C-IX BEHAVIOR OF METALS SUBJECTED TO WELDING

IX-2665-19
72nd IIW Annual Assembly and International Conference 2019, Bratislava, 7–12 July 2019

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Program Summary

July 08, 2019 (Mon.) 14:15 - 18:15  Commission IX-L meeting  
Hall 3, London, CROWNE PLAZA

July 09, 2019 (Tue.) 14:15 - 18:15  Commission IX-H meeting  
Hall II, Berlin, CROWNE PLAZA

July 10, 2019 (Wed.) 08:15 - 12:30  Joint meeting of IX-C and C-XI  
Hall 14, Salonik Grand, TATRA

14:15 - 16:15  Commission IX-NF meeting  
Commission IX-L meeting (cont.)  
Hall 6, Sal LUX, TATRA

16:45 - 18:15  Commission IX-H meeting (conti.)  
Hall 6, Sal LUX, TATRA

18:15 - 18:20  Summary meeting of C-IX  
Hall 6, Sal LUX, TATRA

IIW Antitrust policy

IIW activities are based on a close, voluntary cooperation of its worldwide members with the overall target to improve the knowledge and skills in joining. To maintain these fruitful activities, it is strictly necessary to meet the obligatory terms of antitrust laws during IIW working sessions, meetings and other events. Thus, any commercial oriented discussion (including, but not limited to market shares, prices, turnovers, production quantities, costs, suppliers and/or customers) is strictly banished.
# I. Opening Session
1. Opening and welcome by the chair  
2. Approval of Agenda (IX-2665-19)  
3. Approval of Minutes of A“A” Meeting (IX-2661-18) of Bali 2018  
4. Approval of Minutes of intermediate Meeting (IX-2664-19) of Maimi 2019

# II. Commission IX-L: Low alloy steel welds
1. Administration matters of IX-L by Prof. Norbert Enzinger, Chair of IX-L  
2. Presentation of documents:

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<th>Document ID</th>
<th>Title</th>
<th>Authors</th>
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<td>IX-2667-19</td>
<td>Usage of surface-modified filler material to increase the joint-strength of HSLA steels under different load types</td>
<td>K. Treutler, V. Wesling</td>
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<td>IX-2668-19</td>
<td>Effects of Niobium in Submerged Arc Weld Metal</td>
<td>T. Patterson, X. Liu, and J.C. Lippold</td>
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<td>IX-2670-19</td>
<td>Tensile and microstructural characteristics of 24Mn steel welds at 110 and 298 K</td>
<td>K. M. Choi, M. Kim, N. Kang, C. Kang, D. Cho, D. Nam</td>
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<td>IX-2673-19</td>
<td>Effect of Mn and Al on acicular ferrite formation in SAW weld metal</td>
<td>N. Fuyijama, G. Shigesato</td>
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<td>IX-2674-19</td>
<td>Microstructure and toughness of C-Mn steel weld metal obtained by the SAW process, with and without titanium addition</td>
<td>J.C.F. Jorge, I.S. Bott, L.F.G. Souza, M.C. Mendes, L.S. Araújo, G.M. Evans</td>
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<td>IX-2675-19</td>
<td>Characterization of bainite-ferrite structures formed in the heat-affected zone of a dissimilar weld of high-strength steel (S700MC/S960QC) and their dependency on the cooling rate</td>
<td>K. F. N. Bajoch, P. Kah, B. Mvola, H. Eskelinen, and X. Cai</td>
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Continued on July 10, 2019 (Wednesday)

# Tuesday, July 09, 2019

# I. Commission IX-H: Welding of stainless Steels and Nickel-base Alloys
1. Administration matters of IX-L by Prof. Norbert Enzinger, Chair of IX-L  
2. Presentation of documents:

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<tr>
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<tr>
<td>IX-2677-19</td>
<td>Influence of the process parameters on the corrosion behavior of quality 2205 duplex stainless steel in laser beam welding with highest focusability</td>
<td>Stefan Ulrich, S. Jahn, P. Schaaf</td>
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<td>IX-2678-19</td>
<td>Bead by bead study of a multipass shielded metal arc welded super duplex stainless steel</td>
<td>Vahid Hosseini, Kjell Hurting, Leif Karlsson</td>
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IX-2679-19 Evaluation of test results and ranking criteria for Varestraint testing of an austenitic high temperature alloy
Mikael M. Johansson, Peter Stenvall, Leif Karlsson, Joel Andersson

IX-2681-19 Advanced microstructural characterization of cast ATI 718Plus® – effect of homogenization heat treatment temperature on HAZ cracking during manual TIG repair welding
Fabian Hamning, A.K. Khan, O.A. Ojo, Joel Andersson

