

Experimental Study on Flexural Strength of Reinforced Geopolymer Concrete Beams

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Abstract : This paper presents the flexural response of Reinforced Geopolymer Concrete (RGPC) beams. A commercial finite element (FE) software ABAQUS has been used to perform a structural behavior of RGPC beams. Using parameters such: stress, strain, Young's modulus, and Poisson's ratio obtained from experimental results, a beam model has been simulated in ABAQUS. The results from experimental tests and ABAQUS simulation were compared. Due to friction forces at the supports and loading rollers; slip occurring, the actual deflection of RGPC beam from experimental test results were slightly different from the results of ABAQUS. And there is good agreement between the crack patterns of fly ash-based geopolymer concrete generated by FE analysis using ABAQUS, and those in experimental data.

Keywords : geopolymer concrete beam, finite element method, stress strain relation, modulus elasticity

Conference Title : ICCSGE 2016 : International Conference on Concrete, Structural and Geotechnical Engineering

Conference Location : Los Angeles, United States

Conference Dates : April 05-06, 2016