



**City of Phoenix**  
PLANNING & DEVELOPMENT DEPARTMENT

# Self-Certification: Elevators

**Dennis Beck**

**Elevator Inspections Field Supervisor**



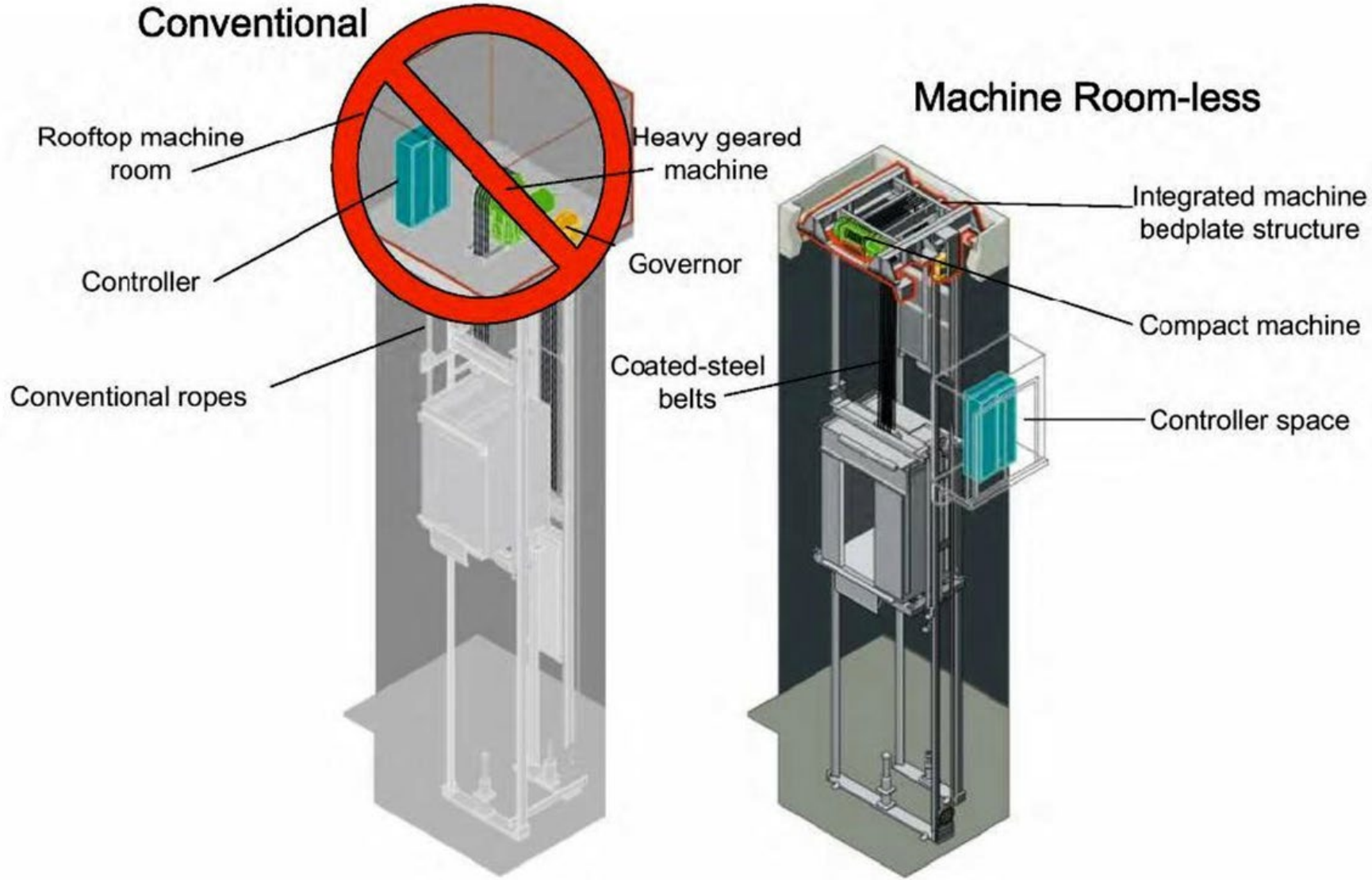
PLANNING & DEVELOPMENT  
**PRESERVE  
SHAPE  
BUILD**

# City of Phoenix Elevator Codes – Adopted July 2018

- ASME, A17.1 – 2016 Safety Code for Elevators & Escalators
- ASME, A17.3 – 2015 Safety Code for Existing Elevators
- ASME A18.1 – 2016 Safety Std for Platform & Stairway Lifts
- ASME A17.6 – 2010 Std for Elevator Suspension & Compensation
- ASME A17.7 – 2007 Performance Based Safety Code for Elevators
- Also Currently Enforced IBC, NFPA70, NFPA72, NFPA13 & IPC Codes

