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SEM/ DRX / EBSD characterization of electric submerged arc welded of an industrial low carbon steel

Semcheddine DERFOUF, Belhi Guerira, Amria BOURAS

Abstract : In this study, we tried to understand the impact of evolution of thermal deformation during the electric submerged arc welding process used to assembling parts. This welding process is applied on an industrial low carbon steel of %C 0.19Wt, %Si 0.25 Wt, %Mn 0.40 Wt, %P 0.025 Wt, %S 0.015 Wt, %Al 0.09 Wt, %Mo 0.009 Wt, %Nb 0.05 Wt and % Ti 0.03 Wt. The plates with thickness of 2.6 mm, it is called BS2. And used by the company SNS BAG destined for making gas storage cylinders. To highlight the present work, different areas of our specimens were investigated especially fusion zone and heat affected zone. Characterizations performed are SEM, DRX and EBSD and show the appearance and texture development during the weld process. Note that in this working part, the behavior of thermal

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