

Supplementary Material

Performance of Impregnated Paper Decorated Blockboard

Manufactured using HDF as Equilibrium Layer

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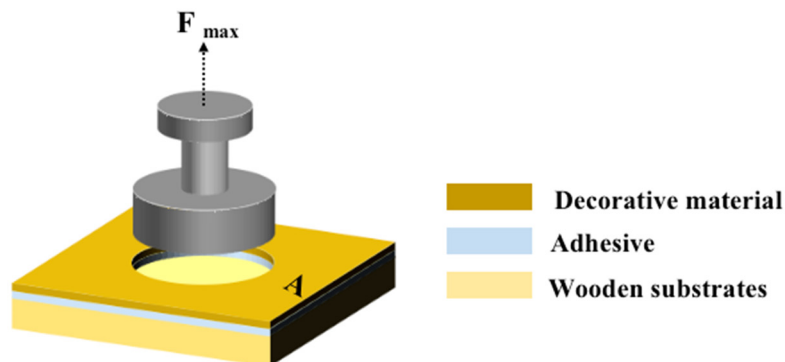
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File S1: Details of surface bonding strength

At first, cut an annular groove with an inner diameter of 35.7 mm on the surface of the test piece (50 mm x 50 mm). When cutting, it is required to penetrate the decorative material but the depth cut into the wood substrate shall not exceed 0.3 mm. Then bond the special chuck with the specimen using the epoxy resin as adhesive (or hot melt adhesive).



The surface bonding strength was measured using a Multi-Function Mechanical Testing machine (Jinan Shijin Co.Ltd, 10kN), with a crosshead speed of 10 mm min⁻¹. When bonding failure occurred between the decorative material and the substrate, the maximum damage load (F_{max}) was output. The surface bonding strength value (∂) was calculated based on the contact area A . (The calculation formula was as follows according to GB/T 17657-2013)

$$\partial = \frac{F_{max}}{A}$$

∂ ——Surface bonding strength value (MPa)

F_{max} ——Maximum load when the surface layer was damaged (N)

A ——Bonding area of the specimen to the test tool (1000 mm²)