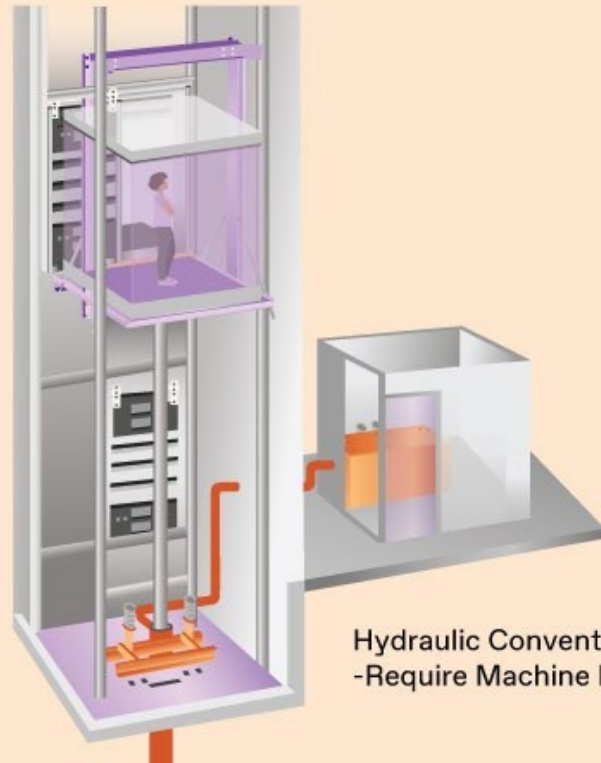


# Traction Elevators



# Hydraulic Elevators

What is the right choice for your building?



Hydraulic Conventional  
-Require Machine Room

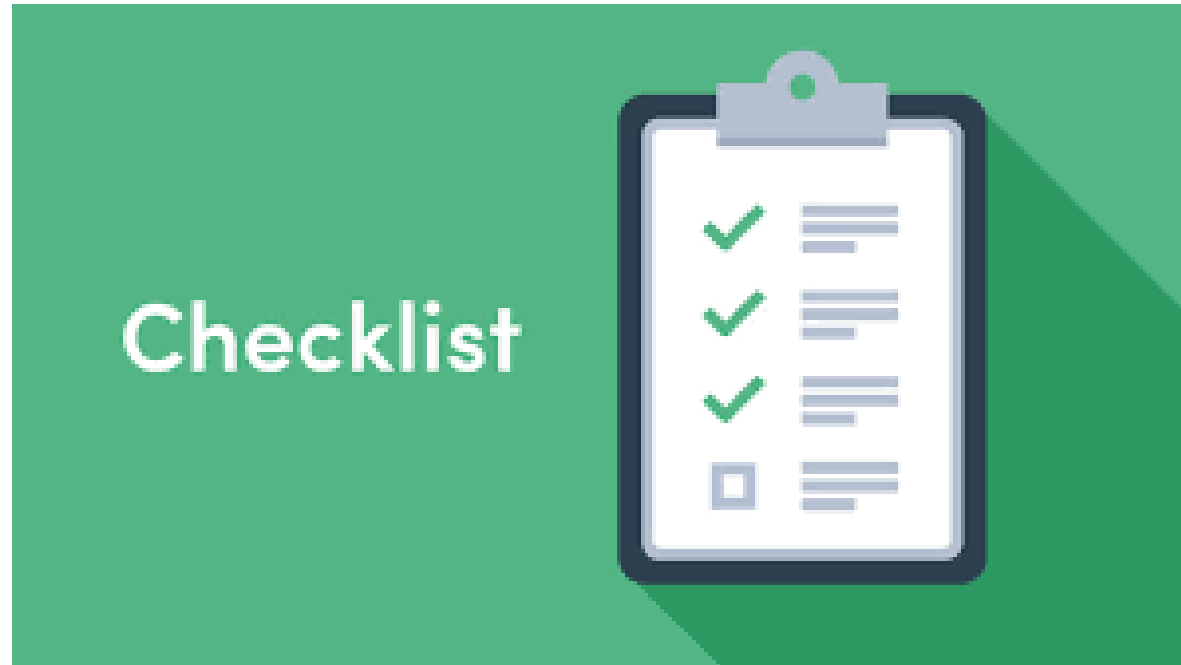


Hydraulic MRL  
- Machine Room-Less

# Machine Room Less (MRL) Elevators – Hydraulic & Traction

- MRL options include adjacent or remote full control room, closet control space, control space in hoistway, machine space in hoistway, or at least part of controls mounted in elevator jamb.
- Machine space in hoistway has same requirements as a machine room, GFCI, HVAC, lighting. Some components such as smoke detector, heat detector, sprinkler depend on model of elevator.

# Plan Review Checklist - Elevators



## Plan Review Checklist – Elevators: *Architectural*

- 4 story requires stretcher elevator, IBC 3002.4.
- Standby power requirements IBC 2702.2.
- Fire rating of hoistway & control room, IBC 3006.2.
- Sump pump well, A17.1, section 2.2.2
- Fire Service Access elevators IBC 3007.
- Occupant Evacuation Operations IBC 3008.
- AOR review stamp on all pages of plans being submitted.
- EOR review stamp only on the pages with loads, calculations, and reactions listed on plans being submitted.



