
NappiCycle

Company Profile

NappiCycle is a trading division of Natural UK, the largest independent washroom services and clinical waste collection company in Wales, dealing in hygiene and sanitary waste (e.g. nappies and incontinence pads from nursing and residential homes). BEACON initially contacted the Ammanford-based company to learn more about their unique and innovative process and discuss potential opportunities for new markets and applications for the company's cellulose fibre waste stream.

Collaboration with BEACON

The safe disposal of offensive municipal waste is a widespread problem, with much of it currently being sent to landfill. However NappiCycle uses a novel hydro-recovery process to recover the plastics and cellulose material from the sanitary waste that would previously have been sent to landfill. Part of the absorbent hygiene and incontinence pads contain Rayon, which



is made from wood pulp or cotton, a naturally occurring cellulose-based raw material. After processing, a clean and hygienic fraction is produced which can be re-used for new product development. Potential uses include:

- A prototype Medium-Density fibreboard (MDF) board
- A product to absorb industrial liquid spills
- Acoustic/insulation boards
- Pulp-moulded "single use" products for the healthcare sector

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The initial R&D project focused on the production and evaluation of MDF boards using the fibre cellulose fraction for potential applications in the construction industry. Boards were produced using 100% recovered Nappicycle material, 50:50 recovered Nappicycle/standard MDF fibre

(made from spruce chips), and control boards made from 100% MDF. The prototype samples then underwent mechanical testing to determine their dimensional stability, bending/rupture propensity and internal bond strength. The test data is still being assessed, but already the dimensional stability of the Nappicycle samples is proving favourable.

The initial response from the company on receiving the prototype sample boards has been positive and they are generating interest with potential development partners. The feedback was that the boards produced by BEACON looked more engineered and robust compared to the boards that had been produced for the company elsewhere. There are ongoing discussions with the company to progress the work. With BEACON assisting the company in their commercialisation of new products, NappiCycle will be more informed of the commercial opportunity which can help them evaluate their future investment decisions.



“Development of markets for NappiCycle’s innovative recycled materials is particularly challenging for a new company with limited R&D resources.

BEACON’s independent technical assistance and appraisal of products utilising these new materials has provided an essential part of our development.”

*Richard Jones
Projects Manager*



For further information:
www.nappicycle.co.uk