

**Draft 2007 Florida Specific Requirements Supplement
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Note: throughout the document, change International Building Code to Florida Building Code, Building; change the ICC Electrical Code to Chapter 27 of the Florida Building Code, Building; change the International Energy Conservation Code to Chapter 13 of the Florida Building Code, Building; change the International Existing Building Code to Florida Building Code, Existing Building; change the International Fire code to Florida Fire Prevention Code; change International Fuel Gas Code to Florida Building Code, Fuel Gas; change the International Mechanical Code to Florida Building Code, Mechanical; change the International Plumbing Code to Florida Building Code, Plumbing; change the International Residential Code to Florida Building Code, Residential.

Chapter 1, Administration

Section 101 General

101.1 Scope. Change to read as shown.

101.1 Scope. The provisions of Chapter 1, *Florida Building Code, Building* shall govern the administration and enforcement of the *Florida Building Code, Mechanical*.

101.2 Scope. Change to read as shown.

101.2 Scope. Reserved.

101.3 Intent. Change to read as shown.

101.3 Intent. Reserved.

101.4 Severability. Change to read as shown.

101.4 Severability. Reserved.

Section 102 Applicability

Section 102 Applicability. Change to read as shown.

Section 102 Applicability. Reserved.

Section 103, Department of Mechanical Inspection. Change to read as shown.

Section 103, Department of Mechanical Inspection. Reserved.

Section 104, Duties and Powers of the Code Official. Change to read as shown.

Section 104, Duties and Powers of the Code Official. Reserved.

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Section 105, Approval. Change to read as shown.

Section 105, Approval. Reserved.

Section 106, Permits. Change to read as shown.

Section 106, Permits. Reserved.

Section 107, Inspections and Testing. Change to read as shown.

Section 107, Inspections and Testing. Reserved.

Section 108, Violations. Change to read as shown.

Section 108, Violations. Reserved.

Section 109, Means of Appeal. Change to read as shown.

Section 109, Means of Appeal. Reserved.

Chapter 2, Definitions

Section 201, General

201.4 Terms not defined. Change to read as shown.

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have the meanings as defined in Webster's *Third New International Dictionary of the English Language Unabridged*.

202 General Definitions. Change to read as shown.

ADDITION. An extension or increase in conditioned floor area or height of a building or structure. (Reference Chapter 13, - §13-101.1.2 and §13-101.2.2 of the Florida Building Code, Building).

AIR BARRIER. Relating to air distribution systems, a material object(s) which impedes or restricts the free movement of air under specified conditions. For fibrous glass duct, the air barrier is its foil cladding; for flexible non-metal duct, the air barrier is the non-porous core; and for sheet metal duct and air handling units, the air barrier is the metal in contact with the air stream. For mechanical closets, the air barrier may be a uniform panelized material such as gypsum wall board which meets ASTM C36, or it may be a membrane which alone acts as an air barrier which is attached to a panel, such as the foil cladding of fibrous glass duct board. Relating to the building envelope, air barriers comprise the planes of primary resistance to air flow between the interior spaces of a building and the outdoors and the planes of primary air

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flow resistance between adjacent air zones of a building, including planes between adjacent conditioned and unconditioned air spaces of a building. To be classed as an air barrier, a building plane must be substantially leak free; that is, it shall have an air leakage rate not greater than 0.5 cfm/ft² when subjected to an air pressure gradient of 25 pascal. In general, air barriers are made of durable, non-porous materials and are sealed to adjoining wall, ceiling or floor surfaces with a suitable long-life mastic. House wraps and taped and sealed drywall may constitute an air barrier but dropped acoustical tile ceilings (T-bar ceilings) may not. Batt insulation facings and asphalt-impregnated fiberboard and felt paper are not considered air barriers.

AIR CONDITIONING. The process of treating air to control its temperature, humidity, cleanliness and distribution to meet requirements of the conditioned space.

AIR DILUTION. The air that enters the relief opening of a draft hood or draft diverter, or the air that enters another opening in an appliance flue or venting system.

AIR DISTRIBUTION SYSTEM. Include all building elements (duct systems, air handling units, cavities of the building structure and mechanical closets) through which air is delivered to or from the conditioned spaces.

AIR-HANDLING UNIT. The fan unit of a furnace and the fan-coil unit of a split-system, packaged air conditioner or heat pump.

AIR POROSITY. The ability to transmit air through minute openings in a substance or material.

ATTIC. An enclosed unconditioned space located immediately below an uninsulated roof and immediately above the ceiling of a building. For the roof to be considered insulated, roof insulation shall be at least the R-value required to meet §13-404.2.B.1 or §13-604.1.ABC.1 of Chapter 13 of the FBC-Building

BOILER, HOT WATER SUPPLY. Any vessel used for generating hot water to be used external to the vessel, which exceeds any of the following limitations:

1. A heat input capacity of 200,000 Btuh (58.6 kW).
2. A water temperature of 200°F (93°C).
3. A nominal water capacity of 120 gal (454 L).

BUILDING. Any structure that includes provision for any of the following or any combination of the following: a space heating system, a space cooling system, or a service water heating system. For the purpose of this code each portion of a building separated from other portions by a rated fire wall shall be considered as a separate building. The term "building" shall be construed as if followed by the words "or part thereof."

CONDITIONED SPACE. That volume of a structure which is either mechanically heated, cooled, or both heated and cooled by direct means. Spaces within the thermal envelope that are not directly conditioned shall be considered buffered unconditioned space. Such spaces may include, but are not limited to, mechanical rooms, stairwells, and unducted spaces beneath roofs

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and between floors. Air leakage into dropped ceiling cavities does not constitute conditioned space.

DRAWBAND. A fastener which surrounds and fastens a duct fitting with either the inner lining or the outer jacket of flexible ducts. Tension ties, clinch bands, draw ties, and straps are considered drawbands.

DUCT FITTING. Couplings that join sections of ducting together or to other air distribution system components. When used to join sections of flexible non-metal duct, duct fittings are typically metal or other rigid material and have a raised bead or indented groove against which the drawband is secured. Terminal fittings join ducting to supply outlets and return inlets at the end of the distribution system and include register and return boots and register and return boxes. Intermediate fittings join flexible non-metal duct to other sections of flexible non-metal duct, to sections of other types of ducting, and to mechanical equipment and include collars, take-offs, tap-ins, sleeves, and the supply and return ends of air handlers and furnaces. (See also “INTEGRAL FLANGE DUCT COLLAR FITTING”)

ENCLOSED SUPPORT PLATFORM. A framed enclosure located inside or outside the conditioned space, which supports a furnace or central heating/air conditioning air handler and which may contain and protect a return duct section of the air distribution system.

EXISTING BUILDING. A building or portion thereof that was previously occupied or approved for occupancy by the authority having jurisdiction. (Reference Chapter 13, Section 13-101.4 of the *Florida Building Code, Building*.)

FIREWALL. Fire resistant wall, having protective openings, which restricts the spread of fire and extends continuously from the foundation to or through the roof, with sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall.

FLEXIBLE NON-METAL DUCT. A type of flexible air duct comprised of a wire-reinforced core (usually plastic), an insulation layer and an outer jacket (usually a durable reinforced plastic).

GASKETS OR GASKETING. A compressible, resilient, elastic packing, made of foam rubber or of a synthetic foam polymer. A gasket is distinct from the components being joined and must be capable of closing all air leakage pathways between the air barriers of the joint and of creating an air-tight seal.

INTEGRAL FLANGE DUCT COLLAR FITTING. . A type of duct collar fitting having a flange that is secured to and sealed to the cylinder or sleeve of the fitting. A function of this flange is to provide a surface which can be sealed to rigid ductboard.

MANUFACTURED BUILDING. A closed structure, building assembly, or system of subassemblies, which may include structural, electrical, plumbing, heating, ventilating or other service systems manufactured for installation or erection, with or without other specified

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components, as a finished building or as part of a finished building, which shall include, but not be limited to, residential, commercial, institutional, storage, and industrial structures.

MANUFACTURED HOME. As defined by the U.S. Department of Housing and Urban Development, residential units constructed in accordance with Federal Mobile Construction and Safety Standards, pursuant to 42 USC 55.5401, et. seq. and 24 CFR 3282 and 3283. (Reference Chapter 13, - §13-101.2.4 of the Florida Building Code, Building).

MASTIC. A thick, pliable substance that adheres well to specific materials and is used for sealing different building components together. Mastics are often used in conjunction with fibrous or mesh fabric.

MASTIC RIBBONS. Mastic ribbons are malleable, putty-like packings which are used in applications akin to those of gasketing; but, they do not have the elasticity of gasketing. Such mastics contain nearly 100 percent solid, require no curing in air, and are used without reinforcing fabric.

MECHANICAL CLOSET. For the purposes of this code, a closet used as an air plenum which contains the blower unit or air handler of a central air conditioning or heating unit.

MECHANICAL EQUIPMENT PLENUM CHAMBER. In an air distribution system, that part of the casing, or an air chamber furnace, to or from which the air duct system delivers conditioned air.

NONCOMBUSTIBLE BUILDING MATERIALS. A material which meets either of the following requirements:

1. Materials which pass the test procedure set forth in ASTM E 136
2. Materials having a structural base of noncombustible materials as defined in 1, with a surfacing not more than 1/8 inch (3.17 mm) thick which has a flamespread rating not greater than 50 when tested in accordance with ASTM E 84.

The term noncombustible does not apply to the flamespread characteristics of interior finish or trim materials. A material shall not be classed as noncombustible which is subject to increase in combustibility or flamespread rating beyond the limits herein established through the effects of age, moisture or other atmospheric conditions.

PRESSURE VESSELS. Closed containers, tanks or vessels that are designed to contain liquids, gases or both, under pressure.

RENOVATION. See *Florida Existing Building Code*.

SEAL or SEALING – AIR DUCT. The use of closure products, either welds, mastic, mastic plus embedded fabric, adhesives, caulking, gaskets, pressure sensitive tapes, heat-activated tapes or combinations thereof as allowed by specific sections of this code, to close cracks, joints, seams, and other openings in the air barriers of air duct, air handling units, and plenum chambers for the purpose of preventing air leakage. No joining of opening from which a closure product is

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absent shall be considered sealed unless considered otherwise in specific cases identified by this code. Closeness of fit between mated parts alone shall not be considered a seal.

SITE-INSTALLED COMPONENTS AND FEATURES. Equipment, materials, measures, practices and features which are affixed to a new manufactured home at its first set-up that are not initially installed by the manufacturer. Reference *Chapter 13, - §13-101.2.4 of the FBC-B,*

SOURCE CAPTURE SYSTEM. A mechanical exhaust system designed and constructed to capture air contaminants at their source and to exhaust such contaminants to the outdoor atmosphere.

UNUSUALLY TIGHT CONSTRUCTION (Oil Burning Equipment). Construction in compliance with *Chapter 13 of the FBC-B* or the following requirements for oil heat:

1. Walls and ceilings exposed to the outside atmosphere having a continuous water vapor retarder with a rating of 1 perm ($57 \text{ ng/s} \cdot \text{m}^2 \cdot \text{Pa}$) or less with openings gasketed or sealed;
2. Storm windows or weatherstripping on openable windows and doors; and
3. Caulking or sealants applied to areas, such as joints around window and door frames, between sole plates and floors, between wall-ceiling joints, between wall panels, at penetrations for plumbing, electrical and gas lines, and at other openings.

