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Temperature change calculation at welding products

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Abstract

Thermal calculation of the welded seams was conducted, made from heat resisting austenitic steel 10X11H20T2P by argon-arc welding. Schedules of temperature increment are constructed during various time moments on mode parameters existing on technology manufacture and on offered welding conditions. Structure forecasting opportunity and mechanical properties of welded connection various zones is shown: a welded seam, weld lines, zones of thermal influence and basic metal by calculation of temperature field changing in time. Calculation data are received at use of standard methods of calculation and under general formulas. Basic methods of experimental temperature test are considered at welding and computer application in calculations of temperature fields. Recommendations are given at the welding modes choice for prevention of hot cracks formation, namely, welding speed reduction up to 6 km/h is recommended. © IDOSI Publications, 2014.

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Keywords

Austenitic class steel, Mechanical properties, Thermal processes, Welded connections