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Prediction of California Bearing Ratio from Physical Properties of Fine-Grained Soils

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Abstract : The California bearing ratio (CBR) has been acknowledged as an important parameter to characterize the bearing capacity of earth structures, such as earth dams, road embankments, airport runways, bridge abutments, and pavements. Technically, the CBR test can be carried out in the laboratory or in the field. The CBR test is time-consuming and is infrequently performed due to the equipment needed and the fact that the field moisture content keeps changing over time. Over the years, many correlations have been developed for the prediction of CBR by various researchers, including the dynamic cone penetrometer, undrained shear strength, and Clegg impact hammer. This paper reports and discusses some of the results from a study on the prediction of CBR. In the current study, the CBR test was performed in the laboratory on some fine-grained subgrade soils collected from various locations in Victoria. Based on the test results, a satisfactory empirical correlation was found between the CBR and the physical properties of the experimental soils.

Keywords : California bearing ratio, fine-grained soils, soil physical properties, pavement, soil test
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