

CHAPTER 3 GENERAL REGULATIONS

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.

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 Chapter 13 of the *Florida Building Code, Building*.

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 *Florida Building Code, Fuel Gas*.

301.4 Listed and labeled. All appliances regulated by this code shall be listed and labeled, unless otherwise approved in accordance with Sections 301.4.1 through 301.4.4.

301.4.1 Modifications. Whenever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases, provided the code official shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, life and fire safety requirements. The details of action granting modifications shall be recorded and entered in the files of the mechanical inspection department.

301.4.2 Alternative materials, methods, equipment and appliances. The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material or method of construction shall be approved where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

301.4.3 Required Testing. Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate

claims for alternative materials or methods, the code official shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction.

301.4.3.1 Test methods. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the code official shall approve the testing procedures.

301.4.3.2 Testing agency. All tests shall be performed by an approved agency.

301.4.3.3 Test reports. Reports of tests shall be retained by the code official for the period required for retention of public records.

301.4.4 Materials, equipment and appliance reuse. Materials, equipment, appliances and devices shall not be reused unless such elements have been reconditioned, tested and placed in good and proper working condition and approved.

301.5 Labeling. Labeling shall be in accordance with the procedures set forth in Sections 301.5.1 through 301.5.2.3.

301.5.1 Testing. An approved agency shall test a representative sample of the mechanical equipment and appliances being labeled to the relevant standard or standards. The approved agency shall maintain a record of all of the tests performed. The record shall provide sufficient detail to verify compliance with the test standard.

301.5.2 Inspection and identification. The approved agency shall periodically perform an inspection, which shall be in-plant if necessary, of the mechanical equipment and appliances to be labeled. The inspection shall verify that the labeled mechanical equipment and appliances are representative of the mechanical equipment and appliances tested.

301.5.2.1 Independent. The agency to be approved shall be objective and competent. To confirm its objectivity, the agency shall disclose all possible conflicts of interest.

301.5.2.2 Equipment. An approved agency shall have adequate equipment to perform all required tests. The equipment shall be periodically calibrated.

301.5.2.3 Personnel. An approved agency shall employ experienced personnel educated in conducting, supervising and evaluating tests.

301.6 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. 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 trademark 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 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 enforcement of a code provision would violate the conditions of the listing of the equipment or appliance, the conditions of the listing and the manufacturer's installation instructions shall apply.

301.8 Electrical. Electrical wiring, controls and connections to equipment and appliances regulated by this code shall be in accordance with Chapter 27 of the *Florida Building Code, Building*.

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

301.10 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.

301.11 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.

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

301.13 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 *Florida Building Code, Building*.

301.14 Flood hazard. For structures located in a flood-hazard zone or a high-hazard zone, mechanical systems shall be either placed above the base flood elevation or protected so as to prevent water from entering or accumulating within the equipment, appliances, ducts or plenum space during floods up to the base flood elevation.

301.15 NFPA Standards. Unless otherwise specified in this code, air conditioning equipment shall comply with the following standards:

1. NFPA 90A (Standard for the Installation of Air Conditioning and Ventilating Systems)
2. NFPA 90B (Standard for the Installation of Warm Air Heating and Air Conditioning Systems)

SECTION 302 PROTECTION OF STRUCTURE

302.1 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 *Florida Building Code, Building*.

302.2 Cutting, notching and boring holes. Notches on the ends of solid wood joists shall not exceed one-fourth of the depth. Holes bored for pipes or cable shall not be within 2 inches (51 mm) of the top or bottom of the solid wood joist, and the diameter of any such hole shall not exceed one-third of the depth of the joist. Notches for pipes in the top or bottom of solid wood joists shall not exceed one-sixth of the depth and shall not be located in the middle one-third of the span.

302.3 Notching and cutting of wood studs. In exterior walls and bearing partitions, wood studs shall not be cut or notched to a depth exceeding 25 percent of its depth. Wood studs shall not be cut or notched to a depth exceeding 40 percent of the

depth of the stud in nonload-bearing partitions supporting no loads other than the weight of the partition.

302.3.1 Bored holes. The diameter of a bored hole shall not exceed 40 percent of the stud depth.

Exceptions:

1. In nonload-bearing partitions, the diameter of bored holes shall not exceed 60 percent of the depth of the stud.
2. Where each stud that is bored is doubled and not more than two adjacent double studs are bored, the diameter of bored holes shall not exceed 60 percent of the depth of the stud.

302.3.1.1 Location. The edge of the bored hole shall not be nearer than $\frac{5}{8}$ 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.

