



# Alachua County Department of Growth Management

## Building Division

Jeff Hays, AICP, Director  
Dan Gargas, Building Official  
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### **HVAC Replacement – Residential** **PERMIT SUBMITTAL REQUIREMENTS**

*Per current edition of FBC-R 107.2, and Building Official determinations: All documents are required to be submitted electronically in .PDF format. Construction plan documents shall be drawn to scale, dimensioned and drawn upon suitable material, sized to be legible, (11x17 minimum). Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of the Florida Building Code 2023 and all relevant laws, ordinances, rules and regulations, as determined by the Building Official.*

This form is intended as a basic guide and does not cover all codes that may be relevant to your project.

HVAC replacement is considered a level 1 alteration per FBC- EB 602.1

This form shall be provided to all HVAC replacement applicants at time of permit issuance.

*Per FBC-EB 702.6 – All new work shall comply with the materials and methods requirements in the Florida Building Code, Building; Florida Building Code, Energy Conservation; Florida Building Code, Mechanical; and Florida Building Code, Plumbing, as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.*

Required Submittal documents: (may vary depending on the scope of project)

1. AHRI Certificate for equipment being replaced.
2. If surge protection is being installed, provide manufacturer's installation instructions.
3. If and ductwork is being replaced, altered, or added, manual J and Manual D forms are also required and a 3000 – Rough-in Mechanical inspection should be scheduled as well.
4. Recorded Notice of Commencement must be uploaded to Citizenserve before inspections can be scheduled if the cost of the project is \$15,000 or more. Florida Statutes 713.135

*\*\* Additional items may be requested depending on the scope of your project\**

### **Inspection Requirements**

9000 – Final Inspection

\*Please provide information for the contact who will provide access for inspection. Please note AM, PM, or specific time preferences. We will do our best to comply with your request but cannot promise it.

Documents required on site:

We recommend that all approved permit documents be on site for the inspector. Poor signal, or time constraints may prevent the inspector from accessing them on Citizenserve and may result in a failed inspection. In addition, the manufacturer's installation instructions are required to be on site. If equipment is located in the attic, the contractor is required to provide access.

What is inspected: Outdoor Equipment

1. Minimum 3" Clearance from grade per FBC-R M1305.1.4.1
2. Required clearances around condensing unit per manufacturer's instructions. FBC-R M1307.1
3. Appliances properly anchored per FBC-R M1307.2
4. Piping insulation on suction lines per FBC-R M1411.6
5. Locking access port caps installed per FBC-R M1411.8
6. Piping Support within 6' of condensing unit per FBC-R M1411.9

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Effective Date: TBA

7. MOCP must be labeled on the unit and match installed circuit breaker. NEC 440.22(C).

*Licensed Mechanical contractors are now allowed to replace, disconnect, or reconnect power wiring on the line or load side of the dedicated existing electrical disconnect switch on single phase electrical systems; to repair or replace power wiring, disconnects, breakers, or fuses for dedicated HVAC circuits with proper use of a circuit breaker lock.*

8. Disconnecting means per 2020 NEC 440.14, disconnecting means shall be within sight and readily Accessible or use a circuit breaker lock.

#### Indoor Equipment – Electric

1. Appliance Access – minimum 30" x 30" level working space per FBC-R M1305.1

2. Minimum clearance of 3" along sides and back per FBC-R M1305.1.1

Note exception, manufacturer's installation instructions on clearances must be followed.

3. Protection from impact if subject to vehicle impact per FBC-R M1307.3.1

4. Approved Refrigerants per FBC-R M1411.1

5. Condensate disposal min. ¾" pipe size, minimum slope of 1/8" per foot per FBC-R M1411.3.

6. Secondary drain system per FBC-R M1411.3.1

7. Overflow device per FBC-R M1411.3.1.1

8. Drain maintenance per FBC-R M1411.3.3

9. MOCP must be labeled on the unit and match installed circuit breaker. NEC 440.22(C).

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10. Disconnecting means per 2020 NEC 440.14, disconnecting means shall be within sight and readily accessible or a circuit breaker lock.

