Downloaded from http://www.everyspec.com

MILITARY SPECIFICATION

BONDING, ELECTRICAL, AND LIGHTNING PROTECTION, FOR AEROSPACE SYSTEMS

This interim amendment is approved for use by the Department of the Air Force with Military Specification MIL-B-5087B dated 15 October 1964.

PAGE 17

3.3.6, 3.3.6.1: Delete and substitute the following:

"3.3.6 Bonding of aircraft fuel systems in metal skinned aircraft. All metallic components in the aircraft fuel systems can be sources of electrical discharges, and are potentially hazardous if electrically isolated from structure. This potential component hazard shall be eliminated either by grounding and bonding, or proven safe by another method. This requirement specifically includes small metallic items such as name tags and marriage clamps (clamp standoff spacers).

"3.3.6.1 Electrically powered components. Electrically powered fuel system components such as pumps and valves shall be designed and installed to comply with 3.3.2.4.

"3.3.6.2 Small metallic components. Small metallic components in fuel systems, such as name tags, coupling shells, brackets, and clamps, are potentially hazardous and their use shall be avoided whenever possible. If the use of a small component is essential, it preferably shall be designed and installed to comply with 3.3.6.3. If this is not feasible, the component shall have an electromechanically secure connection to structure that measures 10 megohms or less, or shall be proven safe in accordance with 3.3.6.2.1.

"3.3.6.2.1 Maximum energy criteria. This safety criteria is verified by measuring the capacitance (C) of the small metal component, and then the voltage (Vb) at which electrical discharge/breakdown occurs. If $E = 1/2CVb^2$ is less than 0.25 millijoules, the small component may be excluded from bonding and grounding requirements. These tests are intended to be performed in a laboratory at normal ambient temperature and atmospheric pressure.

"3.3.6.3 All other fuel system components. All other fuel system components, such as fuel line (line to line) access doors, fuel line supports, major structural parts, multiple orifice tank outlets, or brackets, shall have an electromechanically secure connection to structure that measures one ohm or less.

Downloaded from http://www.everyspec.com

"3.3.6.4 Instrumentation. Measurement instrumentation used to verify the bonding requirement shall be subject to approval by the procuring activity.

CAUTION

If bonding measurements are performed in fuel tanks that might have fuel vapors present, it is essential that the instrumentation be certified as safe in the specific environment. "

Preparing activity:
Air Force - 11

(Project 6150-F200)