MECHANICAL, PHYSICAL AND SCREW WITHDRAWAL PROPERTIES OF ENGINEERED WOOD STRUCTURE

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CANDIDATE'S DECLARATION

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ABSTRACT

MECHANICAL, PHYSICAL AND SCREW WITHDRAWAL PROPERTIES OF ENGINEERED WOOD STRUCTURE

Mechanical, Physical and Screw Withdrawal Properties of Engineered Wood Structure bounded with 12% urea formaldehyde added with hardener (Ammonium Chloride) has been studied. The board combination of laminated veneer lumber and particleboard were fabricated with three different sizes i.e <1mm, >1mm and mixture from below and upper than 1mm. The boards produced was evaluated for its modulus of rupture(MOR), modulus of elasticity (MOE), internal bonding (IB), water absorption (WA), thickness swelling (TS) and Screw Withdrawal properties which is screw withdrawal (SW) in according with Malaysia Standard. The diameter of screw used in the study is 7mm while the thread angle is 30°. The screw withdrawal testing was made on two position which are the surface (Laminated Veneer Lumber) and edge (Particleboard). The study revealed that the >1mm shows the best screw withdrawal strength. The best orientation on face in laminated veneer lumber substrate compare to orientation on edge in particleboard substrate, for mechanical properties mixed particle size shows the best strength of bending strength, <1mm particle size has high internal bonding strength and for physical properties <1mm particle size is the best result compared to <1 mm and mixed particle size.

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