ABSTRACT

PROCESSING RECYCLED FABRIC WASTE MATERIALS INTO ROOM PARTITION PRODUCT DESIGN

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The increasing volume of textile waste due to high clothing consumption and industrial production residues has led to significant environmental issues, particularly in the form of pollution and the accumulation of non-organic waste. This study aims to design a room partition product using recycled materials derived from textile waste, employing the Material Driven Design (MDD) approach as the primary design method. Cotton textile waste was selected as the main material due to its high absorbency and its origin from environmentally friendly natural fibers. The material processing stages included shredding the fabric into fibers, mixing with four types of adhesive (PVA wood glue, cement, PVAC white glue, and flour-based glue), molding in wooden frames, and compressing the mixture. Test results indicated that the flour-based adhesive—composed of wheat flour, cornstarch, and vinegar—yielded the best performance in terms of structural integrity and bonding strength. The resulting composite material was then applied to a room partition design featuring a mahogany wood frame and folding hinge system. The final product demonstrates the potential of textile waste to be utilized as an alternative material in interior design, offering not only aesthetic and functional value but also supporting sustainability principles.

Keywords: *recycled, textile waste, room partition, sustainability*