



CHAPTER 20 PIPING SYSTEMS

§20-01 Witnessing Tests of Gas Piping Systems.

- (a) Persons witnessing tests of gas piping systems in accordance with §27-921(b) of the Administrative Code, other than authorized plumbing inspectors of the Department of Buildings, shall be acceptable to the Commissioner of Buildings and shall meet the following prerequisites:
- (1) Be either a registered architect, licensed professional engineer, licensed master plumber, or employee of a utility company; and,
 - (2) Have at least five years experience in inspection and testing of gas piping systems, or hold a current master plumbers license.
- (b) The witnessing of the test in accordance with §27-921 and these rules shall be in person by the specifically designated person on the list maintained by the Commissioner. This authorization may not be delegated to anyone, nor can persons under his supervision witness the test in his behalf.
- (c) Authorized persons on the list shall be required to maintain liability insurance of an amount acceptable to the Department.
- (d) Failure of authorized persons to require compliance with law and these rules, and/or submission of a false statement will be grounds for immediate suspension or revocation of an authorized representative's authority to conduct inspections on behalf of the Department, and the immediate suspension of a Master Plumber License; be cause for immediate referral to the Division of Professional Conduct of the State Education Department, in the case of Architects or Engineers; and be cause for immediate referral to the Public Service Commission, in the case of utility companies.
- (e) Reports of the inspections or tests are required to be submitted, and shall be made on forms acceptable to the Department.
- (f) No reports shall be accepted for any installations for which a prior permit has not been previously obtained from the Department.

§20-02 High Pressure Steam Piping Systems.

These regulations shall apply to high pressure steam piping system which is defined as a system operating at a steam pressure of more than fifteen (15) psi. In the application of these rules and regulations, loops, bends or offsets of the piping shall not be considered expansion joints.

(a) *Existing Systems.*

The following requirements are applicable:

- (1) All expansion joints, anchorage and guides which are presently not accessible to permit a complete visual inspection, shall be made accessible. Where the integrity of any shaft enclosure is impaired hereby, proper means shall be provided to maintain its integrity. All joints, including the joints so exposed, shall be inspected for any signs, visual or audible, of [*sic*] any escaping steam or condensation. Where there is evidence of such escaping steam in a bellows joint, immediate appropriate action shall be taken including expeditious replacement of the joint. If the escaping steam is immediately adjacent to a tenanted area, the occupants of this area shall be evacuated and shall not be permitted to return until the joint has been replaced or removed. In all cases, the joint shall be kept under intensive surveillance by the owner until such replacement or removal. In the event that the leak is progressive and has progressed to an extent as to present a hazard, the steam system or any part thereof serviced by the affected joint shall be shut down and the Department of Buildings shall be notified immediately. The Commissioner may waive the requirement for the exposure of the structural attachments to the building of the anchorage or guides upon the certification of a professional engineer to the effect that the exposure would impair a structural element of the building and specifying the basis on which he predicates his conclusion as to the adequacy of the structural attachments to the buildings of the anchorage or guides without such exposure.

Upon exposure and initial inspection of the joints, the Commissioner shall be notified in writing by registered or certified mail. Such notification shall specify the type and location of the joints and the date inspected. The notification shall also contain the name of the person responsible for seeing that the inspections are made and properly recorded. Such inspections and exposure shall be made within two weeks from the effective date of this requirement. The initial inspection of the anchorage and guides shall be made within two months from the effective date of this requirement.

The Commissioner shall be notified in the same manner described above of any subsequent change of the person responsible for seeing that the inspections are made and records kept.

The notifications required in this paragraph shall be addressed to the Borough Superintendent of the Borough in which the system is located.

(2) *Maintenance inspections.*

- (i) Expansion joints shall be inspected weekly.

- (ii) The anchorage and guides shall be inspected annually. Exposure of the structural attachments to the buildings of the anchorages or guides shall not be required where the inspection reveals no improper movement or defects in the system.
- (iii) A record of such inspections shall be kept by the person in charge of the mechanical equipment of the building or other qualified person designated by the owner and acceptable to the Commissioner. The records shall be available at the premises and subject to inspection by the Commissioner.
- (3) No joint, anchorage or guides shall be repaired, replaced or relocated, unless and until an application has been filed and the approval of the Department is obtained. The application shall contain all pertinent information and shall be filed by a licensed professional engineer, knowledgeable as to high pressure steam piping systems. He shall be responsible for the controlled inspection of the proposed work in accordance with the approval of the Department. This provision shall not apply to the repacking of a slip or ball joint, however, records of such repacking shall be kept in the inspection records as hereinabove provided. When, in the opinion of the professional engineer, the requirement for prior approval by the Department of Buildings would create an imminent health or safety hazard, the professional engineer may permit the work to proceed without prior approval. In such cases, he shall, prior to the repair, replacement or relocation, notify by telephone the Borough Superintendent of the borough in which the building is located; and, if the emergency occurs at other than normal working hours, he shall notify the Emergency Section by telephone at 312-8298. [sic] This shall be followed up by the filing of the application and obtaining the approval specified above.
- (4) The Commissioner, where he deems it necessary, shall require the replacement or relocation of any joints, guides or anchors. The Commissioner shall cause the joints in potentially hazardous locations such as those which are located adjacent to tenant occupied spaces to be relocated, unless means exist or are provided for eliminating the hazard.
- (5) Applicability upon completion of new high pressure steam piping systems. Upon the completion of a new high pressure steam piping system and the approval of same by the Department, the rules relating to existing high pressure steam piping systems affecting maintenance requirements and the keeping of records shall apply.

(b) *New Systems.*

For the purpose of the application of these rules and regulations, the replacement of existing steam piping systems, the installation of a new system in existing buildings, as well as installations in buildings hereafter constructed, shall be considered to be new high pressure steam piping systems. The following requirements are applicable:

(1) *Design.*

(i) The system shall be designed by a registered architect or licensed professional engineer. An application and plans shall be filed and the approval of the Department obtained. The plans and application shall contain, but not be limited to the following information:

- (A) Size and location of all steam piping.
- (B) The operating pressures and temperatures.
- (C) The location, type, specifications and details of all expansion joints.
- (D) The design, size, material and location of all anchors, guides and auxiliary steel, and the stresses thereon.

(ii) Systems using utility street steam shall be designed for a pressure of 200 psig and 413° [sic] F up to and including the steam pressure reducing valve or valves which reduce the pressure of 90 psig or below. For steam pressures between 90 psig and 16 psig the system shall be designed for 125 psig.

(2) *Installation.*

(i) Installations (including any welding for same), shall be under controlled inspection by the engineer responsible for the design, or by a Professional Engineer acceptable to him.

(ii) Systems using utility street steam shall be designed for a pressure of 200 psig and 413° F up to and including the steam pressure reducing valve or valves which reduce the pressure of 90 psig or below. For steam pressures between 90 psig and 16 psig the system shall be designed for 125 psig

(iii) Welders shall be qualified for all required pipe sizes, wall thickness and positions in accordance with the American Society of Mechanical Engineers, Welding and Brazing Qualification, Section IX, Boiler and Pressure Vessel Code 1980, (ANSI/ASME BPV- IX- 1980). Requalification is required every three years; or, if there is a specific reason to doubt the welders ability to make sound welds.

(iv) Welder qualification testing shall be performed by an agency listed with the Department of Buildings, and if the testing is by radiography, the inspection shall have a minimum radiography qualification of Level II in accordance with the American Society for Non-destructive Testing, 3200 Riverside Drive, Columbus, Ohio 43221, Recommended Practice, Document No. SNT-TC-1A- 1980.

(v) Copies of the certified welder qualification reports shall be maintained by the responsible welding agency and the company performing the welding, and shall be made available upon request to the Department of Buildings.

(vi) No reports from any welding inspection agency shall be accepted unless such agency has first requested and obtained from this Office [sic] in accordance with §25-01(q)(1) of the Board of Standards and Appeals Welding Rules.

(vii) (A) All piping over 3 inches shall be butt welded. Piping 3 inches and under may be socket welded or threaded.

(B) Threaded piping may continue to be used for existing construction in sizes of 6 inches and under.

(C) The Borough Superintendent may determine where welding is not feasible and that an acceptable alternative has been provided.

(viii) Radiographic examination, when required, shall be performed on butt welds in accordance with the following standard:

(ix) The percentage of butt welds subject to radiographic examination shall be based on the piping pressure and shall be as follows:

ANSI ASME B 31.1-1980	
Piping Pressure	Percentage
90 psig or below	Not required
91 psig to 150 psig	10% at Random
Over 150 psig	100%

However, if in the opinion of the engineer responsible for Controlled Inspection radiographic examination is not required for piping at pressure between 90 psig and 150 psig, he shall so specify in writing, and his final report on the installation may omit the foregoing, and be predicated on all of the other requirements noted above, as well as a hydrostatic test.

(x) Testing - Hydrostatic test the completed installation at 150 percent of the design pressure for all piping pressure. Where the changes in an existing steam system involve less than 30 percent of the piping in the system, the testing may be in accordance with the ASME Power Piping Code, (ANSI/ASME B 31.1 - 1980).

§ 20-03 Standards for Non-Mercury Gauges.

(a) *Applicability.* In accordance with Local Law 17 for the year 2001, the rules in this section establish minimum standards for non-mercury gauges to test gas piping, drainage and vent systems.

(b) *Minimum Requirements.* Each gauge shall meet the following requirements:

(1) The gauge shall be manufactured and used in accordance with the ASME B40.100-1998 Standard for Pressure Gauges and Gauge Attachments, which incorporates ASME B40.1-1998 and ASME B40.7-1998, and the manufacturer shall provide with the gauge a written statement that the gauge is manufactured in accordance with such ASME standard,

(2) The gauge shall be labeled with the name of the manufacturer,

(3) The gauge shall be kept in a padded separate rigid box and the manufacturer's instructions for use and protection of the gauge shall be complied with,

(4) The units of measurement "psi" shall appear on the face of the gauge, and

(5) The gauge shall be kept in good working order.

(c) *Analog Gauges Used to Measure Pressure in the Magnitude of 3 psig.* Each analog gauge used to measure pressure in the magnitude of 3 psig shall meet the following requirements in addition to satisfying the minimum requirements set forth in subdivision (b):

(1) The face of the gauge shall not be smaller than 2¼ inches in diameter,

(2) The gauge shall have a minimum of 270-degree dial arc,

(3) The gauge shall be calibrated in increments of not greater than one-tenth of a pound,

(4) The range of the gauge shall not exceed 5 psig when a 2¼ inch diameter gauge is used,

(5) The 1/10th psig interval on the gauge shall not be smaller than 1/10th of an inch of arc,

(6) The gauge shall be provided with an effective stop for the indicating pointer at the zero point,

(7) The gauge shall be protected from excessive pressure with a shut off valve and prior to using the 5-psig gauge the snifter valve shall be tested with a tire gauge to determine the magnitude of pressure, and

(8) The gauge shall have a calibration screw.

(d) *Analog Gauges Used to Measure Pressure in the Magnitude of 5 psig.* Each analog gauge used to measure pressure in the magnitude of 5 psig shall meet the following requirements in addition to satisfying the minimum requirements set forth in subdivision (b):

(1) The face of the gauge shall not be smaller than 2¼ inches in diameter,

(2) The gauge shall have a minimum of 270-degree dial arc,

(3) The gauge shall be calibrated in increments not greater than one-fifth of a pound,

- (4) The range of the gauge shall not exceed 10 psig when a 2¼ inch diameter gauge is used,
- (5) The 1/5th psig interval on the gauge shall not be smaller than 1/10th of an inch of arc,
- (6) The gauge shall be provided with an effective stop for the indicating pointer at the zero point,
- (7) The gauge shall be protected from excessive pressure with a shut off valve and prior to using the 10-psig gauge the snifter valve shall be tested with a tire gauge to determine the magnitude of pressure, and
- (8) The gauge shall have a calibration screw.

(e) *Digital Gauges Used to Measure Pressure in the Magnitude of 3 psig and Higher.* Each digital gauge used to measure pressure in the magnitude of 3 psig and higher shall meet the following requirements in addition to satisfying the minimum requirements set forth in subdivision (b):

- (1) The gauge shall have a minimum reading of 1/100th of a psig, and
- (2) An extra charged battery shall be readily available for immediate use with the gauge.

CHAPTER 21 PLANS

§21-01 Limited Supervisory Check of Plans.

In accordance with §27-143 of the Administrative Code of the City of New York, the Commissioner will exercise his discretion in designating portions of plans for the construction of new buildings, other than private residences and their appurtenances and accessories, for limited supervisory check predicated upon statements and representations made by the Architect or Engineer of record and conditions as follows:

- (a) That the time required for a complete examination by the department would delay the project.
- (b) That complete and co-ordinated architectural, structural and mechanical plans are or have been filed.
- (c) That the portion for limited supervisory check be clearly and specifically identified, however, it shall not include compliance with the zoning resolution nor the exit requirements of the building code or other applicable laws.
- (d) Wherever applicable, the necessary certifications and appropriate approvals have been obtained regarding:
 - (1) Landmarks, landmark sites and historic districts.
 - (2) Sewers.
 - (3) Urban Renewal Areas.
 - (4) Transit Authority for the effect on subways.
 - (5) Compliance with General City Law, §35.
 - (6) Proof of filing with the Department of Transportation of a related paving plan application (General City Law, §36; New York City Charter, § 230);
 - (7) Liability Insurance. (General City Law, §36; New York City Charter, §220).
- (e) That where there are associate Architects or Engineers, that they likewise join in the request for limited supervisory check of the plans.
- (f) That the Architect or Engineer of record and associate Architects or Engineers, if any, are aware that the Commissioner, in the exercise of his discretion in accordance with §27-143 of the Administrative Code, will rely upon the truth and accuracy of the statements contained in the construction application made by them, and any amendments submitted in connection therewith, as to compliance with the provisions of the Building Code and other applicable laws and regulations.
- (g) That the Architect or Engineer of record and associate Architects or Engineers, if any, are further aware that the Commissioner will rely on a complete enumeration of exceptions to compliance with the provisions of the Building Code and other applicable laws and regulations as set forth in the Statements A and B, filed with the construction application. That, prior to the request for a limited supervisory check, the enumerated exceptions must be resolved by reconsideration or otherwise.
- (h) Should disclosure indicate a non-compliance with the Building Code and other applicable laws and regulations, the Architect or Engineer of record shall take the necessary remedial measures to obtain compliance.
- (i) That the owner is aware of this request and the conditions under which it is being granted and he agrees to comply with any requirement for remedial measures, if same becomes necessary.

§21-02 Additional Procedures with Respect to Designation of Applications and Plans Submitted by Registered Architects and Licensed Professional Engineers for Limited Supervisory Check.

(a) *Purpose.*

Pursuant to §27-143 of the Administrative Code, the Department of Buildings has established procedures for limited supervisory check of applications and plans submitted by registered architects and licensed professional engineers. In general, these procedures have benefited both the construction industry and the general public by expediting departmental review without sacrifices to public safety. While the vast majority of architects and engineers have justified the confidence which the Department has in their professionalism, there have been

occasions when the laws which govern construction in the City have been disregarded, threatening public safety. The purpose of these regulations which amend regulations promulgated by the Department and effective February 9, 1986 is to protect the safety and integrity of the procedures for limited supervisory check by assuring that such disregard is not permitted to continue.

(b) *Grounds for Exclusion.*

The Commissioner may exclude a registered architect or licensed professional engineer from the Department's procedure for limited supervisory check of applications and plans if the Commissioner finds that:

- (1) Applications, plans, certifications or reports submitted by the architect or engineer demonstrate such a lack of knowledge of the Building Code, Multiple Dwelling Law, Zoning Resolution and/or Labor Law that in the interest of public safety and welfare the applications and plans submitted by such architect or engineer should be subject to full review by the Department; or
- (2) The architect or engineer has submitted applications, plans, certifications or reports to the Department which were required to be prepared by him or her or under his or her supervision but which were not prepared by him or her or under his or her supervision; or the architect or engineer engages in any conduct evidencing a delegation of professional responsibilities to a person where the architect or engineer knows or has reason to know that such person is not qualified, by training, by experience or by licensure, to perform them; or
- (3) The architect or engineer has knowingly or negligently made false or misleading statements or knowingly or negligently falsified or allowed to be falsified any certificate, form, signed statement, application or report filed with the Department, or knowingly failed to file a report required by law or the Department or willfully impeded or obstructed such filing, or induced another person to do so; or
- (4) The architect or engineer has been convicted of a criminal offense where the underlying act arises out of his professional occupation or business dealings with the City of New York.

(c) *Procedures.*

- (1) Written notice of the basis for such action to exclude from limited supervisory check shall be served on the architect or engineer pursuant to the provisions of New York State Civil Practice Law and Rules §308.
- (2) If the Commissioner finds that continued use of the procedures for limited supervisory check by the architect or engineer would be likely to create a condition of imminent peril to public safety, the Commissioner's determination shall be effective immediately.
- (3) On and after the effective date of the determination, whether after hearing as provided in §21-02(c)(1) or immediate suspension pursuant to §21-02(c)(2) of these regulations, as the case may be, any or all of the applications and plans submitted by the architect or engineer shall be subject to full review by the Department.

(d) *Hearing.*

- (1) Upon a filing of the administrative charges, the architect or engineer will be scheduled for a hearing on the determination by submitting written objection to the determination and the grounds for such objection to the Commissioner within fifteen days after the date that the notice of determination is served.
- (2) The hearing will be held at the Office of Administrative Trials and Hearings. Pursuant to §21-02(c)(2) of these regulations, if the Commissioner's determination was effective immediately, the hearing shall be scheduled expeditiously, with due consideration given to the current calendar at the Office of Administrative Trials and Hearings.
- (3) The architect or engineer may be represented by counsel and may present evidence in his or her behalf. A transcribed or tape-recorded record shall be kept of the hearing.
- (4) After the conclusion of the hearing, the OATH Administrative Law Judge shall issue proposed findings of fact and proposed conclusions of law, along with a report and recommendation issued by the OATH Administrative Law Judge and shall issue a final decision. The Commissioner shall notify the architect or engineer in writing of the Commissioner's decision. Such notice shall include a written statement indicating the reason for the decision.

(e) *Review of determination.*

At the expiration of one year from the date of the initial determination to exclude an architect or engineer from participation in the procedures for limited supervisory check of applications and plans, and at intervals of no more than six months thereafter, upon request of the architect or engineer, the Commissioner shall re-examine such determination. If the architect or engineer has not committed any of the acts described in §§21-02(b)(2) or (3) during such period and applications and plans submitted by him or her during such period which were subject to complete examination by the Department demonstrate adequate knowledge of the Building Code, Multiple Dwelling Law, Labor Law and the Zoning Resolution and the Commissioner determines that it would be in the public interest to do so, he or she may rescind such determination. In making such decision, the Commissioner may consider any relevant documents submitted by the applicant bearing on his or her capability to resume participation in the procedures for limited supervisory check.

CHAPTER 22 PRESSURE TANKS

§22-01 Installation and Maintenance of Pressure Tanks Operating at a Pressure in Excess of 15 PSI and Their Proximity to Gas Supply or Service Lines.

(a) *Applicability.* These regulations shall apply to tanks containing water and air in combination, under pressure exceeding 15 psi above atmospheric pressure, where the pressure is supplied and maintained by pumps connected directly to the tanks.

(b) *Design.*

The system shall be designed by a registered Architect or a Licensed Professional Engineer. An application and plans shall be filed and the approval of the department obtained. The plans and application shall contain, but not be limited to:

- (1) Size and location of high pressure tanks.
- (2) The operating pressures and temperatures.
- (3) The location, type and specifications of pressure relief valves.

(c) *Location.*

- (1) All high pressure tanks shall be located a clear distance of at least five feet horizontally from a gas service or distribution line or its vertical projection upon the floor.
- (2) All new high pressure tank [*sic*] installations shall be located in rooms separated from gas service or distribution lines.
- (3) In cases where the spatial relationship between tanks and gas services does not comply with the regulations, it shall be the responsibility of the party responsible for the last installation to correct the violation.

