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# The possibility of using Portland cement to improve the sedimentation properties of activated sludge

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**ABSTRACT**

Sludge bulking and foam on the surface of activated sludge tanks, as mainly resulting from the overgrowth of filamentous bacteria, is a problem encountered frequently in WWTPs. Activated sludge sedimentation can be improved through the use of chemical reagents and powdered materials. In that context, the work detailed here, demonstrated the impact of two types of Portland cement on such sedimentation properties, i.e. Portland cement (PC) and Portland-fly ash cement (PFAC). Settling tests showed differing efficiencies where the settlement capacity of activated sludge was concerned, in relation to both the type and amount of cement used. At 1.0 mL/L of cement milk, the decrease in settleability is almost unnoticeable. During tests with the highest dose of cement (10.0 mL/L), the reduction in activated sludge settleability was 16.8% for Portland-fly ash cement. Portland cement may thus represent an effective new reagent in activated sludge technology.

*Keywords:* Portland cement; Cement milk; Wastewater treatment; Activated sludge; Sludge bulking

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