



C-II: Arc Welding and Filler Metals

Agenda of Annual Assembly 2025

II-2344r1-2025

Author: Zhuyao ZHANG

Venue: Room Ex-Novio 1
Centro Congressi Porto Antico
Via Magazzini del Cotone, 59
16128 Genova
Italy

Meeting Schedule:

Monday, 23 June 2025	8:30 – 8:45	Opening Session
	8:45 – 8:50	IIW Secretariat
	8:50 – 9:00	Presentation of WitW
	9:00 – 12:30	II-A Meeting
Tuesday, 24 June 2025	8:30 – 12:30	II-E Meeting
Wednesday, 25 June 2025	8:30 – 12:15	II-C Meeting
	12:15 – 12:30	Summary and Closing
Intermission and coffee break:	10:15 – 10:45	

Comments: Meetings are in person only, not hybrid.

Pre-recorded video presentations will not be accepted except those pre-authorized due to a special reason.

IIW ANTITRUST STATEMENT (draft)

It is the policy of the International Institute of Welding (IIW), including Technical Commissions and their participants, to comply fully with antitrust, trade regulation, and anti-competitive laws.

Antitrust laws prohibit agreements or understandings between two or more individuals or businesses to:

- regulate prices or quantities of goods or services;
- allocate customers or territories;
- hinder or limit a competitor or potential competitor's operations;
- unreasonably to restrain business activity; or
- implement discriminatory pricing or servicing.

All participants in IIW activities should use particular care to avoid improper actions or results, including the appearance of such actions or results. The IIW Secretariat should be consulted if potentially sensitive issues are anticipated or arise.

Further information and guidance can be found in IIW RD-260 Antitrust Guidelines (DOs and DONTs).

1. Agenda

Monday, 23 June 2025	
1. Introduction	Chair: Zhuyao ZHANG, vice-Chair: Susanne BAUMGARTNER
1.1. Welcome and apologies	
1.2. Approval of the Agenda	II-2344-2025
1.3. Commission II Executive Summary Annual Report 2024	II-2339-2024
1.4. Presentation of IIW Secretariat	Elisabetta SCIACCALUGA
1.5. Presentation of WitW	Thomas KANNENGIESSER
<i>C-II Subcommission Meetings</i>	
2. II-A: Metallurgy of Weld Metals	Chair: Thomas KANNENGIESSER
2.1. List of documents of Subcommission II-A, revised June 2025	II-2345-2025
2.2. List of members of Subcommission II-A, revised June 2025	II-2346-2025
2.3. Working program of Subcommission II-A / 2025-2026, revised June 2025	II-2380-2025
<i>Hydrogen in Weld Metal</i>	
2.4. “Numerical study on the cooling conditions during in-service welding of steel pipelines for gas transport” by Z. Silvayeh, D. Gomboc, S. Kaiser, K. Erxleben, P. Auer, M. Rhode, Th. Kannengiesser and J. Domitner	II-2347-2025
2.5. “Metallurgical strategy to enhance cryogenic tensile properties and hydrogen embrittlement resistance in 316L stainless steel welds” by J. Nam, J. D. Poplawsky, N. Park, J. Yoo, C. Ji, S. Lee and N. Kang	II-2348-2025
<i>Metallurgy of Additive Manufactured Components</i>	
2.6. “Influence of the deposition strategy on 3D printed CMT-WAAM 316 LSi stainless steel structure” by I. Thomas, M. Zinke and S. Juettner	II-2349-2025
2.7. “Obtaining a high-entropy alloy based on the Ti–Zr–Hf–Nb–Ta system using filler cored wire and WAAM technology” by S.L. Schwab, A.V. Zavdoveev, M.M. Voron	II-2350-2025
2.8. “TIG-Assisted In-situ High Entropy Alloy Coating on 304L Stainless Steel Substrate” by A. M. F. M. Saleem and R. Anant	II-2351-2025
2.9. “Comparative residual stress analysis on a DED-Arc manufactured high-strength steel component using the contour method and XRD” by G. A. Shabdali, K. Wandtke, D. Schroepfer, R. Scharf-Wildenhain, A. Haelsig, T. Kannengiesser, and J. Hensel	II-2379-2025
<i>Weld Metal Cracking</i>	
2.10. “Influence of build-up height and heat control on residual stresses in additive repair and modification of multi-material composites using DED-Arc” by R. Scharf-Wildenhain, L. Engelking, A. Haelsig, D. Schroepfer, T. Kannengiesser and J. Hensel	II-2352-2025

