant speed test
- 4.1.2.2. Vehicles of categories M2 > 3 500 kg, M3, N2,...
- 4.1.2.2.1 Gear ratio selection
- 4.1.2.2.1V Vehicles with manual transmissions
- 4.1.2.2.1V Vehicles with automatic transmissions, adaptive transmissions and CVTs
- 4.1.2.2.2 Acceleration test
- 4.1.3. Interpretation of results
- 4.1.3.1. Vehicles of categories M1, N1 and M2 ≤ 3 500...
- 4.1.3.2. Vehicles of categories M2 > 3 500 kg, M3, N2,...
- 4.2. Measurement of noise emitted by stationary vehicles
- 4.2.1. Sound level in the vicinity of vehicles
- 4.2.2. Acoustic measurements
- 4.2.3. Test site — local conditions as referred to in Figures...
- 4.2.3.1. In the vicinity of the microphone, there shall be no...
- 4.2.4. Disturbance sound and wind interference
- 4.2.5. Measuring method
- 4.2.5.1. Nature and number of measurements
- 4.2.5.2. Positioning and preparation of the vehicle
- 4.2.5.3. Measuring of noise in proximity to the exhaust as referred...
- 4.2.5.3.1 Positions of the microphone
- 4.2.5.3.1 The microphone shall be located at a distance of 0,5...
- 4.2.5.3.1 For vehicles having an exhaust provided with outlets spaced more...
- 4.2.5.3.1 In the case of an exhaust provided with two or...
- 4.2.5.3.1 For vehicles with a vertical exhaust (e.g. commercial vehicles) the...
- 4.2.5.3.1 For exhaust outlets located under the vehicle body, the microphone...
- 4.2.5.3.1 Examples of the position of the microphone, depending on the...
- 4.2.5.3.2 Operating conditions of the engine
- 4.2.5.3.2 Target engine speed
- 4.2.5.3.2 Test procedure
- 4.2.5.3.2 Test validation
- 4.2.6. Results
- 5. Noise from hybrid electric vehicles of categories M1 in motion,...
- 5.1. In order to facilitate in-use compliance testing of hybrid electric...
- 5.2. The in-use compliance reference data shall be entered in the...

Appendix

Figures

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### ANNEX III LIMIT VALUES

The sound level measured in accordance with the provisions of...

### ANNEX IV SILENCING SYSTEMS CONTAINING ACOUSTICALLY ABSORBING FIBROUS MATERIALS

1. GENERAL
  - 1.1. Continuous road operation for 10 000 km.
    - 1.1.1. 50 ± 20 % of this operation shall consist of...
    - 1.1.2. The two speed regimes shall be alternated at least twice....
    - 1.1.3. The complete test programme shall include a minimum of 10...
  - 1.2. Conditioning on a test bench
    - 1.2.1. Using standard parts and observing the vehicle manufacturer's instructions, the...
    - 1.2.2. The test shall be conducted in six six-hour periods with...
    - 1.2.3. During each six-hour period, the engine shall be run, under...
    - 1.2.4. During the test, the silencing system, or components thereof, shall...
  - 1.3. Conditioning by pulsation
    - 1.3.1. The silencing system or components thereof shall be fitted to...
    - 1.3.2. The test apparatus shall be adjusted in such a way...
    - 1.3.3. The valve shall open when the exhaust-gas back pressure, measured...
    - 1.3.4. The time-delay switch shall be set for the duration of...
    - 1.3.5. Engine speed shall be 75 % of the speed (S)...
    - 1.3.6. The power indicated by the dynamometer shall be 50 %...
    - 1.3.7. Any drain holes shall be closed off during the test....
    - 1.3.8. The entire test shall be completed within 48 hours.

#### Appendix

### ANNEX V COMPRESSED AIR NOISE

1. METHOD OF MEASUREMENT
2. EVALUATION OF THE RESULTS
3. LIMITING VALUE

#### Appendix

Figure 1: Microphone positions for measurement of compressed air noise...



