

Bending and Compressive Behaviors of a New Cement Composite (CEMTEC)

Description

Meta Fields

Category : Completed Projects

Group : Ultra-High Performance Concrete (UHPC)

Subject : Alternatives

Abstract :

To conceive structural elements with a cement composite and without any reinforcement except steel fibers is a very exciting and difficult challenge, which can change the building construction fields. To achieve this objective the Laboratoire Central des Ponts et Chaussées (LCPC) has developed a new cement composite, CEMTECmultiscale® , which is strain hardening in tension and has a very high uniaxial tensile strength, more than 20 MPa. The present paper is on an experimental research related to this composite fatigue behavior. The principal results obtained are the following: A strong correlation exists between the initial static damage and the fatigue endurance limit; Below a loading ratio $R = 0.65$ (ratio between the applied stress and the characteristic static stress), failure during bending fatigue tests never appears with CEMTECmultiscale® specimen; An 8% gain is observed between the bending static behavior of the specimens being previously loaded in fatigue and those not being loaded in fatigue.

Key Words :

Composite material, fiber composite, Cemtec multiscale, Ductal

Budget : 0.00

Project Starting Year : 2006

Project Completion Year : 2006