

Commission Regulation (EU) 2017/2400 of 12 December 2017 implementing Regulation (EC) No 595/2009 of the European Parliament and of the Council as regards the determination of the CO₂ emissions and fuel consumption of heavy-duty vehicles and amending Directive 2007/46/EC of the European Parliament and of the Council and Commission Regulation (EU) No 582/2011 (Text with EEA relevance)

CHAPTER 4

CO₂ EMISSIONS AND FUEL CONSUMPTION RELATED PROPERTIES OF COMPONENTS, SEPARATE TECHNICAL UNITS AND SYSTEMS

Article 12

Components, separate technical units and systems relevant for the purposes of determining CO₂ emissions and fuel consumption

1 The simulation tool input data referred to in Article 5(3) shall include information relating to the CO₂ emissions and fuel consumption related properties of the following components, separate technical units and systems:

- a engines;
- b transmissions;
- c torque converters;
- d other torque transferring components;
- e additional driveline components;
- f axles;
- g body or trailer air drag;
- h auxiliaries;
- i tyres.

2 The CO₂ emissions and fuel consumption related properties of the components, separate technical units and systems referred to in points (b) to (g) and (i) of paragraph 1 shall be based either on the values determined, for each component family, separate technical unit family or system family, in accordance with Article 14 and certified in accordance with Article 17 ('certified values') or, in the absence of the certified values, on the standard values determined in accordance with Article 13.

3 The CO₂ emissions and fuel consumption related properties of engines shall be based on the values determined for each engine family in accordance with Article 14 and certified in accordance with Article 17.

4 The CO₂ emissions and fuel consumption related properties of auxiliaries shall be based on the standard values determined in accordance with Article 13.

5 In the case of a base vehicle referred to in Article 2(2), the CO₂ emissions and fuel consumption related properties of components, separate technical units and systems referred to in points (g) and (h) of paragraph 1 which cannot be determined for the base vehicle shall be based on the standard values. For components, separate technical units and systems referred to in point (h), the technology with highest power losses shall be selected by the vehicle manufacturer.

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. (See end of Document for details) View outstanding changes

[^{F16} In the case of ZE-HDVs, He-HDVs and dual-fuel vehicles, the simulation tool input data shall include the information set out in Table 5 of Annex III.

7 Where the vehicle is to be registered, sold or put into service with snow tyres and standard tyres, the vehicle manufacturer may choose which of the tyres to use for determining the CO₂ emissions.]

Textual Amendments

F1 Inserted 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).

Article 13

Standard values

1 The standard values for transmissions shall be determined in accordance with Appendix 8 of Annex VI.

2 The standard values for torque converters shall be determined in accordance with Appendix 9 of Annex VI.

3 The standard values for other torque-transferring components shall be determined in accordance with Appendix 10 of Annex VI.

4 The standard values for additional driveline components shall be determined in accordance with Appendix 11 of Annex VI.

5 The standard values for axles shall be determined in accordance with Appendix 3 of Annex VII.

6 The standard values for a body or trailer air drag shall be determined in accordance with Appendix 7 of Annex VIII.

7 The standard values for auxiliaries shall be determined in accordance with Annex IX.

[^{F28} The standard value for tyres shall be the one for C3 snow tyres as set out in Table 2 of Part B of Annex II to Regulation (EC) No 661/2009 of the European Parliament and of the Council⁽¹⁾.]

Textual Amendments

F2 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).

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. (See end of Document for details) View outstanding changes

Article 14

Certified values

1 The values determined in accordance with paragraphs 2 to 9 may be used by the vehicle manufacturer as the simulation tool input data if they are certified in accordance with Article 17.

2 The certified values for engines shall be determined in accordance with point 4 of Annex V.

3 The certified values for transmissions shall be determined in accordance with point 3 of Annex VI.

4 The certified values for torque converters shall be determined in accordance with point 4 of Annex VI.

5 The certified values for other torque-transferring component shall be determined in accordance with point 5 of Annex VI.

