

Fiberboard: An Option for Recycling Wood Treated With Waterborne Preservatives

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Abstract

Preservative-treated construction and demolition waste is disposed in landfills at a rate of 31 lb./person per year and is increasing rapidly. In Dane County, Wisconsin (population ~250,000), this is enough fiber to manufacture approximately 125,000 4 by 8 (1/4-in.) fiberboard sheets per year. Although preservative-treated plywood has recently become available, low-cost preservative-treated composite products analogous to particleboard, fiberboard, and OSB are not available and would provide an outlet for the increasingly large amounts of waste preservative-treated wood. Approximately 50 percent of southern pine construction lumber used today is treated with chromated

copper arsenate (CCA). Other preservatives such as ammoniacal copper quaternary (ACQ) are also increasingly being used. Untreated southern pine heartwood and 0.4 pcf retention CCA-C, ACQ-B, ACQ-D treated southern pine were chipped, steam refined, and pressed into 1/4-inch panels using 10 percent phenol-formaldehyde resin. Performance tests showed that the ACQ-D and CCA-C medium density fiberboard met industry standards for tensile strength, elasticity, rupture, and thickness swell. Work in progress includes exterior durability tests and assessment of the effects of resource variability and manufacturing parameters on product performance.

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The Use of Recycled Wood and Paper in Building Applications

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