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 the specific installation.

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 and fireplaces, provided that the room is not a confined space and the building is not of unusually tight construction.
3. Appliances installed in a dedicated enclosure in which all combustion air is taken directly from the outdoors, in accordance with Section 703 or 704. Access to such enclosure shall be through a solid door, weather-stripped in accordance with the exterior door air leakage requirements of the energy 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. Fuel-fired furnaces 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 not less than 12 times the total volume of fuel-fired appliances other than boilers and not 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 in an approved manner.

SECTION 304 INSTALLATION

304.1 General. Equipment and appliances shall be installed as required by the terms of their approval. Equipment and appliances shall be installed in accordance with the conditions of listing and 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 Elevation of ignition source. Equipment and appliances having an ignition source shall be elevated such that the source of ignition is not less than 18 inches (457 mm) above the floor in hazardous locations and public garages, private garages, repair garages, automotive service stations and parking garages. Such equipment and appliances shall not be installed in Use Group H occupancies or control areas where open use, handling or dispensing of combustible, flammable or explosive materials occurs.

304.3 Public garages. Appliances located in public garages, service stations, 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 exceed 6 feet (1829 mm) in height and are capable of passing under an

304.4 – TABLE 305.4

appliance, appliances shall be installed a minimum of 2 feet (610 mm) higher above the floor than the height of the tallest vehicle.

Exception: The requirements of this section shall not apply where the appliances are protected from motor vehicle impact and installed in accordance with Section 304.2 and NFPA 88B.

304.4 Private garages. Appliances located in private garages shall be installed with a minimum clearance of 6 feet (1829 mm) 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 304.2.

304.5 Construction and protection. Boiler rooms and furnace rooms shall be protected as required by the *Florida Building Code, Building*.

304.6 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 door stops or limits, closers, drapery ties or guards shall not be used to provide the required clearances.

304.7 Clearances from grade. Equipment and appliances installed at grade level shall be supported on a level concrete slab or other approved material extending above adjoining grade or shall be suspended a minimum of 6 inches (152 mm) above adjoining grade.

304.8 Guards. Guards shall be provided where appliances, equipment, fans or other components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The top of the guard shall be located not less than 42 inches (1067 mm) above the elevated surface adjacent to the guard. The guard shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *Florida Building Code, Building*.

304.9 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 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. Hangers and anchors shall be attached to the building construction in an approved manner.

305.4 Interval of support. Piping shall be supported at distances not exceeding the spacing specified in Table 305.4, or piping shall be supported in accordance with MSS SP-69.

**TABLE 305.4
PIPING SUPPORT SPACING^a**

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)
ABS pipe	4	10 ^b
Aluminum pipe and tubing	10	15
Brass pipe	10	10
Brass tubing, 1 1/4 -inch diameter and smaller	6	10
Cast-iron pipe ^b	5	15
Copper or copper alloy pipe	12	10
Copper or copper alloy tubing, 1 1/4 -inch diameter and smaller	6	10
Copper or copper alloy tubing, 1 1/2 -inch diameter and larger	10	10
CPVC pipe or tubing, 1 inch and smaller	3	10 ^b
CPVC pipe or tubing, 1 1/4 inch and larger	4	10 ^b
Steel pipe	12	15
Steel tubing	8	10
Lead pipe	Continuous	4
PB pipe or tubing	2 2/3 (32 inches)	4
PVC pipe	4	10 ^b

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

^a The maximum horizontal spacing of cast-iron pipe hangers shall be increased to 10 feet where 10-foot lengths of pipe are installed.

^b Mid-story guide for sizes 2-inches and smaller.

305.5 Sway bracing. Rigid support sway bracing shall be provided at changes in direction greater than 45 degrees (0.8 rad) for pipe sizes 4 inches (102 mm) and larger.

SECTION 306 ACCESS AND SERVICE SPACE

306.1 Clearances for maintenance and replacement. Clearances around appliances to elements of permanent construction, including other installed equipment and appliances, shall be sufficient to allow inspection, service, repair or replacement without removing such elements of permanent construction or disabling the function of a required fire-resistance-rated assembly.

306.1.1 Central furnaces. Central furnaces within compartments or alcoves shall have a minimum working space clearance of 3 inches (76 mm) along the sides, back and top with a total width of the enclosing space being at least 12 inches (305 mm) wider than the furnace. Furnaces having a firebox open to the atmosphere shall have at least 6 inches (152 mm) working space along the front combustion chamber side. Combustion air openings at the rear or side of the compartment shall comply with the requirements of Chapter 7.