6 The certified values for additional driveline components shall be determined in accordance with point 6 of Annex VI.

7 The certified values for axles shall be determined in accordance with point 4 of Annex VII.

8 The certified values for a body or trailer air drag shall be determined in accordance with point 3 of Annex VIII.

9 The certified values for tyres shall be determined in accordance with Annex X.

Article 15

Family concept regarding components, separate technical units and systems using certified values

1 Subject to paragraphs 3 to 6, the certified values determined for a parent component, parent separate technical unit or parent system shall be valid, without further testing, for all family members in accordance with the family definition as set out in:

- Appendix 6 to Annex VI as regards the family concept of transmissions, torque converters, other torque transferring component and additional driveline components;
- Appendix 4 to Annex VII as regards the family concept of axles;
- Appendix 5 to Annex VIII as regards the family concept for the purposes of determining air drag.

2 Notwithstanding paragraph 1, for engines, the certified values for all the members of an engine family created in accordance with the family definition as set out in Appendix 3 to Annex V, shall be derived in accordance with paragraph 4, 5 and 6 of Annex V.

For tyres, a family shall consist of one tyre type only.

3 The CO₂ emissions and fuel consumption related properties of the parent component, parent separate technical unit or parent system shall not be better than the properties of any member of the same family.

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4 The manufacturer shall provide the approval authority with evidence that the parent component, separate technical units or system fully represents the component family, separate technical unit family or system family.

If, in the framework of testing for the purposes of the second subparagraph of Article 16(3), the approval authority determines that the selected parent component, parent separate technical unit or parent system does not fully represent the component family, separate technical unit family or system family, an alternative reference component, separate technical units or system may be selected by the approval authority, tested and shall become a parent component, parent separate technical unit or parent system.

5 Upon request of the manufacturer, and subject to the agreement by the approval authority, the CO₂ emissions and fuel consumption related properties of a specific component, specific separate technical unit or specific system other than a parent component, parent separate technical unit or parent system, respectively, may be indicated in the certificate on CO₂ emissions and fuel consumption related properties of the component family, separate technical unit family or system family.

The CO₂ emissions and fuel consumption related properties of that specific component, separate technical unit or system shall be determined in accordance with Article 14.

6 Where the characteristics of the specific component, specific separate technical unit or specific system, in terms of CO₂ emissions and fuel consumption related properties as determined in accordance with paragraph 5, lead to higher CO₂ emissions and fuel consumption values than those of the parent component, parent separate technical unit or parent system, respectively, the manufacturer shall exclude it from the existing family, assign it to a new family and define it as the new parent component, parent separate technical unit or parent system for that family or apply for an extension of the certification pursuant to Article 18.

Article 16

Application for a certification of the CO₂ emissions and fuel consumption related properties of components, separate technical units or systems

1 The application for certification of the CO₂ emissions and fuel consumption related properties of the component family, separate technical unit family or system family shall be submitted to the approval authority.

2 The application for certification shall take the form of an information document drawn up in accordance with the model set out in:

- Appendix 2 to Annex V as regards engines;
- Appendix 2 to Annex VI as regards transmissions;
- Appendix 3 to Annex VI as regards torque converters;
- Appendix 4 to Annex VI as regards other torque transferring component;
- Appendix 5 to Annex VI as regards additional driveline components;
- Appendix 2 to Annex VII as regards axles;
- Appendix 2 to Annex VIII as regards air drag;
- Appendix 2 to Annex X as regards tyres.

3 The application for certification shall be accompanied by an explanation of the elements of design of the component family, separate technical unit family or the system family concerned which have a non-negligible effect on the CO₂ emissions and fuel consumption related properties of the components, separate technical units or systems concerned.

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The application shall also be accompanied by the relevant test reports issued by an approval authority, test results, and by a statement of compliance issued by an approval authority pursuant to point 1 of Annex X of Directive 2007/46/EC.

