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Effect Of Water Cement Ratio on the Compressive Strength of Revibrated Concrete

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Abstract

Effect of water cement-ratio on compressive strength of re-vibrated concrete is presented. The mix proportion of 1:2:4 aggregates were considered to cast 39 cubes each as laboratory specimen with 0.65, 0.70 and 0.75 water-cement ratios. Each of these categories were revibrated at time lag intervals of 10minutes for 120 minutes period of revibration process and cured for 7, 21 and 28 days. When tested for their respective compressive strength, the result obtained shows that there is a gradual increase in compressive strength of the concrete specimen with increase in time and in water-cement ratio. The maximum compressive strength at 120th minute for ages of 28 days are 25.42, 26.67 and 40.44N/mm2 for concrete with water-cement ratio of 0.65, 0.70 and 0.75 respectively. The maximum attained compressive strength for 28 days curing is 40.44N/mm2 (for 0.75w/c) appears to be higher than 25.42N/mm2 (for 0.65 w/c). Water-cement ratio has adversely enhanced the compressive strength of concrete when re-vibrated.

Keywords: Compressive strength re-vibrated concrete, re-vibration, time-lag intervals,

water-cement ratio.