(d) *Installation.*

- (1) Installation with the exception of welding, shall be under controlled inspection by the engineer responsible for the design, or by a Professional Engineer acceptable to him.
- (2) The welding shall be under controlled inspection of an Engineer, supervising a welding inspection agency acceptable to the Department of Buildings.
- (3) Welders shall be qualified for all pipe sizes, wall thickness and positions in accordance with either the American Petroleum Institute, 1801 K Street, N.W., Washington, D.C. 20006, Standard for Welding Pipelines and Related Facilities, Fourteenth Edition, January 1977, (API STD 1104-1977), or the American Society of Mechanical Engineers, Welding and Brazing Qualification, Section VIII, Boiler and Pressure Vessel Code, 1980, (ANSI/ASTM BPV-IX-1980), and requalified on an annual basis.
- (4) The qualification testing shall be performed by an agency listed with the Department of Buildings, and the inspector shall have a minimum radiography qualification of Level II in accordance with the American Society for Nondestructive Testing, 3200 Riverside Drive, Columbus Ohio 43221, Recommended Practice, Document No. SNT-TC-1A-1980.
- (5) Copies of the certified welder qualification reports shall be maintained by the responsible welding agency and shall be made available upon request to the Department of Buildings.
- (6) No reports from any welding inspection agency shall be accepted unless such agency has first requested and obtained approval from this Office, in accordance with Rule 2511(G)(1) of the Board of Standards and Appeals Welding Rules.
- (7) All welded piping shall be butt welded.
- (8) Radiography shall be performed on all butt welds in accordance with API STD 1104-1977 or ANSI/ASTM BPV-IX-1980.
- (9) Testing- A hydrostatic test of the completed installation at 150 percent of the design pressure adjusted to compensate for the difference in gas or fluid pressure and the ambient temperature shall be conducted. Where the changes in an existing system incorporating high pressure tanks involves less than 30 percent of the piping system, the testing may be in accordance with Standard Power Piping, ANSI B31.1-1980.

CHAPTER 23 NONCOMMERCIAL GREENHOUSES

§23-01 Noncommercial Greenhouses Accessory to Residential Uses as a Permitted Obstruction in Required Rear Yards or Rear Yard Equivalents.

(a) *Definitions:* Greenhouse. A greenhouse shall be defined as a glass or slow burning plastic enclosed building used for cultivating plants.

(b) *Detached accessory noncommercial greenhouse.* A detached accessory noncommercial greenhouse is a

permitted obstruction in a required rear yard or rear yard equivalent, pursuant to §23-44 (b) of the Zoning Resolution, when it complies with the following conditions:

1. no portion of the greenhouse is located in a rear yard equivalent which also is a required front or side yard,
2. the greenhouse does not exceed ten feet above the level of the rear yard or rear yard equivalent,
3. the floor area of the greenhouse is included in the total floor area on the zoning lot,
4. the greenhouse use does not create offensive odors or dust,
5. the wall of the greenhouse closest to the appurtenant residential use building shall be a minimum distance of six feet from the exterior wall of such residential use building,
6. the greenhouse shall not be located less than 3 feet from a lot line,
7. the greenhouse shall be constructed of non-combustible materials and glazed with plain or wire glass or slow burning plastic,
8. the glass or slow burning plastic constructed roof shall be capable of supporting the live load prescribed in §27-561 (a) of the Building Code.

(c) *Attached accessory noncommercial greenhouse.* An attached accessory noncommercial greenhouse is a permitted obstruction in a required rear yard or rear yard equivalent, pursuant to §23-44 (b) of the Zoning Resolution when it complies with the following conditions:

1. no portion of the greenhouse is located in a rear yard equivalent which also is a required front or side yard,
2. the greenhouse roof shall be no higher than the level of the floor above the lowest residential level,
3. the floor area of the greenhouse is included in the total floor area on the zoning lot,
4. the greenhouse use does not create offensive odors or dust,
5. in no event shall the greenhouse project more than six feet from the plane surface of the building wall,
6. the greenhouse shall be constructed of noncombustible materials and glazed with plain or wire glass or slow burning plastic. The floor of the greenhouse shall be constructed as required in Table 3-4 of the Building Code, for the construction classification of the building to which it is attached and if not on grade [sic] shall be capable of sustaining a minimum live load of 75 pounds per square foot,
7. the roof of the greenhouse shall be constructed of glass or slow burning plastic and capable of supporting the live load prescribed in §27-561(a) of the Building Code,
8. the depth of the greenhouse need not be included in the maximum permitted depth of a room, pursuant to §30(3) of the Multiple Dwelling Law,
9. the greenhouse shall be provided with operable windows or jalousies, whose free openable area shall be equal to at least five percent of the combined floor area of the greenhouse, as prescribed in §27-750 of the Building Code.

CHAPTER 24 REFUSE CHUTES AND REFUSE ROOMS

§24-01 Construction and Maintenance of Refuse Chutes and Refuse Rooms.

(a) *Refuse chute enclosures.* Refuse chutes used for conveyance of garbage and rubbish from upper floors of a building to a cellar or other location shall be constructed with an enclosure of brick masonry at least eight inches in thickness or of reinforced concrete at least six inches in thickness, except as otherwise provided in this section.

(b) *Height and service openings.* Refuse chutes shall extend from the refuse collection room to a height of at least six feet above the roof. A spark arrestor shall be provided at the top of the chute above the roof. Service openings into the chute shall be equipped with approved self-closing hoppers so constructed that the chute is closed off while the hopper is being loaded and so that no part will project into the chute. The area of service opening shall not exceed one third the area of the chute. Hopper doors shall have a fire resistive rating of at least one hour, unless separated from the corridor by a fireproof, self-closing door in which case they shall be constructed of incombustible material.

(c) *Existing flues and refuse chutes.* Flues for existing incinerators may be used for refuse chutes provided such flues are in good condition and provided the flues comply with the provisions of subdivisions (a) and (b) of this section. Existing refuse chutes may be continued in use provided they conform to the provisions of subdivisions (a) and (b) of this section, except that existing refuse chutes of other construction, which have been approved by the Department may be retained.

(d) *Refuse chutes in new construction.* Where refuse compacting systems are required hereafter in new construction, refuse chutes shall be required for conveyance of garbage and rubbish to refuse collection rooms, except that refuse chutes will not be required in class A multiple dwellings which are four stories or less in height. Refuse chutes erected hereafter in new construction shall be of a type approved by the board or shall comply with the requirements of subdivisions (a) and (b) of this section. Chutes shall be constructed straight and plumb,

without projections of any kind within the chute. Refuse chutes shall have an inside dimension of at least twenty-four inches for the full height of the chute. All chutes shall be supported on fireproof construction having at least a three hour resistive rating.

(e) *Refuse collection rooms.* A refuse collection room shall be provided at the bottom of all chutes at the cellar or lowest story level to receive the refuse. Such rooms shall be enclosed with walls and roofs constructed of material having a minimum fire resistive rating of three hours, except that gypsum masonry may not be used for such enclosure walls. Openings to such rooms shall be provided with fireproof, self-closing doors having a minimum fire resistive rating of one and one-half hours. It shall be unlawful to keep such doors open. Refuse chutes shall extend to the underside of the roof of the refuse room or lower. Roofs shall be at least six inches away from combustible floor or wall construction. Refuse rooms shall be used only for receipt of refuse and for refuse compacting equipment. Refuse rooms shall be provided with sufficient sprinklers to sprinkle all parts of the room, with at least two sprinkler heads provided and with sprinklers so separated as to sprinkle a maximum area of the room when one of the sprinklers is blocked or not operating. A hose connection shall be provided within the refuse room. Existing refuse rooms and incinerator rooms that have been approved by the Department for such use may be retained as approved.

(f) *Collection room floors.* The floor within the room for the collection of refuse shall be constructed of concrete and shall be sloped to a floor drain within the room connected to the house drain. The drain shall be provided with a protective screen to retain solid material. Floor drain traps shall be readily accessible for cleaning.

(g) *Use of existing combustion chambers.* Existing incinerator combustion chambers may be used in whole or in part as refuse collecting rooms for collection of refuse and for compacting equipment provided the grates are removed and provided they comply with the provisions of subdivision (e) of this section.

(h) *Sprinkler operation and water supply.* Sprinklers shall be designed to operate automatically at a temperature not exceeding one hundred sixty-five degrees Fahrenheit . They may be electrically controlled provided such sprinklers are approved by the Board of Standards and Appeals. Sprinklers may be connected to the cold water supply of the building at the point where such service enters the building or at the base of a water supply riser provided the piping of such service or riser is of adequate size. No connections, except those for sprinklers, shall be made to the sprinkler piping.

(i) *Hoppers, cut off doors and compactors.* A hopper and cut off door shall be provided at the bottom of the refuse chute to regulate and guide the flow of refuse into containers. Where compactors are installed so that the refuse flows directly into the compacting equipment, the equipment may be used in place of the hopper and cut off door. Compacting equipment shall be arranged to operate automatically when the level of rubbish is not higher than three feet below the lowest door.

Compactors shall be located entirely within the enclosure of the refuse room and former combustion chamber where the latter is retained, except that motors, pumps and controls may be installed in adjacent rooms. Where refuse is removed manually, the refuse shall be removed with sufficient frequency so that it will at no time extend less than three feet below the level of the lowest hopper door opening into the chute.

(j) *Number of sprinkler heads.* Sufficient sprinklers shall be installed in the refuse room and former combustion chamber to provide sprinkler coverage for the entire area of each unit.

(1) Adequate lighting shall be provided in refuse rooms.

(2) Refuse chutes, refuse rooms, hoppers and all parts of the refuse collecting system shall be maintained in a clean and sanitary condition at all times, free of vermin, odors and defects, and shall be maintained in good operating condition. Fused sprinkler heads shall be replaced promptly.

(3) The owner shall establish a program to ensure that the refuse chute and the refuse room and appurtenances will be treated as often as may be necessary to prevent infestation with insects or rodents. The owner shall maintain a record of such treatments which shall be available at all times for inspection by the Department.

(k) These rules shall apply only to refuse chutes in new construction and to refuse chutes resulting from the conversion of existing incinerator flues and to existing refuse chutes.

(l) *Collection and disposal of refuse within premises.* The collection and disposal of refuse within any building or on any premises shall be performed as deemed necessary to provide for the safety, health and well being of the occupants of buildings and of the public. The construction, operation, maintenance, cleanliness and sanitation of refuse chutes and refuse rooms and extermination treatment for insects and rodents, and the keeping of records of such treatments for refuse chutes and refuse rooms shall be in accordance with regulations established by this Department in consultation with the Department of Health.

CHAPTER 25 CLIMBER AND TOWER CRANE RIGGERS

§25-01 Licensing Persons as Climber or Tower Crane Rigger.

- (a) *Qualifications.* Applicants shall meet the following qualifications at the time of filing for the license:
- (1) Be able to read, write and speak the English language.
 - (2) Be able to interpret structural and erection drawings.
 - (3) (i) Have at least five years of supervisory experience within the last 10 years in the planning and execution of the erection or dismantling of tower and climber cranes; or
(ii) For a period of five years within the last 10 years, an applicant shall have erected or dismantled, as part of a team, eight or more tower and/or climber cranes of which at least three erections and dismantlings of such cranes shall be under his supervision, and/or oversee the safety and code requirements for the same.
- (b) *Prerequisites to examination.* Applicants shall be required to have passed a written and practical examination no more than one year prior to the application filing date. Prior to being eligible to take such examination, an applicant must submit satisfactory evidence that:
- (1) the applicant has at least five years of supervisory experience in the planning and execution of the erection or dismantling of tower or climber cranes; or
 - (2) the applicant has at least five years of practical experience working as part of a team erecting and dismantling tower or climber cranes and has participated in at least eight such erections or dismantlings.
- (c) *Annual renewal of licenses without examination.* Licenses issued under the above stated rules may be renewed annually without examination.
- (d) *Requirement of examination following failure of timely renewal.* Failure to renew this license annually shall require an examination or re-examination as appropriate. Renewal applications shall be submitted between 30 and 60 days prior to the expiration date of the license.
- (e) *Fees.* The initial fee for licensing in accordance with these rules shall be \$150.00, and the annual renewal fee shall be \$50.00. If the initial application is denied, a refund of \$50.00 will be made.

CHAPTER 26 SAFETY OF PUBLIC AND PROPERTY DURING CONSTRUCTION OPERATIONS

26-01 Filing of Site Safety Programs and Designation of Site Safety Managers.

- (a) *Program to be filed.*
- (1) No permit shall be issued for:
 - (i) the construction of a major building (as hereafter defined); or
 - (ii) for the alteration of the facade of a major building when a sidewalk shed is required by §27-1021(a)(5) of the Administrative (Building) Code, until a document describing a site safety program has been filed at the borough office. The site safety program shall be submitted after approval of the building application has been obtained, but before approval of any full or partial permit. If partial approval and partial permit are being sought (e.g. foundation, excavation or the like), then the scope of the site safety program shall reflect that component of work.
 - (2) A major building is a building either:
 - (i) 15 or more stories;
 - (ii) 200 feet or more in height;
 - (iii) with a lot coverage of 100,000 square feet or more regardless of height; or
 - (iv) as designated by the commissioner of the Department of Buildings.

(b) *Manager to be designated.* The site safety program shall provide for the designation of a site safety manager, certified by the Department of Buildings.

(c) The Department of Buildings shall issue a site safety manager certificate to an individual who shall have good moral character so as not to adversely impact upon his or her fitness to perform the duties and responsibilities of a site safety manager, and the following qualifications:

(1) (i) New York State Licensed Professional Engineer or Registered Architect, or eight years of construction supervision experience, including five years of such experience with major buildings, and

(ii) Proof that, within the year prior to the date of the application for certification, the person has satisfactorily completed an orientation course approved by the Department of Buildings of no less than five hours in duration and passed a written examination covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) Code and the duties of site safety manager; or

(2)(i) Completion of an on-the-job training program under a currently certified site safety manager. Such training shall cover all aspects of the site safety management and all phases of building construction, from the commencement of construction until the building is completely enclosed, and shall last a minimum of 18 months. Each month the site safety manager shall summarize the trainee's activities in the site safety log or other record, and shall certify as to the trainee's satisfactory completion of the training program; and

(ii) Proof that, within the year prior to the date of the application for certification, the person has satisfactorily completed 40-hour course approved by the Department of Buildings and passed a written examination covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code and the duties of a site safety manager.

(d) Certificates shall be renewable every three years, provided that the certificate holder shall have good moral character so as not to adversely impact upon his or her fitness to perform the duties and responsibilities of a site safety manager, and shall have satisfactorily completed a seven (7) [sic] hour site safety course approved by the department within one (1) year prior to the renewal date.

(e) Effective October 1, 1987, all individuals, whether previously approved or currently designated as site safety managers or alternates, must hold a site safety manager certificate from the Department of Buildings. All incumbents who do not hold a certificate as of that date shall be disqualified from the position.

(f) *Responsibility for site safety.* Nothing in these rules is intended to alter or diminish any obligation otherwise imposed by law on the owner, construction manager, general contractor, contractors, materialmen, architects, engineers, or other party involved in a construction project to engage in sound engineering, design and construction practices and to act in a reasonable and responsible manner to maintain a safe construction site.

(g) *Site Safety program and manual.* (1) The site safety program shall include the duties of the site safety manager and the measures to be taken to ensure compliance with the safety requirements of Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) Code.

(2) The site safety manager shall monitor compliance with the safety requirements of Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) code, but shall not be responsible for reviewing design specifications, lifting capacities, performing technical inspections, etc. (except as such duties may fall within the scope of other responsibilities of such person).

(3) The specific duties and responsibilities of the site safety managers are described in the Department of Buildings' Manual for Site Safety Programs, which appears as an appendix to this rule.

(i) the manual may not be changed or modified by the Department of Buildings without first obtaining comment from the Building Industry Advisory Council of the Department of Buildings or representative organizations for the construction industry.

- (ii) The manual shall be an appendix to these rules and regulations.
 - (iii) The manual shall be available at the offices of the Department of Buildings.
- (4) The site safety program to be submitted pursuant to this section shall contain statements from both the contractor and the site safety manager and alternate managers, if any, that the manager and alternates will have those duties and responsibilities as described in the manual and that the contractors' policy is as set forth in the manual. The site safety program shall include a site safety plan, which shall have descriptions of the following items, including approximate dates of installation, where applicable:
- (i) location of all construction fences around job site;
 - (ii) location of all gates in fences;
 - (iii) location of guardrail around excavation during excavation, when required;
 - (iv) horizontal and vertical safety netting program, including details of the initial installation, a schedule of horizontal jumps and vertical installations, and designated crane and derrick lifting areas where the horizontal netting is to be omitted;
 - (v) location of sidewalk sheds;
 - (vi) location of temporary walkways;
 - (vii) location of footbridges and motor vehicle ramps;
 - (viii) protection of side of excavation, when required;
 - (ix) location of street and sidewalk closing(s);
 - (x) approximate location of material and personnel hoist(s) and loading areas;
 - (xi) approximate location of all crane and derrick loading areas;
 - (xii) location of surrounding buildings, indicating occupancy, height and type of roof protection, when required;
 - (xiii) location of standpipe system and siamese hose connections;
 - (xiv) location of temporary elevators for fire department use when building is above 75 feet in height;
 - (xv) location of all exterior contractors' sheds;
 - (xvi) safety netting and scaffolding when required by §27-1022 of the Administrative Code;
 - (xvii) sidewalk and roadway widths and all traffic information and all exits from job sites;
 - (xviii) specific case reconsiderations in relation to requiring safety netting during construction operations are to be attached and the revised site safety plans shall be approved.

(h) *Signs at construction sites.* In addition to the information required to be displayed on signs at construction sites specified in §27-1009(c) of the Administrative Code, the telephone numbers of the following shall be prominently displayed in both English and Spanish:

The Department of Buildings

The Building Enforcement Safety Team (B.E.S.T.)

The Emergency Squad

The Department of Transportation

(i) *Fees.* The initial fee for obtaining certification as a site safety manager in accordance with these rules shall be \$300.00, and the renewal fee shall be \$150.00.

(j) Other than as required by statute or pursuant to these rules or as set forth in 1 RCNY §27-03, there shall be no information, pictorial representations, or any business or advertising messages posted on the sidewalk shed or bridge or other structure listed [*sic*] in §26-252(a) of the Administrative Code of the City of New York which is erected at the construction site and is adjacent to such building.

(k) Where renewal for an application for a sidewalk shed or other protective structure listed in §26-252(a) of the Administrative Code of the City of New York and pursuant to §27-1021 of the Administrative Code is required, such application must be signed by the owner of the affected building.

§26-02 Safety Netting During Construction Operations.

(a) *Applicability.* Safety netting shall be provided on the sides of a structure more than six stories or seventy-five feet in height above the adjoining ground or adjoining roof level, whichever is applicable, when there is exposure to the public or adjacent property. Reference to OSHA Safety and Health Standard 29 CFR 1926.500 is suggested.

(1) While under construction, the facade of such structure is not enclosed. In such case:

(i) Horizontal safety netting shall be provided pursuant to §27-1021(a)(6) and §26-02(e)(3) of these rules.

(ii) Vertical safety netting shall be provided pursuant to §27-1021(a)(7) and §26-02(f)(4).

(2) When demolishing the exterior walls or roof of a structure. In such case: Horizontal safety netting shall be provided pursuant to §27-1022(a)(1) and §26-02(e)(3)(ii).

(3) When exterior walls are being constructed. In such case: Horizontal safety netting shall be provided pursuant to §27-1022(a)(2) and §26-02(e)(3)(iii).

(b) *Definitions.*

Debris Netting. “Debris netting” shall mean netting of a fine mesh of a size and strength sufficient to catch debris such as falling tools and materials.

Enclosed.

(i) “Enclosed” shall mean a structure is enclosed when the permanent facade is completed except for the windows.

(ii) Such windows shall be protected to a height specified in §26-02 (f)(3) unless there is a sill not less than two feet-six inches in height and vertical mullions or piers with a maximum opening of five feet and a non-corrosive wire cable which is capable of withstanding a load of at least two hundred pounds applied in any direction (except upward).

