

Consortium

Led by the Fraunhofer Institute for Process Engineering and Packaging IVV in Freising, the Circular Flooring consortium consists of eleven companies and research institutions from Austria, Belgium, France, Germany and Greece.

Project partners



Linked third parties



Project profile

Project:

Circular Flooring (New products from waste PVC flooring and safe end-of-life treatment of plasticisers)

Funding programme:

The Circular Flooring project receives funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 821366.

Project duration:

June 2019 – August 2024

EU funding:

EUR 5.4 million

Coordination

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in LinkedIn Group: Circular Flooring – Pioneering
Recycling Process for PVC Waste



EU project Circular Flooring Environmentally friendly recycling of post-consumer PVC floor coverings

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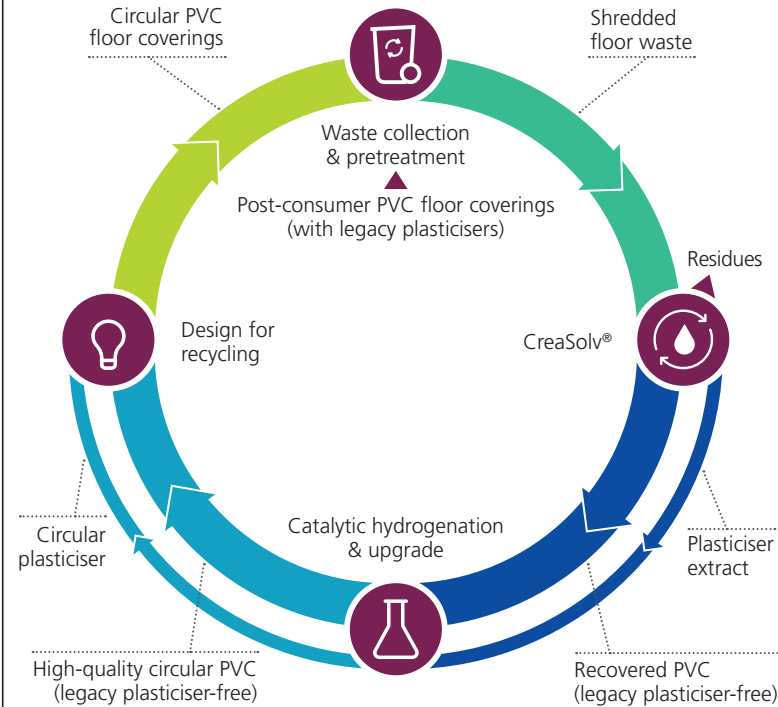
Used flexible PVC floor coverings may contain specific plasticisers that can no longer be used today because of the European REACH regulation that aims to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. These legacy plasticisers cannot be removed by the currently used and well-established mechanical recycling processes. Until now, the only way to dispose of end-of-life flooring containing these plasticisers has been thermal recovery, which wastes valuable raw materials.

Focus of Circular Flooring

The EU project Circular Flooring is focused on the recovery of a PVC compound from post-consumer PVC floor coverings and the separation of legacy plasticisers in order to create a recycled material for the manufacturing of new PVC floor coverings. For this purpose, the Circular Flooring consortium uses the patented, innovative CreaSolv® Plastic recycling process developed by the Fraunhofer Institute for Process Engineering and Packaging IVV. The high-quality recovered PVC compound is compliant with EU legislation and meets consumer needs with regard to circular economy.

CreaSolv® – an effective plastic recycling process

The CreaSolv® Technology for PVC has already proven its viability in the lab. As part of the Circular Flooring project, the technical and commercial feasibility of this recycling process for post-consumer PVC floor covering waste will now be demonstrated on a larger technical scale.



CreaSolv® – an effective plastic recycling process



The CreaSolv® Process uses solvent-based formulations that are not classified as hazardous according to GHS (Globally Harmonized System of Classification, Labelling and Packaging of Chemicals) and therefore poses no risk to consumers or the environment. To recycle PVC floor coverings, researchers developed selective solvent-based formulations that recover the PVC compound from end-of-life floor coverings and separate it from specific phthalate plasticisers like DBP, DIBP, BBP and DEHP.



These phthalate plasticisers are safely transformed into REACH-compliant substances using an additional chemical process.



The recycled PVC compound will be made ready for re-use as a high-quality secondary raw material with tailor-made additives and stabilisers. This process allows the environmentally friendly recycling of PVC floor coverings containing plasticisers which are classified under REACH.

EU project Circular Flooring Benefits for the European Society

In 2015, the EU agreed on a package of measures that would help transition Europe to a circular economy and thereby reinforce its competitiveness around the world, promote sustainable economic growth and create new jobs.

The transition to a circular economy shall provide economic benefits of around 1.8 trillion euros by 2030 – around 900 billion euros more than by maintaining the linear model. It can also help reduce the burden on the environment, which has positive effects on biodiversity and human welfare.

By using the CreaSolv® Recycling process, the Circular Flooring project helps the EU in its goal of establishing a circular economy in Europe.

Benefits for the European society:

- Contribution to establishing a circular economy in the EU
- Reduction in consumption of primary resources
- Removal of legacy plasticisers from the plastics life cycle and safe destruction of these plasticisers
- Recovery of the inherent value of plastic waste
- Increase in recycling rates of plastic waste
- Reduction of greenhouse gas emissions
- Creation of new business opportunities within the circular value chain



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