HARDNESS MODIFICATIONS IN CASE OF 4G-POSITION HYPERBARIC DRY WELDING

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ABSTRACT

The paper studies the welded joint hardness (Vickers HV 10) modification in case of the 4G-position hyperbaric dry welding. The hardness was measured on three parallel directions, crossing the welded joints zones and on two parallel directions in the overheating area, following up the fusion line of the welded joint. The specimens were mechanically machined, transversally to the welding direction. The welding was achieved at atmospheric pressure, as well as at 2 and 4 barr. GMAW with pulsed arc and mixture shielding gas (Corgon 18) were used. For root filling was used the flux cored wire Fluxofil M8 (1,2 mm diameter, with metallic powder), whereas for filling the rest of the gap was used the flux cored wire Fluxofil 14HD (1,2 mm diameter, with rutilic powder). The first passes were made without welding torch oscillation and for the other passes the mechanical oscillation was applied. Three butt welded samples of steel plates, X 60, 14,3 mm thickness were achieved. The paper presents the experimental program research and the final conclusions.

KEYWORDS: 4G-position dry hyperbaric welding, flux cored wire, hardness tests

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