IX-2688-19 Liquidation cracking in Cast Haynes 282
Sukhdeep Singh, Joel Andersson

IX-2682-19 Investigation of Standardizing for Evaluation Method of Varestraint Test
Kota Kadoi

IX-2683-19 Solidification Cracking Susceptibility of Grain Boundary Engineered Fully Austenitic Stainless Steel
Shun Tokita, Kota Kadoi, Yudai Kanno, Hiroshige Inoue

IX-2684-19 Hot Cracking Susceptibility of Alloy 617 by Varestraint Test
Shotaro Yamashita, Takahiro Niki, Kenji Kamimura, Tomo Ogura, Kazuyoshi Saida

IX-2685-19 Hot Cracking Susceptibility in Duplex Stainless Steel Welds
Dong-Cho Kim, Tomo Ogura, Shotaro Yamashita, Kazuyoshi Saida

Continued on July 10, 2019 (Wednesday)

2686-19 Evaluation of variations in Trans-Varestraint Test
Daisuke Abe, Yu Murakami, Takaaki Matsuoka, Takanori Kanehiro, Boian T. Alexandrov, Benjamin Shutton and Steve McCracken

IX-2687-19 Experimental and Numerical Modeling Study of Solidification Cracking in Alloy 52M Filler Metal in the Cast Pin Tear Test
Huimin Wang, Boian T. Alexandrov, Eric Przybylowicz

IX-2689-19 Nitrogen effect on pitting corrosion resistance of tube welded joints in super-austenitic stainless steels
Zhiliang Zhou, Andreas Rahm Yhr

IX-2690-19 Application of laser peening to grain boundary engineering process of 304 austenitic stainless steel
Hiroyuki Katakawa, Shun Tokita, Shohei Kodama, Yutaka S. Sato, Yuji Sano, Zhuguo Li, Kai Feng

IX-2680-19 Failure analysis of duplex 2205 gas separator welds operating in process plan conditions
Pekka Nevasmaa and S. Yli-Olli

Wednesday, July 10, 2019
(Morning session)

Joint Meeting of Commission IX-C (Creep and Heat resistant welds) & Commission XI (Pressure Vessels, Boilers and Pipelines)
1. Administration matters of IX-C by Prof. Peter Mayre, Chair of IX-C
2. Presentation of documents of IX-C

IX-2691-19 (IX-C-1091-19) Solidification phenomena in creep resistant 9Cr weld metals and their implications on mechanical properties
A. Nitsche

IX-2692-19 (IX-C-1091-19) Utility properties of creep resistant boron and nitrogen containing martensitic steel base metal and weld deposits

IX-2693-19 (IX-C-1092-19) Hydrogen diffusion in creep-resistant 9%-Cr steel welds
M. Rhode, T. Richter, A. Nitsche, P. Mayr

IX-2696-19 (IX-C-1095-19) Microstructural evolution of creep resistant 2.25Cr-IMo-0.25V weld metal
H. Schönmaier, F. Grimm, R. Krein, K. Kirchheimer, R. Schnitzer
Solid experience in the use of continuous monitoring systems pipeline thermal station during the operation on the basis of SHM technologies
L.M. Lobanov, A.Y. Nedoseka, S.A. Nedoseka, S.I. Motrunich

Assessment of phase transformation at partially melted zone of dissimilar creep resistance P91 and alloy 800 to mitigate cracks
E. M. Mvola Belinga, P. Kah, P. Layus, C. R. Das, J. Hald

Effect of Long-term Exposure at 650°C on Microstructural and Creep Characteristics of T92/ Super304H Dissimilar Welds
N. Kumar, G.D. Janaki Ram, K. Devakumaran, R. S. Kottada

(Morning session)

I. Commission IX-NF: Non-ferrous materials
1. Administration matters of IX-NF by Dr. Jorge F. dos Santos, Chair of IX-NF
2. Presentation of documents:

IX-2694-19 Theoretical analysis of keyhole dynamics in laser spot welding for aluminum
H. Mori, Q. Zhou, F. Miyasaka

IX-2695-19 Thermodynamic generation properties of multiple connected structure of copper-constantan laser welded joint
S. Meguro, S. Nigo, T. Nakamura

II. Doc. Presentation of IX-L (continued)

III. Doc. Presentation of IX-H (continued)

VI. Meeting Summary and Others
1. Administration matters of IX-NF by Dr. Jorge F. dos Santos, Chair of IX-NF
2. Review of Resolutions
3. Review of Administrative matters
4. Plan for Intermediate Meeting(s) of 2019
5. Any other business
6. Adjournment of Commission IX