

NEW YORK CITY FIRE DEPARTMENT

SOCIETY of
FIRE PROTECTION ENGINEERS
NEW YORK CITY CHAPTER

OVERVIEW OF
NEW YORK CITY
FIRE CODE

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NYC FIRE CODE VS NYC BUILDING CODE

- Building Code (Title 28 of NYC Administrative Code)
 - Design and construction of buildings, including design requirements for structure, means of egress, and building fire safety systems (sprinkler, standpipe, fire alarm and emergency power systems)
- Fire Code (Title 29 of NYC Administrative Code)
 - Operation and maintenance of buildings and fire safety systems
 - Emergency planning and preparedness (fire safety and evacuation plans and emergency action plans)
 - Regulation of hazardous materials, including design and installation of systems and equipment
 - Regulation of businesses and activities involving fire safety concerns (e.g. hot work and torch operations)
- Advantages of Model Codes
 - 3 year ICC code development process
 - Focus attention on new technology and safety concerns
 - Make New York City code requirements more transparent



APPROACH TO FIRE CODE REVISION

- Maintain existing jurisdiction between FDNY and Department of Buildings (DOB). Eliminate from Fire Code building design and construction provisions.
- Generally, apply design and installation requirements prospectively (to new and substantially altered facilities) and operational and maintenance requirements retroactively (to both new and existing facilities).



ORGANIZATION OF NYC FIRE CODE

- The organization of the NYC Fire Code mirrors that of the IFC, which is organized by type of material, operation and/or facility.
 - 45 Chapters
 - 117 Referenced Standards (listed in Chapter 45)
 - 2 Appendices (Fees and Referenced Standard Modifications)
- Additional requirements in Fire Department Rules (Title 3 of the Rules of the City of New York)



NYC FIRE CODE VS FORMER CODE (cont'd)

- Enhancements
 - Expanded fire safety and evacuation plan requirements
 - Periodic testing and inspection for sprinkler, standpipe and fire alarm systems (NFPA standards)
 - Fire apparatus access roads
 - Rooftop access and obstructions
 - More comprehensive regulation of hazardous materials
 - Construction site fire safety manager
 - Enforcement of industry standards



NYC FIRE CODE HIGHLIGHTS

CHAPTER 1

ADMINISTRATION

- Lawfully existing facilities and conditions on July 1, 2008 allowed to continue under prior applicable laws, rules and regulations, with certain exceptions (FC102.3 and R102-01)
- Pre-existing facility is a premises that was lawfully existing on June 30, 2008, that was designed and constructed in compliance with Fire Prevention Code and other applicable laws, rules, regulations and permit conditions, and would not be allowed under new Fire Code.
- Design and installation requirements (new installations, only with limited exceptions)
- Alteration (work other than an ordinary repair) triggers compliance with design and installation requirements
- Operational and maintenance requirements (new and existing installations)
 - Permits
 - Supervision
 - Periodic testing and inspection
 - Signage
 - Recordkeeping



NYC FIRE CODE HIGHLIGHTS

CHAPTER 1

ADMINISTRATION (cont'd)

- Projects in progress
 - Pre-existing facility need not comply with Fire Code design and installation requirements when:
 - DOB work permit issued prior to 7/1/08; work conforms to Fire Prevention Code and rules in effect at time of approval; and construction completed and use and occupancy approved by 1/1/2010.
 - DOB work permit issued prior to 7/1/08; compliance with Fire Code would be an undue hardship; compliance with FDNY approved measures to ameliorate the fire safety concerns; and completion of construction and use and occupancy approved by 1/1/2011.
- Design and installation document requirements listed in FC 105.4 for convenient reference, referenced in Building Code 28-104.1.1
- Modifications (FC104.8)



NYC FIRE CODE HIGHLIGHTS

CHAPTER 4

EMERGENCY PLANNING AND PREPAREDNESS

- Fire safety and evacuation plans
 - Required in A, B, E, H, I, M, R-1, and R-2 (transient), all high rise, underground buildings and homeless shelters
 - Standardize plan format, include all instructions and guidance for completion of plans
 - Additional content (R404-01)
 - Electronic floor plans prepared by an engineer or architect
 - Procedures for providing assistance to the disabled
 - Evacuation of the fire floor, floor above and floor below the fire
 - Building maintenance program



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES

- Fire Apparatus Access Roads (FAAR)
 - Definitions
 - Frontage space – 30' x 30' area (from Building Code) accessible from a public street or FAAR – adjoining main front entrance
 - FAAR – private road from public street to frontage space of building



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS

FEATURES (cont'd)

