

Effect of tropical climate to compressive strength of high performance fibre reinforced concrete

ABSTRACT

High performance fibre reinforced concrete (HPFRC) is relatively an advance fibre reinforced concrete (FRC) material, which is made of more than 2% volume fraction of fibres. This research focuses on the effect of tropical climate on the compressive strength of HPFRC. Total of 56 HPFRC cubes made of 3%, 4% and 5% of hooked-end fibres and grade 80 slurry were prepared. Half of which were exposed to tropical climate condition (80% humidity at 35°C) for 30 days which the other half are placed in room temperature. After which, the compression test was carried out. The highest compressive strength of 152.2 MPa was recorded from samples made of 5% fibre volume and being exposed to tropical climate, which is 90% higher than the control sample.

Keyword: High performance fibre reinforced concrete; Water curing; Steam curing; Tropical climate