



Designation: F3063/F3063M – 16a

Standard Specification for Design and Integration of Fuel/Energy Storage and Delivery System Installations for Aeroplanes¹

This standard is issued under the fixed designation F3063/F3063M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers minimum requirements for the design and integration of Fuel/Energy Storage and Delivery system installations for aeroplanes.

1.2 This specification is applicable to aeroplanes as defined in the F44 terminology standard.

1.3 The applicant for a design approval must seek the individual guidance to their respective CAA body concerning the use of this standard as part of a certification plan. For information on which CAA regulatory bodies have accepted this standard (in whole or in part) as a means of compliance to their Aeroplane Airworthiness regulations (Hereinafter referred to as “the Rules”), refer to ASTM F44 webpage (www.ASTM.org/COMITTEE/F44.htm) which includes CAA website links.

1.4 *Units*—The values stated are SI units followed by imperial units in brackets. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

F3060 Terminology for Aircraft

F3083/F3083M Specification for Emergency Conditions, Occupant Safety, and Accommodations

¹ This specification is under the jurisdiction of ASTM Committee F44 on General Aviation Aircraft and is the direct responsibility of Subcommittee F44.40 on Powerplant.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

F3116/F3116M Specification for Design Loads and Conditions

2.2 *Other Standard:*

US 14 CFR Part 23 Airworthiness Standards: Normal, Utility, Aerobatic and Commuter Category Airplanes (Amendment 62)³

3. Terminology

3.1 The following are a selection of relevant terms. See Terminology F3060 for more definitions and abbreviations.

3.2 *Definitions:*

3.2.1 *main pump, n*—a pump that supplies sufficient fuel to sustain the engine during normal operations.

3.2.2 *emergency pump, n*—a pump that can sustain engine operation at full power in the event the main pump fails.

3.2.3 *auxiliary pump, n*—a pump that can provide some fuel flow during emergency operations but not enough to sustain engine operation at full power. Its function is to aid in priming the engine and suppressing fuel vapors.

3.3 *Abbreviations:*

3.3.1 *cc*—cubic centimetre

3.3.2 *CFR*—Code of Federal Regulations

3.3.3 *RPM*—rotation per minute

4. Fuel System

4.1 *General:*

4.1.1 Each fuel system must be constructed and arranged to ensure fuel flow at a rate and pressure established for proper engine and auxiliary power unit functioning under each likely operating condition, including any maneuver for which certification is requested and during which the engine or auxiliary power unit is permitted to be in operation.

4.1.2 Each fuel system for a turbine engine and compression ignition engine must be capable of sustained operation throughout its flow and pressure range with fuel initially saturated with water at 27°C [80°F] and having 0.75 cc of free

³ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.