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PRESENTATION DESCRIPTION

The 2022 Construction Codes contain improvements in building technologies and safety, further protecting the health and welfare of all New Yorkers. These include enhancements to emergency response, fire protection, elevator safety, vertical transportation and accessibility, construction site safety, tenant protection, building system construction and inspection, sustainability, and resiliency. In this course, participants will get an overview of the code revision process and learn about several significant changes to the 2014 Construction Codes.



AGENDA

- NYC Construction Codes Revision Overview
- Effective Date of the Code
- Select Highlights
 - Combustible Exterior Walls
 - Special Inspections
 - Elevators
 - Alarm Systems
 - Sidewalk Sheds



NYC CONSTRUCTION CODES REVISION OVERVIEW



NYC CONSTRUCTION CODE REVISION MANDATE & PROCESS

- Local Law 99/2005 mandated the periodic revision of the Construction Codes to the latest International Code Council codes
- DOB's Code revision process uses consensus-building technical committees
- 400+ stakeholders participate in the process
 - Engineers & Architects
 - Attorneys, Planners, Tradesmen
 - Industry Organizations (labor, real estate, etc.)
 - Utilities
 - Other Agencies and Authorities from city and state



NYC CONSTRUCTION CODE REVISION TIMELINE

Committee work began: July 2017

Committee work completed: December 2020

Introduction at City Council: April 2021

City Council Approval: October 2021

Enactment: November 7, 2021



EFFECTIVE DATE OF THE CODE



EFFECTIVE DATE

For all applications for construction document approval filed on or after **November 7, 2022**, *EXCEPT*:

- Amendments to the following sections or articles in the General Administrative Provisions took effect on **January 1, 2022**:
 - Section 28-401.11 Term of License
 - Article 421 Elevator Agency Director License
 - Article 422 Elevator Agency Inspector License
 - Article 425 Elevator Agency Technician License
 - Article 303 Periodic Boiler Inspections
 - Article 304 Elevators and Conveying Systems; and
 - Article 323 Periodic Inspection of Parking Structures



SELECT HIGHLIGHTS

Administrative Code



ADMINISTRATIVE CODE: APPLICATION TIME LIMIT

AC § 28-104.2.3

An application for approval of construction documents shall be deemed to have been abandoned 12 months after the date of its submission,...

EXCEPTION: Where, subsequent to the filing of an application, the department determines that such application is incomplete and the department has notified the applicant that the application is incomplete, the commissioner may deem such application abandoned after 90 days from the date of such notification.



ADMINISTRATIVE CODE: CHIMNEY/VENT ALT.

AC § 28-104.13

Where an owner of a new or altered taller building is required by section 2113 of the New York city building code, section 801 of the New York city mechanical code or section 501 of the New York city fuel gas code to extend, alter or relocate an existing chimney or vent on an affected building, such work shall be filed under a separate application for the affected building.



ADMIN CODE: PERMITS ON OCCUPIED BUILDINGS

AC § 28-105.5.2

- All applications for permits for work on a building having more than three dwelling units shall state
 - (i) the total number of units in the building at the time the application is filed,
 - (ii) the number of units occupied at the time the application is filed, and
 - (iii) the number of units to be occupied during the course of the work. The work permit application shall be amended prior to occupancy of any units that were not initially counted as being occupied during the course of the work.



ADMINISTRATIVE CODE: EFFECTIVE 1/1/22

- Local Law 126/2021 is effective November 7, 2022, for applications for construction document approval filed on or after November 7, 2022, EXCEPT:
 - Amendments to the following sections or articles in the General Administrative Provisions take effect on January 1, 2022:
 - Article 303 Periodic Boiler Inspections
 - Article 304 Elevators and Conveying Systems; and
 - Article 323 Periodic Inspection of Parking Structures
 - Section 28-401.11 Term of License
 - Article 421 Elevator Agency Director License
 - Article 422 Elevator Agency Inspector License
 - Article 425 Elevator Agency Technician License



ADMINISTRATIVE CODE: PERIODIC INSPECTION - BOILERS

AC § 28-303

Current State of the Industry (2014 Code)	Future State of the Industry (2022 Code)
Annual Boiler Inspections are currently performed by a qualified boiler inspector	Same as current state
Building owners are responsible for hiring a boiler inspector	Same as current state
Inspection report must be submitted within 45 calendar days after the date of inspection	Inspection report must be submitted within 14 calendar days after the date of inspection
An Affirmation of Correction must be filed within 120 days from the date of filing the report indicating all defects have been corrected	All defects must be corrected within 90 days after the initial inspection*
	An Affirmation of Correction must be filed within 14 calendar days from the date the defect is corrected



ADMINISTRATIVE CODE: PERIODIC INSPECTION - ELEVATORS

AC § 28-304.6.1

Current State of the Industry (2014 Code)	Future State of the Industry (2022 Code)
Annual Periodic Inspections are currently performed by a contracted inspection agency on behalf of the Department of Buildings (DOB)	Annual Periodic Inspections will continue to be required, however the responsibility for performing periodic inspections is shifting from the Department (DOB) to an approved elevator agency on behalf of the owner
Category Testing is performed and witnessed by approved independent third-party agencies licensed by the DOB	Category Testing is performed and witnessed by an approved elevator agency licensed by the DOB
Periodic inspections interval January 1st to December 31st	Periodic inspections January 1st and December 31st at a minimum of three months from the date of any Category 1 testing or previous periodic inspection.



ADMINISTRATIVE CODE: PERIODIC INSPECTION – PARKING STRUCTURES

AC § 28-323





New York City recently enacted requirements for the periodic inspection of parking structures

Condition Assessment	 Performed once every 6 years To be performed by an approved professional(PE) Prepare checklist for annual observation File the report with the Department
Observation performed	 Performed annually To be performed by nonprofessional assigned by the owner (super, garage attendant, etc.) Would need to be made available if there is an incident Not filed with the department

Following the initial condition assessment of a parking garage, such parking garage shall undergo periodic condition assessments every three years.

During either assessment or observation: Notify DOB immediately of any unsafe conditions



ELEVATORS

(EFFECTIVE JANUARY 1, 2022)

- Section 28-401.11 Term of License
 - Two-year license term for elevator agency technicians
- Article 421 Elevator Agency Director License
 - Private elevator inspection agency director may associate their license with one other private elevator inspection agency, located at the same place of business
- Article 425 Elevator Agency Technician License
 - Two-year license terms for elevator agency technicians and restricted elevator agency technicians



ELEVATORS

(EFFECTIVE JANUARY 1, 2022)

Article 304 Elevators and Conveying Systems

- Periodic Inspections
 - must be performed by an approved agency hired by owner, not
 DOB
 - must be 3 months, minimum from the date of any Category 1 testing or previous periodic inspection
 - test reports must be filed within 14 days after inspection
- Category test reports must be filed within 21 days after inspection
- All defects shall be corrected within 90 days after inspection
 - DOB may grant an extension of 45 days, based on application by the owner demonstrating a practical difficulty
 - In no case will more than 2 extensions be granted for a specific defect
- An affirmation of correction must be filed within 14 days after correction



ADMINISTRATIVE CODE: ELEVATOR MAINTENANCE



SOURCE: https://www.prorealtyusa.com/2021/08/15/new-york-city-elevator-maintenance-and-testing-requirements/

AC § 28-401.3

The required periodic inspections in Table N1 shall be made by the department.] The [other] required category tests and periodic inspections in Table N1 of ASME A17.1 as modified by chapter K1 of appendix K of the New York City building code shall be performed on behalf of the owner by an approved <u>elevator</u> agency in accordance with this code and department rules...



