

Electrical Flammability Factors

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FAA Aircraft safety, in many aspects, relies on the design, integration, installation, maintenance, and proper performance of the wiring system over an aircraft's life. Aircraft manufacturers use great care to provide redundant critical systems to improve safety and damage tolerance. An important aspect of wiring system design is the ability of the wiring to adequately absorb failures during normal and abnormal aircraft operation. The Electrical Wire Interconnection System (EWIS) should be able to prevent the propagation of the effects of electrical faults to other independent power sources due to maintenance and human factors. This research paper presents an assessment of factors that occur during flammable events in the presence of electrical arcing inside an aircraft. The paper will also evaluate the consequence of the flammable events and mitigating techniques. The variables will include fault current, material types, dirt accumulation, fluid contamination, maintenance effects, and circuit protection.