MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

THERMAL INSULATION SYSTEMS: ADVANCED APPLICATIONS AND MAINTENANCE

“Enhance Energy Efficiency, Asset Integrity, and Safety through Advanced Insulation Solutions.”

Schedule

Venue (InHouse)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** In-House Training

Introduction

This intensive training provides in-depth knowledge and hands-on skills required for the design, application, inspection, and maintenance of thermal insulation systems in industrial environments. Participants will explore advanced insulation technologies, material selection strategies, and maintenance techniques that improve energy efficiency, prevent corrosion under insulation (CUI), and extend equipment lifespan. The course is aligned with global best practices, including ISO 12241, ASTM, and EIGA standards.

Objectives

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

- Understand the principles and thermal properties of industrial insulation systems
- Identify suitable insulation materials for different temperature ranges and environments
- Design insulation systems for energy efficiency, personnel protection, and condensation control
- Detect and prevent Corrosion Under Insulation (CUI)
- Apply maintenance, inspection, and repair procedures for thermal insulation systems

MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

Why Attend

Effective insulation is critical for reducing energy consumption, enhancing safety, and minimizing maintenance costs. This course enables professionals to design and maintain high-performance insulation systems that comply with safety and environmental standards.

Target Audience

- Mechanical and Maintenance Engineers
- Facility and Plant Managers
- Insulation and Coatings Specialists
- Energy Efficiency and HSE Professionals
- Project Engineers and Contractors in Oil, Gas, Petrochemical, and Power

Individual Benefits

- Master insulation design, installation, and maintenance best practices
- Minimize heat loss, energy waste, and maintenance issues
- Gain expertise in managing CUI risks and insulation lifecycle
- Enhance career growth in energy, industrial, and process sectors

Organizational Benefits

- Improve plant energy efficiency and reduce operational costs
- Increase asset longevity through effective insulation maintenance
- Enhance compliance with safety, fire protection, and thermal regulations
- Lower emissions and support sustainability targets

Instructional Methodology

- Real-world case studies and industry benchmarks
- Hands-on exercises in insulation design, inspection, and failure analysis
- Live demonstrations of insulation systems and materials
- Team-based workshops and thermal performance evaluations
- Final exam and certificate issuance

MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

Course Outline

DETAILED 5-DAY COURSE OUTLINE (CUSTOMIZABLE)

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee Breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Fundamentals of Thermal Insulation Systems

- Module 1: Principles of Heat Transfer and Insulation Performance (07:30 – 09:30)
- Module 2: Classification of Insulation Materials – Properties and Standards (09:45 – 11:15)
- Module 3: Functions of Insulation – Energy Saving, Process Stability, Personnel Protection (11:30 – 01:00)
- Module 4: Overview of International Standards (ISO, ASTM, EIGA, API) (02:00 – 03:30)

Day 2: Material Selection and System Design

- Module 1: Selection Criteria – Temperature Range, Moisture Resistance, Fire Safety (07:30 – 09:30)
- Module 2: Insulation System Design – Thickness, Jacketing, Vapor Barriers (09:45 – 11:15)
- Module 3: Thermal and Economic Performance Analysis (11:30 – 01:00)
- Module 4: Case Study: Design of Insulation for Hot and Cryogenic Systems (02:00 – 03:30)

Day 3: Application Techniques and Quality Control

- Module 1: Installation Methods – Piping, Equipment, Ducting, and Vessels (07:30 – 09:30)
- Module 2: Joint Sealing, Fastening, and Jacketing Systems (09:45 – 11:15)
- Module 3: Quality Assurance and Field Supervision (11:30 – 01:00)
- Module 4: Workshop: Field Installation Review and Checklist (02:00 – 03:30)

Day 4: Corrosion Under Insulation (CUI) and Maintenance

- Module 1: Causes and Mechanisms of CUI (07:30 – 09:30)
- Module 2: CUI Detection and Prevention Methods (09:45 – 11:15)
- Module 3: Insulation Maintenance Programs and Inspection Plans (11:30 – 01:00)
- Module 4: Workshop: Evaluating CUI Risk in Existing Systems (02:00 – 03:30)

Day 5: Advanced Topics and Future Trends

- Module 1: Sustainable Insulation – Eco-Friendly Materials and Circular Design (07:30 – 09:30)
- Module 2: Innovations – Aerogels, Vacuum Insulation Panels, Smart Systems (09:45 – 11:15)
- Module 3: Troubleshooting, Failure Modes, and Repairs (11:30 – 01:00)
- Module 4: Final Exam, Certification Wrap-Up, and Action Planning (02:00 – 03:30)

Certification

Participants who attend the full course and pass the final assessment will be awarded a Certificate of Completion – Thermal Insulation Systems: Advanced Applications and Maintenance. This certification confirms competence in thermal system design, application, and maintenance aligned with global industry practices.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**