WATER HEATER. An indirect-fire fuel-burning or electrically heated appliance for heating water which does not exceed any of the following:

1. A heat input capacity of 200,000 Btuh (58.6 kW).
2. A water temperature of 200°F (93°C).
3. A nominal water capacity of 120 gal (454 L)

Chapter 3, General Regulations

Section 301 General

301.4 Listed and labeled. Change to read as shown.

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. Add to read as shown.

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.

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301.4.2 Alternative materials, methods, equipment and appliances. Add to read as shown.

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. Add to read as shown.

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. Add to read as shown.

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. Add to read as shown.

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

301.4.3.3 Test reports. Add to read as shown.

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. Add to read as shown.

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.

301.12 Wind resistance. Change to read as shown.

301.12 Wind resistance. Mechanical equipment, appliances and supports that are exposed to wind shall be designed and installed to resist the wind pressures on the equipment and the supports as determined in accordance with the *Florida Building Code, Building*. This may be accomplished by design or by application of Section 301.13.1. Roof mounted mechanical units and supports shall be secured to the structure. The use of wood “sleepers” shall not be permitted.

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301.12.1 Ground-mounted units. Change to read as shown.

301.12.1 Ground-mounted units. Ground-mounted units for R3 residential applications may be anchored with #14 screws with gasketed washers according to the following.

1. For 1.units with sides less than 12 inches, one screw shall be used at each side of the unit
2. For 2. units between 12 and 24 inches, two screws shall be used per side.
3. For 3.units between 24 and 36 inches, three screws shall be used per side.
4. For 4.units greater than 36 inches or 5 tons, anchorage shall be designed in accordance with 301.13..

NOTES:

1. Corrosion protection. Buildings located within 3,000 feet of the ocean should utilize non-ferrous metal, stainless steel or steel with minimum G-90 hot-dip galvanized coating for equipment stands and anchors and stainless steel screws.
2. Strapping. Job site strengthening of fan cowlings and vent hoods is recommended. Two or four stainless steel cables are recommended, depending on design wind conditions. Alternatively, additional, heavy straps can be screwed to the cowling and curb.

301.13 Floodplain management construction standards. Change to read as shown.

301.13 Floodplain Management Construction Standards. This code specifically defers to the authority granted to local government by Title 44 CFR, sections 59 and 60. This code is not intended to supplant or supercede local ordinances adopted pursuant to that authority, nor are local floodplain management ordinances to be deemed amendments to the code.

301.14 Rodentproofing. This was deleted inadvertently. It should be reinstated.

301.14 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 *Florida Building Code*.

301.15 NFPA Standards. Change to read as shown.

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 304 Installation

304.3 Elevation of ignition source. Change to read as shown.

304.3 Elevation of ignition source. Reserved.

304.6 Private garages. Change to read as shown.

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304.6 Private garages. Reserved.

304.9 Clearances from grade. Change to read as shown.

304.9 Clearances from grade. Equipment and appliances installed at grade level shall be supported on a level minimum 3 ½ inch concrete slab or other approved material extending a minimum of 2 inches above adjoining finished grade. Suspended equipment and appliances shall be installed a minimum of 6 inches (152 mm) above adjoining grade to provide support and protection from contact with soil or water.

Exception: On changeouts or new installations of existing buildings where equipment is replaced that has a support platform approved under a previous code.

Section 306 Access and Service Space

306.3 Appliances in attics. Change to read as shown.

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 6 feet (1829 mm) in length measured along the centerline of the passageway from the attic access opening to the appliance's service panel. 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 (508mm by 762 mm), where such dimensions are large enough to allow removal of the largest appliance.

Exceptions:

1. The passageway and level service space are not required where the appliance is capable of being serviced and removed through the required opening.
2. Where the passageway is unobstructed and not less than 6 feet (1829 mm) high and 22 inches wide for its entire length, the passageway shall be not greater than 50 feet (15 250 mm) in length.

306.3.1 Electrical requirements. Add text to read as shown.

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.

306.3.2 Air handling units. Add text to read as shown.

306.3.2 Air Handling Units. Air handling units shall be allowed in attics if the following conditions are met:

1. The service panel of the equipment is located within six (6) feet of an attic access.
2. A device is installed to alert the owner or shut the unit down when the condensation drain is not working properly.

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3. The attic access opening is of sufficient size to replace the air handler.
4. A notice is posted on the electric service panel indicating to the homeowner that the air handler is located in the attic. Said notice shall be in all capitals, in 16 point type, with the title and first paragraph in bold:

NOTICE TO HOMEOWNER

A PART OF YOUR AIR CONDITIONING SYSTEM, THE AIR HANDLER, IS LOCATED IN THE ATTIC. FOR PROPER, EFFICIENT, AND ECONOMIC OPERATION OF THE AIR CONDITIONING SYSTEM, YOU MUST ENSURE THAT REGULAR MAINTENANCE IS PERFORMED.

YOUR AIR CONDITIONING SYSTEM IS EQUIPPED WITH ONE OR BOTH OF THE FOLLOWING: 1) A DEVICE THAT WILL ALERT YOU WHEN THE CONDENSATION DRAIN IS NOT WORKING PROPERLY OR 2) A DEVICE THAT WILL SHUT THE SYSTEM DOWN WHEN THE CONDENSATION DRAIN IS NOT WORKING. TO LIMIT POTENTIAL DAMAGE TO YOUR HOME, AND TO AVOID DISRUPTION OF SERVICE, IT IS RECOMMENDED THAT YOU ENSURE PROPER WORKING ORDER OF THESE DEVICES BEFORE EACH SEASON OF PEAK OPERATION.

Section 307 Condensate Disposal

307.2.2 Drain pipe materials and sizes. Change to read as shown.

307.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, cross-linked polyethylene, 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 ¾ 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.

Exception: On wall mounted ductless split units less than 36,001 Btu/h where the drain line is less than 10 feet (3048 mm) in length, the factory drain outlet size shall be acceptable from the equipment to the place of disposal.

307.2.5 Pipe insulation. Change to read as shown.

307.2.5 Pipe insulation. All horizontal primary condensate drains within unconditioned areas shall be insulated to prevent condensation from forming on the exterior of the drain pipe.

312.1 Load calculations. Change to read as shown.

312.1 Load calculations. Heating and cooling system design loads for the purpose of sizing systems, appliances and equipment shall be determined in accordance with the requirements of Chapter 13 of the *Florida Building Code, Building*:

Commercial: Section 13-407.1.ABC.1

Residential: Section 13-607.1.ABC.1

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Chapter 4 Ventilation

Section 401 General

401.5.1 Intake openings. Change to read as shown.

401.5.1 Intake openings. Mechanical and gravity outside air intake openings shall be located a minimum of 10 feet (3048 mm) from any hazardous or noxious contaminant, such as vents, chimneys, plumbing vents, streets, alleys, parking lots and loading docks, except as otherwise specified in this code. Fresh air intakes shall not be located closer than 10 ft (3048 mm) from any chimney or vent outlet, or sanitary sewer vent outlet.

Section 402 Natural Ventilation

402.3.1 Bathrooms. Add to read as shown. [Note: This reqt was removed from IMC]

402.3.1 Bathrooms. Rooms containing bathtubs, showers, spas and similar bathing fixtures shall be mechanically ventilated in accordance with Section 403.

Exception: Residential bathrooms with windows having no less than 3 sq.ft. of open space.

Section 403 Mechanical Ventilation

403.1 Ventilation system. Change to read as shown.

403.1 Ventilation system. Mechanical ventilation shall be provided by a method of supply air and return or exhaust air. The amount of supply air shall be approximately equal to the amount of return and exhaust air. The system shall not be prohibited from producing negative or positive pressure. The system to convey ventilation air shall be designed and installed in accordance with Chapter 6. See also Section 13-409.1.ABC.2 of the *Florida Building Code, Building*.

Ventilation supply systems shall be designed to deliver the required rate of supply air to the occupied zone within an occupied space. The occupied zone shall have boundaries measured at 3 inches (76 mm) and 72 inches (1829 mm) above the floor and 24 inches (610 mm) from the enclosing walls.

403.3 Ventilation rate. Change to read as shown.

403.3 Ventilation rate. Ventilation systems for other than Group R-3 (one- and two-family dwellings), shall be designed to have the capacity to supply the minimum outdoor airflow rate determined in accordance with Table 403.3 based on the occupancy of the space and the occupant load or other parameter as stated therein. The occupant load utilized for design of the ventilation system shall not be less than the number determined from the estimated maximum occupant load rate indicated in Table 403.3. Ventilation rates for occupancies not represented in Table 403.3 shall be determined by an approved engineering analysis. The ventilation system shall be designed to supply the required rate of ventilation air continuously during the period the building is occupied, except as otherwise stated in other provisions of the code.

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Exception: The occupant load is not required to be determined, based on the estimated maximum occupant load rate indicated in Table 403.3 where approved statistical data document the accuracy of an alternate anticipated occupant density.

Table 403.3 Required Outdoor Ventilation Air. Change to read as shown. Under Public Spaces, change outdoor air for toilet rooms from “75 cfm” to “50 cfm”.

**TABLE 403.3
REQUIRED OUTDOOR VENTILATION AIR**

OCCUPANCY CLASSIFICATION	ESTIMATED MAXIMUM OCCUPANT LOAD, PERSONS PER 1,000 SQUARE FEET ^a	OUTDOOR AIR [Cubic feet per minute (cfm) per person] UNLESS NOTED ^e
Correctional facilities		
Cells		
without plumbing fixtures	20	20
with plumbing fixtures ^{g, h}	20	20
Dining halls	100	15
Guard stations	40	15
Dry cleaners, laundries		
Coin-operated dry cleaner	20	15
Coin-operated laundries	20	15
Commercial dry cleaner	30	30
Commercial laundry	10	25
Storage, pick up	30	35
Education		
Auditoriums	150	15
Classrooms	50	15
Corridors	—	0.10 cfm/ft ²
Laboratories	30	20
Libraries	20	15
Locker rooms ^h	—	0.50 cfm/ft ²
Music rooms	50	15
Smoking lounges ^{b, g}	70	60
Training shops	30	20
Food and beverage service		
Bars, cocktail lounges	100	30
Cafeteria, fast food	100	20
Dining rooms	70	20
Kitchens (cooking) ^{f, g}	20	15
Hospitals, nursing and convalescent homes		
Autopsy rooms ^b	—	0.50 cf m/ft ²
Medical procedure rooms	20	15
Operating rooms	20	30
Patient rooms	10	25
Physical therapy	20	15
Recovery and ICU	20	15
Hotels, motels, resorts and dormitories		
Assembly rooms	120	15
Bathrooms ^{g, h}	—	35
Bedrooms	—	30 cfm per room

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Conference rooms	50	20
Dormitory sleeping areas	20	15
Gambling casinos	120	30
Living rooms	—	30 cfm per room
Lobbies	30	15
Offices		
Conference rooms	50	20
Office spaces	7	20
Reception areas	60	15
Telecommunication centers and data entry	60	20

