PRECIPITATE CALCIUM CARBONATE ($CACO_3$) IN PAPER

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ABSTRACT

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The paper is known as a material made from the wood fibre that undergoes different chemical treatment to achieve a high quality of the paper. In the early stage of papermaking, people used acid as an adhesive to treat the paper, but it gives a bad impact on paper. Where the paper is become yellow in colour, brittle and easy to damage if stored in a long time. Meanwhile, when the alkali treatment was added to treat the paper and show the positive impact by strengthening the paper. Additives such as calcium carbonate increase the inter-fibre bond and make the paper become opacity, high in brightness, smoothing the surface and strengthen the paper. Calcium carbonate acts as a filler in fibre, and the percentage of calcium carbonate that added into paper must be in the range of 10 to 30%. The objective of the study is to optimize the percentage of precipitated calcium carbonate used in paper and to study the physical and chemical properties of paper fill with precipitated calcium carbonate. If the calcium carbonate exceeds the range, it will interfere with the fibre bond and give the effect to the mechanical properties such as thickness, tensile strength, tear resistance and burst. The paper with 10% and 20% of calcium carbonate shows the best result in term of its mechanical properties.