CONCEPT

# Elevator and Escalator Maintenance: Safety Codes, Passenger Rescue and Modernisation

29 August – 2 September 2027
Jeddah - Corniche four-star



# Elevator and Escalator Maintenance: Safety Codes, Passenger Rescue and Modernisation

**Ref:** 354_15693 **Date:** 29 August – 2 September 2027 **Location:** Jeddah - Corniche four-star **Fees:** 19500 SAR

## Introduction:

Elevator and escalator maintenance is often left entirely to the lift contractor, so building owners cannot judge whether a stalled car is being handled safely, whether tests are due or whether repeated callbacks point to a failing controller. This Core Concept course equips facility and building engineering staff to understand traction, hydraulic and machine-room-less lifts, supervise safe passenger rescue, set preventive maintenance and inspection regimes, and measure contractor performance. Participants leave with a Vertical Transportation Management Plan covering rescue, maintenance, modernisation and KPIs for their own buildings.

## Course Objectives:

- Identify the construction, operating principle and critical components of traction, hydraulic and machine-room-less lifts, escalators and moving walks in a building portfolio
- Explain how the brake, overspeed governor, safety gear, buffers and door locks protect passengers, using the requirements of the EN 81 series, EN 115 and ASME A17.1
- Supervise a safe passenger rescue from a stalled lift car, from alarm receipt to controlled evacuation at a landing
- Set preventive maintenance schedules and periodic safety test regimes for lifts and escalators and audit the records
- Analyse fault, callback and entrapment data to decide between repair, component modernisation and full replacement
- Define lift maintenance contract KPIs and read a traffic analysis summary to judge whether installed lifts meet building demand

## Target Audience:

- Facility management staff accountable for the safe operation and availability of lifts and escalators across one or more buildings
- Building engineering staff who oversee mechanical and electrical services, including vertical transportation plant
- Maintenance supervision staff who direct in-house technicians or monitor lift contractors on site
- Property and asset management staff who approve lift modernisation budgets and maintenance contracts
- Building operations and security control room staff who receive lift alarms and coordinate first response to entrapments

## Course Outline:

### Day 1: Vertical Transportation Systems in Buildings

- Traction Lifts: Sheave, Counterweight and Geared Versus Gearless Machines
- Hydraulic Lifts: Pump Unit, Cylinder and Low-Rise Applications
- Machine-Room-Less Lift Layout: Hoistway-Mounted Drive and Controller Access
- Escalators and Moving Walks: Truss, Step Chain, Handrail and Drive Station
- Lift and Escalator Asset Register and Condition Baseline for a Building Portfolio

### Day 2: Lift Components, the Safety Chain and Governing Codes

- Controller, VVVF Drive and Door Operator Functions in the Lift Control System
- Suspension Ropes, Roping Ratios and Rope Condition Indicators
- Brake, Overspeed Governor, Safety Gear and Pit Buffers as One Protection Chain
- EN 81 Series Scope: EN 81-20, EN 81-21, EN 81-28 Remote Alarm and EN 81-70 Accessibility
- ASME A17.1, ASME A17.3, ISO 22559 Series and EN 115 Requirements Compared

### Day 3: Passenger Rescue and Preventive Maintenance Regimes

- Entrapment Response Procedure: Alarm Receipt, Two-Way Communication and Passenger Reassurance
- Manual Brake Release and Controlled Car Movement to the Nearest Landing
- Landing Door Unlocking, Car Level Check and Passenger Evacuation Sequence
- Preventive Maintenance Task Lists: Monthly, Quarterly and Annual Checks by Lift Type
- Periodic Safety Test Records: Governor Trip, Safety Gear, Brake and Buffer Tests

### Day 4: Faults, Escalator Hazards, Modernisation and Performance

- Common Lift Fault Patterns: Door Faults, Levelling Errors, Overheating and Controller Trips
- Escalator Entrapment Points: Comb Plates, Skirt Panels, Handrail Inlets and Debris Build-Up
- Modernisation Decision Matrix: Controller, Drive, Door Equipment or Full Replacement
- Lift Maintenance Contract KPIs: Uptime, Callback Rate, Entrapments and Response Time
- Lift Traffic Analysis Overview: Handling Capacity, Interval, Up-Peak, Down-Peak and Destination Control

### Day 5: Inspection Walkthrough and the Vertical Transportation Management Plan

- Machine Room, Hoistway and Pit Inspection Walkthrough Against a Safety Checklist
- Escalator Landing and Balustrade Inspection Walkthrough with Defect Grading
- Case: Hospital Bed Lift Entrapment and Rescue Debrief
- Case: Shopping Mall Escalator Fleet Callback Analysis and Contract Review
- Vertical Transportation Management Plan Build and Peer Review

## Skills You Will Gain:

- Lift System Identification
- Lift Safety Device Assessment
- Passenger Rescue Supervision
- Lift Preventive Maintenance Scheduling
- Escalator Hazard Inspection
- Lift Fault Pattern Analysis
- Modernisation Option Appraisal
- Lift Contractor Performance Measurement

## Why Attend This Course:

- Return with a Vertical Transportation Management Plan: rescue procedure, maintenance schedule, test register, modernisation priorities and KPI set for your buildings
- Ask a lift contractor specific questions about tests, callbacks and entrapments instead of accepting monthly reports at face value
- Know what a safe rescue from a stalled car looks like and who may carry out each step
- Compare lift and escalator practice with peers from hospitals, shopping malls, offices, hotels and residential towers

## Conclusion:

Lifts and escalators move more people in a building than any other system, and their safety depends on devices, tests and procedures that facility teams rarely see. The course moves from lift and escalator types, through components and codes, to passenger rescue and preventive maintenance, then to faults, escalator hazards, modernisation, contract KPIs and traffic analysis. The final day applies this in inspection walkthroughs and cases and produces a Vertical Transportation Management Plan that participants use with their lift contractor and building owners.