OCCUPANCY CLASSIFICATION	ESTIMATED MAXIMUM OCCUPANT LOAD, PERSONS PER 1,000 SQUARE FEET ^a	OUTDOOR AIR (Cubic feet per minute (cfm) per person) UNLESS NOTED ^e
Private dwellings, single and multiple		
Garages, common for multiple units ^b	—	1.5 cfm/ft ²
Garages, separate for each dwelling	—	100 cfm per car
Kitchens ^g	—	100 cfm intermittent or 25 cfm continuous
Living areas ^e	Based upon number of bedrooms. first bedroom: 2; each additional bedroom: 1	0.35 air changes per hour ^a or 15 cfm per person, whichever is greater Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous
Toilet rooms and bathrooms ^{g, h}	—	intermittent or 20 cfm continuous
Public spaces		
Corridors and utilities	—	0.05 cfm/ft ²
Elevator carg	—	1.00 cfm/ft ²
Locker rooms ^h		0.5 cfm/ft ²
Shower rooms (per shower head) ^{g, h}		50 cfm intermittent or 20 cfm continuous
Smoking lounges ^{b, h}		60
Toilet rooms ^{g, h}	70	50 cfm per water closet or urinal
Retail stores, sales floors and showroom floors		
Basement and street	—	0.30 cfm/ft ²
Dressing rooms	—	0.20 cfm/ft ²
Malls and arcades	—	0.20 cfm/ft ²
Shipping and receiving	—	0.15 cfm/ft ²
Smoking lounges ^b	70	60

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Storage rooms	—	0.15 cfm/ft ²
Upper floors	—	0.20 cfm/ft ²
Warehouses	—	0.05 cfm/ft ²
Specialty shops		
Automotive motor-fuel-dispensing stations	—	1.5 cfm/ft ²
Barber	25	15
Beauty	25	25
Clothiers, furniture	—	0.30 cfm/ft ²
Embalming rooms		2.0 cfm/ft ²
Florists	8	15
Hardware, drugs, fabrics	8	15

OCCUPANCY CLASSIFICATION	ESTIMATED MAXIMUM OCCUPANT LOAD, PERSONS PER 1,000 SQUARE FEET ^a	OUTDOOR AIR (Cubic feet per minute (cfm) per person) UNLESS NOTED ^e
Specialty shops—continued		
Nail salons, i	—	50 cfm intermittent or 20 cfm continuous per station
Pet Shops	—	1.00 cfm/ft ²
Reducing salons	20	15
Supermarkets	8	15
Sports and amusement		
Ballrooms and discos	100	25
Bowling alleys (seating areas)	70	25
Game rooms	70	25
Ice arenas	—	0.50 cfm/ft ²
Playing floors (gymnasiums)	30	20
Spectator areas	150	15
Swimming pools (pool and deck area)	—	0.50 cfm/ft ²
Storage		
Repair garages, enclosed parking garages ^d	—	1.5 cfm/ft ²
Warehouses	—	0.05 cfm/ft ²
Theaters		
Auditoriums	150	15
Lobbies	150	20
Stages, studios	70	15
Ticket booths	60	20
Transportation		
Platforms	100	15
Vehicles	150	15
Waiting rooms	100	15
Workrooms		
Bank vaults	5	15

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Darkrooms	—	0.50 cfm/ft ²
Duplicating, printing	—	0.50 cfm/ft ²
Meat processing	10	15
Pharmacy	20	15
Photo studios	10	15

For SI: 1 cubic foot per minute = 0.0004719m³/s, 1 ton = 908 kg,

1 cubic foot per minute per square foot = 0.00508m³/(s • m²), °C = [(°F) -32]/1.8, 1 square foot = 0.0929m².

a. Based upon net floor area.

b. Mechanical exhaust required and the recirculation of air from such spaces as permitted by Section 403.2.1 is prohibited (see Section 403.2.1, Items 1 and 3).

c. Spaces unheated or maintained below 50°F are not covered by these requirements unless the occupancy is continuous.

d. Ventilation systems in enclosed parking garages shall comply with Section 404.

e. Where the ventilation rate is expressed in cfm/ft², such rate is based upon cubic feet per minute per square foot of the floor area being ventilated.

f. The sum of the outdoor and transfer air from adjacent spaces shall be sufficient to provide an exhaust rate of not less than 1.5 cfm/ft².

g. Transfer air permitted in accordance with Section 403.2.2.

h. Mechanical exhaust is required and recirculation is prohibited except that recirculation shall be permitted where the resulting supply air stream consists of not more than 10 percent air recirculated from these spaces (see Section 403.2.1, Items 2 and 4).

i. The required exhaust system shall capture the contaminants and odors at their source.

403.4 ASHRAE 62 Alternative. Add to read as shown.

403.4 ASHRAE 62 Alternative. In lieu of compliance with Section 403.1 through Section 403.3, mechanical ventilation may be implemented in compliance with ASHRAE 62 including approved addenda

Section 404 Enclosed Parking Garages

404.1 Enclosed parking garages. Change to read as shown. Overlap exists. Needs resolution.

404.1 Enclosed parking garages. Mechanical ventilation systems for enclosed parking garages shall be permitted to operate intermittently where the system is arranged to operate automatically upon detection of vehicle operation or the presence of occupants by approved automatic detection devices. See definition of “Open parking garage” in Section 202 of the *Florida Building Code, Building*.

Section 407 Return Air Intake

Section 407 Return Air Intake. Add to read as shown.

407 RETURN AIR INTAKE

407.1 General. It shall be prohibited to place a return air intake in the following locations: public bathrooms, and nondedicated kitchen HVAC systems

Section 501 General

501.3 Pressure equalization. Change to read as shown.

501.3 Pressure equalization. See Section 601.4 of this code and Section 13-409 of the *Florida Building Code, Building*.

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501.4 Ducts. Change to read as shown.

501.4 Ducts. Exhaust ducts shall be of metal and such construction shall comply with Chapter 6.

Section 504 Clothes Dryer Exhaust

504.3 Cleanout. Change to read as shown.

504.3 Cleanout. Each vertical riser shall be provided with a means for cleanout. Such means may include the exhaust duct connection to an individual dryer outlet if it is accessible and readily disassembled.

504.6 Domestic clothes dryer ducts. Change to read as shown.

504.6 Domestic clothes dryer ducts. Exhaust ducts for domestic clothes dryers shall have a smooth interior finish and the maximum developed length shall not exceed 25 feet (7620 mm) from the dryer location to the outlet terminal. The maximum length of the duct shall be reduced 2 ½ feet (762 mm) for each 45-degree (0.79 rad) bend and 5 feet (1524 mm) for each 90-degree (1.6 rad) bend. The exhaust duct shall be a minimum nominal size of 4 inches (102 mm) in diameter. The entire exhaust system shall be supported and secured in place. The male end of the duct at overlapped duct joints shall extend in the direction of airflow. Clothes dryer transition ducts used to connect the appliance to the exhaust duct system shall be limited to single lengths not to exceed 8 feet (2438 mm) in length and shall be listed and labeled for the application. Transition ducts shall not be concealed within construction. Developed duct lengths longer than 25 feet (7620mm) shall be allowed for specific dryer installations where the dryer manufacturer's installation instructions specify the allowable developed length of an engineered system.

Exception: Where a clothes dryer booster fan is installed and listed and labeled for the application, the maximum length of the exhaust duct, including any transition duct, shall be permitted to be in accordance with the booster fan manufacturer's installation instructions. Where a clothes dryer booster fan is installed and not readily accessible from the room in which the dryer is located, a permanent identifying label shall be placed adjacent to where the exhaust duct enters the wall. The label shall bear the words "This dryer exhaust system is equipped with a remotely located booster fan."

Section 505 Domestic Kitchen Exhaust Equipment

505.2 Installation of microwave ovens. Add to read as shown.

505.2 INSTALLATION OF MICROWAVE OVENS Installation of microwave oven over a cooking appliance. The installation of a listed and labeled cooking appliance or microwave oven over a listed and labeled cooking appliance shall conform to the terms of the upper appliance's listing and label and the manufacturer's installation instructions.

505.3 Overhead exhaust hoods. Add to read as shown.

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505.3 OVERHEAD EXHAUST HOODS General. Domestic open-top broiler units shall be provided with a metal exhaust hood, not less than 28 gage, with a clearance of not less than 0.25 inch (6.4 mm) between the hood and the underside of combustible material or cabinets. A clearance of at least 24 inches (610 mm) shall be maintained between the cooking surface and the combustible material or cabinet. The hood shall be at least as wide as the broiler unit and shall extend over the entire unit. Such exhaust hood shall discharge to the outdoors and shall be equipped with a back draft damper or other means to control infiltration/exfiltration when not in operation. Broiler units incorporating an integral exhaust system, and listed and labeled for use without an exhaust hood, need not be provided with an exhaust hood.

Section 506 Commercial Kitchen Hood Ventilation System Ducts and Exhaust Equipment

506.1 General. Change to read as shown.

506.1 General. Commercial kitchen grease ducts and exhaust equipment shall comply with the requirements of this section. Commercial kitchen grease ducts shall be designed for the type of cooking appliance and hood served. Unless otherwise specified in this chapter, grease hoods and grease hood duct systems shall conform to NFPA 96.

506.3.2 Joints, seams and penetrations of grease ducts. Change to read as shown.

506.3.2 Joints, seams and penetrations of grease ducts. Joints, seams and penetrations of grease ducts shall be made with a continuous liquid-tight weld made on the external surface of the duct system.

Exceptions:

1. Penetrations shall not be required to be welded where sealed by devices that are listed for the application.
2. Internal welding shall not be prohibited provided that the joint is formed or ground smooth and is provided with ready access for inspection.
3. Factory-built commercial kitchen grease ducts listed and labeled in accordance with UL 1978 and installed in accordance with Section 304.1.

506.3.2.2 Duct to hood joints. Change to read as shown.

506.3.2.2 Duct to hood joints. Duct to hood joints shall be made with continuous internal or external liquid-tight welded joints. Such joints shall be smooth, accessible for inspection, and without grease traps.

Exceptions: [No change]

506.3.4 Air velocity. Change to read as shown.

506.3.4 Air velocity. Grease duct systems serving a Type I hood shall be designed and installed so as to provide an air velocity within the duct system of not less than 500 feet per minute (7.6 m/s) and not greater than 2,500 feet per minute (13 m/s).

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Exception: The velocity limitations shall not apply within duct transitions utilized to connect ducts to differently sized or shaped openings in hoods and fans, provided that such transitions do not exceed 3 feet (914 mm) in length and are designed to prevent the trapping of grease.

506.3.8 Cleanouts and other openings. Change to read as shown.

506.3.8 Cleanouts and other openings. Grease duct systems shall not have openings therein other than those required for proper operation and maintenance of the system. Any portion of such system having sections not provided with access from the duct entry or discharge shall be provided with cleanout openings. Cleanout openings shall be equipped with tight-fitting doors constructed of steel having a thickness not less than that required for the duct. Doors shall be equipped with a substantial method of latching, sufficient to hold the door tightly closed. Doors shall be designed so that they are operable without the use of a tool. Door assemblies, including any frames and gasketing, shall be approved for the purpose, and shall not have fasteners that penetrate the duct. Listed and labeled access door assemblies shall be installed in accordance with the terms of the listing. A sign shall be placed on all access panels stating: ACCESS PANEL - DO NOT OBSTRUCT in letters at least 1 inch high.

