PROPERTIES OF CEMENT BOARDS FROM DIFFERENT PERCENTAGE OF SODIUM SILICATE (Na_2SiO_3) AND OIL PALM TRUNK (OPT) LAYERS

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ABSTRACTS

PROPERTIES OF CEMENT BOARDS FROM DIFFERENT PERCENTAGE OF SODIUM SILICATE (Na_2SiO_3) AND OIL PALM TRUNK (OPT) LAYERS

The objective of this study to investigate the physical and mechanical properties of cement boards from different percentage of sodium silicate (Na_2SiO_3) and oil palm trunk (OPT) layers. Variable factors were layer of OPT (layer 1, 2 and 3) and different percentage of additive improve bonding, sodium silicate (0%, 3% and 5%). The physical and mechanical properties were tested as modulus of rapture (MOR), modulus of elasticity (MOE), internal bonding (IB), thickness swelling (TS) and water absorption (WA) were evaluated based on the Malaysian Standard (MS 544: 2001). Were analyzed using software package (SPSS) used for statistical analysis to determine significant different of the variable. Mechanical and physical properties of cement board depends on the properties of OPT layer and the percent of additives. The most better layer was layer 2, because in this layer have both of vascular bundles and parenchyma cells, and for perfect bond the cement and particle, the 3% of sodium silicate (Na_2SiO_3) show the better bonding agent.