Exposure to the public or adjacent property. “Exposure to the public or adjacent property” shall refer to any unenclosed facade of [*sic*] a structure which is opposite a street, public way or other open areas intended for public use or which is opposite any side or rear lot line.

Horizontal safety netting.

(i) “Horizontal safety netting” shall mean a horizontal system of nets and their supports, as cited and modified in Building Code Reference Standard RS 19-4.1.

(ii) “Horizontal safety netting” shall include a structural net lined with a debris net of a size and strength sufficient to catch falling tools and materials.

Protected. “Protected” shall mean a structure is protected when there is temporary vertical netting.

Public or adjacent property. “Public or adjacent property” shall mean property which is protected as used herein in relation to “public or adjacent property” as required by Article Seven of Subchapter Three of Title Twenty-six of the Administrative Code.

Qualified person. “Qualified person” shall mean a person trained and qualified in a manner satisfactory to the holder of the work permit.

Structural netting. “Structural netting” shall mean a system of nets capable of complying with the prototype test described in Section Seven of Reference Standard RS 19-4.

Vertical safety netting.

(i) Vertical safety netting means a vertical system of nets and their supports, as cited and modified in Building Code Reference Standard RS 19-4.

(ii) Vertical safety netting shall be of a fine mesh of a size and strength sufficient to contain falling tools and materials.

(iii) Wall opening screens, grills or tarpaulins may be used in lieu of vertical safety netting, provided that they shall be structurally equivalent and of such construction and mounting installed so as to retain debris.

(c) *General requirements.*

(1) Structural net hardware shall be drop forged, pressed or formed steel or material of equal or better quality. Surfaces shall be smooth and free of sharp edges. All hardware shall have a corrosion resistant finish capable of withstanding a fifty hour salt spray test in accordance with ASTM B-1117.

(2) *Identification of nets.* Each structural net shall be permanently labeled with the following information:

- (i) Name of manufacturer
- (ii) Identification of net material
- (iii) Date of manufacture [*sic*]
- (iv) Date of prototype test
- (v) Name of testing agency
- (vi) Serial number

(3) *Inspection.*

(i) Structural nets, including mesh ropes, hardware, connectors, suspension systems, shall be completely inspected by the manufacturer or manufacturer's representative or other qualified person after each installation. Additional inspections shall be made after relocation, alterations, repair, impact loading and welding or cutting operations above the nets.

(ii) Nets that show mildew, wear, damage or deterioration that substantially affects their strength shall be immediately removed from service and replaced.

(4) *Records to be maintained.*

(i) An on-the-job up-to-date [*sic*] record shall be maintained for the structural portion of each horizontal net. The record shall include the following information:

Net serial number

Date installed

Dates inspected and all removal orders, per §26-02(c)(3)(ii).

The qualified person responsible for the nets shall initial each entry.

The information required by this rule shall be recorded as part of the Site Safety Log, where such log is required.

(ii) A letter or other documentation from the manufacturer stating the description, model or serial number of all vertical netting shall be kept posted until all such netting is removed.

(5) *Care, maintenance and storage.*

(i) Care, maintenance and storage of nets shall be in accordance with the net manufacturer's recommendations with due attention being given to the factors affecting net life.

(ii) Debris shall be removed from nets at least daily.

(iii) Nets shall be capable of a minimum service life of two years under normal on-the-job exposure to weather, sunlight, and handling, excluding damage from misuse, mishandling and exposure to chemicals and airborne contaminants.

(6) *Storage of materials.* Safety netting shall not be used for storing materials.

(7) *Combustibility.* The debris netting shall be noncombustible or flame-resistant.

(d) *Precautions.*

(1) *Sunlight.* Ropes one-half inch in diameter and smaller shall be treated to resist damage from the sun's rays. All nets not in use should be protected from direct and indirect sunlight.

(2) *Abrasion.* Dragging or chafing of nets over the ground or other rough surfaces shall be minimized in order to protect against abrasions and prolong life.

(3) *Sand.* Care shall be taken to keep nets as clean and free of sand as possible.

(4) *Rust.* Nets shall not be stored in metal containers that are rusty. Net hardware shall be replaced if there is

evidence of heavy corrosion.

(5) *Welding and cutting operations.* Nets and debris shall be protected from sparks and hot slag resulting from welding and cutting operations or other operations producing sparks or excessive heat.

(e) *Horizontal safety netting.*

(1) *Design, testing and installation requirements.* Horizontal safety netting shall be designed, tested and installed in accordance with Reference Standard RS 19-4, as modified.

(i) *Structural mesh openings.* Mesh openings should be small in order to spread the deceleration force through as many net strands as possible. The maximum size of mesh shall not exceed thirty-six square inches or be longer than six inches on any side measured center-to-center of mesh ropes or webbing, and center-to-center of mesh crossing. All mesh crossings shall be anchored to eliminate frictional wear and prevent enlargement of the mesh opening.

(ii) *Debris netting openings.* The largest opening area for fine mesh netting when used horizontally shall not be larger than one-half square inch.

(iii) *Deceleration and rebound force.* Design, materials and construction shall combine to produce a net which will minimize a deceleration and rebound force.

(iv) *Connections.* Connections between net panels shall develop the full strength of the net.

(2) *Projection of safety netting.* Horizontal safety netting shall project outward horizontally from the edge of the floor a minimum distance of ten feet.

(3) *Locations where required.*

(i) Horizontal safety netting shall be maintained not more than two stories below the stripping operation floor on concrete structures or the uppermost finished (and walkable) concrete floor on steel frame structures, provided that such floor is more than six stories or seventy-five feet in height above the adjoining ground or adjoining roof level, whichever is applicable.

(A) *Stripping operation.* The stripping operation on concrete structures shall not be performed more than three stories below the story being formed.

Note: Industrial Code Rule 23 of the State of New York (12 NYCRR 23-2.4 (a)) states:

"23-2.4 Flooring requirements in building construction. (a) Permanent flooring and skeleton steel construction in tiered buildings. The permanent floors of such buildings or other structures shall be installed as soon as possible as the erection of structural steel members progresses. In no case shall there be more than eight stories, floors or equivalent levels or 120 feet, whichever is less, between the erection floor and the uppermost permanent floor".

(B) *Tarpaulins.* When tarpaulins encase one or more floors immediately below the finished concrete floor in order to maintain temporary heat, the horizontal nets may be located no more than three floors below the finished concrete floor.

(C) The installation of the horizontal safety nets shall not interfere with Fire Department access from the street.

When [*sic*] demolishing the exterior walls or roof of a structure horizontal [*sic*] safety netting shall be constructed and maintained not more than two stories or thirty feet below the story from which the exterior walls and roof are being removed until the demolition has progressed to within six stories or seventy-five feet off [*sic*] the ground or adjoining roof level.

(A) An exterior built-up scaffold conforming to Article eight of Subchapter nineteen of the Building Code may be used in lieu of horizontal safety netting.

(B) The horizontal safety netting or scaffolding shall be required in addition to the sidewalk sheds, fence or railings required under §27-1021 of the Administrative (Building) Code.

(iii) Constructing exterior walls from a scaffold. Horizontal safety netting shall be constructed and maintained not more than two stories or thirty feet below the story from which the exterior walls are being constructed, or the bottom, outer faces and ends of the scaffold shall be enclosed with debris netting or its equivalent so as to prevent the falling of material and debris.

(iv) Designated crane and derrick lifting areas. The horizontal safety netting required by §§26-02(e)(3)(i)(ii) and (iii) may be omitted in designated crane and derrick lifting areas so long as it is as indicated on the crane application and on the site safety program.

(v) Horizontal safety netting may be removed after the formwork for the topmost level of concrete is removed or after the topmost level of concrete for a steel building is poured.

(f) *Vertical safety netting.*

(1) *Design and installation requirements.* Vertically installed nets or screens shall be supported so as to be capable of withstanding a load of at least two hundred pounds applied at any direction (except upward).

(2) *Debris netting openings.* The largest opening area for fine mesh netting when used vertically shall not be larger than one square inch.

Debris netting purchased prior to November 3, 1987 may be installed until January 2, 1988 and may remain for the duration of construction with openings up to five and one-half square inches. Such netting may not be used to replace tow boards as provided in §26-02(f)(5).

(3) *Height of safety netting.* Vertical safety netting shall have a height not less than sixty inches in buildings more

than six stories or seventy-five feet in height.

Vertical safety netting purchased prior to November 3, 1987 may be installed to a height of not less than forty-two inches until January 2, 1988 prior to which time additional netting to a height of not less than sixty inches shall be installed.

(4) *Locations where required.*

(i) Vertical safety netting shall be provided on the sides of a structure more than six stories or seventy-five feet in height above the adjoining ground or adjoining roof level.

(ii) Vertical safety netting shall be maintained at each story except at the story at grade, the story immediately above the sidewalk shed and the roof level where a parapet is installed.

Until elevator in readiness is operative for Fire Department access, such netting shall not be installed below the sixth story or seventy-five feet in height.

(iii) Vertical safety netting shall be secured and kept closed at all times except during actual loading operations or perimeter construction operations.

(5) The top edge and intermediate height of nets shall be mounted securely to non-corrosive wire cable capable of withstanding a load of at least two hundred pounds applied to any direction (except upward).

(6) Toe boards, required by subdivision (b) of §27-1050 of the Administrative Code shall not be necessary if the netting is brought to deck level and securely fastened and has openings not over one inch in greatest dimension.

(g) *Responsibility.* The holder of the work permit and his/her designee shall be responsible for the installation and maintenance of all horizontal and vertical netting, and for complying with these rules and regulations.

(h) *Appeals.*

(1) Requests for New York City Building Code Information, Interpretations, Consultations and Reconsiderations shall be in accordance with Paragraph four of Directive one of 1985. The Commissioner may, in specific cases, modify these rules and regulations where proper methods are proposed to be employed.

(2) *Site Safety Program.* The appeal shall make reference to the Site Safety Program where applicable, when stating the specific relief requested, the practical difficulty, proposed equivalencies consistent with public safety to be complied with and any stipulations.

(i) *Accidents pertaining to public and adjacent properties.*

(1) *Borough office.* The Borough Office of the Department of Buildings shall be notified of all accidents at construction sites at telephone numbers provided in the City's website, <http://www.nyc.gov>.

(2) The Building Enforcement Special Team (BEST Squad) shall be notified of any accidents relative to buildings fifteen or more stories and two hundred feet or more in height at the telephone number provided in the City's website, <http://www.nyc.gov>.

§26-03 Storage of Materials During Construction.

(a) *Applicability.* Pursuant to subdivisions (c), (d) and (e) of §27-1018 of the Administrative Code of the City of New York, materials stored on the floors of a building during construction operations shall comply with these rules and regulations.

(b) *Housekeeping.*

(1) When not being used, materials, equipment and tools that might fall from levels above areas used by the public shall be kept away from edges or openings.

(i) When exterior walls are not in place, stored material shall be kept at least ten feet back from the perimeter of the building.

(ii) However, when the floor area is less than one thousand square feet, stored material may be kept not less than five feet back from the perimeter of the building.

(iii) Material may be stored between five feet and ten feet back from the perimeter of the building when such material weighs [*sic*] less than seven hundred-fifty pounds.

(2) Material stored on floors of a building shall be secured when not being used.

(c) *Storage of materials at top working floors.*

(1) Material may be stored to within two feet of the edge of the building on the upper working floors located not more than two stories below the stripping operation on concrete structures or on the uppermost concrete floor on steel structures.

Such material shall be secured against accidental movement such as by winds and vibration from adjacent moving loads or load carriers.

(2) No material shall hang over the edge of a building unless banded and braced preparatory to relocation at the end of the workday.

(i) Where such material is so banded and braced, it may overhang the floor of the stripping operation by not more than one-third of its length so long as it is relocated on the next workday for concrete operations.

(ii) Where the steel mill and lumber mill are located on not more than two additional floors, material may overhang for relocation until the next workday.

(d) *Debris.*

(1) All debris shall be cleaned off floors daily.

(2) The roof of the sidewalk shed and the street shall be cleaned of construction debris daily.

(3) A daily inspection shall be made for construction debris on all floors and if a major building noted in the site safety log.

(e) *Waste dumpsters, debris boxes and skip boxes.*

(1) Waste dumpsters, debris boxes and skip boxes shall be secured from movement by rope, cable or chocking at wheels at the end of the workday.

(2) Containers containing debris or waste shall be covered at the end of the workday and when full to near the rim.

(3) Containers need not be covered when not in use or while stored in a fully enclosed space at the end of the workday.

(f) *Containers for the storage of debris.*

(1) Sufficient containers of metal, canvas, plastic or other material acceptable to the commissioner shall be available.

(2) The containers shall be of three-quarter cubic yard minimum capacity.

Containers of one-half cubic yard minimum capacity may be used so long as the total capacity of the containers at the construction site is not less than that required by this subdivision (f)(2).

(3) The Commissioner may accept alternate container sizes to function with the building's size.

§26-04 Use of Reshores During Construction Operations.

(a) *Applicability.* Pursuant to subdivision (f) of §27-1035 of the Administrative Code, reshoring shall be provided where forms and shores are stripped before concrete has gained adequate strength to support the superimposed loads due to construction above. Paragraph (1) of subdivision (f) specifies a prohibition on the use of wedges within ten feet of a facade and such other locations as determined by rules and regulations.

(1) *Definition.* Shores are defined as vertical or inclined falsework supports.

(2) *Stripping.* Removal on the floor of any parts of the concrete formwork including shoring, bracing and other supports shall be considered as stripping.

Waste debris as a result of stripping operations shall be immediately contained and removed at reasonable intervals.

(b) *Formwork.*

(1) *Form design drawings.* Form design drawings shall be available to the Commissioner as per subdivision (c) of §27-1035.

(2) *Records.* Records shall be available for inspectors per subdivision (b) of §27-1035.

(c) *Installation limitations - reshores.*

(1) Reshores shall be perpendicular to the surface which they are supporting.

(2) Reshores of wood or metal shall be screw adjusted or jacked and locked and wedged to make them secure.

(3) Wedges shall not be used within ten feet of the facade of a building.

(4) Adjusting devices shall not be used if heavily rusted, bent, dented, rewelded or having broken weldments or other defects.

(5) Metal shoring and accessory parts shall be fully operative when in use.

(6) Reshores within ten feet of the facade of a building shall be secured to prevent them from falling off the building.

(d) *Specific safety provisions.*

(1) Extra shores or material and equipment that might be needed in an emergency shall be furnished.

(2) Care shall be taken while stripping is underway to insure that material does not fall off the building.

(3) Building materials shall be properly piled and tied or contained.

APPENDIX A
The Department of Buildings
Manual for Site Safety
Programs May, 1988

A. Purpose.

This "Manual" outlines the requirements of the site safety programs submitted to the Department of Buildings pursuant to Local Law 45 of 1983, Local Law 61 of 1987 and the rules and regulations relating to the filing of site safety programs, dated September 23, 1986, as set forth in Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) Code. The requirements include a schedule of specific duties and responsibilities for the site safety manager and other items that are to be set forth in a site safety program. They are not intended, however, to supersede any requirements of the Building Code, or rules and regulations promulgated by the Buildings Department or any other city, state or federal agency, pertaining to site safety and other construction activity.

B. Scope.

Site Safety program requirements shall apply to all construction projects that have the following scope of work:

1. The construction of a major building, which is defined as either 15 or more stories, or 200 feet or more in height.
2. 100,000 square feet or more of lot coverage regardless of height.
3. The alteration of the facade of a major building, when a sidewalk shed is required.
4. As designated by the Commissioner of the Department of Buildings.

C. Designation of Site Safety Manager.

In accordance with §27-1009 of the Administrative (Building) Code, unless otherwise determined by the Commissioner, it shall be the responsibility of the builder/owner, agent, the construction manager or the general contractor (the "Contractor") to designate a construction site safety manager who must be present on a construction site for those projects that are within the scope of this program, as defined above, and who shall be responsible for all site safety requirements as specified in the site safety program and Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code.

In the event that an alternate manager will be acting as the full-time safety manager for a period longer than two weeks, the Department of Buildings must be so notified. Any permanent change of site safety manager requires immediate notification of the Department of Buildings.

D. Site Safety Manager Qualifications.

Individuals eligible for designation as site safety manager shall meet one of the following requirements: (1, 2, or 3).

1. a. New York State Licensed Professional Engineer or Registered Architect, or a person with eight years of construction supervision experience including five years of such experience with major buildings, and
b. Certification that the person has satisfactorily completed an orientation course approved by the Department of Buildings of no less than 5 hours in duration and passed a written examination given by the N.Y.C. Department of Personnel covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code, [sic] and the duties of site safety manager as detailed in Local Law 45 of 1983; or
2. a. Satisfactory equivalent of experience and/or education, as determined by the N.Y.C. Department of Personnel, and
b. Certification that the person has satisfactorily completed a 40-hour course approved by the Department of Buildings and passed a written examination given by the N.Y.C. Department of Personnel covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code and the duties of a site safety manager; or
3. a. Completion of an on-the-job training program under a currently certified site safety manager. Such training shall cover all aspects of site safety management and all phases of building construction, from the commencement of construction until the building is completely enclosed, and shall last a minimum of 18 months. Each month, the site safety manager shall summarize the trainee's activities in the site safety log or other record, and shall certify as to the trainee's satisfactory completion of the training program; and
b. Certification that the person has satisfactorily completed a 40-hour course approved by the Department of Buildings and passed a written examination given by the N.Y.C. Department of Personnel covering Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code and the duties of a site safety manager.
4. All individuals approved by the Department of Buildings as site safety coordinators prior to July 1, 1985 shall be required to complete the 40 hour orientation course and pass the written examination given by the N.Y.C. Department of Personnel, but shall not be subject to the Personnel Department's subsequent review of qualifications.
5. Site Safety Manager Certificates shall be issued by the Department of Buildings in accordance with the regulations relating to the filing of site safety programs. A copy of the Site Safety Manager Certificate for the

proposed site safety manager (and alternate manager, if any), shall be included with the contractor's submission of its site safety program. No proposed alternate manager shall have as his or her primary duty the job of site safety manager on any other construction project.

E. Statement of Contractor's Policy.

1. The Contractor agrees that it shall appoint a qualified site safety manager who shall be assigned the responsibilities described in the Contractor's site safety program submitted to the Department of Buildings pursuant to Local Law 45 of 1983. The site safety program will incorporate the provisions of this site safety manual as required as per §26-01(d) of the Rules and Regulations of the Department of Buildings, effective [September 23, 1986.]*

The contractor also agrees that it shall notify all of its supervisory personnel and all of its subcontractors working on the construction site of the name and responsibilities of the site safety manager.

It shall state to its directly employed personnel and also to its subcontractors that the site safety manager is responsible for monitoring compliance with the Buildings Department regulations dealing with site safety and that they are required to obey and implement all orders and directives relating to safety requirements.

2. The contractor also agrees to inform the site safety manager that, in the event he or she discovers a violation of the site safety regulations, he or she should immediately notify the person or persons responsible for creating the violation, whether these persons are employed by the Contractor or by subcontractors. If the site safety manager is unable to obtain the cooperation of these persons in correcting the violation, he or she will be instructed to inform his or her direct supervisor immediately and request that the supervisor order the necessary corrective action. If the supervisor of the site safety manager is not present at the site or otherwise available, the site safety manager will be told to notify any other supervisory personnel of the Contractor present on the job or any other responsible manager or officer of the Contractor.

** Copy in brackets not enacted but probably intended.*

F. Contractor's Responsibility.

It shall be the responsibility of all general contractors, construction managers and subcontractors engaged in building work to institute and maintain safety measures and provide all equipment or temporary construction necessary to safeguard the public and property affected by their operations.

G. Site Safety Manager's Responsibility.

1. In addition to other safety duties assigned by the owner or contractor to meet the federal and state requirements, it shall be the responsibility of the site safety manager to monitor compliance with the safety requirements of Subchapter 19 of Chapter 1 of Title 27 of the Administrative (Building) Code. At a minimum, this requires that the manager, as a representative of the owner, his agent, the general contractor and/or construction managers, meet on a weekly basis with the designated representative of each subcontractor to ascertain that they are complying with the provisions of Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code when the scope of the subcontractor's work at that time falls within the Subchapter.

