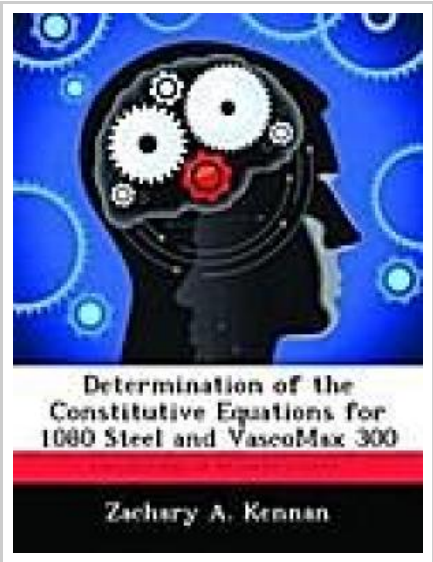

Determination of the Constitutive Equations for 1080 Steel and VascoMax 300

By Zachary A. Kennan

Bibliioscholar Okt 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x11 mm. This item is printed on demand - Print on Demand Neuware - The objective of this research is to establish a better representation of the components utilized in a gouging event being considered in research leading to a better understanding of the Holloman High Speed Test Track. Gouging occurs when two metals are traveling at a slight incline to each other at velocities nearing 1.5 kilometers per second, and results in a structural failure of both the metals. The gouging process occurs at very high strain rates, which results in non-linear stress-strain relations. The coefficients that lead to the Johnson-Cook equations have been determined by the Split Hopkinson Bar test for 1080 steel and VascoMax 300. The Split Hopkinson Bar test was conducted using various strain rates and temperatures to produce meaningful stress-strain relations for both of the steels. These relations allowed a fit of the data to yield specific material coefficients defined in the Johnson-Cook constitutive model. Both the 1080 steel and Vascomax 300 models showed excellent approximation of the plastic region. Verification of the constitutive models was conducted through the use of Taylor tests. A Taylor test model...

Reviews

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