



Role of Water Film Thickness on Rheological Characteristics of Self-Consolidating Concrete Containing Silica Fume

Reza Saleh Ahari^{1*}

^{*1} Assistant Professor, Department of Civil Engineering, Tabriz Branch, Islamic Azad University, Tabriz, Iran. (rsalehahari@iaut.ac.ir)

ABSTRACT

In previous studies, it has been found that utilization of various supplementary cementations materials has significant effect on rheological properties of self-consolidating concrete. The present study aims to extend the role of water film thickness on rheological characteristics of self-consolidating concrete containing silica fume. For this purpose, relation between T_{50} flow time, V-funnel flow time and plastic viscosity with water film thickness of self-consolidating concrete mixtures containing different amounts of silica fume has been investigated. Results, showed that the rheological parameters can be closely related to the thickness of excess water around the solid particles.

Keywords: *Water film thickness, Rheology, Self-consolidating concrete, Silica fume.*