

Enhancing the Engineering Properties of Clay by Using Mechanically Treated Rice Straw Fibers

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Abstract : The studies on the mechanical behavior of randomly distributed short fiber soil composite are relatively new technique in geotechnical engineering. In this paper, mechanically treated rice straw (MTRS) fiber is used to improve the engineering properties of clay. Clay was mixed with 0 %, 0.5 %, 1 % and 2 % of MTRS fiber to analyze the effect of MTRS fiber on properties of soil. It was found that the plasticity index of soil decreases with increase in the MTRS fiber. Cohesion and angle of internal friction of soil were also found to increase with limiting increase in the amount of MTRS fiber and then decreases. The maximum dry density slightly decreases and the optimum moisture content slightly increases with increasing amount of MTRS fibers.

Keywords : cohesion, friction angle, optimum moisture content, rice straw fiber, short fiber

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