



Additional airworthiness specifications for operations: thermal/acoustic insulation materials

RELATED NPA/CRD: 2015-15 — RMT.0071 (26.004) — 19.5.2016

EXECUTIVE SUMMARY

This Opinion addresses a safety and harmonisation issue related to flame propagation and flame penetration resistance characteristics of thermal/acoustic insulation materials.

The specific objective is to improve the protection of occupants of large commercial air transport (CAT) aeroplanes by improving certain characteristics of the insulation materials installed in the fuselage: their capability to resist flame propagation and flame penetration (burnthrough).

This Opinion proposes, within the new framework introduced by Regulation (EU) 2015/640 (Part-26) and the related CS-26, the introduction of additional airworthiness requirements and specifications on flammability standards for thermal/acoustic insulation materials. These requirements will be applicable to certain already type-certified large CAT aeroplanes, and are based on CS 25.856(a) and (b).

The proposed changes are expected to increase the safety of large CAT aeroplanes by preventing or reducing the risk of flame propagation or flame penetration into the aeroplane's fuselage.

The proposed changes will also allow harmonisation with the Federal Aviation Administration (FAA) on this subject.

Applicability		Process map	
Affected regulations and decisions:	Regulation (EU) 2015/640 (Part-26); ED Decision 2015/013/R (CS-26)	Terms of reference (Issue 2):	18.9.2014
Affected stakeholders:	Operators and type certificate holders of already type-certified large aeroplanes; modifiers of large aeroplanes; manufacturers of insulation blankets	Concept paper:	No
Driver/origin:	Safety	Rulemaking group:	No
Reference:	NPA 2008-13 'Thermal/Acoustic Insulation Material'; Notice of Proposed Rulemaking (NPRM) 'Improved Flammability Standards for Thermal/Acoustic Insulation Materials Used in Transport Category Airplanes'; Decision No 2009/010/R	RIA type:	Light
		Technical consultation during NPA drafting:	Yes
		Publication date of the NPA:	1.10.2015
		Duration of NPA consultation:	3 months
		Review group:	No
		Focused consultation:	No
		Publication date of the Decision:	2017/Q3



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1. Procedural information

1.1. The rule development procedure

The European Aviation Safety Agency (hereinafter referred to as the ‘Agency’) developed this Opinion in line with Regulation (EC) No 216/2008¹ (hereinafter referred to as the ‘Basic Regulation’) and the Rulemaking Procedure².

This rulemaking activity is included in the Agency’s [5-year Rulemaking Programme](#) under RMT.0071 (26.004). The scope and timescales of the task were defined in the related terms of reference (see process map on the title page).

The draft text of this Opinion has been developed by the Agency. All interested parties were consulted through Notice of Proposed Amendment (NPA) 2015-15³. 7 comments were received from interested parties, including industry and national aviation authorities (NAAs).

The Agency has addressed and responded to the comments received on the NPA. The comments received, and the Agency’s responses thereto, are presented in Comment-Response Document (CRD) 2015-15⁴.

The final text of this Opinion (i.e. Explanatory Note and draft Commission Regulation) has been developed by the Agency.

The process map on the title page summarises the major milestones of this rulemaking activity.

1.2. The structure of this Opinion and related documents

Chapter 1 of this Opinion contains the procedural information related to this task. Chapter 2 ‘Explanatory Note’ explains the core technical content. The draft rule text proposed by the Agency is published on the Agency’s website⁵.

1.3. The next steps in the procedure

This Opinion contains proposed changes to Union regulations. The Opinion is addressed to the European Commission, which shall use it as a technical basis in order to prepare a legislative proposal.

The Decision containing the related certification specifications (CSs) (CS-26) and guidance material (GM) will be published by the Agency when the related regulation is adopted by the European Commission.

¹ Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1).

² The Agency is bound to follow a structured rulemaking process as required by Article 52(1) of the Basic Regulation. Such a process has been adopted by the Agency’s Management Board and is referred to as the ‘Rulemaking Procedure’. See Management Board Decision 01-2012 of 13 March 2013 concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material (Rulemaking Procedure).

³ In accordance with Article 52 of the Basic Regulation and Articles 5(3) and 6 of the Rulemaking Procedure.

⁴ <http://easa.europa.eu/document-library/comment-response-documents>

⁵ <http://easa.europa.eu/document-library/opinions>



2. Explanatory Note

2.1. Issues to be addressed

Service experience and past accidents of large aeroplanes with in-flight or post-crash-related fires suggest that certain flammability characteristics of thermal/acoustic insulation materials installed in the aeroplane's fuselage have contributed to the propagation of an in-flight fire through the fuselage or failed to prevent flame penetration from an outside fire into the fuselage.

