CHAPTER 3
GENERAL REGULATIONS

User note:

‘ ***About this chapter:*** *Chapter 3 contains broadly applicable requirements that are necessarily placed in an overarching “general” chapter. These general requirements would not be suitably located in any other chapter that is specific to unique subject matter. General requirements include those related to installation, access, location, testing, structural and clearances.*

SECTION 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 *Jamaica Energy Conservation Code*.

301.3 Identification. Each length of pipe and tubing and each pipe fitting utilized in a mechanical system shall bear the identification of the manufacturer, its diameter in mm and material type.

301.4 Plastic pipe, fittings and components. Plastic pipe, fittings and components shall be *third-party certified* as conforming to NSF 14 or a BSJ-*approved* or recognised national or international standard(s) addressing the same risks.

301.5 Third-party testing and certification. Piping, tubing and fittings shall comply with the applicable referenced standards, specifications and performance criteria of this code and shall be identified in accordance with Section 301.3. Piping, tubing and fittings shall either be tested by the BSJ or a BSJ-recognised third-party testing agency or certified by the National Certification Body of Jamaica (NCBJ) or an NCBJ recognised third-party certification agency.

301.6 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 *Jamaica Fuel Gas Code*.

301.7 Listed and labelled. Appliances regulated by this code shall be *listed* and *labelled* for the application in which they are installed and used, unless otherwise *approved* in accordance with Section 105.

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

301.8 Labelling. Labelling shall be in accordance with the procedures set forth in Sections 301.8.1 through 301.8.2.3.

301.8.1 Testing. The Bureau of Standards (BSJ) or a BSJ-recognised agency shall test a representative sample of the mechanical *equipment* and appliances being *labelled* to the relevant standard or standards. The BSJ or the BSJ-recognised agency shall maintain a record of all of the tests performed. The record shall provide sufficient detail to verify compliance with the test standard.

301.8.2 Inspection and identification. The BSJ or any BSJ-recognised testing agency shall periodically perform an inspection, which shall be in-plant if necessary, of the mechanical *equipment* and appliances to be *labelled*. The inspection shall verify that the *labelled* mechanical *equipment* and appliances are representative of the mechanical *equipment* and appliances tested.

301.8.2.1 Independent. The BSJ or any BSJ-recognised testing agency shall be objective and competent. To confirm its objectivity, the BSJ or its recognised agency shall disclose all possible conflicts of interest.

301.8.2.2 Equipment. The BSJ or any BSJ-recognised testing agency shall have adequate *equipment* to perform all required tests. The *equipment* shall be periodically calibrated to ensure that all measurements made are traceable to the Systeme Internationale (SI).

301.8.2.3 Personnel. The BSJ or any BSJ-recognised testing agency shall employ only experienced personnel educated in conducting, supervising and evaluating tests designed to generate comparative testing and inspection data that can reliably verify the truth of label data on mechanical equipment and appliances.

301.9 Label information. A permanent factory-applied nameplate(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. The lettering for single language labels shall be English but multilingual lettering shall be accepted if such labels include English. A label shall 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; wattage (Btu/h) output; and required clearances.
2. Absorption units: Hourly rating in Watts (Btu/h); minimum hourly rating for units having step or automatic modulating controls; type of fuel; type of refrigerant; cooling capacity in W (Btu/h); and required clearances.
3. Fuel-burning units: Hourly rating in Watts (Btu/h); type of fuel *approved* for use with the *appliance*; and required clearances.

4. Electric comfort heating appliances: electric rating in volts, amperes and phase; wattage in W (Btu/h) output rating; individual marking for each electrical component in amperes or watts, volts and phase; and required clearances from combustibles.

301.10 Electrical. Electrical wiring, controls and connections to *equipment* and appliances regulated by this code shall be in accordance with the *Jamaica Electrical Code*.

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

301.12 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* by the *building official* 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.

301.13 Vibration isolation. Where vibration isolation of *equipment* and appliances is employed, an *approved* means of supplemental restraint shall be used to accomplish the support and restraint.

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

301.15 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 *Jamaica Building Code*.

301.16 Flood hazard. For structures located in flood hazard areas, mechanical systems, equipment and appliances shall be located at or above the flood elevation required by Section 1612 of the *Jamaica Building Code* for utilities and attendant equipment.

Exception: Mechanical systems, equipment and appliances are permitted to be located below the flood elevation required by Section 1612 of the of the *Jamaica Building Code* for utilities and attendant equipment provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding up to such elevation.

