

CHAPTER 3 - 2014CC_MC_Chapter3_General_Regulations.pdf

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CHAPTER 3

GENERAL REGULATIONS

SECTION MC 301 GENERAL

301.1 Scope. This chapter shall govern the approval and installation of all equipment and appliances that comprise parts of the building mechanical systems regulated by this code in accordance with Section 101.2.

301.2 Energy utilization. Heating, ventilating and air-conditioning systems of all structures shall be designed and installed for efficient utilization of energy in accordance with the *New York City Energy Conservation Code*.

301.3 Fuel gas appliances and equipment. The approval and installation of fuel gas distribution piping and equipment, fuel gas-fired appliances and fuel gas-fired appliance venting systems shall be in accordance with the *New York City Fuel Gas Code*.

301.4 Listed and labeled. Appliances regulated by this code shall be listed and labeled for the application in which they are installed.

Exception: Listing and labeling of equipment and appliances used for refrigeration shall be in accordance with Section 1101.2.

301.5 Testing of materials. Refer to Section 28-113 of the *Administrative Code*.

301.6 Label information. A permanent factory-applied name-plate(s) shall be affixed to appliances on which shall appear in legible lettering, the manufacturer's name or trademark, the model number, serial number and the seal or mark of the approved agency. A label shall also include the following:

1. Electrical equipment and appliances: Electrical rating in volts, amperes and motor phase; identification of individual electrical components in volts, amperes or watts, motor phase; Btu/h (W) output; and required clearances.
2. Absorption units: Hourly rating in Btu/h (W); minimum hourly rating for units having step or automatic modulating controls; type of fuel; type of refrigerant; cooling capacity in Btu/h (W); and required clearances.
3. Fuel-burning units: Hourly rating in Btu/h (W); type of fuel approved for use with the appliance; and required clearances.
4. Electric comfort heating appliances: Name and trade-mark of the manufacturer; the model number or equivalent; the electric rating in volts, ampacity and phase; Btu/h (W) output rating; individual marking for each electrical component in amperes or watts, volts and phase; required clearances from combustibles; and a seal indicating approval of the appliance by an approved agency.

301.7 Electrical. Electrical wiring, controls and connections to equipment and appliances regulated by this code shall be in accordance with the *New York City Electrical Code*.

301.8 Plumbing connections. Potable water supply and building drainage system connections to equipment and appliances regulated by this code shall be in accordance with the *New York City Plumbing Code*.

301.9 Fuel types. Fuel-fired appliances shall be designed for use with the type of fuel to which they will be connected and the altitude at which they are installed. Appliances that comprise parts of the building mechanical system shall not be converted for the usage of a different fuel, except where approved and converted in accordance with the manufacturer's instructions. The fuel input rate shall not be increased or decreased beyond the limit rating for the altitude at which the appliance is installed.

301.10 Vibration isolation. Where vibration isolation of equipment and appliances is employed, supplemental restraint shall be used to accomplish the support and restraint.

301.11 Repair. Defective material or parts shall be replaced or repaired in such a manner so as to preserve the original approval or listing.

301.12 Wind resistance. Mechanical equipment, appliances and supports that are exposed to wind shall be designed and installed to resist the wind pressures determined in accordance with the *New York City Building Code*.

301.13 Flood hazard. For structures located in areas of special flood hazard, and buildings that include Group I-2 occupancies that are hospitals located in shaded X-Zones, mechanical systems, equipment and appliances shall comply with Appendix G of the *New York City Building Code*.

301.14 Rodent proofing. Buildings or structures and the walls enclosing habitable or occupiable rooms and spaces in which persons live, sleep or work, or in which feed, food or foodstuffs are stored, prepared, processed, served or sold, shall be constructed to protect against the entrance of rodents in accordance with the *New York City Building Code*.

301.15 Seismic resistance. When earthquake loads are applicable in accordance with the *New York City Building Code*, mechanical system supports shall be designed and installed for the seismic forces in accordance with the *New York City Building Code*.