2. The site safety manager shall immediately notify the Chief Inspector of the Building Enforcement Special Team directly if he/she discovers any of the following in the routine performance of the job:

- a. a person is operating a crane, derrick or hoisting equipment on the construction site without a permit and refuses to desist from operating the crane;
- b. that crane is being operated by an unlicensed operator and said unlicensed operator refuses to desist from operating the crane;
- c. no flagmen present during crane operation where required by the Building Code;
- d. sidewalk sheds required by the site safety plan are not in place during construction activity;
- e. permits have not been issued for the sidewalk sheds;
- f. the designer and/or supplier of sidewalk sheds has not certified that the sheds have been erected in accordance with the approved plans;
- g. an accident involving the public, or private or public property has occurred.

3. Upon proper notification of the Department of Buildings of the existence of any of the above noted circumstances, any liability the site safety manager has or may have under the Building Code arising out of, relating to, or as a result of the existence of that circumstance, shall cease.

4. It shall be the responsibility of the site safety manager to inspect personally, on a regular basis, specific areas and items, identified below, and to notify responsible personnel employed by the general contractor, construction manager or any subcontractor when violations of Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code or the Subchapter 19 Site Safety Program have occurred.

5. The site safety manager shall ensure that all daily entries in the site safety log are completed. These entries must be recorded by 7:00 a.m. on the day following the activities.

6. An example of a log sheet and permit log are attached as Appendix A and B.

7. The site safety manager, or alternate, shall sign the log at the beginning of each day, and must be present at the job at all times during ongoing construction. If at any point during the day the site safety manager, or alternate,

shall be relieved of his/her responsibilities at the construction site, or leave the site for any reason he/she shall indicate this in the log, and an alternate shall sign in.

8. The site safety manager shall make periodic inspections of the construction site in accordance with the schedule in the following chart to determine that the conditions at the site meet the public safety requirements of Subchapter 19 of Chapter 1 of Title 27 of the Administrative Code.

H. Items to be recorded in Site Safety Log.

1. Details of areas inspected by the site safety manager.
2. Companies and representatives met with weekly to ascertain their Subchapter 19 compliance.
3. Any unsafe acts and/or conditions. (dates and locations).
4. Companies and representatives notified of unsafe acts and/or conditions.
5. Dates of notification of unsafe acts and/or conditions.
6. Dates of correction of unsafe acts and/or conditions.
7. Any accident the public or damage to public or private property.
8. Any violations, stop work orders or summonses issued by the Department of Buildings, including date issued and date lifted or dismissed.
9. Dates and location where horizontal and vertical netting has been installed, replaced and/or repaired.
10. Date horizontal safety netting is removed.
11. Date when building reaches a height of 75 feet.
12. Any equipment brought onto the job which requires permits, including a description of the equipment, where it is to be located, permit number, issue and expiration date of the permit, and certificate of inspection, if required, shall be entered on a Permit Log.

I. Periodic Site Safety Inspections.

1. General Requirements for Site Safety

Construction Sites	Minimum Schedule of Inspections
a. When the building reaches a height greater than 75 feet at least one elevator or personal hoist with an emergency communication system shall be kept available for use at all times as per Fire and Building Department requirements.	As appropriate
b. When the personnel hoist requires a jump, all necessary permits must be obtained and testing performed.	As appropriate
c. When the building reaches a height greater than 75 feet, a standpipe system shall be available and in readiness at all times for Fire Department [<i>sic</i>] use.	Daily
1. Valves shall be in place at each story below construction floor.	As appropriate
2. Standpipes shall be connected to water source and siamese connection.	Periodic
3. Siamese hose connections shall be kept free from Obstruction and shall be marked by a sign reading. "Standpipe Siamese Connection," and by a red light.	Daily
d. The construction shed shall be constructed of noncombustible materials if located within 30 feet of the building.	Once per shed
e. Interior and exterior guard rails and toeboards shall be provided and properly installed to meet the standards as described in the Administrative (Building) Code §27-1050.	Daily
f. All openings and/or holes in the floor must be covered at all times.	Daily
g. All stairwells must have standard handrails.	Daily
h. Each sign as required in the Administrative (Building) Code §27-1009(c) shall also contain the telephone number of B.E.S.T. and the Emergency Squad.	Once per sign
2. Safety Netting.	
a. Horizontal safety netting shall be maintained not more than two stories below the stripping operation floor on concrete structures or uppermost finished and walkable concrete floor on steel frame structures, providing that such floor is more than six stories or such floor is seventy-five feet in height above the adjoining ground or adjoining roof level, whichever is applicable.	Daily
b. Horizontal safety netting shall project outward horizontally From the edge of the floor a minimum distance of ten feet.	Daily
c. The horizontal safety netting may be omitted in designated crane and derrick lifting areas as it is indicated and approved on the crane application and on the site safety plan.	Weekly

- d. For steel frame construction where the steel frame extends more than eight stories above the walkable concrete floor, vertical safety netting shall be provided at the floors at and below the topmost working metal deck, where this deck is substantially completed and the required guard rails and toeboards are in place. Daily
- e. Vertical safety netting shall be provided at all floors below the floor on which horizontal netting is required. Daily
- f. Vertical safety netting shall be maintained at each story except for the story at grade, the story immediately above the sidewalk shed and the uppermost level. Daily
- g. Vertical safety netting shall be secured and kept closed at all times except during actual loading operations or perimeter construction operations. Daily

3. Maintenance of site and adjacent areas.

- a. Guards, shields or barricades shall surround all exposed, electrically charged, moving or otherwise dangerous parts of machines and construction equipment so as to prevent contact with the public. Daily
- b. There shall be no exposed hose lines, wire, ropes etc., that may constitute a tripping hazard to the public. Throughout day
- c. Adjoining property shall be protected when the height of building exceeds that of adjoining property. Daily
- d. If the 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 previously constructed chimneys within 100 feet the chimneys must be made to conform with §27-860 of the Administrative Code. As Appropriate

4. Housekeeping.

- a. All areas used by the public shall be maintained free from ice, snow, grease, debris, equipment, materials, projections, tools or other items substance or conditions that may constitute a slipping, tripping or other hazard. Throughout day
- b. Floors and stairs shall be cleaned [*sic*] of excess debris. Throughout day
- c. [*sic*] When not in use, equipment and tools shall be kept away from edges or openings. Throughout day
- d. [*sic*] The roof of the sidewalk shed and the street shall be cleaned of debris. Daily
- e. [*sic*] Sufficient containers for the storage of garbage and debris shall be in place. Daily
- f. [*sic*] Containers shall be covered when full and secured. Daily

5. Removal and storage of material.

- a. Combustible waste material or combustible debris shall be removed from the site. Daily
- b. Chutes, when used for the removal of debris, shall be installed and maintained in accordance with §27-1019 of the Administrative Code. Weekly
- c. When exterior walls are not in place, stored material shall be kept at least ten feet back from the perimeter of the building. If the floor area is less than one thousand square feet, stored material may be kept not less than five feet back from the perimeter of the building. Daily
- d. Material stored on floors of a building shall be secured when not being used. Daily
- e. Material may be stored to within two feet of the edge of the building only on the upper working floors located not more than two stories below the stripping operation on concrete structures or on the uppermost concrete floor on steel structures. Daily
- f. No material shall hang over the edge of a building unless banded and braced preparatory to relocation prior to the end of the workday. Daily
- g. Where such material is so banded and braced it may overhang the floor of the stripping operation by not more than one-third of its length so long as it is relocated by the next workday for concrete operations. Daily
- h. Where the steel mill and lumber mill are located, material may overhang for relocation until the next workday. Maximum number of floors designated as steel mills [*sic*] or lumber mills [*sic*] is two. Daily

6. Protection of sidewalks.

- a. Permits for sidewalk sheds shall be in effect and posted in a central, visible area. Periodic
- b. Approved drawings of the sidewalk shed shall be at the construction site. Periodic
- c. The designer and/or supplier of sidewalk sheds shall certify that such sheds have been erected in accordance with the approved plans and that a Form B-23 has been filed with the Department of Buildings. Once
- d. Sidewalk sheds shall remain in place until the structure is enclosed, all exterior work completed, the sash is glazed above the second story, the exterior of the facade is cleaned down, all outside handling of material, equipment and machinery is completed and dismantling of a material hoist, tower or climber crane, or the use of a derrick in their removal above the second story, is completed. Weekly
- e. All openings in sidewalk sheds, fences and railings for loading purposes shall be kept closed, barricaded, protected or guarded at all times. Throughout day
- f. Sidewalk sheds shall extend the entire perimeter of the building. Once
- g. When the building exceeds 100 feet in height, sidewalk sheds shall extend 20 feet beyond the side property line. Once
- h. Sidewalk sheds shall be illuminated at night by the equivalent of 100-watt bulbs spaced 15 feet apart at a minimum height of 8 feet above floor. Daily
- i. Any temporary footbridges and walkways for the public shall be maintained at a width of at least 4 feet. Daily as appropriate

7. Warning signs and lights.

- a. All dangerous and hazardous areas to the public or areas where work is performed near vehicular traffic shall be marked appropriately with warning signs and lights. Daily
- b. Other steps necessary to protect the public shall be taken, including provisions for flagmen whenever intermittent operations are conducted on or across areas open to the public or when dangerous operations, such as blasting, may affect such areas. Throughout day as appropriate

8. Scaffolds, structural ramps, runways and platforms.

- a. Where it poses a risk to the public all structural ramps, scaffolds, runways and platforms shall be provided with standard rails, toeboards, screening, or nets, unless otherwise specified in the Building Code [*sic*]. Daily

9. Material handling and hoisting equipment.

- a. Certificates of approval, operation and on site inspection for all cranes, derricks and/or cableways shall be obtained and available for inspection at the construction site. As required
- b. Permits for highway and street closings shall be available at the construction site. As required
- c. Licenses of crane operators shall be available at the construction site. Daily
- d. Cranes shall be jumped, as needed, in accordance with the schedule submitted by the professional engineer and approved by the Department of Buildings. As Appropriate
- e. A means of communication shall be arranged and put into effect between the responsible parties when the operator of hoisting machinery has no vision of the lift or loading areas. Daily when operational
- f. A program shall be established and operational for the control of pedestrian and/or vehicular traffic around the construction site during all lifting and hoisting operations. Daily when operational
- g. Flagmen shall be required to stop pedestrian and/or vehicular traffic during the following intermittent operations: As Appropriate
 - 1. All lifting and hoisting operations;
 - 2. Trucks entering and exiting site;
 - 3. Materials being lifted over sidewalk shed;
 - 4. Dangerous operation, e.g., blasting;
 - 5. When sidewalk and/or street is temporarily closed.

10. In addition to the above schedule, the site safety manager shall use reasonable prudence to ensure that safety is maintained at the job site as job conditions and Contractor's Statement of Policy dictate.

J. General notes for site safety plan.

Site Safety plans at a minimum shall include the following:

1. Location of all construction fences around job site;
2. Location of all gates in fences;
3. Location of guard rail around excavation during excavation, when required; [*sic*]
4. Horizontal and vertical netting program, including details of the initial installation, schedule of horizontal jumps and vertical installations, and designated crane and derrick lifting areas where horizontal netting is omitted;
5. Location of sidewalk sheds;¹
6. Location of temporary walkways;¹
7. Location of foot bridges and motor vehicle ramps;¹
8. Protection of side of excavation, when required;¹
9. Location of street and sidewalk closing(s);¹
10. Approximate location of material and personnel hoist(s) and loading areas;¹
11. Approximate location of all crane and derrick loading areas;¹
12. Location of surrounding buildings, indicating occupancy, height and type of roof protection, when required;
13. Location of standpipe system and siamese hose connections;
14. Location of temporary elevators for Fire Department use when building is above 75 feet in height;
15. Location of all exterior contractors' sheds;
16. Safety netting and scaffolding when required by §27-1022 of the Administrative Code;
17. Sidewalk and roadway widths and all traffic information and all exits from job site;
18. Specific case reconsiderations in relation to requiring safety netting during construction operations are to be attached and the revised site safety plan shall be approved.

1. Indicate appropriate Department of Buildings application numbers and/or Department of Transportation permit numbers and expiration dates.

NOTE: Location of cranes-derricks and hoists, etc. may be entered on site plan as indicated on the Department of Buildings application and number by the Site Safety Manager and signed by the inspector when checked against the Department of Buildings application number during inspection.

CHAPTER 27 SIGNS

§27-01 Stair and Elevator Signs in Buildings Which Have at Least One Elevator.

(a) Applicability.

These rules and regulations shall apply to all buildings which have at least one elevator including:

- (1) Any existing office buildings occupied or arranged to be occupied for an occupant load of more than one hundred (100) persons above or below the street level or more than a total of five hundred (500) persons in the entire building, and
- (2) All other existing buildings which have at least one elevator, pursuant to §27-390 of the Administrative (Building) Code, as enacted by Local Law 16 of 1984.

(b) Signs at elevator landings.

(1) *Elevator landing sign.* On all floors other than the main entrance floor, a sign shall be posted and maintained on every floor at the elevator landing. The sign shall read "IN CASE OF FIRE, USE STAIRS UNLESS OTHERWISE INSTRUCTED".

(2) *Floor diagram sign.* The sign shall contain a floor diagram showing the location where it is posted and the location and letter identification of the stairs on the floor and each elevator bank.

(3) *J-2 multiple dwellings.* The floor diagram sign may be omitted on all residential floors in J-2 multiple dwellings provided that:

- (i) The stair is in the line of sight from the elevator call button, and
- (ii) The stair is located a maximum of twenty (20) feet from the elevator call button, and
 - (A) There is not more than one stair, or
 - (B) Two scissors [*sic*] stairs, or
 - (C) A stair or fire escape serves only an individual apartment and directional signs with arrows and reading "TO STAIRS" are provided.

(c) Location. The sign(s) shall be located:

- (1) Directly above the call button, and
- (2) Its top shall not be above six (6) feet from the floor level.
- (3) The sign(s) may be placed on the wall or an adjacent conspicuous place where there is insufficient wall space at the call button, or
- (4) The sign(s) may be placed on the elevator door(s) where there is insufficient wall space or an adjacent conspicuous place at the elevator landing.

Exception: Raised signs on horizontal sliding flush type elevator doors.

(d) *Floor number sign(s).* Floor numbering sign(s) shall be posted and maintained within each stair enclosure on every floor. The floor numbering sign shall be posted and maintained on the stair side of the door, or if no door, nearby on the wall or an adjacent conspicuous place.

(e) *Stair and elevator identification signs.* Each stair and each bank of elevators shall be identified by an alphabetic letter. A sign indicating the letter of identification for the elevator bank shall be posted and maintained at each elevator landing directly above or as part of the sign specified in §27-01(b). The stair identification signs shall be posted and maintained on the occupancy and stair sides of the door, or if no door, nearby on the wall or an adjacent conspicuous place.

(f) *Stair re-entry signs.* Stair re-entry signs shall be posted and maintained on the stair door at each floor in buildings classified in Occupancy Group E, occupied or arranged to be occupied for an occupant load of more than a total of 500 persons in the entire building indicating re-entry is provided. The signs shall be attached approximately five feet above the floor. The signs shall read as follows and may be either independent or combined with the corresponding sign required by §§27-392 and 27-393:

(1) Where no re-entry is provided:

(i) Where no re-entry is provided from the stairs to any floor, the sign shall read "NO RE-ENTRY FROM THIS STAIR" and such sign shall be posted and maintained on the occupancy side of the stair door at each floor. No re-entry sign shall be required on the stair side of the door.

(ii) On every floor where fail-safe [*sic*] re-entry locking devices are installed on exit doors, a sign reading "NO RE-ENTRY FROM THIS STAIR EXCEPT DURING FIRE OR EMERGENCY" shall be posted on the occupancy side of the stair door.

(2) Where re-entry is provided to specified floors:

(i) On the stair side of the door at floors where re-entry is provided, the sign shall read "RE-ENTRY ON THIS FLOOR".

(ii) Where no re-entry is provided on that floor, the sign on the stair side of the door shall read, "NO RE-ENTRY, NEAREST RE-ENTRY ON THE _____ AND _____ FLOORS". The floor numbers of the nearest re-entry below and the nearest re-entry floor above shall be entered in the blank spaces.

(g) *Size of signs.*

(1) Signs for new buildings shall be limited to combined elevator landing and floor diagram signs, conforming with paragraph (4) below. Signs for existing buildings in Occupancy Group J-2 may be either independent signs as required or combined signs, conforming with the size requirements as set forth in the following subdivisions.

(2) *Elevator landing signs.* Elevator landing signs shall be at least two and one-half (2 1/2) [*sic*] inches by ten (10) inches.

(3) *Floor diagram signs.* Floor diagram signs shall be at least eight (8) inches by twelve (12) inches.

(4) *Combined elevator landing and floor diagram signs.* Combined elevator landing and floor [*sic*] diagram signs shall be at least ten (10) inches by twelve (12) inches.

(h) *Lettering and coloring of signs.*

(1) Lettering and background shall be in contrasting colors.

(2) Lettering shall be of bold-type and properly spaced to provide good legibility.

(3) The lettering and numerals of the signs shall be at least one-half inch high, except that:

(i) Floor numbering sign numerals shall be at least three inches high.

(ii) Elevator identification sign letters shall be at least three inches high.

(i) *Material for signs.*

(1) Signs shall be of metal or other durable materials.

(2) Fire resistive pressure sensitive vinyl decals may be permitted if the plastic is printed on the reverse side.

(j) *Attachment of signs.* Signs shall be securely attached to the wall or partition.

(k) *Signs in existing buildings.*

- (1) Signs installed prior to March 27, 1984 may be accepted by the Commissioner, provided that such signs will adequately accomplish the intended purpose.
- (2) In buildings existing prior to March 27, 1984, the Commissioner may modify the requirements as to location of signs where compliance would cause practical difficulty or undue hardship.
- (3) All existing buildings not already subject to the requirements of Local Law 5 as of January 18, 1983 shall comply with these requirements on or before October 1, 1985.

(l) *Compliance date.* Signs shall be installed on or before October 1, 1985.

(m) *Report of compliance.* Owners shall file a report with the Department of Buildings certifying that they have posted the signs in compliance with the Building Code requirements on or before October 1, 1985.

§27-02 Caution Sign Tapes Required on Elevators Being Serviced.

(a) In all buildings, when an automatic passenger elevator is being serviced by an elevator maintenance company, elevator maintenance personnel or other persons and there are no maintenance personnel available to remain in the elevator car, "CAUTION" sign tapes shall be placed across the car door jamb. One strip of "CAUTION" sign tape shall be placed at a height of eighteen (18) inches from the car floor and another strip of "CAUTION" sign tape shall be placed at a height of fifty-four (54) inches above the floor.

(b) The "CAUTION" sign tape shall be three (3) inches in width with the words "CAUTION - DO NOT ENTER" repeated every six (6) inches. The lettering shall be black on yellow background. The letters shall be at least two (2) inches high.

§27-03 Signs on any Sidewalk Shed, Fence, Railing, Footbridge, Catch Platform, Builder's Sidewalk Shanty, and Over-the-Sidewalk Chute Erected at Demolition or Construction Sites.

(a) *Applicability.* These rules and regulations shall apply to all protective structures erected at demolition or construction sites, including but not limited to, sidewalk sheds, fences, railings, footbridges, catch platforms, builder's sidewalk shanties, and over-the-sidewalk chutes as specified in Administrative Code §26-252(a).

(b) Other than the signs required by 1 RCNY §§8-01 and 26-01 or as set forth below, there shall be no information, pictorial representations, or any business or advertising messages posted on such protective structures at demolition or construction sites.

(c) *Required shed sign.* Where a sidewalk shed is erected and a sign is posted in compliance with Administrative Code §27-1021(a)(1)(b), the information shall also include the Department of Buildings' Complaint Telephone Number and whether the shed is a heavy duty sidewalk shed or light duty sidewalk shed as defined in 1 RCNY §8-01(a)(2). If the shed is for light duty use, the sign shall include the statement that storage is not permitted on the shed.

