Influence of the Degreaser Type on the Bonded Joint Strength

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In the report the results of bonded joints laboratory tests are published. The determination of the tensile lap-shear strength of rigid-to-rigid bonded assemblies according to the standard CSN EN 1465 (66 8510) was the aim of the carried out tests. The samples were made from steel sheets. For bonding of test samples four different types of adhesives were used (two super glue adhesives, one epoxy adhesive and one contact adhesive). Ahead of bonding the surfaces of all samples were blasted using corundum grit and degreased. For degreasing four various types of five different degreasers were used, namely perchlorethylene, acetone, methanol, technical gasoline and toluene. Then the samples were dried using warm air. For comparison the blasted samples without degreasing were bonded, too. At the tested samples bonding the consumption of adhesive was determined. From the adhesive consumption for one bonded joint and from the adhesive price the costs of one sample bonding were calculated. After curing the bonded assemblies were loaded using the universal test machine LabTest 5.50 ST up to their rupture. The rupture force was written down. From the values of the rupture force and the bonded surface size the bonded joint strength was calculated. By the carried out tests evaluation the influence of different degreaser types was determined. Also for all used adhesives the price of one bonded joint was calculated.

Keywords: adhesive bonding, degreasing, technological properties of adhesives, testing of bonded joints

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