ADMINISTRATIVE CODE: FIRE SUPPRESSION

AC § 28-401.3

- FIRE SUPPRESSION PIPING SYSTEM. Any system including any and all equipment and materials in connection therewith, the purpose of which is to control, contain, suppress or extinguish fire and shall include:
 - 1. The systems, materials and equipment described or referred to in this code or
 - 2. Up to 30 sprinkler heads off the domestic water in any one building; or
 - <u>3</u>. Any dry, liquid or gaseous chemical fire containment, suppression, control or extinguishing system or any other device or means of control, suppression, containment or extinguishing of fire.

Fire suppression piping systems shall not include:

- 1. Any electrical components that must be installed by a licensed electrician pursuant to the New York city electrical code; or
- 2. Portable fire extinguishers; or
- 3. Connection to domestic water being used for sprinklers.



ADMINISTRATIVE CODE: SPRINKLERS OFF DOMESTIC WATER

AC § 28-410.4.1.1

- Work on 30 or fewer sprinkler heads off the domestic water shall be considered qualifying experience for a master fire suppression piping contractor license pursuant to this section. Such experience shall qualify when the applicant is working as a licensed master plumber, or an individual working under the direct and continuing supervision of either a licensed master plumber or a master fire suppression piping contractor. The balance of the experience required under all qualification bases must be in the performance of fire suppression piping work as defined in section 28-401.3 under the direct and continuing supervision of a licensed fire suppression piping contractor.
 - Class A license. An applicant may be permitted to use no more than eighteen (18) months of experience working on 30 or fewer sprinkler heads.
 - Class B license. An applicant may be permitted to use no more than three (3) years of experience working on 30 or fewer sprinkler heads.



ADMINISTRATIVE CODE: HIGH-PRESSURE OPERATING LICENSE

AC § 28-413.1

It shall be unlawful to operate any high-pressure boiler for any purpose whatsoever, in the city of New York or in connection with any vessel on the waters in and around the city not subject to the jurisdiction of the United States, unless such boiler is operated by or under the direct and continuing supervision and in the presence of a person having a highpressure boiler operating engineer license under the provisions of this article.

Exceptions: A licensed high-pressure boiler operating engineer is not required to operate a high-pressure boiler that meets all of the following conditions:

- - -

6. There is a carbon monoxide detector in the boiler room interlocked with the boiler.



ADMINISTRATIVE CODE: LICENSING BOARDS

AC § 28-417 - RESERVED

- Plumbing and fire suppression piping contractor license board. The commissioner shall appoint annually and may remove in his or her discretion each member of a plumbing and fire suppression piping contractor license board that shall have as its purpose the following:
 - 1. To advise the commissioner regarding the character and fitness of applicants for certificates of competence and licenses who have passed the required examination.
 - 2. To advise the commissioner regarding allegations of illegal practices on the part of licensed master plumbers, licensed master fire suppression piping contractors, master plumber businesses or master fire suppression piping businesses.
 - 3. To advise the commissioner regarding plumbing and fire suppression piping practices, code applications, regulations and legislation.
 - 4. To perform such other responsibilities as may be requested by the commissioner and as set forth in rules promulgated by the department.



SELECT HIGHLIGHTS

Building Code



BUILDING CODE



Source: https://www.behance.net/gallery/50769867/City-of-Glasgow-College-Riverside-Campus

Atrium Definition: BC 202

An opening connecting two or more stories other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or any other vertical openings that are not required to be enclosed by other provisions of this code, which is closed at the top and not defined as a mall. Stories, as used in this definition, do not include balconies within assembly groups or mezzanines that comply with Section 505.



BUILDING CODE: ACCESSORY STORAGE



SOURCE:https://commons.wikimedia.org/wiki/File:Archaeology_storage_room,_ Heritage_Conservation_Centre,_Singapore_-_20141125-01.jpg

BC 311.1.1

- A room or space used for storage purposes that is less than 100 square feet (9.3 m2) in area and accessory to another occupancy shall be classified as part of that occupancy. The aggregate area of such rooms or spaces shall not exceed the allowable area limits of Section 508.2.3.
- Aggregate of all such rooms and other accessory spaces must still be 10% or less of floor area of the story on which it's located and must still not exceed area limits for non-sprinklered buildings (BC 508.2.3 and Table 506.2).



BUILDING CODE: HYDROGEN GAS ROOMS



SOURCE: https://www.thegreenage.co.uk/tech/hydrogen-storage/

BC 421

- New provisions specifically designed to discuss hydrogen fuel gas room have been introduced and contain the following content:
 - Storage
 - Location
 - Design and construction
 - Exhaust ventilation
 - Gas detection system
 - Explosion control
 - Emergency power



BUILDING CODE: SEPARATION

BC 508.3.3

No separation is required between nonseparated occupancies.

EXCEPTIONS:

1...

2...

- 3. Commercial kitchens shall be separated in accordance with Section 508.1, Exception 5.
- Commercial kitchens classified as Group F-2 need not be separated by fire separations from adjoining dining spaces, provided:
 - 5.1. The cooking equipment is vented directly to the outdoors;
 - 5.2. A draft curtain of noncombustible material, at least 24 inches (609 mm) down from the ceiling, is provided to separate the opening between the cooking facilities and the dining spaces; and
 - 5.3. A fire protection system is installed and located as set forth in Item 5.3.1 or 5.3.2.



Select Highlights (BC)

Combustible Exterior Walls



COMBUSTIBLE EXTERIOR WALLS

- All exterior walls made from combustible materials required to undergo testing to industry standards (NFPA 285).
- Filing details and special inspection review for all buildings using exterior walls made from combustible materials.
- All exterior walls made from combustible materials require non-combustible fire blocking installed periodically.
- In existing buildings, 3-foot horizontal band made of non-combustible material (brick) must be installed to separate each floor of combustible material when not protected by full-building sprinkler system.