(d) *Signs.* A sign may be posted on such protective structure when the structure is adjacent to any building and obscures from view a lawful and existing sign and shall comply with the following requirements:

- (1) Signs shall be securely fastened to the face of the protective structure at a location directly in front of such business storefront;
- (2) No projecting signs shall be permitted, and all signs shall be limited to a maximum height of three feet six inches and when affixed to a sidewalk shed, shall not project above the parapet;
- (3) No signs shall be permitted on the ends of any protective structure, unless the lawful and existing sign would otherwise be obscured from view by a deck or parapet of a sidewalk shed or bridge; and
- (4) No sign shall project below the deck of any sidewalk shed.

(e) *Materials.* Such signs shall be constructed of three-fourths inch plywood or sheet metal.

(f) *Area and height limitations.* The maximum height for the erection of such sign shall comply with the applicable zoning regulations, statutes and these rules, and in no event shall the height of such sign be greater than three feet six inches.

(g) *Non-illumination.* No illuminated signs shall be permitted on any protective structure subject to this rule.

CHAPTER 28 SMOKE DETECTING DEVICES AND SYSTEMS

§28-01 Required Smoke Detecting Devices and Systems.

- (a) *Applicability.* (1) Local Law 62 for the year 1981 requires that all existing dwelling units within Occupancy Group J-1 (which includes Hotels, Motels, Lodging Houses, and Rooming Houses) and Occupancy Group J-2 (which includes Apartment Houses, Apartment Hotels and School Dormitory Buildings), and new buildings or substantially improved or altered buildings in Occupancy Group J-1, J-2 and J-3 (the latter includes One and Two Family Dwellings, Rectories, Convents and Group Homes) to be equipped with approved smoke detecting devices, except such units which contain operational automatic wet sprinkler systems.
- (2) The devices shall be operational in existing Occupancy Groups J-1 and J-2 by January 1, 1982; however, the Commissioner may upon good cause shown extend the period of compliance to June 30, 1982. Appeals to the Commissioner for extension of the period of compliance shall be set forth on a form to be available and filed at the Office of the Commissioner, (Attention: The Executive Engineer), Department of Buildings, 60 Hudson Street New York, N.Y. 10013, [sic] no later than December 1, 1981, and contain the following information:
- (i) The location of the premises, block and lot, the Building Department Application number, if any, the Construction and Occupancy Class, number of dwelling units, estimated number of detectors, type, and where they are to be installed.
 - (ii) The hardship to be considered with regard to the delivery or installation of the equipment.
 - (iii) The proposed time table for compliance.
 - (iv) A copy of the signed contract for the purchase and/or installation of the system. (Cost figures may be deleted).
 - (v) The application number, as appropriate.
- (3) The Commissioner will not consider "good cause" appeals unless:
- (i) The installation is wired into the building's electrical system, or
 - (ii) The number of units in single ownership or management responsibility exceed 500, and a complete schedule for installation is submitted prior to January 1, 1982, or
 - (iii) Special circumstances not covered by subdivisions (i) or (ii) above are involved.
- (4) Notice of approved extensions are to be forwarded to the Commissioner of the Department of Housing Preservation and Development.
- (5) The requirements for new buildings within Occupancy Group J-3 and new or substantially improved or altered buildings in Occupancy Group J-1, J-2, or J-3, shall only apply to those for which plans are Approved by the Department of Buildings on or after January 1, 1982.
- (b) *Installation—new, existing and altered buildings.* (1) Dwelling units shall be equipped with smoke detecting devices receiving their primary power from the building wiring, and there shall be no switches in the circuit other than the overcurrent device protecting the branch circuit.
- (2) However, dwelling units in existing buildings may, in the alternative, be equipped with battery-operated smoke detecting devices except where such buildings are substantially improved or altered on or after January 1, 1982.
- (3) An existing building is one which is within either Occupancy Group J-1 or Occupancy Group J-2 for which plans have been approved by the Department prior to December 31, 1981.
- (4) A building shall be deemed to have been substantially improved or altered if
- (i) the cost of improvement or alteration exceeds the sum of \$150,000 or
 - (ii) 50 percent or more of the dwelling units or square feet of the structure are improved or altered and the cost of such improvement or alteration exceeds the sum of \$15,000 per dwelling unit or
 - (iii) there has been a change in the occupancy or use of the entire structure.
- (5) In applying the foregoing provisions where cost is the factor, items falling within the scope of minor alterations or ordinary repairs, as set forth in §§27-124 and 27-125 of the Administrative Code, thereby exempt from permit requirements based on §27-147, as well as any other cost associated with any matters that are not regulated by the Building Code are not included within calculation of the cost, as well as minor applications filed pursuant to Directive 14/75, or for any other miscellaneous applications referred to in §§27-148 (c) to (h).
- (6) Cost of alterations are not cumulative, provided any application filed with this department is signed off as satisfactorily completed prior to the filing of a subsequent application; and, if a Certificate of Occupancy is

involved that a final Certificate of Occupancy has been issued for the pertinent application.

(c) *Equipment requirements.*

(1) Section 27-981 of the Administrative Code provides that all smoke detecting devices required to be provided and installed shall either be approved by the Board of Standards and Appeals, accepted pursuant to Rules and Regulations promulgated by the Commissioner, or be listed by a Nationally Recognized Independent Laboratory that:

- (i) Maintains periodic inspections of production of listed equipment.
- (ii) States in its listing that the equipment meets nationally recognized standards.
- (iii) Maintains a periodic follow-up service of the devices to ensure compliance with the original listing.

(2) The following is the current list of Acceptable Testing Laboratories:

Underwriters' Laboratories, Inc.
333 Pfingsten Road Tele: (312) 272-8800
Northbrook, Illinois 60061 MEA Laboratory No. 1-69-L

Canadian Standards Association
178 Rexdale Boulevard Tele: (416) 744-4316
Rexdale, Ontario M9W 1R3 Canada MEA Laboratory No. 25-69-L

Underwriters' Laboratories of Canada
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(The Director of the Materials and Equipment Acceptance Division, who maintains the current list of MEA Acceptable Testing Laboratories, will be able to advise interested parties of any changes.)

(3) (i) The device shall be of either the ionization chamber or photoelectric type. The device shall be in compliance with the requirements of:

REFERENCE [sic] STANDARD RS 17-11

UL No. 217-1980—Single and Multiple Station Smoke Detectors.

The device shall be installed in a manner consistent with the requirements of:

REFERENCE STANDARD RS 17-12

ANSI/NFPA No. 74-1980—Standard for the Installation, Maintenance and Use of Household Fire Warning Equipment, as Modified.

The following sections of this standard are modified to read as follows:

1-1 Scope. Covers the requirements for the proper selection, installation, operation and maintenance of fire warning equipment for use within dwelling units or rooming units.

1-2.6 The installation of wiring and equipment shall be in accordance with the New York City Electrical Code.

2-1.1.1 Smoke detectors shall be installed outside of each separate sleeping area in the immediate vicinity of the rooms used for sleeping purposes in dwelling units in Occupancy Group J-2 and J-3, and in basements and basement recreation rooms in Occupancy Group J-3.

Smoke detectors shall be installed within the sleeping area of hotel or motel units, rooming units or studio dwelling units in Occupancy Group J-1.

4-5.5 Each smoke detector shall have an integral test means to permit the occupant to check that it is operational. A continuous power display indicator light is recommended.

5-2.1.4 A smoke detector installed to protect a sleeping area in accordance with 2-1.1.1 shall be located outside the rooms used for sleeping purposes, but in the immediate vicinity of the sleeping area, except as set forth for rooming units.

5-2.1.6 Smoke detectors shall be located on or near the ceiling and within fifteen feet of all rooms used for sleeping purposes in J-2 or J-3 occupancies. In all dwelling units with multiple levels, when any level has only one means of egress, the dwelling unit shall be provided with smoke detectors on all levels.

5-2.6.1 If ceiling mounted, the closest edge of the detector shall be a minimum of four inches from any wall.

5-2.1.6.2 If wall mounted, the closest edge of the detector shall be a minimum of four inches and a maximum of twelve inches from the ceiling.

(ii) The following sections of this standard are extracted for informational purposes:

3-3.1 Household fire warning equipment may be powered by a battery provided that the battery is monitored to assure that the following conditions are met:

- (a) All power requirements are met for at least one year's life, including weekly testing.
- (b) A distinctive audible trouble signal is given before the battery is incapable of operating (from aging, terminal corrosion, etc.) the device(s) for alarm purposes.

5-1.1.6 The supplier or installing contractor shall provide the owner with:

- (a) An instruction booklet illustrating typical installation layouts.
 - (b) Instruction charts describing the operation, method and frequency of testing and proper maintenance of household fire warning equipment.
 - (c) Printed information for establishing a household emergency evacuation plan.
 - (d) Printed information to inform the owner where he may obtain, [sic] repair or replacement service and where and how parts requiring regular replacement (such as batteries or bulbs) may be obtained within two weeks.
- NOTE: Owners of buildings in Occupancy Group J-2 are required to pass on all printed information as described in (b), (c) and (d) to the tenant who is responsible for maintaining the unit.

B-2.1 Where to locate the required smoke detectors.

B-2.1.1 The major threat from fire in a family living unit is at night when everyone is asleep. The principal threat to persons in sleeping areas comes from fires in the remainder of the unit; therefore, smoke detector(s) are best located between the bedroom areas and the rest of the unit. In units with only one bedroom area on one floor, the smoke detector should be located as shown in Figure B-2.1.1.

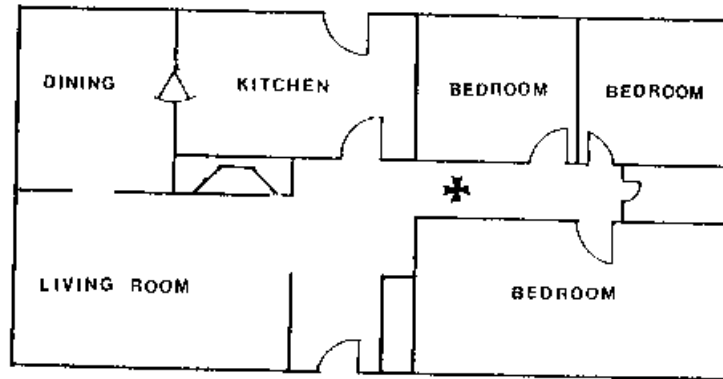


Figure B-2.1.1 A smoke detector (indicated by cross) should be located between the sleeping area and the rest of the family living unit.

B-2.1.2 In family living units with more than one bedroom area or with bedrooms on more than one floor, more than one smoke detector may be needed as shown in Figure B-2.1.2.

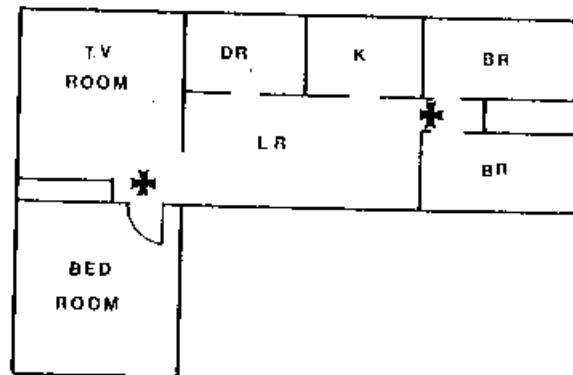


Figure B-2.1.2 In family living units with more than one sleeping area, a smoke detector (indicated by cross) should be provided to protect each, if the distant requirement of 5-2.1.6 is exceeded.

- (4) (i) Buildings with Occupancy Group J-1 and including Class “B” Multiple [*sic*] Dwellings, may in the alternative be equipped with a line-operated zoned smoke detecting system with central annunciation and central office tie-in for all public corridors and public spaces.
- (ii) Such system shall be in compliance with the requirements of the Division of Fire Prevention of the Fire Department and the following standards:

REFERENCE STANDARD RS 17-3

§13.—Automatic Heat and Smoke Detection System of the standards for the Installation of Fire Sprinkler, Standpipe Smoke Detection, Oxygen, Nitrous Oxide, and other Alarm and Extinguishing Systems.

REFERENCE STANDARD RS 17-5A

ANSI/NFPA No. 72A-1979—Standard for the Installation, Maintenance and Use of Local Protective Signaling Systems for Guard’s Tour, Fire Alarm and Supervisory Service.

REFERENCE STANDARD RS 17-5E

ANSI/NFPA No. 72E-1979—Standard of Automatic Fire Detectors.

- (iii) All devices and equipment shall be approved by the Board of Standards and Appeals.
- (5) (i) For dwelling units to be equipped with smoke detecting devices receiving their primary power from the building wiring, a Licensed Electrician shall file an application for a Certificate of Electrical Inspection with the Bureau of Electrical Control, Department of Buildings at the address provided in the City’s website, <http://www.nyc.gov>.
- (ii) For buildings within Occupancy Group J-1 (Class “B” Multiple Dwellings) using the alternate provisions of Paragraph D of these Rules, the following shall apply:
- (A) A Miscellaneous Application shall be filed in the Borough Office of the Department of Buildings, by a Registered Architect or Professional Engineer. All fees are to be paid.
- (B) A duplicate set of plans and specifications are to be forwarded for examination, approval and inspection to the Electrical Section, Division of Fire Prevention, Fire Department, prior to the signing-off of the application.
- (C) Notice of approvals shall be forwarded to the Commissioner of the Department of Housing and Preservation.
- (6) No applications are required to be filed for installation of battery operated devices.
- (7) It shall be the duty of the owner of a building in Occupancy Group J-2 (Class “A” Multiple Dwelling) to:
- (i) Provide and install one or more approved and operational smoke detecting devices in each dwelling unit.
- (ii) Post a notice in a form approved by the Commissioner of the Department of Housing Preservation and Development in a common area of the building, readily visible and preferably in the area of the inspection certificate, informing the occupants of such building, that the owner is required by law to install one or more approved and operational smoke detecting devices in each dwelling unit in the building, and that each occupant is responsible for the maintenance and repair of such devices and for replacing any or all such devices which are stolen, removed, missing or rendered inoperable during the occupancy of such dwelling unit.
- (iii) Replace any smoke detecting device which has been stolen, removed, missing or rendered inoperable during a prior occupancy of the dwelling unit and which has not been replaced by the prior occupant prior to the commencement of a new occupancy of a dwelling unit.
- (iv) Replace within thirty calendar days after the receipt of written notice any such device which becomes inoperable within one year of the installation of such device due to a defect in the manufacture of such device and through no fault of the occupant of the dwelling unit.
- (v) File a certification of satisfactory installation within 10 days after completion with the Department of Housing Preservation and Development, Borough Division of Code Enforcement. This certification shall be set forth on a form available at the H.P.D. Borough Office.
- (vi) Keep such records as the Commissioner of the Department of Housing Preservation and Development shall prescribe relating to the installation and maintenance of smoke detecting devices in the building and make such records available to the Commissioner of the Department of Housing Preservation and Development and/or the Fire Commissioner (or their representatives) upon request.
- (8) It shall be the sole duty of the Occupant of each dwelling unit in a building in Occupancy Group J-2 (Class “A” Multiple Dwelling) in which a smoke detecting device has been provided and installed by the owner to:
- (i) Keep and maintain such device in good repair; and,
- (ii) Replace any and all devices which are either stolen, removed, missing or rendered inoperable during the occupancy of such dwelling unit.

NOTE: The occupant of a dwelling unit in which a battery operated smoke detecting device is provided and installed pursuant to this section shall reimburse the owner a maximum of ten dollars for the cost of providing and installing each such device. The occupant shall have one year from the date of installation to make such reimbursement.

(9) It shall be the duty of the owner of a building in Occupancy Group J-1 (Class "B" Multiple Dwelling) which is required to be equipped with smoke detecting devices to install and maintain such devices, and to keep such records as the Commissioner of the Department of Housing Preservation and Development shall prescribe relating to the installation and maintenance of smoke detecting devices in each dwelling unit and make such record available to the Commissioner of the Department of Housing Preservation & Development and/or the Fire Commissioner, (or their representatives) upon request.

(10) In Occupancy Group J-1 all components of the line operated zoned detecting systems, with central annunciators and central office tie-ins shall be inspected and tested by qualified personnel holding a Fire Department Certificate of Fitness for testing and maintaining smoke detecting systems at intervals of not more than six months. In addition, trouble signals shall be tested daily and each sounding device monthly and records of such test be maintained.

For further information, refer to the Board of Standards and Appeals, Rules for Interior Fire Alarm Signal Systems, §8-01 of the B.S.A. rules.

(11) Smoke detecting devices and systems installed in accordance with the technical requirements of Divisions C, D and E after publication of this Notice of Opportunity to Comment, may at the option of the owner continue to be operated after the effective date of the promulgation, and modification of such devices and systems will not be required.

CHAPTER 29 SPRINKLER SYSTEMS

§29-01 Installation of Automatic Sprinklers in Halls and Rooms in Class "A" Multiple Dwellings Used For Single-Room Occupancy Under the Provisions of Subdivision 7-A of §4 and §248 of the Multiple Dwelling Law.

(a) Before the installation of any sprinkler system in any single-room occupancy building is begun, an application, together with plans and specifications for such installation shall be filed with and approved by the Department of Buildings. Plans shall show accurately, both horizontally and vertically, the arrangement and dimensions of the private halls and rooms and the areas to be sprayed by each sprinkler head. Application and specification forms may be obtained at the borough office of the Department of Buildings. Applications shall be filed in the department office in the borough in which the premises are located. Applications and specifications shall be in triplicate. Preliminary plans may be on paper. Final plans shall be filed in triplicate on paper and microfilmed.

When it is proposed to supply a sprinkler system by means of a direct connection to a public water supply main, the specifications shall be accompanied by a letter from the Department of Environmental Protection, establishing the fact that the water-supply conditions and pressures are suitable to meet the requirements of these rules for water supplies for sprinklers.

(b) Sprinkler systems shall be of the automatic wet type.

(c) Water supply from public water mains will be acceptable when such supply will provide a minimum static pressure at the highest sprinkler head or heads of not less than 15 pounds per square inch.

Taps connecting to public water mains must be equal in size to the main pipe line, except that:

A two-inch (2") tap connecting to the public water main and immediately increased to two-and-one-half inches (2 1/2") direct connection to the public water main and,

A one-and-one-half inch (1 1/2") tap connecting to the public water main and immediately increased to two inches (2") in diameter, with piping of the same diameter extending into the building, shall be considered the same as a two-inch (2") direct connection to the public water main.

The sprinkler system of each building shall have a separate and independent source of supply. When a sprinkler system is supplied direct from a public water main, it shall be separately and independently connected to the public water main. However, a house service water supply connection may be taken from the sprinkler water supply connection to the public main, on the house side of the main shut-off valve for the building, provided the diameter of the house service water supply connection does not exceed one-half of the diameter of the sprinkler water supply connection. Only one connection of the domestic water supply to the sprinkler water supply line shall be permitted and no shut-off valve shall be placed on the sprinkler supply line other than the main shut-off valve for the building on the street side of the house service water supply connection.

(d) A gravity tank upon the roof will be required when the normal minimum water pressure from the public mains is insufficient, or, in lieu of a gravity tank, a pressure tank may be installed in the basement or cellar in accordance with the requirements hereafter specified in these rules.

The bottom of each gravity tank supplying the sprinkler system shall be elevated at least 20' above the roof.

Each gravity tank shall be filled through a fixed water supply tank of at least one-and-one-half inch (1 1/2") diameter and independent of the sprinkler pipe system, by means of an automatically controlled pump of a discharge capacity of at least sixty-five (65) gallons per minute against the total head, including friction at the discharge nozzle of the pump. The tank fill line shall be standard weight pipe, galvanized steel, or brass or copper pipe.

A gravity tank, if used exclusively to supply the sprinkler system, shall have an effective capacity of not less than 1,500 gallons. Gravity tanks which serve both the house supply and the sprinkler system shall have a capacity of not less than 2,500 gallons.