506.3.10 Duct enclosure. Change to read as shown.

506.3.10 Duct enclosure. A grease duct serving a Type I hood that penetrates a fire rated ceiling, fire rated wall, or floor shall be enclosed from the point of penetration to the outlet terminal. A duct shall only penetrate exterior walls at locations where unprotected openings are permitted by the building code. Ducts shall be enclosed in accordance with the building code requirements for shaft construction. The duct enclosure shall be sealed around the duct at the point of penetration and vented to the outside of the building through the use of weather-protected openings. The enclosure shall be separated from the duct by a minimum of 6 inches (152 mm) and a maximum of 12 inches (305mm) and shall serve a single grease exhaust duct system.

Exceptions:

1. The shaft enclosure provisions of this section shall not be required where a duct penetration is protected with a through-penetration firestop system classified in accordance with ASTM E 814 and having an "F" and "T" rating equal to the fire-resistance rating of the assembly being penetrated and where the surface of the duct is continuously covered on all sides from the point at which the duct penetrates a ceiling, wall or floor to the outlet terminal with a classified and labeled material, system, method of construction or product specifically evaluated for such purpose, in accordance with ASTM E 2336. Exposed ductwrap systems shall be protected where subject to physical damage.

2. The shaft enclosure provisions of Section 506.3.102 shall not be required where a duct penetration is protected with a through-penetration firestop system classified, and installed as tested, in accordance with ASTM E814. The system shall have an F and T rating of not less than 1 hour, but not less than the required fire resistance rating of the assembly being penetrated and where the surface of the duct is continuously covered on all sides from the point at which the duct penetrates a ceiling, wall or floor to the outlet terminal with a classified and labeled prefabricated system specifically evaluated for such purposes in accordance with UL 2221.

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3. A duct enclosure shall not be required for a grease duct that penetrates only a nonfire-resistance-rated roof/ceiling assembly.

507.7 Hood joints, seams and penetrations. Change to read as shown.

507.7 Hood joints, seams and penetrations. External hood joints, seams and penetrations shall be made with a continuous external liquid-tight weld to the lowest outermost perimeter of the hood. Internal hood joints, seams, penetrations, filter support frames, and other appendages attached inside the hood shall not be required to be welded but shall be otherwise sealed to be grease tight.

Exceptions:

1. Penetrations shall not be required to be welded where sealed by devices that are listed for the application.
2. Internal welding of seams, joints, and penetrations of the hood shall not be prohibited provided that the joint is formed smooth or ground so as to not trap grease, and is readily cleanable.
3. External hood joints and seams tested and listed in accordance with the requirements of UL 710 shall not be required to be welded.

507.11.1 Criteria. Change to read as shown.

507.11.1 Criteria. Filters shall be of such size, type and arrangement as will permit the required quantity of air to pass through such units at rates not exceeding those for which the filter or unit was designed or approved. Filter units shall be installed in frames or holders so as to be readily removable without the use of separate tools, unless designed and installed to be cleaned in place and the system is equipped for such cleaning in place. Removable filter units shall be of a size that will allow them to be cleaned in a dishwashing machine or pot sink. Filter units shall be arranged in place or provided with drip-intercepting devices to prevent grease or other condensate from dripping into food or on food preparation surfaces. Listed grease filters shall conform to the requirements of UL 1046.

Table 507.11 Minimum Distance between the Lowest Edge of a Grease Filter and the Cooking Surface or the Heating Surface. Change to read as shown.

TABLE 507.11
MINIMUM DISTANCE BETWEEN THE LOWEST EDGE OF A GREASE FILTER
AND THE COOKING SURFACE OR THE HEATING SURFACE

For SI: 1 foot = 304.8 mm

510.8.1 Duct joints. Change to read as shown.

510.8.1

Ducts shall

TYPE OF COOKING APPLIANCE	HEIGHT ABOVE COOKING SURFACE (feet)
Without exposed flame	0.5
Exposed flame and burners	2
Exposed charcoal and charbroil type	4

Duct joints.
be made

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tight with the male end of the duct overlapped a minimum of 1 inch (25 mm) with duct joints extending in the direction of airflow.

511.1 Dust, stock and refuse conveying systems. Change to read as shown.

511.1 Dust, stock and refuse conveying systems. Dust, stock and refuse conveying systems shall comply with the provisions of 511.1.1 through 511.2 Unless otherwise specified in this section, dust, stock and refuse conveying systems shall also comply with 510 and NFPA 91.

511.3 Clearance to combustibles. Add to read as shown.

511.3 Clearance to combustibles.

511.3.1 Ambient Temperature Noncombustible Materials. Dusts conveying ambient temperature noncombustible materials shall have a minimum clearance of 1/2 inch from combustible construction and a minimum of 6 inch clearance to store combustible materials.

511.3.2 Ambient Temperature Combustible Materials. Dusts conveying ambient temperature combustible materials shall have a minimum clearance of 18 inches from combustible construction or combustible materials.

Exceptions:

1. Clearance may be reduced to 6 inches from combustible materials and to 1/2 inch from combustible construction if the duct system is provided for the specific hazard.
2. Clearances from ducts to combustible material may be reduced if the combustible material is protected in accordance with Table M308.6.

511.3.3 Systems Operating at Temperatures Above 100°F. Ducts conveying materials whose temperature exceeds 100°F (37.7°C) shall have clearances in accordance with Table M511.3.3. All ducts shall be lined with refractory materials if the temperature of the conveyed material exceeds 900°.

Table 511.3.3 Clearances for Ducts Conveying Materials Temperatures Exceeding 100°F. Add to read as shown.

**TABLE 511.3.3
CLEARANCES FOR DUCTS CONVEYING MATERIALS
TEMPERATURES EXCEEDING 100°F**

Product Temperature (In Duct)	Maximum Dimension of Duct (inches)	Minimum Clearance (inches)
101°-600°	Up to and including 8	8
	Over 8	12
601°-900°	Up to and including 8	18
	Over 8	24
901°	All ducts shall be lined with refractory material	24

511.4 Wood processing and woodworking facilities. Add to read as shown.

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511.4 Wood processing and woodworking facilities. Wood processing facilities that produce or utilize finely divided wood particles or wood fibers shall conform with NFPA 664.

Exception: Facilities with an area of 2,000 square feet (185.8 m²) or less and have a dust collection flow rate of 1500 cubic feet per minute (0.708 m³/sec) or less.

Section 515 Mausoleum Relief Vent. Add to read as shown.

SECTION 515 MAUSOLEUM RELIEF VENT

515.1 General. Add to read as shown.

515.1 General. A pressure relief vent shall be provided for each crypt. Niches shall not require pressure relief systems.

515.2 Materials. Add to read as shown.

515.2 Materials. The pressure relief vent pipe and fittings shall conform to one of the standards listed in Table M515.2A and Table M515.2B.

Table 515.2A Crypt Pressure Relief Pipe. Add to read as shown.

TABLE 515.2A: CRYPT PRESSURE RELIEF PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D 2661
	ASTM F 628 CSA B181.1
Polyolefin pipe	CSA CAN/CSA - B181.3
Polyvinyl chloride (PVC) plastic pipe (Type DWV)	ASTM D 2665
	ASTM D 2949, ASTM F 891

Table 515B Crypt Pressure Relief Pipe. Add to read as shown.

Table 515b: Crypt Pressure Relief Pipe

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D 3311, CSA B181.1
Polyvinyl chloride (PVC) plastic pipe (Type DWV)	ASTM D 3311, ASTM D 2949, ASTM F 891
Plastic, general	ASTM F 409

515.3 Pressure relief vent. Add to read as shown.

515.3 Pressure relief vent. Each crypt shall have a pressure relief vent from the crypt to the roof of the mausoleum. The minimum nominal pipe size shall be 1 inch (25.4 mm). The system shall have a minimum of one-eighth unit vertical to 12 units horizontal (1-percent slope). The piping shall not be trapped or installed to trap water or condensate.

515.4 Termination. Add to read as shown.

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515.4 Termination. Crypt pressure relief system shall extend through the roof and terminate at least 6 inches (152 mm) above the roof and at least 10 feet (3048 mm) from any openable opening, air intake, or property line. The termination of the relief system pipe shall be done by a roof and vent cap compatible with the relief pressure pipe. The roof and vent cap shall be waterproof.

Chapter 6 Duct Systems

Section 601 General

601.4 Balanced return air. Add to read as shown.

601.4 Balanced Return Air. Restricted return air occurs in buildings when returns are located in central zones and closed interior doors impede air flow to the return grill or when ceiling spaces are used as return plenums and fire walls restrict air movement from one portion of the return plenum to another. Provisions shall be made in both residential and commercial buildings to avoid unbalanced air flows and pressure differentials caused by restricted return air. Pressure differentials across closed doors where returns are centrally located shall be limited to 0.01 inch WC (2.5 pascals) or less. Pressure differentials across fire walls in ceiling space plenums shall be limited to 0.01 inch WC (2.5 pascals) by providing air duct pathways or air transfer pathways from the high pressure zone to the low zone.

Exceptions:

1. Transfer ducts may achieve this by increasing the return transfer 1½ times the cross sectional area (square inches) of the supply duct entering the room or space it's serving and the door having at least an unrestricted 1 inch undercut to achieve proper return air balance.
2. Transfer grilles shall use 50 square inches (of grille area) to 100 cfm (of supply air) for sizing through-the-wall transfer grilles and using an unrestricted 1 inch undercutting of doors to achieve proper return air balance

Habitable rooms only shall be required to meet these requirements for proper balanced return air excluding bathrooms, closets, storage rooms and laundry rooms, except that all supply air into the master suite shall be included.

Section 602 Plenums

602.2.1 Materials exposed within plenums. Change to read as shown.

602.2.1 Materials exposed within plenums. Except as required by Sections 602.2.1.1 through 602.2.1.5, materials within plenums shall be noncombustible or shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E 84.

Exceptions:

1. Rigid and flexible ducts and connectors shall conform to Section 603.
2. Duct coverings, linings, tape and connectors shall conform to Sections 603 and 604.

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3. This section shall not apply to materials exposed within plenums in one- and two-family dwellings.
4. This section shall not apply to smoke detectors.
5. Combustible materials enclosed in noncombustible raceways or enclosures, approved gypsum board assemblies or enclosed in materials listed and labeled for such application.
6. Condensate Pump Units with a total volume not exceeding 2 cubic feet.

7. Loudspeakers, loudspeaker assemblies, and their accessories exposed within a plenum shall have a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a peak heat release rate not greater than 100 kW when tested in accordance with UL 2043.

