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VERIFYING ENGINE DATA

6.   Application of engine pre-processing tool

The engine pre-processing tool shall be executed for each engine within one engine CO_2-family using the input defined in paragraph 6.1.

The output data of the engine pre-processing tool shall be the final result of the engine test procedure and shall be documented.

6.1   Input data for the engine pre-processing tool

The following input data shall be generated by the test procedures specified in this Annex and shall be the input to the engine pre-processing tool.

6.1.1   Full load curve of the CO_2-parent engine

The input data shall be the engine full load curve of the CO_2-parent engine of the engine CO_2-family defined in accordance with Appendix 3 to this Annex and recorded in accordance with paragraph 4.3.1.

In the case that upon request of the manufacturer the provisions defined in Article 15(5) of this Regulation are applied, the engine full load curve of that specific engine recorded in accordance with paragraph 4.3.1 shall be used as input data.

The input data shall be provided in the file format of 'comma separated values' with the separator character being the Unicode Character 'COMMA' (U+002C) (','). The first line of the file shall be used as a header and not contain any recorded data. The recorded data shall start from the second line of the file.

The first column of the file shall be the engine speed in min^{-1} rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06. The second column shall be the torque in Nm rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06.

6.1.2   Full load curve

The input data shall be the engine full load curve of the engine recorded in accordance with paragraph 4.3.1.

The input data shall be provided in the file format of 'comma separated values' with the separator character being the Unicode Character 'COMMA' (U+002C) (','). The first line of the file shall be used as a header and not contain any recorded data. The recorded data shall start from the second line of the file.

The first column of the file shall be the engine speed in min^{-1} rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06. The second column shall be the torque in Nm rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06.

6.1.3   Motoring curve of the CO_2-parent engine

The input data shall be the engine motoring curve of the CO_2-parent engine of the engine CO_2-family defined in accordance with Appendix 3 to this Annex and recorded in accordance with paragraph 4.3.2.

In the case that upon request of the manufacturer the provisions defined in Article 15(5) of this Regulation are applied, the engine motoring curve of that specific engine recorded in accordance with paragraph 4.3.2 shall be used as input data.

The input data shall be provided in the file format of 'comma separated values' with the separator character being the Unicode Character 'COMMA' (U+002C) (','). The first line of the file shall be used as a header and not contain any recorded data. The recorded data shall start from the second line of the file.

The first column of the file shall be the engine speed in min^{-1} rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06. The second column shall be the torque in Nm rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06.

6.1.4   Fuel consumption map of the CO_2-parent engine

The input data shall be the values of engine speed, engine torque and fuel massflow determined for the CO_2-parent engine of the engine CO_2-family defined in accordance with Appendix 3 to this Annex and recorded in accordance with paragraph 4.3.5.

In the case that upon request of the manufacturer the provisions defined in Article 15(5) of this Regulation are applied, the values of engine speed, engine torque and fuel massflow determined for that specific engine recorded in accordance with paragraph 4.3.5 shall be used as input data.

The input data shall only consist of the average measurement values of engine speed, engine torque and fuel massflow over the 30 ± 1 seconds measurement period determined in accordance with subpoint (1) of paragraph 4.3.5.5.

The input data shall be provided in the file format of 'comma separated values' with the separator character being the Unicode Character 'COMMA' (U+002C) (','). The first line of the file shall be used as a header and not contain any recorded data. The recorded data shall start from the second line of the file.

The first column of the file shall be the engine speed in min^{-1} rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06. The second column shall be the torque in Nm rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06. The third column shall be the fuel massflow in g/h rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06.

6.1.5   Specific fuel consumption figures for WHTC correction factor

The input data shall be the three values for specific fuel consumption over the different sub-cycles of the WHTC – urban, rural and motorway – in g/kWh determined in accordance with paragraph 5.3.1.

The values shall be rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06.

6.1.6   Specific fuel consumption figures for cold-hot emission balancing factor

The input data shall be the two values for specific fuel consumption over the hotstart and coldstart WHTC in g/kWh determined in accordance with paragraph 5.3.2.

The values shall be rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06.

6.1.7   Correction factor for engines equipped with exhaust after-treatment systems that are regenerated on a periodic basis

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The input data shall be the correction factor CF_{RegPer} determined in accordance with paragraph 5.4.

For engines equipped with exhaust after-treatment systems with continuous regeneration, defined in accordance with paragraph 6.6.1 of Annex 4 to UN/ECERegulation 49 Rev.06, this factor shall be set to 1 in accordance with paragraph5.4.

The value shall be rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06.

6.1.8   NCV of test fuel

The input data shall be the NCV of the test fuel in MJ/kg determined in accordance with paragraph 3.2.

