**Durability of Impregnated Fast Growing Wood by Nano Silica from Betung Bamboo Sticks**

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*Abstract:* Sengon wood (*Falcataria moluccana*) is one of fast growing species that is widely planted in Indonesia. It has low durability particularly against termites. The objective of this research was to analyze the durability of impregnated sengon wood by using MEG (*monoethylen glycol*) and nano silica from betung bamboo sticks. The treatment were consisted of untreated (water treated), 50% MEG, 0.5% nano silica in 50% MEG, 0.75% nano silica in 50% MEG and 1% nano silica in 50% MEG. The impregnation process was initiated by applying 0.5 atm of vacuum for 60 min and followed by 2.5 bar of pressure for 120 min. Graveyard test based on ASTM D 1758-06 and laboratory test against dry-wood termite based on SNI 7207 : 2014 were used in this study. The results showed that MEG and nano silica impregnation treatment had significant effect on durability. The optimum treatment was MEGsilica 0.75% treatment.

*Keywords: durability, impregnation, MEG, nano particles, sengon, silica.*