301.16.1 Coastal high-hazard areas and coastal A zones. In coastal high-hazard areas and coastal A zones, mechanical systems and *equipment* shall not be mounted on or penetrate walls intended to break away under flood loads.

301.17 Rodentproofing. 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 *Jamaica Building Code*.

301.18 Seismic resistance. Where earthquake loads are applicable in accordance with the *Jamaica Building Code*, mechanical system supports shall be designed and installed to resist such seismic forces in accordance with the *Jamaica Building Code*.

SECTION 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 *Jamaica 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 Chapter 7 of the *Jamaica Building Code*.

302.3 Cutting, notching and boring in wood framing. Where permitted by the *Jamaica Building Code* or the *Jamaica Small Building/Residential Code*, 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 50 mm (2 inches) 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, a wood stud shall not be cut or notched in excess of 25 percent of its depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth.

302.3.3 Bored holes. The diameter of bored holes in loadbearing partition wood studs shall not exceed 40 percent of the stud depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of the bored hole shall be not closer than 16 mm ($^5/_8$ inch) to the edge of the stud. Bored holes shall be not 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 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 by a *registered design building professional*.

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 building professional*. Alterations resulting in the addition of loads to any member, such as HVAC *equipment* and water heaters, shall not be permitted without verification that the truss is capable of supporting such additional loading in both static and dynamic conditions.

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 building professional*.

302.5.2 Cutting, notching and boring holes in cold-formed steel framing. Flanges and lips of loadbearing cold-formed steel framing members shall not be cut or notched. Holes in webs of loadbearing cold-formed steel framing members shall be permitted along the centreline 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 building professional*. Cutting, notching and boring holes of steel floor/roof decking shall be as prescribed by the *registered design building 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 centreline of the web of the framing member, shall not exceed 38 mm ($1^1/_2$ inches) in width or 100 mm (4 inches) in length, and shall not be spaced less than 610 mm (24 inches) centre to centre from another hole or less than 255 mm (10 inches) from the bearing end.

SECTION 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 that specific environment.

303.3 Prohibited locations. Fuel-fired appliances shall not be located in, or obtain *combustion* air from, any of the following rooms or spaces:

1. Sleeping rooms.
2. Bathrooms.
3. Toilet rooms.
4. Storage closets.
5. Surgical rooms.

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

1. *Direct-vent* appliances that obtain all *combustion* air directly from the outdoors.
2. Solid fuel-fired appliances, provided that combustion air is provided in accordance with the manufacturers' instructions.
3. Appliances installed in a dedicated enclosure in which all *combustion* air is taken directly from the outdoors, in accordance with Chapter 7. *Access* to such enclosure shall be through a solid door, weather-stripped in accordance with the exterior door air leakage requirements of the *Jamaica Energy Conservation Code* and equipped with an *approved* self-closing device.

303.4 Protection from damage. Appliances shall not be installed in a location where subject to mechanical damage unless protected by *approved* barriers.

303.5 Indoor locations. Furnaces and boilers installed in closets and alcoves shall be listed for such installation.

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

303.7 Pit locations. Appliances installed in pits or excavations shall not come in direct contact with the surrounding soil and shall be installed not less than 76 mm (3 inches) above the pit floor. The sides of the pit or excavation if not made in rocky or firm limestone soil shall be vertically sloped outward and consolidated and held back not less than 305 mm (12 inches) from the *appliance*. Where the depth exceeds 305 mm (12 inches) below adjoining grade, the walls of the pit or excavation shall be lined with concrete or masonry. Such concrete or masonry shall extend not less than 100 mm (4 inches) above adjoining grade and shall have sufficient lateral loadbearing capacity to resist collapse. Excavation on the control side of the appliance shall extend not less than 760 mm (30 inches) horizontally. The *appliance* shall be protected from flooding in an *approved* manner.

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

303.9 Fireplaces in Group I-2, Condition 2 occupancies. Fuel-burning appliances and fireplaces in Group I-2, Condition 2 occupancies shall be in accordance with Section 901.4.

SECTION 304
INSTALLATION

304.1 General. *Equipment* and appliances shall be installed as required by the terms of their installation permit, 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 the *building official's* 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 455 mm (18 inches) 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.

Exception: Elevation of the ignition source is not required for appliances that are listed as flammable vapour ignition resistant.

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 appliances shall be installed and located in accordance with their listing and the manufacturer's instructions. Ventilation shall be required in accordance with Section 304.5.1, 304.5.2 or 304.5.3 in public garages, private garages, repair garages, automotive motor fuel-dispensing facilities and parking garages that contain hydrogen-generating appliances or refueling systems. 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.