2.11. "From conventional to narrow groove repair: Optimizing repair welding with modern welding processes for high-strength offshore steels" by L. Reichel, A. Kromm, D. Schroeppfer and T. Kannengiesser	II-2353-2025
<i>Development and behavior of filler metals for high-loaded components</i>	
2.12. "Effect of weld design on fatigue strength of welded components using LTT filler materials" by M. Huebner, F. Dittmann, A. Kromm, I. Varfolomeev and Th. Kannengiesser	II-2354-2025
2.13. "Peculiarities of the structure formation of high-tin bronze CuSn10P1 surfacing on low-alloy steel" by T. Maydanchuk	II-2355-2025

Tuesday, 24 June 2025	
3. II-E: Standardizations / Constitution of Weld Metals	Chair: Teresa MELFI
<i>Standardizations</i>	
3.1. Update of standards for welding consumables in review in 2025	
a) Review Matrix of Consumable Classification Standards	II-2356-2025
b) Standards that are not part of Matrix:	
i) ISO 15792-1:2020, Welding consumables - Test methods - Part 1: Test assembly for all-weld metal test specimens in steel, nickel and nickel alloys	
ii) ISO 15792-1:2020, Welding consumables - Test methods - Part 1: Test assembly for all-weld metal test specimens in steel, nickel and nickel alloys	
iii) ISO 6847:2020, Covered electrodes for manual metal arc welding – Deposition of a weld metal pad for chemical analysis	
3.2. Update on ISO TC44/SC3 member countries	
<i>Constitution of Weld Metals</i>	
3.3. "Microstructure and mechanical properties in dissimilar weld of copper to 304 stainless steel produced by gas tungsten arc welding" by Yutaka S. Sato, M. Kunioka, S. Tokita, K. Koike and Y. Yoshida	II-2357-2025
3.4. "Properties of GMA-welded medium manganese austenite under sudden dynamic loads and low temperature" by K. Treutler, P. Neef, V. Wesling, C. Reppin, A. Gericke and W. Fluegge	II-2358-2025
3.5. "Influence of various microalloying strategies on the mechanical properties of weld seams in S690QL steel" by N. Schroeder, M. Rhode, A. Kromm, D. Kadoke, J. Kruse und Th. Kannengiesser	II-2359-2025
3.6. "Modification of high-alloyed filler metals for welding medium manganese steels" by P. Leicher, K. Treutler; P. Neef, V. Wesling, C. Reppin, A. Gericke and W. Fluegge	II-2360-2025
3.7. "Challenges in the evaluation of the weldability of old mild steels" by N. Schroeder, A. Kromm, D. Schroeppfer and Th. Kannengiesser	II-2361-2025
3.8. "Thermophysically Simulated Weld HAZ and CCT Diagram of High Strength Low Alloy Pipeline Steel"	II-2362-2025

by G. Fey, A. Kromm and Th. Kannengiesser	
3.9. "Effects of Ta on the eutectic phases in weld metal with Ni-30Cr filler metal by gas tungsten arc welding" by X. Guo, K. Xu, Y. L. Jiang, Y. Han and H. Zhang	II-2363-2025
3.10. "Effect of Cu Addition on the Microstructure and Mechanical Properties of Flux Cored Arc Weld Metal of 600MPa grade Carbon Steels" by B.-H. Park, J.-Y. Park, Y.-C. Kim and S. Liu	II-2364-2025
3.11. "Cold wire alloying in gas metal arc welding and related arc processes – possibilities and limitations" by K. Mäde, M. Mierzwa, M. Olesch, J. Kellwessel, P. Dewald, A. Biber, R. Sharma and U. Reisgen	II-2365-2025
3.12. "Modification of element segregation in the Twin-wire plasma arc welding (PAW) of Ti-48Al-2Cr-2Nb alloy using interpass remelting and ultra-high frequency pulsed (UHFP) current" by C. Shen, J. Xin, F. Li, L. Wang, W. Zhou, D. Zhang, Y. Zhang and X. Hua	II-2366-2025

