

APPLICABILITY OF FRICTION STIR WELDING TO VARIOUS STEEL ALLOYS USED IN AUTOMOBILES

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Abstract

An effort is made to develop fuel efficient vehicles by making tailor welded blank. Presently laser welding is used to make tailor welded blank. In this paper friction stir welding is done to TRIP 590, DP 590, DP 780, and its properties are compared with the base material. An acceptable weld is a weld which does not fail in the heat affected zone or in the weld nugget during transverse tension testing. The samples long are cut and joint together by a rapidly rotating tool stirs and forges two part together at a seam or overlap. These welded joint are then tensile and hardness tested. TRIP 590 sample shows acceptable weld, DP 590 showed mixed result and DP 780 sample are rejected. Although three different steel where studied there are others that should be studied

Keywords: Tailor welded blank, friction stir welding, acceptable weld, weld nugget, heat effected zone.