

## **Effect of different weightage of Enova® IC3100 silica aerogel on aluminium alloy composites in ISO2685 aviation standard fire-test**

### **ABSTRACT**

The study presents the use of Enova® IC3100 and hardener/epoxy resin on the metal alloy and a hybrid composite of metal with natural fibre (flax) with the percentage of aerogel, for use in aircraft high-temperature region. The main objective of the study is to determine the percentage amount of Enova® IC3100 and epoxy resin/hardener on the hybrid composite. The composites were fabricated using different percentage of aerogel in an epoxy. The composites undergo a fire test using ISO2685 propane-air burner. The results obtained indicate that a less layered aluminium alloy coated with greener and lighter substance mix with epoxy resin/hardener can be used in a high-temperature aircraft application. The hybrid composite with flax fibre presents 5-10% greater than the other composite in terms of fire resistance. The study shows that the composite of aluminium alloy 2024-T3 coated with silica aerogel possesses good properties that resist high-temperature in an aircraft component.

**Keyword:** Aluminium alloy; Composite; Enova® IC3100; Flax fibre; ISO2685 standard

