LAPORAN AKHIR
PENELITIAN STRATEGIS NASIONAL

TEMA
INFRASTRUKTUR, TRANSPORTASI
DAN TEKNOLOGI PERTAHANAN

JUDUL PENELITIAN
PENGEMBANGAN TEKNOLOGI BARU RAMAH LINGKUNGAN DALAM PEMBUATAN COM-PLY SEBAGAI ALTERNATIF PENGGANTI KAYU LAPIS

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November, 2014
Abstract

Technology for producing binderless comply has been developed as a method to create a type of composite products that are free of formaldehyde compounds. Our previous research has shown that the application of oxidation treatment can be applied in the manufacture of comply without adhesive. This study was aimed to evaluate the characteristics of binderless comply that using various amount of veneer layers and to evaluate the possibility of utilization several wood species as veneer layers. In conventional comply that using adhesives, more veneer layers are potentially to increase the strength of comply. In this research, however, the presence of veneer in solid shape are potentially to complicate in the oxidation process due to the process was very affected by accessibility of chemical component of raw materials. Comply that were produced consist of various layers, namely 3, 5, and 7 where, each type using 2, 3, and 4 veneers layers respectively. There were four proportion of oxidant between veneer and particles, namely 1 : 3, 1 : 4, 1 : 5 and 1 : 6. The possibility of utilization several wood species were conducted using six wood species, namely, sengon, jabon, mahagony, candlenut, afrika, and pine. The results showed that the differences of comply structure layers affect the characteristics of produced comply. Seven layers structure and 1 : 3 of oxidant proportion is the optimum combination to produce comply with the best characteristics. Utilization of various wood species as veneer layers have significant effect on binderless comply characteristics. However all of comply types have good characteristics and fulfill almost of parameter in JIS A 5908 2003. These indicated that utilization of various wood species is possible to be veneer layers in comply production without any negative effect on binderless comply characteristics.

Keywords: comply, veneer, oxidant, binderless, wood species, pine, mahagony