



Development of Novel Post-Tensioned Glulam Timber Composites

<https://research.thinkwood.com/en/permalink/catalogue676>

Author: McConnell, Emma
 McPolin, Daniel
 Taylor, Su

Year of Publication: 2014

Country of Publication: Canada

Format: Conference Paper

Material: Glulam (Glue-Laminated Timber)

Topic: Design and Systems
 Mechanical Properties

Keywords: Basalt Fiber Reinforced Polymer
 Post-Tension
 Four Point Bending Test
 Ductile
 Load Carrying Capacity

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Notes: August 10-14, 2014, Quebec City, Canada

Summary:

Timber as a primary structural material has been forced to continually evolve to keep abreast with the changing demands of the construction industry. This paper presents further research undertaken by Queen's University Belfast to evaluate the advantages provided by the post-tensioning of timber members using novel basalt fibre reinforced polymer (BFRP) rods. Using the high strength, low density, highly durable BFRP tendons experimental investigations utilising the four-point bending method were conducted and monitored. From the experimentation it was found that there was an increase in load carrying capacity, a more favourable ductile failure mode and a further benefit of less net deflection due to the precamber induced by the post-tensioning prior to load application.

Online Access: Free

Resource Link

http://scho.wshd.com/hosted_files/wcte2014/cf/ABS363_McConnell_web.pdf