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The measurement is performed at the stationary vehicle in accordance...

## ANNEX VI

### CHECKS ON CONFORMITY OF PRODUCTION FOR VEHICLES

1. GENERAL
2. TESTING PROCEDURE
  - 2.1. The vehicle(s) under test shall be subjected to the test...
  - 2.2. Compressed air noise
  - 2.3. Additional sound emission provisions
3. SAMPLING AND EVALUATION OF THE RESULTS

## ANNEX VII

### MEASURING METHOD TO EVALUATE COMPLIANCE WITH THE ADDITIONAL SOUND EMISSION PROVISIONS

1. GENERAL
2. MEASURING METHOD
  - 2.1. Measuring instruments and condition of measurements
  - 2.2. Method of testing
  - 2.3. Control range
  - 2.4. Gear ratios
  - 2.5. Target conditions
  - 2.6. Test of the vehicle
3. ANALYSIS OF RESULTS
  - 3.1. Determination of the anchor point for each gear ratio
  - 3.2. Slope of the regression line for each gear
    - 3.2.1. Calculation of the slope of the regression line for each...
    - 3.2.2. Slope of the regression line for each gear
  - 3.3. Calculation of the linear sound level increase expected for each...
  - 3.4. Samples
4. INTERPRETATION OF RESULTS
5. REFERENCE SOUND ASSESSMENT
  - 5.1. The determination of gear K is as follows:
  - 5.2. Determination of reference engine speed  $n_{ref\_K}$
  - 5.3. Calculation of  $L_{ref}$
6. EVALUATION OF ASEP USING THE PRINCIPLE OF  $L_{urban}$ 
  - 6.1. General
  - 6.2. Calculation of  $L_{urban}$  ASEP

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## Appendix

### Model statement of compliance with the Additional Sound Emission Provisions

(Name of manufacturer) attests that vehicles of this type (type...  
(Name of manufacturer) makes this statement in good faith,  
after...  
Date:  
Name of authorized representative:  
Signature of authorized representative:

## ANNEX VIII

### MEASURES CONCERNING THE ACOUSTIC VEHICLE ALERTING SYSTEM (AVAS)

#### Section I

This Annex sets out measures concerning the AVAS for hybrid...

- I.1. Notwithstanding points I.2(a), I.2(b), I.3(a) and I.3(b), the provisions of...
- I.2. Notwithstanding points I.3(a) and (b), the provisions of section III...
- I.3. The provisions of section IV shall apply to an AVAS...

#### SECTION II

II.1. System performance If AVAS is installed on a vehicle,...

- II.1. System performance
- II.2. Operation conditions
- II.3. Sound type and volume

#### SECTION III

III.1. System performance The AVAS shall comply with the requirements...

- III.1. System performance
- III.2. Operation conditions
- III.3. Sound type and volume
- III.4. Test track requirements
- III.5. Type-approval certificate
- III.6. Markings

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## SECTION IV

The provisions of section III shall apply, with the exception...

Switch

## ANNEX IX

### EU TYPE-APPROVAL IN RESPECT OF THE SOUND LEVEL OF SILENCING SYSTEMS AS SEPARATE TECHNICAL UNITS (REPLACEMENT SILENCING SYSTEMS)

