



RECYCLING CONCEPT

Recycling Projects

ERFMI.

EUROPEAN RESILIENT FLOORING MANUFACTURERS' INSTITUTE

EuPolySep Project

- Run by PCE
- Based on invention by Australian company PVC separation Australia
- Developed delamination process for multilayer polymers
- ERFMI worked with members to send flooring samples to Australia for processing
- Some members have received separated samples back
- Feedback?

Background

- PCE has signed exclusive agreement to set up Pilot Plant in Europe
- Asked for interested parties/ companies to sign letter of intent which require a certain commitment for funding of 2020 as well as support with testing etc.
- ERFMI suggestion to fund via H2020 project rather than requiring industry funding with limited information.

The Australian process

Intellectual Property and Trademarks

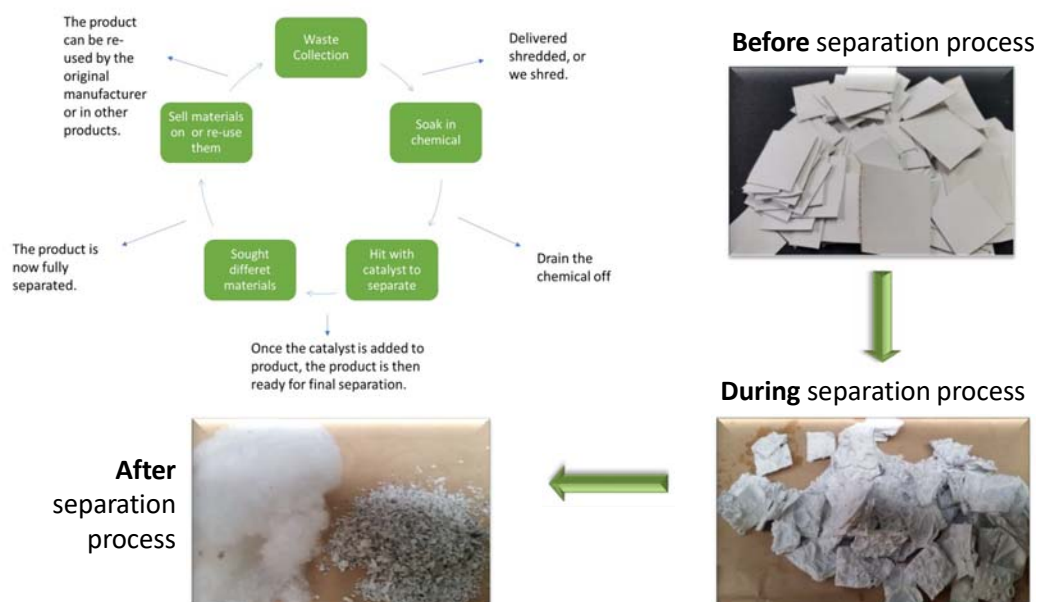
Patent owned or currently under application by PVC Separation

Jurisdiction	Patent Details	Description
European Union	Application No. 17842451.1	Separating Polymer from composite structures.
Japan	Derived from PCT/AU2017/050896	Separating Polymer from composite structures.
China	Application No. 201780052117.6	Separating Polymer from composite structures.
India	Application No. 201937004248	Separating Polymer from composite structures.
Indonesia	Application No. PID201901467	Separating Polymer from composite structures.
Malaysia	Application No. PI2019000742	Separating Polymer from composite structures.
Vietnam	Application No. 1-2019-01417	Separating Polymer from composite structures.
United States of America	Application No. 16/327036	Separating Polymer from composite structures.
Singapore	Application No. 11201900560U	Separating Polymer from composite structures.
New Zealand	Application No. 750145	Separating Polymer from composite structures.
Australia	Application No. 2017314765	Separating Polymer from composite structures.

