

European Aviation Safety Agency

**Certification Specifications
and
Acceptable Means of
Compliance**

for

**Aircraft Engine Emissions and
Fuel Venting**

CS-34

Amendment 1
29 January 2013

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PREAMBLE

CS-34 Amendment 1 – Effective: 29/01/2013

The following is a list of paragraphs affected by this amendment.

| | |
|------------|---------------------|
| Title page | Amended |
| Contents | Contents page added |
| Preamble | Preamble page added |

Book 2

| | |
|-----------------------|-------|
| GM 34.2 (c) to (i) | Added |
| GM 34.2 final section | Added |

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Book 1

Certification Specifications

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CS 34.1 Fuel venting

The aircraft must be designed to comply with the applicable fuel venting requirements defined under 21A.18(b)(1).

CS 34.2 Aircraft engine emissions

(See AMC 34.2 and GM 34.2)

The aircraft engine must be designed to comply with the applicable emission requirements defined under 21A.18(b)(2) and (3)

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Book 2

**Acceptable Means of
Compliance and Guidance
Material**

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AMC 34.2 Aircraft engine emissions

The acceptable means of compliance for aircraft engine emissions are presented in:

- (a) for measurement of reference pressure ratio, Appendix 1 of ICAO Annex 16, Volume II;
- (b) for smoke emission evaluation, Appendix 2 of ICAO Annex 16, Volume II;
- (c) for instrumentation and measurement techniques for gaseous emissions, Appendix 3, except for its attachments, of ICAO Annex 16, Volume II;
- (d) for specification for fuel to be used in aircraft turbine engine emission testing, Appendix 4 of ICAO Annex 16, Volume II;
- (e) for instrumentation and measurement techniques for gaseous emissions from afterburning gas turbine engines, Appendix 5, except for its attachments, of ICAO Annex 16, Volume II; and
- (f) for compliance procedure for gaseous emissions and smoke, Appendix 6 of ICAO Annex 16, Volume II.

GM 34.2 Aircraft engine emissions

Guidance material for the application of the certification specifications for aircraft engine emissions is presented in:

- (a) for instrumentation and measurement techniques for gaseous emissions, the attachments to Appendix 3 of ICAO Annex 16, Volume II;
- (b) for instrumentation and measurement techniques for gaseous emissions from afterburning gas turbine engines, the attachments to Appendix 5 of ICAO Annex 16, Volume II;
- (c) for definitions and symbols, Part I of the ICAO Environmental Technical Manual, Volume II;
- (d) for emissions certification of turbojet and turbofan engines intended for propulsion only at subsonic speeds, Part III, Chapter 2 of the ICAO Environmental Technical Manual, Volume II; except for the exemption process from the NO_x emissions production cut-off requirements;
- (e) for turbojet and turbofan engines intended for propulsion at supersonic speeds, Part III, Chapter 3 of the ICAO Environmental Technical Manual, Volume II;
- (f) for smoke emission evaluation, Appendix 2 of the ICAO Environmental Technical Manual, Volume II;
- (g) for instrumentation and measurement techniques for gaseous emissions, Appendix 3 of the ICAO Environmental Technical Manual, Volume II;
- (h) for specification for HC analyser, Attachment A to Appendix 3 of the ICAO Environmental Technical Manual, Volume II; and
- (i) for specification for fuel to be used in aircraft turbine engine emission testing, Appendix 4 of the ICAO Environmental Technical Manual, Volume II.

References throughout these Certification Specifications to the ICAO Environmental Technical Manual, Volume II, refer to ICAO Doc 9501 —

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Environmental Technical Manual, Volume II — Procedures for the Emissions Certification of Aircraft Engines, First Edition 2010.

[Amdt. 34/1]