1. APPLICATION FOR EU TYPE-APPROVAL
  - 1.1. The application of EU type-approval pursuant to Article 7(1) and...
  - 1.2. A model for the information document is contained in Appendix...
  - 1.3. At the request of the technical service concerned, the applicant...
    - 1.3.1. two examples of the system in respect of which application...
    - 1.3.2. a silencing system of the type originally fitted to the...
    - 1.3.3. a vehicle representative of the type to which the system...
    - 1.3.4. a separate engine corresponding to the type of vehicle described....
2. MARKINGS
  - 2.4.1. The replacement silencing system, or components thereof, excluding fixing hardware...
    - 2.4.1.1. the trade mark or trade name of the manufacturer of...
    - 2.4.1.2. the manufacturer's trade description.
  - 2.4.2. These marks shall be clearly legible and indelible, even when...
3. GRANTING OF EU TYPE-APPROVAL
  - 3.1. If the relevant requirements are satisfied, EU type-approval pursuant to...
  - 3.2. A model for the EU type-approval certificate is contained in...
  - 3.3. A type-approval number in accordance with Annex VII to Directive...
4. EU TYPE-APPROVAL MARK
  - 4.1. Every replacement silencing system, or components thereof, excluding fixing hardware...
  - 4.2. The EU type-approval mark shall consist of a rectangle surrounding...
  - 4.3. The mark shall be clearly legible and indelible even when...
  - 4.4. A model for the EU type-approval mark is contained in...
5. SPECIFICATIONS
  - 5.1. General specifications
    - 5.1.1. The replacement silencing system, or components thereof, shall be designed,...
    - 5.1.2. The silencing system, or components thereof, shall be designed, constructed...
    - 5.1.3. Additional prescriptions related to tamperability and manually adjustable multi-mode exhaust...
      - 5.1.3.1. All exhaust or silencing systems shall be constructed in a...
      - 5.1.3.2. Exhaust or silencing systems with multiple, manually adjustable operating modes...
  - 5.2. Specifications regarding sound levels

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- 5.2.1. Conditions of measurement
  - 5.2.1.1. The noise test of the silencing system and the replacement...
- 5.2.2. The noise reduction performance of the replacement silencing system, or...
- 5.2.3. Further to the requirements of Annex II, any replacement silencing...
  - 5.2.3.1. Where the replacement silencing system, or components thereof, is a...
  - 5.2.3.2. Where the replacement silencing system, or components thereof, is not...
  - 5.2.3.3. The compliance statement shall read as follows: ‘(Name of the...
- 5.3. Measurement of the vehicle performances
  - 5.3.1. The replacement silencing system, or components thereof, shall be such...
  - 5.3.2. The replacement silencing system or, depending on the manufacturer's choice,...
  - 5.3.3. The verification shall be carried out by measuring the back...
  - 5.3.4. Test method
    - 5.3.4.1. Test method with engine
    - 5.3.4.2. Test method with vehicle
- 5.4. Additional specifications regarding replacement silencing systems, or components thereof, containing...
  - 5.4.1. General
    - 5.4.1.1. Continuous road operation for 10 000 km
      - 5.4.1.1.150 ± 20 % of this operation shall consist of...
    - 5.4.1.2. Conditioning on a test bench
      - 5.4.1.2.1Using standard parts and observing the manufacturer's instructions, the silencing...
      - 5.4.1.2.2The test shall be conducted in six six-hour periods with...
      - 5.4.1.2.3During each six-hour period, the engine shall be run under...
      - 5.4.1.2.4During the test, the silencing system, or components thereof, shall...
    - 5.4.1.3. Conditioning by pulsation
      - 5.4.1.3.1The silencing system, or components thereof, shall be fitted to...
      - 5.4.1.3.2The test apparatus, a detailed diagram of which is shown...
      - 5.4.1.3.3The test apparatus shall be adjusted in such a way...
      - 5.4.1.3.4The valve shall open when the exhaust gas back pressure,...
      - 5.4.1.3.5The time-delay switch shall be set for the duration of...
      - 5.4.1.3.6Engine speed shall be 75 % of the speed (S)...
      - 5.4.1.3.7The power indicated by the dynamometer shall be 50 %...
      - 5.4.1.3.8Any drain holes shall be closed off during the test....
      - 5.4.1.3.9The entire test shall be completed within 48 hours. If...
      - 5.4.1.3.10After conditioning, the sound level is checked pursuant to point...

