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Corrosive Properties of Ceramic-Coated Steel Rebar

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Corrosive Properties of Ceramic-Coated Steel Rebar

Enameled steel reinforcing bars were provided to CIES by a project consultant at Roesch, Inc. The gritty ceramic enamel was added to the surface of the rebar in an attempt to prevent steel corrosion in extreme environments, as well as to increase bonding between the rebar and cement. These bars were subjected to mechanical tests to gain an understanding of the tensile strain levels and load-displacement tendencies under which the coating experienced cracking or spalling. The bars were also subjected to a corrosion test which quantified corrosion levels by measuring the current in the bars after an electric potential was passed through them.

Stephen Grelle is a junior pursuing dual degrees in Architectural and Civil Engineering. In addition to being involved in the Opportunities for Undergraduate Research Program at Missouri S&T, he is also involved with many other campus organizations, such as Pi Kappa Alpha, Intercollegiate Knights, Architectural Engineering Institute, Order of Omega, and the Missouri S&T Lacrosse Team.