- 38' wide FAAR with certain exceptions below
 - 34' wide FAAR by right where ZR 26-21 authorizes narrower streets in exchange for additional off-street parking, or by modification in Special Natural Area zoning districts
 - 30' wide FAAR by right in Special Hillside Preservation zoning districts
 - 30' wide FAAR by right for 5 sprinklered dwelling units



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES (cont'd)

- Reduced FAAR width by modification for 1 or 2 family dwellings set back from street (main front entrances to each dwelling unit 30-100 feet from street), if following criteria met:
 - Impracticability (required FAAR > 20% of the width of the property).
 - The driveway serving as FAAR only for single 1 or 2 family dwelling and no other non-accessory buildings.
 - The height of the 1 or 2 family dwelling is not >35 feet above the grade plane (BC502.1).
 - Dwellings have interconnected smoke alarms.
 - 30' x 30' frontage for each main front entrance. Exception: If the main front entrance to one of the dwellings is on side or rear of building (not directly accessible from the street or the driveway), provide unobstructed 5-foot access to the rear yard.



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES (cont'd)

- Reduced FAAR width by modification for 1 or 2 family dwellings set back from streets (main front entrance to each dwelling 100-150 feet from street), if following criteria met:
 - All of the requirements set forth above for 30'-100', except that, in lieu of a driveway, at least 20' wide FAAR designed and constructed in compliance with FC503.1.1.
 - Dwelling is protected throughout by a sprinkler system.
 - 2 off-street spaces for a one-family dwelling (3 for a two-family dwelling) on the premises, separate from the FAAR.
 - No parking on FAAR and "No Parking" sign (FC503.7) at entrance to FAAR.
 - Unobstructed frontage space.



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES (cont'd)

- Modification of FAAR width for 1 or 2 family dwellings set back >150' from street by special approval only.
- FAAR turnarounds - Required for dead ends >150' up to 400 feet, unless all new buildings sprinklered.
- “No Parking” signs required when parking is restricted



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES (cont'd)

- Sprinkler Requirements For Buildings on Public Streets of Substandard Width
 - New buildings on public streets less than 38' in width to be protected throughout by a sprinkler system
 - Alterations to buildings on public streets less than 38' in width to be protected throughout by a sprinkler system only when:



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES (cont'd)

- The cost of alterations to the building (excluding 1 and 2 family dwellings) exceeds Building Code 60% standard.
- Any change in the "main use or dominant occupancy" of the building, as determined by DOB (except restoration of a building to original 1 or 2 family use).
- An increase of more than 125% in the square footage of the floor area of a building (excluding attic, basement and cellar space).
- An alteration that increase the height of a combustible (non-fireproof) building from 35' or less above the grade plane, to more than 35' above the grade plane.



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES (cont'd)

- A one-family dwelling altered to a two-family dwelling, except where:
 - the alteration involves converting a basement or cellar space to a separate dwelling unit, and the new basement or cellar dwelling unit is protected throughout by a sprinkler system; or
 - the alteration does not involve converting a basement or cellar space to a separate dwelling unit and at least two lawful accessory off-street parking spaces are provided on the premises.



NYC FIRE CODE HIGHLIGHTS CHAPTER 5 FIRE OPERATIONS FEATURES (cont'd)



- Rooftop Access and Obstructions
 - Buildings 100' or less in height with flat roofs ($\leq 20^\circ$)
 - Roof access - 6' wide openings for every 12 linear feet of accessible exposure
 - Roof obstructions- clear path- 6' wide and 9' high
 - Color coding of electric, natural gas, compressed gas and fuel oil piping (new and existing)
 - Telecommunication transmitter markings - (new and existing)
- Solar Panels, Telecommunication, HVAC Equipment, Roof Gardens
- Existing Building Alterations and Requests for Modifications



MODIFICATION OF FIRE CODE ROOFTOP ACCESS REQUIREMENTS

- FDNY-approved rooftop plan, showing modified rooftop access points and clear path, should be filed with Department of Buildings.
- FDNY is seeking to arrange BIS entry identifying FDNY-approved rooftop plan for convenient reference by future applicants.