## 6. EXTENSION OF EU TYPE-APPROVAL

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7. MODIFICATION OF THE TYPE OF SILENCING SYSTEM
8. COP
  - 8.1. Measures to ensure the conformity of production shall be taken...
  - 8.2. Special provisions:
    - 8.2.1. The tests referred to point 2.3.5 of Annex X to...
    - 8.2.2. The frequency of inspections referred to in point 3 of...
9. INFORMATION INTENDED FOR USERS AND TECHNICAL INSPECTION
  - 9.1. Each replacement silencing system shall be accompanied by a paper...
  - 9.2. If the paper document referred to in point 9.1 consists...
  - 9.3. The information concerning point 9.1(g) and (h) may be provided...

#### Appendix 1

Information document No ... relating to EU type-approval as separate technical unit of replacement silencing systems for motor vehicles (Regulation (EU) No 540/2014)

The following information, if applicable, shall be supplied in triplicate...

If the systems, components or separate technical units have electronic...

Date:

Signed:

Position in company:

0. General
  - 0.1. Make (trade name of manufacturer):
  - 0.2. Type and general commercial description(s):
  - 0.3. Means of identification of type, if marked on the separate...
    - 0.3.1. Location of that marking:
  - 0.5. Company name and address of manufacturer:
  - 0.7. In the case of components and separate technical units, location...
  - 0.8. Address(es) of assembly plant(s):
  - 0.9. Name and address of the manufacturer's representative (if any):
1. Description of the vehicle for which the device is intended...
  - 1.1. Make (trade name of manufacturer):
  - 1.2. Type and general commercial description(s):
  - 1.3. Means of identification of type, if marked on the vehicle:...
  - 1.4. Category of vehicle:
  - 1.5. EU whole-vehicle type-approval number:
  - 1.6. Power plant:
    - 1.6.1. Manufacturer of the engine:
    - 1.6.2. Manufacturer's engine code:
    - 1.6.3. Maximum net power (g): ... kW at ... min<sup>-1</sup> or...
    - 1.6.4. Pressure charger(s): original part or make and marking:
    - 1.6.5. Air filter: original part or make and marking:
    - 1.6.6. Intake silencer(s): original part or make and marking:
    - 1.6.7. Exhaust silencer(s): original part or make and marking:
    - 1.6.8. Catalyst: original part or make and marking:
    - 1.6.9. Particulate Trap(s): original part or make and marking:

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- 1.7. Transmission
    - 1.7.1. Type (mechanical, hydraulic, electric, etc.):
  - 1.8. Non-engine devices designed to reduce noise: original part or description:...
  - 1.9. Sound-level values:
  - 1.10. Value of the back pressure: ... Pa
  - 1.11. Any restrictions in respect of use and mounting requirements:
2. Remarks:
3. Description of the device
    - 3.1. A description of the replacement silencing system indicating the relative...
    - 3.2. Detailed drawings of each component, so that they can be...

## Appendix 2

MODEIEU type-approval certificate

### SECTION 1

0.1. Make (trade name of manufacturer):

- 0.1. Make (trade name of manufacturer):
- 0.2. Type and general commercial description(s):
- 0.3. Means of identification of type if marked on the separate...
  - 0.3.1. Location of that marking:
- 0.4. Category of vehicle:
- 0.5. Company name and address of manufacturer:
- 0.7. In the case of components and separate technical units, location...
- 0.8. Address(es) of assembly plant(s):
- 0.9. Name and address of the manufacturer's representative (if any):

### SECTION II

1. Additional information (where applicable): See Addendum

1. Additional information (where applicable): See Addendum
2. Technical service responsible for carrying out the tests:
3. Date of test report:
4. Number of test report:
5. Remarks (if any): See Addendum
6. Place:
7. Date:
8. Signature:
9. The index to the information package lodged with the approval...

### Addendum

to EU type-approval certificate No ...

