Effect of nanoclay on the performance of particleboard made from mixed wood waste

ABSTRACT

The purpose of this study is to evaluate the effect of nanoclay on particleboard properties which made from mixed wood waste. Nanoclay was used at three different percentages:1, 3, and 5% (based on weight of adhesive). For comparison purposes, particleboard without nanoclay were also produced. Various board properties such as modulus of elasticity (MOE), modulus of rupture (MOR), thickness swelling (TS), water absorption (WA) and internal bonding (IB) were determined according to JIS A 5908 : 2003 Standard. The results showed that the addition of nanoclay significantly affect the mechanical properties of particleboard. Based on the results obtained, the value of MOE, MOR and dimensional stability of particleboard increased by adding 1% of nanoclay.