Applied Mechanics and Materials, vol. 554, 2014, pages 406-410

Strength of three-point-bending ductile adhesive joint with dissimilar adherent

Abstract

In this study, an experimental investigation was conducted in order to determine the effect of different adhesive thickness (i.e., 0.1, 0.5, 0.7 and 1 mm) on strength of ductile adhesive joint. The study scope covers both experiment and analysis. In particular, two different types of material, aluminum and stainless steel as adherents were used and joined by using a specific adhesive jig. By using universal tensile machine (UTM), three-point-bending (3PB) test was conducted. To obtain the result from the experiment, continuous load is applied to the adhesive until the adhesive become fracture. The result obtained has enabled the clarification of failure behavior mechanisms and characteristics of adhesive bonding.

Keywords — Flexure strength, bond thickness, stress, strain, ductile