

Experimental Study of Different Types of Concrete in Uniaxial Compression Test

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Abstract : Polymer concrete (PC) is a distinct concrete with superior characteristics in comparison to ordinary cement concrete. It has become well-known for its applications in thin overlays, floors and precast components. In this investigation, the mechanical properties of PC with different epoxy resin contents, ordinary cement concrete (OCC) and lightweight concrete (LC) have been studied under uniaxial compression test. The study involves five types of concrete, with each type being tested four times. Their complete elastic-plastic behavior was compared with each other through the measurement of volumetric strain during the tests. According to the results, PC showed higher strength, ductility and energy absorption with respect to OCC and LC.

Keywords : polymer concrete, ordinary cement concrete, lightweight concrete, uniaxial compression test, volumetric strain

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