

# **Large Fireproof Battery Enclosure for electric truck**

## **Abstract:**

The research aim is to investigate the performance of novel enriched mineral fibres (Filava) in polysiloxane SLIRES H62 resin. Specimens were manufactured using a vacuum bagging process and oven cured at 250 C. Specimens were prepared for flexural testing according to BS EN ISO 14125:1998 to obtain flexural strength, modulus, and elongation. The mechanical strength was compared to similar composites, with the aim of determining composite performance index. The flexural modulus (9.7 GPa), flexural strength (83 MPa), and flexural strain (2.9%) were obtained from a three-point bending test. In addition, the study investigates the thermal properties of the composite using a state-of-art Zwick Roell high temperature tensile rig. The results showed Filava/Polysiloxane Composites had an ultimate tensile strength 400 MPa, Young's modulus 16 GPa and strain 2.5% at 1000 C, and no smoke and ash were observed during pyrolysis. Ongoing research is currently taking place to use Filava-H62 in fire-retardant enclosure for lithium-ferro-phosphate Batteries used in electric trucks.