SOURCE: https://wallsystems.master-builders-solutions.com/en/news-and-updates/nfpa-285-fire-test



SOURCE: https://wallsystems.master-builders-solutions.com/en/newsand-updates/nfpa-285-fire-test



SELECT HIGHLIGHTS (BC)

Alarm Systems



BUILDING CODE: ALARM SYSTEMS



SOURCE: https://www.csemag.com/articles/fire-alarm-and-ecs-voice-amplifiers/

- Expand the universe of buildings that require emergency voice communication systems by lowering the height trigger for such systems in Group R-2 occupancies (residential buildings with more than two dwelling units) from 125 feet to 75 feet in height.
- Addition of an allowance for Group R-2 occupancies in buildings 125 feet or less in height to use batteries as the secondary power supply for emergency voice communications systems and Fire Department in-building Auxiliary Radio Communication systems (ARCs). This change requires the coordinated changes made to the provisions of BC 907.5.2.2, BC 916.3 and Section 760.41(B) of the NYC Electrical Code. (403.4.8.4)



BUILDING CODE: ALARM SYSTEMS



SOURCE: https://www.csemag.com/articles/firealarm-and-ecs-voice-amplifiers/

BC 907.5.2.2 Emergency voice/alarm communication systems. Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72...

EXCEPTIONS:

1. Group I-1 and I-2 occupancies.

[3.] 2. Group R-2 occupancies greater than [125 feet] 75 feet (22 860 mm) in height. In Group R-2 occupied buildings greater than [125 feet (33 100 mm)] 75 feet (22 860 mm) in height above the lowest level of Fire Department vehicle access,...An emergency voice/alarm communication system shall not be required. However, a one-way voice communication shall be provided between the fire command center for use by Fire Department personnel and the following terminal areas:

[3.1.] 2.1. Within dwelling units...

[3.2.] 2.2. Within required exit stairs...



BUILDING CODE: ALARM SYSTEMS



SOURCE: https://asmintegrators.com/arcs-system-nyc/

Increase safety by promoting the use of the Fire Department endorsed Auxiliary Radio **Communication System** (ARCS). ARCS is a wireless, two-way building communication system for Fire Department use only. This system only receives and transmits Fire Department radio frequencies within buildings where it is installed.





SOURCE: https://asmintegrators.com/arcs-system-nyc/

- 916.1 General. This section covers the design, installation and performance criteria of Fire Department In-Building Auxiliary Radio Communication System (ARCS)...
 - 916.1.1 Construction documents.
- 916.2 Instructions.
- 916.3 Where required. ARCS, which shall be in accordance with this section, shall be required in the following:





SOURCE: https://asmintegrators.com/arcs-system-nyc/

- **1.** High-rise buildings constructed in accordance with Section 403.
- 2. <u>Underground buildings constructed</u> in accordance with Section 405.
- 3. Buildings having a total gross area exceeding 250,000 square feet (23 225.8 m²).

EXCEPTIONS:

- 1. Group R-2 buildings
 - a. The highest occupied floor is less than 125 feet (38 100 mm); The building has no more than 1 story below grade; and area of the building does not exceed 250,000 square feet (23 225.8 m²)...





SOURCE: https://www.vectorsolutions.com/course-details/basic-emergency-power-systems/aca1f0b9-7c6d-ea11-a9e3-edf83207be0f/

Addition of an allowance for buildings 125 feet or less in height to use batteries as the secondary power supply for emergency voice communications systems and Fire Department in-building Auxiliary Radio Communication systems (ARCs).





SOURCE: https://www.vectorsolutions.com/course-details/basic-emergency-power-systems/aca1f0b9-7c6d-ea11-a9e3-edf83207be0f/

- BC 403.4.8.4.3 Emergency power loads in Group R-2 occupancies 125 feet or less in height. Group R-2 occupancies in buildings 125 feet (38 100 mm) or less in height shall be required to provide an emergency power system to support the following loads:
 - 1. Emergency voice communications systems in buildings containing Group R-2 occupancies in accordance with Section 907.5.2.2 of this code, or where otherwise provided. Batteries in accordance with the New York City Electrical Code are permitted to serve as the secondary power supply for such systems.
 - 2. Fire Department in-building Auxiliary Radio
 Communication systems (ARCs) in buildings
 containing Group R-2 occupancies in accordance
 with Section 916.3 of this code, or where otherwise
 provided. Batteries in accordance with the New York
 City Electrical Code are permitted to serve as the
 secondary power supply for such systems.



SELECT HIGHLIGHTS (BC)

Accessibility



BUILDING CODE: ACCESSIBLE ROUTE

BC 1101.3.1

Accessible features and construction governed by this chapter shall be provided:

- 1. To the entire building, as if the building were hereafter erected, where a change is made in the main use or dominant occupancy of such building.
- 2. Throughout a space, including the immediate entrance(s) thereto, where an alteration is made that is considered either: (i) a change in occupancy classification of such space in accordance with this code, or (ii) a change in the zoning use group of such space in accordance with the New York City Zoning Resolution.
 - 2.1. Where the immediate entrance(s) to such space provides direct access to the sidewalk, such immediate entrance(s) shall be provided with an accessible route to the sidewalk. Where the immediate entrance(s) to such space are only through an adjacent space, such as a building lobby, such space shall be provided with an accessible route, through the adjacent space, to the sidewalk.
 - 2.2. Where elevator service is provided in the building, an accessible route shall be required to a rooftop, where prior to a change in use or occupancy, such rooftop was not intended for general public or occupant use.



BUILDING CODE: PRIMARY FUNCTION AREA

BC 1101.4

Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The costs of providing the accessible route are not required to exceed 20 percent of the value of the alterations affecting the area of primary function. The accessible route to the primary function area shall include toilet facilities and drinking fountains serving the area of primary function.

EXCEPTIONS:

- 1. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
- 2. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
- 3. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.
- 4. This provision does not apply to altered areas limited within a Type B or Type B+NYC dwelling unit.



BUILDING CODE: ACCESSIBLE CHARGING



Source: cleantechnica.com

BC 1106.8.1

At least five percent of the total number of electrical vehicle charging stations per facility, but not less than one for each type of electric vehicle charging station, shall be accessible. The number of accessible vehicle charging stations are in addition to the required accessible parking spaces.



BUILDING CODE: ACCESSIBLE DINING

BC 1108.2.9

In dining and drinking areas, all interior and exterior floor areas shall be accessible and be on an accessible route.

EXCEPTIONS:

- 1. An accessible route between accessible levels and stories above or below is not required where permitted by Section 1104.4 (Multilevel buildings and facilities.), EXCEPTION 1.
- 2. An accessible route to dining and drinking areas in a mezzanine is not required, provided that the mezzanine contains less than 25 percent of the total combined area for dining and drinking and the same services, and decor are provided in the accessible area.
- 3. In sports facilities, tiered dining areas providing seating required to be accessible shall be required to have accessible routes serving at least 25 percent of the dining area, provided that accessible routes serve accessible seating and where each tier is provided with the same services and similar view.
- 4. Employee-only work areas shall comply with Sections 1103.2.2 and 1104.3.1.



