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PREDICTING CONTOUR SLUMP FLOW OF SELF-COMPACTING CONCRETE USING BENTONITE AS FILLER

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ABSTRACT

This research presents the application of Box-Benken design method to develop a model for predicting contour slump flow and its desirability in self-compacting concrete (SCC) with partial replacement of cement with bentonite. Mixtures of 15 have been tested for slump flow and prepared at the laboratory. The use of Bentonite as filler materials in self-compacting concrete can add many benefits that are directly related to the workability and consistency of various cementitious materials, besides the fact that it is possible to reduce the quantities of cement and optimize the percentage in the composite. The performance of the model can be judged by the Correlation Coefficient (R^2), Mean Absolute Error (MAE) and Root Mean Square Error (MSE) which have been adopted as the comparative measures against the experimental results obtained from the mixtures, and found the best percentage of Bentonite in SCC.

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