Exception: This section shall not apply to replacement appliances installed in existing compartments and alcoves where the working space clearances are in accordance with the equipment or appliance manufacturer's installation instructions.

306.2 Appliances in rooms. Rooms containing appliances requiring access shall be provided with a door and an unobstructed passageway measuring not less than 36 inches (914 mm) wide and 80 inches (2032 mm) high.

Exception: Within a dwelling unit, appliances installed in a compartment, alcove, basement or similar space shall be accessed by an opening or door and an unobstructed passageway measuring not less than 24 inches (610 mm) wide and large enough to allow removal of the largest appliance in the space, provided that a level service space of not less than 30 inches (762 mm) deep and the height of the appliance, but not less than 30 inches (762 mm), is present at the front or service side of the appliance with the door open.

306.3 Appliances in attics. Attics containing appliances requiring access shall be provided with an opening and unobstructed passageway large enough to allow removal of the largest appliance. The passageway shall not be less than 30 inches (762 mm) high and 22 inches (559 mm) wide and not more than 20 feet (6096 mm) in length measured along the centerline of the passageway from the opening to the appliance. The passageway shall have continuous solid flooring not less than 24 inches (610 mm) wide. A level service space not less than 30 inches (762 mm) deep and 30 inches (762

mm) wide shall be present at the front or service side of the appliance. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), where such dimensions are large enough to allow removal of the largest appliance.

Exception: The passageway and level service space are not required where the appliance is capable of being serviced and removed through the required opening.

306.3.1 Electrical requirements. A lighting fixture with receptacle outlet, controlled by a switch located at the passageway opening, shall be provided so as to light the passageway and service area and installed in accordance with NFPA 70.

306.4 Appliances under floors. Underfloor spaces containing appliances requiring access shall be provided with an access opening and unobstructed passageway large enough to remove the largest appliance. The passageway shall not be less than 30 inches (762 mm) high and 22 inches (559 mm) wide, nor more than 20 feet (6096 mm) in length measured along the centerline of the passageway from the opening to the appliance. A level service space not less than 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present at the front or service side of the appliance. If the depth of the passageway or the service space exceeds 12 inches (305 mm) below the adjoining grade, the walls of the passageway shall be lined with concrete or masonry. Such concrete or masonry shall extend a minimum of 4 inches (102 mm) above the adjoining grade and shall have sufficient lateral-bearing capacity to resist collapse. The clear access opening dimensions shall be a minimum of 22 inches by 30 inches (559 mm by 762 mm), where such dimensions are large enough to allow removal of the largest appliance.

Exception: The passageway is not required where the level service space is present when the access is open and the appliance is capable of being serviced and removed through the required opening.

306.4.1 Electrical requirements. A lighting fixture with receptacle outlet, controlled by a switch located at the passageway opening, shall be provided so as to light the passageway and service area and installed in accordance with NFPA 70.

306.5 Equipment and appliances on roofs or elevated structures. Where equipment and appliances requiring access are installed on roofs or elevated structures at a height exceeding 16 feet (4877 mm), such access shall be provided by a permanent approved means of access, the extent of which shall be from grade or floor level to the equipment and appliances' level service space. Such access shall not require climbing over obstructions greater than 30 inches (762 mm) high or walking on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope).

306.6 Sloped roofs. Where appliances are installed on a roof having a slope of 3 units vertical in 12 units horizontal (25-percent slope) or greater and having an edge more than 30 inches (762 mm) above grade at such edge, a level platform shall be provided on each side of the appliance to which access is required by the manufacturer's installation instructions for service, repair or maintenance. The platform shall not be less than 30 inches (762 mm) in any dimension and shall be provided with guards in accordance with Section 304.8.

SECTION 307 CONDENSATE DISPOSAL

307.1 Fuel-burning appliances. Liquid combustion by-products of condensing appliances shall be collected and discharged to an approved plumbing fixture or disposal area in accordance with the manufacturer's installation instructions. Condensate piping shall be of approved corrosion-resistant material and shall not be smaller than the drain connection on the appliance. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth inch vertical in one foot horizontal (1-percent slope).

307.2 Evaporators and cooling coils. Condensate drain systems shall be provided for equipment and appliances containing evaporators or cooling coils. Condensate drain systems shall be designed, constructed and installed in accordance with Sections 307.2.1 through 307.2.5.