# Plan Review Checklist – Elevators: *Electrical*

- **Shunt trip, IBC 3005.5**
- **Sump pump circuit, NEC Article 620.85**
- **Sump pump controls not allowed in hoistway.**
- **When standby power is supplied to elevator conditions must comply with NEC Article 701, Legally Required Standby Systems.**
  
- **A complete checklist available on request.**





# Sprinkler Requirements A17.1; 2.8.3 and NFPA 13; 9.3.6

- **Hydraulic** – Sprinkler(s) in pit (Less than 24” from pit floor), machine room, control room, or control space. Smoke detector always in top of hoistway, in pit when sprinkler in pit. **MRL Hydraulic** – Sprinkler top & bottom of hoistway with heats near sprinklers and smoke detectors both top & bottom of hoistway.
- **Traction** – No sprinkler(s) in machine rooms, control rooms, machinery spaces, control spaces or hoistways protected by smoke devices. **Unless:** The unit has Non-Fire Rated elastomeric coated steel belts as a suspension means, then sprinklers required at top of hoistway and pit, with heat and smoke detectors per NFPA 13 – 2019.
- **Sprinkler lines-** Branch runs not to penetrate a floor. Only branch lines at no more than one floor level. Lines running up hoistways are prohibited.
- **Traps and Shutoff Valves**  
Shall be provided in accessible locations outside the hoistway.

# Plan Review Checklist – Elevators: *Plumbing & Mechanical*

- **Sump pump discharge, 3000 gal/hr  
A17.1, 2.2.2.4**
- **Sprinkler head location, NFPA 13**
- **Equipment space HVAC, IBC 3005**

# 2018 IBC



# City of Phoenix Amendments to the 2018 International Building Code

- **3002.4 Elevator car to accommodate ambulance stretcher.** Where elevators are provided in buildings four or more stories above or four or more stories below, grade plane, at least one elevator shall be provided for fire department emergency access and emergency medical access to all floors. All elevators that require emergency medical access shall be in accordance with 3002.4.1 through 3002.4.5.
- **3002.4 Size of the emergency access elevator (EMS) cab.** The elevator car shall be of such a size and arrangement to accommodate ambulance stretcher 24-inch by 84-inch (610mm by 2134mm) with not less than 5-inch (127mm) radius corners, in the horizontal, open position.

# City of Phoenix Amendments to the 2018 International Building Code

- **3003 Emergency Operations**
- **3003.1.4 Venting** Where standby-power is connected to elevators, the machine room, machine space, control room or control space air conditioning shall be connected to the stand-by power.

# City of Phoenix Amendments to the 2018 International Building Code

- **3005.2 Venting (Air Conditioning)**
- Elevator machine rooms, machinery spaces, control rooms and control spaces that contain solid state equipment for elevator operation shall be provided with an independent air-conditioning system to protect against the overheating of electrical equipment. The system shall be capable of maintaining temperatures not greater than 90 degrees, to ensure normal operation of the elevator.
- Air conditioning equipment shall not be located directly above elevator equipment or in the elevator hoistway (A17.1, 2.8.5.1)
- Means shall be provided to collect and drain condensation water from these spaces. Condensation drains shall not be located directly above elevator equipment. Drains connected directly to sewers shall not be installed. (A17.1, 2.8.5.3)

# 2018 IBC Fire Service Access Elevator, Section 3007

- Required when there is an occupied floor more than 120' above the lowest level of fire department vehicle access.
- No fewer than two elevators, or all, whichever is less.
- Capacity not less than 3500#
- Shaft enclosure complying with section 708 (Fire partitions)
- Shaft integrity complying with 403.2.3.1 through 403.2.3.4 (Wall assemblies – Meet or exceed)

# 2018 IBC Fire Service Access Elevator, Section 3007

- Special 2-hour protection of wiring or cables (all lines outside shaft)
- Fire service access elevator lobby shall have direct access to an enclosure for an interior exit stairway
- Hoistway lighting – not less than 1 foot candle throughout hoistway
- Special requirements for lobbies
- Approved method to prevent water from infiltrating into the hoistway
- Recall to smokes is the same, No sprinkler or shunt devices.



# 2018 IBC Occupant Evacuation Operation Elevators, Section 3008

- Buildings 420' in height and up may, in lieu of required additional stairway, install occupant evacuation elevators.
- Shaft enclosure complying with section 713 (Shaft enclosures).
- Shaft integrity complying with 403.2.3.1 through 403.2.3.4 (Wall assemblies – Meet or exceed).
- Special protection of wiring or cables (All lines outside shaft).



# 2018 IBC Occupant Evacuation Operation Elevators, Section 3008

- Approved method to prevent water from infiltrating into the hoistway
- Occupant evacuation elevator lobbies shall have direct access to an enclosure for an interior exit stairway
- Recall is different
- Special lobbies\*

# Questions?

**Dennis Beck**

**Elevator Supervisor**

**Cell: 602-501-1329**

**[Dennis.Beck@phoenix.gov](mailto:Dennis.Beck@phoenix.gov)**

**Jose Martinez**

**Building Code Examiner (Elevators)**

**Cell: 602-501-1408**

**[Jose.Martinez@phoenix.gov](mailto:Jose.Martinez@phoenix.gov)**