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SECTION MC 301

GENERAL

301.1 Scope.

This chapter shall govern the approval and installation of all equipment and appliances that comprise parts of the building mechanical systems regulated by this code in accordance with Section 101.2.

301.2 Energy utilization.

Heating, ventilating and air conditioning systems of all structures shall be designed and installed for efficient utilization of energy in accordance with the New York City Energy Conservation Code.

301.3 Fuel gas appliances and equipment.

The approval and installation of fuel gas distribution piping and equipment, fuel gas fired appliances and fuel gas

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fired appliance venting sys

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Exception:

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301.5 Testing of

materials.

Refer to Section

28

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113 of the

Administrative Code

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301.6 Label information.

A permanent factory

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applied name

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plate(s) shall be affixed to appliances on which shall appear in legible

lettering, the manufacturer's name or trade

mark, the model n

umber, serial number and the seal or mark of the approved agency. A

label shall also include the following:

1.

Electrical equipment and appliances: Electrical rating in volts, amperes and motor phase; identification of indi

vidual electrical

components in vol

ts, amperes or watts, motor phase; Btu/h (W) output; and required clearances.

2.

Absorption units: Hourly rating in Btu/h (W); minimum hourly rating for units having step or automatic modulat

ing controls;

type of fuel; type of refrigerant; cooling capacity i

n Btu/h (W); and required clearances.

3.

Fuel

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burning units: Hourly rating in Btu/h (W); type of fuel approved for use with the appliance; and required clearances.

4.

Electric comfort heating appliances: Name and trade

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mark of the manufacturer; the model number

or equivalent; the electric

rating in volts, ampacity and phase; Btu/h (W) output rating; individual marking for each electrical component in amperes or

watts, volts and phase; required clearances from combustibles; and a seal indicating approval of the ap

pliance by an approved

agency.

301.7 Electrical.

Electrical wiring, controls and connections to equipment and appliances regulated by this code shall be in

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301.8 Plumbing connections.

Potable water supply

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ing drainage system connections to equipment and appliances

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by this code shall be in accordance with the

New York

City Plumbing Code

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301.9 Fuel types.

Fuel

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different fuel, except where approved and converted in accordance with the manufacture

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be increased or decreased beyond the limit rating for the altitude at which the appliance is installed.

301.10 Vibration isolation.

Where vibration isolation of equipment and appliances is employed, supplement

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301.11 Repair.

Defective material or parts shall be replaced or repaired in such a manner so as to preserve the original approval or

listing.

301.12 Wind resistance.

Mechanical equipment,

appliances and supports that are exposed to wind shall be designed and installed to resist the wind pressures determined in accordance with the New York City Building Code

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301.13 Flood hazard.

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Group

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shall comply with Appendix G of the

New

York City Building

Code

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301.14 Rodent proofing.

Buildings or structures and the walls enclosing habitable or occupiable rooms and spaces in which persons live, sleep or work, or in which feed, food or foodstuffs are stored, prepared, processed, served or sold, shall be constructed to protect against the entrance of rodents in accordance with the New York City Building Code

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301.15 Seismic resistance.

When earthquake loads are applicable in accordance with the New York City Building Code

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system supports shall be designed and installed for the seismic forces in accordance with the New York City Building Code

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SECTION MC 302
PROTECTION OF STRUCTURE

302.1 Structural safety. The building or structure shall not be weakened by the installation of mechanical systems. Where floors, walls, ceilings or any other portion of the building or structure are required to be altered or replaced in the process of installing or repairing any system, the building or structure shall be left in a safe structural condition in accordance with the *New York City Building Code*.

302.2 Penetrations of floor/ceiling assemblies and fire-resistance-rated assemblies. Penetrations of floor/ceiling assemblies and assemblies required to have a fire-resistance rating shall be protected in accordance with the *New York City Building Code*.

302.3 Cutting, notching and boring in wood framing. The cutting, notching and boring of wood framing members shall comply with Sections 302.3.1 through 302.3.4.

