PRESSME Open Innovation Test Bed

Open call project – Wood Foam

INN-PRESSME Final event

December 2nd 2024 - in Brussels

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Develop a roll-to-roll production system

- Increase volumes and reduce costs through a roll-to-roll production system, supporting a continuous and fast production line.
- + Faster cost competitive product and market entry

Test and improve material qualities for market fit

- Improve the foam qualities to become water-resistant and ensure the material is recyclable and biodegradable.
- + Replace plastic foams in a wider range of applications



Bio-based products and materials



Woamy is bringing to the market the novel FoamWood anisotropic biofoam for protective packaging. Which is currently manufactured in **sheets** and processed into other forms.

Using **cellulose fibres** (kraft pulp, recycled fibres, MFC, etc) and other **cellulose derivates** Woamy aims to become a circular alternative to plastic foams.





Cooperation with INN-PRESSME pilots & services



VTT Sucto line

Pilot a roll-to-roll production using a Woamy applicator on the Sutco line for linear movement and drying.

+ Speed-up production

+ Create new output formats



VTT Plasco line + Polymaris

Pilot the use of PHA extrusion coating on top of FoamWood sheets

+ Add water and air barriers



KCL lab

Test the foam recyclability with cardboard before and after coating

+ Ensure recyclability and circularity



AIMPLAS lab

Test the foam disintegration before and after coating. As a first step to test the biodegradability of the material

+ Ensure biodegradability and circularity





VTT Sucto line

To be able to dry and roll the FoamWood with the Sutco setup, Woamy developed an open pattern applicator and used a mesh roll as subtract.





create lighter weight structures and wrapping materials for packaging





VTT Plasco line + Polymaris

For coating tests, sheets from the Woamy line were used.



The pressure necessary for the PHA to adhere to the foam was too high and resulted in total flattening of the foam



Potential to improvement and use as an outer layer attached to thicker blocks





KCL lab

To save time, the first tests used the sheets from the Woamy line. Testing both single sheets and blocks.

> KCL ran tests using the CEPI method with single sheets and confirmed that FoamWood is recyclable with cardboard.

The coated foam had a significant higher amount of PHA in weight, therefore Woamy accessed that recyclability tests would not lead to useful results

AIMPLAS lab

To save time, the first tests used the sheets from the Woamy line.

AIMPLAS ran disintegration tests for industrial composting but the material did not achieve an acceptable degree of disintegration during the project time.

The coated foam had a significant higher amount of PHA in weigh, therefore Woamy accessed that disintegration tests would not lead to useful results



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Project outcomes:

- Confirmed potential of a roll-to-roll production line in the future, and clearer understanding of the parameters needed for it.
- Strong indication of the potential of extrusion coating on FoamWood and clearer understanding of its limitations.
- Positive recyclability test results.
- Indication of challenges towards biodegradability certifications







Open Innovation Test Bed

Thank you

Contact

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