

**O 93. UTILIZATION OF UNSATURATED POLYESTER IN IMPROVING THE
GEOTECHNICAL PROPERTIES OF THE SANDS**

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ABSTRACT: It is stabilized by adding chemical additives (cement, lime, bitumen etc.) to the soil to increase the strength and physical properties of soils. But these traditional soil stabilizers usually require long curing time and excess of material for large scale improvement. Therefore, researchers have turned to alternative stabilizers to be used in soil stabilization. The most important of these materials are liquid unsaturated polyesters which have curing effect in a short time and are used in little amounts. In this study, in order to determine the optimum ratio of sandy soils stabilization with unsaturated polyester, samples were prepared in the laboratory by using parameters and levels prepared according to the Taguchi method. The purpose of using the Taguchi method is to save time and cost by reducing the number of experiments. According to Taguchi method, water, polyester, accelerator and accelerator/hardener ratios are selected as 4 parameters. Depending on these parameters, 4 levels were determined. A table with orthogonal array L16 was made. Water and polyester content were taken as percentage of dry sand weight; accelerator and hardener ratios were taken as percentage of the amount of polyester used. Then unconfined compressive test was performed on these samples. According to the results of the experiments, the strength of the ratios determined was compared. According to the results, the use of unsaturated polyester for improving the engineering properties of sandy soils and optimum mixing ratios were investigated.

Keywords: Soil stabilization, Unsaturated polyester, Taguchi method