1. Additional information
  - 1.1. Description of the vehicle for which the device is intended...

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- 1.1.1. Make (trade name of manufacturer):
- 1.1.2. Type and general commercial description(s):
- 1.1.3. Means of identification of type, if marked on the vehicle:...
- 1.1.4. Category of vehicle:
- 1.1.5. EU whole vehicle type-approval number:
- 1.2. Power plant:
  - 1.2.1. Manufacturer of the engine:
  - 1.2.2. Manufacturer's engine code:
  - 1.2.3. Maximum net power (g): ... kW at ... min<sup>-1</sup> or...
2. Test results
  - 2.1. Sound level of moving vehicle: ... dB(A)
  - 2.2. Sound level of stationary vehicle: ... dB(A) at ... min<sup>-1</sup>...
  - 2.3. Value of the back pressure: ... Pa
3. Remarks:

### Appendix 3

#### Model for the EU type-approval mark

The silencing system, or components thereof, bearing the above EU...

The figures used are only indicative.

### Appendix 4

#### Test apparatus

### Appendix 5

#### Measuring points — back pressure

Examples of possible measuring points for loss-of-pressure tests.  
The exact...

1. Figure 1
2. Figure 2
3. Figure 3

## ANNEX X

### CHECKS ON CONFORMITY OF PRODUCTION FOR REPLACEMENT SILENCING SYSTEM AS A SEPARATE TECHNICAL UNIT

1. GENERAL
2. TESTING AND PROCEDURES

**Changes to legislation:** There are outstanding changes not yet made to Regulation (EU) No 540/2014 of the European Parliament and of the Council. Any changes that have already been made to the legislation appear in the content and are referenced with annotations. (See end of Document for details) View outstanding changes

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3. SAMPLING AND EVALUATION OF THE RESULTS
  - 3.1. One silencing system or components thereof shall be chosen and...
  - 3.2. If one of the test results does not comply with...
  - 3.3. If the test results for the second and the third...
  - 3.4. If one of the test results for the second or...

## ANNEX XI

### AMENDMENTS TO DIRECTIVE 2007/46/EC

Directive 2007/46/EC is hereby amended as follows:

#### Part A

1. Annex IV shall be amended as follows:
2. In Annex VI, the following row shall be inserted in...
3. Annex XI shall be amended as follows:

#### Part B

1. Annex IV shall be amended as follows:
2. In Annex VI, in the table in the Appendix to...
3. Annex XI shall be amended as follows:

## ANNEX XII

### CORRELATION TABLE



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**Changes to legislation:** There are outstanding changes not yet made to Regulation (EU) No 540/2014 of the European Parliament and of the Council. Any changes that have already been made to the legislation appear in the content and are referenced with annotations. (See end of Document for details) View outstanding changes

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- (1) [OJ C 191, 29.6.2012, p. 76.](#)
- (2) Position of the European Parliament of 6 February 2013 (not yet published in the Official Journal) and position of the Council at first reading of 20 February 2014 (not yet published in the Official Journal). Position of the European Parliament of 2 April 2014 (not yet published in the Official Journal).
- (3) Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise ([OJ L 189, 18.7.2002, p. 12](#)).
- (4) Council Directive 70/157/EEC of 6 February 1970 on the approximation of the laws of the Member States relating to the permissible sound level and the exhaust system of motor vehicles ([OJ L 42, 23.2.1970, p. 16](#)).
- (5) Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles (Framework Directive) ([OJ L 263, 9.10.2007, p. 1](#)).
- (6) Regulation No 51 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of motor vehicles having at least four wheels with regard to their noise emissions ([OJ L 137, 30.5.2007, p. 68](#)).
- (7) Regulation No 59 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of replacement silencing systems ([OJ L 326, 24.11.2006, p. 43](#)).
- (8) Council Decision 97/836/EC of 27 November 1997 with a view to accession by the European Community to the Agreement of the United Nations Economic Commission for Europe concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted to and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions ('Revised 1958 Agreement') ([OJ L 346, 17.12.1997, p. 78](#)).
- (9) Regulation (EC) No 661/2009 of the European Parliament and of the Council of 13 July 2009 concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor ([OJ L 200, 31.7.2009, p. 1](#)).
- (10) Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93 ([OJ L 218, 13.8.2008, p. 30](#)).
- (11) Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme ([OJ L 242, 10.9.2002, p. 1](#)).
- (12) [OJ C 168 E, 14.6.2013, p. 72.](#)

