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review on spot weld ability of twip steel for automotive structure

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ABSTRACT

Recent trends towards the integration of strong steels into the automobile sector have accentuated demands on their resistance spot weld ability, a technique most widely used for welding during automotive assembly. However, such steels are inherently rich in alloying elements, TWIP steels are not exceptions because they require certain level of Manganese, Carbon, Silicon,Cobalt,Nickel & Aluminum content to maintain austenite stability. A materials selection exercise is conducted to substantiate that TWIP steels are more desirable than most other materials for structural and safety components of automobiles such as TRIP steel and dual phase steel. Gaps in the knowledge of TWIP steels that are hindering adoption for automotive applications are identified. This review concludes by suggesting further research needs in TWIP steel weld ability, strength, toughness to promote components in automotive sector applications.

Keywords: **:** *TWIP steels, TRIP steel, twinning deformation, materials selection, constitutive models, structure property relationship*