

## MultiMatt – Development and research of the fusion between innovative technology combinations and sustainable design strategies, presented as a multi-functional play mat

### Objective

The aim was to merge innovative combinations of modern production technologies and sustainable design strategies in the form of a multifunctional play mat. As part of a pioneering, sustainable and interdisciplinary research project, the MultiMatt was developed as a recyclable product inspired by the cradle-to-cradle (C2C) design agenda.

### Approach and results

Within the research project, a large number of insights into the combination and linking of different manufacturing technologies using C2C-certified recycled materials were gained. The developed MultiMatt combines the mono-material approach with both the surface formation process of knitting and the finishing and functionalisation technologies 3D printing, back coating and laser treatment. The use of a single material (as yarn, granulate and 3D printing filament) for the production and finishing of the textile surface opens up the possibility of being able to fully recycle the MultiMatt at the end of its product life.

The developed demonstrator in the research project shows how modern and innovative textile technologies can be combined using sustainable and certified materials and how current requirements, such as individuality (batch size 1), can be met. Complemented by an appealing but freely interpretable design, it forms an important basis for the research and development of further sustainable application projects.



MultiMatt in use with building blocks and toys (left), mono material as yarn, 3D printing filament and granular material (centre) and anti-slip coating on the back (right)

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The final report on this project is available on request.

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