BUILDING CODE: DESTINATION ORIENTED ELEVATORS



https://elevation.fandom.com/wiki/Kone_Destination?file=Kone_Destination_Floor_Select.jpeg

- BC 1109.7.2 Destination—oriented Elevators
- 1109.7.2.1 Hall call console number and location
 - 1109.7.2.1.1 Transfer floors, sky lobbies and floors containing building entrances
 - 1109.7.2.1.2 Other floors
- 1109.7.2.2 Required features
 - 1109.7.2.2.1 Accessibility function button
 - 1109.7.2.2.2 Audio output
 - 1109.7.2.2.3 Visible display screen
 - 1109.7.2.2.4 Floor selection controls
 - 1109.7.2.2.5 Tactile discernibility



SELECT HIGHLIGHTS (BC)

Special Inspections



BC 1705.5.6

 Added a new section and table with requirements for special inspection of Type IV construction utilizing cross laminated timber or structural composite lumber elements.

TABLE 1705.5.6

REQUIRED SPECIAL INSPECTIONS OF TYPE IV CONSTRUCTION UTILIZING
CROSS-LAMINATED TIMBER OR STRUCTURAL COMPOSITE LUMBER

Туре	Continuous Special Inspection	Periodic Special Inspection	Referenced Standard	Code References
Inspection of anchorage and connections of mass timber construction to timber deep foundation systems	=	<u>X</u>		1705.7, 2308.3, 2304.10
Inspect erection of mass timber, including material verification	=	X	PRG-320. ASTM D5456	2303.1.4, 2303.1.10
Inspection of connections where installation methods are required to meet design loads				
3.1. Threaded fasteners				



BC 1705.16

- Expanded the section for EIFS special inspections, requiring MCM, HPL and other combustible material exterior wall coverings to have special inspection.
- Alterations to existing installations must also comply with this section.
- A new requirement to verify that installations comply with the submitted documents and match the NFPA 285 tested assembly.
- The special inspector is now required to confirm the installation of thermal barriers and fireblocking.



BC 1705.25

- Added language clarifying requirements for verification of structural systems during construction.
 - Means & methods for structural stability measures must be prepared by an RDP & filed with the department.
 - New requirements for inspection may be triggered by SOE foundations; blasting effects; underpinning; and demolition operations.



BC 1705.26

- Added a new special inspection to verify compliance with tenant protection plan requirements.
 - Compliance with tenant protection plans ensures safety of occupants and ensures that contractors are complying with requirements to protect tenants during construction operations



BC 1705.32.1

- Text is newly clarified as applicable to new & altered chimneys; replaced appliances; and changes in appliances (ie, oil to gas conversions)
- Added a new special inspection to verify the condition of an existing chimney lining and breaching when a new heating system appliance is installed.

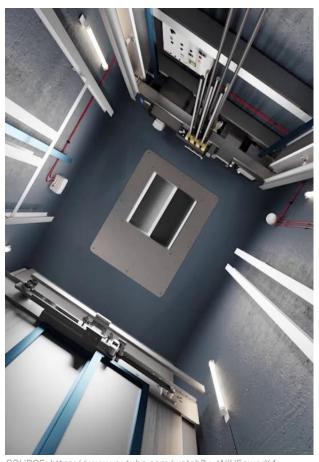


SELECT HIGHLIGHTS (BC)

Elevators



BUILDING CODE: ELEVATOR SMOKE VENTING



SOURCE: https://www.youtube.com/watch?v=tNjU5aworX4

713.12.1 Smoke venting of stair and other closed shafts. All closed shafts, including vertical exit enclosures, having a floor area exceeding 4 square feet (0.37 m²) shall be provided with a smoke vent in accordance with Sections 713.12.1.1 through 713.12.1.3. Interior vertical exit shaft enclosures shall also comply with Chapter 10.

EXCEPTIONS:

- 1. Elevator and dumbwaiter shafts in accordance with Chapter 30.
- 2. Interior exit stairways and ramps constructed as smokeproof enclosures in accordance with Section 1023.11.



BUILDING CODE: FIRE SERVICE ACCESS ELEVATOR



SOURCE: https://rescueair.com/newsletter_archive/FARS%20vs.%20Elevators %20No%20Contest.htm

- BC 3003.3.1 Elevator in readiness for Fire Department emergency access.
 - ...in buildings five stories in height or more, underground buildings as described in Section 405.1, and high-rise buildings, [all floors shall be served by at least one elevator that] at least one elevator shall be kept available for immediate use by the Fire Department during all hours of the night and day, including holidays, Saturdays and Sundays. The elevator in readiness shall serve all floors of the building. For buildings where a Fire Service Access Elevator (FSAE) is provided, the FSAE shall serve all floors of the building...



BUILDING CODE: MRL



SOURCE: http://www.schumacherelevator.com/elevators/traction-elevators/machine-roomless-mrl-traction-elevators.aspx

- BC SECTION [3006] 3005
 MACHINERY SPACES, MACHINE ROOMS, CONTROL SPACES
 AND CONTROL ROOMS
 - [3006.1] 3005.1 Access. An approved means of access shall be provided to elevator machine rooms [and overhead machinery], control rooms, control spaces and machinery spaces...

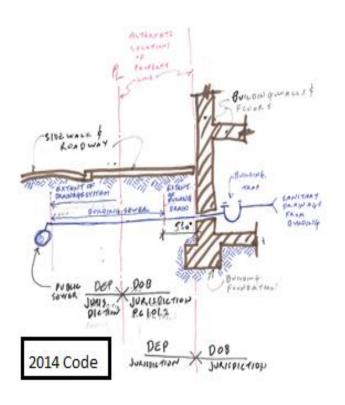


SELECT HIGHLIGHTS

Plumbing Code



PLUMBING CODE: SEWER/DRAIN JURISDICTION



PC 202

- Building Drain. That part of the lowest piping of a drainage system that receives the discharge from soil, waste and other drainage pipes inside and that extends to the exterior face of the exterior building wall, or the outlet of the most downstream trap, private manhole, catch basin, detention tank, or similar fixture or equipment, and conveys the drainage directly to the building sewer or, in the absence of building sewer, to an approved place of disposal.
- Building Sewer. That part of the drainage system that extends from the end of the building drain, or the outlet of the most downstream trap, private manhole, catch basin, detention tank or similar fixture or equipment, and conveys the discharge to a public sewer.



PLUMBING CODE: STRUCTURAL SAFETY

PC 307

- 307.1 General.
 - In the process plumbing work, finished floors, walls, ceilings, tile work or any other part of the building or premises shall be left in a safe structural condition.
- 307.2 Loading.
 - Alterations resulting in additional loads to any member (ie, appliances & equipment) shall not be permitted without verification of additional loading capacity.
- 307.3 Cutting, notching and boring. Cutting, notching & boring of elements shall be in accordance with Appendix C.



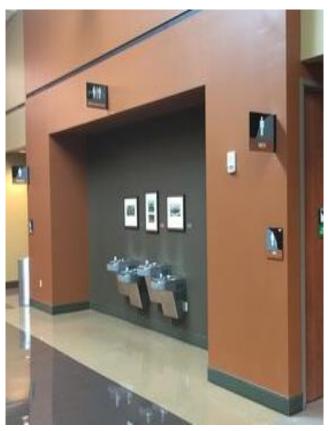
PLUMBING CODE: STRUCTURAL SAFETY

(continued)

- 307.4 Penetrations of floor/ceiling assemblies...
 Penetrations of fire-resistance rated assemblies shall be protected per the Building Code.
- 307.5 Trusses.
 Truss members cannot be cut, drilled, notched, spliced or altered without written RDB approval.
- 307.6 Protection of footings.
 Trenching installed parallel to footings and walls shall not extend into the bearing plane of a footing or wall.
- 307.7 Piping materials exposed within plenums. Piping materials exposed within plenums must comply with the Mechanical Code.



