INFLUENCE OF FLOCCULANT MOLECULAR WEIGHT AND ANIONIC CHARGE ON FLOCCULATION BEHAVIOUR AND ON THE MANUFACTURE OF FIBRE CEMENT COMPOSITES BY THE HATSCHEK PROCESS

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Abstract

Although in the industrial Hatschek process it is necessary to use flocculants to improve retention, dewatering and formation, the use of flocculants may also decrease the strength of the final product. This paper studies the influence of the molecular weight and the anionic charge of anionic polyacrylamides on the flocculation behaviour of fibre cement suspensions and on the bending strength of the final product. Flocculants influence the density of the final product and in-turn the lowering of the density results in strength reduction. Results showed that an increase in the flocculant molecular weight reduces the bending strength of the composites significantly due to its density reduction. However, an increase in flocculant anionic charge increases the bending strength of composites. Therefore, in order to optimise the fibre cement process, it is necessary to use flocculants with high anionic charge and medium molecular weight. (C) 2005 Elsevier Ltd. All rights reserved.