304.5.1 Natural ventilation. Indoor locations intended for hydrogen-generating or refueling operations shall be limited to a maximum floor area of 79 m^2 (850 square feet) and shall communicate with the outdoors in accordance with Sections 304.5.1.1 and 304.5.1.2. The maximum rated output capacity of hydrogen-generating appliances shall not exceed 0.00189 m^3/s (4 standard cubic feet per minute) of hydrogen for each 23 m^2 (250 square feet) of floor area in such spaces. The minimum cross-sectional dimension of air openings shall be 76 mm (3 inches). Where ducts are used, they shall be of the same cross-sectional area as the free area of the openings to which they connect. In such locations, *equipment* and appliances having an *ignition source* shall be located such that the source of ignition is not within 305 mm (12 inches) of the ceiling.

304.5.1.1 Two openings. Two permanent openings shall be provided within the garage. The upper opening shall be located entirely within 305 mm (12 inches) of the ceiling of the garage. The lower opening shall be located entirely within 305 mm (12 inches) of the floor of the garage. Both openings shall be provided in the same exterior wall. The openings shall communicate directly with the outdoors and shall have a minimum free area of 1 $m^2/610$ m^3 ($^1/_2$ square foot per 1,000 cubic feet) of garage volume.

304.5.1.2 Louvers and grilles. In calculating free area required by Section 304.5.1, the required size of openings shall be based on the net free area of each opening. If the free area through a design of louver or grille is known, it shall be used in calculating the size opening required to provide the free area specified. If the design and free area are not known, it shall be assumed that wood louvers will have 25-percent free area and metal louvers and grilles will have 75-percent free area. Louvers and grilles shall be fixed in the open position.

304.5.2 Mechanical ventilation. Indoor locations intended for hydrogen-generating or refueling operations shall be ventilated in accordance with Section 502.16. In such locations, *equipment* and appliances having an *ignition source* shall be located such that the source of ignition is below the mechanical ventilation outlet(s).

304.5.3 Specially engineered installations. As an alternative to the provisions of Sections 304.5.1 and 304.5.2, the necessary supply of air for ventilation and dilution of flammable gases shall be provided by an *approved* engineered system.

304.6 Public garages. Appliances shall not be located in public garages, motor fueling-dispensing facilities, repair garages or other areas frequented by motor vehicles unless they perform a function entirely beneficial to these areas. All such qualified appliances shall be installed not less than 2,400 mm (8 feet) above the floor. Where motor vehicles are capable of passing under an *appliance*, the *appliance* shall be installed at the clearances required by the *appliance* manufacturer and not less than 305 mm (1 foot) higher than the tallest vehicle garage door opening.

Exception: The requirements of this section shall not apply where the appliances are protected from motor vehicle impact and installed in accordance with Section 304.3 and NFPA 30A.

304.7 Private garages. Appliances shall not be located in private garages and carports unless they perform a function entirely beneficial to these areas. All such qualified appliances located in private garages and carports shall be installed with a minimum clearance of 1,830 mm (6 feet) above the floor.

Exception: The requirements of this section shall not apply where the appliances are protected from motor vehicle impact and installed in accordance with Section 304.3.

304.8 Construction and protection. Boiler rooms and furnace rooms shall be protected as required by the *Jamaica Building Code.*

304.9 Clearances to combustible construction. Heat-producing *equipment* and *appliances* shall be installed to maintain the required *clearances* to combustible construction as

specified in the listing and manufacturer's instructions. Such clearances shall be reduced only in accordance with Section 308. *Clearances* to combustibles shall include such considerations as door swing, drawer pull, overhead projections or shelving and window swing, shutters, coverings and drapes. Devices such as doorstops or limits, closers, drapery ties or guards shall not be used to provide the required *clearances*.

304.10 Clearances from grade and roof. Equipment and *appliances* installed at grade level shall be supported on a level concrete slab or other *approved* material extending not less than 100 mm (4 inches) above the highest adjoining grade point or shall be suspended not less than 150 mm (6 inches) above adjoining grade. Such support shall be in accordance with the manufacturer's installation instructions.

