

Calculation of time-dependent Bingham plastic flow using marker FEM

by

Osamu TANAKA^{*1} and Yoji SHIMAZAKI^{*2}

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Abstract

A simple marker FEM solution algorithm is introduced to calculate transient Bingham plastic flows. An axisymmetric pure radial flow problem and a simple problem of mass conservation are first solved for the purpose of checking the FEM algorithm. A slumping flow of cement-paste caused by its own weight is then calculated as an example of the transient Bingham plastic flow.

Keywords: Marker Particle, Bingham Plastic Fluid, Cement-Paste, Finite Element Method

*1 Graduate Student, Course of Civil Engineering.

*2 Professor, Department of Civil Engineering.