**Changes to legislation:**

There are outstanding changes not yet made to Regulation (EU) No 540/2014 of the European Parliament and of the Council. Any changes that have already been made to the legislation appear in the content and are referenced with annotations.

[View outstanding changes](#)

**Changes and effects yet to be applied to :**

- Annex 3 table notes words substituted by S.I. 2022/1273 reg. 76(4)(a)
- Annex 3 table notes words substituted by S.I. 2022/1273 reg. 76(4)(b)
- Annex 2 words substituted by S.I. 2022/1273 reg. 76(3)
- Annex 9 point 4.2 substituted by S.I. 2022/1273 reg. 76(9)(e)(i)
- Annex 9 point 6 words omitted by S.I. 2022/1273 reg. 76(9)(f)
- Annex 9 heading words substituted by S.I. 2022/1273 reg. 76(9)(a)
- Annex 9 words substituted by S.I. 2022/1273 reg. 76(9)(a)
- Annex 9 point 1.1 words substituted by S.I. 2022/1273 reg. 76(9)(b)
- Annex 9 point 3.1 words substituted by S.I. 2022/1273 reg. 76(9)(c)
- Annex 9 point 3.3 words substituted by S.I. 2022/1273 reg. 76(9)(d)(i)
- Annex 9 point 3.3 words substituted by S.I. 2022/1273 reg. 76(9)(d)(ii)
- Annex 9 point 4.2 words substituted by S.I. 2022/1273 reg. 76(9)(e)(ii)
- Annex 9 point 7 words substituted by S.I. 2022/1273 reg. 76(9)(g)
- Annex 9 point 8.1 words substituted by S.I. 2022/1273 reg. 76(9)(h)
- Annex 9 point 8.2.1 words substituted by S.I. 2022/1273 reg. 76(9)(i)
- Annex 9 point 8.2.2 words substituted by S.I. 2022/1273 reg. 76(9)(j)
- Art. 1 word substituted by S.I. 2022/1273 reg. 75(2)(a)
- Art. 1 words substituted by S.I. 2022/1273 reg. 75(2)(b)
- Annex 1 heading words substituted by S.I. 2022/1273 reg. 76(2)(a)
- Annex 1 words substituted by S.I. 2022/1273 reg. 76(2)(a)
- Annex 1 point 1.1 words substituted by S.I. 2022/1273 reg. 76(2)(b)
- Annex 1 point 3.1 words substituted by S.I. 2022/1273 reg. 76(2)(c)
- Annex 1 point 3.3 words substituted by S.I. 2022/1273 reg. 76(2)(d)(i)
- Annex 1 point 3.3 words substituted by S.I. 2022/1273 reg. 76(2)(d)(ii)
- Annex 1 point 4 words substituted by S.I. 2022/1273 reg. 76(2)(e)
- Annex 1 point 5.1 words substituted by S.I. 2022/1273 reg. 76(2)(f)
- Annex 1 point 5.2.1 words substituted by S.I. 2022/1273 reg. 76(2)(g)
- Annex 1 point 5.2.2 words substituted by S.I. 2022/1273 reg. 76(2)(h)
- Art. 2 words substituted by S.I. 2022/1273 reg. 75(3)
- Art. 3 words substituted by S.I. 2022/1273 reg. 75(4)(a)
- Art. 4 heading words substituted by S.I. 2022/1273 reg. 75(5)(a)
- Art. 4 words substituted by S.I. 2022/1273 reg. 75(5)(b)
- Art. 4(1) words substituted by S.I. 2022/1273 reg. 75(5)(c)(i)
- Art. 4(1) words substituted by S.I. 2022/1273 reg. 75(5)(c)(ii)
- Art. 4(2) words substituted by S.I. 2022/1273 reg. 75(5)(d)(i)
- Art. 4(2) words substituted by S.I. 2022/1273 reg. 75(5)(d)(ii)
- Art. 4(3) words substituted by S.I. 2022/1273 reg. 75(5)(e)(i)
- Art. 4(3) words substituted by S.I. 2022/1273 reg. 75(5)(e)(ii)
- Art. 4(4) words substituted by S.I. 2022/1273 reg. 75(5)(f)(i)
- Art. 4(4) words substituted by S.I. 2022/1273 reg. 75(5)(f)(ii)
- Art. 7 words omitted by S.I. 2022/1273 reg. 75(6)
- Art. 8 words substituted by S.I. 2022/1273 reg. 75(7)
- Art. 9 substituted for Arts. 9, 10 by S.I. 2022/1273 reg. 75(8)
- Art. 11 omitted by S.I. 2022/1273 reg. 75(9)

