



Commission XIII - Fatigue of welded components and structures

Draft Agenda for the 75th IIW Annual Assembly 2022

17th – 22nd July 2022, Tokyo, Japan

Overview of C-XIII Meetings

Note: The schedule time is according to the local time in Tokyo

Sunday, 17 th July	Tuesday, 19 th July	Wednesday, 20 th July	Thursday, 21 st July
C-XIII working group meetings	C-XIII working group meetings	C-XIII main Commission meetings	C-XIII main Commission meetings
08:30 - 12:30	08:30 - 16:00	08:30 – 18:00	08:30 – 16:00



COMMISSION XIII WORKING GROUP MEETINGS

Sunday, 17th July

08:30 – 12:30

Day 1

Working Group	Chair	Time
Welcome Commission business	M. Farajian	08:30- 09:00
<i>Invited Lecture</i> History of the IIW Recommendations for Fatigue Design	A. Hobbacher	09:00- 09:30
JWG XIII/XV Fatigue design rules	A. Hobbacher	09:30- 10:30
Coffee Break		10:30- 11:00
WG1 Fatigue testing and evaluation of data for design	F. Lefebvre	11:00- 12:30



COMMISSION XIII WORKING GROUP MEETINGS

Tuesday, 19th July

08:30 – 16:00

Day 2

Working Group	Chair	Time
Welcome	M. Farajian	08:30
<i>Invited Lecture</i> Current industrial activities regarding light weight construction in Austria?	M. Stoschka?	08:30-09:00
WG2 Fatigue Improvement and Retrofit Engineering Techniques	M. Farajian Zuheir Barsoum	09:00-10:30
Coffee Break		10:30-11:00
WG3 Stress analysis	J. Baumgartner	11:00-12:30
Lunch Break		12:30-14:00
WG4 Effects of weld imperfections on fatigue strength	Heikki Remes M. Leitner	14:00-15:30
WG6 Residual Stress Effects in fatigue Short presentation, vision and mission	M. Farajian J. Hensel	15:30-16:00
Close		16:00



MAIN COMMISSION XIII MEETINGS

Wednesday, 20th July

08:30 – 18:00

Day 3

Main topic: Fatigue testing and evaluation of data for design (WG1)			
Welcome, opening remarks and Commission business WG6, 2 Best practice documents			08:30- 08:50
<i>Invited Lecture?</i> Current activities in Fatigue Testing and Standards in France?		F. Lefebvre	08:50- 09:10
XIII-2933-2022	A statistical assessment of the fatigue strength improvement of butt joints by flush grinding	M. Braun, J. Baumgartner, H. Bakhshi, G. Hofmann, K. Drebenstedt, U. Kuhlmann	09:10- 09:30
XIII-2941-2022	Comparison of fatigue crack growth design curves on GMAW and EBW joints of high strength steels	Sisodia, R.P.S.; Gaspar, M.; Lukács, J.	09:30- 09:50
XIII-2953-2022	Fundamental study on the effect of specimen size and loading conditions on the fatigue crack growth behavior	Ramy Gadallah, Hidekazu Murakawa, Masakazu Shibahara	09:50- 10:10
XIII-2934-2022	Fatigue performance of hot-dip galvanized ultra-high-strength steel laser cut notches under constant and variable amplitude loading	Kalle Lipiäinen, Antti Ahola, Timo Björk	10:10- 10:30
Coffee Break			10:30- 11:00
Main topic: Fatigue Improvement and Retrofit Engineering Techniques (WG2)			
XIII-2930-2022	Quantification of the Intensity of High Frequency Mechanical Impact treatment of Welded Joints	Jan Schubnell, Takeshi Hanji, Stefanos Gkatzogiannis, Majid Farajian	11:00- 11:20
XIII-2932-2022	Fatigue strength of blast-cleaned post-weld-treated non-load-carrying fillet weld joints	Antti Ahola, Kalle Lipiäinen, Jani Riski, Matti Koskimäki, Joonas Pyörret, Timo Björk	11:20- 11:40



XIII-2931-2022	Fatigue life improvement of similar and dissimilar aluminium friction stir welds by deep rolling	Jan Schubnell, Antonia Müller, Ralf Boywitt, Majid Farajian	11:40- 12:00
XIII-2935-2022	Validation of the fatigue strength assessment of HFMI-treated steel joints by structural hot-spot stress approach	Brunnhofer P., Buzzi C., Pertoll T., Leitner M.	12:00- 12:20
Buffer time, discussion and commission business			12:20- 12:30
Lunch Break			12:30- 14:00
XIII-2936-2022	Capability of weld seam improvement techniques for the fatigue strength optimization of welded high strength steels	Werner T., Nitschke-Pagel T., Dilger K.	14:00- 14:20
XIII-2952-2022	Numerical study on the effect of peening analysis condition on HFMI-induced local residual stresses	Peiyuan Dai, Phyo Myat Kyaw, Naoki Osawa, Sherif Rashed, Donghui Ma, Jun Okada, Masahito Honnami	14:20- 14:40
XIII-2939-2022	Extended fatigue strength potential of welded low and high strength steels	Th.Nitschke-Pagel and K.Dilger	14:40- 15:00
XIII-2946-2022	Thickness effect of HFMI treatment under negative stress ratio	Shuichi TSUMURA, Toshiaki IWATA, Toshio NIWA	15:00- 15:20
XIII-2948-2022	Fatigue life extension of boxing fillet joints by LTT elongated bead method for all welding positions	Ninshu MA, Kazuo HIRAOKA, Hidekazu MURAKAWA, Naoki OSAWA, Takaaki TAKEUCHI, Zhongyuan FENG, Kohichi OKADA, Takuya MATSUZAKI, Satoru KANO, Chiaki SHIGA, Hiroshi YAJIMA	15:20- 15:40
XIII-2949-2022	Life extension analysis considering crack opening-closing behavior in HFMI treated welds	Yuki BANNO, Koji KINOSHITA, and Zuheir BARSOUM	15:40- 16:00
Coffee Break			16:00- 16:30



