

Stiffness and Ductility of Bolted Connection Laminated Veneer Lumber (LVL) Paraserianthes Falcataria

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Abstract	<p>Sengon wood can be used as an alternative to solid wood, although this type of wood has low mechanical properties, as technology develops, it can be processed into engineered wood products, namely LVL. Furthermore, the problem is finding out how the connection mechanism is, considering that this greatly affects the stability of the structure when the LVL Sengon wood is applied in structural design. This research is focused on examining the parameters of LVL Sengon wood joints using bolts to predict the level of stiffness and ductility of the joints, where wood failure leads to brittle failure. Wood Testing based on ASTM 5652-95 provisions with a distance of one bolt is 5d and for a distance of two bolts is 5d (d = bolt diameter). The test results show that the value of the joint stiffness is influenced by the bolt connection binding force system which will increase the slip resistance. With the increase in the number of bolts the value of the joint stiffness will be greater, this is due to the increased bearing capacity of LVL wood due to the axial force of the bolts. The ductility value of the joint decreases as the number of bolts increases. This is due to the group action factor of the joint, the outer bolt connection will compress the wood which will affect the value of the joint slip and reduce the bending angle of the bolt.</p>
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Author	Ir. DANI NUGROHO SAPUTRO, S.Pd.T., M.Eng.