



TESTING CAPABILITIES

Mechanical Testing¹ including but not limited to:

Tensile testing - ASTM D638², D3039

Flexural testing - ASTM D790²

Compression – ASTM D6641

V-Notched Rail Shear – ASTM D7078

Short Beam Shear – ASTM D2344

Izod Impact notched and un-notched – ASTM D256, D4812

Sandwich Core Shear Properties – ASTM C273

Sandwich Core Flatwise Compression – ASTM C365

Sandwich Construction Flatwise Tensile – ASTM C297

Sandwich Construction Core Shear Properties – ASTM C393

Sandwich Construction Facing Properties – ASTM D7249

Sandwich Construction Beam Flexural and Shear Stiffness – ASTM D7250

Material Properties Testing (CIC):

Thermal Analysis

TMA: Linear Thermal Expansion – ASTM E831

Glass Transition Temperature – ASTM E1545

DMA: Glass Transition Temperature – ASTM E1640, D7028

Heat Distortion Testing – ASTM D648 by DMA

DSC: Glass Transition Temperature – ASTM E1356, E2602 (MDSC)

Degree of Cure – ASTM E2160

Specific Heat Capacity – ASTM E2716 (MDSC)

continued on back

Notes:

¹ Specimen preparation performed at CIC, testing outsourced to external service providers

² ASTM D638 and D790 non-accredited testing can be done at CIC on 10kN load frame with integrated axial and transverse extensometer system.



Material Properties Testing (CIC) Continued:

Constituent Content

Acid digestion – ASTM D3171, Procedure A (nitric acid) and Procedure B (sulfuric acid)

Oven burn-off – ASTM D3171, Procedure G (for reinforcements that will not degrade at higher temperatures)

Density Determination

Density and Specific Gravity of Plastics – ASTM D792

Density of High Modulus Fibres – ASTM D3800

Viscosity testing

Brookfield (Dynamic Viscosity)

Gel Time/Peak Exotherm

Gel time and peak exothermic temperature of reacting thermosetting resins – ASTM D2471

Shrinkage from cure

Linear and Volumetric

Specimen Preparation (CIC):

Machining of specimens for above listed mechanical testing and thermal analysis testing

Custom machining and sectioning available using HAAS VF-2 CNC mill and Labcut diamond wafering saw