

The use of additive manufacturing components within the interior of aircraft presents new risks and challenges that must be taken into consideration with the fire testing of materials. This presentation details the tests that have been performed by the FAA's William J. Hughes Technical Center to understand how various print parameters in the Fused Deposition Modeling (FDM) process affect the flammability of a material. A design of experiments (DOE) test setup was used to evaluate a multitude of different print parameters including; raster width, raster angle, infill percentage, infill pattern, layer thickness, material, and sample thickness. The goal of these tests is to provide worst-case scenarios for each variable in order to simplify future flammability testing of Additive Manufactured parts.