

In general constructions, it would be a problem that newly mixed concrete could not be poured in time as specified. Remixing of concrete may lead to a homogeneous materials and increase its workability. However, if elapse time prior to its remixing is too long then it may become too striff and unworkable. This study has introduced the remixed method using superplasticizers to improve its workability and the setting times. The experimental investigation had selected water to cement ratio, cement content, elapse time prior to remixing and superplasticizer dosages as the major variables. Concrete properties to be considered in this program consists of fresh concrete properties as setting time, slump and flow, and hardened concrete properties as compressive strength at 28 days.

The test condition as conducted in this study had been out-door with temperature ranges of 30-35°C and the relative humidity range of 75-80%. Portland Cement Type I was used with cement content of 300-400 kg/m³, water to cement ratio of 0.4-0.6 and elapse time prior to remixing of 1-3 hours. Superplasticizer as conformed to the ASTM C 494 Type F was used at dosages of 0-6% of the cement content to obtain its reasonable workability.

The results have shown that rates of stiffening and setting time of remixed concrete depend on elapse time prior to remixing and the water to cement ratio. Slump losses and flow losses have found to be 40, 70 and 100% and 15, 25 and 35% of the initial values with the elapse times of 1, 2 and 3 hours, respectively. The compressive strength at 28 days has shown the tendency of increase at 4, 9 and 15% of the control mix with its elapse times of 1, 2 and 3 hours, respectively. Dosages of superplasticizer were led to longer setting time and better workability of the remixed concrete without any defects in compressive strength. The optimum dosages were found to be about 0.2, 2 and 4% of cement content for elapse times of 1, 2 and 3 hours before remixing, respectively.