Wednesday, 25 June 2025	
4. II-C: Testing and Measurement of Welds	Chair: Carolin FINK
4.1. List of documents of Subcommittee II-C, revised June 2025	II-2367-2025
4.2. List of members of Subcommittee II-C, revised June 2025	II-2368-2025
4.3. Working program of Subcommittee II-C, revised June 2025	II-2369-2025
<i>Weld metal chemical analysis, and comparison of analysis methods</i>	
4.4. "Experimental determination of hydrogen diffusion in high-strength submerged arc welded joints by electrochemical permeation" by D. Czeskleba, K. Wandtke, M. Rhode and T. Kannengiesser	II-2370-2025
<i>Mechanical property testing of welds, and comparison of test methods</i>	
4.5. "Microstructural evolution and toughness behavior of structural steel multi-pass weld metal, with a particular focus on the effect of notch location and the stability of acicular ferrite under thermal cycling" by J. Porter, G. Evans and C. Fink	II-2371-2025
<i>Weldability testing, and comparison of test methods</i>	
4.6. "Weldability Evaluation for Alloy Design and Wire Arc Additive Manufacturing of Functionally Graded Materials for Harsh Service Environments" by G. Melaragno and B. Alexandrov	II-2372-2025
4.7. "Accelerated Thermomechanical Testing Under Simulated and Extreme Service Conditions" by J. Berkson, S. Zhang, K. Orsborn and A. Ramirez	II-2373-2025
4.8. "Evaluation of Hydrogen Embrittlement Susceptibility in Pipeline Steel Welds" by F. Romero and B. Alexandrov	II-2374-2025

4.9. "Determination of inner pipe surface temperatures during in-service welding on hydrogen pipelines by means of component-like mock up experiments" by S. Kaiser, K. Erxleben, M. Rhode and Th. Kannengiesser	II-2375-2025
4.10. "Numerical simulation of hydrogen diffusion in submerged arc multilayer welds as a tool for the evaluation of cold cracking resistance" by D. Czeskleba, K. Wandtke, M. Rhode and T. Kannengiesser	II-2376-2025
4.11. "Simplified test method for assessing the risk of Hydrogen-Assisted Cold Cracking during gas metal arc welding of High Strength Steels" by H. Miedlig, X. Wei, M. Zinke and S. Jüttner	II-2377-2025
Corrosion testing of welds, and comparison of test methods	
4.12. "Assessment of the corrosion resistance of 1.4307 and 1.4404 stainless steel following chemical, mechanical and physical methods for removing oxide in front face of the weld" by D. Plélan, J.A. Soto Puente, L. Guilmois, Jubin	II-2378-2025
5. Summary and AOBs Chair: Zhuyao ZHANG	
5.1. Summary of technical presentations and recommendations - WitW recommendations	
5.2. Administrative matters - Resolutions	
5.3. Next meetings - 2026 Intermediate meeting - 2026 Annual Assembly	
5.4. AOBs and closing remarks	

2. Leadership of Commission II

Commission II — Arc Welding and Filler Metals			
Chair	Zhuyao ZHANG	UK	zzhang@lincolnelectric.eu zhuyao.zhang@iiwelding.net
Vice-Chair	Susanne BAUMGARTNER	Austria	susanne.baumgartner@voestalpine.com
II-A: Metallurgy of Weld Metals			
Chair	Thomas KANNENGIESSER	Germany	thomas.kannengiesser@bam.de
II-C: Testing and Measurement of Welds			
Chair	Carolyn FINK	USA	fink.242@osu.edu
II-E: Standardization			
Chair	Teresa MELFI	USA	teresa_melfi@lincolnelectric.com