#### Indoor Equipment – Gas

In addition to the above items, the following items will be inspected for gas equipment

1. Ignition source elevated 18" above floor if in a garage per FBC-R G2408.2

**Exception:** *Elevation of the ignition source is not required for appliances that are listed as flammable-vapor-ignition resistant. – Please have evidence of this listing.*

2. Prohibited locations per FBC-R G2406.2 (sleeping rooms, bathrooms, storage closets)

3. Combustion and dilution air per FBC-R G2407.1 as prescribed in sections G2407.5 thru G2407.9

4. Clearances to combustibles per manufacturer's instructions. FBC-R G2408.5

5. Gas piping other than CSST shall be bonded with minimum 6 AWG copper. FBC-R G2411.1, 2411.2.2

6. Vents shall be installed per manufacturer's instructions FBC-R G2426.5

#### Attic Location

In addition to all above items, the following items will be inspected for equipment installed in the attic

1. Access shall be provided per FBC-R M1305.1.3, min 30"x 30" level working surface. 20" x 30" opening.

2. Electrical requirements (Light and receptacle) per FBC-R M1305.1.3.1

An "Approved" result on the final inspection will result in closing the permit.

A "Failed w/ fee" result will be entered if any of the above items are deficient. Corrections will need to be made and fees paid before another inspection is scheduled.

This form is only a guide to common inspection items, every job is different and will have different code requirements. If you are unsure if you can meet code compliance, or are unsure of any of the requirements of this document, please contact the Alachua County Building Department.

## **Code References**

### **FBC Existing Building**

#### **602.1 Scope.**

Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.

#### **702.6 Materials and methods.**

All new work shall comply with the materials and methods requirements in the Florida Building Code, Building; Florida Building Code, Energy Conservation; Florida Building Code, Mechanical; and Florida Building Code, Plumbing, as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.

### **FBC Residential**

#### **M1305.1 Appliance access for inspection service, repair and replacement.**

Appliances shall be located to allow for access for inspection, service, repair and replacement without removing permanent construction, other appliances, or any other piping or ducts not connected to the appliance being inspected, serviced, repaired or replaced. A level working space not less than 30 inches deep and 30 inches wide shall be provided in front of the control side to service an appliance.

##### **M1305.1.1 Furnaces and air handlers.**

Furnaces and air handlers within compartments or alcoves shall have a minimum working space clearance of 3 inches along the sides, back and top with a total width of the enclosing space being not less than 12" wider than the furnace or air handler. Furnaces having a firebox open to the atmosphere shall have not less than a 6-inch working space along the front combustion chamber side. Combustion air openings at the rear or side of the compartment shall comply with the requirements of Chapter 17.

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

##### **M1305.1.3 Appliances in attics.**

Attics containing appliances shall be provided with an opening and a clear and unobstructed passageway large enough to allow removal of the largest appliance, but not less than 30" high and 22" wide and not more than 20' long measured along the centerline of the passageway from the opening to the appliance. The passageway shall have continuous solid flooring in accordance with Chapter 5 not less than 24" wide. A level service space not less than 30" deep and 30" wide shall be present along all sides of the appliance where access is required. The clear access opening dimensions shall be not less than of 20" by 30", and large enough to allow removal of the largest appliance.

**Exceptions:** The passageway and level service space are not required where the appliance can be serviced and removed through the required opening.

##### **M1305.1.3.1 Electrical requirements.**

A luminaire controlled by a switch located at the required passageway opening and a receptacle outlet shall be installed at or near the appliance location in accordance with Section E3401.1. Exposed lamps shall be protected from damage by location or lamp guards.

#### **M1305.1.4.1 Ground clearance.**

Equipment and appliances supported from the ground shall be level and firmly supported on a concrete slab or other approved material extending not less than 3" above the adjoining ground. Such support shall be in accordance with the manufacturer's installation instructions. Appliances suspended from the floor shall have a clearance of not less than 6" from the ground.

