

RECYCLING KENAF PAPER, A COMMERCIAL EXPERIENCE

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ABSTRACT

This work demonstrated that papers made entirely of kenaf fibers blend well with typical wood based recycled fibers, and that production efficiencies, technical values and functional performance are at least equal to wood fiber furnishes.

INTRODUCTION

The objective of this work was to incorporate kenaf-based paper into a commercial recycling system, demonstrating its compatibility in mainstream recycling and paper production.

MATERIALS AND METHODS

RAW MATERIAL

The furnish for the recycled paper consisted of 20% uncoated offset printing paper made from 100 % kenaf fibers. This material was produced from raw, partially-separated kenaf comprised of roughly 80% kenaf bast fibers, and 20% kenaf core fibers. The raw kenaf material was pulped using a batch kraft AQ process, then semi-bleached in a single-stage hydrogen peroxide process. The resulting sheet contained filler (precipitated calcium carbonate) in amounts ranging from 8-12 %, and had an ISO brightness ranging from 66-72%.

Another 20% of the furnish was recycled pulp made from 100 % post-consumer waste, and processed chlorine-free. The fiber content of this type of commercial-grade recovered waste paper pulp typically consist entirely of wood fibers which have been chemically pulped.

The remaining 60% was pre-consumer recycled pulp made from white mill broke (manufacturing wastes), as commercially available. The fiber content of this type of commercial grade recovered waste paper pulp typically consists entirely of wood fibers, which have been chemically pulped. This portion of the furnish contained less than 20% of already-recycled wood fibers.

Process

A total of 18.1 metric tons of raw materials were proportionally blended in a standard hypulpur, with dyes added to achieve a color match to the original semi-bleached

sheet. The resulting slurry was run on a 1.42 m (56 in.) wide fourdrinier paper machine, at normal operating speeds and with normal production efficiencies.

The resulting paper was sheeted to standard commercial sizes, and was tested on one-, two-, and four- color printing presses.

RESULTS

Recycled paper containing 20% recycled kenaf content performed as well or better than typical wood fiber recycled uncoated papers with at least 20% post consumer content. There were no pulp blending or paper machine production problems. Print performance was un-compromised, with press speed, ink holdout, and finished quality meeting or exceeding typical values.

These results demonstrate the feasibility of producing papers containing recycled kenaf fibers. In fact, Vision Paper currently markets such (Re:Vision paper products). Vision Paper is the first company in the United States of America to produce both 100 % kenaf papers and recycled papers containing kenaf fibers.