CONTRIBUTION OF LIQUID ASPHALT IN SHEAR STRENGTH AND REBOUND CONSOLIDATION BEHAVIOUR OF GYPSEOUS SOIL

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Abstract
This paper deals with the effect of stabilizing gypseous soil using two liquid Asphalt types (cutback and emulsion) on its behavior in shear strength and rebound consolidation. Soil-Asphalt specimens had been constructed using various percentages of both liquid Asphalt types. One group of such specimens were tested in the direct shear box apparatus to determine the effect of liquid Asphalt on shear strength, cohesion and angle of internal friction using the unconsolidated un drained test. Another group of the specimens were subjected to one dimensional confined compression test using both dry and saturated testing conditions in the consolidation apparatus. The effect of liquid Asphalt on the behavior of mixes in consolidation and rebound consolidation was studied. It was concluded that gypseous soil is usually stiff in the dry condition, but it is weak and had a collapsible behavior when saturated. The addition of liquid Asphalt provides cohesion strength to the soil mass and also acts as a waterproof agent. It creates a type of elastic properties and reduces the total strain.

Key words: Consolidation, Cutback, Emulsion, Gypseous soil, Shear strength

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