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The Thesis Submitted for the Degree of M.Sc (In wood Composite products)

Recycled composite: Efficiency of waste paper for furniture making.

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Abstract

Reuse of recycled cellulose resources depends on the type and amount of waste and access to technology. Some of these processes are very simple and some are complex and require expensive equipment. In Iran, newspaper paper is widely used after its invalidation. According to an expert on cellulosic composites, one of the uses that has not yet been tested is its use to make members of a furniture structure. The purpose of this study is to investigate the possibility of making a new composite product using waste paper and polyvinyl acetate adhesive. The use of this adhesive indicates that the researcher intends to use this structure indoors. In the first stage, test boards were made to achieve the best and most cost-effective combination of conditions, and then the main structure was formed by making several molds to shape the members of a bench. The density of the boards at three levels of 0.3, 0.4 and 0.5 g / cm3 and the amount of polyvinyl acetate adhesive at both levels were 30 and 40% of the variables of this study. Waste newspaper paper and polyvinyl acetate adhesive were mixed in certain proportions and test boards were made by cold pressing for 24 hours. Mechanical tests including shear strength, screw holding strength, modulus of rupture and modulus of elasticity on the edge and width, internal adhesion and physical properties including water absorption and swelling of 2 and 24 hours were performed on the test specimens. The results showed that with increasing density, most of the mechanical properties increased while water absorption decreased. On the other hand, with increasing the amount of adhesive, mechanical properties increased while no significant change in physical properties occurred due to the increase of adhesive.

Keywords: Waste Newspaper Paper, Composite Product, Polyvinyl Acetate, Physical and Mechanical Properties.