

## Fibre recovery from barrier-coated paper and board through cavitation pulping

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### Abstract

Repulping Technology (RT) has transferred the physical phenomenon of cavitation to industrial practice. The method is very fast, gentle on fibres and capable of separating large material surfaces easily and accurately.

RT goes far beyond conventional high-consistency pulping: it makes materials such as cross-linked, wet-strength and functional coatings of any type and even laminates available for recycling.

The new technology paves the way for the production and marketing of papers and boards whose manufacturing has been prevented by their limited (or even impossible) broke recycling so far.

We will show examples of high-wet-strength or film-laminated papers and boards, impregnated sheets, composite materials like beverage packaging board or label composites comprising various adhesives and silicone release paper.

For the latter, RT offers the additional advantage of cold-water defibration, which means that the size of unwanted sticky components present in paper for recycling (and also binder components) is reduced less so that they can be separated easily by conventional methods.

Moreover, the cavitation technology makes it possible to introduce reactants directly into fibres. The modified fibres have no impact on subsequent papermaking processes because their reactants will only interact with the reactants present in coating colours when they get in contact with them in the liquid phase of the coating material. This makes it possible to trigger cross-linking and many other desired reactions systematically on the surface of fibres. The new technology opens up new possibilities for achieving the desired functions with minimum coat weights.