

# Elevator Mechanic License Exam

QUICK REFERENCE CHEAT SHEET | ASME A17.1 / NEIEP

## ASME A17.1 ELEVATOR TYPES

Type	Drive System	Key Feature
Traction Elevator	Electric motor + sheave + ropes	Counterweight reduces motor load; most common for mid/high-rise
Hydraulic Elevator	Oil pump + cylinder	Low-rise (up to 5-6 floors); slower; no overhead machine room needed
MRL (Machine Room-Less)	Traction with compact motor in hoistway	Motor mounted in hoistway; saves space; newer buildings
Escalator	Moving steps on loop of chain	Handrails must move same speed as steps
Moving Walk	Flat belt or pallets	Airports, shopping centers; 12-degree max incline

## TRACTION ELEVATOR COMPONENTS

Component	Function
Hoist Ropes	Support car and counterweight; min 3 ropes required
Sheave	Drive pulley in machine room; rope friction drives car
Counterweight	Balances 40-50% of car capacity; reduces motor energy
Governor	Overspeed safety device; trips safeties if car exceeds set speed
Safety Device	Clamps guide rails to stop car if governor trips or rope breaks
Buffer (oil or spring)	Absorbs impact at pit in case of over-travel
Door Interlock	Prevents car from moving unless all landing doors are closed and locked

## INSPECTION & TESTING REQUIREMENTS

Test	ASME A17.1 Requirement
Full-load test	Car at rated capacity; safety and buffer test
Annual inspection	State-licensed inspector; certificate posted in car
Governor / Safety test	Annual test with full load; car at full speed
Oil buffer test	Compress buffer under full load at rated speed
Phase reversal test	Verify motor stops if power phases reverse
Emergency lighting	Backup lighting must activate within 10 seconds of power loss

## EXAM-DAY TIPS

- + ASME A17.1 is the Safety Code for Elevators and Escalators -- know Part 2 (electric) and Part 3 (hydraulic).
- + Governor rope: separate from hoist ropes; connects to car safety device via linkage.
- + Pit depth and overhead clearance: minimums specified in A17.1 -- vary by speed and travel.
- + Modernization: A17.3 governs existing elevator upgrades -- less strict than new A17.1 for existing shafts.
- + Hydraulic: check for oil leaks in pit and underground cylinder -- environmental liability.
- + Practice 1,000+ questions -> [voltexam.com/apps/elevator](http://voltexam.com/apps/elevator)

Practice 1,000+ questions + built-in tools | [voltexam.com/apps/elevator](http://voltexam.com/apps/elevator)