PLUMBING CODE: DRINKING FOUNTAIN LOCATION



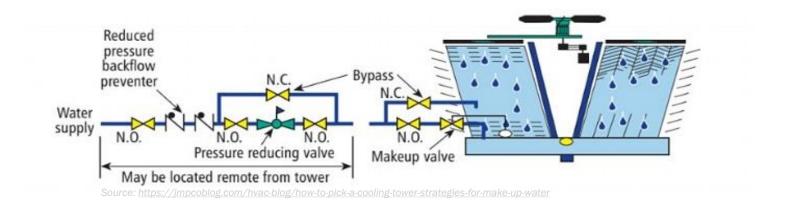
Source: https://inspectionsada.com/ada-compliance

PC 403.5

Drinking fountains shall not be required to be located in individual tenant spaces provided that public drinking fountains are located on each story within a distance of travel of 500 feet (152 m) of the most remote location in the tenant space on such story. Where the tenant space is in a covered or open mall, such distance shall not exceed 300 feet (91 m). Drinking fountains shall be located on an accessible route.



PLUMBING CODE: DRINKING WATER SAFETY

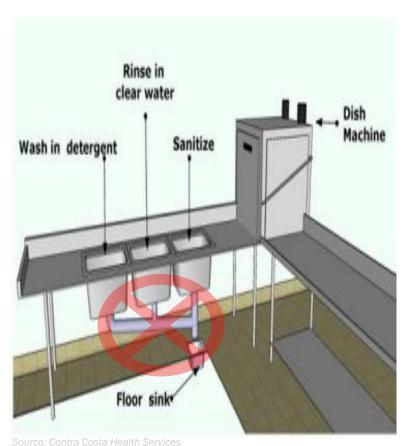


PC 608.16.6

Connections subject to backpressure. Where a potable water connection is made to a nonpotable line, fixture, tank, vat, pump, cooling tower or other equipment subject to high-hazard backpressure, the potable water connection shall be protected by a reduced pressure principle backflow prevention assembly.



PLUMBING CODE: FOOD HANDLING



PC 802.1.1

Equipment and fixtures utilized for the storage, preparation and handling of food shall discharge through an indirect waste pipe by means of an air gap. Each well of a multiple compartment sink shall discharge independently to a waste receptor.





PLUMBING CODE: FIXTURE TRAP VENT DISTANCE

Maximum Distance of Fixture Trap from Vent

Size of Trap (inches)	Slope (inch per foot)	Distance from Trap (feet)	
11/4	1/4	5	
11/2	1/4	6	
2	1/4	8	
3	1/8	12	
4	1/8	16	

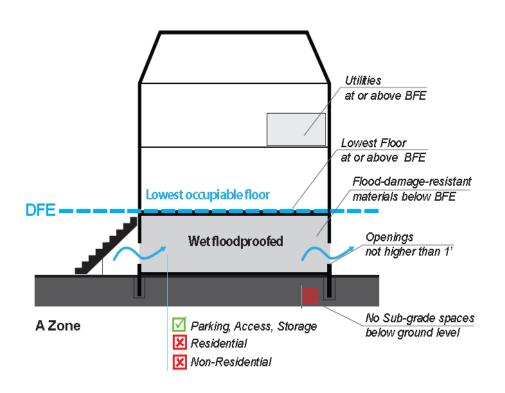
For SI: 1 inch = 25.4 mm.

PC 910.1

Each trap and trapped fixture is permitted to be provided with an individual vent. The individual vent shall connect to the fixture drain of the trap or trapped fixture being vented in accordance with section 909.1, but at a distance not to exceed **16 feet** (4876 mm).



PLUMBING CODE: DETENTION & RETENTION



PC 1101.5.2

Detention and retention tanks located within buildings in flood hazard areas shall be located above the design flood elevation or shall be designed and constructed to withstand the static pressure conditions the system will experience in the event of a flood condition.

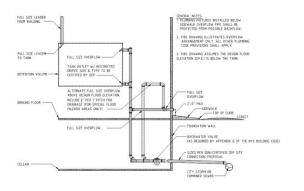
Source: <u>NYC Plannin</u>g

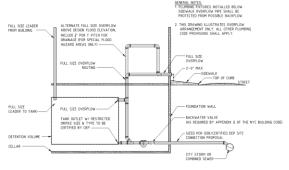


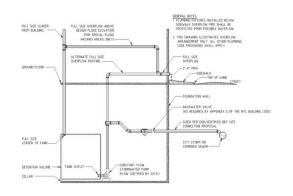
PLUMBING CODE: EMERGENCY OVERFLOW

PC 1101.5.2.1

Emergency overflow piping shall equal the full size of the incoming storm water flow. Emergency overflows and vent terminations for buildings located in flood hazard areas shall be located above the design flood elevation. Such emergency overflow shall discharge the overflow outside of the building into either of the following locations: 1. The tax lot; or 2. The public sewer, provided that the overflow piping is provided with a vent, of the same diameter as the overflow piping, that terminates on the front wall of the building facing the street and no more than 2 feet (610 mm) above the sidewalk. See Figures 1101.5.2.1(1), 1101.5.2.1(2) and 1101.5.2.1(3).









PLUMBING CODE: ROOF DRAINAGE DESIGN



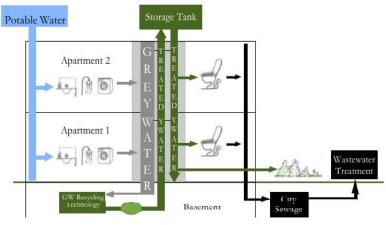
PC 1105.2

The published roof drain flow rate, based on the head of water above the roof drain, shall be used to size the storm drainage system in accordance with Section 1106. The flow rate used for sizing the storm drainage piping shall be based on the maximum anticipated ponding at the roof drain.

Source: https://www.blucher.com/products/drainage-solutions/roof-drain



PLUMBING CODE: NONPOTABLE SYSTEMS



Source: http://www.shomera.org/on-greywater-recycling/what-is-greywater-recycling/







PC 1301.1

The provisions of Chapter 13 shall govern the materials, design, construction and installation of systems for the collection, storage, treatment and conveyance of nonpotable water. The use and application of nonpotable water shall comply with the New York City Construction Codes, and all applicable laws, and rules, including but not limited to those of the Department of **Environmental Protection and the** Department of Health and Mental Hygiene. Water from nonpotable systems shall be collected, stored, treated, conveyed and used on the same tax lot unless otherwise approved by the commissioner.



