

**EARLY AGE CREEP OF SELF-COMPACTING CONCRETE USING LOW HEAT
CEMENT AT DIFFERENT STRESS/STRENGTH RATIOS**

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Abstract

In this paper I will investigate the influence of different stress/strength ratios on the creep of unsealed and sealed of self compacting concrete and normal concrete using Low Heat Cement and the corresponding properties of Ordinary Portland Cement is outlined in this studied. The results were compared with a similar mixture of Low Heat Cement and Ordinary Portland Cement. The creep strain was measured at different stress/strength ratios of 10, 20, 30, 40 and 60 percent, for a maximum period of 7 days. All the tests were carried out in the room at temperature of 20°C and relative humidity of 50%. The study included forty mix proportions of sealed and unsealed conditions with water-cement ratio equal to 0.3. Half of the mixes studied were based on self-compacting concrete and the other half were based on normal concrete. The age at loading of the concretes in the creep studied was carried out at 24 hours after casting. Parallel studies were performed on strength (f_c) and relative humidity (RH).

Creep of self-compacting concrete and normal concrete were found to vary linearly with logarithm of time for both sealed and unsealed concrete. Also, creep of self-compacting concrete and normal concrete were found to be a linear function of stress/strength ratio between 10 and 60 percent.

The results show that the specimens subjected to air-dried curing exhibited higher creep strains than sealed specimens; creep strains decrease with an increase in concrete compressive strength at the time of loading.

KEYWORDS: Creep, Shrinkage, Self Compacting Concrete, Low heat cement, Stress/Strength Ratios.