MERCURY

Welding and Hot Work Safety

16 – 20 May 2027
Sharm El-Sheikh (Egypt)



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Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

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Ref: 16309_1015145 **Date:** 16 – 20 May 2027 **Location:** Sharm El-Sheikh (Egypt) **Fees:** 4500 Euro

Introduction to Welding and Hot Work Safety:

Welding and hot work are essential operations in industrial, construction, and maintenance environments, but they carry significant safety risks if not properly managed. This Welding and Hot Work Safety course provides an understanding of the hazards, safety protocols, and best practices required to minimize risks.

Participants will explore regulatory compliance, fire prevention measures, equipment safety, and safe work procedures. The Welding and Hot Work Safety training course emphasizes the importance of risk assessment, hazard identification, and implementing control measures aligned with global safety standards.

This Welding and Hot Work Safety program builds both theoretical knowledge and practical awareness for workers, supervisors, and safety professionals. It equips participants to maintain safe working environments while ensuring operational efficiency and compliance with legal requirements. Learners will have a strong grasp of preventive measures, emergency responses, and compliance strategies.

Targeted Groups:

This Welding and Hot Work Safety training targets professionals seeking specialized knowledge and skills:

- Welders and fabricators.
- Maintenance and repair technicians.
- Safety officers and supervisors.
- Project engineers and site managers.
- Quality assurance and inspection teams.
- Fire watch and emergency response personnel.
- Health, safety, and environment HSE professionals.
- Contractors and subcontractors involved in hot work activities.
- Industrial plant and facility managers.

Targeted Competencies:

Participants will gain the following competencies during the Welding and Hot Work Safety program:

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- Hazard identification and risk analysis.
- Regulatory compliance and safety documentation.
- Proper use of personal protective equipment PPE.
- Hot work permit system administration.
- Fire prevention and emergency planning.
- Safe handling of equipment and materials.
- Workplace communication and safety leadership.
- Incident investigation and reporting techniques.
- Continuous safety monitoring and audits.

Course Objectives:

Participants will achieve the following objectives by completing the Welding and Hot Work Safety course:

- Identify welding and hot work hazards in diverse industrial settings.
- Assess potential risks and implement appropriate safety measures.
- Apply regulatory and industry safety standards effectively.
- Demonstrate safe use of welding equipment and protective gear.
- Analyze fire prevention strategies and implement control systems.
- Develop hot work permits and follow authorization procedures.
- Respond effectively to emergencies and workplace incidents.
- Evaluate ventilation and environmental controls for confined areas.
- Recognize hazardous materials and handle them safely.
- Plan and execute welding tasks while reducing exposure to risks.
- Clearly communicate safety requirements to teams and contractors.
- Monitor and audit hot work areas to ensure compliance with relevant regulations and standards.
- Reinforce a proactive safety culture within organizations.
- Understand incident reporting protocols and corrective actions.
- Integrate safety practices into operational planning and design.
- Gain confidence in applying safety frameworks in real scenarios.

Studying Scenarios:

In this Welding and Hot Work Safety training, participants will develop their skills through the analysis of the following scenarios:

- Evaluating a welding job with multiple fire hazards present.
- Responding to an oxygen cylinder fire in a confined space.
- Conducting a safety audit before issuing a hot work permit.
- Assessing ventilation needs in an enclosed welding environment.
- Reviewing an incident report to identify missed safety measures.
- Coordinating with fire watch teams during repair operations.
- Applying lockout/tagout before welding on pressurized lines.
- Mitigating risks during cutting operations on flammable tanks.
- Planning safe hot work on elevated platforms with nearby personnel.

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Course Content:

Unit 1: Fundamentals of Welding and Hot Work Safety:

- Definition of welding and hot work processes.
- Types of welding operations and associated hazards.
- Global safety regulations and compliance standards.
- Introduction to OSHA and NFPA hot work guidelines.
- Importance of hazard recognition and risk assessment.
- Basic principles of fire prevention in welding activities.
- The Role of Safety Culture in Hot Work Operations.
- Key responsibilities of workers and supervisors.
- Overview of hot work permits and control measures.

Unit 2: Hazard Identification and Risk Assessment:

- Identifying fire and explosion risks in hot work.
- Electrical hazards related to welding equipment.
- Exposure to fumes, gases, and toxic substances.
- Thermal hazards and heat-related injuries.
- Environmental risks, including confined space operations.
- Risk assessment methodology and evaluation steps.
- Implementing job safety analysis JSA.
- Use of safety data sheets SDS for hazard control.
- Documentation and reporting of risk assessments.

Unit 3: Safety Equipment and Preventive Measures:

- Selection and Use of PPE for Welders and Hot Work Teams.
- Proper use of welding helmets, gloves, and fire-resistant clothing is essential.
- Grounding and insulation of electrical welding equipment.
- Installation of fire-resistant shields and barriers.
- Use of fire extinguishers and suppression systems.
- Ventilation and fume extraction systems.
- Safe Handling and Storage of Gas Cylinders.
- Hot work permit issuance and monitoring procedures.
- Pre-work safety checklist for welding tasks.

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Unit 4: Fire Safety and Emergency Response:

- Fire watch responsibilities during hot work.
- Combustible materials management and safe clearance.
- Emergency evacuation protocols and drills.
- Incident reporting and investigation procedures.
- Fire Detection and Alarm Systems for Welding Sites.
- Coordination with emergency response teams.
- First aid for burns and inhalation injuries.
- Developing an emergency response plan.
- Case studies of welding-related fire incidents.

Unit 5: Compliance, Audits, and Continuous Improvement:

- Overview of regulatory compliance requirements.
- Workplace inspections and safety audits.
- Root cause analysis for welding accidents.
- Continuous monitoring of hot work environments.
- Implementing corrective and preventive actions CAPA.
- Worker training and competency verification.
- Safety performance metrics and reporting.
- Integration of safety standards into project planning.
- Building a Proactive Safety Culture in Organizations.

Final Insights & Key Takeaways:

This Welding and Hot Work Safety course ensures that participants gain a deep understanding of hazard control and safety management. The training builds awareness of global safety standards and compliance protocols essential for hot work operations. Learners leave with practical skills to prevent incidents and improve workplace safety. The course empowers participants to foster a proactive and sustainable safety culture within their organizations.