

Proposed Special Condition to In-Flight Fire Resistance of Composite Fuselage Material

Applicable to B787

Introductory note:

The following Special Condition has been classified as an important Special Condition and as such shall be subject to public consultation, in accordance with EASA Management Board decision 02/04 dated 30 March 2004, Article 3 (2.) of which states:

"2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency."

Statement of Issue

The FAA has specifically established flammability test method (radiant panel test) and related test criteria for improving the in-flight fire ignition/flame propagation of thermal/acoustic insulation materials, as specified in FAR25.856(a) at amendment 25-111.

The proposed standards are intended to "reduce the incidence and severity of cabin fires, particularly those ignited in inaccessible areas where thermal acoustic insulation materials are typically installed."

The FAA has determined that the fuselage of aircraft consisting of a conventional aluminium fuselage in an inaccessible in-flight fire scenario does not contribute to in-flight fire propagation. However, the Model 787 series aircraft has extensive use of composites in the fuselage, and the conclusions based on the premises of an aluminium structure may not be applicable anymore.

Therefore, to keep consistency with the general safety objective, the Boeing Model 787 Series must provide protection against an in-flight fire propagating along the surface of the fuselage.

B787 – Special Condition to In-Flight Fire Resistance of Composite Fuselage Material

The EASA has reviewed the FAA Special Condition defined here above and considers appropriate to incorporate it into the EASA TC base, according to the following terms :

"The in-flight fire safety of the Boeing Model 787 series composite fuselage must be shown resistant to flame propagation and if the products of combustion, beyond the test heat source are observed, these must be evaluated for acceptability."