MECHANIC AND PHYSICAL PROPERTIES OF PARTICLE BOARDPANELS PRODUCED WITH HORNS SHEATHS

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ABSTRACT

Two IP / HP and AP / HP bio composites, each made from a horn-clad powder resin and reinforced respectively with Iroko and Ayous wood particles, ranging in size from 125 to 625 µm were characterized. The best physical and mechanical properties were obtained at 225 µm. The values of thickness swelling ratio, density, modulus of elasticity, tensile strength modulus and internal cohesion of IP / HP and AP / HP at (225 µm) are respectively (21% for 2H and 22.4% for 24 hours, 600 kg / m3, 1850 MPa, 22.8 MPa and 0.52 MPa) and (17% for 2H and 19% for 24 hours, 750 kg / m3, 200N, 1590 MPa, 20.2 MPa and 0.44 MPa). It is deduced from these values that IP / HP and AP / HP are resistant but IP / HP is more resistant than AP / HP and can be used in a dry environment. The developed resin can be used in the wood industry.

Keywords: Bio-composites, keratin, particle board, horn cases, horn particles.