



**Professor Konstantinos Daniel Tsavdaridis**

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### Biography:

Dr Konstantinos (Kostas) Daniel Tsavdaridis joined the School of Civil Engineering at the University of Leeds in 2012 as Lecturer-B (Assistant Professor) in Structural Engineering and promoted to Associate Professor of Structural Engineering in 2015. After taking his MSc and DIC in Structural Engineering from Imperial College London, he completed his PhD (funded by ASD | Westok Ltd.) in 2010 at City University London and then took a Lectureship in Civil Engineering and Structural Mechanics at City University London. Since 2012, he has led the Steel and Steel-Concrete Composite (SCC) Structures research group and he is co-leading the University Research Theme for Materials and High-Value Engineering within the School of Civil Engineering. Dr Tsavdaridis is internationally known through large-scale experiments in the field of structural engineering - more particularly for his work on perforated steel beams and he is holding a few international patents. His results make it possible to calculate the static and dynamic performance of thin-webbed steel profiles with large and closely spaced web openings when subjected to various complex loading scenarios and calculate the fracture behaviours under high-stress conditions. He is actively involved in the development and transfer into the market of new technologies in structural products that embrace resilience and sustainability, through

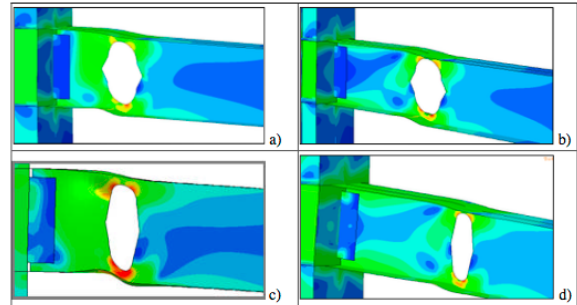


Fig. 3. Von Mises stress distribution and Vierendeel mechanism a) A3-350; b) A3-700; c) B3-350; d) B3-700

From: Tsavdaridis KD; Pilbin C (2014) Finite element modeling of steel connections with web openings: aseismic design and progressive collapse The 7th European Conference on Steel and Composite Structures

laboratory research. His discoveries combine science and practice. Some of his research outcomes are widely used by the design and construction industries in a number of applications such as sensitive structures and smart buildings. He has published more than 80 scientific articles, journal publications, technical reports and international conference papers. In 2013, he was core member and co-investigator of the successful EPSRC Strategic Equipment Grant proposal for establishing a Multi-Axial Dynamic Shaking Table testing facility at the University of Leeds EP/L022648/1. Dr Tsavdaridis is also a Professional/Chartered Civil Engineer in Greece, a Member of the American Society of Civil Engineers, a Chartered Civil Engineer in Europe recognised by the European Federation of National Engineering Associations (FEANI) and an ICE Mentor. He acts as a consultant to projects involving the implementation of advanced strengthening and rehabilitation technologies in new and existing structures. Since 2010, he further provides technical consultancy to Pell Frischmann Consultants Ltd. (PF), specialising in Nuclear Power Plant Infrastructures under extreme dynamic loading conditions (e.g., pipe explosion, aircraft impact and sloshing effects from the indoor pools). He has led PF's in-house team as Principal Structural Stress Specialist.

#### **Research Interests:**

steel; aluminium; composite; structures; earthquake engineering; sustainable design; digital design & construction; high-rise buildings; masts; towers; vibrations; structural optimisation; guidelines

#### **Selected Publications:**

- Tsavdaridis KD; D Mello C; Huo BY (2009) Shear capacity of perforated concrete-steel ultra shallow floor beams (USFB) 6th National Concrete Conference, TEE, ETEK, pp. 159-159
- Tsavdaridis KD; D Mello C (2011) FE modelling techniques for web-post buckling response: Perforated steel beams with closely spaced web openings of various shapes 6th European Conference on Steel and Composite Structures, pp. 1851-1856
- Tsavdaridis KD; Cedric D (2011) Web buckling study of the behaviour and strength of perforated steel beams with different novel web opening shapes. *Journal of Constructional Steel Research*, 67 (10), pp. 1605-1620.
- Tsavdaridis KD; D'Mello C (2012) Vierendeel Bending Study of Perforated Steel Beams with Various Novel Web Opening Shapes, through Non-linear Finite Element Analyses. *Journal of Structural Engineering*, 138 (10), pp. 1214-1230
- Tsavdaridis KD; Faghieh F; Nikitas N (2014) Assessment of perforated steel beam-to-column connections subjected to cyclic loading. *Journal of Earthquake Engineering*, 18 (8), pp. 1302-1325.
- Tsavdaridis KD; Pilbin C (2014) Finite element modelling of steel connections with web openings: aseismic design and progressive collapse The 7th European Conference on Steel and Composite Structures.
- Tsavdaridis KD; Papadopoulos T (2015) Assessment of beam-column connections using perforated beams with multiple closely spaced web openings 8th International Conference on Behaviour of Steel Structural in Seismic Areas.
- Tsavdaridis KD; Galiatsatos G (2015) Assessment of cellular beams with transverse stiffeners and closely spaced web openings. *Thin-Walled Structures*, 94 , pp. 636-650
- Maraveas C; Balokas GA; Tsavdaridis KD (2015) Numerical evaluation on shell buckling of empty thin-walled steel tanks under wind load according to current American and European design codes. *Thin-Walled Structures*, 95 , pp. 152-160
- Tsavdaridis KD (2015) Seismic Resistant Design of Connections with the Use of Perforated Beams *Journal of Civil and Environmental Engineering*
- Iuorio O; Homma EE; Tsavdaridis KD The application of free-form grid shells as protective shelters in archaeological sites *Proceedings of the IASS Annual Symposium 2016*

Tsavdaridis KD; Papadopoulos T (2016) A FE parametric study of RWS beam-to-column bolted connections with cellular beams. *Journal of Constructional Steel Research*, 116 , pp. 92-113

Maraveas C; Fasoulakis Z; Tsavdaridis KD (2017) Post-Fire Assessment and Reinstatement of Steel Structures. *Journal of Structural Fire Engineering*, 8 (2).

Maraveas C; Tsavdaridis KD; Nadjai A (2017) Fire Resistance of Unprotected Ultra Shallow Floor Beams (USFB): A Numerical Investigation. *Fire Technology*, 53 (2), pp. 609-627.