

## PERFORMANCE OF COTTON RAG PULP IN FIBER CEMENT SHEETS

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### **Abstract.**

Cotton rag pulp produced from waste cotton rag generated by garment manufacturer has been evaluated as reinforcement in fiber cement products. Kraft pulping process is suitable for processing of cotton rag pulp and no chemicals or additives are required. These fibers are longer, coarser than most wood fibers and do not contain any Acid or Lignin. Cotton rag pulp has been found to provide many benefits in fiber cement applications due to their high modulus, high fiber strength and low Lignin content. Laboratory preparations of multiple formulations of fiber cement sheets have been carried out incorporating these fibers and have found higher strength properties. Subsequent pilot plant and main plant trials confirm many of the laboratory findings and establish suitability of cotton rag pulp as reinforcement in fiber cement sheets. Fully cured fiber cement sheet made with this pulp reinforcement exhibits high modulus of Rupture(MOR), high fracture energy (toughness), flexibility and excellent dimensional stability. Accelerated aging tests were also run and high performance mix designs showed the most strength retention after aging.