II-2110-19

C-II ARC WELDING AND FILLER METALS

II-2110-19
72nd IIW Annual Assembly and International Conference 2019, Bratislava, 7–12 July 2019

Chair: Gerhard Posch (Austria)

Time schedule for Social Events and Commission II activities

**Sunday, 7 July**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00</td>
<td>IIW General Assembly</td>
<td>Hall 3-5 / London I – III, Crowne Plaza Hotel</td>
</tr>
<tr>
<td>16:00</td>
<td>Young Professionals’ Ice Breaker Session</td>
<td>Fresh! Restaurant, Crowne Plaza Hotel</td>
</tr>
<tr>
<td>18:15</td>
<td>Opening Ceremony &amp; Welcome Reception</td>
<td>DoubleTree by Hilton</td>
</tr>
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**Monday, 8 July**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Venue</th>
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<tbody>
<tr>
<td>08:15</td>
<td>Commission II regular meeting (C-II A)</td>
<td>Hall 8 / Dunaj, Austria Trend Hotel</td>
</tr>
<tr>
<td>19:00</td>
<td>Slovak Evening</td>
<td>The Old Market Hall</td>
</tr>
</tbody>
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**Tuesday, 9 July**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Venue</th>
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<tbody>
<tr>
<td>08:15</td>
<td>Commission II regular meeting (C-II C)</td>
<td>Hall II/Berlin, Crowne Plaza Hotel</td>
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**Wednesday, 10 July**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Venue</th>
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<tbody>
<tr>
<td>08:15</td>
<td>Commission II regular meeting (C-II E)</td>
<td>Hall 8 / Dunaj, Austria Trend Hotel</td>
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<tr>
<td>10:45</td>
<td>Commission Joint meeting C-II, C-VIII</td>
<td>Hall 8 / Dunaj, Austria Trend Hotel</td>
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<tr>
<td>19:30</td>
<td>Gala Banquet</td>
<td>Refinery Gallery</td>
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**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.

By attending the meeting, you commit to follow the terms of prevailing antitrust laws (relevant antitrust laws can be found at www.iiwelding.org )
IIW Commission II

SUBCOMMISSION II-C MEETING
Testing and Measurement of Weld Metal

Agenda
(II-C-570-19)

Chair: Zhuyao Zhang (United Kingdom)
Tuesday, 9 July 2019, 08:15-12:30

Venue: Hall II/Berlin
Crowne Plaza Bratislava, Hodžovo nám. 2, Bratislava, Slovakia

1. Opening remarks
   • IIW Antitrust policy

2. Administrative matters of Sub Commission II-C
   • II-2110-19 (II-C-570-19): Approval of the agenda
   • II-2124-19 (II-C-571-19): List of members of Sub Commission II-C by Z. Zhang
   • II-2125-19 (II-C-572-19): List of documents of Sub Commission II-C by Z. Zhang
   • II-2109-18: Executive Summary Commission II, Annual Assembly 2018, Bali, Sub Commission II-C by G. Posch
   • II-2123-19 (II-C-569-19): Minutes of the Intermediate Meeting of SC II-C, Miami, USA, March 2019 by Z. Zhang

3. Ferrite in high alloyed weld metal

4. Testing of weld metal for hot cracking and micro fissuring
   • II-2128-19 (II-C-574-19): “Analysis of the hardness-increasing mechanism for welded high-hardness-armor steel and optimization of heat input and shielding gas conditions” by Y. Jeong, Y. T. Cho

5. Corrosion testing of weld metal
   • No document

6. Procedures for weld metal chemical analysis and weld metal sample preparation – Comparison of analysis methods
   • No document
7. Testing of high-strength weld metals
   • II-2129-19 (II-C-575-19): “Development of welding consumables for high strength steels (Rp0.2 ≥ 960 MPa)” by A. Ramasamy, B. Kalfsbeek, V. van der Mee
   • II-2130-19 (II-C-576-19): “Niobium behavior by during welding thermal cycle for niobium micro-alloyed HSLA steels” by H. H. Wang, Z. Tong, Z.P. Qin

8. Testing of Creep- and heat resistant weld metal
   • II-2131-19 (II-C-577-19): “Gas Metal Arc (MIG) Welding of Gr. 91 (X10CrMoVNb9-1) martensitic steel - AWM characteristics, metallurgy, influence of the shielding gas mix and weld position” by Stefano Sorrentino
   • II-2134-19: “HAZ microstructures in CB2 steel” by Stan T. Mandziej and Anna Vyrostkova