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PVC Separation process

The PVC separation process consists of **5 steps** and is fully compliant with the concept of **circular economy**



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PVC Separation process: demonstration



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About the Installation

- Chemicals to stay in controlled loop
- Waste permission granted with approval of fire department
- Shredder, grinder etc. to be able to process material on 24/7
- Indication of the size of the input (flakes) material into the installation
- Delivery time of a pilot scale installation (indication basis, number of weeks after order)
- **Pilot installation to run first in Australia prior to shipment to Europe**

Vinyl floor tile



Runners

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Nutripol

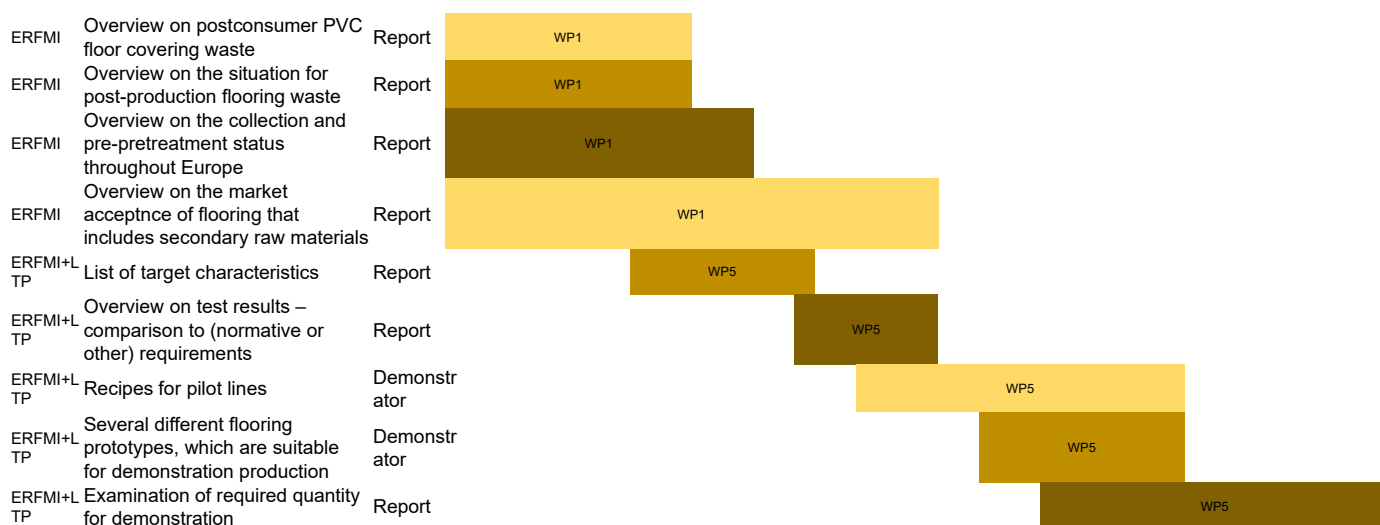
- Gent based company
- Separation process based on a blend of bio based solvents
- The chemistry is sugar based
- The chemical action is dissolution of the binding agents of the different layers
- The solution can be reused until saturation many times
- After saturation there is a potential to regenerate
- Use costs should be quite low
- Sent samples and awaiting further analysis



Circular Flooring Project H2020

- H2020 project June 2019 to June 2023
- Project launch June 2019
- Timeline:

Jun-19 Jul-19 Aug-19 Sep-19 Oct-19 Nov-19 Dec-19 Jan-20 Feb-20 Mar-20 Apr-20 May-20 Jun-20 Jul-20 Aug-20 Sep-20 Oct-20 Nov-20 Dec-20 Jan-21 Feb-21 Mar-21 Apr-21 May-21 Jun-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 Jan-22 Feb-22 Mar-22 Apr-22 May-22 Jun-22 Jul-22 Aug-22 Sep-22 Oct-22 Nov-22 Dec-22 Jan-23 Feb-23 Mar-23



Next steps

- Meeting arranged at Vinnolit October 2nd 2019 to
 - understanding the PVC for processing A-grade PVC
 - understanding what types of PVC the CreaSolv® Process can generate
 - defining required quality of CreaSolv® material to achieve easy mixing

Oréade

- Incinerator run by Suez in France
- Project for difficult to recycle end of life flexible waste
- Update:
 - Incineration facility required repairs as there were some leaks incineration line
- Plus fire in storage facility resulted in long delays

- Initial plan 2000 tonnes
- Now 1000 tonnes 2019 and 1000 tonnes 2020
- Funding will be required to cover gate fee, but not sure what level yet
- Further information in the coming weeks.
- Will discuss financing following further feedback from Vinyl Plus

Funding structure

Project costs: ~1 M€

- Covering CAPEX, standard waste treatment costs, the costs of neutralization agent and certification

- **Duration:** 12 months

Waste quantity: 2000 tons

- Vinyl Plus to contribute €700,000 and €75,000 each from IVK (Tarpaulins), ESWA(Roofing), VSFE (Films and sheets) and ERFMI

