

Effect of Inclusions in the Ultrasonic Fatigue Endurance of Maraging 300 Steel

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Abstract : Ultrasonic fatigue tests have been carried out in the maraging 300 steel. Experimental results show that fatigue endurance under this modality of testing is closely related to the nature and geometrical properties of inclusions present in this alloy. A model was proposed to correlate the ultrasonic fatigue endurance with the nature and geometrical properties of the crack initiation inclusion. Scanning Electron Microscopy analyses were obtained on the fracture surfaces, in order to assess the crack initiation inclusion and to introduce these parameters in the proposed model, with good agreement for the fatigue life prediction.

Keywords : inclusions, ultrasonic fatigue, maraging 300 steel, crack initiation

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