**Changes and effects yet to be applied to the whole legislation item and associated provisions**

- Signature words omitted by S.I. 2022/1273 reg. 75(10)

- Annex 7 s. 1 words substituted by [S.I. 2022/1273 reg. 76\(7\)](#)
- Annex 8 s. 3.5 words substituted by [S.I. 2022/1273 reg. 76\(8\)](#)
- Annex 4 s. 1 words substituted by [S.I. 2022/1273 reg. 76\(5\)](#)
- Annex 9 Appendix 3 image substituted by [S.I. 2022/1273 reg. 76\(9\)\(n\)\(i\)](#)
- Annex 9 Appendix 1 point 1.5 word substituted by [S.I. 2022/1273 reg. 76\(9\)\(k\)](#)
- Annex 9 Appendix 2 Addendum word substituted by [S.I. 2022/1273 reg. 76\(9\)\(l\)](#)
- Annex 9 Appendix 3 image words omitted by [S.I. 2022/1273 reg. 76\(9\)\(n\)\(ii\)](#)
- Annex 9 Appendix 2 notes words substituted by [S.I. 2022/1273 reg. 76\(9\)\(m\)](#)
- Annex 6 s. 3 words substituted by [S.I. 2022/1273 reg. 76\(6\)](#)
- Annex 1 Appendix 2 heading word substituted by [S.I. 2022/1273 reg. 76\(2\)\(j\)\(i\)](#)
- Annex 1 Appendix 2 Addendum word substituted by [S.I. 2022/1273 reg. 76\(2\)\(l\)](#)
- Annex 1 Appendix 2 words inserted by [S.I. 2022/1273 reg. 76\(2\)\(j\)\(ii\)](#)
- Annex 1 Appendix 1 heading words substituted by [S.I. 2022/1273 reg. 76\(2\)\(i\)\(i\)](#)
- Annex 1 Appendix 1 point 9(1) words substituted by [S.I. 2022/1273 reg. 76\(2\)\(i\)\(ii\)](#)
- Annex 1 Appendix 2 notes words substituted by [S.I. 2022/1273 reg. 76\(2\)\(k\)\(i\)](#)
- Annex 1 Appendix 2 notes words substituted by [S.I. 2022/1273 reg. 76\(2\)\(k\)\(ii\)](#)
- Art. 3(1) words substituted by [S.I. 2022/1273 reg. 75\(4\)\(b\)](#)
- Art. 3(5) words substituted by [S.I. 2022/1273 reg. 75\(4\)\(c\)](#)
- Art. 3(21) word substituted by [S.I. 2022/1273 reg. 75\(4\)\(d\)](#)