program book

The 4th

International Symposium of Indonesian Wood Research Society

"Greening the Earth to Continue the Wonderful Use of Wood for Secure Life"

QUALITY PLAZA HOTEL
MAKASSAR, INDONESIA
NOVEMBER 7 - 8, 2012

PROGRAM BOOK

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The Resistance of Bamboo Oriented Strand Board Made from Mixing Bamboo Strands against Termites and Powder Post Beetle Attacked

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Abstract: The objective of this research was to evaluate with the resistance of bamboo oriented strand board (BOSB) made from mixing bamboo strands against subterranean termite (*Coptotermes curvignathus* Holmgren), dry wood termite (*Cryptotermes cynocephalus* Light) and powder post beetle attacked. Three layered OSBs were produced. The strand composition for face, core, and back was 25%, 50% and 25%, respectively. Three (3) bamboos species were used namely Betung bamboo (*Dendrocalamus asper* Schult.F) Backer ex. Heyne) (B), Andong bamboo (*Gigantochloa verticillata* (Willd.) Munro) (G) and Ampel bamboo (*Bambusa vulgaris* Schrad. Ex Wendl.) (L) Nine (9) combination of BOSBs were prepared from these bamboos, namely 1) B/B/B; 2) B/G/B; 3) B/L/B; 4) G/G/G; 5) G/B/G; 6) G/L/G; 7) L/L/L; 8) L/B/L; and 9) L/G/L. Commercial MDI adhesive was used to bond the strands to BOSB in amount of 5%.. Paraffin was added in amount of 1%. The resistances of BOSBs against *C. curvignathus* and *C. cynocephalus termites* were evaluated in accordance to Indonesia standard (SNI 01. 7207-2006). The resistance of BOSBs against powder post beetles was evaluated using semi-field test. The results indicated that the resistance of BOSBs against *C. curvignathus* increased 2 times compared to the solid bamboo. All the bamboo solid used belongs to "poor" (level 4) and after converted into BOSBs the resistance increased to become "resistance" (level 2). Conversely, the resistance of BOSBs against *C. cynocephalus* attacked decreased 2 times compared to the solid bamboo. All the bamboo solid used belongs to "very resistance" (level 1) and after converted into BOSBs the resistance lowered to become "moderately resistance" (level 3). Whether BOSBs prepared from single species bamboo or mixing bamboo strands had similar resistance to *C. curvignathus* and *C.cynocephalus* attacked. The species of powder post beetle attacked the BOSBs was *Anobium* sp. The resistance of solid bamboo against *Anobium* sp was varied. The average weight loss of *D. asper*, *G.verticillata* and *B. vulgaris* bamboos were 3.19%, 17.39% and 25.36%, respectively. The average weight losses of BOSBs were in the range of 2.85-3.87%. *G.verticillata* and *B vulgaris* bamboos belong to very susceptible to *Anobium* sp attacked. After converted into BOSBs their resistances were increased around 5 times. Whether BOSBs prepared from single species bamboo or mixing bamboo strands had similar resistance to *Anobium* sp.

Keywords: Bamboo oriented strand board (BOSB), Bamboo, Subterranean termite, drywood termite, powder post beetles