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QUENCHING CRACK ANALYSIS OF BIG SIZE FORGING BY FE ANALYSIS

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Abstract

Heat treatment crack is one of the main defects of big size forging manufacturing process. In this research finite element method has been applied to predict crack initiation by mass effect during water agitation cooling. Cooling curve of specimens was measured water quenching test and convective coefficients were calculated by inverse method based on finite element method. Water quenching processes were analyzed by Deform software and Jmatpro. Crack initiation has been predicted by comparison of stress distribution and strength on the temperature basis.

Author Keywords

Quenching Crack, Big size forging, Crack initiation prediction, Finite element analysis, Quenching direction.

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