307.2.1 Condensate disposal. Condensate from all cooling coils or evaporators shall be conveyed from the drain pan outlet to an approved place of disposal as follows:

1. Units larger than 6 tons (21.1 kW) nominal capacity shall discharge to a sanitary sewer drain, storm sewer drain or a French drain constructed in accordance with Section 307.2.1.1. Where discharging to a sanitary sewer, such drains shall be indirectly connected in accordance with the *Florida Building Code, Plumbing*.
2. Units 6 tons (21.1 kW) and smaller nominal capacity shall discharge in accordance with Item 1, or shall discharge to a gutter, roof drain or other approved location.
3. Condensate drains from rooftop units shall discharge in accordance with Item 1 or 2, or shall discharge onto rooftops where the condensate does not discharge into a street, alley or other areas so as to cause a nuisance.

307.2.1.1 French drain. A French drain shall consist of a pit excavated in the earth not less than 24 inches (610 mm) in any dimension completely filled with coarse gravel. The drain pipe shall extend to the pit and shall be securely anchored in place.

307.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, polybutylene, polyethylene, ABS, CPVC or PVC pipe or tubing. All components shall be selected for the pressure and temperature rating of the installation. Condensate waste and drain line size shall be not less than 3/4-inch (19 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with an approved method. All horizontal sections of drain piping shall be installed in uniform alignment at a uniform slope.

307.2.3 Auxiliary drain pans. Except as provided for in Section 307.2.4, auxiliary drain pans shall be installed under all coils on which condensation will occur and under units containing coils that are located in attic spaces, suspended ceiling spaces, furred spaces or any area where damage will occur to the building or building contents, as a result of an overflow of the equipment or appliance drain pan or a stoppage in the condensate drain piping. Auxiliary drain pans shall have a minimum depth of 1 1/2 inches (38 mm), shall be not less than 3 inches (76 mm) larger than the unit or coil dimensions in width and length, and shall be constructed of an approved corrosion-resistant material. Metallic pans shall have a minimum thickness of not less than 0.0276-inch (0.7 mm) galvanized sheet steel. Nonmetallic pans shall have a minimum thickness of not less than 0.0625 inch (1.6 mm). A separate drain line shall extend from the pan to a conspicuous point and serve as an alarm which indicates that the primary drain is restricted. As an alternative to a separate drain line, an approved water level detector or float switch device shall be used to control overflow by automatically shutting down the equipment or appliance that produces the condensate.

307.2.4 Secondary drain system. Where an auxiliary drain pan cannot be installed under units containing cooling coils, a drain pipe shall be connected to the secondary drain (overflow) connection so that the overflowing condensate resulting from flow restrictions in the primary drain pipe will be carried away without causing damage to the unit and its surroundings. The overflowing condensate shall be drained to a conspicuous point and serve as an alarm which indicates that the primary drain pipe is restricted. As an alternative, overflowing condensate shall be piped to a secondary drain pan, firmly secured and located along the side of the cooling unit, from which the condensate will be drained to a conspicuous point. A secondary drain pan shall have a capacity of not less than the capacity of the condensate drain pan, shall be not less than 1 1/2 inches (38 mm) deep, and shall be constructed of not less than 0.0276-inch (0.7 mm) thick galvanized sheet metal. As an alternative to a separate drain line, an

approved water level detector or float switch device shall be used to control overflow by automatically shutting down the equipment or appliance that produces the condensate.

307.2.5 Traps. Condensate drains shall be trapped as required by the equipment or appliance manufacturer.

SECTION 308 CLEARANCE REDUCTION

308.1 Scope. This section shall govern the reduction in required clearances to combustible materials and combustible assemblies for chimneys, vents, kitchen exhaust equipment, mechanical appliances, and mechanical devices and equipment.

308.2 Listed appliances and equipment. The reduction of the required clearances to combustibles for listed and labeled appliances and equipment shall be in accordance with the requirements of this section except that such clearances shall not be reduced where reduction is specifically prohibited by the terms of the appliance or equipment listing.

308.3 Protective assembly construction and installation. Reduced clearance protective assemblies, including structural and support elements, shall be constructed of noncombustible materials. Spacers utilized to maintain an airspace between the protective assembly and the protected material or assembly shall be noncombustible. Where a space between the protective assembly and protected combustible material or assembly is specified, the same space shall be provided around the edges of the protective assembly and the spacers shall be placed so as to allow air circulation by convection in such space. Protective assemblies shall not be placed less than 1 inch (25 mm) from the mechanical appliances, devices or equipment, regardless of the allowable reduced clearance.

308.4 Allowable reduction. The reduction of required clearances to combustible assemblies or combustible materials shall be based on the utilization of a reduced clearance protective assembly in accordance with Section 308.5 or 308.6.

