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Prediction of Compressive Strengths in Cement-Natural Pozzolan Blends

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Abstract : In this paper, it is aimed to propose prediction approaches for the 2, 7, 28, 90 and 180 days compressive strength of blended cements with natural pozzolan (PZ) by using soft computing techniques. Plant data were collected for the chemical and physical properties of the cement that were used in model construction and testing. The training and testing data were separated from the complete original data set by the use of Multiple Linear Regression (MLR) model based on the training data of the cement strength was created. The importance of chemical mineralogical of clinker, the reactive silica of pozzolan and the water-to-cement ratio were pointed out. The benefit of the model is in the potential ability to control processing parameters to yield the desired strength levels and in providing information regarding the most appropriate experimental conditions to obtain maximum compressive strength.

Key words : compressive strength, blended cement, natural pozzolan, Multiple Linear Regression.

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