



## Post-Weld Heat Treatment (PWHT)

23 - 27 Sep 2024  
Geneva (Switzerland)



# Post-Weld Heat Treatment (PWHT)

**Ref.:** 15455\_312110 **Date:** 23 - 27 Sep 2024 **Location:** Geneva (Switzerland) **Fees:** 5200 Euro

## Introduction:

Post-Weld Heat Treatment PWHT is a critical process in welding and fabrication industries. It plays a vital role in reducing residual stresses, enhancing mechanical properties, and ensuring the structural integrity of welded components. This comprehensive PWHT course provides a deep understanding of the principles, methods, and applications of post-weld heat treatment. Participants will gain the knowledge and practical skills necessary to perform effective PWHT, resulting in improved weld quality and performance.

This Post-Weld Heat Treatment PWHT course equips participants with the knowledge and skills needed to perform effective heat treatment on welded components, ensuring quality, safety, and compliance with industry standards.

## Targeted Groups:

- Welding Engineers and Technicians
- Materials Engineers
- Quality Control and Inspection Personnel
- Welding Supervisors and Managers
- Mechanical Engineers
- Construction and Manufacturing Professionals
- Anyone involved in welding processes or quality assurance

## Course Objectives:

### By the end of this course, participants will be able to:

- Understand the fundamentals of Post-Weld Heat Treatment PWHT and its significance.
- Identify the types of welds and materials that benefit from PWHT.
- Select appropriate PWHT methods based on welding processes and material types.
- Comprehend the importance of temperature control during PWHT.
- Perform PWHT effectively to relieve residual stresses and improve material properties.
- Interpret and apply industry standards and codes related to PWHT.
- Troubleshoot common issues and challenges in PWHT processes.
- Enhance the quality, safety, and reliability of welded components through PWHT.
- Document and report PWHT procedures and results accurately.

## Targeted Competencies:

- Post-Weld Heat Treatment Techniques
- Material Science and Metallurgy
- Welding Process Knowledge
- Quality Control and Inspection Skills
- Compliance with Industry Standards and Codes
- Problem Solving and Troubleshooting Abilities
- Effective Communication and Documentation

## **Course Content:**

### **Unit 1: Introduction to Post-Weld Heat Treatment PWHT**

- Basics of PWHT and its role in welding
- Benefits and objectives of PWHT
- Types of welds that require PWHT
- PWHT vs. other heat treatment processes

### **Unit 2: Principles of PWHT**

- Effects of welding on material properties
- Residual stresses and their impact
- Temperature control and uniformity
- Heat treatment cycles and parameters

### **Unit 3: PWHT Methods and Equipment**

- PWHT methods: furnace, induction, resistance, and flame heating
- Selection of PWHT equipment
- Temperature monitoring and control systems
- Safety considerations in PWHT equipment operation

### **Unit 4: PWHT Process Execution**

- Preparing the weldment for PWHT
- Temperature profiles and soak times
- Cooling and quenching methods
- Evaluation of PWHT results

### **Unit 5: PWHT for Different Welded Materials**

- PWHT of carbon steels
- PWHT of stainless steels and nickel alloys
- PWHT of heat-treatable alloys
- PWHT of exotic materials and superalloys
- Case studies on material-specific PWHT

### **Unit 6: Quality Assurance and Documentation**

- PWHT inspection and testing
- Compliance with welding codes and standards
- Documentation and reporting
- Non-destructive testing NDT techniques
- Weld qualification and certification related to PWHT

### **Unit 7: Troubleshooting and Best Practices**

- Common challenges in PWHT
- Problem-solving strategies
- Best practices for successful PWHT



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- Safety considerations in PWHT processes
- Real-world case studies and hands-on exercises



**Registration form on the :  
Post-Weld Heat Treatment (PWHT)**

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