

SYNTHETIC DRY STRENGTH AGENT–BONDSTAR®

We are increasingly being faced with the question of dry-strength or higher filler loadings without loss of strength in graphic papers. This question and our experiences in the field of dry strength agents have motivated us to revisit this issue.



Foto: Spiola

The enormous cost pressure on graphic paper manufacturers in recent years has resulted in the fact that more expensive fibers have been partly replaced by fillers, in stock as well as in coating.

This trend is currently continuing as some new developments are still in the experimental stage. Different concepts – either by dry strength agents, improved fillers or optimized coating color additives - have already been a success, but within a short time the increasing content has led to an increasing fillers content in waste paper. Due to this fact some paper manufacturers, who process especially ordinary grades of waste paper such as 1.01, now

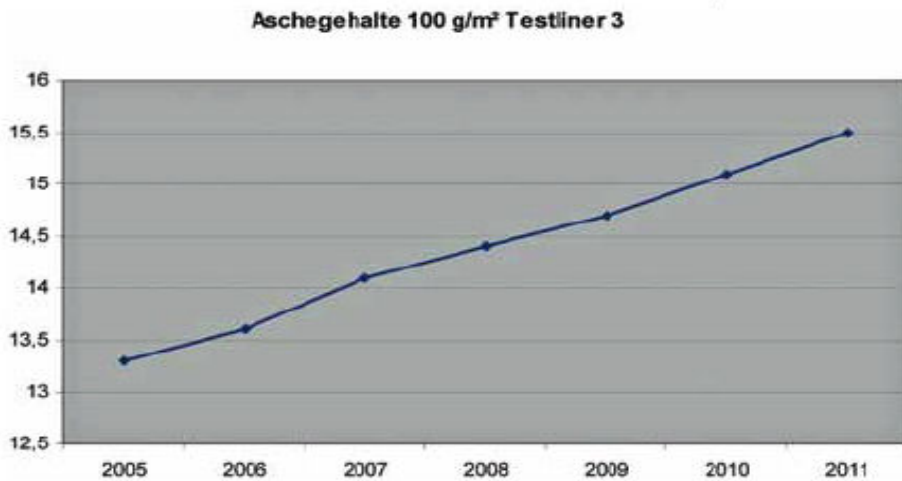
have problems with their water circulation systems and with strength values. Mainly these are the producers of newsprint paper and packaging paper. Some producers try to discharge the ash selectively with mechanical devices for example with flotation plants. This succeeds to a certain degree and provides relaxation for a limited period of time.

Quote Mr. Michael Habeck plant manager of the Adolf Jass GmbH paper mill: „We have become a waste disposing company for Rügen chalk.”

But the packaging paper producers currently have to deal with several trends: increasing

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Trend ash content at test liner 3

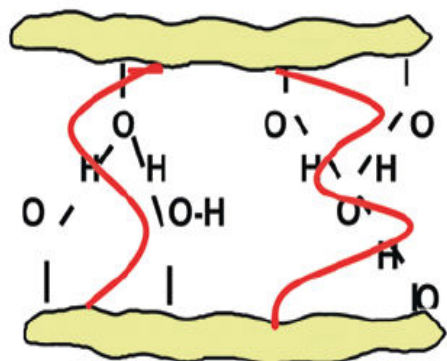
fillers content, decreasing quality of waste paper due to the high demand and multiple recycling, as well as the trend towards low basis weights. Meanwhile, 80 g/m² are the standard grades for fluting paper. In the graph on the left above the average ash content of a packaging paper maker is shown as an example.

ACAT now offers different synthetic dry strength agents - the BondStar® series. With these dry strength agents it is possible to replace fresh fibers or higher quality recycled fibers with lower quality recycled fibers and therefore with cheaper waste paper grades, without a negative influence on the required features. Furthermore, it is possible to keep strength properties stable despite higher ash content in the paper. As a side effect in some systems these chemicals can significantly improve the efficiency of paper mills.

This effect causes especially a more stable and stronger paper web whereby the speed can be increased and the breaks caused especially by edge defects are reduced. Our synthetic dry strength agents keep their characteristics also

in closed systems with high conductivity, where the wet-end strength is no longer working.

For the future a market is created for synthetic dry strength agents that will partly be in competition - but mostly they will be a complement- to conventional dry agents such as starch. For ACAT this area is a number one research and development project.



The new dry strength agents of the BondStar® series keep strength of paper stable despite of higher ash contents

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