Main topic: Stress analysis (WG3)			
XIII-2928-2022	Sequence effects on the life estimation of thin-walled welded tubular structures made of HSS + UHSS under bending	Josef Neuhäusler, Jakob Roth, Markus Oswald, Andre Dürr, Klemens Rother	16:30- 16:50
XIII-2929-2022	Sequence effects on the life estimation of welded tubular structures made of S355J2H under tension	Josef Neuhäusler, Jakob Roth, Markus Oswald, Andre Dürr, Klemens Rother	16:50- 17:10
XIII-2937-2022	The peak stress method applied to fatigue lifetime estimation of welded steel joints under variable amplitude multiaxial local stresses	Luca Vecchiato, Alberto Campagnolo, Alberto Visentin and Giovanni Meneghetti	17:10- 17:30
XIII-2942-2022	Analysis of the applicability of the 'modified' FKM-Guideline 'Nonlinear' for service fatigue assessment of as-welded transverse non-load carrying attachments of mild steel under variable amplitude loading	Schiller R., Engelhardt I.	17:30- 17:50
Buffer time, discussion and commission business			17:50- 18:00
Close			18:00



MAIN COMMISSION XIII MEETINGS

Thursday, 21st July

08:30 – 16:00

Day 4

Main topic: Stress analysis (WG3)			
Welcome			08:30-
Commission business			08:50
<i>Invited Lecture</i>		J. Baumgartner?	08:50-
Stress Analysis and current industrial activities in Germany?			09:10
XIII-2943-2022	A traction force approach for the fatigue assessment of complex welded structures	Rautiainen M, Remes H, Niemelä A.	08:50-09:10
XIII-2945-2022	An effective stress approach for the fatigue assessment of welded joints considering the influence of materials strength	Baumgartner, Jörg and Braun, Moritz and Varfolomeev, Igor and Fischer, Claas	09:10-09:30
XIII-2951-2022	A Simple Estimation of Local Strain Amplitude at Weld Toe for Low Cycle Fatigue Assessment	Takeshi HANJI, Kazuo TATEISHI, Shunya Sumi, Masaru SHIMIZU	09:30-09:50
XIII-2950-2022	Fatigue Strength Evaluation by Reference Stresses for Root Cracks in U-Rib to Deck Welded Joints of Orthotropic Steel Decks	Masafumi HATTORI, Kazuo TATEISHI, Takeshi HANJI, Masaru SHIMIZU	09:50-10:10
XIII-2944-2022	Fatigue and failure behaviour of friction welded steel joints under normal and shear stresses	Baumgartner, Jörg and Uhlenberg, Lorenz and Trommer, Frank and Hesse, Ann-Christin	10:10-10:30
Coffee Break			10:30-11:00
Main topic: Effects of weld imperfections on fatigue strength (WG4)			
XIII-2927-2022	Effects of manufacturing parameters on surface and fatigue of DED-arc steel components	Jonas Hensel et al.	11:00-11:20
XIII-2940-2022	Fatigue life of thin sheet joints of dissimilar AA2024 and AA5056 produced by friction stir welding technology	Sviatoslav Motrunich, Illia Klochkov, Anatoliy Poklaytsky, Viktor Fedorchuk	11:20-11:40



XIII-2955-2022	Influence coefficient based fracture parameter modification factor for surface cracks in a T-butt welded joint'	Phyo Myat Kyaw, Naoki Osawa, Satoyuki Tanaka, Ramy Gadallah	11:40- 12:00
Commission business Discussions, Opinion of the C-XIII members, suggestions		M. Farajian	12:00- 12:30
Lunch Break			12:30- 14:00
Main topic: Residual Stress Effects in fatigue (WG6)			
XIII-2954-2022	Study on the relationship between root-failure fatigue strength and root welding residual stress of plug welded specimens	Yukihide YOSHIHARA, Naoki OSAWA, Hidekazu MURAKAWA	14:00- 14:20
XIII-2938-2022	Residual stress stability of HFMI treated transverse attachments under variable amplitude loading with the P(1/3) and the linear spectrum	Daniel Löschner, Paul Diekhoff, Richard Schiller, Imke Engelhardt, Thomas Nitschke- Pagel, Klaus Dilger	14:20- 14:40
XIII-2947-2022	Local-strain based assessment of effect of residual stress on fatigue crack initiation and propagation life of welded joints	Kasumi Morita, Masashi Mouri, Riccardo Fincato, Seiichiro Tsutsumi	14:40- 15:00
Closing remarks and Commission business (a) Commission XIII WITW paper recommendations (b) 2023 Annual Assembly (c) 2023 Spring Intermediate meetings of Working Groups (d) Any other business			15:00- 16:00
Close			16:00