PLUMBING CODE: STRUCTURAL SAFETY



Source: https://elizabethtown.wini.com/resources/tec-articles/improper-notching-and-boring-joists/

PC Appendix C

- C101.1 Cutting, notching and boring in wood members.
 - C101.1.1 Engineered wood products.
 - C101.1.2 Solid non-engineered joist notches and holes.
 - C101.1.3 Stud cutting and notching.
 - C101.1.4 Bored holes in studs.
 - C101.1.5 Drilling and notching of top plate.
- C101.2 Cutting, notching and boring in steel members.
 - C101.2.1 Structural steel framing.
 - C101.2.2 Cold-formed steel framing.
 - C101.2.3 Nonstructural cold-formed steel wall framing.
 - C101.2.4 Steel floor and roof decking.
- C101.3 Cutting, notching and coring into concrete.



SELECT HIGHLIGHTS

Mechanical Code



MECHANICAL CODE: CONSTRUCTION DOCUMENTS



Source: https://www.daikinac.com/content/assets/DOC/White-paper/ /TAVRVUSE13-05C-ASHRAE-Standard-15-Article-May-2013.pdf

MC 107.8

 Construction documents for airconditioning and ventilating systems shall contain plans that include the following data and information:

. . .

- 6. The safety group classification of refrigerant utilized, if any.
- 7. The refrigerant concentration limit calculations and routing of all refrigerant piping for any airconditioning system that contains more than 6.6 pounds (3.0 kg) of refrigerant. Refer to Chapter 11 for refrigerant piping requirements.



MECHANICAL CODE: VENTILATION REQUIRED



Source: https://www.constructionexec.com/article/designing-naturaventilation-strategies-for-new-and-existing-buildings

MC 401.2

- Habitable and occupiable spaces shall be provided with ventilation in accordance with this section.
 - 1. Every occupiable space shall be:
 - 1.1 Naturally ventilated in accordance with Section 402 and mechanically exhausted in accordance with Table 403.3.1.1; or
 - 1.2 Mechanically ventilated in accordance with Section 403.

HABITABLE SPACE. All rooms and spaces within a dwelling unit in Group R or I-1, including bedrooms, living rooms, studies, recreation rooms, kitchens, dining rooms and other similar spaces.



MECHANICAL CODE: VENTILATION REQUIRED



Source: https://www.constructionexec.com/article/designing-natural-ventilation-strategies-for-new-and-existing-huildings

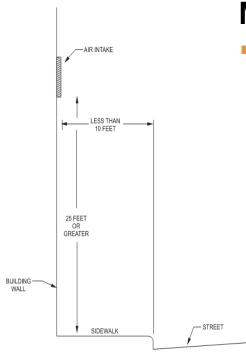
(continued)

- 2. All habitable spaces and occupiable spaces provided with air conditioning shall be mechanically ventilated in accordance with Section 403.
- 3. Every habitable space shall be naturally ventilated in accordance with Section 402.
- 4. Every habitable space shall be mechanically ventilated if required by Section 403.

Ambulatory care facilities (Group B) and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407.



MECHANICAL CODE: INTAKE OPENINGS



MC 401.4

Ventilation air intake openings shall comply with all of the following:

- - -

3. Mechanical and gravity outdoor air intake openings shall be located not less than 10 feet (3048 mm) horizontally from any hazardous or noxious contaminant source, such as vents, exhausts (including but not limited to exhaust from dry cleaning establishments, spray booths, and cooling towers), streets, alleys, parking lots and loading docks, except as specified in Item 3 of Section 501.3.1.

Outdoor air intake openings shall be permitted to be located less than 10 feet (3048 mm) horizontally from streets, alleys, parking lots and loading docks provided that the openings are located not less than 25 feet (7620 mm) vertically above such locations. Where openings front on a street or public way, the distance shall be measured from the closest edge of the street or public way.



MECHANICAL CODE: OUTDOOR AIR REQUIRED



2016 Edition

MC 403.2

The minimum outdoor airflow rate shall be determined in accordance with Section 403.3.1.1.

EXCEPTION:

The minimum required rate of outdoor air may be reduced where the registered design professional demonstrates that an engineered ventilation system is designed in accordance with ASHRAE 62.1 Indoor Air Quality Procedure.



MECHANICAL CODE: BATTERY SUPERVISION



MC 502.4

- Stationary storage battery systems, as regulated by Section 608 of the New York City Fire Code, shall be provided with ventilation in accordance with this chapter, Section 502.4.3 and either Section 502.4.1 or 502.4.2. EXCEPTION: Lithium-ion batteries shall not require ventilation
- Mechanical ventilation systems...shall be supervised with proof of airflow by a central, proprietary system or remote station service or shall initiate an audible and visual signal at a constantly attended on-site location.



MECHANICAL CODE: KITCHEN EXHAUST



MC 505.4

All domestic cooking appliances installed in cafeterias and in Group A-1, A-2, A-4, A-5, and M occupancies shall be provided with hoods and exhaust systems... In other than Group R occupancies, domestic appliances may be provided with domestic kitchen exhaust systems ducted to outdoors in accordance with this section provided that the installation complies with all of the following:

 No more than two domestic cooking appliances are installed in each fire separated room or tenancy in other than Group E occupancies;



MECHANICAL CODE: KITCHEN EXHAUST



(continued)

- 2. Each appliance shall have electric or gas connections and nameplate ratings not to exceed 10kW for electric appliances or 75,000 Btu/h for gas appliances. Branch gas connections shall not be larger than 3/4 inch (19.1 mm) pipe;
- 3. The appliances shall not include open top broilers or fryers; and
- 4. The appliances are used for periodic, non-commercial, non-revenue generating purposes, except for in Group A-3 occupancies, where such appliances may be used a maximum of 8 hours per week to generate revenue



MECHANICAL CODE: EXISTING CHIMNEYS/VENTS

MC 801.1.1

- Whenever a building is erected, enlarged, or increased in height so that any portion of such building, except chimneys or vents, extends higher than the top of any existing chimneys or vents within 100 feet (30 480 mm), the owner of such new or altered building shall have the responsibility of altering such chimneys or vents to make them conform with the requirements of this chapter...
- Applications for a new or altered building shall include a chimney and vent plan submitted pursuant to Section 107.18 of the New York City Building Code...

MECHANICAL CODE: EXISTING CHIMNEYS/VENTS



(continued)

- (1st) Written notice in a form acceptable to the department shall be provided to the building owner not less than 60 days prior to a request for permit for construction on the new or altered building...
- (2nd) Written notice in a form acceptable to the department shall be provided to the building owner not more than 45 days following commencement of work after a permit has been issued...

Source: ecogrizzly.com

MECHANICAL CODE: CHIMNEYS TERMINATIONS



chimneys-multi-flues

MC 801.21

- D = F × \sqrt{A} (Equation 8-1)
- D = Distance, in feet, measured from the center of the chimney, vent or flue outlet to the nearest edge of the construction. If a single chimney is divided into multiple smaller flues or chimneys, measure from the center of the chimney outlet that is closest to the nearest edge of the construction.
- F = Value determined from 801.21.
- A = Free area, in square inches, of chimney flue space outlet. If a single chimney is divided into multiple smaller flues or chimneys, the total aggregate free area of such flue and chimney outlets shall be used to calculate "A".