302.3.1 Joist notching. Notches on the ends of joists shall not exceed one-fourth the joist depth. Holes bored in joists shall not be within 2 inches (51 mm) of the top or bottom of the joist, and the diameter of any such hole shall not exceed one-third the depth of the joist. Notches in the top or bottom of joists shall not exceed one-sixth the depth and shall not be located in the middle third of the span.

302.3.2 Stud cutting and notching. In exterior walls and bearing partitions, any wood stud is permitted to be cut or notched not to exceed 25 percent of its depth. Cutting or notching of studs not greater than 40 percent of their depth is permitted in nonbearing partitions supporting no loads other than the weight of the partition.

302.3.3 Bored holes. A hole not greater in diameter than 40 percent of the stud depth is permitted to be bored in any wood stud. Bored holes not greater than 60 percent of the depth of the stud are permitted in nonbearing partitions or in any wall where each bored stud is doubled, provided not more than two such successive doubled studs are so bored. In no case shall the edge of the bored hole be nearer than 0.625 inch (15.9 mm) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.

302.3.4 Engineered wood products. Cuts, notches and holes bored in trusses, structural composite veneer lumber, structural glue-laminated members and I-joists are prohibited except where permitted by the manufacturer's recommendations or where the effects of such alterations are specifically considered in the design of the member.

302.4 Alterations to trusses. Truss members and components shall not be cut, drilled, notched, spliced or otherwise altered in any way without written concurrence and approval of a registered design professional. Alterations resulting in the addition of loads to any member (e.g., HVAC equipment, water heaters) shall not be permitted without verification that the truss is capable of supporting such additional loading.

302.5 Cutting, notching and boring in steel framing. The cutting, notching and boring of steel framing members shall comply with Sections 302.5.1 through 302.5.3.

302.5.1 Cutting, notching and boring holes in structural steel framing. The cutting, notching and boring of holes in structural steel framing members shall be as prescribed by the registered design professional.

302.5.2 Cutting, notching and boring holes in cold-formed steel framing. Flanges and lips of load-bearing cold-formed steel framing members shall not be cut or notched. Holes in webs of load-bearing cold-formed steel framing members shall be permitted along the centerline of the web of the framing member and shall not exceed the dimensional limitations, penetration spacing or minimum hole edge distance as prescribed by the registered design professional. Cutting, notching and boring holes of steel floor/roof decking shall be as prescribed by the registered design professional.

302.5.3 Cutting, notching and boring holes in nonstructural cold-formed steel wall framing. Flanges and lips of nonstructural cold-formed steel wall studs shall not be cut or notched. Holes in webs of nonstructural cold-formed steel wall studs shall be permitted along the centerline of the web of the framing member, shall not exceed 1½ inches (38 mm) in width or 4 inches (102 mm) in length, and shall not be spaced less than 24 inches (610 mm) center to center from another hole or less than 10 inches (254 mm) from the bearing end.

SECTION MC 303
EQUIPMENT AND APPLIANCE LOCATION

303.1 General. Equipment and appliances shall be located as required by this section, specific requirements elsewhere in this code and the conditions of the equipment and appliance listing.

303.2 Hazardous locations. Appliances shall not be located in a hazardous location unless listed and approved for the specific installation.

303.3 Prohibited locations. Appliances shall not be located in sleeping rooms, bathrooms, toilet rooms, storage closets or surgical rooms, or in a space that opens only into such rooms or spaces, except where the installation complies with one of the following

SECTION MC 302

PROTECTION OF STRUCTURE

302.1 Structural safety.

The building or structure shall not be weakened by the installation of mechanical systems. Where floors,

walls, ceilings or any other portion of the build

ing or structure are required to be altered or replaced in the process of installing or

repairing any system, the building or structure shall be left in a safe structural condition in accordance with the

New York City

Building Code

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302.2 Penetrations of f

loor/ceiling assemblies and

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rated assemblies.

