

Structural Steel Fabrication and Welding for Engineers

Overview

Engineering practitioners who design and specify steel structures need a practical understanding of steel materials including knowing the processes and practices of welding, cutting and forming, and weld testing and quality control. This knowledge is essential if fabricated steel structures are to be economical, practicable and fit for purpose.

Unfortunately few professionals have the opportunity to gain substantial exposure to fabrication workshop or testing activities and expand their practical understanding.

This course aims to address the gap, combining a broad scope of background information with hands-on practical experience.

On completion you will have gained an:

- appreciation of the design of welded structures.
- insight into fabrication processes, procedures and automation.
- overview of non-destructive testing processes and procedures.
- awareness of the heat-affected zone, residual stress and distortion.
- insight into the importance of welding procedures, and material certificates.
- awareness of common design errors in steel structures.

Course Content

Course consists of 3 components – basic theoretical learning of steel and welding; hands on workshop time, and guest speakers.

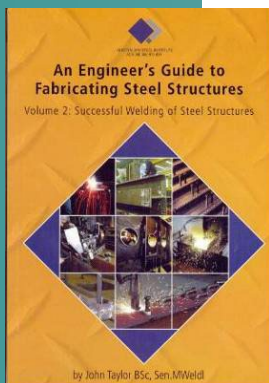
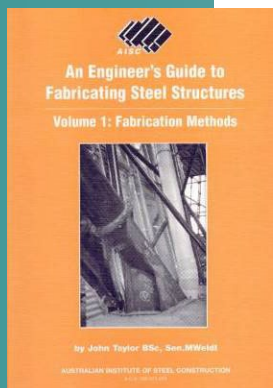
Theory Topics (indicative only)

- Steel materials – properties, grades & standards
- Mechanical cutting, thermal cutting, forming
- Joining processes
- Weld properties, weld preparations and weldability
- Open & hollow section connections
- Arc welding processes and selection
- Heat treatment, residual stress & distortion
- Weld defects, weld inspection and quality control
- Management of weld quality
- Design detailing – economy, access & common errors

Hands-on Workshop

Of the total 27 hours course time, approximately 18 hours is spent in the workshop, using equipment and learning basic welding techniques. Teachers also create situations for difficult design welds, allowing firsthand experience at tight place welding or non-standard welding.

(Refer Page 2 for further details)



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Guest Speakers

- Non Destructive Testing (NDT) expert will deliver a demonstration on NDT testing methods and equipment.
- Steel Fabricator will speak on economy of design and highlight common errors
- Steel Detailer will speak on economy of design and common errors they experience.

Please note: Content is introductory level, assuming no or limited experience in metal fabrication. Some content may already be known to participants, however, content is included as a refresher prior to physically working with steel.

Participants successfully completing the course will receive 2 TAFE competencies including "Perform routine gas metal arc welding" and "Perform routine manual metal arc welding"

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Study and reference material provided

- An Engineers Guide to Fabricating Steel Structures: Volume 1: Fabrication methods
- An Engineers Guide to Fabricating Steel Structures: Volume 2: Successful Welding of Steel Structures

Course Fee (incl GST)

Price includes personal copy of reference materials and purchase of personal welding safety equipment.

- \$1550.00 - members of ASI
- \$1650.00 - members of EA or Weld Australia
- \$1750.00 - non-members

(Please note the course fees are subsidised by TAFE Queensland and are only available for residents of Queensland.)

Minimum registrations are required to commence the course.

Places are strictly limited to 14 participants, so please register early to avoid disappointment.

Registrations Close Friday 5 July 2019

EA/Weld Australia members who are not ASI members should email membership@steel.org.au with current proof of membership to obtain the promotion code to access the EA/WA Member reduced fee.

Location	Date	Venue
Brisbane	Tuesday nights from 23 July to 17 September 2019 (6 pm to 9 pm each night)	TAFE Queensland, 247 Bradman Street, Acacia Ridge Qld

Please register online at <https://www.steel.org.au/events-awards/events/>

For further details, please contact: Peter Key, ASI National Technical Development Manager

Phone: (02) 8748 0180 Email: peterk@steel.org.au Web: www.steel.org.au