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The Behavior of Non-Destructive Test for Different Grade of Concrete

Abstract

Rebound hammer tests are generally preferred as a non-destructive testing method as compared to destructive testing methods such as compression tests. In this study, a general series of rebound hammer tests and destructive tests were carried on in a heavy concrete laboratory. A set of concrete cubes measuring 100 x 100 x 100 mm were cast and subjected to water curing for 7, 14 and 28 days to obtain the cube strength and rebound number. Three grades of concrete, namely M20, M25 and M30 were used in this experiment. At 28 days, the minimum target strength should be 30 MPa. The rebound hammer tests were conducted before the compression tests. The data obtained for each test was evaluated and tabulated in the findings of this study. It was found that the variation between predicted strength and experimental strength for the rebound hammer test was 0.18%. This indicates that the rebound hammer test is able to predict strength with acceptable accuracy.

Keywords

Compression test; Non-destructive test; Prediction strength; Rebound hammer