

Chemical stabilization of sabkha soils at high moisture contents

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Abstract: In surficial, small-scale applications, chemical stabilization provides a potential technique to improve the inferior properties of these soils. A literature search indicates that chemical stabilization of soils using asphalt, lime and cement is usually conducted at lower moisture contents than the optimum. If applied to sabkha in the field, this would require lowering the moisture content before any stabilization commenced; which would be neither feasible nor economical. In this investigation an eastern Saudi sabkha soil was chemically stabilized at its natural moisture level, which varies from 16% to 22%. In addition to the characterization of the soil and standard compaction tests, cement and lime sabkha mixtures were prepared at five additions and cured up to 90 days in plastic wrap. Results indicate that cement-stabilized sabkha gained high strength with time and proved to have a potential use in construction. -from Author