



Pavement Rehabilitation Strategy and Treatment Selection Course

9 – 20 May 2027
Langkawi



Pavement Rehabilitation Strategy and Treatment Selection Course

Ref: 569_143859 **Date:** 9 – 20 May 2027 **Location:** Langkawi **Fees:** 15000 Euro

Overview

Pavement Rehabilitation Strategy and Treatment Selection Course is a ten-day advanced course for pavement and highway teams who leave with a Pavement Rehabilitation Strategy. Participants connect pavement condition diagnosis, evidence quality, flexible and rigid pavements, root-cause analysis, rehabilitation treatment selection, materials, drainage, constructability, quality control, performance monitoring, and life-cycle comparison. The course turns survey findings into traceable treatment and delivery decisions. Agile Leaders Training Center presents pavement rehabilitation through practical engineering artifacts.

Who Should Attend

- Teams responsible for pavement condition surveys, diagnosis, and rehabilitation recommendations
- Functions managing road assets, maintenance priorities, and renewal pipelines
- Personnel evaluating pavement materials, structural response, and treatment compatibility
- Groups preparing rehabilitation specifications, traffic staging, quality controls, and delivery plans
- Reviewers comparing treatment performance, constructability, risk, and life-cycle implications

The course assumes participants can interpret pavement drawings, survey records, material reports, and basic engineering calculations, and it leaves out project-specific design, laboratory certification, legal advice, statutory approvals, and professional certification.

Departments and Industries

The course supports departments and industries responsible for road condition, pavement renewal, engineering assurance, and maintenance delivery.

- Highway engineering, pavement management, maintenance, and materials
- Public works, municipal roads, airports, and industrial transport networks
- Engineering consultancy, testing services, contracting, and construction supervision
- Logistics corridors, ports, utilities, and large-site infrastructure
- Asset management, procurement, quality assurance, and performance monitoring

Learning Objectives

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



- Diagnose pavement deterioration using functional, structural, material, and drainage evidence
- Evaluate data quality, distress mechanisms, and root causes
- Compare flexible and rigid pavement rehabilitation treatment families
- Apply constructability, traffic, specification, and quality-control screens
- Build life-cycle, risk, and performance-monitoring comparisons
- Prioritize actions in a Pavement Rehabilitation Strategy

Course Agenda

Day 1: Rehabilitation Context and Evidence

- Pavement Rehabilitation Need and Decision-Scope Statement
- Flexible and Rigid Pavement System Map
- Condition Data Inventory and Provenance Register
- Survey Coverage, Resolution, and Reliability Matrix
- Rehabilitation Assumption and Evidence-Gap Log

Day 2: Distress Identification and Diagnosis

- Flexible Pavement Distress Type-Severity-Extent Catalogue
- Rigid Pavement Distress and Joint-Condition Catalogue
- Surface Defect Location and Progression Map
- Distress Mechanism and Root-Cause Logic Tree
- Condition Rating and Intervention Trigger Profile

Day 3: Functional and Structural Evaluation

- Ride Quality and Roughness Evaluation Sheet
- Rutting, Texture, and Skid-Resistance Assessment
- Deflection Basin and Structural Response Interpretation
- Traffic Loading and Remaining-Capacity Scenario
- Functional-Structural Condition Synthesis Matrix

Day 4: Materials, Drainage, and Failure Drivers

- Pavement Layer and Material Investigation Plan
- Core, Sample, and Test-Result Correlation Table
- Surface and Subsurface Drainage Pathway Map
- Shoulder, Edge, Utility, and Interface Condition Register
- Failure Driver and Treatment Constraint Statement



Day 5: Flexible Pavement Treatment Selection

- Crack Sealing, Surface Treatment, and Thin-Lift Decision Tree
- Milling Depth and Asphalt Overlay Option Matrix
- Cold In-Place and Hot In-Place Recycling Screen
- Full-Depth Reclamation and Stabilization Assessment
- Flexible Pavement Treatment Compatibility Register