Penetrations of floor/ceiling assemblies and

assemblies required to have a fire

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resistance rating shall be protected in accordance with the

New York

City Building Code

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302.3 Cutting, notching a

nd boring in wood framing.

The cutting, notching and boring of wood framing members shall comply with Sections 302.3.1 through 302.3.4.

302.3.1 Joist notching.

Notches on the ends of joists shall not exceed one

-

fourth the joist depth. Holes bored in joists

shall not be

within 2 inches (51 mm) of the top or bottom of the joist, and the diameter of any such hole shall not exceed one

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third the depth of

the joist. Notches in the top or bottom of

joists shall not exceed one

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sixth the depth and shall not be located

in the middle third of

the span.

302.3.2 Stud cutting and notching.

In exterior walls and bearing partitions, any wood stud is permitted to be cut or notched not to

exceed 25 percent of its depth. Cutting or notching of studs not greater than 40 percent

of their depth is permitted in nonbearing

partitions supporting no loads other than the weight of the partition.

302.3.3 Bored holes.

A hole not greater in diameter than 40 percent of the stud depth is permitted to be bored in any wood stud.

Bored holes n

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bored stud is doubled, provided not more than two such successive doubled studs are so bored. In no case shall the edge of th

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as a cut or notch.

302.3.4 Engineered wood products.

Cuts, notches and holes bored in trusses,

structural composite

veneer lumber,

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permitted by the manufacturer's recommendations or where

the effects

of such alterations are specifically considered in the design of the member.

302.4 Alterations to trusses.

Truss me

mbers and components shall not be cut, drilled, notched, spliced or otherwise altered in any way without written concurrence and approval of a registered design professional. Alterations resulting in the addition of loads to any member (e.g., HVAC equipment, water heaters) shall not be permitted without verification that the truss is capable of supporting such additional loading.

302.5 Cutting, notching and boring in steel framing.

The cutting, notching and boring of steel framing members shall comply with

Sections 302.5.1 through 302.5.3.

302.5.1 Cutting, notching and boring holes in structural steel framing.

The cutting, notching and boring of holes in structural steel framing members shall be as prescribed by the registered design professional.

302.5.2

Cutting, notching and boring holes in cold

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formed steel framing.

Flanges and lips of load

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framing members shall not be cut or notched. Holes in webs of load

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bearing cold

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formed steel framing members shall be permitted

along the c

enterline of the web of the framing member and shall not exceed the dimensional limitations, penetration spacing or

minimum hole edge distance as prescribed by the registered design professional. Cutting, notching and boring holes of steel

floor/roof deck

ng shall be as prescribed by the registered design professional.

302.5.3 Cutting, notching and boring holes in

nonstructural cold

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formed steel wall framing.

Flanges and lips of nonstructural

cold

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formed steel wall studs shall not be cut or notched. Holes i

n webs of nonstructural cold

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formed steel wall studs shall be

permitted along the centerline of the web of the framing member, shall not exceed

1½

inches (38 mm) in width or 4 inches (102

mm) in length, and shall not be spaced less than 24 inches (610

mm)

center to center from another hole or less than 10 inches (254

mm) from the bearing end.

SECTION MC 303

EQUIPMENT AND APPLIANCE LOCATION

303.1 General.

Equipment and appliances shall be located as required by this section, specific requirements elsewhere i

n this code

and the conditions of the equipment and appliance listing.

303.2 Hazardous locations.

Appliances shall not be located in a hazardous location unless listed and approved for the specific

installation.

303.3 Prohibited locations.

Appliances shall

not be located in sleeping rooms, bathrooms, toilet rooms, storage closets or surgical

rooms, or in a space that opens only into such rooms or spaces, except where the installation complies with one of the follow

ing

exceptions:

Exceptions: This section shall not apply to the following appliances:

1. In rooms other than those used for sleeping purposes, direct-vent appliances that obtain all combustion air directly from the outdoors and are installed in accordance with the conditions of the listing and manufacturer's instructions.
2. In rooms other than those used for sleeping purposes, vented room heaters, wall furnaces, vented decorative appliances, vented gas fireplaces, vented gas fireplace heaters and decorative appliances for installation in vented solid fuel-burning fireplaces that are installed in rooms that meet the required volume criteria of Section 702.
3. Appliances installed in a dedicated enclosure in which all combustion air is taken directly from the outdoors, in accordance with Section 703. Access to such enclosure shall be through a solid door, weather-stripped in accordance with the exterior door air leakage requirements of the *New York City Energy Conservation Code* and equipped with an approved self-closing device.