SECTION 603 DUCT CONSTRUCTION AND INSTALLATION

603.1 General. Change to read as shown.

603.1 General. An air distribution system shall be designed and installed to supply the required distribution of air. The installation of an air distribution system shall not affect the fire protection requirements specified in the building code. Ducts shall be constructed, braced, reinforced and installed to provide structural strength and durability. All transverse joints, longitudinal seams and fitting connections shall be securely fastened and sealed in accordance with the applicable standards of this section.

All enclosures which form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers and shall be constructed and sealed in accordance with the applicable criteria of this section.

603.1.1 Mechanical fastening. Add to read as shown.

603.1.1 Mechanical fastening. All joints between sections of air ducts and plenums, between intermediate and terminal fittings and other components of air distribution systems, and between subsections of these components shall be mechanically fastened to secure the sections independently of the closure system(s).

603.1.2 Sealing. Add to read as shown.

603.1.2 Sealing. Air distribution system components shall be sealed with approved closure systems.

603.1.3 Space provided. Add to read as shown.

603.1.3 Space provided. Sufficient space shall be provided adjacent to all mechanical components located in or forming a part of the air distribution system to assure adequate access for (1) construction and sealing in accordance with the requirements of Section 603.1 of this code; (2) inspection; and (3) cleaning and maintenance. A minimum of 4 inches (102 mm) is considered sufficient space around air handling units.

Exception: Retrofit or replacement units not part of a renovation are exempt from the minimum clearance requirement.

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603.1.4 Product application. Add to read as shown.

603.1.4 Product application. Closure products shall be applied to the air barriers of air distribution system components being joined in order to form a continuous barrier or they may be applied in accordance with the manufacturer's instructions or appropriate industry installation standard where more restrictive.

603.1.5 Surface preparation. Add to read as shown.

603.1.5 Surface preparation. The surfaces upon which closure products are to be applied shall be clean and dry in accordance with the manufacturer's installation instructions.

603.1.6 Approved mechanical attachments. Add to read as shown.

603.1.6 Approved mechanical attachments. Approved mechanical attachments for air distribution system components include screws, rivets, welds, interlocking joints crimped and rolled, staples, twist in (screw attachment), and compression systems created by bend tabs or screw tabs and flanges or by clinching straps. Mechanical attachments shall be selected to be appropriate to the duct system.

603.1.7 Approved closure systems. Add to read as shown.

603.1.7 Approved closure systems. Closure system materials, including adhesives when used, shall have a flame spread rating not over 25 without evidence of continued progressive combustion and a smoke-developed rating not over 50 when tested in accordance with the ASTM E 84. The following closure systems and materials are approved for air distribution construction and sealing for the applications and pressure classes prescribed in Sections 603.2 through 603.10:

1. Metal Closures.
 - a. Welds applied continuously along metal seams or joints through which air could leak.
 - b. Snaplock seams, and grooved, standing, double-corner, and Pittsburgh-lock seams as defined by SMACNA, as well as all other rolled mechanical seams. All seams shall be rolled or crimped.
2. Gasketing, which achieves a 25/50 flame spread, smoke density development rating under ASTM E 84 or UL 723, provided that it is used only between mated surfaces which are mechanically fastened with sufficient force to compress the gasket and to fill all voids and cracks through which air leakage would otherwise occur.
3. Mastic Closures. Mastic shall be placed over the entire joint between mated surfaces. Mastics shall not be diluted. Approved mastics include the following:
 - a. Mastic or mastic plus embedded fabric systems applied to fibrous glass ductboard that are listed and labeled in accordance with the UL 181A, Part III.
 - b. Mastic or mastic plus embedded fabric systems applied to nonmetal flexible duct that are listed and labeled in accordance with the UL 181B, Part II.
 - c. Mastic ribbons, which achieve a 25/50 flame spread, smoke density development rating under ASTM E 84 or UL 723, provided that they may be used only in flange-joints and lap-joints, such that the mastic resides between two parallel surfaces of the air barrier and that those surfaces are mechanically fastened.

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4. Tapes. Tapes shall be applied such that they extend not less than 1 inch (25 mm) onto each of the mated surfaces and shall totally cover the joint. When used on rectangular ducts, tapes shall be used only on joints between parallel rigid surfaces and on right angle joints. Approved tapes include the following:

a. Pressure-sensitive tapes.

1) Pressure-sensitive tapes applied to fibrous glass ductboard that are listed and labeled in accordance with the UL 181A, Part I.

2) Pressure-sensitive tapes applied to nonmetal flexible duct that are listed and labeled in accordance with the UL 181B, Part I.

b. Heat-activated tapes applied to fibrous glass ductboard that are listed and labeled in accordance with the UL 181A, Part II.

5. Aerosol Sealant. Such sealants shall be installed by manufacturer-certified installers following manufacturer instructions and shall achieve 25/50 flame spread/smoke density development ratings under ASTM E 84 or UL 723.

603.3 Metallic ducts, rigid and flexible. Add to read as shown.

603.3 Metallic ducts, rigid and flexible. All ducts shall be constructed of iron, steel, aluminum or other approved material. Ducts shall be constructed as specified in the SMACNA HVAC Duct Construction Standards - Metal and Flexible.

Exception: Ducts installed within single dwelling units shall have a minimum thickness as specified in Table 603.3.

All transverse joints, longitudinal seams and duct wall penetration of ducts and joints with other air distribution systems components shall be mechanically attached and sealed using approved closure systems for that pressure class specified in Section 603.3.1 or 603.3.2.

603.3.1 Pressure less than 1 inch water gage, approved closure systems. Add to read as shown.

603.3.1 Pressure less than 1 inch water gage, approved closure systems. The following closure systems are approved for rigid metal duct designed to be operated at pressures less than 1 inch water gauge when they conform to the approved closure and mechanical attachment requirements of Section 603.1:

1. Continuous welds.

2. Snaplock seams, and grooved, standing, double-corner, single-corner and Pittsburgh lock seams and all other rolled mechanical seams.

3. Mastic, mastic-plus-embedded fabric, or mastic ribbons.

4. Gaskets.

5. Pressure-sensitive tape.

6. Aerosol sealant.

603.3.2 Pressure 1 inch water gage or greater, approved closure systems. Add to read as shown.

603.3.2 Pressure 1 inch water gage or greater, approved closure systems. The following closure systems are approved for rigid metal duct designed to be operated at pressures 1 inch

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water gage or greater and flexible duct when they conform to the approved closure and mechanical attachment requirements of Section 603.1:

1. Continuous welds.
2. Mastic, mastic-plus-embedded fabric, or mastic ribbons.
3. Gaskets.

603.3.3 High pressure duct systems. Add to read as shown.

603.3.3 High pressure duct systems. High pressure duct systems designed to operate at pressures greater than 3 inches water gage (4 inches water gage pressure class), shall be tested in accordance with the SMACNA HVAC *Air Duct Leakage Test Manual*. The tested duct leakage class, at a test pressure equal to the design duct pressure class rating, shall be equal to or less than Leakage Class 6. Leakage testing may be limited to representative sections of the duct system but in no case shall such tested sections include less than 25 percent of the total installed duct area for the designated pressure class.

603.4 Nonmetallic ducts. Change to read as shown.

603.4 Nonmetallic ducts. Nonmetallic ducts shall be constructed with Class 0 or Class 1 duct material in accordance with UL 181. Fibrous duct construction shall conform to the SMACNA Fibrous Glass Duct Construction Standards or NAIMA Fibrous Glass Duct Construction Standards. The maximum air temperature with nonmetallic ducts shall not exceed 250°F (121°C).

603.4.1 Gypsum. Change to read as shown.

603.4.1 Gypsum. Gypsum boards that form air shafts (ducts) shall be limited to return air systems where the air temperatures do not exceed 125°F (52°C) and the gypsum board surface temperature is maintained above the airstream dew-point temperature. Gypsum return air ducts shall not be incorporated in air-handling systems utilizing evaporative coolers.

603.4.2 Fibrous glass duct, rigid. Add to read as shown.

603.4.2 Fibrous glass duct, rigid. All joints, seams and duct wall penetrations including, but not limited to, the joints between sections of duct and the joints between duct and other distribution system components shall be mechanically attached and sealed using approved closure systems as specified in Section 603.1.

603.4.2.1 Approved closure systems. Add to read as shown.

603.4.2.1 Approved closure systems. The following closure systems are approved for rigid fibrous glass ducts when they conform to the approved closure and mechanical attachment requirements of Section 603.1:

1. Heat-activated tapes.
2. Pressure-sensitive tapes.
3. Mastics or mastic-plus-embedded fabric systems.

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603.4.2.2 Mechanical fastening. Add to read as shown.

603.4.2.2 Mechanical fastening. Attachments of ductwork to air-handling equipment shall be by mechanical fasteners. Where access is limited, two fasteners on one side shall be acceptable when installed in accordance with Section 603.1.6.

603.5 Flexible air ducts and flexible air connectors. Change to read as shown.

603.5 Flexible air ducts and flexible air connectors. Flexible air ducts, both metallic and nonmetallic, shall comply with Sections 603.5.1, 603.5.1.1 and 603.5.3 through 603.5.5. Flexible air connectors, both metallic and nonmetallic, shall comply with Sections 603.5.2 through 603.5.5.

603.5.1 Flexible air ducts. Change to read as shown.

603.5.1 Flexible air ducts. Flexible air ducts, both metallic and nonmetallic, shall be tested in accordance with UL 181. Such ducts shall be listed and labeled as Class 0 or Class 1 flexible air ducts and shall be installed in accordance with Section 304.1.

603.5.1.1 Duct length. Change to read as shown.

603.5.1.1 Duct length. Flexible air ducts shall not be limited in length.

603.5.2 Flexible air connectors. Change to read as shown.

603.5.2 Flexible air connectors. Flexible air connectors, both metallic and nonmetallic, shall be tested in accordance with UL 181. Such connectors shall be listed and labeled as Class 0 or Class 1 flexible air connectors and shall be installed in accordance with Section 304.1.

603.5.2.1 Connector length. Change to read as shown.

603.5.2.1 Connector length. Flexible air connectors shall be limited in length to 14 feet (4267 mm).

603.5.3 Air temperature. Change to read as shown.

603.5.3 Air temperature. The design temperature of air to be conveyed in flexible air ducts and flexible air connectors shall be less than 250°F (121°C).

603.5.4 Flexible air duct and air connector clearance. Change to read as shown.

603.5.4 Flexible air duct and air connector clearance. Flexible air ducts and air connectors shall be installed with a minimum clearance to an appliance as specified in the appliance manufacturer's installation instructions.

603.5.5 Penetrations prohibited. Add to read as shown.

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603.5.5 Penetrations prohibited. Flexible air ducts and flexible air connectors shall not pass through any fire-resistance-rated assembly. Flexible air connectors shall not pass through any wall, floor or ceiling.

603.5.6 Flexible air duct systems, nonmetal. Add to read as shown.

603.5.6 Flexible air duct systems, nonmetal. Flexible nonmetal ducts shall be joined to all other air distribution system components by either terminal or intermediate fittings. All duct collar fittings shall have a minimum 5/8 inch (.63 mm) integral flange for sealing to other components and a minimum 3-inch (76 mm) shaft for insertion into the inner duct core. Flexible ducts having porous inner cores shall not be used.

