



Materials Processing

NCCEF offers a broad range of processing equipment for the fabrication of composites via both lamination of prepreg materials and resin infusion of dry fibre preforms.

Pre-fabrication ply kits can be designed using CAD based software and prepared using a fully automatic ply cutter. Autoclave, Quickstep, hot press, vacuum press, oven and resin transfer moulding facilities are also available within NCCEF.

Capabilities

- Dedicated lay-up room
- Cold room (Viessmann FS 1800 SE-213)
- Automatic ply cutter (Lectra Vector TechTex FX)
- Autoclave (LBBC Technologies TC1000 HTHP)
- Quickstep (Quickstep Technologies Pty Ltd Q55)
- Hot press (Dr Collin GmbH P300P/M)
- Vacuum press (Elkom GmbH Vakutherm)
- Oven facilities
- Resin transfer moulding (RTM) facilities



Materials Processing

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Material Storage			
Equipment	Manufacturer & Model	Capacity	Operating Temperature
Cold Room	Viessmann FS 1800 SE-213	2400 x 3000 x 2110 mm	-20°C

Composite Pre-fabrication										
Equipment	Manufacturer & Model	Cutting Window Width	Cutting Window Length	Cutting Height with Vibrating Blade	Maximum Vibration Frequency	Vibrating Blade Type	Vibrating Blade Dimensions	Cutting Height with Draw Blade	Draw Blade Type	Draw Blade Dimensions
Ply Cutter	Lectra Vector TechTex FX	1820 mm	1700 mm	25 mm	6000 rpm	Notched carbide	1.5 x 5.5 mm	4 mm	Titanium	0.4 x 4 mm

Composite Processing													
Equipment	Manufacturer & Model	Capacity	Maximum Temperature	Maximum Heating Rate	Maximum Cooling Rate	Temperature Accuracy	Maximum Pressure	Pressure Accuracy	Vacuum Lines	Prepreg Laminates	Fibre-Metal Laminates	Resin Infusion/Transfer	Thin Film Infusion
Autoclave	LBBC Technologies TC1000 HTHP Thermoclave	1000 mm diameter 1700 mm length [1]	400°C	5°C/min	5°C/min	±5°C	7 bar	±0.07 bar	5x draw 5x monitor	✓	✓	x	✓
Quickstep	Quickstep Technologies Pty Ltd QS5	900 x 900 mm [2]	180°C	20°C/min	15°C/min	±5°C	0.5 bar	±0.05 bar	1x draw 1x monitor	✓	✓	✓	✓
Hot Press	Dr Collin GmbH P300P/M Hydraulic Platen Press	300 x 300 mm [3]	300°C	15°C/min	15°C/min	±1°C	35 bar	±2 bar	n/a	✓	✓	x	✓
Vacuum Press	Elkom GmbH Vakutherm Membrane Press	1500 x 1000 mm	220°C	5°C/min	2°C/min	±2°C	n/a	n/a	1x platen 1x draw	✓	✓	✓	✓
Oven	Thermo Scientific Heraeus T20P	550 x 560 x 630 mm	250°C	5°C/min	n/a	±5°C	n/a	n/a	1x draw	✓	✓	✓	✓
Vacuum Oven	Thermo Scientific Heraeus Vacutherm VT6060M	415 x 370 x 345 mm	200°C	n/a	n/a	±5°C	n/a	n/a	n/a	n/a	n/a	n/a	n/a
RTM	Magnus Venus Plastech Ltd Megaject MKV	200 litre resin 8 litre catalyst	ambient	n/a	n/a	n/a	n/a	n/a	1x draw	x	x	✓	x
RTM	Magnus Venus Plastech Ltd Hypaject MkII	1 litre pre-mixed resin & catalyst	100°C	2°C/min	n/a	±5°C	n/a	n/a	n/a	x	x	✓	x

Footnotes

[1] Maximum design load of 300 kg

[2] Working area for flat and simple contour components

[3] Effective platen opening of 200 mm