

The Effect of Pulling and Rotation Speed on the Jet Grout Columns

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Abstract : The performance of jet grout columns was affected by many controlled and uncontrolled parameters. The leading parameters for the controlled ones can be listed as injection pressure, rod pulling speed, rod rotation speed, number of nozzles, nozzle diameter and Water/Cement ratio. And the uncontrolled parameters are soil type, soil structure, soil layering condition, underground water level, the changes in strength parameters and the rheologic properties of cement in time. In this study, the performance of jet grout columns and the effects of pulling speed and rotation speed were investigated experimentally. For this purpose, a laboratory type jet grouting system was designed for the experiments. Through this system, jet grout columns were produced in three different conditions. The results of the study showed that the grout pressure and the lifting speed significantly affect the performance of the jet grouting columns.

Keywords : jet grout, sandy soils, soil improvement, soilcrete

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