



Shear Strength of LVL Box Beams in Fire Conditions

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Summary:

This paper outlines a series of experimental tests of LVL box beams designed to fail in shear. Some beams utilised post-tensioning systems to increase the flexural strength and decrease deflection. Fire conditions were simulated using either an ISO 834 furnace test or by mechanically reducing the section dimensions on three-sides of the beam to replicate charring. Comparisons with a simplified calculation method for the fire performance of post-tensioned timber box beams are made and discussed. This paper gives special focus to the shear performance of LVL box beams because previous research had identified that the inclusion of post-tensioning may increase the likelihood of shear failure occurring in LVL box beams, especially in fire conditions.

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Resource Link

http://schr.ws/hosted_files/wcte2014/9c/ABS305_Buchanan_web.pdf