308.5 Labeled assemblies. The allowable clearance reduction shall be based on an approved reduced clearance protective assembly that has been tested and bears the label of an approved agency.

308.6 Reduction table. The allowable clearance reduction shall be based on one of the methods specified in Table 308.6. Where required clearances are not listed in Table 308.6, the reduced clearances shall be determined by linear interpolation between the distances listed in the table. Reduced clearances shall not be derived by extrapolation below the range of the table.

308.7 Solid fuel-burning appliances. The clearance reduction methods specified in Table 308.6 shall not be utilized to reduce the clearance required for solid fuel-burning appliances that are labeled for installation with clearances of 12 inches (305 mm) or less. Where appliances are labeled for installation with clearances of greater than 12 inches (305 mm), the clearance reduction methods of Table 308.6 shall not reduce the clearance to less than 12 inches (305 mm).

308.8 Masonry chimneys. The clearance reduction methods specified in Table 308.6 shall not be utilized to reduce the clearances required for masonry chimneys as specified in Chapter 8 of this code and in the *Florida Building Code, Building*.

308.9 Chimney connector pass-throughs. The clearance reduction methods specified in Table 308.6 shall not be utilized to reduce the clearances required for chimney connector pass-throughs as specified in Section 803.10.4.

308.10 Masonry fireplaces. The clearance reduction methods specified in Table 308.6 shall not be utilized to reduce the clearances required for masonry fireplaces as specified in Chapter 8 of this code and in the *Florida Building Code, Building*.

308.11 Kitchen exhaust ducts. The clearance reduction methods specified in Table 308.6 shall not be utilized to reduce the minimum clearances required by Section 506.3.12 for kitchen exhaust ducts enclosed in a shaft.

SECTION 309 DISHWASHERS

309.1 Dishwashers. Dishwashers shall be equipped so that the normal operating cycle does not include automatic switching on of the heating element for the drying portion of the operating cycle. Dishwashers the controls of which permit the user to elect to have the heating element on during the drying portion of the operating cycle meet this requirement.

TABLE 308.6

**TABLE 308.6
CLEARANCE REDUCTION METHODS**

Type of protective Assembly ^a	REDUCED CLEARANCE WITH PROTECTION (inches) ^a									
	Horizontal combustible assemblies located above the heat source					Horizontal combustible assemblies located beneath the heat source and all vertical combustible assemblies				
	Required clearance to combustibles without protection (inches) ^a					Required clearance to combustibles without protection (inches) ^a				
	36	18	12	9	6	36	18	12	9	6
Galvanized sheet metal, minimum nominal thickness of 0.024 inch (No. 24 Gage), mounted on 1-inch glass fiber or mineral wool batt reinforced with wire on the back, 1-inch off the combustible assembly	18	9	6	5	3	12	6	4	3	3
Galvanized sheet metal, minimum nominal thickness of 0.024 inch (No. 24 Gage), spaced 1-inch off the combustible assembly	18	9	6	5	3	12	6	4	3	2
Two layers of galvanized sheet metal, minimum nominal thickness of 0.024 inch (No. 24 Gage), having 1-inch of airspace between layers, spaced 1 layers, spaced 1 inch off the combustible assembly	18	9	6	5	3	12	6	4	3	3
Two layers of galvanized sheet metal, minimum of 0.024 inch (No. 24 Gage), spaced 1-inch off the having 1-inch of fiberglass insulation between layers, spaced 1-inch off the combustible assembly	18	9	6	5	3	12	6	4	3	2
1/2-inch inorganic insulating board, over 1-inch of fiberglass or mineral wool batt, against the combustible assembly	24	12	9	6	4	18	9	6	5	3
3 1/2-inch brick wall, spaced 1-inch off the combustible wall	—	—	—	—	—	12	6	6	6	6
3 1/2-inch brick wall, against the combustible wall	—	—	—	—	—	24	12	9	6	5

For SI: 1-inch = 25.4 mm, °C = [(°F)-32]/1.8, 1 pound per cubic foot = 16.02 kg/m³, 1.0 (Btu • in)/(sq ft • hr. • °F) = 0.144 W/m² • K.

^a Mineral wool batts (blanket or board) shall have a minimum density of 8 pounds per cubic foot and a minimum melting point of 1,500 °F. Insulation material utilized as part of a clearance reduction system shall have a thermal conductivity of 1.0 (Btu • in)/(sq ft • hr. • °F) or less. Insulation board shall be of noncombustible material.