Exception: Ducts having a nonporous liner between the porous inner core and the outer jacket. Fastening and sealing requirements shall be applied to such intermediate liners. All joints of flexible ducts to fittings and fittings to other air distribution system components shall be mechanically attached and sealed as specified in Sections 603.5.6.1 through 603.5.6.6.

603.5.6.1 Duct core to duct fitting, mechanical attachment. Add to read as shown.

603.5.6.1 Duct core to duct fitting, mechanical attachment. The reinforced core shall be mechanically attached to the duct fitting by a drawband installed directly over the wire-reinforced core and the duct fitting. The duct fitting shall extend a minimum of 2 inches (51 mm) into each section of duct core. When the flexible duct is larger than 12 inches (305 mm) in diameter or the design pressure exceeds 1 inch water gage, the drawband shall be secured by a raised bead or indented groove on the fitting.

603.5.6.2 Duct core to duct fitting, approved closure systems. Add to read as shown.

603.5.6.2 Duct core to duct fitting, approved closure systems. The reinforced lining shall be sealed to the duct fitting using one of the following sealing materials which conforms to the approved closure and mechanical attachment requirements of Section 603.1:

1. Gasketing.
2. Mastic, mastic-plus-embedded fabric, or mastic ribbons.
3. Pressure-sensitive tape.
4. Aerosol sealants, provided that their use is consistent with UL 181.

603.5.6.3 Duct outer jacket to duct collar fitting. Add to read as shown.

603.5.6.3 Duct outer jacket to duct collar fitting. The outer jacket of a flexible duct section shall be secured at the juncture of the air distribution system component and intermediate or terminal fitting in such a way as to prevent excess condensation. The outer jacket of a flexible duct section shall not be interposed between the flange of the duct fitting and the flexible duct, rigid fibrous glass duct board, or sheet metal to which it is mated.

603.5.6.4 Duct collar fitting to rigid duct, mechanical attachment. Add to read as shown.

603.5.6.4 Duct collar fitting to rigid duct, mechanical attachment. The duct collar fitting shall be mechanically attached to the rigid duct board or sheet metal by appropriate mechanical fasteners; either screws, spin-in flanges, or dovetail flanges.

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603.5.6.5 Duct collar fitting to rigid duct, approval closure systems. Add to read as shown.

603.5.6.5 Duct collar fitting to rigid duct, approved closure systems. The duct collar fitting's integral flange shall be sealed to the rigid duct board or sheet metal using one of the following closure systems/materials which conforms to the approved closure and mechanical attachment standards of Section 603.1:

1. Gasketing.
2. Mastic or mastic-plus-embedded fabric.
3. Mastic ribbons when used to attach a duct collar to sheet metal.
4. Pressure-sensitive tape.
5. Aerosol sealants, provided that their use is consistent with UL 181.

603.5.6.6 Flexible duct installation and support. Add to read as shown.

603.5.6.6 Flexible duct installation and support. Flexible ducts shall be configured and supported so as to prevent the use of excess duct material, prevent duct dislocation or damage, and prevent constriction of the duct below the rated duct diameter in accordance with the following requirements:

1. Ducts shall be installed fully extended. The total extended length of duct material shall not exceed 5 percent of the minimum required length for that run.
2. Bends shall maintain a center line radius of not less than one duct diameter.
3. Terminal devices shall be supported independently of the flexible duct.
4. Horizontal duct shall be supported at intervals not greater than 5 feet (1524 mm). Duct sag between supports shall not exceed ½ inch (12.7 mm) per foot of length. Supports shall be provided within ½ feet (152 mm) of intermediate fittings and between intermediate fittings and bends. Ceiling joists and rigid duct or equipment may be considered to be supports.
5. Vertical duct shall be stabilized with support straps at intervals not greater than 6 feet (1829 mm).
6. Hangers, saddles and other supports shall meet the duct manufacturer's recommendations and shall be of sufficient width to prevent restriction of the internal duct diameter. In no case shall the material supporting flexible duct that is in direct contact with it be less than 1½ inches (38 mm) wide.

603.6 Terminal and intermediate fittings. Add to read as shown.

603.6 Terminal and intermediate fittings.

All seams and joints in terminal and intermediate fittings, between fitting subsections and between fittings and other air distribution system components or building components shall be mechanically attached and sealed as specified in Section 603.6.1 or Section 603.6.2.

603.6.1 Fittings and joints between dissimilar duct types, approved closure systems. Add to read as shown.

603.6.1 Fittings and joints between dissimilar duct types, approved closure systems.

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Approved closure systems shall be as designated by air distribution system component material type in Section 603.1

Exception: When the components of a joint are fibrous glass duct board and metal duct, including collar fittings and metal equipment housings, the closure systems approved for fibrous glass duct shall be used.

603.6.2 Terminal fittings and air ducts to building envelope components, approved closure systems. Add to read as shown.

603.6.2 Terminal fittings and air ducts to building envelope components, approved closure systems. Terminal fittings and air ducts which penetrate the building envelope shall be mechanically attached to the structure and sealed to the envelope component penetrated and shall use one of the following closure systems/materials which conform to the approved closure and mechanical application requirements of Section 603.1:

1. Mastics or mastic-plus-embedded fabrics.
2. Gaskets used in terminal fitting/grille assemblies which compress the gasket material between the fitting and the wall, ceiling or floor sheathing.

603.7 Air handling units. Add to read as shown.

603.7 Air Handling Units. All air handling units shall be mechanically attached to other air distribution system components. Air handling units located outside the conditioned space shall be sealed using approved closure systems conforming to the approved closure and mechanical application requirements of 603.3.

603.7.1 Approved closure systems. Add to read as shown.

603.7.1 Approved Closure Systems. Systems conforming to the product and application standards of §M603.1 may be used when sealing air handling units.

603.8 Cavities of the building structure. Add to read as shown.

603.8 Cavities of the building structure. Cavities in framed spaces, such as dropped soffits and walls, shall not be used to deliver air from or return air to the conditioning system unless they contain an air duct insert which is insulated in accordance with Table 13-410.1.ABC.2.2 or Table 13-610.1.ABC.2.1 of Chapter 13 of the *Florida Building Code, Building* and constructed and sealed in accordance with the requirements of Section 603.1 appropriate for the duct materials used.

Exception: Return air plenums.

Cavities designed for air transport such as mechanical closets, chases, air shafts, etc. shall be lined with an air barrier and sealed in accordance with Section 603.9 and shall be insulated in accordance with Table 13-410.1.ABC.2.2 or Table 13-610.1.ABC.2.1 of Chapter 13 of the Florida Building Code, Building.

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Building cavities, which will be used as, return air plenums shall be lined with a continuous air barrier made of durable non-porous materials. All penetrations of the air barrier shall be sealed with a suitable long-life mastic material.

Exception: Surfaces between the plenum and conditioned spaces from which the return/mixed air is drawn.

Building cavities beneath a roof deck that will be used as return air plenums shall have an insulated roof with the insulation having an R-value of at least R-19.

603.9 Mechanical closets. Add to read as shown.

603.9 Mechanical closets. The interior surfaces of mechanical closets shall be sheathed with a continuous air barrier as specified in Section 603.9.1 and shall be sealed with approved closure systems as specified in Section 603.9.2. All joints shall be sealed between air barrier segments and between the air barriers of walls and those of the ceiling, floor and door framing. All penetrations of the air barrier including, but not limited to, those by air ducts, plenums, pipes, service lines, refrigerant lines, electrical wiring, and condensate drain lines shall be sealed to the air barrier and approved closure systems.

Exception: Air passageways into the closet from conditioned space that are specifically designed for return air flow.

Through-wall, through-floor and through-ceiling air passageways into the closet shall be framed and sealed to form an airtight passageway using approved air duct materials and approved closure systems.

Duct penetrations through any part of the ceiling, walls or floor of a mechanical closet shall have sufficient space between surrounding ceiling, walls or floor and any duct or plenum penetration to allow for sealing of the penetration and inspection of the seal.

Clothes washers, clothes dryers, combustion water heaters and atmospheric combustion furnaces shall not be located in mechanical closets used as return air plenums.

603.9.1 Approved air barriers. Add to read as shown.

603.9.1 Approved air barriers. The following air barriers are approved for use in mechanical closets:

1. One-half-inch-thick (12.7 mm) or greater gypsum wallboard, taped and sealed.
2. Other panelized materials having inward facing surfaces with an air porosity no greater than that of a duct product meeting Section 22 of UL 181 which are sealed on all interior surfaces to create a continuous air barrier.

603.9.2 Approved closure systems. Add to read as shown.

603.9.2 Approved closure systems. The following closure systems are approved for use in mechanical closets:

1. Gypsum wallboard joint compound over taped joints between gypsum wallboard panels.

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2. Sealants complying with the product and application standards of Section 603.4.2.1 for fibrous glass duct board;

A suitable long-life caulk or mastic compliant with the locally adopted mechanical code for all applications

603.10 Enclosed support platform. Add to read as shown.

603.10 Enclosed Support Platforms. Enclosed support platforms located between the return air inlet(s) from conditioned space and the inlet of the air handling unit or furnace, shall contain a duct section constructed entirely of rigid metal, rigid fibrous glass duct board, or flexible duct which is constructed and sealed according to the respective requirements of §M603.1 and insulated according to the requirements of §13-410.1.ABC.2.2 and §13-610.1.ABC.2.1 of Chapter 13 of the Florida Building Code, Building.

- The duct section shall be designed and constructed so that no portion of the building structure, including adjoining walls, floors and ceilings, shall be in contact with the return air stream or function as a component of this duct section.
- The duct section shall not be penetrated by a refrigerant line chase, refrigerant line, wiring, pipe or any object other than a component of the air distribution system.
- Through-wall, through-floor and through-ceiling penetrations into the duct section shall contain a branch duct which is fabricated of rigid fibrous glass duct board or rigid metal and which extends to and is sealed to both the duct section and the grille side wall surface. The branch duct shall be fabricated and attached to the duct insert in accordance with §M603.3 or §M603.4.2, respective to the duct type used.

603.11 Furnace connection. Change to read as shown.

603.11 Furnace connection. Reserved.

603.12 Condensation. Change to read as shown.

603.12 Condensation. Provisions shall be made to prevent the formation of condensation on the exterior of any duct.

603.13 Flood hazard areas. Change to read as shown.

603.13 Flood hazard areas. Floodplain Management Construction Standards. This code specifically defers to the authority granted to local government by Title 44 CFR, sections 59 and 60. This code is not intended to supplant or supercede local ordinances adopted pursuant to that authority, nor are local floodplain management ordinances to be deemed amendments to the code.

603.14 Location. Change to read as shown.

603.14 Location. Ducts shall not be installed in or within 6 inches (152 mm) of the earth, except where such ducts comply with Section 603.7.

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603.15 Mechanical protection. Change to read as shown.

603.15 Mechanical protection. Ducts installed in locations where they are exposed to mechanical damage by vehicles or from other causes shall be protected by approved barriers.

603.16 Weather protection. Change to read as shown.

603.16 Weather protection. All ducts including linings, coverings and vibration isolation connectors installed on the exterior of the building shall be protected against the elements.

