

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 800°C 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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