All exposed water supply piping connecting with roof gravity tanks shall be properly protected against frost action by four layers of one inch (1") high-grade hair felt, and each layer of hair felt shall be covered with a layer of heavy tar paper.

Each wrapping must be securely fastened with heavy twine, and wrapping joints shall have a lap not less than two inches (2"), staggered with the laps of adjacent layers.

All coverings shall be finally covered with heavy canvas, painted with two coats of waterproof [*sic*] paint.

In lieu of the foregoing, three inch thick fiberglass in a metal shield may be used.

(e) Pressure tanks when used shall be capable of supplying actual water volume as required in subdivision (j) of this section of these rules. The required water volume shall be two-thirds of the tank capacity and the [*sic*] air pressure one-third.

For the pressure to be maintained, pressure tanks shall be constructed and tested in accordance with the requirements of the ANSI/NFPA 22 of Reference Standard RS 17-10 of the Administrative (Building) Code. At the end of each pressure tank there shall be a glass water level gauge, and the pressure tank must also be provided with a pressure gauge and manhole for access to the tank.

The filling pump for the pressure tank shall have a capacity of 65 gallons per minute with sufficient strength to pump water into the pressure tank against full air pressure.

The air compressor for the pressure tank must be capable of delivering ten cubic feet of air per minute for the permanent maintenance of the required maximum air pressure in the tank.

The filling pipe from pump to air compressor must be provided with a relief valve set at 15 pounds in excess of the maximum air pressure carried in the tank.

(f) All tanks shall be supported in accordance with the provisions of the Administrative (Building) Code. All tanks shall be provided with emergency outlets in conformity with Section P107.8(c) of Reference Standard RS-16 of the Administrative (Building) Code.

(g) Standard one-half inch (1/2") spray type sprinkler heads. Each private hall and room within an apartment having single-room occupancy shall be sprinkled as hereinafter provided. In private halls within apartments, sprinkler heads shall be placed not more than fourteen feet (14') apart. No sprinkler head in a hallway shall be distant more than seven feet (7') from a wall, partition or end of the hall.

No sprinkler protection will be required within any closet with a floor area of not more than 20 square feet provided such closet is within a room and the area of the closet is considered as part of the room area in computing the required number of heads.

(h) The term "protected area" shall be construed to mean that single-room occupancy apartment within the building requiring the greatest number of sprinkler heads. In computing the required number of heads within a "protected area," the number of heads within the same apartment may be used on the condition that there is no connection to another apartment or private hall.

Whenever there is a direct connection between two adjoining apartments, either or both of which are used for single-room occupancy, the combined connected apartments and private halls shall be considered as the "protected area." In computing the required number of heads in a "protected area" of this type, the number of heads within the rooms in the connected apartments or the number of heads required in the private halls of such connected apartments, whichever is greater, shall be used.

(i) The total number of heads in the "protected area" requiring the greatest number of heads shall determine the required size of the main supply, including service mains, main branch, tank, down feed and riser, but in no case shall the size of the main supply be less than two inches.

(j) There shall be sufficient actual water volume to supply 25 percent of the heads in the "protected area" requiring the greatest number of heads for a period of 20 minutes at 20 gallons per minute.

(k) The number of sprinkler heads on a given size of piping shall not exceed the following:

Size of pipe diameters	Maximum number of sprinkler heads allowed
1 inch.....	2 heads
1 1/4 inch.....	3 heads
1 1/2 inch.....	5 heads
2 inch.....	10 heads
2 1/2 inch.....	30 heads
3 inch.....	60 heads
3 1/2 inch.....	100 heads
4 inch.....	Unlimited heads

(l) The sprinkler main shall not be less in size than the sprinkler riser and [sic] the check valve of equal diameter to the main and the riser shall be provided on the sprinkler main. For draining the sprinkler system, a 3/4" plugged valve shall be provided on the sprinkler main just inside the aforesaid check valve. All sprinkler piping and fittings shall be so installed that they can be thoroughly drained.

On the sprinkler main, an outside screw and yoke gate valve, readily accessible, must be provided near the front of the front of the building and located so as to control the water supply to all of the interior sprinkler systems. The said outside screw and yoke gate valve must be sealed in an open position.

If tank water supply is used for sprinklers, an outside screw and yoke gate valve shall be provided on the piping leading from the tank to the sprinkler system under conditions similar to those specified for such valves on sprinkler mains.

(m) Sprinkler risers shall not be located close to windows and all sprinkler piping shall be properly supported.

(n) Sprinkler systems shall be maintained for sprinkler use only, and connections to such sprinkler systems for any other purposes are prohibited.

(o) All piping used in sprinkler systems shall be full weight standard steel threaded pipe, well reamed and screwed up tight into fittings without reducing the waterway. Fittings shall be standard cast iron. All fittings placed inside of tank shall be of brass or other non-corroding material.

(p) Sprinkler risers shall be provided at the top for testing purposes, with a connection not less than one inch in diameter, with a valved outlet so located that same will be readily accessible at all times. When not in use, the valve shall be provided with an iron or brass plug screwed in tight.

(q) Sprinkler systems when completed shall be subjected to a hydrostatic test at a pressure of not less than thirty pounds in excess of the normal pressure required for such sprinkler systems when in service, and shall remain uncovered in every part until they have successfully passed the test. The Department of Buildings, in the borough in which the test is to be conducted, shall be notified when such test is to take place. Tests shall be conducted by the contractor or the owner or [sic] the owner's representative, in the presence of a representative of the Building Department.

(r) Sprinkler systems shall be inspected at least once in each month by a competent representative of the owner, to ascertain that all parts of the system are in perfect working order. A detailed record of each inspection shall be kept on the premises for examination by the Fire Department, the Department of Housing Preservation and Development, and the Department of Buildings.

(s) There shall be kept available on the premises at all times a sufficient supply of extra sprinkler heads and also a sprinkler wrench for use to replace promptly any fused or damaged sprinkler heads.

Any head which has opened or has been damaged shall be replaced immediately with a good sprinkler head. Sprinkler heads shall be of a type and manufacture approved by the Board of Standards and Appeals.

The minimum operating temperature of all sprinkler heads shall be in the ordinary degree range. Appropriate higher degree operating temperatures shall be required in cooking spaces.

§29-02 Installation of Automatic Wet-Pipe Sprinklers in Certain Class A and Class B Multiple Dwellings, Including Hotels, Under the Provisions of §67, Multiple Dwelling Law.

Effective February 25, 1949, automatic wet-pipe sprinklers used in certain Class A and Class B multiple dwellings, including hotels, shall be installed in conformity with the provisions of the Administrative Code, Subchapter 17 of Chapter 1 of Title 27, except as modified herein. These rules do not apply to sprinkler installations in converted dwellings, lodging houses or multiple dwellings used for single room occupancy.

- (a) In lieu of one of the four alternate automatic sources of water supply specified in §27-961, of the Administrative (Building) Code, a connection may be made to the domestic water supply system on the condition that:
- (1) It can be established from information obtainable from the Department of Environmental Protection that the pressure at the top of the highest riser will be 15 pounds per square inch (except as provided in §29-02(f).
 - (2) If the pressure from this source is insufficient to provide a pressure of 15 pounds at the highest line of sprinklers, but is sufficient to supply a pressure of 15 pounds or more at the highest line of sprinklers, an automatic booster pump is provided, the capacity of which shall be sufficient to supply 25 percent of the standard one-half inch (1/2") inch heads in the sprinkler area having the maximum number of heads, and in no event shall such supply be less than 250 gallons per minute at a pressure of at least 15 pounds at the highest sprinkler line.
 - (3) A local approved type of water-flow alarm is provided, the gong so located that when it operates it may be heard by the occupants or employees, and the gong also plainly marked "Sprinkler Alarm", in red letters one inch in height on a white background.
Exception: In a sprinkler area which does not contain more than 36 heads, no water-flow alarm shall be required.
 - (4) A sprinkler shut-off valve is provided conveniently accessible and its purpose clearly indicated by the words "Automatic Sprinkler Shut-Off Valve" on a sign affixed thereto.
 - (5) The size of the domestic water supply line is at least equal to the size of the main sprinkler connection. *Note :* The provisions of Paragraph c of §27-964 shall not apply to sprinklers installed in conformity with the provisions of §29-02(a).
- (b) The capacity of gravity tanks for sprinklers shall be in conformity with the provisions, of §27-965, or such tank may be supplied by an automatic filling pump of at least 65 gallons per minute capacity, which shall be sufficient to supply 25 percent of the sprinkler heads in the largest sprinkler area for 20 minutes. The capacity of such tank shall be not less than 1,000 gallons . The bottom of the gravity tank or sprinkler supply pipe shall be not less than 20 feet above the highest supplied sprinkler line. When such elevation is not practicable, an automatic booster pump may be installed in the main sprinkler supply line in conformity with §29-02(a)(2).
- (c) In lieu of complying with the provisions of §27-965, a pressure tank located not more than one story below the highest supplied sprinkler line, filled by an automatic pump, and with a supply of water, all as described in §29-02(b) may be installed. In addition, a high-and-low air-alarm shall be provided.
- (d) The provisions of §27-963(a) may be construed to permit the sprinkler connection to the street main to be the same size as main sprinkler riser, but in no instance shall it be less than two inches. A tap may be one pipe size less than the sprinkler main.
- (e) §27-935 shall apply only when the number of heads in any sprinkler area as defined in these rules exceeds 36.
- (f) *Standard 1/2-inch sprinkler heads.* In lieu of applying the provisions of §27-956, sprinkler heads shall be so spaced that there shall be one head for approximately 168 square feet of floor area, and shall also be spaced not more than 14 feet on centers. The distance from a wall or partition to the first sprinkler head shall not exceed seven feet, measured at right angles to the wall or partition. In multiple dwellings that are presently equipped with sprinklers, the heads in the public halls may be spaced 14 feet on centers, with the first head not more than seven feet from any wall or partition. A 12 pound static pressure will be accepted at the topmost sprinkler line, provided the sprinkler heads are spaced to cover 100 square feet or less. Sprinkler heads may be installed in covered shafts in lieu of fire-retarding on the condition that:
- (1) Such shafts are not exposed to freezing temperatures;
 - (2) If ventilating louvres, windows or skylights are present in such shafts, the highest head is located a sufficient distance from such openings to prevent freezing;
 - (3) One head is centered at the top of such shaft at the level of the highest ceiling;
 - (4) In shafts constructed of [*sic*] incombustible materials, excepting windows or doors opening thereon, sprinkler heads are placed at each floor level and are staggered at alternate levels;
 - (5) In shafts constructed of combustible materials, and which exceed 60 square feet in cross-sectional area, sprinkler heads are placed at each floor level and are staggered at alternate floor levels.

(g) The protection afforded by sprinklers to stairs, halls, corridors, and other passageways shall also apply to their soffits and overlaps.

(h) These rules shall also apply to a store or other space used for business on any story where there are no sleeping rooms and which is not provided with sprinkler heads, unless such spaces are otherwise arranged in conformity with the provisions of Section 61, Multiple Dwelling Law.

(i) In lieu of complying with the provisions of §3-9.1.1 of ANSI/NFPA 13 of Reference Standard RS 17-2 of the Administrative (Building) Code, a 1 inch valved pipe may be extended from the top of the riser to the outside of the building, or inside the building to a deep sink for testing the system, pump and alarm under water-flow conditions.

(j) Check valves, gate valves, and water meters shall be installed as and when directed by the Department of Environmental Protection.

(k) The term "sprinkler area" as used in these rules shall mean any floor space within a structure enclosed on all sides by exterior walls, fire walls, fire partitions, fire-retarded partitions, or fire-resistive partitions and doors acceptable to the Department of Housing and Buildings. The term "fire-resistive partition" as used in these rules shall mean a partition which is constructed of incombustible materials or wood studs covered on both sides with lath and plaster, plaster board, or other fire-resistive materials acceptable to the Department. Such partitions shall extend from the floor to the ceiling. All doors in such partitions shall be self closing.

(l) The sprinkler control valve shall be inspected at least once weekly by a competent person, who is employed by the owner to see that such valves are sealed open, and who holds a certificate of fitness. A record of each inspection shall be kept for examination by a representative of the Department. The provisions of §27-957, in relation to alarm devices shall not apply to a sprinkler area which does not contain more than 36 heads in multiple dwellings, in which such weekly inspections are made.

(m) Systems installed before July 1, 1928 shall be subject to inspection and if found adequate may be accepted by the Department of Buildings. However, in such cases, a copy of the plans approved by the Fire Department shall be filed with the Department of Buildings.

(n) Where there are practical difficulties in the way of carrying out these rules, the Superintendent may permit modifications, provided that the spirit of these rules are observed and safety secured.

§29-03 Installation of Automatic Wet-Pipe Sprinkler Systems and Alarm Systems in Certain Class B Multiple Dwellings (Lodging Houses).

(a) Notice is hereby given that, pursuant to the provisions of Chapter 713 of the Laws of 1929, and Section 4 of Chapter 553 of the Laws of 1944, effective April 5, 1944, automatic wet pipe sprinkler systems installed in "lodging houses", shall be installed in conformity with the provisions of the Administrative Code of the City of New York.

(b) An automatic closed-circuit water-flow and valve-tamper alarm system, having at least one manual fire alarm station shall be provided in connection with the sprinkler system. This alarm system shall be connected to an approved central station which provided supervisory and maintenance service satisfactory to the fire commissioner.

In connection therewith, there shall be an approved transmitter so arranged as to actuate all gongs of the interior fire alarm system whenever a water flow through the sprinkler system occurs.

Interior fire alarm systems of the closed-circuit type previously installed under the rules then in force and approved by the fire commissioner may be accepted if, after inspection and test the systems are found to be adequate and in proper operating condition.

Battery operated interior fire alarm systems of the open-circuit type shall be replaced with an approved closed-circuit system.

In connection with these rules, the persons affected are advised to consult Article 5 of Subchapter 17 of Chapter 1 of Title 27, of the Administrative (Building) Code and §§15-126, 15-127 and 15-214, of the Administrative (Fire Prevention) Code of the city of New York, concerning interior fire alarm system, watchmen's time detector system and telegraphic communication.

§29-04 Installation of Automatic Wet-Pipe Sprinkler Systems and Alarm Systems in Certain Class B Multiple Dwelling (Lodging Houses).

(a) Automatic wet-pipe sprinkler systems installed in lodging houses in compliance with Subdivision 3, of §66, of the Multiple Dwelling Law shall be in conformity with the provisions of the Administrative Code, Subchapter 17 of Chapter 1 of Title 27, only to the extent that such article is not inconsistent with these amended rules.

(1) Sprinkler systems shall be automatic wet-pipe with one automatic source of water supply.

(2) Acceptable automatic sources of water supply shall be any one of the following:

(i) Elevated gravity tank having a minimum capacity of 5,000 gallons and installed in accordance with §27-965 of the Administrative (Building) Code. Effective capacity shall be determined by the largest number of heads in any floor area multiplied by 75 gallons, and shall never be less than 5,000 gallons.

(ii) Pressure tank having a minimum capacity of 2,500 gallons and installed in accordance with §27-965 of the Administrative (Building) Code. Effective water capacity shall be determined by the largest number of heads in any floor area multiplied by 37.5 gallons, and shall never be less than 2,500 gallons.

(iii) Automatic fire pump having a capacity of not less than 250 gallons per minute and installed in accordance with §27-964 of the Administrative (Building) Code.

(iv) A direct connection to the public water main, provided it is capable of maintaining a pressure of at least 15 pounds per square inch at the top of the highest sprinkler riser, with 250 gallons of water flowing per minute at a 2 1/2-inch outlet from a hydrant at the street level within 250 feet of the building. The hydrant test shall be made between the hours of 8 a.m. and 5 p.m. on a working day.

If the public water main pressure is incapable of maintaining a minimum pressure of 15 pounds per square inch as specified herein, a booster pump may be installed in conformity with these rules; or, in lieu of such booster pump, the sprinkler spacing and pipe sizes for the area not having the required minimum water pressure of 15 pounds per square inch shall be in conformity with the provisions of §27-956 of the Administrative (Building) Code, provided that in no event shall *[sic]* the minimum water pressure at the highest sprinkler riser be less than 2 pounds per square inch

Booster pumps, if required, shall have a capacity sufficient to supply 250 gallons per minute, at a pressure of at least 15 pounds at the top of the highest sprinkler riser. All shall be installed in accordance with §27-964 of the Administrative (Building) Code.

A letter from the Department of Environmental Protection shall be filed with the application for the installation of a sprinkler system, stating the water pressure and supply conditions of the street main to which the sprinkler supply is to be connected.

(3) One common source of water supply shall be acceptable for any contiguous buildings under the same ownership or leasehold and under the same lodging-house management, provided that each such building is fully separated by fire walls with automatic fire doors on any connecting openings.

Supply mains shall be at least the size of the largest main riser in any one building and shall be arranged to be centrally located and run as directly as possible from the source of water supply to the respective risers in each building.

Each building shall be provided with a separate alarm valve in accordance with §29-04(a)(8).

In all other respects, the installation in each building shall comply with these rules.

Supply mains shall be increased in size as may be required for adequate water supply and pressure requirements in accordance with §29-04(a)(2).

(4) Sprinkler spacing for standard 1/2-inch heads under sheathed or plaster ceilings shall not exceed 168 square feet of protection area, with the distance between lines and between sprinklers on lines not in excess of 14 feet.

(5) The maximum permissible number of standard 1/2-inch sprinkler heads on a given pipe-size, in one fire area, on any one story shall be as follows:

1 inch pipe.....	2 sprinkler heads
1 1/4 inch pipe.....	3 sprinkler heads
1 1/2 inch pipe.....	5 sprinkler heads
2 inch pipe.....	10 sprinkler heads
3 inch pipe.....	30 sprinkler heads
<u>4 inch pipe.....</u>	<u>60 No Limit</u>

Branch lines should not exceed eight sprinkler heads on either side of a cross main.

Areas within fire walls may be subdivided into separate fire areas by one-hour partitions. Openings in such partitions shall be protected with fireproof doors and assemblies, and such doors shall be self-closing. Areas within such subdivisions may be considered independent fire areas.

(6) Each riser shall be of sufficient size to supply all the sprinkler heads on that riser in any one fire area according to §29-04(a)(5).

The supply main shall be at least the size of the riser it serves, except that no main shall be less than two inches and shall be installed in accordance with §27-956 of the Administrative (Building) Code.

(7) Taps in the public water main may be one standard pipe-size smaller than the required supply main according to §29-04(a)(6), provided the supply main immediately increases at the tap to its full required size.

All water main installations shall be subject to the approval of the Department of Environmental Protection.

(8) Systems shall be equipped with an alarm valve so constructed that any flow of water in any part of the system, or the closure of any valve controlling water supply will automatically cause the interior fire alarm system and the central station alarm to operate.

(9) Prior to the issuance of a letter of approval from the Department of Buildings as to the satisfactory installation of any system, a letter from the Department of Environmental Protection must be filed with the Department as to the size of tap and service main and its satisfactory installation.

(b) An automatic closed-circuit water-flow and valve-tamper alarm system, having at least one manual fire alarm station shall be provided in connection with the sprinkler system. This alarm system shall be connected to an approved central station which provided supervisory and maintenance service satisfactory to the fire commissioner.

In connection therewith, there shall be an approved transmitter so arranged as to actuate all gongs of the interior fire alarm system whenever a water flow through the sprinkler system occurs.

Interior fire alarm systems of the closed-circuit type previously installed under the rules then in force and approved by the fire commissioner may be accepted if, after inspection and test the systems are found to be adequate and in proper operating condition.

Battery operated interior fire alarm systems of the open-circuit type shall be replaced with an approved closed-circuit system.

In connection with these rules, the persons affected are advised to consult Article 5 of Subchapter 17 of Chapter 1 of Title 27, of the Administrative (Building) Code and §§15-126, 15-127 and 15-214, of the Administrative (Fire Prevention) Code of the city of New York, concerning interior fire alarm system, watchmen's time detector system and telegraphic communication.

