HR2 Overview: TRL6 Test Plan and Recent Data

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OSU material heat release (HR) testing is required to certify (receiving inspection, process control, engineering testing) all large composite panels installed in commercial passenger airplane interiors. Instruments across the globe run daily to produce the data needed to support compliance showings to 14 CFR 25.853(d) for post-crash fire safety. Test coupons representing interior panel constructions are subjected to a pilot ignition flame, and heat is radiated onto the coupon surface to produce combustion heat release profiles. However, multi-laboratory studies testing the same materials at different facilities has indicated that test result reproducibility can be improved.

The HR2 is a next generation material heat release test method developed using a NASA inspired phase-gate process that relies on the statistical evaluation of test data. The project has matured through successful assessments of robustness (TRL 4) and repeatability (TRL 5) into tests of reproducibility (TRL 6) using the two prototype instruments located at the FAA William J. Hughes Technical Center in Egg Harbor Township, New Jersey.

Data has recently been developed to support an evaluation of reproducibility. This data will be shared, along with plans to generate and analyze test data from other units, allowing for the eventual transition of the method into an assessment of range (TRL 7).