

Fyfe Company Technical Report Abstract FB-6

Tests of PC Concrete Joists

By USA CERL

As part of dealing with optimized prefabricated concrete joists, four joists were cast and tested. Two joists were tested to assess flexural strength. The remaining two joists were evaluated to assess the effectiveness of the Tyfo Fibrwrap System composites repair for improving shear capacity of deficient beams to force a flexural failure. The test results show that carbon fiber retrofit with the Tyfo S System increased the flexural strength and the ductile response of the joist. The CFRP was not damaged and the joist did not fail. Also, the results of tests performed in this study indicate that significant increase in shear strength can be achieved by the application of the Tyfo Fibrwrap Systems to concrete beams deficient in shear capacity. When an FRP jacket is properly applied over the shear span of the member the failure mode of a member may be altered from that of a brittle shear failure to a ductile flexural failure mode.