#### **M1307.1 General.**

Installation of appliances shall conform to the conditions of their listing and label and the manufacturer's instructions. The manufacturer's operating and installation instructions shall remain attached to the appliance.

#### **M1307.2 Anchorage of Appliances.**

Appliances designed to be fixed in position shall be fastened or anchored in an approved manner.

#### **M1307.3.1 Protection from impact.**

Appliances shall not be installed in a location subject to vehicle damage except where protected by approved barriers.

#### **M1401.3 Equipment and appliance sizing.**

Heating and cooling equipment and appliances shall be sized in accordance with ACCA Manual S or other approved sizing methodologies based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies.

**Exception:** Heating and cooling equipment and appliance sizing shall not be limited to the capacities determined in accordance with Manual S where either of the following conditions applies:

1. The specified equipment or appliance utilizes multistage technology or variable refrigerant flow technology and the loads calculated in accordance with the approved heating and cooling calculation methodology are within the range of the manufacturer's published capacities for that equipment or appliance.
2. The specified equipment or appliance manufacturer's published capacities cannot satisfy both the total and sensible heat gains calculated in accordance with the approved heating and cooling calculation methodology and the next larger standard size unit is specified.

#### **M1411.1 Approved refrigerants.**

Refrigerants used in direct refrigerating systems shall conform to the applicable provisions of ANSI/ASHRAE 34.

#### **M1411.3 Condensate disposal.**

Condensate from cooling coils and evaporators shall be conveyed from the drain pan outlet to an approved place of disposal. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than  $\frac{1}{8}$  unit vertical in 12 units horizontal (1-percent slope). Condensate shall not discharge into a street, alley or other areas where it would cause a nuisance.

#### **M1411.3.1 Auxiliary and secondary drain systems.**

In addition to the requirements of Section M1411.3, a secondary drain or auxiliary drain pan shall be required for each cooling or evaporator coil where damage to any building components will occur as a result of overflow from the equipment drain pan or stoppage in the condensate drain piping. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than  $\frac{1}{8}$  unit vertical in 12 units horizontal (1-percent slope). Drain piping shall be not less than  $\frac{3}{4}$ -inch nominal pipe size. One of the following methods shall be used:

**M1411.3.1.1 Water-level monitoring devices.**

On down-flow units and other coils that do not have secondary drain or provisions to install a secondary or auxiliary drain pan, a water-level monitoring device shall be installed inside the primary drain pan. This device shall shut off the equipment served in the event that the primary drain becomes restricted. Devices shall not be installed in the drain line.

**M1411.3.3 Drain line maintenance.**

Condensate drain lines shall be configured to permit the clearing of blockages and performance of maintenance without requiring the drain line to be cut.

**M1411.6 Insulation of refrigerant piping.**

Piping and fittings for refrigerant vapor (suction) lines shall be insulated with insulation having a thermal resistivity of not less than R-3 and having external surface permeance not exceeding 0.05 perm.

**M1411.8 Locking access port caps.**

Refrigerant circuit access ports located outdoors shall be fitted with locking-type tamper-resistant caps or shall be otherwise secured to prevent unauthorized access.

**Exception:** No locking-type tamper-resistant caps are required if ports are located inside the condensing unit cabinet.

**M1411.9 Support of refrigerant piping.**

Refrigerant piping and tubing shall be securely fastened to a permanent support within 6 feet of the condensing unit.

**M1501.1 Outdoor discharge.**

The air removed by every mechanical exhaust system shall be discharged to the outdoors in accordance with Section M1506.3. Air shall not be exhausted into an attic, soffit, ridge vent or crawl space.

**G2406.2 (303.3) Prohibited locations.**

Appliances shall not be located in sleeping rooms, bathrooms, toilet rooms, storage closets or surgical rooms, or in a space that opens only into such rooms or spaces, except where the installation complies with one of the following: Look up exceptions if you feel you qualify.

