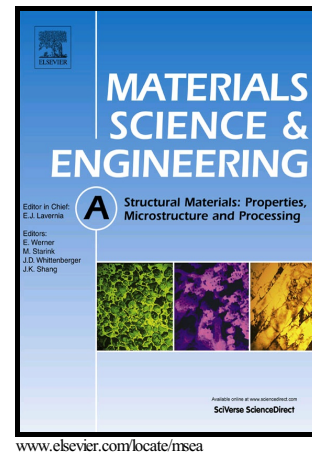


Author's Accepted Manuscript

Microstructures and properties of asymmetrical rolled 7050 al alloy plate with bending behavior optimization

Cunqiang Ma, Longgang Hou, Jishan Zhang, Linzhong Zhuang



PII: S0921-5093(16)30088-0
DOI: <http://dx.doi.org/10.1016/j.msea.2016.01.085>
Reference: MSA33272

To appear in: *Materials Science & Engineering A*

Received date: 15 December 2015
Revised date: 25 January 2016
Accepted date: 26 January 2016

Cite this article as: Cunqiang Ma, Longgang Hou, Jishan Zhang and Linzhong Zhuang, Microstructures and properties of asymmetrical rolled 7050 al alloy plate with bending behavior optimization, *Materials Science & Engineering A* <http://dx.doi.org/10.1016/j.msea.2016.01.085>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and a review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Microstructures and properties of asymmetrical rolled 7050 Al alloy
plate with bending behavior optimization

Cunqiang Ma, Longgang Hou^{*}, Jishan Zhang, Linzhong Zhuang^{*}

State Key Laboratory for Advanced Metals and Materials, University of Science and
Technology Beijing, Beijing 100083, People's Republic of China

* Corresponding author. Tel.: +86 10 66234717; Fax: +86 10 62333447.

E-mail address: lghou@skl.ustb.edu.cn (Longgang Hou),

linzhongzhuang@yahoo.com (Linzhong Zhuang)

Abstract

Bending behaviors during multi-pass asymmetrical rolling (ASR) process were optimized by adjusting the thickness reduction per pass (ϵ). The bending curvature can be reduced significantly, almost closing to zero at a critical thickness reduction per pass (ϵ_c), by which the continuous multi-pass ASR process can be guaranteed. ϵ_c s were obtained by Finite element (FE) simulation firstly, then applied them to the multi-pass ASR-processing. The results show that the predicted ϵ_c s are consist well with the experimental values, which can make the ASR-processed plate exit without bending during multi-pass ASR processing. Microstructural evolution, mechanical properties and fracture toughness of symmetrical rolled (SR) and ASR-processed plates with bending behavior optimization were contrastively studied and it shows that the ASR processing

Download English Version:

<https://daneshyari.com/en/article/1573754>

Download Persian Version:

<https://daneshyari.com/article/1573754>

[Daneshyari.com](https://daneshyari.com)