

NEW YORK CITY FIRE DEPARTMENT

AIA NYC CODE COMMITTEE

OVERVIEW OF
NEW YORK CITY
FIRE CODE

OCTOBER 22, 2009

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NYC MODEL CODE INITIATIVE

- Mayor's Advisory Commission on Model Codes
 - 2003 report recommended adoption, with NYC amendments, of model codes published by International Code Council, a national organization of state and municipal code officials from jurisdictions that have adopted the codes, including New York State (in 2003)
- 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



NYC BUILDING CODE REVISION PROJECT

- New Construction Codes enacted by Local Law Nos. 33/2007 and 8/2008
- Effective July 1, 2008; grace period until July 1, 2009
- Extensive cross-references between Construction Codes and Fire Code



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 systems, standpipe systems, fire alarm 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. open flames and torch operations)



FDNY FIRE CODE REVISION PROJECT

- **NYC Fire Code developed by FDNY based on 2003 ICC International Fire Code.**
 - **Technical Committee (FDNY personnel) review**
 - **Advisory Committee (outside stakeholder) review**
 - **Managing Committee oversight**
 - **FDNY Code Revision Unit/Legal review**
 - **NYC Law Department review**
 - **Publication of Final Draft (December 2007)**
 - **Public Forum - December 20, 2007**
 - **City Council Intro and Committee hearings**

- **Enactment of New York City Fire Code**
 - **Local Law No. 26 of 2008 signed on June 3, 2008**
 - **Effective Date: July 1, 2008**
 - **FDNY rule repeal and repromulgation (ongoing)**



APPROACH TO FIRE CODE REVISION

- Maintain existing jurisdiction between FDNY and Department of Buildings (DOB). Eliminate from Fire Code building design and construction provisions.
- Maintain current FDNY enforcement mechanisms and procedures (ECB Notice of Violation, Violation Order and Criminal Court Summons), as set forth in NYC Administrative Code Title 15.
- Adhere to IFC organization. Undertake to improve consistency of terminology.



APPROACH TO FIRE CODE REVISION (cont'd)

- Maintain standards at least as strict as Fire Prevention Code, unless lesser standard determined to be safe due to other requirements, improved technology or other considerations.
- Evaluate new requirements, balancing fire safety with burdens on property owners, businesses and other regulated entities.
- 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)



NYC FIRE CODE

TABLE OF CONTENTS

- CHAPTER 1. ADMINISTRATION
- CHAPTER 2. DEFINITIONS
- CHAPTER 3. GENERAL PRECAUTIONS AGAINST FIRE
- CHAPTER 4. EMERGENCY PLANNING AND PREPAREDNESS
- CHAPTER 5. FIRE OPERATIONS FEATURES
- CHAPTER 6. BUILDING SERVICES AND SYSTEMS
- CHAPTER 7. FIRE-RESISTANCE-RATED CONSTRUCTION
- CHAPTER 8. INTERIOR FURNISHINGS, DECORATIONS AND
SCENERY
- CHAPTER 9. FIRE PROTECTION SYSTEMS
- CHAPTER 10. MEANS OF EGRESS
- CHAPTER 11. AVIATION FACILITIES AND OPERATIONS



NYC FIRE CODE TABLE OF CONTENTS (cont'd)

CHAPTER 12. DRY CLEANING

CHAPTER 13. COMBUSTIBLE DUST-PRODUCING OPERATIONS

CHAPTER 14. FIRE SAFETY DURING CONSTRUCTION, ALTERATION
AND DEMOLITION

CHAPTER 15. FLAMMABLE FINISHES

CHAPTER 16. FRUIT AND CROP RIPENING

CHAPTER 17. FUMIGATION AND THERMAL INSECTICIDAL
FOGGING

CHAPTER 18. SEMICONDUCTOR FABRICATION FACILITIES

CHAPTER 19. LUMBER YARDS AND WOOD WASTE MATERIALS

CHAPTER 20. MANUFACTURE OF ORGANIC COATINGS

CHAPTER 21. INDUSTRIAL FURNACES

CHAPTER 22. MOTOR FUEL-DISPENSING FACILITIES AND REPAIR
GARAGES



NYC FIRE CODE TABLE OF CONTENTS (cont'd)

- CHAPTER 23. HIGH-PILED COMBUSTIBLE STORAGE
- CHAPTER 24. TENTS AND OTHER MEMBRANE STRUCTURES
- CHAPTER 25. TIRE REBUILDING AND TIRE STORAGE
- CHAPTER 26. WELDING AND OTHER HOT WORK
- CHAPTER 27. HAZARDOUS MATERIALS – GENERAL PROVISIONS
- CHAPTER 28. AEROSOLS
- CHAPTER 29. COMBUSTIBLE FIBERS
- CHAPTER 30. COMPRESSED GASES
- CHAPTER 31. CORROSIVE MATERIALS
- CHAPTER 32. CRYOGENIC FLUIDS
- CHAPTER 33. EXPLOSIVES, FIREWORKS AND SPECIAL EFFECTS
- CHAPTER 34. FLAMMABLE AND COMBUSTIBLE LIQUIDS
- CHAPTER 35. FLAMMABLE GASES



NYC FIRE CODE TABLE OF CONTENTS (cont'd)

CHAPTER 36. FLAMMABLE SOLIDS
CHAPTER 37. HIGHLY TOXIC AND TOXIC MATERIALS
CHAPTER 38. LIQUEFIED PETROLEUM GASES
CHAPTER 39. ORGANIC PEROXIDES
CHAPTER 40. OXIDIZERS
CHAPTER 41. PYROPHORIC MATERIALS
CHAPTER 42. PYROXYLIN PLASTICS
CHAPTER 43. UNSTABLE (REACTIVE) MATERIALS
CHAPTER 44. WATER-REACTIVE SOLIDS AND LIQUIDS
CHAPTER 45. REFERENCED STANDARDS
APPENDIX A. FEES
APPENDIX B. REFERENCED STANDARD MODIFICATIONS



NYC FIRE CODE VS FORMER CODE

- First comprehensive revision since Fire Prevention Code enacted almost 100 years ago.
- Not radical departure – more comprehensive and detailed
- Former Fire Prevention Code strict in many areas, but lagging behind national standards in others.



