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Combined effect of sodium carboxymethyl cellulose, cellulose nanofibers and drainage aids in recycled paper production process

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Highlights

1. CMC-Na and CNF significantly increased mechanical properties of paper.
2. The use of PEI considerably improved pulp drainability with high CMC-Na content.
3. Life span and recyclability of paper products can be significantly improved.

Abstract

The present work shows the suitability of using recovered cardboard boxes for the development of high-performance papers through the use of cellulose nanofibers (CNF) and sodium carboxymethyl cellulose (CMC-Na). CNF were prepared by enzymatic hydrolysis using bleached kraft hardwood pulp, while a commercial grade of CMC-Na was used. Both were added in bulk

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