

Accepted Manuscript

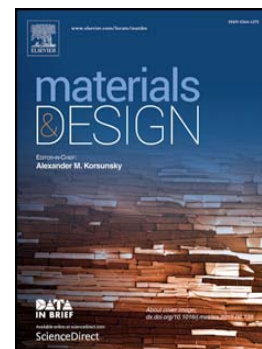
Microstructural evolution of transition zone of clad X70 with duplex stainless steel

Xinjie Di, Zhentang Zhong, Caiyan Deng, Dongpo Wang, Xiaojiang Guo

PII: S0264-1275(16)30089-2
DOI: doi: [10.1016/j.matdes.2016.01.087](https://doi.org/10.1016/j.matdes.2016.01.087)
Reference: JMADE 1288

To appear in:

Received date: 15 September 2015
Revised date: 2 January 2016
Accepted date: 20 January 2016



Please cite this article as: Xinjie Di, Zhentang Zhong, Caiyan Deng, Dongpo Wang, Xiaojiang Guo, Microstructural evolution of transition zone of clad X70 with duplex stainless steel, (2016), doi: [10.1016/j.matdes.2016.01.087](https://doi.org/10.1016/j.matdes.2016.01.087)

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.

Microstructural evolution of transition zone of clad X70 with duplex stainless steel

Xinjie Di ^{a, b}, Zhentang Zhong ^a, Caiyan Deng ^{a, b*}, Dongpo Wang ^{a, b}, Xiaojiang Guo ^c

^a School of Materials Science and Engineering, Tianjin University, Tianjin, 300072, China

^b Tianjin Key Laboratory of Advanced Joining Technology, Tianjin, 300072, China

^c National Engineering Laboratory Transportation Safety of Oil & Gas Pipeline, Langfang, 065000, China

Corresponding author: Caiyan Deng

E-mail: dengcaiyan@tju.edu.cn

Tel: +86 022 27405889

Fax: +86 022 27405889

Address: School of Materials Science and Engineering, Tianjin University, No. 92 Weijin Road, Tianjin, 300072, China

Abstract: The microstructural evolution of the transition zone of clad X70 with duplex stainless steel 2209 by hot-wire tungsten inert gas (TIG) welding was examined with an optical microscope (OM), scanning electron microscope (SEM), and transmission electron microscope (TEM). The relationship between the dilution rate, the value of Cr_{eq} / Ni_{eq} , the solidification mode, and the microstructural evolution within the transition zone were investigated using a Schaeffler diagram and Fe-Cr-Ni pseudobinary diagram. It was found that the dilution rate ranged from 99% to 14% within the transition zone, causing a variation in the value of Cr_{eq} / Ni_{eq} from 0.36 to

Download English Version:

<https://daneshyari.com/en/article/7218614>

Download Persian Version:

<https://daneshyari.com/article/7218614>

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