

Composite Manufacturing Suite

Principle:

CREST has an in-house composite manufacturing suite capable of producing laminates via a vacuum infusion process or an out-of-autoclave (OOA) prepreg method.

This gives CREST the flexibility to produce custom laminates for a range of research projects in collaboration with our industrial partners and funding agencies.

Current facilities:

CREST has a range of vacuum bagging consumable materials used to produce laminates via a resin infusion process or from OOA prepreps. The consumables are rated for use with 180°C resin systems.

A large Binder FED 400 force convection oven is available with internal dimensions of 510mm x 800mm x 1000mm and capable of cure temperature of up to 300°C. The oven has an access port to allow for curing of laminates under vacuum in conjunction with out-of-autoclave (OOA) prepreps.

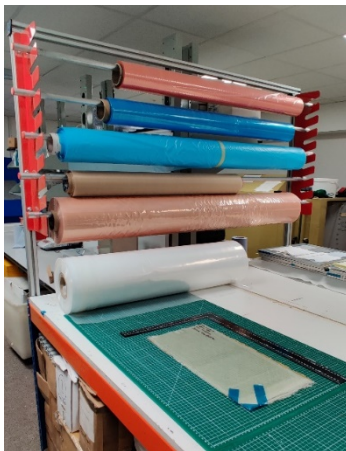


Figure 1: Vacuum bagging layup materials (left) and typical composite layup for a vacuum infusion process (right).



Figure 2: Large programmable composite oven with access port to maintain vacuum during cure.

Typical samples:

CREST has the capability to manufacture composite materials from a range of matrices and reinforcements. Typical polymer resin systems include epoxy, polyester & urethane acrylate while fibre reinforcements are available in carbon, aramid (e.g. Kevlar), glass as well as various hybrid fabrics.

Manufactured laminates are used in projects including surface pre-treatments, protective coatings and adhesively bonded composite joints.

Standards:

The composites are manufactured to customer and research requirements.

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