303.4 Protection from physical damage. Appliances shall not be installed in a location where subject to physical damage, including vehicular impact, unless protected by approved barriers meeting the requirements of the *New York City Fire Code*.

303.5 Indoor locations. Fuel-fired furnaces, water heaters and boilers installed in closets and alcoves shall be listed for such installation. For purposes of this section, a closet or alcove shall be defined as a room or space having a volume less than 12 times the total volume of fuel-fired appliances other than boilers and less than 16 times the total volume of boilers. Room volume shall be computed using the gross floor area and the actual ceiling height up to a maximum computation height of 8 feet (2438 mm).

303.6 Outdoor locations. Appliances installed in other than indoor locations shall be listed and labeled for outdoor installation.

303.7 Pit locations. Appliances installed in pits or excavations shall not come in direct contact with the surrounding soil. The sides of the pit or excavation shall be held back a minimum of 12 inches (305 mm) from the appliance. Where the depth exceeds 12 inches (305 mm) below adjoining grade, the walls of the pit or excavation shall be lined with concrete or masonry. Such concrete or masonry shall extend a minimum of 4 inches (102 mm) above adjoining grade and shall have sufficient lateral load-bearing capacity to resist collapse. The appliance shall be protected from flooding.

303.8 Elevator shafts. Mechanical systems shall not be located in an elevator shaft.

SECTION MC 304 INSTALLATION

304.1 General. Equipment and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of the listing, the manufacturer's installation instructions and this code. Manufacturer's installation instructions shall be available on the job site at the time of inspection.

304.2 Conflicts. Where conflicts between this code and the conditions of listing or the manufacturer's installation instructions occur, the provisions of this code shall apply.

Exception: Where a code provision is less restrictive than the conditions of the listing of the equipment or appliance or the manufacturer's installation instructions, the conditions of the listing and the manufacturer's installation instructions shall apply.

304.3 Elevation of ignition source. Equipment and appliances having an ignition source and located in hazardous locations and public garages, private garages, repair garages, automotive motor fuel-dispensing facilities and parking garages shall be elevated such that the source of ignition is not less than 18 inches (457 mm) above the floor surface on which the equipment or appliance rests. For the purpose of this section, rooms or spaces that are not part of the living space of a dwelling unit and that communicate directly with a private garage through openings shall be considered to be part of the private garage.

304.3.1 Parking garages. Connection of a parking garage with any room in which there is a fuel-fired appliance shall be by means of a vestibule providing a two-doorway separation, except that a single door is permitted where the sources of ignition in the appliance are elevated in accordance with Section 304.3.

Exception: This section shall not apply to appliance installations complying with Section 304.6.

304.4 Prohibited equipment and appliance location. Equipment and appliances having an ignition source shall not be installed in Group H occupancies or control areas where open use, handling or dispensing of combustible, flammable or explosive materials occurs.

304.5 Hydrogen generating and refueling operations. Hydrogen generating and refueling operations shall be prohibited except as permitted by the Commissioner of the Fire Department.

304.6 Public garages. Appliances located in public garages, motor fueling-dispensing facilities, repair garages or other areas frequented by motor vehicles, shall be installed a minimum of 8 feet (2438 mm) above the floor. Where motor vehicles are capable of

exceptions:

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This section sh

all not apply to the following

appliances:

1.

In rooms other than those used for sleeping purposes, direct

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vent

appliances that obtain all combustion air directly from the

outdoors

and are installed in accordance with the conditions of the listing and manufac

turer's instructions

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2.