Where the equipment or appliances is to be mounted on the roof of a building, the registered building professional shall ensure that the roof is structurally capable of accommodating the static loads of the equipment, appliances and mounting plinth plus the dynamic loads of the equipment and appliances. Equipment and appliances installed on concrete roofs shall be supported on a flat concrete plinth or other approved base material. The plinth shall extend not less than 76 mm (3 inches) above roof level and at least 150 mm (6 inches) larger than the outside perimeter of the equipment base. The plinth shall be bonded to the roof concrete mass by removing all surface finish material, hacking up the exposed roof concrete mass and painting on a concrete bonding agent just before casting the plinth. Equipment hold-down J-bolts may be cast in the plinth or expansion bolts may be used as an alternative. The equipment plinth shall be constructed so it does not prevent the roof drains from operating efficiently and effectively in removing storm water from the roof. The entire equipment support shall be in accordance with the manufacturer's installation instructions and shall keep the equipment or appliance firmly in place throughout all likely natural hazards.

304.11 Guards. Guards shall be provided where various components that require service and roof hatch openings are located within 3,050 mm (10 feet) of a roof edge or open side of a walking surface and such edge or open side is located more than 760 mm (30 inches) above the floor, roof, or grade below. The guard shall extend not less than 760 mm (30 inches) beyond each end of components that require service. The top of the guard shall be located not less than 1,065 mm (42 inches) above the elevated surface adjacent to the guard. The guard shall be constructed so as to prevent the passage of a 534 mm (21-inch-diameter) sphere and shall comply with the loading requirements for guards specified in the *Jamaica Building Code*.

Exception: Guards are not required where fall arrest/ restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.

304.12 Area served. Appliances serving different areas of a building other than where they are installed shall be permanently marked in an *approved* manner that uniquely identifies the *appliance* and the area it serves.

SECTION 305
PIPING SUPPORT

305.1 General. All mechanical system piping that is run on-surfaced or off-surfaced or embedded in walls, ceilings, floors or attics shall be supported in accordance with this section.

305.2 Materials. Pipe hangers and supports shall have sufficient strength to withstand all anticipated static and specified dynamic loading conditions associated with the intended use. Pipe hangers and supports that are in direct contact with piping shall be of *approved* materials that are compatible with the piping and that will not promote galvanic action.

305.3 Structural attachment. Pipe hangers and anchors shall be securely fastened to the building construction in an *approved* manner so they remain firmly in place under all piping conveyance conditions of static or dynamic contents.

305.4 Interval of support. Piping shall be supported at distances not exceeding the spacing specified in Table 305.4, or in accordance with ANSI/MSS SP-58. In general mechanical system piping interval of supports shall vary according to the type of pipe being supported and the structural base to which the pipe support is attached (concrete, wood or drywall). Mechanical piping support shall also depend on whether the piping is run off-surfaced, on-surfaced or within walls or ceilings. Mechanical system piping support shall also depend on the direction in which the pipe runs with the horizontal direction requiring much more support than the vertical. Subsections 305.4.1 to 305.4.3. outline requirements for mechanical piping support for off-, on- and in-wall positions.

305.4.1 Supports for off-surfaced mechanical systems piping. Off-surfaced mechanical systems piping supports may be installed on walls, ceilings or floors in service equipment rooms; storerooms; factories; agricultural sorting, packaging and storage areas; as well as any other building areas where aesthetics, installation possibility and desirability do not rule out its construction. Mechanical systems piping supports installed in the hanging, cantilevered or floor-mounted configuration shall be firmly anchored preferably to a building structural member but where building structure anchorage is unavailable, one shall be installed exclusively for the anchorage, or another sturdy building element shall be used. Mechanical systems piping hangers and supports shall be constructed to fully accommodate the static and dynamic loads imposed by the piping system under conveyance conditions. Mechanical systems piping supports shall be constructed to be located at equidistant spacing in accordance with Table 305.4 and to keep the pipes in horizontal plumb when they run horizontally and in vertical plumb when they run vertically, except in circumstances where other requirements, e.g. drainage, negates the plumb condition. Every off-surfaced mechanical systems pipe shall be anchored firmly to each support with an approved metallic strap or other appropriate restraining element that will resist the pipe propensity to move under various conveyance conditions. Notching and boring of floor, wall, or roof/ceiling structural members to accommodate piping hangers and supports shall not weaken them to the point where they are unable to fulfil their structural function. Notching and boring shall therefore strictly conform to the requirements of Chapters 5, 6 and 8 of the *Jamaica Small Building/Residential Code.*

TABLE 305.4
PIPING SUPPORT SPACING[a]

