

## New Developments in Coated White Topliner

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The constant vying for customers at the point of sale increases the demand for high quality packaging solutions. In the sector of the fibre based packaging, this trend results in increased demand for „white products“ such as white topped and coated liner grades, particularly in the European and North American markets. At the same time, the global demand for raw fibre materials is also increasing, driven by the expanding capacity for paper and board production in the growing markets and the alternative use of recycled fibres. The resulting scarcity in the supply of raw materials and the concomitant high price volatility tends to increase the pressure on the print and packaging manufacturers, e.g. corrugated board manufacturers, to develop alternatives to existing packaging solutions. Core requirement for such innovations is to maintain the product properties with regard to paper, print and further processing, as well as cost effectiveness. In the majority, white liner is nowadays printed in the flexoprinting technique. Coated grades are often employed with off-line methods where print and further processing are separate processing steps. The printing process is generally in multiple colours and includes a drying step in-between the individual inking systems. In contrast to coated grades, liners with a white fibre cover are mostly printed and processed in-line. In the printing process, in the majority only two colours are applied in the wet-in-wet process without an intermediate drying step. The dip volume of the colour rolls tends to be higher than that in the off-line method and often can be changed without too much effort.

The replacement of the white fibre top liner by a coated pigment layer has been discussed as a possible alternative concept. Technical and economical considerations such as the requirements for printing quality, optical and mechanical paper properties, cost efficiency and the uncertain market acceptance of such a new product have so far prevented a widespread adoption of this concept. A new coating colour formulation based on 100 parts of a newly developed calcium carbonate pigment was developed to meet these demands. The challenges in regard to the suitability for wet-in-wet flexoprinting without an intermediate drying step and the desired specification for optical and mechanical paper properties were mostly met through adapting the absorption properties of the pigment coat. Several pilot trials with the curtain coating method as well as a number of industrial scale printing trials tested and confirmed the performance of the developed solution.

The newly developed pigment coating therefore affords the production of a white top liner without the need for white fibre resources, and meets the technical as well as the economical requirements of a modern fibre based packaging solution.