

**ABSTRACT:**

This experimental study reports the applicability of hardener-free epoxy-modified mortar panels to permanent forms as precast concrete products. Hardener-free epoxy-modified mortars are mixed using a Bisphenol A-type epoxy resin without any hardener with various polymer–cement ratios and steel fiber reinforcement, and subjected to different curings. Hardener-free epoxy-modified mortar panels are prepared with same polymer–cement ratios and steel fiber reinforcement on trial, and tested for flexural behavior under four-point (third-point) loading. The effects of polymer–cement ratios and curings on strength properties of hardener-free epoxy-modified mortars, and on the flexural strength, flexural stress-extreme tension fiber strain relation, flexural load–deflection relation of hardener-free epoxy-modified mortar panels were examined. The adhesion in tension (to placed concrete) of the hardener-free epoxy-modified mortar panels was also tested. As a result, the hardener-free epoxy-modified mortar panels develop a high flexural strength, large extensibility and good adhesion to the placed concrete. The epoxy-modified mortar panels are more ductile and have high load-bearing capacity than unmodified mortar panels and can be used as precast concrete permanent forms in practical applications.