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## FERROCEMENT CONSTITUTIVE MODEL AND EXPERIMENTAL VALIDATION

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### **Abstract:**

Ferrocement elements are usually analyzed by using the laws of mixture leading to the common understanding of taking ferrocement as a homogenous material. The analytical model presented through this study takes into account each constituent to predict the behaviour of ferrocement crosssections for entire loading history for bending, shear, axial force or any combination thereof. Smearred rotating crack model is used for modelling the constituents. Elastic non-linear model is used for cement-sand mortar. The post cracking response also takes into account the bond at the interface between cement-sand mortar and the reinforcement. These material models are then integrated into a non-linear solution algorithm satisfying equilibrium and compatibility. The realistic models and the computer program developed in this study provide fairly good comparison between analytical and available experimental results. The study has further been extended to carry out some analytical experiments on representative ferrocement specimens to explore effects for parametric variation.

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