§29-05 Installation of Automatic Wet-Pipe Sprinklers in Fireproof Multiple Dwellings Converted to Business Use.

(a) Except as otherwise provided herein, automatic wet-pipe sprinklers used in fireproof multiple dwellings, converted in whole or in part to business use under the provisions of §27-248 of the Administrative (Building) Code, in effect prior to December 6, 1968, and in fireproof multiple dwellings that are altered under the provisions of §9, Subdivision 5, Paragraph b, of the Multiple Dwelling Law (subdivision of large apartments) shall be installed in conformity with Subchapter 17 of Chapter 1 of Title 27 of the Administrative (Building) Code.

(b) In lieu of one of the four alternate automatic sources of water supply specified in §27-961 of the Administrative (Building) Code, a connection may be made to the domestic water supply system on the condition that:

(1) It can be established from information obtainable from the Department of Environmental Protection that the minimum static pressure at the top of the highest riser will be at least 15 pounds per square inch, except as otherwise provided in §29-05(g).

(2) If the pressure from this source is insufficient to provide a minimum static pressure of 15 pounds per square inch, at the highest line of sprinklers, but is sufficient to supply a pressure of 5 pounds per square inch or more at the highest line of sprinklers, and that an automatic booster pump is provided, the capacity of which shall be sufficient to supply 250 gallons per minute at a pressure of at least 15 pounds per square inch at the highest sprinkler line

(3) A sprinkler shut-off valve is provided conveniently accessible, and its purpose clearly indicated by the words "Automatic Sprinkler Shut-Off Valve" on a sign affixed thereto, and that such valve is sealed open.

(4) The size of the domestic water supply line is at least equal in size of the main sprinkler connection.

(5) The provisions of Paragraph c of §27-964 shall not apply to sprinklers installed in conformity with the provisions of this §29-05(b).

(6) Where the length of pipe from the furthestmost sprinkler to the riser exceeds 100 feet the pipe beyond the 100 foot distance shall be increased in size one pipe size above the size otherwise required for each 100 feet of additional length or part thereof. This provision shall not require an increase in the size of the risers.

- (7) A separate riser shall be provided in each required stair enclosure, separately controlled.
- (c) The capacity of gravity tanks for sprinklers shall be in conformity with the provisions of §27-965, or such tank may be supplied by an automatic filling pump capable of delivering at least 65 gallons per minute to the tank and shall have sufficient capacity to supply 25 percent of the sprinkler heads in the largest sprinkler area for 20 minutes, at 20 gallons per minute. The capacity of such tank shall not be less than 1,500 gallons. The bottom of the gravity tank, or the sprinkler supply pipe shall not be less than 20 feet above the highest supplied sprinkler line. When such elevation is not practicable, an automatic booster pump may be installed in the main sprinkler supply line in conformity with §29-05(b)(2).
- (d) In lieu of complying with provisions of §27-965, a pressure tank located not more than one story below the highest supplied sprinkler line, filled by an automatic pump, and with a supply of water, all as described in §29-05(c), may be installed. In addition, a high-and-low air-alarm shall be provided.
- (e) §27-963 may be construed to permit the sprinkler connection to the street main to be the same size as the main sprinkler riser, but in no instance shall it be less than 2 inches. A tap may be one pipe size less than the sprinkler main.
- (f) §27-940 shall apply only when the number of sprinkler heads in any fire area as defined in these rules exceeds 36.
- (g) In lieu of applying the provisions of §27-956, sprinkler heads shall be so spaced that there shall be one head for approximately 130 square feet of floor area, and heads shall be spaced not more than 14 feet on centers. The distance from a wall or partition to the first sprinkler head shall not exceed seven feet measured at right angles to the wall or partition. A 12 pound minimum static pressure will be accepted at the topmost sprinkler line, provided the sprinkler heads are spaced to cover 70 square feet or less.
- (h) In lieu of complying with the provisions of Section ANSI/NFPA 13 of Reference Standard RS 17-2 of the Administrative (Building) Code, a 1 inch valve pipe may be extended from the top of the riser to the outside of the building, or inside the building to a deep sink for testing the system, pump and alarm under water-flow conditions.
- (i) Check valves, gate valves, and water meters shall be installed as and when directed by the Department of Environmental Protection.
- (j) The term "sprinkler area" as used in these rules shall mean any floor space within a structure enclosed on all sides by [*sic*] exterior walls, fire walls, fire partitions, or fireproof [*sic*] partitions and self-closing doors acceptable to the Department of Buildings.
- (k) The sprinkler control valve shall be inspected at least once weekly by a competent person, who is employed by the owner to see that such valves are sealed open, and who holds a certificate of fitness. A record of each inspection shall be kept for examination by a representative of the Department. The provisions of §27-957, in relation to alarm devices, shall not apply to those buildings having not more than 36 heads in any sprinkler area.
- (l) Where there are practical difficulties in the way of carrying out these rules, the Superintendent may permit modification, provided that the spirit of these rules are observed and safety secured.

§29-06 Installation of Automatic Sprinklers in the Public Halls of Multiple Dwellings Under the Provisions of §187 (Converted Dwellings) and §218, Subdivision 5 (Old-Law Tenements), of the Multiple Dwelling Law, and of the Sprinklers in Cooking Spaces in all Types of Multiple Dwellings Under the Provisions of §33 of the Multiple Dwelling Law.

(a) *Certification from the Department of Environmental Protection.* When it is proposed to supply a sprinkler system by means of a direct connection to a public water supply main, the specifications shall be accompanied by a letter or other approved certification from the Department of Environmental Protection, establishing the fact that the water supply conditions and pressure are such that will meet the requirements of these rules for water supplies for sprinklers.

(b) *Type of system required.*
Sprinkler system shall be of the automatic wet type.

(c) *Connection to water main.*
The sprinkler system of each building shall have a separate and independent source of supply except as herein otherwise specifically provided. When a sprinkler system is supplied direct from a public water main, it shall be separately and independently connected to the public water main except that one street main supply will be accepted for not more than three contiguous buildings under one ownership where such buildings are separated by fire walls, provided that the supply is brought into the center building of a group of three, and provided further, that the supply shall be adequate for the total number of sprinklers in any two buildings, but not less than 50 percent of the total number of sprinklers in all the buildings in any case. In all other respects, the installation in each building shall comply with these rules.

When one street supply serves more than one building, there shall be submitted to the department evidence that [*sic*] an easement has been created in favor of each building for the continued use of such supply for each building.

A house service water supply connection may be taken from the sprinkler water supply connection to the city main, on the house side of the main shut-off valve for the building provided the diameter of the house service water supply connection does not exceed one-half of the diameter of the sprinkler water supply connection. Only one connection of the domestic water supply to the sprinkler water supply line shall be permitted and no shut-off valve shall be placed on the sprinkler supply line, other than the main shut-off valve for the building on the street side of the house service water supply connection. (§29-06(c) amended by resolution filed with City Clerk February 9, 1956.)

(d) *Water pressure and supply.*

Water supply from public water mains will be acceptable when such supply will provide a minimum static pressure at the highest sprinkler of not less than 15 pounds per square inch

For computation of the required water pressure at the curb level to provide adequate pressure at the highest sprinkler, the following formula shall be used:

Required water pressure in pounds per square inch = 0.434 H plus 15.

Where H = height in feet from the curb level to the level of the highest sprinkler.

When the minimum pressure in the water supply is insufficient to provide the required pressure, but is capable of [*sic*] providing a pressure of not less than five pounds per square inch at the highest sprinkler, an automatic centrifugal booster pump for the purpose of increasing the water pressure will be accepted under the following conditions:

- (1) The rated capacity of the pump shall be not less than 250 gallons per minute and shall be sufficient to supply at least 25 percent of the total number of sprinklers, or where there is insufficient pressure in the top story only, all the sprinklers on the top floor, at the rate of 20 gallons per minute per sprinkler. A 2 1/2-inch diameter test tee shall be attached to the discharge pipe from the pump for the purpose of testing its capacity.
 - (2) There shall be a pressure regulator attached to the pump which shall be set so that the pump will automatically start operating when the water pressure at the highest sprinkler falls below 20 pounds per square inch, and cease to operate when the said pressure reaches 30 pounds per square inch.
 - (3) The pump shall be attached on bypass properly valved to the sprinkler main on the house side of the main control valve. The intake and discharge pipes to the pump shall be of sufficient size to deliver the required volume of water to the system at the stated minimum pressure.
 - (4) Drain valves shall be installed on the main between the main (O.S.&Y.) control valve and the intake connection to the pump and on the house side of the discharge connection to the pump. Such drain valves shall be closed by means of screw plugs.
 - (5) A check valve shall be installed on the main on the inside service between the intake and discharge connections to the pump.
 - (6) The intake and discharge pipes from the pump shall each be provided with an O.S.&Y. valve.
 - (7) A variation of not more than two pounds per square inch, in the minimum pressure, in the street supply below the required pressure for the sprinkler system without the introduction of a booster pump or increased size in piping may be accepted by the Superintendent if in his opinion the supply is adequate.
- There shall be sufficient actual water volume to supply 25 percent of the heads for a period of 20 minutes at 20 gallons per minute.

(e) *Roof tanks.*

Except as otherwise specifically provided in §29-06 (d), a gravity tank upon the roof will be required when the normal minimum water pressure from the public water main is insufficient.

The bottom of each gravity tank supplying a sprinkler system shall be elevated at least 20 feet above the roof.

Each gravity tank shall be filled through a fixed water supply pipe of at least one and one-half inch diameter and independent of the sprinkler pipe system, by means of an automatically controlled pump of a capacity at the discharge nozzle of the pump of at least 65 gallons per minute against the total head, including friction. The tank fill line shall be standard weight pipe, galvanized steel, brass or copper [*sic*] pipe. The pump shall be equipped with control apparatus which will automatically start operation when the effective capacity of the tank falls below the minimum reserve supply for the sprinkler system.

A gravity tank, if used exclusively to supply the sprinkler system, shall have an effective capacity of not less than fifteen hundred (1500) gallons. Gravity tanks which serve both the house supply and the sprinkler system shall have an effective capacity of not less than twenty-five hundred (2500) gallons with a minimum of fifteen hundred (1500) gallons reserved for the sprinkler system.

All exposed water supply piping connecting with roof gravity tanks shall be properly protected against freezing by four layers of one inch high-grade hair felt, and each layer of hair felt shall be covered with a layer of heavy tar paper.

Each wrapping shall be securely fastened with heavy twine, and wrapping joints shall have a lap of not less than two inches staggered into the laps of the adjacent layers.

All coverings shall be finally covered with heavy canvas sewed at seams and painted with two coats of waterproof paint.

In lieu of the foregoing, three inch thick fiberglass in a metal shield may be used.

Exposed gravity tanks on the roof shall be protected against freezing by means of an approved enclosure, insulation, heating coil or other means acceptable to the Superintendent.

Gravity tanks shall be supported in accordance with the provisions of §P107.8 of Reference Standard RS-16 of the Administrative (Building) Code.

Gravity tanks shall be provided with emergency outlets in conformity with §P107.8 of Reference Standard RS-16 of the Administrative (Building) Code.

(f) *Pressure tanks.*

Except as otherwise specifically provided in §§29-06(d) and (e), a pressure tank will be required when the normal minimum water pressure from the public main is insufficient. Such pressure tank may be installed in the basement or cellar.

Pressure tanks when used shall be capable of supplying actual water volume as required in §29-06(d) of these rules at a pressure of not less than 15 pounds per square inch

Pressure tanks shall be constructed and tested in accordance with the requirements of ANSI/NFPA 22 of Reference Standard RS 17-10 of the Administrative (Building) Code.

Pressure tanks shall be at least two-thirds filled with water and an air pressure by gauge shall be maintained in the tank of not less than 75 pounds plus the pressure caused by the column of water in the sprinkler system above the bottom of the tank.

At the end of each pressure tank there shall be a glass water-level gauge, and the pressure tank shall also be provided with a pressure gauge and a manhole for access to the interior of the tank.

The filling pump for the pressure tank shall have a capacity of not less than 65 gallons per minute against the total head including friction and air pressure of the tank. The compressor shall be powered by an electric motor which shall be equipped with control apparatus, which will automatically start the motor when the pressure in the tank drops to 75 pounds per square inch and will cut out the motor when the pressure in the tank reaches the total required pressure. The air compressor shall be capable of delivering not less than 10 cubic feet of air per minute. The filling pipe from the pump or air compressor shall be provided with a relief valve set to open at 15 pounds in excess of the maximum air pressure required in the tank.

(g) *Sprinkler pressure, where required.*

Sprinklers shall be arranged to spray all parts of the public stairways, service stairways, their hallways, landings and soffits.

Sprinkler protection shall be provided also in each closet opening on a public hall and in any permanent telephone booth placed in a public hall, but no sprinkler protection shall be required in any bathroom, water closet [*sic*] compartment or shower room opening upon a public hall.

There shall be two or more sprinklers installed under the soffit of each public stairs spaced not more than fourteen (14) feet apart. Sprinklers shall be provided over and under the stairway leading from the basement or cellar to the first floor, except that where the under part of the cellar stairway is completely enclosed with fireproof material, sprinklers will not be required under the soffit of such cellar stairway.

Sprinkler protection shall be provided in spaces exceeding three (3) feet in height, above a public hall between the ceiling of the top story and the roof unless such spaces are properly cut off from the public hall by means of fire retarded partitions.

Sprinkler protection shall be provided also on the underside of public stairhalls, stair landings and soffits which are not within stair enclosures except when such surfaces are fire-retarded.

Sprinklers shall not be required in roof bulkheads or in unheated outside street vestibules.

Sprinkler protection shall not be required in any auxiliary stairway extending from the lowest story to the next higher story above, on condition that such stairway is not located under any stairway leading to upper stories nor terminates in a public hall.

Deflectors of sprinklers shall be placed not less than three inches nor more than ten inches below ceilings or soffits.

Sprinklers shall not be located within 12 inches distance of any obstruction such as hanger, lighting fixture, etc.

(h) *Tap sizes required.*

Taps connecting to public water mains shall be equal in size to the main pipe line, except that:

A two and one-half inch tap connecting to the public water main and immediately increased to three inches in diameter, with piping of the same diameter extending into the building, shall be considered the same as a three inch direct connection to the public water main.

A two inch tap connecting to the public water main and immediately increased to two and one-half inches in diameter, with piping of the same diameter extending into the building, shall be considered the same as a two and one-half inch direct connection to the public water main.

A one and one-half inch tap connecting to the public water main and immediately increased to two inches in diameter, with piping of the same diameter extending into the building, shall be considered the same as a two inch direct connection to the public water main.

(i) *Pipe schedules.*

Except as otherwise provided in this section, the number of sprinklers on a given size of piping shall not exceed the following:

Diameter of Pipe	Maximum number of sprinklers allowed
1 inch.....	2 sprinklers
1 1/4 inch.....	3 sprinklers
1 1/2 inch.....	5 sprinklers
2 inch.....	10 sprinklers
2 1/2 inch.....	30 sprinklers
3 inch.....	60 sprinklers
3 1/2 inch.....	100 sprinkler
4 inch.....	Unlimited sprinklers

The sprinkler main shall not be less in size than the sprinkler riser and shall not be less in size than any branch it serves.

Except as otherwise specifically provided in §29-06(h), the total number of sprinklers in a structure shall determine the required size of the tap, service main, risers and branches, but in no case shall the size of the main supply be less than two inches

The following sprinklers will not be counted in computing the size of the taps, mains and risers:

- (1) One sprinkler of the required sprinklers placed under the soffits of the stairs in each story when more than one sprinkler is provided.
- (2) Sprinklers placed in any closet or telephone booth opening upon a public hall.
- (3) Sprinklers placed (in lieu of fire retarding) on the underside of public stairhalls, stair landings and soffits not within the stair enclosure.

The permissible number of heads may at the discretion of the Superintendent be increased by not more than 10 percent.

(j) *Siamese.*

A sprinkler system containing 55 or more sprinklers in one building or fire area, shall be provided with an approved Fire Department Siamese Connection installed in accordance with §27-940 of the Administrative (Building) Code.

(k) *Sprinklers in existing cooking spaces.*

When a sprinkler is installed in the ceiling over an existing cooking space, pursuant to §33 of the Multiple Dwelling Law, the sprinkler shall be connected with the domestic water supply of the building through a pipe of at least one inch diameter, at a point either side of the valve controlling the supply to the plumbing fixture in the cooking space. There shall be at least one sprinkler for every 49 square feet or fraction thereof of the floor area of the cooking space. Such sprinklers shall not be included in the computations for determining the size of the sprinkler piping or the necessity of a siamese as outlined in §§29-06(i) and 29-06(j).

No sprinkler shall be installed in a cooking space without a written approval from the Department of Buildings. The Superintendent may, however, waive the requirement as to the filing of the plans when, in his opinion, the nature of the alteration may be fully explained in the application.

(l) *Valves.*

Each valve controlling water supply and each valve controlling drainage of system or test flow, shall bear a metal plate securely attached to the valve and indicating clearly the purpose of each such valve.

On the sprinkler main, an outside screw and yoke gate valve, readily accessible, shall be provided near the front wall of the building and located so as to control the water supply to all of the interior sprinkler system. The said outside screw and yoke gate valve shall be sealed in an open position.

If a roof tank is used as a supply for sprinklers, an outside screw and yoke gate valve shall be provided in the piping leading from the tank to the sprinkler system, under conditions similar to those specified for such valves on sprinkler mains.

A check valve of equal diameter to the main shall be installed in all sprinkler mains where a building is supplied by services connected to different street mains, or where a building is equipped with a siamese connection. Such check valve shall be placed within two feet of the outlet side of the main control valve. Where a sprinkler system is supplied with both a gravity tank and a street main, a check valve shall be placed in

the independent supply pipe to the tank (on the tank side of the pump) and in the main at the outlet end of the main control valve. Such check valves shall be of equal diameter to the supply pipe and the main respectively.

When the sprinkler system has an auxiliary supply in the form of a siamese connection, a check valve shall be placed in a horizontal position in the down feed from the gravity tank and immediately below the roof.

When a building is supplied through a pressure tank in the cellar or basement, a check valve of equal diameter to the main shall be placed in the sprinkler main on the inside service between the intake and discharge connections to the pump feeding the pressure tank.

Where a sprinkler system is equipped with a booster pump, valves shall be provided in accordance with §29-06(d).

All control valves in supplies to the sprinkler system shall be sealed in an open position in an approved manner.

Where an underground main is used, the main control valve shall be located where readily accessible.

(m) *Drainage.*

All sprinkler pipe and fittings shall be so installed that the system can be thoroughly drained. Where practicable, all piping shall be arranged to drain to the main drain valve. Where this is impracticable, as in the case of sprinkler piping under stair soffits, a three-quarter inch screw plug shall be provided in the lower end of such piping to permit drainage.

Except where otherwise provided in the previous paragraph, sprinkler pipes shall be pitched not less than one-quarter inch in the 10 feet

Pipe shall be straightened before installation to prevent pockets which would interfere with proper drainage.

For draining the sprinkler system, a three-quarter inch tee branch with a three-quarter inch plugged valve shall be provided on the sprinkler main on the house side of the main (O.S.&Y.) control valve.

Where a sprinkler system is provided with check valves, the intermediate pipe between check valves shall be so arranged as to properly drain.

(n) *Sprinkler specifications.*

Sprinklers shall be of a type and manufacture approved by the Board of Standards and Appeals and of current issue.

The operating temperature of all sprinklers shall be in the ordinary degree range. Appropriate higher degree operating temperatures shall be required in cooking spaces.

Any sprinkler which has opened or has been damaged shall be replaced immediately with a good sprinkler.

There shall be kept available on the premises at all times at least three extra sprinklers and also a sprinkler wrench for use to replace any fused or damaged sprinklers.

(o) *Pipe specifications- sleeves.*

All piping except underground piping used in sprinkler systems shall be full weight standard steel threaded pipe, well reamed and screwed up tight into fittings without reducing the waterway. Fittings shall be standard weight cast-iron. All fittings and pipes placed inside of tanks shall be of brass or other non-corroding material.

