1st Biennial ESIS-CSIC Conference on Structural Integrity (BECCSI 2025)
November 25-28, 2025, Metropol Palace, Belgrade, Serbia

Recent advances in structural integrity assessment of welded joints

TC18 Structural Integrity of Welded Joints Minisymposium

Dear colleagues, authors and friends,

It is a great honour for me to invite you to take part in the TC18 Mini-symposium about the structural integrity of welded joints, which will take place during the 1st Biennial ESIS-CSIC Conference on Structural Integrity (BECCSI2025) in Belgrade, November 25th - 28th, 2025. This mini-symposia will be organized by ESIS Technical Committee 18, and will be chaired by Prof. Dr. Fillipo Berto, from Sapienza University of Rome and Dr. Simon Sedmak, from the Innovation Center of Faculty of Mechanical Engineering in Belgrade.

Structural Integrity of Welded Joints is a hot research topic, but still fundamental in many industrial strategic engineering applications. Recent advances in manufacturing processes have allowed to improve the fracture and fatigue strength of welded joins, but still a lot can be done in this research field which has a high impact on large civil structures, mechanical components and a large variety products at different scale levels.

ESIS TC18 will shed light on the physical phenomena of fatigue and fracture of welded joints and develop effective criteria for the design of simple and complex welded connections under static and cyclic loading. Particular attention will be focused on the interaction between manufacturing parameters and the structural integrity of weldments which is a fundamental aspect for the proper design and realization of complex structures. Numerical modeling aimed at predicting residual stresses and distortions as well as advanced techniques for protecting against corrosion (as hot dip galvanization) will be also considered. Emphasis will be given to the effects of residual stresses on the fatigue strength. Recent progresses in multi-material joining will be also considered.

TC 18 will constantly provide an update state of the art about the design of welded joints, will generate guidelines aligned with the advances in the manufacturing processes and post-treatments able to improve the structural performances of welded joints.

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Please, indicate on BECCSI registration and submission form (https://www.beccsi2025.com/authorscenter/) that you want to participate to this minisymposia.