MECHANICAL CODE: CHIMNEYS TESTING



Source: homeguide con

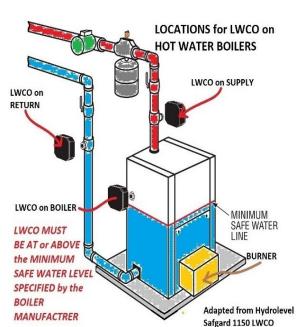
MC 810.1

All new and <u>altered chimneys</u>, and chimneys to which a new appliance has been connected, shall be test run under operating conditions to demonstrate fire safety and the complete exhausting of smoke and the products of combustion to the outer air. The test run shall be conducted by a registered design professional or special inspector responsible for the test, and the results of such test run shall be certified as correct by such professional or special inspector and submitted in writing to the department. Refer to Section 1705.32 of the New York City Building Code for additional requirements.



MECHANICAL CODE: BOILER L. WATER CUTOFF

MC 1007.1

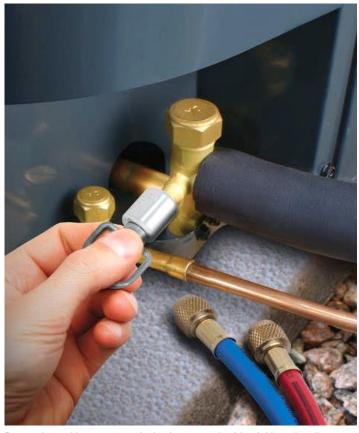


Source: inspectapedia.com

- Steam and hot water boilers shall be protected with dual low-water cutoff control, with each control independently piped to the pressure vessel in accordance with ASME CSD-1. For hydronic boilers, the low-water cut out may be located in the supply piping above the boiler before any intervening valve. A flowsensing control installed in accordance with ASME CSD-1 shall be considered a low-water cutoff for the purposes of this section.
- Low-water cut outs shall be maintained in accordance with ASME CSD-1 and the manufacturer's specifications. An operator shall test low-water cut outs as follows:
 - (1) high pressure steam boilers every shift
 - (2) low pressure steam boilers daily
 - (3) hot water boilers monthly.



MECHANICAL CODE: REFRIGERANT PORTS



Source: https://www.contractingbusiness.com/residential-hvac/media gallery/20869834/5-minisplit-accessories-mandated-by-building-codes?id=20869834&slide=1

MC 1102

- Refrigerant access ports shall be protected in accordance with Section 1101.12 whenever refrigerant is added to or recovered from refrigeration or air-conditioning systems.
- Refrigerant circuit access ports located outdoors shall be fitted with locking-type tamper-resistant caps requiring a special tool or key to open.



MECHANICAL CODE: FUEL OIL PIPING



NYC Buildings Department 280 Broadway, New York, NY 10007 Rick D. Chandler, P.E., Commissions



UL 142

BUILDINGS BULLETIN 2018-010 Technical

Issuer: Gus Sirakis, P.E. Chiralia

Assistant Commissioner for Technical Affairs and Code Development

Issuance Date: August 1, 2018

Purpose: This document provides guidance on code-compliant configurations of fuel oil piping for day tanks and addresses dual certification of day tanks.

ion(s): MC 1305.7 MC 1305.8 MC 1305.12.2

MC 1305.14 MC 1305.3 UL 80

Subject(s): Venting, day tanks; fuel oil piping; NYC-approved day tank; UL 80; UL 142; emergency venting; supply piping; fuel oil installation

A. DESCRIPTION

This bulletin provides guidance on code-compliant fuel oil piping configurations for day tanks supplying fuel to building equipment, and addresses common issues related to the use of dual-certified fuel oil tanks as day

B. BACKGROUND

The New York City Mechanical Code (MC) requirements allow for several configurations of fuel oil piping connected to day tanks. This bulletin provides calification of numerous fuel oil piping configurations acceptable for venting of day tanks located above the lowest floor, including those on roof levels of buildings. Fuel oil piping systems are required to be designed and installed in compliance with MC 1305. The piping arrangement is required to be designed an installed in a manner that allows for effective venting, a functioning overflow pipe, and that functional emergency venting is achieved where required by correctly designed piping. There are multiple acceptable configurations for vent piping of day tanks. This bulletin provides clarifications with regards to more commonly provided arrangements of piping and the associated acceptable cross-connections of vent piping and emergency relief vent piping connections to the primary storage tank.

This bulletin also provides clarification for use of tanks that have been certified to conform to multiple standards, including: Underwriters Laboratory standards 80 and 142, as well as the "Alternate tank design and construction standards" requirements of MC 1305.14.

C. SPECIFICS

The 2014 New York City Mechanical Code (MC) provides piping requirements for fuel oil delivery systems between day tanks above the lowest floor and the primary tanks that supply them. This builderin addresses the two-pipe and three-pipe systems that are commonly specified on plans, which include pipes used for supply, return, and overflow of fuel as well as wenting of fuel oil gases. For purposes of this buildin, a 'day tank above the lowest floor' includes a day tank that is situated on an elevated floor of the building and which MC 1305 considers inside the building, even if the day tank is located on a roof. Although the current Code refers to it as

build safe live safe

Buildings Bulletin 2018-010 page 1 of 6

MC 1305.3.8

- In systems with fuel oil storage tanks above the lowest level, overflow piping from tanks installed above the lowest floor shall be piped by gravity into the top of the tank at the lowest floor that supplies fuel to such tank. The overflow pipe shall be minimum two pipe sizes larger than fuel oil supply pipe. Valves shall not be installed on overflow piping.
- Where the top of the storage tank is above the fill pipe terminal, the fill pipe shall be connected to the top of the tank and provided with...a shutoff valve and swing check valve...[or] a dry disconnect fitting with a ball and a check valve



MECHANICAL CODE: TANK ROOM VENTILATION



Source:https://www.steerank.com/Portals/0/Tanks%2UInside%2UBuildings_10%20Vent%20or%20Not%20To%20Vent,%20That%20ls%20the%20Question,%20Stookey.pdf

MC 1305.16.1

Replacement of tanks in prior code buildings may utilize an existing gravity ventilation system complying with the following:

- The total net free area of supply and exhaust openings shall be equal to at least 1 percent of the floor area of the room, equally divided between the supply and exhaust; and
- 2. Independent supply and exhaust openings to the outside; or
- 3. Independent supply and exhaust ducts to the outside.



MECHANICAL CODE: SOLAR SYSTEMS



MC 1404.1.1

The following types of collectors may be installed:

- 1. Flat-plate collectors.
- 2. Evacuated-tube collectors.
- 3. Integral collector storage systems.
- Alternative collectors as approved by the commissioner in accordance with Section 28-113.2 of the Administrative Code.