NYC FIRE CODE VS FORMER CODE (cont'd)



- Enhanced safety of general public
 - Expanded fire safety and evacuation plan requirements
 - Periodic testing and inspection for sprinkler, standpipe and fire alarm systems (NFPA standards)
 - Fire apparatus access roads
 - More comprehensive regulation of hazardous materials
 - More comprehensive regulation of special effects
 - Enforcement of industry standards



NYC FIRE CODE VS FORMER CODE (cont'd)

- Enhanced firefighter/emergency responder safety
 - Regulation of toxic materials that are not flammable or combustible
 - Rooftop access and obstructions
 - Construction site fire safety manager and pre-fire plan



NYC FIRE CODE VS FORMER CODE (cont'd)

- Lawfully existing facilities and conditions on effective date of Fire Code allowed to continue under prior applicable laws, rules and regulations, with certain exceptions (FC102.3 and R102-01)
- Design and installation document requirements listed in FC 105.4 for convenient reference, referenced in Building Code
- Operational and maintenance requirements applicable to new and existing facilities (new permits and certificates of fitness required by 7/1/09)



FIRE CODE TERMINOLOGY

- Complete listing of definitions in Chapter 2, with cross-references to individual chapters
- Design/installation/operation/maintenance
- Material/operation/facility
- Hazardous material/combustible material/combustible waste
- Manufacturing/storage/handling/use/transportation (sale/possession) of hazardous material



NYC FIRE CODE HIGHLIGHTS (CHAPTERS 1 AND 3)

- **Chapter 1 (Administration)**
 - General maintenance provision (FC107) – maintenance recordkeeping requirement (on premises or other approved location for 3 years, unless otherwise provided)
 - Expeditor registration (FC116) (registered architects exempt)
 - Modifications (FC104.8)

- **Chapter 3 (General Precautions Against Fire)**
 - No Smoking at construction sites



NYC FIRE CODE HIGHLIGHTS (CHAPTER 4)

- Chapter 4 (Emergency Planning and Preparedness)
 - Fire safety and evacuation plans extended to assembly occupancies and mercantile occupancies
 - FSP Staff training (FC406)
 - Additional fire safety and evacuation plan content
 - Requirements for R-1 school and college dormitories
 - FSD requirement
 - Evacuation diagram on back of doors



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES

- FC 503 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 (Group R-3) 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).**
 - **Dwelling has interconnected smoke alarms.**
 - **Unobstructed 5-foot access to the rear yard if the main front entrance to either of the dwellings is on side or rear of building (not directly accessible from the street or the driveway).**



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES (cont'd)

- **Reduced FAAR width by modification for 1 or 2 family dwellings (Group R-3) 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 (Group R-3) set back >150' from street by special approval only.
- Turnarounds - Required for dead ends >150' up to 400 feet, unless all new buildings sprinklered.
- “No Parking” signs required when parking is restricted – FDNY may develop restrictions for winding streets or where access problems



NYC FIRE CODE HIGHLIGHTS

CHAPTER 5

FIRE OPERATIONS FEATURES (cont'd)

- FC503.8.2 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)

- FC504.4 Rooftop Access and Obstructions
 - Buildings 100' or less in height with flat roofs (20°)
 - 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)



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 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

- **FC605.1 Abatement of electrical hazards**
 - Apply Electrical Code Table 210.21(B)(2)
 - 15 amp rated circuit – 12 amps maximum load
 - 20 amp rated circuit – 16 amps maximum load



NYC FIRE CODE HIGHLIGHTS

CHAPTER 9

FIRE PROTECTION SYSTEMS

■ Supervision

- Personal supervision by Certificate of Fitness holder during required inspection, testing or servicing of sprinkler, standpipe and fire alarm systems
- Building staff designated as impairment coordinator for out-of-service fire protection system



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
 - Maintenance of sprinkler/standpipe systems (NFPA 25)
 - Fire pumps – Test weekly and flow test annually
 - Maintenance of fire alarm systems (NFPA 72)
 - Smoke control systems – written maintenance schedule



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, 26 AND 27)

- 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
 - Pre-hot work check list
- Chapter 27 (Hazardous Materials)
 - Fire Department liaison for storage, handling and use of hazardous materials during emergency response



FDNY RULE PROMULGATION (TITLE 3 OF RULES OF CITY OF NEW YORK)

- All rules to be repealed and repromulgated – 95% complete
- New numbering parallels FC organization
- Rules of interest
 - Existing facilities and installations (R102-01)
 - Appeal procedures (R104-01)
 - Non-sequential floor numbering (R408-01)



FDNY WEBSITE

- Internet Address:
 - www.nyc.gov/fdny
 - Quick links to “Fire Code” and “FDNY Rules”
- Complete text of Fire Code and new FDNY Rules
- Frequently Asked Questions
 - Official interpretations of Fire Code and rules
 - Interim guidelines
- Fire Code public inquiry form





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