

عنوان مقاله:

Friction Stir Welding of Aluminum Foam Sandwich Panels Manufactured by Infiltration of NaCl Space Holders

محل انتشار:

شانزدهمین کنفرانس ملی جوش و بازرسی و پنجمین کنفرانس ملی آزمایش های غیر مخرب (سال: 1394)

تعداد صفحات اصل مقاله: 6

نویسندگان:

,Farid Bashirzadeh - MSc student of Materials Engineering, Sahand University of Technology

,Tohid Saeid - Associate Prof. of Materials Engineering, Sahand University of Technology

,Javad Mollaei Milani - PhD student of Materials Engineering, Sahand University of Technology

خلاصه مقاله:

Appropriate combination of mechanical properties of aluminum foam sandwich panels (AFS) makes them ideal materials for applications in automotive, shipbuilding and aerospace industries. The main problems in fusion welding of AFS are core's low density and its cell structure that without taking special measures, the cellular structure will be lost. The lack of metallic material in friction stir welding of AFS causes a poor joint and defect in welds. Adding filler metal by casting method is recommended as a solution. In this study, the casting method were used to apply fillers with different thicknesses to the joint. In order to evaluate the effect of different thicknesses on mechanical properties and defects, all samples friction stir welded with the same rotational and advancing speeds. Due to the results of three-point bending test, the joint between two AFS panels does not represent the weak point of the whole component and failures occur from discontinuities. The advantages of this method include absence of liquid phase which reduces the destruction of cell structure and creating sound joints.

کلمات کلیدی:

.Aluminum sandwich panel, Friction stir welding, Bending test, Infiltration process, NaCl space holders

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1024356>

