

## Accepted Manuscript

Title: Double-stage forming using critical pre-bending radius in roll bending of pipe with rectangular cross-section

Author: Do-Sik Shim Kee-Poong Kim Ki-Yong Lee

PII: S0924-0136(16)30137-6  
DOI: <http://dx.doi.org/doi:10.1016/j.jmatprotec.2016.04.033>  
Reference: PROTEC 14807

To appear in: *Journal of Materials Processing Technology*

Received date: 22-10-2015  
Revised date: 25-4-2016  
Accepted date: 28-4-2016

Please cite this article as: Shim, Do-Sik, Kim, Kee-Poong, Lee, Ki-Yong, Double-stage forming using critical pre-bending radius in roll bending of pipe with rectangular cross-section. *Journal of Materials Processing Technology* <http://dx.doi.org/10.1016/j.jmatprotec.2016.04.033>

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 review of the resulting proof before it is published in its final 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.



# Double-stage forming using critical pre-bending radius in roll bending of pipe with rectangular cross-section

**Do-Sik Shim<sup>\*</sup>, Kee-Poong Kim, Ki-Yong Lee**

Green Manufacturing Process Technology Center, KITECH, Wolchul-dong, Gwangju, South  
Korea, 500-460

\*Correspondence to be addressed to:

Dr. Do-Sik, SHIM

Green Manufacturing Process Technology Center

KITECH

Cheomdan-venturero 108beon-gil, Buk-gu, Gwangju, South Korea

E-mail: : imagineer@kitech.re.kr

C.P: +82-10-4844-4455

Tel: +82-62-600-6200

Fax: +82-62-600-6099

## Abstract

Bent pipes are widely used in many high-end industries as a structural component. Consequently, pipe roll bending has become an attractive manufacturing technology for forming lightweight products. For industrial applications, bent pipes should be accurately shaped into 2D or 3D shapes without defects. In this study, the behavior of pipes with rectangular cross-sections under roll bending was considered in order to improve product quality. When a pipe product is bent with a large curvature, the pipe cross-section shrinks under the bending moment. In order to minimize defects and improve

Download English Version:

<https://daneshyari.com/en/article/7176700>

Download Persian Version:

<https://daneshyari.com/article/7176700>

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