



Permitting Requirements for Permanently Installed Stand-by Generators – Based on FBC 8th Edition (2023) and NEC 2020

Effective December 31st, 2023

The following information outlines the requirements for permanently installed stand-by generators based on the code provisions in the Florida Building Code, 8th Edition (2023) and the NEC 2020, and explains the documentation required when submitting a building permit application for such projects. This information is intended to allow contractors to prescreen their application materials to ensure that all required documentation is included in their building permit application packet, expediting the permitting process.

ELECTRICAL

GENERATOR:

Provide generator's model number with Kw rating and indicate type of fuel source (natural gas, propane, diesel, etc.).

LOAD CALCULATION:

Provide a load calculation and size generator based on the 2020 NEC. Feeder and service loads connected to generator shall be calculated in conformance with the generator manufacturer's specifications, Article 220 (standard or optional calculations), and Article 702.4 of the National Electrical Code.

When using automatic transfer switches and the generator's output capacity is less than the electrical panel's main breaker's rated ampacity, a **load management system shall be required per Article 702.4(B)(2) NEC.**

RISER DIAGRAM:

Provide an electrical riser diagram showing meter, electrical panel(s), transfer switch(s), main disconnect(s) and generator. Riser diagram shall indicate the following information:

- Conductor sizes, conductor material (copper or aluminum), and insulation type (THHN, THWN, direct burial cable, etc.)
- Conduit sizes and material (i.e., PVC, EMT, etc.) **PVC conduit installed above ground shall be Schedule 80.**

- Overcurrent device ratings

TRANSFER SWITCHES:

Provide transfer switch's model number. Transfer Switches are required for all generators per NEC 702.5 and shall be rated for the connected load. If transfer switch is used as service equipment, then the manufacturer's specifications shall indicate this information.

Automatic Transfer Switches shall be sized based upon Article 702.4(B)(2) NEC.

Manual Transfer Switches shall be sized based upon Article 702.4(B)(1) NEC.

Required signage:

Site plan shall indicate a sign or placard shall be placed at the service-entrance equipment showing location and type of generator per 2020 NEC Articles 230.2(E), 700.7, 701.7, and 702.7.

This will be checked at inspection.

Site plan shall indicate all equipment shall be installed per manufacturer's installation instructions and shall indicate these instructions shall be provided to the inspector for inspection.

FUEL GAS

GENERATOR SPECIFICATIONS:

Provide generator's model number with **BTU** rating and indicate type of fuel source (natural gas, propane, diesel, etc.).

RISER DIAGRAM: - per Florida Building Code, Fuel Gas Chapter 4 Section 402

For the Riser Diagram, please provide the following information:

- Gas Type
- Inlet pressure size
- Size of each pipe segment
- Type of pipe used to convey the fuel gas – FBC Fuel Gas Section 403
- Location and size of gas regulator(s)
- Length of each pipe segment
- Overall length of the gas pipe from the meter to the last appliance
- Provide the BTU supply demand for each existing and new appliance on the fuel gas system
- The total BTU supply demand for all appliances on the gas system, including the generator
- All shutoff valve locations and type of shutoff

SITE PLAN REQUIREMENTS

The site plan shall include the following:

- The location of the generator, the gas piping and gas meter
- The location of the electric meter, main service disconnect, all panels, and transfer switch(s)
- The location of the sign or placard to be placed at the service-entrance equipment showing location and type of generator per 2020 NEC Articles 230.2(E), 700.7, 701.7, and 702.7.
- The location of any adjacent building openings (door, window, eve/soffit vents, etc.) or air intakes. Illustrate generator exhaust setbacks/clearances in compliance with 2023 FBC, Residential M1905.2.5
- The location of any adjacent condensing units or exterior gas water heaters with setbacks/clearances illustrated

ELEVATION REQUIREMENTS (New for FBC 8th Edition)

Per FBC, Residential M1905.2.2, permanently installed stand-by generators shall be installed in accordance with the elevation requirements of R322.1.6. Therefore, to determine if a property is flood prone, a [Leon County Flood Letter Certification Form](#) prepared by a State of Florida engineer is required at the time of submittal. If the property is considered flood prone, as-built elevation documentation will be required after installation to ensure the generator is installed at or above the flood protection elevation.

WIND RESISTANCE (New for FBC 8th Edition)

Per FBC, Residential M1905.2.4, generators that are exposed to the wind shall be designed and installed to resist wind pressures based on a minimum of 120mph ultimate design wind speed. If the generator manufacturer installation requirements do not specify the wind resistance of the installation/anchoring method, a State of Florida licensed engineer will be required to certify that the installation/anchoring method meets the wind resistance requirements specified above.

FBC, RESIDENTIAL, 8TH EDITION (2023) CODE PROVISIONS – SECTION M1905 RESIDENTIAL PERMANENTLY INSTALLED STANDBY-BY GENERATORS

M1905.1 Listed and labeled.

Permanently installed stand-by generators regulated by this code shall be listed and labeled for the application in which they are installed and used.

M1905.2 Installation.

Installation of permanently installed stand-by generators shall comply with manufacturer's installation instructions and listing conditions.

M1905.2.1 Electrical installation.

Electrical installation of permanently installed stand-by generators shall comply with the applicable provisions of NFPA 70, National Electrical Code, manufacturer's installation instructions, and conditions of the listing.

M1905.2.2 Flood hazard.

In flood hazard areas as established by Table R301.2(1), permanently installed stand-by generators shall be located or installed in accordance with Section R322.1.6.

M1905.2.3 Fuel installation.

M1905.2.3.1 Fuel gas.

Fuel gas installation for permanently installed stand-by generators shall comply with the applicable provisions of Chapter 24 of this code.

M1905.2.3.2 Liquid fuel.

Liquid fuel installation for permanently installed stand-by generators shall comply with the applicable provisions of NFPA-30.

M1905.2.4 Wind resistance.

Permanently installed standby generators that are exposed to wind shall be designed and installed to resist the wind pressures determined in accordance with this code.

M1905.2.5 Exhaust location.

Permanently installed residential standby generator's exhaust shall be located to not create a nuisance. Exhaust termination shall be a minimum of 10 feet (3048 mm) from any openings that could allow fumes into the building (doors, operable windows, eave vents, etc.) or air intakes.

Exception: The generator exhaust can be located a minimum of 5 feet (1524 mm) from any such openings (doors, operable windows, eave vents, etc.) or in compliance with generator manufacturer installation requirements and listing, whichever is more restrictive, if **all** of the following are complied with:

1. A carbon monoxide (CO) alarm(s) is installed in the residency within 10 feet (3048 mm) of each room used for sleeping purposes, or in accordance with the alarm's manufacturer installation requirements and listing, whichever is more restrictive.
2. An additional carbon monoxide (CO) alarm is installed in the residency as close as possible to the building's exterior opening nearest to the generator exhaust.
3. The carbon monoxide (CO) alarms mentioned above shall be of the types required by Sections R315.1.1 or R315.1.2 of this code.