NYC FIRE CODE HIGHLIGHTS

CHAPTER 6

BUILDING SERVICES AND SYSTEMS

- FC604 Emergency Power Systems
 - Adopts NFPA Standard 110 for emergency power system maintenance
 - Written schedule for maintenance of required emergency power systems
 - Monthly test of transfer switches
 - Monthly test of emergency power systems and automatic transfer switches under load condition at operating temperature for 30 minutes



NYC FIRE CODE HIGHLIGHTS

CHAPTER 9

FIRE PROTECTION SYSTEMS

- Design and installation
 - FDNY Certificate of Approval required for non-water fire extinguishing systems, fire alarm control panels, fire dept connections (R112-01)
 - Removal of carbon dioxide fire extinguishing systems from normally occupied areas by 7/1/13
- Maintenance
 - Smoke control systems – written maintenance schedule
 - Maintenance of sprinkler/standpipe systems (NFPA 25)
 - Maintenance of fire alarm systems (NFPA 72)



CHAPTER 9 (cont'd)

SPRINKLER SYSTEM PERIODIC INSPECTION AND TESTING REQUIREMENTS (Excerpt from NFPA 25 Table 5.1)

Component	Requirement	Frequency
Gauges (dry, preaction, and deluge systems)	Inspect	Weekly/monthly
Control valves	Inspect	Weekly/monthly
Alarm devices	Inspect	Quarterly
Gauges (wet pipe systems)	Inspect	Monthly
Pipe and fittings	Inspect	Annually
Sprinklers	Inspect	Annually
Fire department connections	Inspect	Quarterly
Valves (all types)	Inspect	See NFPA 25 Table 12.1
Alarm devices	Test	Quarterly/semiannually
Main drain	Test	Annually
Gauges	Test	5 years
Sprinklers	Test	50 years, and every 10 years thereafter



CHAPTER 9 (cont'd)

STANDPIPE SYSTEM PERIODIC INSPECTION AND TESTING REQUIREMENTS

(Excerpt from NFPA 25 Table 6.1)

Component	Requirement	Frequency
Control valves	Inspect	Weekly/monthly
Pressure regulating devices	Inspect	Quarterly
Piping	Inspect	Quarterly
Hose connections	Inspect	Quarterly
Cabinet	Inspect	Annually
Hose	Inspect	Annually
Hose storage device	Inspect	Annually
Alarm device	Test	Quarterly
Hose nozzle	Test	Annually
Hose storage device	Test	Annually
Hose	Test	5 years/3 years
Pressure control valve	Test	5 years
Pressure reducing valve	Test	5 years
Hydrostatic test	Test	5 years
Flow test	Test	5 years
Main drain test	Test	Annually



CHAPTER 9 (cont'd)

WATER STORAGE TANK PERIODIC INSPECTION AND TESTING REQUIREMENTS (Excerpt from NFPA 25 Table 9.1)

Component	Requirement	Frequency
Condition of water in tank	Inspect	Monthly/quarterly
Water temperature	Inspect	Daily/weekly
Heating system	Inspect	Daily/weekly
Control valves	Inspect	Weekly/monthly
Water — level	Inspect	Monthly/quarterly
Air pressure	Inspect	Monthly/quarterly
Tank — exterior	Inspect	Quarterly
Interior	Inspect	5 years/ 3 years
Check valves	Inspect	5 years
Temperature alarms	Test	Monthly
High temperature limit switches	Test	Monthly
Water level alarms	Test	Semiannually
Level indicators	Test	5 years
Pressure gauges	Test	5 years



CHAPTER 9 (cont'd)

FIRE ALARM SYSTEM PERIODIC VISUAL INSPECTION REQUIREMENTS (Excerpt from NFPA 72 Table 10.3.1)

Component	Frequency
Control equipment, including fuses, lamps, LEDs, and power supply	Weekly, or annually if alarm, supervisory and trouble signals are monitored by a central station
Batteries	Monthly/semiannually
Emergency voice alarm communications equipment	Semiannually
Remote annunciators	Semiannually
Alarm notification appliance	Semiannually
Supervisory signal and waterflow initiating devices	Quarterly
Other initiating devices (e.g. duct detectors, fire alarm boxes and smoke detectors)	Semiannually
Interface equipment	Semiannually
Central station transmitters	Semiannually



CHAPTER 9 (cont'd)

FIRE ALARM SYSTEM PERIODIC TESTING REQUIREMENTS

(Excerpt from NFPA 72 Table 10.4.3)

Component	Frequency
Control equipment, including fuses, lamps, LEDs, interface equipment and power supply	Quarterly, or annually if alarm, supervisory and trouble signals are monitored by a central station
Engine-driven emergency generator	Monthly
Batteries	Monthly
Emergency voice/alarm communications equipment	Annually
Remote annunciators	Annually
Supervisory signal devices	Quarterly
Water flow devices and valve tamper switches	Semiannually
Other initiating devices (e.g. electromechanical releasing devices and fire alarm boxes)	Annually.
Conventional smoke detector smoke entry test	Annually
Smoke detector sensitivity	See NFPA 72 Section 10.4.3.2. (Generally, at least 2 detectors on each initiating circuit every 2 years)
Supervisory signal devices	Quarterly
Waterflow devices and valve tamper switches	Semiannually
Alarm notification appliances, including audible and visual devices	Annually
Central station transmitters	Annually