**G2407.1 (304.1) General.**

Air for combustion, ventilation and dilution of flue gases for appliances installed in buildings shall be provided by application of one of the methods prescribed in Sections G2407.5 through G2407.9. Where the requirements of Section G2407.5 are not met, outdoor air shall be introduced in accordance with one of the methods prescribed in Sections G2407.6 through G2407.9. Direct-vent appliances, gas appliances of other than natural draft design, vented gas appliances not designated as Category I and appliances equipped with power burners, shall be provided with combustion, ventilation and dilution air in accordance with the appliance manufacturer's instructions.

**G2408.2 (305.3) Elevation of ignition source.**

Equipment and appliances having an ignition source shall be elevated such that the source of ignition is not less than 18" above the floor in hazardous locations and public garages, private garages, repair garages, motor fuel-dispensing facilities and parking garages. For the purpose of this section, rooms or spaces that are not part of the living space of a dwelling unit and that communicate directly with a private garage through openings shall be considered to be part of the private garage.

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

**G2408.5 (305.8) Clearances to combustible construction.**

Heat-producing equipment and appliances shall be installed to maintain the required clearances to combustible construction as specified in the listing and manufacturer's instructions. Such clearances shall be reduced only in accordance with Section G2409. Clearances to combustibles shall include such considerations as door swing, drawer pull, overhead projections or shelving and window swing. Devices, such as door stops or limits and closers, shall not be used to provide the required clearances.

**G2411.1 (310.1) Pipe and tubing other than CSST.**

Each above-ground portion of a gas piping system other than corrugated stainless steel tubing (CSST) that is likely to become energized shall be electrically continuous and bonded to an effective ground-fault current path. Gas piping other than CSST shall be considered to be bonded where it is connected to an appliance that is connected to the equipment grounding conductor of the circuit that supplies that appliance.

**G2411.2.1 (310.2.1) Point of connection.**

The bonding jumper shall connect to a metallic pipe, pipe fitting or CSST fitting.

**G2411.2.2 (310.2.2) Size and material of jumper.**

The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent.

**G2426.5 (502.5) Installation.**

Vent systems shall be sized, installed and terminated in accordance with the vent and appliance manufacturer's installation instructions and Section G2427.

**2020 NEC 440.14 Location**

Disconnecting means shall be located within sight from, and readily accessible from the air-conditioning or refrigerating equipment. The disconnecting means shall be permitted to be installed on or within the air-conditioning or refrigerating equipment.

**2020 NEC 440.22 (C) Protective Device Rating Not to Exceed the Manufacturer's Value**

Where maximum protective device ratings shown on a manufacturer's overload relay table for use with a motor controller are less than the rating or setting selected in accordance with 440.22(A) and (B), the protective device rating shall not exceed the manufacturer's values marked on the equipment.

## **Questions and clarifications**

Following are questions asked to the Building official and the answers provided constitute policy of ACBD.

Q. I am replacing multiple units, do I need a separate permit for each?

A. No, a single permit can replace all units in a SFD. Just list each unit in your scope of work and provide the required documents for each.

Q. Do I need a gas permit if I am replacing a gas furnace?

A. A separate permit is not required, a mechanical contractor may reconnect the gas line to the new equipment.

Q. My AC unit was replaced without a permit. How do I now make it legal now?

A. You will need to hire a licensed HVAC contractor to inspect your unit, provide the proper documents and apply for an "after-the-fact permit". Once the permit is issued, schedule the final inspection.

Q. The new AC equipment has different electrical, ventilation, or combustion air requirements. Am I required to upgrade those items?

A. Yes, those items are required for life safety to be in compliance.

Q. I am an AC contractor, can I change out breakers myself?

A. As an AC contractor licensed under F.S. 489.105 (i), to replace, disconnect, or reconnect power wiring on the line or load side of the dedicated existing electrical disconnect switch on single phase electrical systems; to repair or replace power wiring, disconnects, breakers, or fuses for dedicated HVAC circuits with proper use of a circuit breaker lock; to install, disconnect, and reconnect low voltage heating, ventilating, and air-conditioning control wiring;