PROWASTE - EFFICIENT UTILIZATION OF PLASTIC WASTE THROUGH PRODUCT DESIGN AND PROCESS INNOVATION

PROWASTE

The greater percentage of the scrap of plastic waste sorting is presently sent to landfill or energy recovery. A small part is recycled to realize beams for urban/outdoor furniture. The low compatibility of the different polymers and the contamination by non-polymeric materials result in poor mechanical properties and in the use of over-dimensioned beams, leading to heavy and not attractive products. The idea promoted by PROWASTE is to introduce longitudinal pultruded rods in the recycled plastic beam without substantial modification of the existing plants. The result is a significant enhancement of flexural stiffness and creep resistance, allowing to use thinner beams and to obtain lighter products, with greater aesthetic features than the actual recycled furniture. Within the project, an automated loading system of the pultruded rods will be developed; one of the industrial partners will start-up a new intrusion line, equipped with the rods loading system. Innovative urban/outdoor furniture using the reinforced beams in view of large-scale production will be designed and validated. Life cycle assessment of the new products and comparison with competitors will be carried out.

Benefits

Reduction of unsorted plastic waste destined to landfill or incineration. Availability to urban/outdoor furniture market of enhanced recycled products.

Results

- A reduction in the volume of unsorted plastic wastes destined to landfill, incineration or energy recovery and a corresponding increase in the volume sent to mechanical recycling.
- Availability to urban/outdoor furniture market of more environmentally friendly recycled products with enhanced mechanical and aesthetical properties.
- Creation of partnerships among European industries not participating in this project, involving: • European industry operating in the field of recycled plastic lumber, able to produce the reinforced beams using the technology promoted by the project; • European company operating in the field of urban/outdoor furniture, using the innovative recycled plastic lumbers to produce benches, seats, planters and fencing.

Partners and coordinator

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Budget

Overall budget: 1.566.984,00 € (EU contribution: 50,00 %)

Key documents

- Project Fact File [8]  
  DOC 367 KB

In brief

Sector: Recycling

Duration: 28/06/2010 to 31/07/2013

Contract number: ECO/09/256120

Tags:
  plastic  
  recycling
Media coverage

- **ESPAÑA, SEGUNDO PAÍS DE LA UE EN RECICLAJE DE PLÁSTICOS** [9]
  Teinteresa.es - 29/07/2014
- **Posizionata una panchina nel giardino di Melissa** [10]
  News Mesagne - 17/05/2013
- **Novità nel giardino di Melissa: posizionata panchina “Brindisi”** [10]
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