

## Effect of Soaking Period of Clay on Its California Bearing Ratio Value

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**Abstract :** The quality of road pavement is affected mostly by the type of sub-grade which is acting as road foundation. The roads degradation is related to many factors especially the climatic conditions, the quality, and the thickness of the base materials. The thickness of this layer depends on its California Bearing Ratio (CBR) test value which by its turn is highly affected by the quantity of water infiltrated under the road after heavy rain. The capacity of the base material to drain out its water is predominant factor because any change in moisture content causes change in sub-grade strength. This paper studies the effect of the soaking period of soil especially clay on its CBR value. For this reason, we collected many clayey samples in order to study the effect of the soaking period on its CBR value. On each soil, two groups of experiments were performed: main tests consisting of Proctor and CBR test from one side and from other side identification tests consisting of other tests such as Atterberg limits tests. Each soil sample was first subjected to Proctor test in order to find its optimum moisture content which will be used to perform the CBR test. Four CBR tests were performed on each soil with different soaking period. The first CBR was done without soaking the soil sample; the second one with two days soaking, the third one with four days soaking period and the last one was done under eight days soaking. By comparing the results of CBR tests performed with different soaking time, a more detailed understanding was given to the role of the water in reducing the CBR of soil. In fact, by extending the soaking period, the CBR was found to be reduced quickly the first two days and slower after. A precise reduction factor of the CBR in relation with soaking period was found at the end of this paper.

**Keywords :** California Bearing Ratio, clay, proctor test, soaking period, sub-grade

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