

Contract No: QLK5-CT-1999-01221

Title: High added value composite panels through recycling of waste lignocellulosic materials

Duration: 01/01/2000 – 31/12/2002

Abstract

The objective of the project was the development of a new recycling technology for the processing of waste composite panels (particleboard (PB), fibreboard (MDF)) and waste low-grade paper, either alone or in mixtures, to obtain fibres suitable for the production of medium density fibreboard, a valuable commodity. The technology was based on an application of the extrusion technique and targeted at reactivating the aminoplastic resin used for the bonding of waste panels, so as to enable reduction of the resin level needed to rebond the fibres obtained through recycling. For comparative studies, waste PB, MDF, paper and mixtures therefrom, defibrated in a conventional refiner as commonly used in the MDF industry.

CHIMAR's contribution to the project centred on the testing of fibres' behaviour towards resins by modification of urea-formaldehyde resins, testing and assessment of fibres towards bonding as well as the lab-scale production of boards with the fibres produced and testing of their mechanical properties. CHIMAR succeeded in modifying the UF resins in such a way that increased the bondability of the fibres produced from waste materials and mixtures therefrom and in producing boards with upgraded properties by using fibres derived from waste materials and modified resins. Finally, CHIMAR established the pressing conditions for the production of such boards that would be used during the pilot-scale board production of the said project.

The technology developed in the framework of this project is now protected through International (PCT) patent application (WO 98/24605)