NUMERICAL ANALYSIS OF RFSSW JOINTS

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The paper presents a numerical analysis of tensile test for welded specimens made of 7075 T6 aluminum alloy. The specimens were joined by Refill Friction Spot Stir Welding (RFSSW). RFSSW is a welding method joining metals in a solid state. The numerical calculations were performed using ADINA System based on Finite Element Method (FEM). Three different FE analyses were carried out for each specimen. In the first analysis the sheets and joints were modeled with 3D elements. In the second analysis the sheets and joints were modeled with shell elements. In the third analysis the sheets were modeled with shell elements while the joints were modeled with 3D elements. The stress and strain distribution and displacements were analyzed. The numerical results and experimental studies were compared.

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