Underground piping shall be of Extra Heavy Cast Iron Corporation pipe with bell and spigot [*sic*] or mechanical joints.

Sprinkler piping passing through floors (other than floors in public halls) of concrete or waterproof construction, shall have properly designed substantial thimbles or sleeves projecting three to six inches above the floor to prevent possible floor leakage.

The space between the pipe and sleeve should be caulked with oakum or equivalent material. If floors are of cinder concrete, thimbles or sleeves should extend all the way through to protect the piping against corrosion.

(p) *Hangers and support of piping.*

All branches shall be adequately supported. There shall be at least one hanger for each length of pipe between sprinklers, with one hanger within 30 inches of the end sprinkler and with hangers not over 12 feet apart.

Vertical piping shall be securely supported at the base and at maximum intervals of every other floor, provided that such maximum intervals are 20 feet or less.

The maximum spacing between hangers on horizontal mains and risers shall be twelve 12 feet

Hangers shall be of a substantial metal type.

Sprinkler risers shall not be located within 12 inches of a window or other exterior wall opening.

(q) *Frost protection.*

When necessary for the protection of a sprinkler system against frost, the Superintendent shall require that the public halls be heated.

Exposed water supply piping shall be protected against frost in accordance with §29-06(e).

(r) *Tests.*

Sprinkler systems when completed shall be subjected to a hydrostatic test at a pressure of not less the thirty 30 pounds per square inch in excess of the normal pressure required for such sprinkler system when in service, except

that where a siamese is required, the test pressure shall be not less than 200 pounds per square inch. All piping shall remain uncovered in every part until it has successfully passed the test. The Department of Buildings, in the borough in which the test is to be conducted, shall be notified when such test is to take place. Tests shall be conducted by the contractor or the owner or the owner's representative, in the presence of a representative of the Building Department. Sprinkler risers shall be provided at the top for testing purposes, with a connection not less than one inch in diameter, with a valve outlet so located that same will be readily accessible at all times. When not in use the valve shall be provided with an iron or brass plug screwed in tight.

(s) *Maintenance.*

Each sprinkler system shall be maintained in good condition and in such manner that it will function effectively in the event of fire on the premises.

The owner is responsible for the condition of his sprinkler system and shall use due diligence in keeping the system in good operating condition.

Sprinkler systems shall be inspected at least once in each six months by the owner, to ascertain that all parts of the system are in perfect working order. A detailed record of each such inspection shall be kept on the premises for examination by the Department of Housing Preservation and Development, the Department of Buildings and the Fire Department.

(t) *Painting.*

When the sprinkler system is given any kind of coating, such as whitewash or paint, care shall be exercised to see that no portion of the automatic sprinklers is covered.

(u) *Alterations.*

No additional sprinklers shall be installed and no part of a sprinkler system shall be altered without a written approval from the Department of Buildings.

(v) *Issuance of approval.*

Before the installation of a sprinkler system is approved and prior to the issuance of a letter of approval, there shall be filed with the Department of Buildings, in the borough in which the work has been installed, a letter from the Department of Environmental Protection indicating the size of the tap and service main and whether same has been installed in an approved manner.

§29-07 Installation of Wet-Pipe Sprinklers.

Rules and Regulations for the Installation of Wet-Pipe Sprinklers under the provisions of §248, Subdivision 4, Paragraph b, Multiple Dwelling Law, in Certain Fireproof Multiple Dwellings Erected before May 16, 1913, and Converted in Whole or in Part to Single Room Occupancy Prior to December 9, 1955.

Extract from the Multiple Dwelling Law

Section 248, Subdivision 4, Paragraph b. "There shall be access to a second means of egress within the apartment without passing through any public stair or public hall. On and after July first, nineteen hundred fifty-seven, every tenement used or occupied for single room occupancy in whole or part under the provisions of this section, and which does not have at least two means of egress accessible to each apartment, and extending from the ground story to the roof, shall be provided with at least two means of egress or, in lieu of such egress, every stair hall or public hall, and every hall or passage within an apartment, shall be equipped on each story with one or more automatic sprinkler heads approved by the department. Elevator shafts in such tenements shall be completely enclosed with fireproof or other incombustible material and the doors to such shafts shall be fireproof or shall be covered on all sides with incombustible material."

(a) Except as otherwise provided herein, automatic wet-pipe sprinklers installed under the provisions of §248, Subdivision 4, Paragraph b, Multiple Dwelling Law, in certain fireproof multiple dwellings erected before May 16, 1913, and converted in whole or in part to single room occupancy prior to December 9, 1955, shall be installed in conformity with Subchapter 17 of Chapter 1 of Title 27 of the Administrative Code.

(b) In lieu of one of the four alternate automatic sources of water supply specified in §27-961, Subdivision b, of the Administrative (Building) Code, a connection may be made to the domestic water supply system under the following conditions:

(1) It can be established from the information obtainable from the Department of Environmental Protection that

the minimum static pressure at the top of the highest riser will be at least 15 pounds per square inch except as otherwise provided in §29-07(g).

(2) If the pressure from this source is insufficient to provide a minimum static pressure of 15 pounds per square inch at the highest line of sprinklers, but is sufficient to supply a pressure of 5 pounds per square inch or more at the highest line of sprinklers, an automatic booster pump shall be provided, the capacity of which shall be 250 gallons per minute at a pressure of at least 15 pounds per square inch at the highest sprinkler line.

(3) A sprinkler shut-off valve is provided conveniently accessible, and its purpose is clearly indicated by the words "Automatic Sprinkler Shut-Off Valve" on a sign affixed thereto, and that such valve is sealed open.

(4) The size [*sic*] of the domestic water supply line is at least equal to the size of the main sprinkler connection.

(5) The provisions of Paragraph c, of §27-964 shall not apply to sprinklers installed in conformity with the provisions of this §29-07(b).

(6) Where the length of pipe from the furthestmost sprinkler to the riser exceeds 100 feet, the pipe beyond the 100 foot distance shall be increased in size one pipe size above the size of otherwise required, for each 100 feet of additional length or part thereof. This provision shall not require an increase in the size of the risers.

(c) The capacity of [*sic*] gravity tanks for sprinklers shall be in conformity with provisions of §27-965, or such tank may be supplied by an automatic filling pump, capable of delivering at least 65 gallons per minute to the tank and shall have sufficient capacity to supply 25 percent of the sprinkler heads in the largest sprinkler area for 20 minutes, at 20 gallons per minute. The capacity of such tank shall not be less than 1,500 gallons. The bottom of the gravity tank or the sprinkler supply pipe shall not be less than 20 feet above the highest supplied sprinkler line. When such elevation is not practicable, an automatic booster pump may be installed in the main sprinkler supply line in conformity with paragraph b of §29-07(b)(2).

(d) In lieu of complying with the provisions of §27-965, a pressure tank located not more than one story below the highest supplied sprinkler line, filled by an automatic pump, and with a supply of water, all as described in §29-07(c), may be installed. In addition, a high-and-low air-alarm shall be provided.

(e) Subdivision b of §27-963(a) may be construed to permit the sprinkler connection to the street main to be the same size as the main sprinkler riser, but in no instance shall it be less than 2 inches. A tap may be one pipe-size less than the sprinkler main.

(f) When the number of sprinkler heads in any fire area as defined in these rules exceeds fifty-five (55), an approved Fire Department siamese connection shall be installed in accordance with the requirements of §27-940 of the Administrative (Building) Code.

(g) In lieu of applying the provisions of §27-956, sprinkler heads shall be so spaced that there shall be one head for approximately 144 square feet of floor area, and heads shall be spaced not more than 14 feet on centers. The distance from a wall or partition to the first sprinkler head shall not exceed 7 feet, measured at right angles to the wall or partition. A 12-pound minimum static pressure will be accepted at the topmost sprinkler line, provided the sprinkler heads are spaced to cover 100 square feet or less.

(h) In lieu of complying with the provisions of ANSI/NfPA [*sic*] 13 of Reference Standard RS 17-2 of the Administrative (Building) Code, a 1-inch valve pipe may be extended from the top of the riser to the outside of the building, or inside the building to a deep sink for testing the system, pump and alarm under water-flow conditions.

(i) Check valves, gate valves, and water meters shall be installed as and when directed by the Department of Environmental Protection.

(j) **Definition. Sprinkler area.** The term "sprinkler area" as used in these rules shall mean any floor space within a structure enclosed on all sides by exterior walls, fire walls, fire partitions, or fireproof [*sic*] partitions and self-closing doors acceptable to the Department of Buildings.

(k) The sprinkler control valves shall be inspected at least once weekly, by a competent person, who is employed by the owner and who holds a Certificate of Fitness to see that such valves are sealed open. A record of each inspection shall be kept for examination by a representative of the Department. The provisions of §27-957, in relation to alarm devices, shall not apply to those buildings having more than 36 heads in any sprinkler area.

(l) In conformity with the provisions of §27-957, sprinkler alarm devices shall be required when more than 36 heads are installed in any fire area.

(m) Where there are practical difficulties in the way of carrying out these rules, the Superintendent may permit modification, provided that the spirit of these rules are observed and safely secured.

§29-08 Installation of Sprinklers in Rooms of Class B Non-Fireproof Converted Dwellings and in Rooms Used for Class B Occupancy in Non-Fireproof Class A Converted Dwellings Under the Provisions of §194 of the Multiple Dwelling Law.

(a) *Applicability.* Sprinklers installed in rooms of class B non-fireproof converted dwellings, and in rooms used for class B occupancy in non-fireproof class A converted dwellings shall conform to the "sprinkler rules governing the installation of automatic sprinklers in the public halls of multiple dwellings. Under the provisions of §187 (Converted Dwellings) and §218(7) (Old Law Tenements) of the Multiple Dwelling Law, and of sprinklers in cooking spaces in all types of multiple dwellings under the provisions of §33 of the Multiple Dwelling Law," except as provided otherwise in these rules.

(b) *Sprinkler protection-when required.* In every room in a class B non-fireproof converted dwelling, and in every room used for class B occupancy in any non-fireproof class A converted dwelling, there shall be one or more sprinkler heads so arranged as to sprinkle all parts of such rooms. A sprinkler system in the public stairway or in the service stairway shall not be required by these rules, but sprinklers shall be provided for such stairways where required by the Multiple Dwelling Law or the provisions of other rules.

(c) *Spray type sprinklers.* Where approved spray type sprinkler heads are used, they shall conform to the requirements of the rules specified in subdivision (a) of this section, except that the protected area for approved 1/2 inch spray type sprinklers shall not exceed 168 square feet in area, and the distance between heads shall not exceed 14 feet and the maximum distance between such heads and a wall or partition shall not exceed 7 feet

(d) *Connection to existing sprinkler systems.* Where a separate sprinkler system exists in a building and such sprinkler system was installed prior to December 15, 1956, and the sprinkler system was approved by the Department of Buildings and is in good operating condition, piping for the sprinklers in rooms may be taken from the existing sprinkler riser at each story, provided the riser has a diameter of not less than one inch. The size of the branch piping between the sprinklers and the riser shall be determined according to the number of sprinklers supplied but shall not be required to be greater in size than 1 1/4 inches in diameter, except that if the length of pipe exceeds 50 feet, the entire length of pipe shall be increased one pipe size for each 50 feet of length. Existing risers and mains of sprinkler systems shall not be required to be increased. The sprinkler heads installed in rooms shall not be counted in determining whether a siamese hose connection is required.

(e) *Installation where no sprinkler system exists.* Where it is required that sprinklers be provided in rooms and there is no existing approved sprinkler system in the building, a system of sprinklers shall be provided which shall conform to the requirements of the rules specified in subdivision (a) of this section and to the requirements of these rules in the same manner as if such sprinklers were existing except that mains shall be not less than 1 1/4 inches in diameter and that a siamese hose connection shall not be required, and except as follows:

Where the existing water supply piping is tested at any location within the dwelling and discharges at least 20 gallons of water per minute, at a flow pressure of not less than 10 pounds per square inch at the point of delivery, the existing house water supply main may be used provided the diameter of the main is not less than 3/4 inch, and provided a static pressure of at least 15 pounds per square inch is provided at the highest sprinkler. In such case, a riser for the sprinkler system shall be connected to the water main not more than 12 inches from the point where the main enters the building and on the house side of the main house control valve. No additional branch control valves shall be permitted. The size of the riser shall be determined by the number of sprinkler heads as required by the rules specified in subdivision (a) of this section, except that the riser shall not be required to be more than 1 1/4 inches in diameter regardless of the number of sprinkler heads provided. The size of branches shall be determined by the number of sprinkler heads, except that branches shall not be required larger than 1 1/4 inches in size. Risers and branches provided for the sprinkler system shall be used for no other purpose.

§29-09 Installation of Chlorinated Poly Vinyl Chloride (CPVC) Sprinkler Pipe and Fittings.

(a) Storage and Handling

CPVC piping shall be stored and carried in the original shipment containers whenever possible. Reasonable care should be exercised in handling the pipes. If improper handling results in splits, gouges or cuts and scratches that

are not superficial in nature, the damaged section shall be cut out and discarded. Pipes must be covered with non-transparent material when stored outdoors without the original containers.

(b) Safety Precautions

All solvent cements and primers for CPVC piping are flammable and shall not be used or stored near heat, spark or open flames. Cement shall be stored in closed containers at temperatures between 40 °F (4.4 °C) and 110 °F (43 °C). They shall be used only with adequate ventilation. Containers shall be kept tightly closed when not in use and covered as much as possible when in use.

(c) Certification

Individuals installing CPVC piping shall be trained and certified by the manufacturer. Documentation of such certification of the individual shall be on the job site at all times when installation work is performed.

(d) Installation

(1) General

Sprinkler piping systems shall be laid out so that the piping is not located adjacent to heat producing sources such as light fixtures and ballasts, steam lines, etc. which can produce an ambient temperature exceeding 150 °F (66 °C). CPVC pipes shall not be threaded, grooved or drilled.

(2) Concealed Installation

(i) For concealed installation, the minimum protection shall consist of one layer of 3/8" (10mm) gypsum wallboard or a suspended membrane ceiling with lay-in panels or tiles having a weight of not less than 0.35 pounds per square foot (1.71kg/m²) when installed with metallic support grids, or 1/2" (13mm) plywood pipe enclosure. Plywood used for pipe enclosure shall be fire-retardant treated when used in buildings of non-combustible construction.

(ii) When pipes and fittings are installed in a plenum space, they shall not be positioned directly over open ventilation grills.

(iii) System risers shall not be installed exposed, and shall be provided with minimum protection for concealed installation as stated above.

(3) Exposed Installation

(i) Exposed sprinkler piping shall be installed below a smooth, flat, horizontal ceiling construction. Positioning of sprinkler heads relative to obstructions such as, but not limited to, beams, light fixtures or decorations shall be in accordance with Reference Standard RS 17-2, 17-2A and 17-2B.

(ii) Only quick-response sprinkler heads shall be used on exposed piping.

(iii) Deflectors of pendent sprinklers when installed shall be not more than 4" (102mm) from the ceiling, and sidewall sprinklers not more than 6" (152mm) from the ceiling and not more than 4" (102mm) from the sidewall.

(iv) Upright quick-response sprinklers when installed on exposed piping shall meet the following conditions:

(a) The deflectors shall be not more than 4" (102mm) from the ceiling.

(b) The maximum temperature rating shall be 155 °F (68 °C).

(c) The maximum distance from the ceiling to the centerline of the main run of pipe shall be 7 1/2" (191mm).

(d) The maximum distance from the centerline of a sprinkler head to a hanger shall be 3" (76mm).

(4) Hangers and Supports

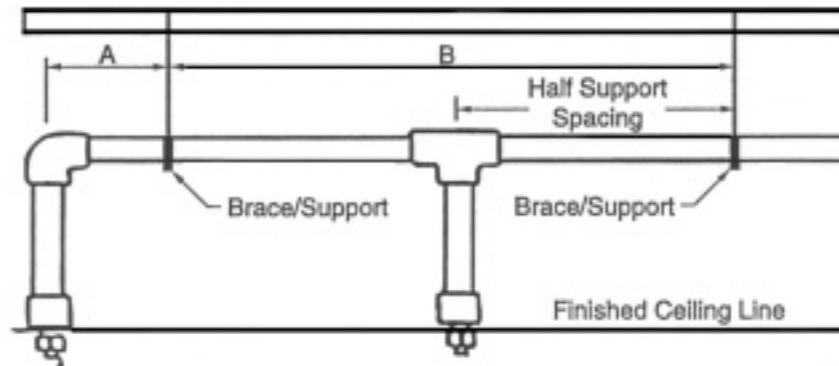
The pipe hangers shall comply with all the requirements of RS 17-2, 17-2A and 17-2B. The hanger shall not have rough or sharp edges which come in contact with the pipe. Hangers shall not bind the pipe from movement.

(i) The support spacing shall be as shown on the following tables and diagram:

Nominal Pipe Size		Maximum Support Spacing	
Inches	(millimeters)	Feet	(meters)
¾	(19)	5 ½	(1.675)
1	(25)	6	(1.830)
1 ¼	(32)	6 ½	(1.980)
1 ½	(38)	7	(2.135)
2	(51)	8	(2.440)
2 ½	(64)	9	(2.745)
3	(76)	10	(3.050)

Nominal Pipe Size (In)	Less than 100 psi (689kPa)	More than 100 psi (689kPa)
¾" (19mm)	9" (229mm)	6" (152mm)
1" (25mm)	12" (305mm)	9" (229mm)
1 ¼" (32mm)	16" (406mm)	12" (305mm)
1 ½"-3" (38-76mm)	24" (610mm)	12" (305mm)

Nominal Pipe Size (In)	Less than 100 psi (689kPa)	More than 100 psi (689kPa)
¾" (19mm)	4' (1.220m)	3' (0.915m)
1" (25mm)	5' (1.525m)	4' (1.220m)
1 ¼" (32mm)	6' (1.830m)	5' (1.525m)
1 ½"-3" (38-76mm)	7' (2.135m)	7' (2.135m)



(ii) Vertical pipes shall be supported at each floor level or at 10 feet (3.050m) intervals whichever is less.

(iii) Other methods of pipe support shall be as recommended by the manufacturer.

(5) Pipe Cutting

Pipes shall be cut with a wheel-type plastic-tubing cutter. If any indication of damage or cracking is evident, cut off at least 2" (51mm) beyond any visible crack. Burrs and filings can prevent contact between pipe and fittings during assembly, and must be removed from the outside and inside of the pipe. A slight bevel shall be placed at the end of the pipe to ease entry of the pipe into the socket.

(6) Pipe Joints

(i) Primer and cement application.

The pipe and fittings shall be clean and free of any moisture and debris. Primer and cement shall be applied to the joining surfaces using an applicator. Puddling of cement or primer on or within fitting and pipe must be avoided. When cementing in temperatures below 40 °F (4.4 °C) make certain cement has not gelled. Gelled cement must be discarded.

A bead of cement should be evident around the pipe and fitting juncture. If this bead is not continuous around the socket shoulder, it should be rejected and the joint must be cut out, discarded and begun again.

(ii) Set and Cure Time

The assembly must be allowed to set, without any stress on the joint, in accordance with manufacturer's recommendations, which may vary from 1 to 5 minutes depending upon the pipe size and temperature. Refer to manufacturer's recommendation for minimum cure times prior to pressure testing.

(7) Sprinkler Installation

Sprinklers shall be installed only after all pipes and fittings, including sprinkler head adapters, are solvent welded to the piping system and allowed to cure for a minimum of 30 minutes. Sprinkler head fittings should be visually inspected and probed with a wooden dowel to insure that the waterway and threads are clear of any excess cement. Only Teflon tape or equivalent approved by the Commissioner shall be used when installing the sprinkler heads. If a leak is detected on the sprinkler head drop when the system is pressure tested, the sprinkler head must be removed and the joint redone before reinstalling the head.

(8) Firestopping

Pipe penetration through fire rated construction shall be firestopped as per Section 27-343 of the Building Code

(e) Hydrostatic Pressure Testing

After the installation is completed and cured, the system shall be pressure tested as per Section 27-967 of the Building Code. Air or compressed gas must never be used for pressure testing.