

Contract No: FAIR-CT96-1486

Title: Novel Closed-Loop Technology for Panel Recycling

Duration: 01/01/1997 – 31/03/2000

Abstract

The objective of this project was to develop a recycling process for the production of medium density fibreboards and lower grade paper or paperboard via the use of waste boards. The new boards will have acceptable properties addressing in this way the already existing and progressively gaining more importance problem of waste management of old furniture. The above-mentioned process would be followed by using exclusively fibres produced by pulping waste panels. Furthermore, the black liquor generated by the pulping process would be used to substitute up to a level of 30% synthetic resins such as amino and phenolic resins used in the production of wood-based panels. Another objective was the further recycling of the panels produced by this process.

CHIMAR was the project coordinator and involved in all of its different tasks and subtasks. The results of the project were the production of UF and PF-bonded lab boards, with improved mechanical strength and water resistance, by using up to 60 and 100% replacement of virgin wood fibres with recycled ones respectively as well as lab preparation of corrugated papers and beer mats at raw material substitution levels of 50 and 30% respectively. PF resins have also been synthesised using up to 20% substitution of phenol with spent pulping liquor, with no impairment of their bonding properties. It was also found that the recycled boards could be recycled again at least once (**closed-loop**).