SELECT HIGHLIGHTS

Fuel Gas Code



FUEL GAS CODE: APPLIANCE FUEL CONVERSION



Source: https://ignny.com/hoiler-after-conversion/

FGC 301.7.1

- Appliances shall not be converted to utilize a different fuel gas except where complete instructions for such conversion are provided by the serving gas supplier, the appliance manufacturer, the burner manufacturer or the boiler manufacturer.
- If a specific listing & labeling is available for the burner/boiler combination, it shall be submitted to DOB.



FUEL GAS CODE: APPLIANCE FUEL CONVERSION



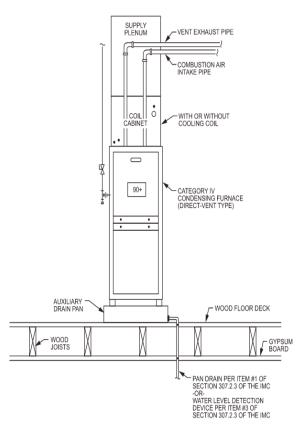
Source: https://ignpy.com/hoiler.after.conversion

(continued)

- If a specific listing for the combination is not available the listing and a letter confirming compatibility shall be submitted by the burner manufacturer.
- The completed installation shall be inspected & tested by a representative of manufacturer and certified by a registered design professional. The certifying registered design professional need not be the engineer of record for the design.



FUEL GAS CODE: CONDENSATE DISPOSAL



FGC 307.6

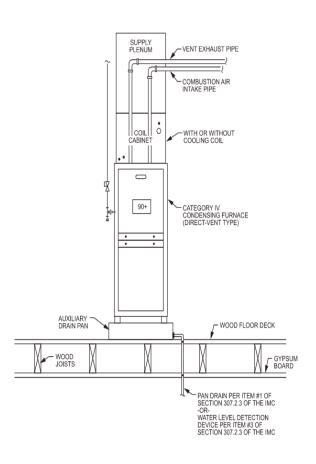
Condensate pumps located in uninhabitable spaces, such as attics and crawl spaces, shall be connected to the appliance or equipment served such that when the pump fails, the appliance or equipment will be prevented from operating. Pumps shall be installed in accordance with the manufacturer's instructions.

EXCEPTIONS:

1. Equipment shutdown shall not be required when the condensate pump resides within the auxiliary drain pan provided under Section 307.5 and an alternate means for unit shutdown due to condensate overflow or leakage, such as a leak detector, is provided.



FUEL GAS CODE: CONDENSATE DISPOSAL



(continued)

2. Equipment shutdown shall not be required when the potential for freezing of interior piping systems exists and the auxiliary drain pan provided under Section 307.5 is equipped with a secondary overflow drain that shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain.



FUEL GAS CODE: PIPE MOVEMENT



Source: https://www.metraflex.com/products/me traloop-expansion-joint/

FGC 404.2

- Flammable or combustible gas piping systems shall be designed to account for pipe movement resulting from thermal changes or seismic forces.
- Gas piping shall be designed and installed to withstand seismic forces in accordance with Section 1613 of the New York City Building Code.
- Stainless steel flexible multiple leg hose assemblies may be installed where pipe movement resulting from seismic forces may occur. Such assemblies shall be listed and labeled in accordance with UL 536 and shall be installed in accordance with the manufacturer's instructions.
- The installation of stainless steel flexible multiple leg hose assemblies shall be subject to special inspections in accordance with Chapter 17 of the New York City Building Code.



FUEL GAS CODE: PIPING IN PUBLIC CORRIDORS

FGC 404.3

5. Public corridor. Gas piping shall not be installed in public corridors and exit enclosures.

EXCEPTIONS:

1. Gas piping may be installed in public corridors or exit enclosures where separated by a fire-resistance-rated assembly meeting the hour rating and, if applicable, the impact resistance rating required for the corridor or exit enclosure. Such assembly shall be rated for exposure to fire from both sides.



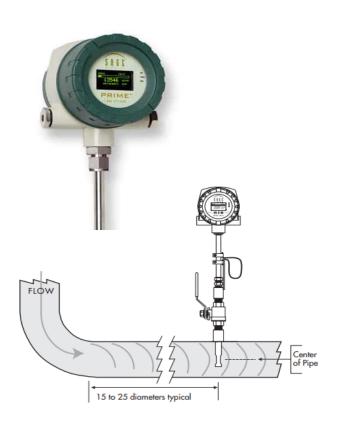
FUEL GAS CODE: PIPING IN PUBLIC CORRIDORS

(continued)

- 2. In residential buildings that do not have floors below grade, or in multiuse buildings that have a residential occupancy, gas piping may be installed in public corridors in accordance with the following:
 - 2.1. Gas piping shall be permitted to be installed within a public corridor at the lowest level of the building or the lowest residential level of the building.
 - 2.2. All gas valves located within the public corridor shall be accessible for maintenance and inspection.
 - 2.3. Gas pressure within the public corridor piping shall not exceed $\frac{1}{2}$ psi (14 in w.c.).
 - 2.4. The public corridor shall be ventilated in accordance with the New York City Mechanical Code. The pipe shall not be installed in a return air plenum.
 - 2.5. Pipes must be welded



FUEL GAS CODE: GAS METERING DEVICES



Source: https://sagemetering.com/applications/industrial/natural gas-sub-metering/

FGC 404.9

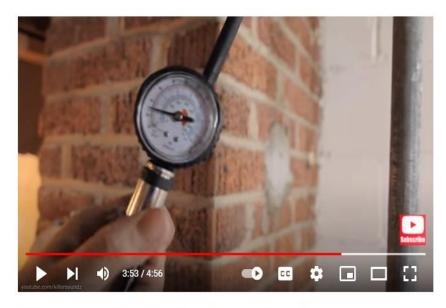
A device shall not be placed inside the piping or fittings that will reduce the cross-sectional area or otherwise obstruct the free flow of gas.

EXCEPTIONS:

- 1. Approved gas filters.
- 2. An approved fitting or device where the gas piping system has been sized to accommodate the pressure drop of the fitting or device.
- 3. Approved gas meters for monitoring and analysis of gas usage.



FUEL GAS CODE: GAS METERING DEVICES



FGC 406.4.6

Tests of gas piping systems in accordance with this code shall be conducted by an individual with not less than five years' experience in gas work.

DIY Pressure Test Natural Gas Lines Cheaply w/ Tire Inflator



Source: https://www.voutube.com/watch?v=fPYvDG9an-



FUEL GAS CODE: STATIONARY FUEL CELL POWER



FGC 633.1

Stationary fuel cell power systems having a power output not exceeding 10 MW shall be tested in accordance with ANSI/CSA America FC 1 and shall be installed in accordance with the manufacturer's instructions, NFPA 853, the New York City Building Code, the New York City Fire Code and the New York City Electrical Code. Indoor stationary fuel cell power systems used in hydrogen generating systems shall be located in accordance with the requirements of Section 706 of this code.