603.17 Registers, grilled and diffusers. Change to read as shown.

603.17 Registers, grilles and diffusers. Duct registers, grilles and diffusers shall be installed in accordance with the manufacturer's installation instructions and shall have a flamespread rating not over 25 without evidence of continued progressive combustion and a smoke developed rating not over 50 when tested in accordance with ASTM E 84. **Volume dampers or other means of supply air adjustment shall be provided in the branch ducts or at each individual duct register, grille or diffuser. Each volume damper or other means of supply air adjustment used in balancing shall be provided with access.**

603.17.1 Floor registers. Change to read as shown.

603.17.1 Floor registers. Floor registers shall resist, without structural failure, a 200-pound (90.8 kg) concentrated load on a 2-inch (51 mm) diameter disc applied to the most critical area of the exposed face.

603.17.2 Prohibited locations. Add to read as shown.

603.17.2 Prohibited locations. Diffusers, registers and grilles shall be prohibited in the floor or its upward extension within toilet and bathing room floors required by the *Florida Building Code* to have smooth, hard, nonabsorbent surfaces.

Exception: Dwelling units.

603.18 Underground ducts. Add to read as shown.

603.18 Underground ducts. Ducts shall be approved for underground installation. Metallic ducts not having an approved protective coating shall be completely encased in a minimum of 2 inches (51 mm) of concrete.

603.18.1 Slope. Add to read as shown.

603.18.1 Slope. Ducts shall slope to allow drainage to a point provided with access.
603.1-603.7

603.18.2 Sealing. Add to read as shown.

603.18.2 Sealing. Ducts shall be sealed and secured prior to pouring the concrete encasement.

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603.18.3 Plastic ducts and fittings. Add to read as shown.

603.18.3 Plastic ducts and fittings. Plastic ducts shall be constructed of PVC having a minimum pipe stiffness of 8 psi (55 kPa) at 5-percent deflection when tested in accordance with ASTM D 2412. Plastic duct fittings shall be constructed of either PVC or high-density polyethylene. Plastic duct and fittings shall be utilized in underground installations only. The maximum design temperature for systems utilizing plastic duct and fittings shall be 150°F (66°C).

Section 606 Smoke Detection Systems Control

606.1 Controls required. Change to read as shown. Overlap exists.

606.1 Controls required. Air distribution systems shall be equipped with smoke detectors listed and labeled for installation in air distribution systems, as required by this section. **Duct smoke detectors shall comply with UL 268A. Other smoke detectors shall comply with UL 268.**

Exception: Structures classified as R-3 occupancy type.

606.2 Where required. Change to read as shown.

606.2 Where required. Smoke detectors shall be installed where indicated in Sections 606.2.1 through 606.2.3 **and NFPA 90A.**

606.2.1 Supply air systems. Change to read as shown.

606.2.1 Supply air systems. Smoke detectors shall be installed in supply air systems with a design capacity greater than 2,000 cfm (0.9 m³/s), in the **supply air duct.**

Exception: Smoke detectors are not required in the **supply air system where the space served by the air distribution system is protected by a system of area smoke detectors in accordance with the Florida Fire Prevention Code.** The area smoke detector system shall comply with Section 606.4.

606.2.2 Common supply, return air and supply air systems. Change to read as shown.

606.2.2 Common supply, return air and supply air systems. Where multiple air-handling systems share common supply or return air ducts or plenums with a combined design capacity greater than 2,000 cfm (0.9 m³/s), the return air **and supply air system** shall be provided with smoke detectors in accordance with Section **606.2.1.**

606.2.3 Return and supply risers. Change to read as shown.

606.2.3 Return and supply risers. Where return air **and supply air** risers serve two or more stories and **are part of a return air and supply air system** having a design capacity greater than 15,000 cfm (7.1 m³/s), smoke detectors shall be installed at each story. Such smoke detectors shall be located upstream of the connection between the return air riser and any air ducts or plenums **and between the air supply source and the first branch or take-off to the areas served.**

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606.3 Installation. Change to read as shown.

606.3 Installation. Smoke detectors required by this section shall be installed in accordance with NFPA 72. The required smoke detectors shall be installed to monitor the entire airflow conveyed by the system including return air, supply air, and exhaust or relief air. Access shall be provided to smoke detectors for inspection and maintenance.

Section 607 Ducts and Transfer Openings

607.8 Location and installation details. Add to read as shown.

607.8 Location and installation details. The specific location and installation details of each fire door, fire damper, ceiling damper and smoke damper shall be shown and properly identified on the building plans by the designer.

Chapter 8, Chimneys and Vents

Section 801 General

801.1 Scope. Change to read as shown.

801.1 Scope. This chapter shall govern the installation, maintenance, repair and approval of factory-built chimneys, chimney liners, vents and connectors. This chapter shall also govern the utilization of masonry chimneys. Gas-fired appliances shall be vented in accordance with the *Florida Building Code, Fuel Gas*. Unless otherwise stated in this code, chimneys, fireplaces, vents and solid fuel-burning appliances shall comply with NFPA 211.

801.21 Fans. Add to read as shown.

801.21 Fans. The return and exhaust fans shall be arranged so that any negative pressure produced will not affect the appliance venting.

Chapter 9, Specific Appliances, Fireplaces and Solid Fuel-burning Equipment

Section 908 Cooling Towers, Evaporative Condensers and Fluid Coolers

908.1 General. Change to read as shown.

908.1 General. A cooling tower used in conjunction with an air-conditioning appliance shall be installed in accordance with the manufacturer's installation instructions. The design of such cooling tower shall be in accordance with the requirements of the *Florida Building Code, Building* for a structure. Unless otherwise stated in this code, water cooling towers shall comply with NFPA 214.

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Section 918 Forced-Air Warm-Air Furnaces

918.6 Prohibited sources. Change to read as shown.

918.6 Prohibited sources. Outside or return air for a forced-air **mechanical** system shall not be taken from the following locations:

[Locations: No change]

Section 926 Residential Radiant Heating Systems. Add to read as shown.

926.1 General. Add to read as shown.

926.1 General. Electric radiant heating systems shall be installed in accordance with the manufacturer's installation instructions and Chapter 27 of the Florida Building Code.

926.2 Clearances. Add to read as shown.

926.2 Clearances. Clearances for radiant heating panels or elements to any wiring, outlet boxes and junction boxes used for installing electrical devices or mounting lighting fixtures shall comply with Chapter 27 of the Florida Building Code.

926.3 Installation of radiant panels. Add to read as shown.

926.3 Installation of radiant panels. Radiant panels installed on wood framing shall conform to the following requirements:

1. Heating panels shall be installed parallel to framing members and secured to the surface of framing members or mounted between framing members.
2. Panels shall be nailed or stapled only through the unheated portions provided for this purpose and shall not be fastened at any point closer than 1/4 inch (6.4 mm) from an element.
3. Unless listed and labeled for field cutting, heating panels shall be installed as complete units.

926.4 Installation in concrete or masonry. Add to read as shown.

926.4 Installation in concrete or masonry. Radiant heating systems installed in concrete or masonry shall conform to the following requirements:

1. Radiant heating systems shall be identified as being suitable for the installation, and shall be secured in place, as specified in the manufacturer's installation instructions.
2. Radiant heating panels or radiant heating panel sets shall not be installed where they bridge expansion joints unless protected from expansion and contraction.

926.5 Gypsum panels. Add to read as shown.

926.5 Gypsum panels. Where radiant heating systems are used on gypsum assemblies, operating temperatures shall not exceed 125°F (52°C).

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Finish surfaces. Finish materials installed over radiant heating panels or systems shall be installed in accordance with the manufacturer's installation instructions. Surfaces shall be secured so that nails or other fastenings do not pierce the radiant heating elements.

Section 927 Residential Electric Duct Heaters. Add to read as shown.

927.1 General. Add to read as shown.

927.1 General. Electric duct heaters shall be installed in accordance with the manufacturer's installation instructions and Chapter 27 of this code. Electric furnaces shall be tested in accordance with UL 1995.

927.2 Installation. Add to read as shown.

927.2 Installation. Electric duct heaters shall be installed so that they will not create a fire hazard. Class 1 ducts, duct coverings and linings shall be interrupted at each heater to provide the clearances specified in the manufacturer's installation instructions. Such interruptions are not required for duct heaters listed and labeled for zero clearance to combustible materials. Insulation installed in the immediate area of each heater shall be classified for the maximum temperature produced on the duct surface.

927.3 Installation with heat pumps and air conditioners. Add to read as shown.

927.3 Installation with heat pumps and air conditioners. Duct heaters located within 4 feet (1219 mm) of a heat pump or air conditioner shall be listed and labeled for such installations. The heat pump or air conditioner shall additionally be listed and labeled for such duct heater installations.

927.4 Access. Add to read as shown.

927.4 Access. Duct heaters shall be accessible for servicing, and clearance shall be maintained to permit adjustment, servicing and replacement of controls and heating elements.

927.5 Fan interlock. Add to read as shown.

927.5 Fan interlock. The fan circuit shall be provided with an interlock to prevent heater operation when the fan is not operating.

Section 928 Vented Residential Floor Furnaces. Add to read as shown.

928.1 General. Add to read as shown.

928.1 General. Vented floor furnaces shall conform to ANSI/UL 729 and be installed in accordance with their listing, the manufacturer's installation instructions and the requirements of this code.

928.2 Clearances. Add to read as shown.

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928.2 Clearances. Vented floor furnaces shall be installed in accordance with their listing and the manufacturer's installation instructions.

928.3 Location. Add to read as shown.

928.3 Location. Location of floor furnaces shall conform to the following requirements:

1. Floor registers of floor furnaces shall be installed not less than 6 inches (152 mm) from a wall.
2. Wall registers of floor furnaces shall be installed not less than 6 inches (152 mm) from the adjoining wall at inside corners.
3. The furnace register shall be located not less than 12 inches (305 mm) from doors in any position, draperies or similar combustible objects.
4. The furnace register shall be located at least 5 feet (1524 mm) below any projecting combustible materials.
5. The floor furnace burner assembly shall not project into an occupied under-floor area.
6. The floor furnace shall not be installed in concrete floor construction built on grade.
7. The floor furnace shall not be installed where a door can swing within 12 inches (305 mm) of the grill opening.

928.4 Access. Add to read as shown.

928.4 Access. An opening in the foundation not less than 18 inches by 24 inches (457 mm by 610 mm), or a trap door not less than 22 inches by 30 inches (559 mm by 762 mm) shall be provided for access to a floor furnace. The opening and passageway shall be large enough to allow replacement of any part of the equipment.

928.5 Installation. Add to read as shown.

928.5 Installation. Floor furnace installations shall conform to the following requirements:

1. Thermostats controlling floor furnaces shall be located in the room in which the register of the floor furnace is located.
2. Floor furnaces shall be supported independently of the furnace floor register.
3. Floor furnaces shall be installed not closer than 6 inches (152 mm) to the ground. Clearance may be reduced to 2 inches (51 mm), provided that the lower 6 inches (152 mm) of the furnace is sealed to prevent water entry.
4. Where excavation is required for a floor furnace installation, the excavation shall extend 30 inches (762 mm) beyond the control side of the floor furnace and 12 inches (305 mm) beyond the remaining sides. Excavations shall slope outward from the perimeter of the base of the excavation to the surrounding grade at an angle not exceeding 45 degrees (0.39 rad) from horizontal.
5. Floor furnaces shall not be supported from the ground.