[**F1**The value shall be rounded to 2 places to the right of the decimal point in accordance with ASTM E 29-06.**]**

Textual Amendments

F1   Substituted by Commission Regulation (EU) 2019/318 of 19 February 2019 amending Regulation (EU) 2017/2400 and Directive 2007/46/EC of the European Parliament and of the Council as regards the determination of the CO2 emissions and fuel consumption of heavy-duty vehicles (Text with EEA relevance).

6.1.9   Type of test fuel

The input data shall be the type of the test fuel selected in accordance with paragraph 3.2.

6.1.10   Engine idle speed of the CO_2-parent engine

The input data shall be the engine idle speed, n_{idle}, in min^{-1} of the CO_2-parent engine of the engine CO_2-family defined in accordance with Appendix 3 to this Annex as declared by the manufacturer in the application for certification in the information document drawn up in accordance with the model set out in Appendix 2.

In the case that upon request of the manufacturer the provisions defined in Article 15(5) of this Regulation are applied, the engine idle speed of that specific engine shall be used as input data.

The value shall be rounded to the nearest whole number in accordance with ASTM E 29-06.

6.1.11   Engine idle speed

The input data shall be the engine idle speed, n_{idle}, in min^{-1} of the engine as declared by the manufacturer in the application for certification in the information document drawn up in accordance with the model set out in Appendix 2 to this Annex.

The value shall be rounded to the nearest whole number in accordance with ASTM E 29-06.

6.1.12   Engine displacement

The input data shall be the displacement in ccm of the engine as declared by the manufacturer at the application for certification in the information document drawn up in accordance with the model set out in Appendix 2 to this Annex.

The value shall be rounded to the nearest whole number in accordance with ASTM E 29-06.

6.1.13   Engine rated speed

The input data shall be the rated speed in $\min^{-1}$ of the engine as declared by the manufacturer at the application for certification in point 3.2.1.8. of the information document in accordance with Appendix 2 to this Annex.

The value shall be rounded to the nearest whole number in accordance with ASTM E 29-06.

6.1.14   Engine rated power

The input data shall be the rated power in kW of the engine as declared by the manufacturer at the application for certification in point 3.2.1.8. of the information document in accordance with Appendix 2 to this Annex.

The value shall be rounded to the nearest whole number in accordance with ASTM E 29-06.

6.1.15   Manufacturer

The input data shall be the name of the engine manufacturer as a sequence of characters in ISO8859-1 encoding.

6.1.16   Model

The input data shall be the name of the engine model as a sequence of characters in ISO8859-1 encoding.

6.1.17   Technical Report ID

The input data shall be an unique identifier of the technical report compiled for the type approval of the specific engine. This identifier shall be provided as a sequence of characters in ISO8859-1 encoding.

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Changes to legislation:
There are outstanding changes not yet made to Commission Regulation (EU) 2017/2400. 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 the whole legislation item and associated provisions

