



Rail Welding – Fundamentals to Frontiers

August 27 to 31, 2018

Institute of Railway Technology

Monash University

Presenters:

*Peter Mutton, John Cookson and Iman Salehi – Institute of Railway Technology
Specialists from the Australian Rail Industry
Specialists from Railtech
Specialists from Thermit Australia
Standards Australia / RISSB*

Day One	Introduction to rail and rail welding
Day Two	Aluminothermic welding
Day Three	Flashbutt welding
Day Four	Rail welding standards and training
Day Five	Practical demonstrations of welding processes

The aim of this workshop is to:

- Provide background information on rail welding for supervisors, engineers and managers who are responsible for rail welding or qualifying rail welds at railway operations
- Highlight common issues with both processes found in practice, as well as key factors in resolving them
- Provide issues arising due to the interpretation as well as application of the rail welding standard AS1085.20, and discuss options for future versions of this standard

The format of the workshop will be flexible to allow participants to raise questions regarding the above topics or other rail welding concerns for discussion.

Venue: Monash University (Clayton), Green Chemistry Bldg, 13 Rainforest Walk, Fourth floor

Date: Monday Aug 27 to Friday Aug 31, 2018

Time: 9.00 – 5.00 (Registration from 8.30am)

Cost: Payable prior to workshop

Full five days: AUD\$2000 + GST

Day One only: AUD\$ 500 + GST

Day Two to Five only: AUD\$1500 + GST

Morning/afternoon tea, lunch and refreshments will be provided

This is an exclusive event with limited seats; early registration is essential to avoid disappointment
Please feel free to notify others who may be interested in this workshop.

Registration by Tuesday July 31, 2018

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Please advise if you have any dietary or access requirements.





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AGENDA

Day 1: 27 August 2018 – Rail and rail welding fundamentals

- Introduction to rail – functional requirements, manufacturing process, key performance aspects, Australian and International standards
- Introduction to rail welding – aluminothermic and flashbutt welding – key parameters including bond strength, running surface hardness, alignment, microstructure, Australian and International standards

Day 2: 28 August 2018 – Aluminothermic welding

- Aluminothermic welding process description - general
- Differences between major process types of AT welds
- Railway operator experiences with aluminothermic welds
- Requirements and issues with standards and specifications, including heavy haul requirements, Australian vs European standards
- Welder training, auditing, procedural compliance and competency requirements

Day 3: 29 August 2018 – Flashbutt welding

- Flashbutt welding – process basics, new developments
- Fixed vs mobile plants, significance in Australian context
- Standards, specifications and related acceptance requirements
- Railway operator experiences with flashbutt welds
- Rail grade developments and the welding different rail grades
- Quality control procedures, welder training and competency requirements
- Common issues, problems, and how to address them

Day 4: 30 August 2018 – Frontiers and future developments in rail welding

- Development of rail welding specifications and key issues
- Further review of QA in production welding - minimum and recommended requirements in acceptance testing
- Non-destructive testing of aluminothermic and flashbutt welds
- Head repair welds
- Questions and discussion
- Issue of Certificate of Workshop Attendance

Day 5: 31 August 2018 – Practical Demonstrations of rail welding