

Sepiolite as a Processing Aid in Fibre Reinforced Cement Produced in Hatschek Machine

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Abstract : Sepiolite is used as a processing aid in the manufacture of fibre cement from the start of the replacement of asbestos in the 80s. Sepiolite increases the inter-laminar bond between cement layers and improves homogeneity of the slurries. A new type of sepiolite processed product, Wollatrop TF/C, has been checked as a retention agent for fine particles in the production of fibre cement in a Hatschek machine. The effect of Wollatrop T/FC on filtering and fine particle losses was studied as well as the interaction with anionic polyacrylamide and microsilica. The design of the experiments were factorial and the VDT equipment used for measuring retention and drainage was modified Rapid Köethen laboratory sheet former. Wollatrop TF/C increased the fine particle retention improving the economy of the process and reducing the accumulation of solids in recycled process water. At the same time, drainage time increased sharply at high concentration, however drainage time can be improved by adjusting APAM concentration. Wollatrop TF/C and microsilica are having very small interactions among them. Microsilica does not control fine particle losses while Wollatrop TF/C does efficiently. Further research on APAM type (molecular weight and anionic character) is advisable to improve drainage.

Keywords : drainage, fibre-reinforced cement, fine particle losses, flocculation, microsilica, sepiolite

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