**Physical and Mechanical Properties of Medium Density of Oriented Bamboo Scrimber Board from *Gigantochloa atter* (Hassk.) Kurz ex Munro) Bamboo**

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*Abstract:* Scrimber board is a bamboo-based panel in which the main process in preparation raw material is defibering. This study aimed to determine the physical and mechanical properties of medium-density of oriented scrimber board from *Gigantochloa at*ter (Hassk.) Kurz ex Munro bamboo, which is known as ater bamboo. This bamboo has a relatively small diameter and thin walls mainly used for musical instruments and household appliances. The alkali treatments were carried out into the strip-strand raw material in the 0% (control), 2%, and 5% concentration. A three-layer scrimber board with a density target of 0.6 g/cm3 with the isocyanate resin was applied in this study. Thickness swelling, water absorption, and anti-swelling efficiency characteristics of the samples were tested as physical properties while bending, internal bond strength, and compressive strength were considered for their mechanical properties. The results showed that the moisture content, density, thickness swelling, water absorption, and anti-swelling efficiency were in ranged 9.84% to 15.65%, 0.70 g/cm3 to 0.71 g/cm3, 9.25% to 16.16%, 20.69% to 40.01%, and 34.05% to 65.67%, respectively. Meanwhile, the modulus of elasticity (MOE), modulus of rupture (MOR), internal bond, and compressions strength was in a ranged 1187 MPa to 4795 MPa, 8.74 MPa to 29.30 MPa, 0.06 MPa to 0.23 MPa, 17.06 MPa to 22.46 MPa, respectively. Only control boards that passed the quality of second grade of oriented strand board. The alkali treatments have been decreasing the quality of physical and mechanical the board significantly.

*Keywords: Ater bamboo, alkali treatments, strip, strand, anti-swelling efficiency*