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (mm)	MAXIMUM VERTICAL SPACING (mm)
ABS pipe	1,220	3,050[c]
Aluminum pipe and tubing	3,050	4,575
Cast-iron pipe[b]	1,525	4,575
Copper or copper-alloy pipe	3,660	3,050
Copper or copper-alloy tubing	2,440	3,050
CPVC pipe or tubing, 25 mm and smaller	915	3,050[c]
CPVC pipe or tubing, 32 mm and larger	1,220	3,050[c]
PB pipe or tubing	813	1,220
PE-RT 25 mm and smaller	813	3,050[c]
PE-RT 32 mmand larger	1,220	3,050[c]
PEX tubing 25 mm and smaller	813	3,050[c]
PEX tubing 32 mm and larger	1,220	3,050[c]
Polypropylene (PP) pipe or tubing, 25 mm and smaller	813	3,050[c]
Polypropylene (PP) pipe or tubing, 32 mm and larger	1,220	3,050[c]
PVC pipe	1,220	3,050[c]
Steel tubing	2,440	3,050
Steel pipe	3,660	4,575

For Inch Pound Units:1 mm = 0.03937 inch, 1 mm = 0.00328 foot.

a. See Section 301.18.

b. The maximum horizontal spacing of cast-iron pipe hangers shall be increased to 3,050 mm (10 feet) where 3,050 mm-lengths (10-foot lengths) of pipe are installed.

c. Mid-storey guide.

305.4.2 Supports for on-surfaced mechanical systems piping on concrete, wood, or drywall surfaces. On-surfaced mechanical piping systems may be installed on walls, ceilings, floors, or attics where it is more desirable or unavoidable. On-surfaced piping systems may be installed on concrete, wood, or drywall surfaces and shall be supported at equidistant points not exceeding that specified in Table 305.4. The supports that anchor each pipe to the building surface shall be firm and capable of bearing the static and dynamic forces imposed by the piping system under conveyance conditions. On-surfaced piping shall be installed in vertical and horizontal plumb and disguised as best as possible by using such locations as wall to floor, wall to ceiling and wall to wall intersections and the shortest vertical and horizontal runs. The registered design mechanical engineer for an on-surfaced mechanical system piping shall procure a written clearance from the registered design structural engineer for the static and dynamic loads to be imposed on the building structural system by the mechanical system piping. The written clearance for the designed on-surfaced mechanical systems piping shall be requested by the *building official* as one of the conditions for final approval of the mechanical works.

305.4.3 Supports for mechanical systems piping embedded in concrete or wood or drywall ceilings, walls, floors or attics. Mechanical systems piping may be installed in walls, ceilings, floors, or attics whenever possible and desirable. Mechanical systems piping installed in poured-in-place concrete walls or ground slabs or suspended slabs shall be supported by the mass concrete which shall be poured after the pipe has been satisfactorily installed. Mechanical systems piping installed in masonry walls shall be supported by filling the masonry cavities in which the pipe runs with concrete. Mechanical systems piping installed in wood or drywalls shall be supported by the structural elements in these walls either by attachment or penetration or both. Where pipes require support but there is no accommodating structural elements, supplementary structural elements shall be installed to provide the support for these pipes. In no case shall a pipe be unrestrained by a structural element if the distance between two consecutive supports exceeds 50 percent of the spacing outlined in Table 305.4.

Attachment and penetration supporting points shall be located as needed to restrain the mechanical systems pipes and prevent them from moving during conveyance conditions. Notching and boring of wooden or drywall floor, wall, or roof/ceiling structural members to accommodate pipe restraints by attachment or penetration shall not weaken these members to the point where they are unable to fulfill their structural function. Notching and boring shall therefore strictly conform to the requirements of Chapters 5, 6 and 8 of the *Jamaica Small Building/Residential Code*.

305.5 Protection against physical damage. In concealed locations where piping, other than cast-iron or steel, is installed through holes or notches in studs, joists, rafters or similar members less than 38 mm ($1^1/_2$ inches) from the nearest edge of the member, the pipe shall be protected by shield plates. Protective steel shield plates having a minimum thickness of 1.463 mm (0.0575 inch) (No. 16 gage) shall cover the area of the pipe where the member is notched or bored, and shall extend not less than 51 mm (2 inches) above sole plates and below top plates.

SECTION 306
ACCESS AND SERVICE SPACE

306.1 Access. Appliances, controls devices, heat exchangers and HVAC system components that utilize energy shall be accessible for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, venting systems or any other piping or ducts not connected to the *appliance* being inspected, serviced, repaired or replaced. A level working space not less than 760 mm deep by 760 mm wide (30 inches deep and 30 inches wide) shall be provided in front of the control side to service an *appliance*.

306.2 Appliances in rooms. Rooms containing multiple appliances shall be provided with a door or at least one openable window directly to the outdoors and an unobstructed passageway measuring not less than 915 mm (36 inches)