



COMPOSITE FILLERS FOR PAPERMAKING

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ABSTRACT

By incorporating fillers in the papermaking process, an improvement of the optical properties of paper and sheet formation is observed and the costs of the furnish are drastically reduced since fibers are replaced by a cheaper material. However, this is detrimental to fiber bonding, which leads to a reduction of the paper strength. One way to overcome this drawback is the modification of the fillers surface.

In this work precipitated calcium carbonate (PCC) was modified with a) silica and b) cellulose derivatives. Laboratorial handsheets were produced with the modified PCC's and their properties were evaluated. A significant improvement of the paper strength properties (tensile, tear and burst indexes) was achieved when compared to those of the handsheets produced with the unmodified filler.

The modified PCC has thereby proven to be able to establish stronger interactions with the cellulosic fibers.