Section 929 Vented Residential Wall Furnaces. Add to read as shown.

929.1 General. Add to read as shown.

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929.1 General. Vented wall furnaces shall conform to ANSI/UL 730 and be installed in accordance with their listing, the manufacturer's installation instructions and the requirements of this code.

929.2 Location. Add to read as shown.

929.2 Location. The location of vented wall furnaces shall conform to the following requirements:

1. Vented wall furnaces shall be located so as not to cause a fire hazard to walls, floors, combustible furnishings or doors. Vented wall furnaces installed between bathrooms and adjoining rooms shall not circulate air from bathrooms to other parts of the building.
2. Vented wall furnaces shall not be located where a door can swing within 12 inches (305 mm) of the furnace air inlet or outlet measured at right angles to the opening. Doorstops or door closers shall not be installed to obtain this clearance.

929.3 Installation. Add to read as shown.

929.3 Installation. Vented wall furnace installations shall conform to the following requirements:

1. Required wall thicknesses shall be in accordance with the manufacturer's installation instructions.
2. Ducts shall not be attached to a wall furnace. Casing extensions or boots shall only be installed when listed as part of a listed and labeled appliance.
3. A manual shut off valve shall be installed ahead of all controls.

929.4 Access. Add to read as shown.

929.4 Access. Vented wall furnaces shall be provided with access for cleaning of heating surfaces; removal of burners; replacement of sections, motors, controls, filters and other working parts; and for adjustments and lubrication of parts requiring such attention. Panels, grilles and access doors that must be removed for normal servicing operations shall not be attached to the building construction.

Section 930 Vented Residential Room Heaters. Add to read as shown.

930.1 General. Add to read as shown.

930.1 General. Vented room heaters shall be tested in accordance with UL 1482 or UL 896 and installed in accordance with their listing, the manufacturer's installation instructions and the requirements of this code.

930.2 Floor mounting. Add to read as shown.

930.2 Floor mounting. Room heaters shall be installed on noncombustible floors or approved assemblies constructed of noncombustible materials that extend at least 18 inches(457 mm) beyond the appliance on all sides.

Exceptions:

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1. Listed room heaters shall be installed on noncombustible floors, assemblies constructed of noncombustible materials or listed floor protectors with materials and dimensions in accordance with the appliance manufacturer's instructions.
2. Room heaters listed for installation on combustible floors without floor protection shall be installed in accordance with the appliance manufacturer's instructions

Chapter 10, Boilers, Water Heaters and Pressure Vessels

Section 1001 General

1001.1 Scope. Change to read as shown.

1001.1 Scope. This chapter shall govern the installation, alteration and repair of boilers, water heaters and pressure vessels.

Exceptions: [1. – 7. Unchanged.]

8. Boiler or pressure vessels subject to inspection as provided in the *Florida Statutes 554-Boiler Safety Act*, administered by the Boiler Safety Program, State Fire Marshal's Office.

Section 1002 Water Heaters

1002.1 General. Change to read as shown.

1002.1 General. Non-potable water heaters and hot water storage tanks shall be designed and stamped under ANSI Z10.1, ANSI Z10.3, ASME Boiler and Pressure Vessel Code Section IV code or shall be listed and labeled in accordance with national standards, and installed in accordance with the manufacturer's installation instructions, and this code. All water heaters shall be capable of being removed without first removing a permanent portion of the building structure. The potable water connections and relief valves for all water heaters shall conform to the requirements of the *Florida Building Code, Plumbing*.

Section 1003 Pressure Vessels

1003.1 General. Change to read as shown.

1003.1 General. All pressure vessels shall bear the label of an approved agency and shall be installed in accordance with the manufacturer's installation instructions. Pressure vessels shall be designed and stamped per ASME Boiler and Pressure Vessel Code Section VIII-Division 1, Division 2. or Division 3, 1998 edition, 1999 addenda and interpretation.

Chapter 11, Refrigeration

Section 1107 Refrigerant Piping.

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1107.2.1 Piping installed in or beneath concrete floors shall be encased in pipe duct. Add to read as shown.

1107.2.1 Piping installed in or beneath concrete floors shall be encased in pipe duct.

Where piping passes through concrete or masonry walls, ceilings, floors or beams, such piping shall be provided with sleeves or thimbles which shall be at least 3/8 inch (9.5 mm) larger than the outside diameter of the piping plus the insulation. All voids between piping and casing shall be adequately enclosed with an approved material.

Chapter 12, Hydronic Piping

Section 1206 Piping Installation.

1206.1.1 Prohibited tee applications. Change to read as shown.

1206.1.1 Prohibited tee applications. **Reserved.**

Chapter 15, Referenced Standards

Referenced Standards. Change to read as shown.

**ACCA Air Conditioning Contractors of America
 2800 Shirlington Road, Suite 300
 Arlington, VA 22206**

Standard reference number	Title	Referenced in code section number
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**ANSI American National Standards Institute
 25 West 43rd Street
 New York, NY 10036**

Standard reference number	Title	Referenced in code section number
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Z10.1—98	Gas Water Heaters-Volume I-Storage, Water Heaters With Input Ratings of 75,000 Btu per Hour or Less	1002.1
Z10.3—98	Gas Water Heaters-Volume III-Storage, Water heaters	1002.1

**ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
 1791 Tullie Circle, NE
 Atlanta, GA 30329-2305**

Standard reference number	Title	Referenced in code section number
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62.1-2004	Ventilation for Acceptable Indoor Air Quality	403.4
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**ASTM ASTM International
 100 Barr Harbor Drive
 West Conshohocken, PA 19428-2959**

Standard reference number	Title	Referenced in code section number
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C 36/C 36M-03	Standard Specification for Gypsum Wallboard	202
D 2661-01	Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings	Table 515.2A
D2665-01	Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	Table 515.2A
D 2949-97	3.25-in. Outside Diameter Poly (Vinyl Chloride)(PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	Table 515.2A, 515.2B
D 3311-94	Drain, Waste, and Vent (DWV) Plastic Pipe Fittings Patterns	Table 515.2B
F 628-01	Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with Cellular Core	Table 515.2A
F 891-00	Coextruded Poly (Vinyl Chloride)(PVC) Plastic Pipe with Cellular Core	Table 515.2A, Table 515.2B

**CSA Canadian Standards Association
178 Rexdale Blvd.
Rexdale (Toronto), Ontario, Canada M9W 1R3**

Standard reference number	Title	Referenced in code section number
CAN/CSA B 181.1-99	ABS Drain, Waste, and Vent Pipe and Pipe Fittings	Tables 515.2A, 515.2B
CAN/CSA B 181.3-99	Polyolefin Laboratory Drainage Systems with Revisions through October 1990	Table 515.2A

**FEMA Federal Emergency Management Agency
U.S. Department of Homeland Security,
c/o Superintendent of Documents
US Government Printing Office
Washington, DC 20402-9325**

Standard reference number	Title	Referenced in code section number
44 CFR 59	Emergency Management and Assistance, General Provisions	301.14, 603.17
44 CFR 60-97	Criteria for Land Management and Use	301.14, 603.17

**Florida Codes Florida Building Commission
c/o Florida Department of Community Affairs
Building Codes and Standards
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100**

Standard reference number	Title	Referenced in code section number
Florida Building Code, Building	201.3, 202, 301.2, 301.7, 301.13, 302.1, 302.2, 303.3, 304.10, 306.4.1, 308.8, 308.10, 312, 401.4, 401.6, 403, 501.3, 502.10, 502.10.1, 504.2, 506.3.12.2, 506.4.1, 509, 510.6, 510.6.2, 510.7, 511.1.5, 513.1, 513.3, 513.5, 513.5.2, 513.5.2.1, 513.6.2, 513.2, 513.10.5, 513.11, 513.12.1, 513.20, 514.1, 602.2.1.1, 602.2.1.5.1, 602.2.1.5.2, 602.3, 603.10, 604, 607.1.1, 607.3.2.1, 607.5.1, 607.5.3, 607.5.4, 607.5.4.1, 607.5.5, 607.5.5.1, 801.3, 801.18.4, 902.1, 908.3, 908.4, 910.3, 926.1, 926.2, 927.1, 1004.6, 1105.1, 1204.1, 1204.2, 1206.4, 1402.4, 1402.4.1	201.3, 901.1, 906.1, 1101.5
Florida Building Code, Fuel Gas		201.3, 901.1, 906.1, 1101.5
Florida Building Code, Plumbing	201.3, 301.8, 512, 908.5, 1002.2, 1002.3, 1005.2, 1006.6, 1008.2, 1009.3, 1101.4, 1201.1, 1206.2, 1206.3, 1401.2	
Florida Fire Prevention Code	201.3, 310.1, 311, 502.5, 502.7.2, 502.8.1, 502.9.5, 502.9.5.2, 502.9.5.3, 502.9.8.2, 502.9.8.3, 502.9.8.5, 502.9.8.6, 502.10, 502.10.3, 502.16.2, 509, 510.2.1, 510.2.2, 510.4, 513.12.3, 513.15, 513.16, 513.17, 513.18, 513.20.2, 513.20.3, 606.2.1, 908.7, 1101.9, 1105.3, 1106.5, 1106.6, 1301.1, 1301.2	

IIAR International Institute of Ammonia Refrigeration

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**Suite 250
1110 North Glebe Road
Arlington, VA 22201**

**NFPA National Fire Protection Association
Battery March Park
Quincy, MA 02269**

Standard reference number	Title	Referred in code section number
70-05	National Electrical Code	306.31, 306.6.4.1, 602.2.1, 1106.8
86-99	Standard for Ovens and Furnaces	924.1
90A-02	Standard for the Installation of Air Conditioning and Ventilating Systems	301.15, 606.2
90B-02	Standard for the Installation of Warm Air Heating and Air Conditioning Systems	301.15
96-01	Ventilation Control and Fire Protection of Commercial Cooking Operations	506.1
214-96	Standard on Water Cooling Towers	908.1
664-02	Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities	511.4
8501—01	Boiler and Combustion Systems Hazards Code	1004.1

**SMACNA Sheet Metal and Air Conditioning Contractors' National Assoc., Inc.
4201 Lafayette Center Drive
Chantilly, VA 20151-1209**

Standard reference number	Title	Referred in code section number
SMACNA-85	HVAC Air Duct Leakage Test Manual	603.3.3

**UL Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, IL 60062-2096**

Standard reference number	Title	Referred in code section number
181A—96	Closure Systems for Use with Rigid Air Ducts and Air Connectors—with revisions through December 14, 1998	603.1.7
181B—98	Closure Systems for Use with Flexible Air Ducts and Air Connectors—with Revisions through May 18, 2000	603.1.7
723C-03	Standard for Test for Surface Burning Characteristics of Building Materials	603.1.7
727—94	Oil-Fired Central Furnaces—with Revisions through January 1999	918.1
1046-00	Grease Filters for Exhaust Ducts	507.11.1