SHEAR STRENGTH OF CEMENT BASED COMPOSITE BEAMS

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The fracture mechanics and strength of laminated beams under transverse bending has been studied insufficiently. Beams of cement-based composites reinforced with different types of meshes usually have not stirrups. At good anchoring of longitudinal tensile reinforcement such beams without stirrups break after the development of a critical inclined crack caused by the principal tensile stresses. In this report, mechanics of the development of such cracks is studied. Taking into account that the laminated beam has not stirrups, the cracking and fracture practically take place simultaneously. Results of the theoretical investigation based on the structural mechanics of laminates are compared with the results of experimental testing of cement-based composite beams reinforced with punched steel meshes.