ENGINEERING TRAINING INSTITUTE AUSTRALIA

COLD-FORMED STEEL DESIGN WORKSHOP

BROOKS H. SMITH *CPEng P.E.*

- 15 years of experience in CFS product design, forensic engineering, software development, and technical leadership
- Lead maintainer of two open-source engineering software packages, including pyCUFSM
- Active researcher with over 600 citations to 17+ peer-reviewed publications.

Livestreamed via zoom

WORKSHOP SUMMARY **8 hours of CPD**

This workshop provides a theoretical background to the behaviour of thin-walled members and presents the methods and tools that engineers use for the analysis and design of cold-formed steel.

The content is tailored for practitioners with existing experience as well as engineers seeking to extend their knowledge of cold-formed steel. The workshop delivers concise information on the buckling analysis of thin-walled structures, stiffness and strength predictions for cold-formed steel members, and light steel framing design. Several exercises are included, focusing on typical day-to-day design applications. THIN-WALL-2 elastic buckling analysis software is also used throughout the course.

***Laptops, Calculators and Australian Standard AS4600-2018 Required**: THIN-WALL-2 must be installed on laptops, prior to the workshop. Upon registration, information regarding THIN-WALL-2 will be sent to all attendees.*

PROGRAMME *(8.30am Zoom invite will be emailed)*

9.00 - 11.00 Session 1
- INTRODUCTION
- BEHAVIOUR & DESIGN OF THIN-WALLED MEMBERS

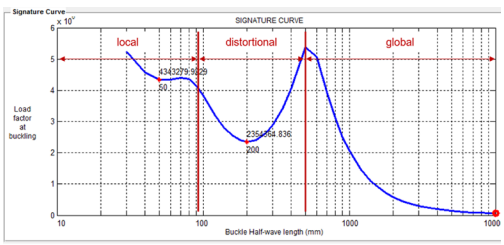
- Applications
- Advantages
- References
- Design Tools
- Global, Local and Distortional Instabilities
- Plate Theory and Post-Buckling Reserve
- The Effective Width Method of CFS Design
- Exercise #1: Compressive Axial Strength of a Square Hollow Section via EWM

11.00 - 11.15 Morning Break

11.15 - 1.00 Session 2
- BUCKLING ANALYSIS

- The Finite Strip Method of Stability Analysis
- The "Signature Curve"
- Exercise #2: Buckling Analysis of a Lipped Channel in Bending (Computerised & Manual)

1.00 - 1.30 Lunch Break



1.30 - 3.00 Session 3
- THE DIRECT STRENGTH METHOD OF CFS DESIGN

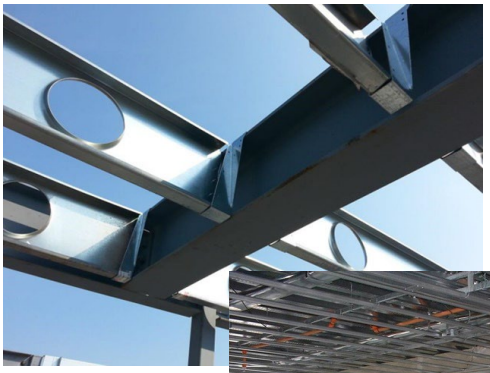
- What is DSM?
- DSM vs. EWM
- Exercise #3: Wall Stud Design via DSM (ULS & SLS)

3.00 - 3.15 Afternoon Break

3.15 - 5.00 Session 4
- DESIGN CONSIDERATIONS FOR WEBS
- CONNECTIONS

- Failure Modes of Webs
- Webs in Shear
- Web Crippling
- Exercise #4: Stud-to-Track Connection Capacity
- Bolted Connections
- Screwed Connections
- Exercise #5: Stud Splice Design

Certificate of Attendance will be emailed



AUSTRALIAN STANDARD AS4600-2018, LAPTOPS & CALCULATORS REQUIRED

- One day course – **$930 pp**

FURTHER INFORMATION

- (02) 9899 7447
- +61 413 998 031
- registrations@etia.net.au

- *To register, visit our website* www.etia.net.au ***OR** scan the QR Code.*

Cancellations made more than 5 working days prior to a course will incur a 50% processing fee of the full registration amount.
Cancellations made 5 working days or less will incur forfeiture of the full registration fee.