

عنوان مقاله:

Investigation of Roll Bonding between AA5083 Strips

محل انتشار:

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خلاصه مقاله:

Layered alloys and composite materials have become an increasingly popular in industrial development. The roll bonding (RB) process, as a solid phase method of bonding, has been widely used in manufacturing large layered strips. In this study, aluminum alloy (AA 5083) strips were roll bonded at warm and cold temperatures. The effects of the rolling parameters such as the amount of plastic deformation by rolling and rolling temperature that create successful bonds on the bond strength and the threshold deformation between two layer strips of AA 5083/ AA 5083 were investigated. The bond strength was evaluated by the peeling test. It was found that by increasing the rolling temperature or thickness reduction, the peel strengths of the bonds increased and successful bonds with higher strength were created. Also, the threshold thickness reduction decreased with increasing the rolling temperature. Moreover, the interfaces of laminates were studied by scanning electron microscopy (SEM) in order to investigate the bonding quality.

کلمات کلیدی:

Roll bonding, solid welding, Bond strength, Peel testing

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