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High-Temperature Corrosion of Weldment of Fe-2%Mn-0.5%Si Steel in N2/H2O/H2S-Mixed Gas

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Abstract : Fe-2%Mn-0.5%Si-0.2C steel was welded and corroded at 600, 700 and 800oC for 20 h in 1 atm of N2/H2S/H2O-mixed gas in order to characterize the high-temperature corrosion behavior of the welded joint. Corrosion proceeded fast and almost linearly. It increased with an increase in the corrosion temperature. H2S formed FeS owing to sulfur released from H2S. The scales were fragile and nonadherent.

Keywords: Fe-Mn-Si steel, corrosion, welding, sulfidation, H2S gas

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