

Staff Analysis for Declaratory Statement Request DS2018-018

Issue: Petitioner seeks a Declaratory Statement on interpretation of Section R501.7, Exception 1 thru 4 of the 6th Edition (2017) Florida Building Code, Energy Conservation.

Petitioner seeks clarification of the following questions:

- A.) Is it required that when part of an HVAC unit is replaced, that the part or resulting whole system must meet the current SEER rating?
- B.) In the event an outdoor condenser/compressor unit is replaced and upgraded to a higher, current SEER rating, must the fully functioning and by industry standards, compatible indoor evaporator coil be replaced to match the SEER rating of the outdoor unit (or vice-versa)?

Background:

The National Home Service Contract Association (NHSCA) represents the nation's leading providers of residential home warranty (service) contracts many of whom conduct business in the state of Florida.

Residential home warranty contracts are a consumer contract to service, repair or replace a household system or appliance that fails due to normal wear and tear. If the household system or appliance breaks or quits working correctly, the contracts require the service or repair of these to make it functional. The contracts do not cover replacement of appliances or systems that are not broken and operate mechanically correctly and compatibly at current manufacturer standards. If a part or an entire appliance or system requires replacement, the home service contract provider replaces it with the legally required energy operating standard under federal, state, or local law.

Most conventional air conditioning units consist of an outdoor condenser coil/compressor and an indoor evaporator coil joined to an air handler unit (which often is also joined to a furnace or heating unit). If the outdoor condenser/compressor unit cannot be repaired, it is replaced with a like-kind unit. If necessary to meet industry or compatibility standards, it is upgraded to meet new state mandated energy efficiency standards per Florida Building Code Section R501.7 - currently SEER 14. A perfectly good working indoor coil is not replaced even though rated below SEER 14 if it is fully mechanically compatible.

HVAC technicians are knowledgeable through their training and experience with Manufacturer's specification what systems are compatible. They are able to verify this compatibility through manufacturer specification, training, manuals and instant and direct installer support from manufacturer representatives.

Situation:

Mrs. Baker has an eight-year-old conventional HVAC rated SEER 12. Her outdoor condenser/compressor portion of the air conditioner fails and needs replacing. It is recommended that it be replaced with an available and updated SEER 14 unit. It operates fine and compatible to manufacturer standards with the indoor evaporator coil and air handler (resulting in a total SEER calculation somewhere between SEER 12 and SEER 14). As such, we propose that it does not make economic or environmental sense to be required to tear out the existing SEER 12 indoor evaporator coil and air handler that is working fine and is perfectly compatible just to match the SEER 14 rating of the outdoor condenser coil.

6th Edition (2017) Florida Building Code, Residential

SECTION M1202 EXISTING MECHANICAL SYSTEMS

M1202.1 Additions, alterations or repairs. Additions, alterations, renovations or repairs to a **mechanical system** shall conform to the requirements for a **new mechanical system without requiring the existing mechanical system to comply with all of the requirements of this code**. Additions, alterations or repairs shall not cause an existing mechanical system to become unsafe, hazardous or overloaded. Minor additions, alterations or repairs to existing mechanical systems shall meet the provisions for new construction, unless such work is done in the same manner and arrangement as was in the existing system, is not hazardous, and is approved.

6th Edition (2017) Florida Building Code, Energy Conservation

SECTION R503 ALTERATIONS

R503.1 General. Alterations to any building or structure shall comply with the requirements of the code for new construction. Alterations shall be such that the existing building or structure is no less conforming to the provisions of this code than the existing building or structure was prior to the alteration. **Alterations to an existing building, building system or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portions of the existing building or building system to comply with this code**. Alterations shall not create an unsafe or hazardous condition or overload existing building systems. Alterations shall be such that the existing building or structure uses no more energy than the existing building or structure prior to the alteration. Alterations to existing buildings shall comply with Sections R503.1.1 through R503.2.

Section R501.7 Building systems and components.

Thermal efficiency standards are set for the following building systems and **components** where new products are installed or replaced in existing buildings, and for which a permit must be obtained. **New products shall meet the minimum efficiencies allowed by this code** for the following systems and components:

Heating, ventilating or air-conditioning systems;
Service water or pool heating systems;
Lighting systems; and
Replacement fenestration.

Exceptions:

1. Where part of a functional unit is repaired or replaced. For example, **replacement of an entire HVAC system is not required because a new compressor or other part does not meet code when installed with an older system.**

2. If the unit being replaced is itself a functional unit, such as a condenser, it does not constitute a repair. Outdoor and indoor units that are not designed to be operated together must meet the U.S. Department of Energy certification requirements contained in Section R303.1.2. Matched systems are required; this match may be verified by any one of the following means:

- a. AHRI data
- b. Accredited laboratory
- c. Manufacturer's letter
- d. Letter from registered P.E. State of Florida

3. Where existing components are utilized with a replacement system, such as air distribution system ducts or electrical wiring for lights, such components or controls need not meet code if meeting code would require that component's replacement.

4. Replacement equipment that would require extensive revisions to other systems, equipment or elements of a building where such replacement is a like-for-like replacement, such as through-the-wall condensing units and PTACs, chillers and cooling towers in confined spaces.

R501.7.1 Existing equipment efficiencies. Existing cooling and heating equipment in residential applications need not meet the minimum equipment efficiencies, including system sizing and duct sealing.

R303.1.2 Equipment efficiency ratings. Minimum equipment efficiency rating identification for heating, cooling, hot water, swimming pool heating and filtration, and lighting shall be in accordance with industry standards and as described in Chapter 4 of the Commercial Provisions of this code, as applicable, for such equipment.

Staff Analysis:**Question A:**

Is it required that when part of an HVAC unit is replaced, that the part or resulting whole system must meet the current SEER rating?

Answer:**Option #1/Petitioner:**

Petitioner respectively believes the answer is “NO” to both questions, as R501.7.1 appears to clearly answer both questions in the negative. Even if R501.7.1 is not seen as a full exception, then exception # 4 appears to clearly indicate that when existing components of a system like HVAC are working fine, they need not be replaced just to meet code. There seems no other logical interpretation of the intent of this exception.

Option #2/Staff:

For the level of work in question, the answer is no. As per R501.7, Exception 1 and R503.1 of the 6th Edition (2017) Florida Building Code, Energy Conservation “the Code”, replacement of the outdoor condenser/compressor in question is permitted without requiring the combined efficiency of the whole system (outdoor unit plus indoor unit) to meet the minimum efficiency listed for that type of equipment in the current Code. However, the two units (outdoor unit plus indoor unit) must be compatible as per R501.7, Exception 2, of the Code.

Question B:

In the event an outdoor condenser/compressor unit is replaced and upgraded to a higher, current SEER rating, must the fully functioning and by industry standards, compatible indoor evaporator coil be replaced to match the SEER rating of the outdoor unit (or vice-versa)?

Option #1/Petitioner:

With respect to Question B, Exception # 1 would also apply. Exceptions # 1-4 appear to be distinct exceptions and not dependent on each other. The language in # 2 is not necessary for reference. Even if Exceptions # 1-4 were read as conjunctive requirements, #2 appears to suggest that if the design of separate indoor and outdoor units allows them to operate compatibly together, the two need not be “matched”. While unclear of its intent, the first sentence of # 2 “If the unit being replaced is itself a functional unit, such as a condenser, it does not constitute a repair” seems to suggest an outright exception as well.

Option #2/Staff:

See answer to question 1 (Option #2/Staff)