Investigations led to changes to the EASA CSs for new designs (CS-25 Amendment 6), upgrading the flammability standards for thermal/acoustic insulation materials.

The FAA amended similarly FAR 25, and also implemented operational rule changes to make the new flame propagation standards also applicable to large aeroplanes of already certified type designs, when newly manufactured after a certain compliance date or when insulation materials are installed as replacements on in-service large aeroplanes. Furthermore, the operational rule changes made the new flame penetration standards applicable to large aeroplanes with a passenger capacity of 20 or greater when newly manufactured after a certain compliance date.

Requirements for already certified type designs are the major difference between the current EASA and FAA regulations on this subject, because to date similar retroactive measures have not yet been taken in Europe.

2.2. Objectives

The overall objectives of the EASA system are defined in Article 2 of the Basic Regulation. This proposal will contribute to the achievement of the overall objectives by addressing the issues outlined in Chapter 2. The specific objective of this proposal is to reduce the safety risks due to flame penetration and propagation by introducing retroactive specifications on flammability standards for thermal/acoustic insulation materials, which are based on CS 25.856(a) and (b), and are applicable to already type-certified large CAT aeroplanes.

2.3. Outcome of the consultation

A summary of the comments, as well as the responses to the individual comments, can be found in CRD 2015-15.

2.4. Summary of the regulatory impact assessment (RIA)

For the RIA, three options have been identified and compared:

- Option 0 ('do nothing') is not an acceptable option compared to the safety risk.
- Option 1 (voluntary implementation of the latest thermal/acoustic insulation material flammability characteristics by aeroplane manufacturers and operators) does not mandate implementation and, therefore, does not guarantee appropriate coverage of the affected fleet.
- Option 2 (requirement for operators of large aeroplanes to ensure that the aeroplanes they operate are equipped with thermal/acoustic insulation materials of the latest flame propagation standard if the aeroplanes are manufactured after a certain date, and on all aeroplanes when thermal/acoustic materials are replaced, and if the aeroplanes are manufactured after a certain



date and have a passenger capacity of 20 or greater, they are equipped with thermal/acoustic insulation materials of the latest flame penetration resistance standard) would ensure a full implementation.

Since Option 1 is based on voluntary implementation, while Option 2 requires operators to ensure that the aeroplane operated is equipped (where feasible) with improved insulation material, Option 2 is considered the best way to ensure effective implementation of the objectives of NPA 2015-15.

Hence, Option 2 is the one preferred by the Agency.

In addition, in the RIA included in the NPA, the Agency addressed the following questions to the stakeholders:

Questions to stakeholders

- 1) What is the share of your fleet which is today compliant with the draft requirements set out in Chapter 3?
- 2) If your fleet is not fully compliant with the draft requirements set out in Chapter 3, what is the estimated unit cost per a retrofitted aircraft?

No feedback was received on those two questions. The Agency considers this as an additional indication that the stakeholders have no concern about the proposed requirements.

2.5. Overview of the proposed amendments

A new paragraph related to thermal/acoustic insulation materials is proposed to be added in Part-26.

Following the existing structure of Part-26 and CS-26, the requirement set out in Part-26 is limited to high-level objectives, applicability, and implementation dates only, whereas the detailed means to comply with are described in CS-26.

Done at Cologne, on 19 May 2016.

Patrick KY
Executive Director

3. References

3.1. Affected regulations

- Commission Regulation (EU) 2015/640 of 23 April 2015 on additional airworthiness specifications for a given type of operations and amending Regulation (EU) No 965/2012 (OJ L 106, 24.4.2015, p. 18)

3.2. Related decisions

- Decision 2015/013/R of the Executive Director of the European Aviation Safety Agency of 8 May 2015 adopting Certification Specifications for additional airworthiness specifications for operations ('CS-26 — Issue 1')

3.3. Reference documents

- [EASA NPA 2008-13 'Thermal/Acoustic Insulation Material'](#)
- Notice of Proposed Rulemaking (NPRM) 'Improved Flammability Standards for Thermal/Acoustic Insulation Materials Used in Transport Category Airplanes' published on 20 September 2000 (Federal Register Vol. 65 No. 183, Notice 00-09, Docket No. FAA-2000-7909)
- Decision N° 2009/010/R of the Executive Director of the European Aviation Safety Agency of 26 June 2009 amending Decision No. 2003/02/RM of the Executive Director of the Agency of 17 October 2003 on Certification Specifications, including Airworthiness Codes and Acceptable Means of Compliance, for Large Aeroplanes (« CS-25 ») (CS-25 — Amendment 6)