9. Testing of non-ferrous weld metal
   • No document

10. Measuring of δ-ferrite in austenite and duplex stainless steel weld metals
    • Discussion on engineering guidelines for δ-ferrite measurement of production welds Dr D. Kotecki and all

II. Working program of Sub Commission II-C
    • II-2133 (II-C-579-19): SC II-C Proposed working program 2019/20 by Z. Zhang

12. Date and venue of next meetings
I IW Commission II

SUBCOMMISSION II-E MEETING
Standardization

Agenda
(II-E-796r1-19)

Chair: David Fink (USA)
Wednesday, 10 July 2019, 08:15-10:15

Venue: Hall 8 / Dunaj
Austria Trend Hotel, Vysoká 2A, Old town, 811 06, Bratislava, Slovakia

1. Opening remarks
  • IIW Antitrust policy

2. Administrative matters of Sub Commission II-E
  • II-2110-19 (II-E-796-19): Approval of the agenda
  • II-2135-19 (II-E-797-19): List of members of Sub commission II-E by D. Fink
  • II-2136-19 (II-E-798-19): List of documents of Subcommission II-E by D. Fink
  • II-2109-18: Executive Summary Commission II, Annual Assembly 2018, Bali, Sub commission II-E by G. Posch
  • II-2137-19 (II-E-795r1-19): Minutes of Miami March 2019 meeting, Subcommission II-E by D. Fink

3. Update standards for welding consumables in review
  • II-2138-19 (II-E-799-19): “2019 Update on Standards for Welding Consumables under Review” by D. Fink
  • Standards for Systematic Review (Route 1) for 2019
    • II-E-778-18: ISO 2560:2009, Welding consumables — Covered electrodes for manual metal arc welding of non-alloy and fine grain steels — Classification
    • II-E-779-18: ISO 14341:2010, Welding consumables — Wire electrodes and weld deposits for gas shielded metal arc welding of non alloy and fine grain steels — Classification
    • II-E-782-18: ISO 18274:2010, Welding consumables — Solid wire electrodes, solid strip electrodes, solid wires and solid rods for fusion welding of nickel and nickel alloys — Classification
    • II-E-783-18: ISO 24034:2010, Welding consumables — Solid wire electrodes, solid wires and rods for fusion welding of titanium and titanium alloys — Classification
    • II-E-784-18: TR 13393:2009, Welding consumables — Hardfacing classification — Microstructures
• Standards for Systematic Review (Route 2) for 2019
  • II-2050-17 (II-E-748-17): Systematic Review of ISO 6847:2013 Welding consumables -- Deposition of a weld metal pad for chemical analysis
  • II-2139-19 (II-E-786r1-19): Systematic Review ISO 6847-2013 Collated comments as agreed to at March 2019 meeting
  • II-2140-19 (II-E-800-19): Draft revision of ISO 6847 for review (Mr. Fink)

4. Matrix filler metal classification standards
  • II-2141-19 (II-E-801-19): Matrix of filler Metal Classifications by D. Kotecki

5. Diffusible Hydrogen Testing
  • Other information on ISO 3690

  • ISO 18273:2015 Welding consumables -- Wire electrodes, wires and rods for welding of aluminium and aluminium alloys – Classification
  • ISO 17634:2015 Welding consumables -- Tubular cored electrodes for gas shielded metal arc welding of creep-resisting steels – Classification
  • ISO 17632:2015 Welding consumables -- Tubular cored electrodes for gas shielded and nongas shielded metal arc welding of non-alloy and fine grain steels – Classification
  • ISO 14172:2015 Welding consumables -- Covered electrodes for manual metal arc welding of nickel and nickel alloys – Classification
  • ISO 6848:2015 Arc welding and cutting -- Nonconsumable tungsten electrodes – Classification
  • ISO 1071:2015 Welding consumables -- Covered electrodes, wires, rods and tubular cored electrodes for fusion welding of cast iron -- Classification

8. Working program of Sub commission II-E
  • II-2142-19 (II-E-802-19): SC II-E Proposed working program for 2019/20 by D. Fink

9. Any other business

8. Date and venue of next meetings
IIW Commission II, VIII

JOINT MEETING

Agenda
(II-2110-19)

Chair C-VIII: Geoff Melton (United Kingdom)
Chair C-II: Gerhard Posch (Austria)

Wednesday, 10 July 2019, 10:45-12:30
Venue: Hall 8 / Dunaj
Austria Trend Hotel, Vysoká 2A, Old town, 811 06, Bratislava, Slovakia

1. Opening remarks

2. Safety and health issues related to filler metals and arc welding processes
   • IARC Monograph II8