40 years of expertise in laser safety and laser technologies, serving your most critical challenges.

Optimising Overlap (Through-Penetration) Welding of Stainless Steels

Ref: AC2-3

Your design is fixed: it will be overlap (through-penetration) welding on stainless steel!

To implement this choice as effectively as possible, discover and learn good practice, from design through parameter setting to inspection.
The “Mastering Laser Welding” training course combined with this specialisation allows you to achieve the grade of Laser Welding Specialist.

Practical information

DATES (INTER-COMPANY / IN-HOUSE)
• 2–4 June 2027

ORGANISATION
IREPA LASER - Strasbourg / Illkirch

DURATION
2 days (14 hours)
PRICES
1850€ excl. VAT

TECHNICAL/TEACHING LEAD:
Teaching: Franck RIGOLET | Technical: Frédérique MACHI
DO YOU HAVE A DISABILITY?
Contact our disability officer at referent.handicap@irepa-laser.com

Key information

PREREQUISITES
Grade of Laser Welding Technologist (“Mastering Laser Welding” training course)

ACCESSIBLE LASER CLASSES
/

CERTIFICATION
Teaching equipment:
• 6 kW fibre laser
• 6kW disk laser with BrightLine Weld function
• 750W single-mode fibre laser
• Lasers combined with scanner heads and a robot or CNC system
• Metallographic preparation and examination laboratory
Validation:
• Assessment of learning outcomes and course certificate
Note:
The grade of Laser Welding Specialist will be awarded after achieving the grade of Laser Welding Technologist and 1 specialisation offered in our catalogue.
The grade of Laser Welding Expert will be awarded after achieving the grade of Laser Welding Technologist and 2 specialisations offered in our catalogue.

TECHNICAL/TEACHING LEAD:
Teaching: Franck RIGOLET | Technical: Frédérique MACHI

Training objectives

- Be able to design an overlap (through-penetration) joint with a laser beam.
- Be able to define the functions of the tooling.
- Be able to select equipment according to requirements (laser, optical system, monitoring…).
- Be able to define the operating parameters.
- Be able to check and interpret analysis results.
- Be able to identify and correct defects.

Target audience

- Project and/or product managers.
- R&D managers.
- Technical managers.
- You are already a Laser Welding Technologist (“Mastering Laser Welding” training course) and wish to develop your product and your skills further.

Programme

Over the 2 days

Overlap joint design
• Part design
• Advantages and points to watch
• Where is the effective cross-section?
• Tooling

Choosing the optical components to install
• Choosing the focal diameter and trajectory types
• Innovative technological solutions, beam shaping, oscillation

Choosing the operating parameters
• Focal point position
• Trajectory type
• Power/speed
• Ramps
• Energy distribution

Inspection methods
• Metallurgical weldability of stainless steels
• Defects in overlap joints, interpretation and corrective measures
• Non-destructive testing
• Mechanical testing of welded joints
• Metallography

Procedure qualification
• Approach
• Documentation

Case study
• Practical exercise