NEW YORK CITY
Lift & Escalator
Regulatory Landscape

PRESENTED BY
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NEW YORK CITY DEPARTMENT OF BUILDINGS
Inaugural International Panel Expert, Singapore
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Top 15 Tallest Buildings in New York City’s Manhattan

Image Credit: StreetEasy
Overview: Elevators in New York City

- 150 Years of Elevator History (since 1857)
- 84,653 Devices Under the Department’s Jurisdiction
- 500 Average Daily Elevator Trips
- 30 Million Daily Citywide Trips
- 12% Percentage of all Elevators in NYC
Device Types

- Amusement
- Conveyers
- Dumbwaiters
- Escalators
- Freight
- Handicap Lift
- Manlift
- Passenger
- Private Elev
- Public Elev
- Sidewalks
- Wheelchairs

Total: 67637
Mission: DOB Elevator Unit

The Department’s Elevator Unit supports the operational safety, reliable service and lawful use of elevators, escalators, amusement rides and other related devices throughout the City of New York by performing inspections and testing.

The Unit advances compliant development and safety awareness through the Department’s various outreach programs. The unit supports development by permitting new technologies under pilot programs.
Elevator Safety

- Public
- Elevator Personnel
- Authorized Personnel
- Emergency Responders
Regulatory Process

- Development of Codes and Standards
- Application and Registration Process
- Inspection & Testing - Commissioning Inspection & Testing
- Training
- Quality Assurance
- Enforcement
- Outreach Programs
- Maintenance Requirements
Process: Codes and Standards

- Standards are communication vehicle for manufacturer’s and users
- Serve as common language defining quality and establishing safety criteria
- Developed to protect the health and welfare of the public
- Lower costs with standardized procedures
- Simplified training
Process: Codes and Standards

- Allows for new development and technical advances
- Consumers accept products more readily when the products can be judged on merit of Codes and Standards
- Harmonization of standards enhance industry innovation, improve safety, reduce costs and can be used in all markets
- Code is a standard that has been adopted by governmental bodies or regulators and has the force of law
The NYC Elevator Code Committee consists of elevator stakeholders, organizations, associations and government agencies. The Committee reviews each section of the Code and Standards and makes decisions to enhance the safety and reliable service for riders. The Committee uses a consensus-based process.

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<th>AFFILIATION/REPRESENTATION</th>
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<td>NEII - National Elevator Industry, Inc.</td>
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<td>EMANY - Elevator Manufacturers Association of NY</td>
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<td>NAEC - National Association of Elevator Contractors</td>
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<td>DCAS - Department of Citywide Administrative Services</td>
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2014 Building Code and Standards


- ICC/ANSI A117.1-2009: Accessible and usable buildings and facilities
- ASME A 17.1/2000 with 2002 and 2003 addendum as modified by NYC Building Code Appendix K; Chapter K1
- ASME B20.1-2006: Conveyors and related equipment as modified by Appendix K; Chapter K2
- ASME A 17.3/2002: Existing elevators and escalators as modified by Appendix K; Chapter K3
2014 Building Code and Standards

IBC 2009 as modified by NYC Building Code 2014 – Elevators and Conveying System: Chapter 30 (continued)

- **ASME A 17.1-2005**: Machine Room Less (MRL) elevators as modified by Appendix K; Chapter K4
- **ASME A 17.6-2010**: Standards for Elevator Suspension, Compensation and Governor System as modified by Appendix K; chapter K4
- **ASME A 18.1-2005**: Standards for Platform Lifts and Stairway Chairlifts
- **ASME A 17.2-2002**: Guide for inspection of Elevators, Escalators
2014 Building Code and Standards

Occupant Evacuation Elevators (OEE) – BC 403.5.2 and BC 3008

Required when…
- Option in lieu of providing an additional exit stair for new, non-residential buildings taller than 420 feet per BC 403.5.2

Fire Service Access Elevators (FSAE) – BC 403.6.1 and BC 3007

Required when…
- At least one FSAE must be provided in new buildings with occupied floors above 120 feet

NOTE: Read the NYC Building Code online at www.nyc.gov/buildings
Elevator Applications

- New Installations
- Removal
- Dismantle
- **Alterations**: Change in speed, capacity, rise, structural and location
- **Replacement and Modification**: Replacement/modification of controller, machine, governor, safety etc.
Elevator Applications

- Elevator use for Construction: New or amendment on existing application
  - Electrical permit must be filed for electrical work performed on device
  - Elevator Unit process average 5,000 applications per year

*NOTE: An acceptance test is required for all of the above applications and must be tested and witnessed* by a New York City Department of Buildings Inspector.
New Installation

All new elevators and escalators shall be in compliance with the following:

