

# Flammability

Presented to: TSO Workshop

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Date: September 21, 2023



# Federal Register

- [www.regulations.gov](https://www.regulations.gov)
  - FAA-2019-0491 published July 3, 2019
  - Supplemental Notice of Proposed Rulemaking (SNPRM) published August 16, 2023
    - FAA-2019-0491-0083 or
    - Federal Register Number 2023-16877

# Notice of Proposed Rulemaking (NPRM)

## FAA-2019-0491

**July 3, 2019 FAA published Interior Parts and Components Fire Protection for Transport Category Aircraft**

- **The proposal would convert those flammability regulations from detailed, prescriptive requirements into simpler, performance-based standards**
- **The proposal would divide these standards into two categories: those designed to protect the airplane and its occupants from the hazards of in-flight fires, and those designed to protect the airplane and its occupants from the hazards caused by post-crash fires**
- **In addition, the proposal would remove test methods, including heat release and smoke emissions tests, from the regulations, replacing them with performance-based requirements**

# NPRM FAA-2019-0491

- Multiple of comments regarding the National Bureau of Standards (NBS) smoke test
- “However, because smoke is an important survivability parameter, and materials that have high smoke emission without significant Heat Release Rate (HRR) are theoretically possible, § 25.853 of this proposal would establish a general performance standard that components must maintain occupant survivability during a post-crash fire.”
- Plethora of other comments
- Final rule is still the objective

# SNPRM FAA-2019-0491-0083

- **Several comments regarding proposal to remove Smoke Emissions Test to show compliance with § 25.853(d)(2)**
  - As discussed in the NPRM for traditional materials heat release test results alone would be sufficient to determine material resists involvement in post crash fire
  - Commenters noted some materials will pass heat release but fail smoke emissions

# SNPRM FAA-2019-0491-0083

- **If data from the Heat Release Rate (HRR) testing does not ensure the post-crash fuel fire performance of a given material, an applicant could show compliance via another means**
- **The SNPRM provides additional information on methods of showing compliance**

# Draft Advisory Circular (AC) 25.853-1A

- [www.faa.gov/aircraft/draft\\_docs/ac](http://www.faa.gov/aircraft/draft_docs/ac)
- **AC 25.853-1A Flammability Requirements for Transport Category Airplanes**
- **Appendix 1: Assessment of Smoke Emissions for New Materials and Material Systems**

# Draft AC 25.853-1A Appendix 1

- **Determine if material or material system was previously approved**
- **If there is no certification data, provide assessment of smoke emission characteristics**
  - Appendix F, Part V
  - Fire Test Handbook Chapter 6
  - New Fire Test Handbook chapter A4



# Draft AC 25.853-1A Appendix 1

- **No specific numerical pass/fail criteria**
  - Relative changes in smoke measurements
- **Material systems mean underlying chemistry, such as phenolic, epoxy, etc.**
- **Smoke testing in Appendix need not follow formal process associated with type certification projects**

# Summary

- **FAA-2019-0042 was published Jan 3, 2019**
- **FAA-2019-0042-0083 was published August 16, 2023**
- **Comment period ends October 2, 2023 for Supplemental NPRM**