Day 6: Rigid Pavement Rehabilitation

- Partial-Depth and Full-Depth Repair Selection Matrix
- Joint Repair, Load Transfer, and Sealing Plan
- Diamond Grinding and Surface Restoration Screen
- Bonded and Unbonded Overlay Concept Comparison
- Rigid Pavement Repair Sequencing Map

Day 7: Treatment Design and Materials Decisions

- Rehabilitation Design Input and Verification Checklist
- Overlay Thickness and Preparation Decision Record
- Recycled and Virgin Material Suitability Matrix
- Mix, Stabilizer, and Repair-Material Selection Brief
- Treatment Detail, Transition, and Interface Schedule

Day 8: Constructability and Delivery Controls

- Constructability Constraint and Access Review
- Traffic Staging and Work-Zone Interface Plan
- Plant, Equipment, Production, and Haulage Capacity Check
- Rehabilitation Specification and Acceptance Schedule
- Construction Risk and Contingency Register

Day 9: Quality, Performance, and Life-Cycle Choice

- Inspection and Testing Control Plan
- Nonconformance, Corrective Action, and Release Workflow
- Performance Indicator and Monitoring Baseline
- Life-Cycle Cost and Service-Impact Comparison
- Treatment Ranking and Sensitivity Decision Table

Day 10: Pavement Rehabilitation Strategy Practice

- Exercise: Validate Condition Evidence and Root Causes
- Exercise: Match Flexible and Rigid Pavement Treatments
- Exercise: Integrate Drainage, Materials, and Constructability
- Exercise: Rank Options by Life-Cycle Value and Risk
- Capstone Exercise: Pavement Rehabilitation Strategy

Practical Exercises

The course uses suggested activities to connect condition evidence, engineering diagnosis, treatment choice, and delivery control.

- Suggested activity: classify flexible and rigid pavement distresses, test the reliability of survey evidence, and trace likely mechanisms through a root-cause logic tree.
- Suggested activity: compare sealing, surface treatments, milling, overlays, recycling, reclamation, stabilization, concrete repairs, grinding, and overlay concepts against condition and constraints.
- Suggested activity: assemble drainage, materials, traffic staging, specifications, inspection, testing, acceptance, performance indicators, and construction risks into a delivery control set.
- Suggested activity: rank rehabilitation options through life-cycle cost, service impact, performance, uncertainty, constructability, and sensitivity criteria in a Pavement Rehabilitation Strategy.

FAQs

Who suits the pavement rehabilitation strategy course and what does it assume?

It suits pavement engineering, road asset, maintenance, materials, consulting, contracting, public works, and assurance teams, and assumes they can interpret pavement drawings, surveys, material reports, and basic engineering calculations.

How does pavement rehabilitation differ from routine pavement maintenance?

Pavement rehabilitation restores functional or structural performance through treatments such as overlays, recycling, reclamation, concrete repair, or grinding, while routine maintenance addresses localized or early defects to preserve serviceability.

How is a pavement rehabilitation treatment selected?

A treatment is selected by linking distress mechanism, severity, extent, functional condition, structural capacity, materials, drainage, traffic, geometry, construction constraints, expected performance, risk, service impact, and life-cycle implications.



When should pavement recycling be considered in a rehabilitation strategy?

Pavement recycling should be considered when existing materials, deterioration depth, structural need, traffic, environment, equipment, specifications, construction impact, and long-term performance support an in-place or plant-based recycling option.

What belongs in a Pavement Rehabilitation Strategy?

The strategy records condition evidence, root causes, treatment alternatives, design inputs, material and drainage needs, constructability, traffic staging, specifications, quality controls, performance indicators, life-cycle comparison, risks, assumptions, priorities, and next actions.

Conclusion

Participants take back a Pavement Rehabilitation Strategy linking condition evidence, diagnosis, treatment selection, delivery controls, and life-cycle comparison. It changes disconnected survey and test results into a traceable basis for rehabilitation priorities and execution planning. The strategy supports engineering decisions without replacing project-specific design, laboratory certification, approvals, or professional certification.