Combined experimental-numerical approach to characterization of steel-glue-concrete interface

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Abstract: An experimental-numerical approach is presented to rationalize the plethora of results, sometimes contradictory, reflecting the characterization of an epoxy bonded steel-concrete interface. Based on data from a specially designed half-beam specimen and experimental results from other specimen geometries, combined with their respective nonlinear finite element idealizations, a classical Mohr-Coulomb failure law together with a tension cut-off are suggested for the steel-glue-concrete interface. This description can then be used in a finite element simulation of a plated reinforced concrete beam.