PHOENIX Low-cost processing of waste plastics

"We are extremely enthusiastic about the developed prototype and will continue to integrate it in a mobile factory for demonstration purposes."



Introduction



The vast amount of plastic debris in the oceans is a mondial problem. A substantial part of these plastics originate from rivers and the sources that end up in rivers.

This project was initiated to add value to disposed plastics so that they do not end up in the ocean. The goal was to develop technologies for reprocessing plastics that are caught in rivers or collected from municipal disposal areas in order to add value. A prototype extruder was developed to process a mixture of multiple kinds of plastics. The melt can easily be caught in moulds for simple products, like flip flop soles, tiles, coins or plates. Despite contaminations and the mixture of plastics input, the resulting mechanical properties turn out to be sufficient for this kind of products. By combining the extruder with a granulator and several moulds a mobile factory was developed by the project partners.





Approach

Several student groups have worked on the following topics:

- The composition and processability of envisaged plastics
- Low cost processing technologies
- Potential products to be produced
- Integration in a mobile factory
- Several demonstration projects in the field

By now, the mobile factory has gained a lot of attention in the Netherlands. Already multiple public events have been organised with great enthusiasm from the project partners, as well as the participants. Expectedly, many new ideas will evolve from this project.





This research is co-financed by Regieorgaan SIA, part of The Netherlands Organisation for Scientific Research (NWO)



PHOENIX Low-cost processing of waste plastics

The process

Collection

Sorting & shredding



Extrusion







Demonstration product

www.saxion.nl/lightweight





