OPTIMUM OXIDANT LEVEL DISTRIBUTION FOR PRODUCING BINDERLESS COM-PLY

Suhasman, Andi Detty Yunianti, Sahriyanti Saad

Laboratory of Forest Product Utilization and Processing,
Faculty of Forestry, Hasanuddin University, Makassar, Indonesia

Corresponding author, email: suhasman@yahoo.com

Abstract

Oxidation treatment to activate the chemical components of wood to be able to produce bond formation between the particles have been successfully applied in the manufacture of binderless particleboard. Produced particleboard has a high internal bond strength, however, it has a low modulus of rupture. To improve the bending strength, addition of veneer layers on both surfaces are needed. This product is called as com- ply. Because of low accessibility of chemical component of veneer layer compared to particles, then the possibility of activation of the chemical components of veneer is still questioned. This study was aimed to investigate the possibility application of oxidation treatment to produce com- ply and to determine the optimum oxidizer composition between particles as the core layer and veneer as surfaces layers. Wood species that used to produce both of particle and veneer are sengon (Paraserianthes falcataria). Oxidant levels composition that used are; 3 : 1, 4 : 1, 5 : 1, 6 : 1, 7 : 1, and 1 : 0 w/w (particle : veneer). The results showed that the manufacturing of binderless com- ply using oxidation treatment is possible to be applied. Optimum oxidizer level composition between particle and veneer is 6 : 1 w/w. The produced com- ply fulfill the JIS A 5908 2003.

Keywords: com- ply, oxidation, veneer, particle, Paraserianthes falcataria