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Tester for tensile shear evaluation of metal–polymer single lap joints

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## Abstract

The general tensile shear test for a single lap joint produces unwanted elastic deformation in a specimen. It is necessary to reduce this type of deformation to evaluate the correct shear strength of a joint. In the study, we developed a new tensile tester that reduces unwanted deformation. We analyzed the effect of the developed tester by using a finite element method and experimentally compared the new tester with a conventional tensile tester. The results indicated that the new tester reduced the deformation of a single lap joint and maintained a constant ratio of the shear to vertical stress even if we used several materials with different values of Young's modulus. The results of this study will enable us to evaluate the correct

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