Article 17

Administrative provisions for the certification of CO₂ emissions and fuel consumption related properties of components, separate technical units and systems

1 If all the applicable requirements are met, the approval authority shall certify the values relating to the CO₂ emissions and fuel consumption related properties of the component family, separate technical unit family or system family concerned.

2 In the case referred to in paragraph 1, the approval authority shall issue a certificate on CO₂ emissions and fuel consumption related properties using the model set out in:

- Appendix 1 to Annex V as regards engines;
- Appendix 1 to Annex VI as regards transmissions, torque converters, other torque transferring component and additional driveline components;
- Appendix 1 to Annex VII as regards axles;
- Appendix 1 to Annex VIII as regards air drag;
- Appendix 1 to Annex X as regards tyres.

3 The approval authority shall grant a certification number in accordance with the numbering system set out in:

- Appendix 6 to Annex V as regards engines;
- Appendix 7 to Annex VI as regards transmissions, torque converters, other torque transferring component and additional driveline components;
- Appendix 5 to Annex VII as regards axles;
- Appendix 8 to Annex VIII as regards air drag;
- Appendix 1 to Annex X as regards tyres.

The approval authority shall not assign the same number to another component family, separate technical unit family or system family. The certification number shall be used as the identifier of the test report.

4 The approval authority shall create a cryptographic hash of the file with test results, comprising the certification number, by means of the hashing tool referred to in Article 5(5). This hashing shall be done immediately after the test results are produced. The approval authority shall imprint that hash along with the certification number on the certificate on CO₂ emissions and fuel consumption related properties.

Article 18

Extension to include a new component, separate technical unit or system into a component family, separate technical unit family or system family

1 At the request of the manufacturer and upon approval of the approval authority, a new component, separate technical unit or system may be included as a member of a certified component family, separate technical unit family or system family if they meet the criteria for family definition set out in:

- Appendix 3 to Annex V as regards the family concept of engines;

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- Appendix 6 to Annex VI as regards the family concept of transmissions, torque converters, other torque transferring component and additional driveline components;
- Appendix 4 to Annex VII as regards the family concept of axles;
- Appendix 5 to Annex VIII as regards the family concept for the purposes of determining air drag.

In such cases, the approval authority shall issue a revised certificate denoted by an extension number.

The manufacturer shall modify the information document referred to in Article 16(2) and provide it to the approval authority.

2 Where the characteristics of the specific component, specific separate technical unit or specific system, in terms of CO₂ emissions and fuel consumption related properties as determined in accordance with paragraph 1, lead to higher CO₂ emissions and fuel consumption values than those of the parent component, parent separate technical unit or parent system, respectively, the new component, separate technical unit or system shall become the new parent component, separate technical unit or system.

Article 19

Subsequent changes relevant for the certification of CO₂ emissions and fuel consumption related properties of components, separate technical units and systems

1 The manufacturer shall notify the approval authority of any changes to the design or the manufacturing process of components, separate technical units or systems concerned which occur after the certification of the values relating to the CO₂ emissions and fuel consumption related properties of the relevant component family, separate technical unit family or system family pursuant to Article 17 and which may have a non-negligible effect on the CO₂ emissions and fuel consumption related properties of those components, separate technical units and systems.

2 Upon receipt of the notification referred to in paragraph 1, the approval authority shall inform the manufacturer whether or not the components, separate technical units or systems affected by the changes continue to be covered by the certificate issued, or whether additional testing in accordance with Article 14 is necessary in order to verify the impact of the changes on the CO₂ emissions and fuel consumption related properties of the components, separate technical units or systems concerned.

3 Where the components, separate technical units or systems affected by the changes are not covered by the certificate, the manufacturer shall, within one month of receipt of that information from the approval authority, apply for a new certification or an extension pursuant to Article 18. If the manufacturer does not apply for a new certification or an extension within that deadline, or if the application is rejected, the certificate shall be withdrawn.

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- (1) [^{F2}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](#)).]

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Textual Amendments

- F2** 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 \(Text with EEA relevance\).](#)

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.

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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)