Research on Mechanical Properties of Adhesive Bonds Reinforced with Fabric with Glass Fibres

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In this paper the mechanical behaviour of structural two-component epoxy adhesives in T-joints is experimentally investigated. Laboratory experiments were performed on standardized test specimens of structural carbon steel S235J0 made according to standard ČSN ISO 11339.
The aim of experiments was to confirm or disprove a hypothesis about a possibility to increase the adhesive bond peeling strength by means of an interlayer from glass fibres.
The research was focused on an effect of an improving a resistance of the adhesive bond stressed by peeling by adding an interlayer created by fabric from glass fibres. The testing of these properties was performed in accordance with standard ČSN EN ISO 11339. An epoxy resin was used as the adhesive for connecting adherents created by sheets of steel. The fabric from glass fibres of the type E in a plain weave was added as the reinforcement for creating the composite bond. For optimization of properties of the composite bond it was used various weight in grams of fabric in the extent of 80, 110, 160, 220 g/m^2.

Keywords: Adhesive bond strength, peeling strength, T-joint, two-component epoxy adhesives

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