

Basics in non-Newtonian Mixing for Handling of Tailings and Other High Concentration Slurries

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Abstract

A precise knowledge of the rheological behavior of highly loaded slurries is essential to design mixing equipment for such applications. Laboratory research with transparent test fluids showing the same flow behavior as the original slurry, the application of analytically-derived models and system cross checking by means of CFD, allows reliable design of large scale mixing equipment. A comparison of these different methods will be shown, followed up by a scale-up to an industrial installation.

Keywords: Non-Newtonian slurry; rheology; mixing; cavity formation; CFD; scale-up.