– Signature words omitted by S.I. 2022/1273 reg. 82(18)
– Annex 5 Appendix 6 point 1.3 substituted by S.I. 2022/1273 reg. 83(4)(b)(i)
– Annex 5 Appendix 6 point 1.4.1 image substituted by S.I. 2022/1273 reg. 83(4)(b)(iii)(aa)
– Annex 5 Appendix 6 point 1.5.1 image substituted by S.I. 2022/1273 reg. 83(4)(b)(iv)(aa)
– Annex 5 Appendix 4 point 7.4 word substituted by S.I. 2022/1273 reg. 83(4)(a)
– Annex 5 Appendix 6 point 2.1 word substituted by S.I. 2022/1273 reg. 83(4)(b)(v)
– Annex 5 Appendix 6 point 1.4.1 words omitted by S.I. 2022/1273 reg. 83(4)(b)(iii)(bb)
– Annex 5 Appendix 6 point 1.5.1 words omitted by S.I. 2022/1273 reg. 83(4)(b)(iv)(bb)
– Annex 5 Appendix 6 point 1.4 words substituted by S.I. 2022/1273 reg. 83(4)(b)(ii)
– Annex 5 Appendix 6 point 2.1 table words substituted by S.I. 2022/1273 reg. 83(4)(b)(vi)
– Annex 10 Appendix 4 point 1.1 word substituted by S.I. 2022/1273 reg. 83(8)(d)(i)
– Annex 10 Appendix 1 words substituted by S.I. 2022/1273 reg. 83(8)(c)
– Annex 10 Appendix 4 point 1.1 table words substituted by S.I. 2022/1273 reg. 83(8)(d)(ii)
– Annex 7 Appendix 5 point 1.3 substituted by S.I. 2022/1273 reg. 83(6)(c)(i)
– Annex 7 Appendix 5 point 1.4.1 image substituted by S.I. 2022/1273 reg. 83(6)(c)(iii)(aa)
– Annex 7 Appendix 1s. 1 point 000.5 word substituted by S.I. 2022/1273 reg. 83(6)(b)(ii)
– Annex 7 Appendix 1 words inserted by S.I. 2022/1273 reg. 83(6)(b)(i)(aa)
– Annex 7 Appendix 1 words omitted by S.I. 2022/1273 reg. 83(6)(b)(i)(bb)
– Annex 7 Appendix 5 point 1.4.1 words omitted by S.I. 2022/1273 reg. 83(6)(c)(iii)(bb)
– Annex 7 Appendix 5 point 1.4 words substituted by S.I. 2022/1273 reg. 83(6)(c)(ii)
– Annex 7 Appendix 5 point 2.1 words substituted by S.I. 2022/1273 reg. 83(6)(c)(iv)
– Annex 7 Appendix 5 point 2.1 table words substituted by S.I. 2022/1273 reg. 83(6)(c)(v)
– Annex 8 Appendix 8 point 1.3 substituted by S.I. 2022/1273 reg. 83(7)(d)(i)
– Annex 8 Appendix 8 point 1.4.1 image substituted by S.I. 2022/1273 reg. 83(7)(d)(iii)(aa)
– Annex 8 Appendix 4 table 11 word omitted by S.I. 2022/1273 reg. 83(7)(c)(i)
– Annex 8 Appendix 4 table 13 word omitted by S.I. 2022/1273 reg. 83(7)(c)(i)
– Annex 8 Appendix 4 table 15 word omitted by S.I. 2022/1273 reg. 83(7)(c)(ii)(aa)
– Annex 8 Appendix 4 table 15 word omitted by S.I. 2022/1273 reg. 83(7)(c)(ii)(bb)
– Annex 8 Appendix 1s. 1 point 000.6 word substituted by S.I. 2022/1273 reg. 83(7)(b)(ii)
– Annex 8 Appendix 8 point 2.1 word substituted by S.I. 2022/1273 reg. 83(7)(d)(iv)
– Annex 8 Appendix 1 words inserted by S.I. 2022/1273 reg. 83(7)(b)(i)(aa)
– Annex 8 Appendix 1 words omitted by S.I. 2022/1273 reg. 83(7)(b)(i)(bb)
– Annex 8 Appendix 8 point 1.4.1 words omitted by S.I. 2022/1273 reg. 83(7)(d)(iii)(bb)
– Annex 8 Appendix 8 point 1.4 words substituted by S.I. 2022/1273 reg. 83(7)(d)(ii)
– Annex 8 Appendix 8 point 2.1 table words substituted by S.I. 2022/1273 reg. 83(7)(d)(v)

- Annex 2 Appendix 2s. 2 point 2 omitted by S.I. 2022/1273 reg. 83(2)(b)(ii)
- Annex 2 Appendix 2 words inserted by S.I. 2022/1273 reg. 83(2)(b)(i)
- Annex 6 Appendix 7 point 1.3 substituted by S.I. 2022/1273 reg. 83(5)(e)(i)
- Annex 6 Appendix 7 point 1.5 image substituted by S.I. 2022/1273 reg. 83(5)(e)(iii) (aa)
- Annex 6 Appendix 7 point 2.1 word substituted by S.I. 2022/1273 reg. 83(5)(e)(iv)
- Annex 6 Appendix 1 words omitted by S.I. 2022/1273 reg. 83(5)(c)
- Annex 6 Appendix 7 point 1.5 words omitted by S.I. 2022/1273 reg. 83(5)(e)(iii)(bb)
- Annex 6 Appendix 2 point 8 words substituted by S.I. 2022/1273 reg. 83(5)(d)
- Annex 6 Appendix 3 point 8 words substituted by S.I. 2022/1273 reg. 83(5)(d)
- Annex 6 Appendix 4 point 8 words substituted by S.I. 2022/1273 reg. 83(5)(d)
- Annex 6 Appendix 5 point 8 words substituted by S.I. 2022/1273 reg. 83(5)(d)
- Annex 6 Appendix 7 point 1.4 words substituted by S.I. 2022/1273 reg. 83(5)(e)(ii)
- Annex 6 Appendix 7 point 2.1 table words substituted by S.I. 2022/1273 reg. 83(5) (e)(v)
- Art. 3(5) omitted by S.I. 2022/1273 reg. 82(4)(a)
- Art. 3(16) words substituted by S.I. 2022/1273 reg. 82(4)(b)
- Art. 3(20) words substituted by S.I. 2022/1273 reg. 82(4)(c)
- Art. 10(1a) inserted by S.I. 2022/1273 reg. 82(8)(b)
- Annex 10a para. 3(f) words inserted by S.I. 2022/1273 reg. 83(9)(a)
- Annex 10a para. 3(f) table words substituted by S.I. 2022/1273 reg. 83(9)(b)(c)
- Art. 12(8) inserted by S.I. 2022/1273 reg. 82(10)