

Duration: 2 Days**Fees:** 16,000 Baht / Person***Training Sessions:**

30 – 31 January 2017 (Rayong)

7 – 8 September 2017 (Bangkok)

Suitable for:

Welders, Operators, Team Leaders and Supervisors who want to learn about welding metallurgy and better understand the requirements of the welding specifications in general.

Objectives:

To be able to implement and enforce relevant basic instructions contained in the Welding Procedure Specifications (parameters and their impact, control of the welding energy, pre and post heating, welding consequences of mono and multiple pass). At the end of the course, you will be able to assess:

- The characterization of a steel from the metallurgical point of view
- How the mechanical properties of steels are obtained
- How welding can alter the mechanical properties of steels
- How welding can cause cracking of steels
- The welding parameters to control to better monitor the risks of the alteration of the mechanical properties and cracking of steels.

Content:**MACROGRAPHIC ANALYSIS OF A WELD**

- Base Metal
- Heat Affected Zone
- Melting Zone (Weldment)

KNOWLEDGE OF THE "BASE METAL"

- Composition
- Structures
- Manufacturing processes
- Principles of the main heat treatment methods
 - Annealing
 - Normalizing
 - Quenching & Tempering
 - Surface Hardening
 - The overheating concept
- Mechanical properties

WELDING METALLURGY

- Thermal aspects of welding
 - Thermal cycle
 - Key factors of the thermal cycle
 - Links between welding parameters and thermal cycle
- Study of the phenomena in the HAZ
 - Heating effects
 - Cooling effects
 - Impact on the choice of the parameters and welding methods
 - Metallurgical flaws

- Study of the phenomena in the melting zone
 - Dilution
 - Impact on the final chemical composition
 - Characteristics of structures in the melted zone
 - Implications of single-pass and multiple-pass welding

WELDABILITY OF NON AND LOW ALLOY

- Cold Cracking
- Key factors
- Origin of the factors
- Location of cracks
- Methods of prevention
 - Welding energy
 - Pre and post-heating
 - Filler metal

* Excluding VAT - Published prices and schedules are subject to change without advance notification

* Registration fees are inclusive of lunch and coffee breaks