- Required application filing and reviewed by a registered design professional
- 2014 NYC Building Code
- Buildings Bulletin (if applicable)
- Section 8.2 contains certain design data, formulas and charts for design professionals
New Installation

- Section 8.3 Engineering tests, type test and certification/listed
- Section 8.4 and 8.5 Elevator and Escalator Safety Requirements for Seismic Risk Zone 2 or greater

NOTE: Non-compliance of the Code due to structural limitation shall be reviewed on a case by case basis and a variance may be issued by complying with an alternative method of compliance or proposed method shall be in compliance with the spirit or intent of the Code requirements.
Alteration and Modernization

Existing Installation

All elevator and escalator alteration and modernization shall be in compliance with following:

- Identify the scope of work during the application filing process and reviewed by a registered design professional
- Section 8.7 of ASME A 17.1-2000 with 2002 and 2003 addendum as modified by NYCBC 2014, Appendix K, chapter K1
- ICC/ANSI A117.1-2009: Accessible and usable buildings and facilities (if applicable)

NOTE: Minor alteration and ordinary repairs (that do not in anyway affect the safe use and operation of the elevator or escalator) do not require a permit to perform the work.
Alteration and Modernization

New & Existing Installation

All new and existing installations shall conform to the following Code requirements:

- Code at the time of Installation
- Code requirements at the time of any alteration or modernization
- ASME A 17.3-2002 as modified by NYC Building Code Appendix K, Chapter K3 (minimum safety requirement of every elevators and escalators, regardless of an age of the device)
- ASME A 17.1 2003, Section 8.6
- NYC Administrative Code Article 304 and 28-315.4 (Elevator Safety)
Accessibility

- ICC/ANSI A117.1-2009 - Accessible and usable buildings and facilities: Elevators (Sections 407 to 410)
- 2014 NYC Building Code, Chapter 11, Sections 1109.6 and 1109.7
  - Passenger Elevator (ASME A 17.1/2000 with 2002 and 2003 addendum as modified in the NYC Building Code Appendix K Chapter K1)
  - Limited-Use/Limited-Application Elevators (maximum rise 25 feet and serving not more than three contiguous levels)
  - Platform (wheel chair) lifts (ASME A 18.1-2005: Standards for Platform Lifts and Stairway Chairlifts)
Maintenance and Repair

- Maintenance Control Program
- Maintenance Log
- Repair
Advantages of Maintenance (per MCP)

- Enhance safety
- Improve service reliability
- Increase life span of equipment
- Enhance efficiency of equipment
- Avoid costly repairs
- Avoid violations and penalties
Inspectorial Organizational Chart
Types of Inspections

- Acceptance Tests – performed on permitted applications for new installations and modernized elevators/devices
- Complaint Inspections (received through NYC 311 Call Center)
- Incidents/Accidents and Emergency Response (24/7) – the Department conducts in-depth inspections/test in all cases of injury and death
- Survey Inspections
- Periodic Inspections
- Violation Re-Inspections
- Amusement Ride Inspections
- Personnel Hoist Inspections (construction sites)
- Quality Assurance Inspection
- Expedited Inspections for handicap, elderly, high rise and single elevator buildings
Types of Inspections

New York City elevators and escalators are required to perform two inspections/tests yearly as per the NYC Building Code

- **Periodic inspections** performed by contracted inspection agency on behalf of the NYC Department of Buildings
- **Category (1, 3 and 5) testing** performed by approved agencies licensed by the NYC Department of Buildings
- **Department Inspectors (in-house)** perform all other types of inspections and tests that include: quality assurance, complaints, acceptance tests and accident investigations
Approved Inspections

All inspections and tests shall be performed and witnessed by an approved agency (licensed by the Department) not affiliated with each other on behalf of the building owner.

- **Category One Inspection (Cat-1): 1 Year Test** - performed between January 1st and December 31st each year (no load safety test)

- **Category Three Inspection (Cat-3): 3 Year Test** - performed on water hydraulic elevators every 3 years from the date of installation

- **Category Five Inspection (Cat – 5): 5 Year Test** - performed every 5 years from the date of installation (performed with rated load and speed)

*NOTE: Defects found during Cat-1 inspection/test shall be corrected within 120 days after inspection and submit correction report to the Department within 60 days from the date of correction.*
Inspection Statistics

Total number of inspections performed in CY 2015: 188,847

DOB Inspection Unit
- Inspectorial Staff: 54
- Inspections/Tests Performed: 22,825

Contract Agency Inspections (on behalf of the Department)
- Agencies: 2
- Inspectorial Staff: 44
- Inspections/Tests Performed: 56,560

Approved Licensed Agency Inspection (on behalf of building owner)
- Approved Licensed Agencies: 168
- Approved Agency Directors: 283
- Approved Agency Inspectors: 779
- Inspections/Tests Performed: 108,539
Training

