

Hygro-thermal Effects on the Translaminar Fracture Toughness of Composite Laminates

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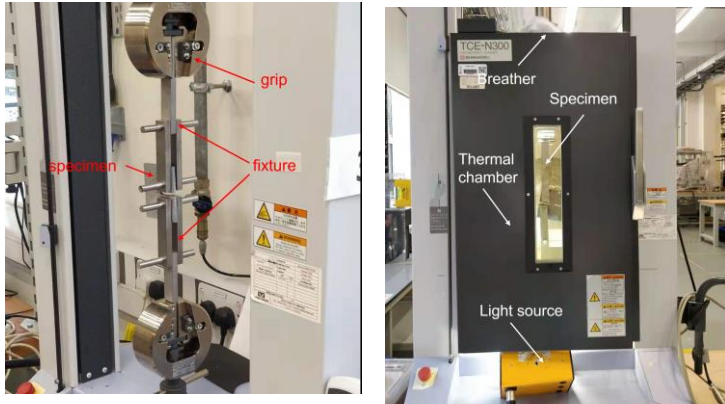
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A Supergen ECR fund 2020 project

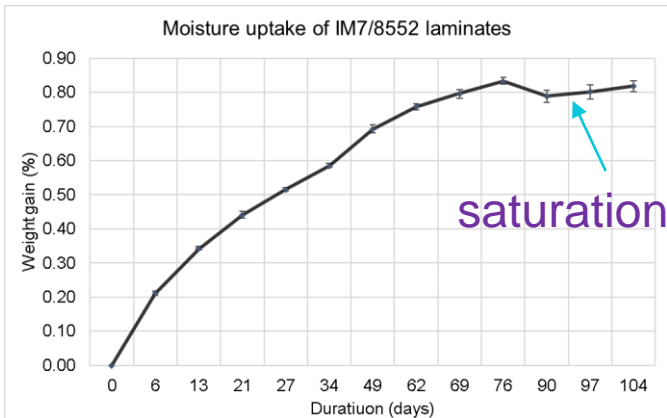
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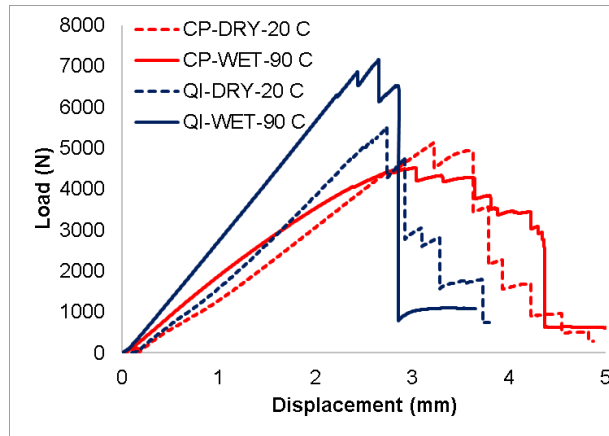
Translaminar fracture toughness of dry and wet IM7/8552 laminates were investigated using compact tension tests.



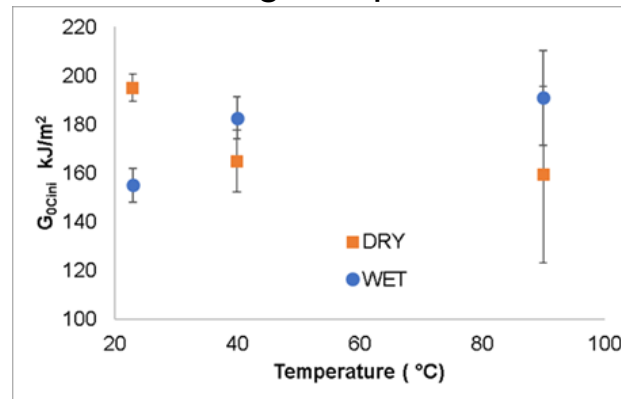
The “wet” specimens were conditioned at 70 °C and 85% relative humidity.



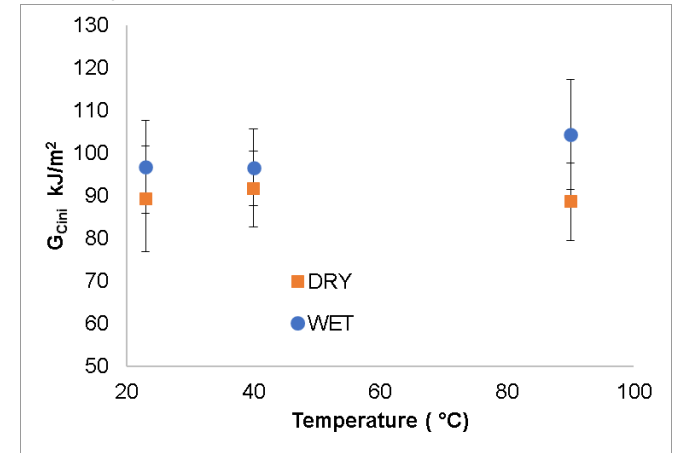
Load-displacement curves of selected cases are shown in the following figure.



The initiation fracture energy of 0° plies obtained from cross-ply (CP) [90/0]_{8S} laminates using compliance calibration



Fracture toughness of the wet QI specimens tested at 90 °C is 17% higher than dry specimens tested at 23 °C



SEM image analysis shows that wet cross-ply (CP) specimen have increased fibre pull-out than dry specimens

