

**A DESIGN PROCEDURE FOR SECONDARY CLARIFIERS USING
MATHEMATICAL MODELS**

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ABSTRACT

A design procedure for settling tanks using mathematical models is applied to the secondary clarifiers of the Psytallia Wastewater Treatment Plant in Athens (Greece), where double-deck tanks are proposed. The procedure consists of 6 steps: (1) preliminary selection of the geometry of the tanks, (2) choice of the dimensionality and phases of the model, (3) formulation of the equations of the model, (4) definition of the approximated geometry, the boundary conditions and the numerical grid, (5) solution of the equations and (6) performance of calculations. Calculations show that flow field predictions and SS removal efficiencies are satisfactory for the proposed geometry.