

The Effect of Fly Ash in Dewatering of Marble Processing Wastewaters

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Abstract : In the thermal power plants established to meet the energy need, lignite with low calorie and high ash content is used. Burning of these coals results in wastes such as fly ash, slag and flue gas. This constitutes a significant economic and environmental problems. However, fly ash can find evaluation opportunities in various sectors. In this study, the effectiveness of fly ash on suspended solid removal from marble processing wastewater containing high concentration of suspended solids was examined. Experiments were carried out for two different suspensions, marble and travertine. In the experiments, FeCl_3 , $\text{Al}_2(\text{SO}_4)_3$ and anionic polymer A130 were used also to compare with fly ash. Coagulant/flocculant type/dosage, mixing time/speed and pH were the experimental parameters. The performances in the experimental studies were assessed with the change in the interface height during sedimentation resultant and turbidity values of treated water. The highest sedimentation efficiency was achieved with anionic flocculant. However, it was determined that fly ash can be used instead of FeCl_3 and $\text{Al}_2(\text{SO}_4)_3$ in the travertine plant as a coagulant.

Keywords : dewatering, flocculant, fly ash, marble plant wastewater

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