

# Mechanical Seal and Gland Packing Application Training Course

10 – 14 May 2027
Kuala Lumpur

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**Ref:** 1882_240353 **Date:** 10 – 14 May 2027 **Location:** Kuala Lumpur **Fees:** 6500 Euro

## Overview

Mechanical Seal and Gland Packing Application Training Course is a one-week intermediate programme for rotating-equipment, maintenance, reliability, inspection, and project personnel who leave with a Seal Application Review Pack. Participants connect service conditions, seal chambers, face and secondary-seal materials, configurations, arrangements, support systems, gland packing, installation evidence, leakage, and failure patterns with documented application decisions. The course develops purchaser and user review capability without replacing seal-vendor design, competent installation, or site authorization. Agile Leaders Training Center delivers this focused sealing-systems course.

## Who Should Attend

- Mechanical and rotating-equipment engineers who review seal applications
- Maintenance and reliability personnel responsible for pumps and sealing systems
- Inspection and quality staff who examine seal documentation and installation evidence
- Project and procurement personnel who coordinate pump and seal packages
- Operations personnel who monitor leakage, temperature, pressure, and support systems

Participants should understand basic pump components and operating data. The course does not authorize pressure-boundary design, seal manufacture, intrusive work, or changes outside approved procedures.

## Departments and Industries

The course supports petroleum, chemical, utilities, water, manufacturing, and other industries that operate centrifugal or rotary pumps.

- Mechanical engineering and rotating equipment
- Maintenance, reliability, and condition monitoring
- Inspection, quality, and technical assurance
- Projects, procurement, and vendor coordination
- Operations and process support

## Learning Objectives

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

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- Explain mechanical-seal and gland-packing operating principles
- Organize service data and seal-chamber information for application review
- Compare seal types, arrangements, materials, and support-system functions
- Evaluate gland packing selection, installation, adjustment, and operating evidence
- Interpret leakage, wear, heat, vibration, and contamination evidence
- Build a traceable seal application and failure-review record

## Course Agenda

### Day 1: Sealing Principles and Service Definition

- Leakage Path, Pressure Boundary, and Shaft-Motion Map
- Mechanical Seal, Lip Seal, and Gland Packing Comparison
- Process Fluid, Pressure, Temperature, Speed, and Hazard Data Register
- Seal Chamber, Shaft, Sleeve, and Runout Information Checklist
- Application Responsibility and Competence-Boundary Matrix

### Day 2: Mechanical Seal Components and Arrangements

- Primary Face, Mating Face, Springs, Bellows, and Drive Mechanism Map
- Secondary Seals, Gaskets, Sleeve, and Gland Review
- Seal Type, Orientation, and Arrangement Comparison
- Balanced and Unbalanced Seal Behaviour
- Cartridge Assembly and Equipment-Interface Drawing Review

### Day 3: Materials, Environment, and Support Systems

- Face-Material and Secondary-Seal Compatibility Matrix
- Lubrication Film, Heat Generation, and Distortion Concept Map
- Flush, Quench, Buffer, and Barrier Function Review
- Reservoir, Cooler, Separator, Instrument, and Piping Checklist
- Support-System Operating Limit and Alarm Register

### Day 4: Gland Packing Selection and Application

- Packing Fibre, Binder, Lubricant, and Service Compatibility
- Stuffing Box, Shaft Sleeve, Lantern Ring, and Gland Geometry Review
- Packing Ring Preparation and Staggered-Joint Installation Sequence
- Gland Adjustment, Controlled Leakage, Temperature, and Run-In Checks
- Packing Wear, Sleeve Damage, Scoring, and Extrusion Evidence

## Day 5: Failure Evidence and Application Review

- Leakage, Face Wear, Coking, Blistering, and Chemical Attack Matrix
- Dry Running, Misalignment, Vibration, Pressure, and Temperature Evidence
- Seal Support-System Deviation and Contamination Review
- Data Sheet, Drawing, Bill of Material, and Inspection Record Checklist
- Capstone Exercise: Seal Application Review Pack

## Practical Exercises

Guided exercises turn service and failure evidence into documented review decisions.

- Build a service-condition register from a pump case
- Compare candidate seal arrangements and materials
- Trace the function of a seal support system
- Review a gland-packing installation and adjustment record
- Prepare a failure-evidence and escalation report

## FAQs

### Does the course teach seal-vendor design?

No. It develops application, documentation, and review literacy while detailed design and suitability confirmation remain with authorized engineering and vendor functions.

### Are both mechanical seals and gland packing covered?

Yes. Participants compare their functions, selection factors, installation evidence, operating behaviour, leakage expectations, and failure signs.

### Does the course address seal support systems?

Yes. It reviews the purposes of flush, quench, buffer, barrier, cooling, separation, instrumentation, and associated piping without authorizing field modification.

### What failure evidence is examined?

Examples include leakage, wear patterns, heat, dry running, contamination, chemical attack, vibration, misalignment, scoring, and support-system deviations.

### What will participants take back to work?

A Seal Application Review Pack containing service data, selection comparisons, support-system checks, packing records, inspection evidence, and an escalation template.

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## Conclusion

Participants return able to review sealing applications, question documentation, recognize adverse evidence, and communicate safely with pump, seal, maintenance, and vendor specialists.