Clinching process for joining dissimilar materials: state of the art

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Abstract

Clinching is a method for mechanically joining sheet metal of different thickness and properties in which the two plates to be joined undergo plastic deformation. The clinching process is established by connection or joining using simple tools: a punch and a die. This method has different characteristics compared to thermal joining methods, such as spot welding, including low purchase and operating costs, little preparatory work, safe and environmentally friendly, interesting mechanical properties, reproducibility, and durability. In this article, a brief review of traditional joining methods for dissimilar materials and the clinching process are illustrated in greater detail. In addition, the article looks to guide researchers for future work by identifying weaknesses of the current processes as well as potential for valuable contributions in the field of clinching.

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