

PROPERTIES OF RICE HUSK PARTICLEBOARD FOR EXTERIOR USE

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ABSTRACT

The composite panel from rice husk were manufactured with different particle size (1.0 mm and 0.5 mm) and different resin content (7% and 9%) of Phenol Formaldehyde (PF). The objectives of this study to determine the mechanical properties (MOR, MOE and IB) and physical properties (TS and WA) of rice husk particleboard. This study also wanted to evaluate whether rice husk particleboard is suitable for exterior use. The mechanical and physical tests were performed according to European Standard (EN 310, EN 317 and EN 319). Based on the testing, the particle size of 1.0 mm have highest MOR and MOE value, while particle size of 0.5 mm gave the highest IB value. The smaller particle size gave better performance on physical properties. There were significant different in bending properties (MOR, MOE and IB) and TS and WA properties as the particle size increased from 0.5 mm to 1.0 mm. The value of bending strength and IB strength increased with higher resin content. While, TS and WA increased significantly with lower resin content. However, only TS for board of 0.5 mm particle size with 9% resin content satisfied the minimum requirements, while the other properties did not satisfy the standard.