

DS 2026-030 - Victor Riffle of Riffles Air & Heat Inc.

ISSUE: The petitioner, Victor Riffles of Riffles Air & Heat, Inc., seeks clarification as to whether dedicated supply and return ductwork is required within an unvented attic to comply with Section M406.1 of the 8th Edition (2023) Florida Building Code, Mechanical.

Petitioner presents the following question:

Is a dedicated supply and return ductwork required in the unvented attic to satisfy M406.1?

BACKGROUND:

The petition involves the construction of a new single-family residence in Orange County, Florida. The proposed home will consist of three bedrooms, two and one-half bathrooms, a two-car garage, and approximately 3,832 square feet of conditioned floor area.

The residence is designed with an unvented attic assembly insulated with air-impermeable spray foam insulation applied directly to the underside of the roof deck. According to the petitioner, the attic will comply with Section R806.5 of the Florida Building Code, Residential, and will be fully enclosed within the building thermal envelope.

The home will be served by two separate HVAC systems.

8th Edition (2023) Florida Building Code, Building

101.2 Scope. The provisions of this code shall apply to the construction, alteration, relocation, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exceptions:

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade plane in height, shall comply with the Florida Building Code, Residential.

8th Edition (2023) Florida Building Code, Mechanical

406 VENTILATION OF UNINHABITED SPACES

406.1 General. Uninhabited spaces, such as crawl spaces and attics, shall be provided with natural ventilation openings as required by the Florida Building Code, Building or shall be provided with a mechanical exhaust and supply air system. The mechanical exhaust rate shall be not less than 0.02 cfm per square foot (0.00001 m³/s · m²) of horizontal area and shall be automatically controlled to operate when the relative humidity in the space served exceeds 60 percent.

8th Edition (2023) Florida Building Code, Residential

R101.2 Scope. The provisions of the Florida Building Code, Residential shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures not more than three stories above grade plane in height.

R101.2.1 The provisions of Chapter 1, Florida Building Code, Building, shall govern the administration and enforcement of the Florida Building Code, Residential.

R806.5 Unvented attic and unvented enclosed rafter assemblies. Unvented attics and unvented enclosed roof framing assemblies created by ceilings that are applied directly to the underside of the roof framing members and structural roof sheathing applied directly to the top of the roof framing members/rafters, shall be permitted where all the following conditions are met:

1. The unvented attic space is completely within the building thermal envelope.
2. No interior Class I vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed roof framing assembly.
3. Where wood shingles or shakes are used, a minimum 1/4-inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. In Climate Zones 5, 6, 7 and 8, any air-impermeable insulation shall be a Class II vapor retarder, or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.

Interpretation # 9545 – Non-Binding Interpretation – Building Official Association of Florida

8th Edition (2023) Florida Building Code, Residential

Question: Is it the intent of Section R806.5 of the Florida Building Code- Residential that once an attic is constructed unvented attic with air-impermeable insulation applied directly to the underside of the roof deck and the space is fully brought inside the building thermal envelope, that dedicated supply and return air ducts are not required to be installed in the attic?

Answer: No. R806.5 does not require a dedicated supply and return air conditioning duct in an “unvented attic space” inside the thermal envelope. These cooling ducts are optional and up to the designer. However, the space is required to be tested for air leakage per R402.4.1.2 testing where it states under #7 that if an attic is both air sealed and insulated at the roof deck, interior access doors and hatches between the conditioned space volume and the attic shall be opened during the test and the volume of the attic shall be added to the conditioned space volume for purposes of reporting an infiltration volume and calculating the air leakage of the home since that space is now within the thermal envelope. Further, this space no longer falls under the definition of “attic” in the energy conservation volume. For the roof to be considered insulated, roof insulation shall be at least the R-value required to meet Section R405.2.1. Some designers provide conditioning to this space to reduce humidity which can occur, but this is optional.

Comment from Tina Neace -

I just noticed on the "question", there is 1 word that must be changed. Is it possible I send another copy with the one word changed?

It should read " Is a dedicated supply and return vent ~~ductwork~~ required in the unvented attic to satisfy M406.1?"

STAFF ANALYSIS:

Question:

Is a dedicated supply and return vent ~~ductwork~~ required in the unvented attic to satisfy M406.1?

Answer:

The answer to the Petitioner's question is no. Section M406.1, Florida Building Code, Mechanical, 8th Edition (2023), is not applicable to the proposed project because the project consists of a new single-family dwelling regulated by the Florida Building Code, Residential, 8th Edition (2023). The unvented attic assembly is governed by section R806.5, Florida Building Code, Residential, 8th Edition (2023), which does not require dedicated supply and return vents in the unvented attic. Accordingly, the requirement for dedicated supply and return vents cannot be imposed based on section M406.1, Florida Building Code, Mechanical, 8th Edition (2023).