- All DOB inspectors attend Qualified Elevator Inspector (QEI) training
- All supervisors and chiefs regularly attend leadership training
- All amusement ride inspectors have attended the National Association of Amusement Ride Safety Organization’s (NAARSO) training program
- Seminars on new technology/codes provided by outside speakers/vendors
- All newly hired inspectors are mentored by selected senior inspectors
- In-house computer and management training provided by the Department’s training center
- All inspectors attend weekly in-house training classes
Quality Assurance

- Created to establish a higher standard of inspection integrity, transparency and to provide enhanced training
- All inspectors receive a quality assurance visit from a supervisor during and after inspection bi-monthly; the Unit has also published an Operational Manual to ensure uniform standards
- Periodic inspections performed by Department-contracted inspection agencies and audited by independent private sector audit agencies on behalf of the Department
- Department issues licenses to Private Inspectors and Agency Directors to perform inspections and testing on behalf of building owners; the Quality Assurance Team monitors the licensed inspector/agency director by performing double checks and spot check visits
Outreach Program

- Elevator Code Review and Interpretation Committee
- Safety and Code Presentation to the real estate industry, elevator industry and other stakeholders
- Elevator and Escalator SafeT-Rider Program in City Schools
  - Each November, the Department celebrates National Elevator and Escalator Safety Week. Representatives from the Department visit schools throughout the City to provide safety awareness classes to students in 2nd through 4th grade. This program is sponsored by the National Elevator and Escalator Safety Foundation.
First we talked about safety rules. On escalators and elevators, we talked about what to do and what not to do on elevators and escalators. You should always check your sides. If the door is not open, you press the alarm button. You always hold on the rail or a person’s hand or the escalator. You do not play on the escalator or you fall. You do not look back on the escalator. You follow the rules and look around not singles or the other side. You do not press the button and close the elevator or you press the button, you do not jump on the elevator to push it down. You press the

Thank you, Pinty

Myles

Class 2005
Outreach Program

Elevator & Escalator
SafeT-Rider
Program Materials
Outreach Program

NYC Department of Buildings
‘Elevator Safety’ ad campaign

STUCK ELEVATOR?
STAY SAFE.
STAY PUT.

RING FOR HELP.
RELAX. WAIT.

New Yorkers have died trying to escape stalled elevators. The safest place to be is inside the elevator. Don’t try to get out for any reason.

Bill de Blasio, Mayor
Rick D. Chandler, P.E., Commissioner
Elevator Safety

Public Safety Factors
- Car Control
- Jumper Management
- Caution Tape
- Deep Pit Protection
- Barricades

Mechanic Safety Practices
- Access/Egress MR
- LOTO/Electrical Safety
- Jumpers
- Mechanical Safety
- Hoistway Access Procedure
- Fall Protection
- Safety Culture, Creation & Maintenance
Job Site Safety

- No job takes priority over safety
- Plan safety into every job
- Take care of each other
- Safety is everyone's responsibility
Elevator Accidents

- Each accident involving injury to any person requiring the service of a **physician** or **damage** to the property or to apparatus **exceeding** $1,000
- Owner of any device shall **promptly** notify the Department of every accident before commencing any repairs
- Department shall make an investigation immediately and prepare a full and complete investigation report
- No device parts shall be removed from the premises of an accident until permission is granted by the NYC Department of Buildings
Elevator Accidents
Enforcement

Failure to Maintain Violations

- Environmental Control Board (ECB) Violations - administrative judge hearing for non compliance and penalty
- PVT/DOB Violations - requires compliance to dismiss violation
- Aggravated I & II - repeated offense of violating conditions that creates an unsafe environment for the public
- Criminal Court Summons - falls under the Major Offenders Program (risk analysis-based inspection)

*NOTE: Top ten offenders on the list are flagged on the DOB website*
Sustainability

- Sustainable-Foster Greener Solutions (environment, climate and energy)
- Re-generative Drives (pulse-width modulation or PF-1 drive)
- PM A.C. Motor with Gearless Machines (MRL)
- Reduction of stand by power of elevator system
- Reducing carbon footprint at manufacturing plants and using materials that can be recycled
- Destination Dispatch System
- Reducing escalator speed when not being used
Our Vision

- Safety
- Reliable Service
- Comfortable Ride
- Sustainable-Foster Greener Solutions (Environment, Climate and Energy)
State of Future Inspections

- Implementation of barcode and star-rating system for device
- Develop risk analysis-based inspection protocol
- Zero tolerance for unreliable elevator service
- Increase percentage of audit/quality assurance inspections
- Computerized process for scheduling inspection/test, submission of checklist, inspection results, reviewing building profile, online application filing, filing inspection reports and payments
- ‘My Elevator’ tab on the Department’s Building Information System
- Support new technology for sustainable growth
Comments & Questions

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