

عنوان مقاله:

Investigation on Microstructure Evolution of a Semi-Austenitic Stainless Steel Through Hot Deformation

محل انتشار:

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خلاصه مقاله:

Dynamic Recrystallization (DRX) is one of the likely mechanisms for fine-graining in metals and alloys. The dynamic recrystallization (DRX) phenomena occurs in different thermo-mechanical processing (TMP) conditions for various metallic materials. DRX depends on various materials and thermo-mechanical parameters such as temperature, strain rate, strain, stress and initial microstructure. in the present study, the restoration mechanism of the 17-YPH stainless steel has been investigated using a hot compression test under different conditions of thermo-mechanical treatment. The microstructural characteristics and the behavior of the hot deformation of the under study steel are investigated using flow curves and microstructure images obtained from optical microscopy. The results show that the maximum and steady state stresses are significantly affected by the strain rate and the deformation temperature. So that, the flow stress increases with decrease in the deformation temperature and increase in the strain rate. Microstructural studies confirm the occurrence of DRX as a restoration mechanism in the microstructure for the two phases of .austenite and ferrite

کلمات کلیدی:

.Dynamic Recrystallization, Thermo-mechanical processing, 17-YPH Stainless steel, Compression test

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