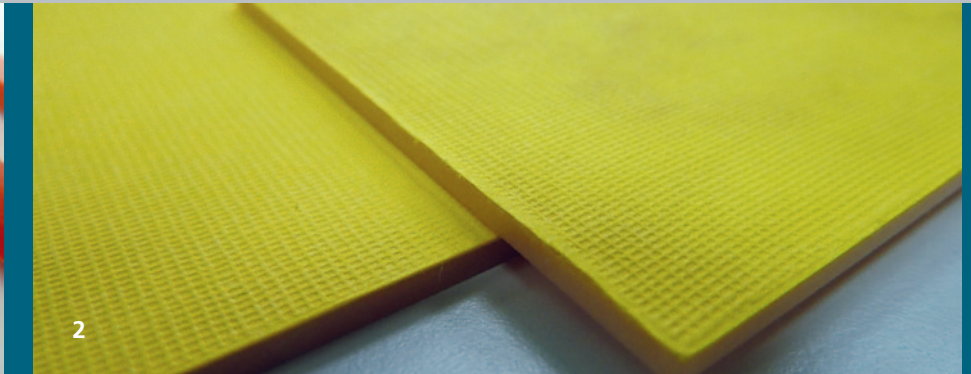




1 Coloured MouldPulp granulate and injected test specimen.



2 MouldPulp granulate and injected plates with different textures.

MOULD PULP

DEVELOPMENT OF DURABLE, FULLY BIO-BASED THERMOPLASTIC COMPOSITES FROM BIOPLASTICS AND PULP FIBRES FOR INJECTION MOULDING APPLICATIONS

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About the Project

The motivation to perform the project is the promising wood-polymer concept DuraPulp® from cellulose pulp and PLA. It is fully renewable, shows good mechanical properties, a perceived naturalness and nice tactile properties and can be dyed with clear colours.

The overall project aim is to develop a processing technology that allows making injection moulded parts out of DuraPulp® but keeping the material identity.

The project consortium covers the whole value chain from a raw bio-based material up to plastic products for consumers. It consists of R&D-institutes, material, application and packaging developers, raw material producers, and plastic processing companies.

The multidisciplinary and international approach is required to reach the project goals:

- Preparation of functionalized fibres
- Development of bioplastics
- Plastics processing
- Techno-economic and environmental assessment

The technical approach will lead to high fibre amount but however to a gentle compounding process and a homogenous fibre dispersion.

The granules will be injection moulded to technical parts. The material properties and moulded parts characteristics will be tested and evaluated. A recycling concept will be elaborated. The development process is framed into a techno-economic and ecological assessment.



1

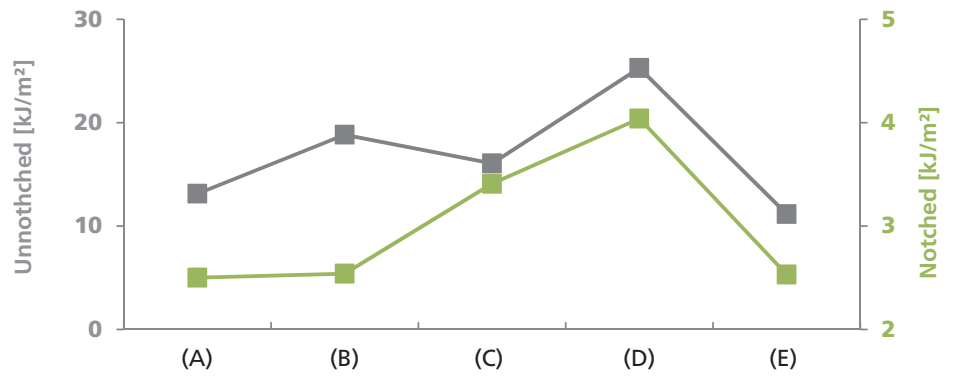


2

- 1 Extruded MouldPulp material.
 2 In-Mould labeling with DuraPulp® and MouldPulp granulate.

- (A) PLA + 30 wt.-% Pulp
 (B) PLA + 25 wt.-% Pulp
 (C) PLA + 20 wt.-% Pulp
 (D) PLA + 20 wt.-% Pulp + IM
 (E) PLA + 20 wt.-% Cotton

Charpy Impact Strength



Consortium



Stress-strain behavior

