INNOVATIVE USED TYRES RECYCLING AND RUBBER SINTERING PROCESS FOR ECO-FRIENDLY URBAN EQUIPMENT FABRICATION (ECO-RUBBER)

Programme area: Recycling

Coordinator: Valentín Polo Ramírez
Asociación de investigación de materiales plásticos y conexas – AIMPLAS, Spain
E-mail: proyectos@aimplas.es
Tel: +34 96 136 60 40

Partners: Instituto de Biomecánica de Valencia (IBV), Spain
Recipneu, Portugal
Bases Poliméricas 2006, S.L., Spain

Website: www.eco-rubber.eu

Benefits (max. 150 characters incl. space): An adapted industrial recycling process to supply innovative recycled rubber urban furniture products manufactured by an innovative sintering process.

Keywords: Recycled rubber, urban furniture
Sector: C22.1.9 - Manufacture of other rubber products
Type of solution: Product & Process

Duration: 01/07/2009 – 31/12/2011
Budget: € 1 022 304 (EU contribution: 51,75 %)
Contract number: ECO/08/239112/SI2.535300

Summary

The 27 countries of the EU had to dispose of 3.4 million tonnes of tyres in 2007 alone, according to the Tyre and Rubber Manufacturer’s Association. Only 38% of those were recycled while 32% were used as fuel – substituting one problem for another in the form of emissions.

The main goal is to implement an eco-friendly and profitable process to use recycled tyres as a raw material for obtaining high quality urban furniture products.

It is planned to industrialize and implant a new sintering process using crumb recycled rubber as a raw material. Being necessary to optimize the complete line: grinding (WP2), mixing (WP4) and sintering processes (WP5). During WP3 the urban product will be defined and designed. To eliminate the emotional barriers to the use of urban furniture made of recycled rubber, an eco-label will be implanted, showing the benefits of the use of this kind of recycled material (WP6).

According to the characteristics of elasticity of used tyres, employing them to fabricate urban furniture will mean an improvement in the urban comfort and safety. As a result, a new market for the crumb recycled rubber will emerge to use it as a raw material for high-valued products.
Expected and/or achieved results

The key outcomes of the ECO-RUBBER project are:
- An adapted and improved grinding process:
  1. To obtain the targeted particle morphology and zero contaminants
  2. To improve the morphologies synergy blends to obtain recycled rubber with enhanced properties.
- An optimized sintering process including dosing chamber and pre-heated phases.
- An Ecolabel stamp for the developed products in order to eliminate user attitude barriers to the use of urban furniture made of recycled rubber.
- The selected urban innovation which will be safe, comfortable and environmentally-friendly.
- An aid the introduction of simulation programs into the design process of recycled products that enables to predict and assess the final product performance.

The information sheet will be published in the Eco-Innovation website. The EACI reserves the right to edit the information sheet for content and length.