In rooms other than those used for sleeping purposes, vented room heaters, wall furnaces, vented decorative appliances,

vented gas fireplaces, vented gas fireplace heaters and decorative appliances for installation in vented solid fue

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burning

fireplaces that are installed in rooms that meet the required volume criteria of Section 702.

3.

Appliances installed in a dedicated enclosure in which all combustion air is taken directly from the outdoors, in accordance

with Section 703. Access t

o such enclosure shall be through a solid door, weather

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stripped in accordance with the exterior

door air leakage requirements of the

New York City Energy Conservation Code

and

equipped

with an approved self

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closing

device.

303.4 Protection from

physical

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amage.

Appliances shall not be installed in a location where subject to

physical

damage

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vehicular impact,

unless protected by

approved

barriers

meeting the requirements of the

New York City Fire Code

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303.5 Indoor locations.

Fuel

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using the gross floor area and the actual ceil

ing height up to a maximum computation height of 8 feet (2438 mm).

303.6 Outdoor locations.

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installed in other than indoor locations shall be listed and labeled for outdoor installa
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303.7 Pit locations.

Appliances installed in pits or excavations shall not come in direct contact with the surrounding soil. The sides of

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shall be held back a minimum of 12 inches (305 mm) from the appliance. Where the depth exceeds 12 inches

(305 mm) below adjoining grade, the walls of the pit or excavation shall be lined with concrete or masonry. Such concrete or

masonry

shall extend a mi

nimum of 4 inches (102 mm) above adjoining grade and shall have sufficient lat

eral load

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bearing capacity to resist

collapse. The appliance

shall be protected from flooding.

303.8 Elevator shafts.

Mechanical systems shall not be

located in an elevator shaf

t.

SECTION MC 304

INSTALLATION

304.1 General.

Equipment and appliances shall be installed as required by the terms of their approval, in accordance with the

conditions of the listing, the manufacturer's installation instructions and this code.

Manufacturer

's installation instruc

tions shall be
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job site at the time of inspection.

304.2 Conflicts.

Where conflicts between this code and the conditions of listing or the manufacturer's installation instructions occur,

the provisions of this code
shall apply.

Exception:

Where a code provision is less restrictive than the conditions of the listing of the equipment or appliance or the

manufacturer's installation instructions, the conditions of the listing and the manufacturer's installation instructions shall apply.

304.3 Elevation of ignition source.

Equipment and appliances having an ignition source and located in hazardous locations and public garages, private garages, repair garages, automotive motor
fuel

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dispensing facilities and parking garages

shall be elevated such

that the source of ignition is not less than 18 inches (457 mm) above the floor surface on which the equipment or appliance rests. For

the purpose of this section, rooms or spaces that are not part of the living space of a dwelling

shall be elevated such that the source of ignition is not less than 18 inches (457 mm) above the floor surface on which the equipment or appliance rests. For the purpose of this section, rooms or spaces that are not part of the living space of a dwelling

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a private garage through openings shall be considered to be part of the private garage.

304.3.1 Parking garages.

Connection of a parking garage with any room in which there is a fuel

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fired appliance shall be by mea

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of a vestibule providing a two

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doorway separation, except that a single door is permitted where the sources of ignition in the

appliance are elevated in accordance with Section 304.3.

Exception:

This section shall not apply to appliance installations co

mplying with Section 304.6.

304.4 Prohibited equipment and appliance location.

Equipment and appliances having an ignition source shall not be installed in

Group H occupancies or control areas where open use, handling or dispensing of combustible, flammabl

e or explosive materials

occurs.

304.

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Hydrogen generating and refueling operations.

Hydrogen

generating

and refueling operations shall be pro

hibited except as

permitted by the Commissioner of the Fire Department.

304.

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Public garages.

Appliances located

in public garages,

motor fueling

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dispensing

facilities, repair garages or other areas

frequented by motor vehicles, shall be installed a minimum of 8 feet (2438 mm) above the floor. Where motor vehicles are capa

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