NYC FIRE CODE HIGHLIGHTS

CHAPTERS 10 AND 26

- Chapter 10 (Means of Egress)
 - Maintenance required, including door hardware, security devices, removal of snow and ice, and prevention of overcrowding
- Chapter 26 (Welding and Other Hot Work)
 - Hot work responsible person
 - Hot work program authorization
 - Inspection of work area



NYC FIRE CODE HIGHLIGHTS

CHAPTER 27

HAZARDOUS MATERIALS

- “Heart” of hazardous material chapters
- Physical and health hazards (corrosive, highly toxic and toxic)
- General storage, handling and use of hazardous materials
- Hazardous material management plan
- Fire Department liaison for storage, handling and use of hazardous materials during emergency response
- Facility closure plan
- Maximum quantities per control area
- Cabinets and sprinkler protection may allowed increased quantities (up to 400%)
- Percentage of maximum allowable quantities based upon floor



NYC FIRE CODE HIGHLIGHTS

CHAPTER 27

HAZARDOUS MATERIALS (cont'd)

- Maximum number of control areas per floor
- Detached storage
- Handling and use requirements
- Non-production chemical laboratories
- Transportation of hazardous materials
- Fire Department liaison for storage, handling and use of hazardous materials during emergency response



FDNY RULE PROMULGATION

- All rules in effect on July 1, 2008 have been repealed and repromulgated
- New numbering parallels FC organization
- Rules of interest
 - Existing facilities and installations (R102-01)
 - Appeal procedures (R104-01)
 - Professional certification of fire alarm system installation (R104-02)
 - Fire safety and evacuation plans (R404-01)
 - Excessive unnecessary and unwarranted alarms (R901-01)
 - Non-sequential floor numbering (R408-01)



FDNY WEBSITE AND FUTURE DEVELOPMENTS

- Internet Address: www.nyc.gov/fdny
 - Quick links to “Fire Code” and “FDNY Rules”
- Complete text of Fire Code and new FDNY Rules
 - 2009 Local Laws Included (Fees, Construction Site Standpipes)
- Frequently Asked Questions
 - Official interpretations of Fire Code and rules
 - Interim guidelines
- Fire Code Public Inquiry Form
- New/Old Fire Code and FDNY Rule cross-reference tables
- Rulemaking Notification Request Form
- New York City Fire Code Revision – Next cycle commencing Fall 2010. 2006 and 2009 IFC amendments to be considered



QUESTIONS AND ANSWERS

- 1. New buildings on a public street must be protected throughout by a sprinkler system when the street width is substandard. What street width is considered substandard?

Answer: 38 feet.

- 2. The rooftop access and obstruction requirements of the Fire Code are applicable only to telecommunication antennas and cabinets. True or false?

Answer: False. The rooftop access and obstruction requirements are applicable to all rooftop installations, including solar panels, HVAC equipment, telecommunication equipment and roof gardens.

- 3. Many facilities have standby emergency generators to ensure continuity of their business operations. Are these generators required to be maintained to the NFPA Standard 110 requirements?

Answer: No. Only emergency generators required by either the Fire Code or the Building Code must be maintained to this standard.



QUESTIONS AND ANSWERS

- 4. The Buildings Department all but eliminated their requirement for manufacturer's of materials and equipment to obtain an MEA approval because the Fire Code assumed this function. True or false?

Answer: Both true and false. The Fire Code assumed this function only with respect to non-water fire extinguishing systems, fire alarm control panels and Fire Department connections.

- 5. Carbon dioxide fire extinguishing systems installed in areas that are not normally occupied must be replaced by July 1, 2013. True or false?

Answer: False. Only carbon dioxide fire extinguishing systems installed in normally occupied areas must be replaced by July 1, 2013.

- 6. Chapter 27 establishes "Maximum Allowable Quantities per control area" (MAQ) for all hazardous material classifications. Are these values absolute maximums?

Answer: No. Locations where hazardous materials are stored in quantities exceeding the MAQ would need to be designed to the high hazard requirements of the Building Code. The table MAQ values are adjusted, downward for floors other than grade floors, and upward based on the storage arrangement (cabinets and/or sprinklers).





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