

**NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
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**Compatible/Properly Matched Partial Replacement of a Split System Heat Pump
or Air Conditioner**

Code: 2018 Mechanical Code
Section: 304.1

Date: April 28, 2019

Code: 2018 Residential Code
Section: M1307.1

Code: 2018 Energy Code
Section: R403.7

Code: 2018 Residential Code
Section: N1103.7

Question:

When the outdoor section of a split system air conditioner or residential heat pump unit must be replaced with a new condensing unit (or heat pump) and where the existing air handler unit/coil is remaining for use with the new condensing unit or heat pump, what is the responsibility, per the code, of the installing contractor to assure that the condensing unit (or heat pump) and the air handler/coil is code compliant for use together? What about vice versa? Also, what is the responsibility of the inspector to assure that the equipment is compatible (properly matched) for use together?

Answer:

This interpretation applies to a condenser (or heat pump) replacement or an AHU replacement or an indoor coil replacement, although the most common situation is a replacement of the condenser (or heat pump).

In order for the code to consider a condensing unit (or heat pump) and air handler/coil compatible, Section 301.4 would require the replacement appliance to be listed¹ and labeled, and Section 304.1 would also require the proposed combination meet the manufacturer's installation instructions. If the proposed combination is provided in the manufacturer's installation instructions, then this combination would be considered code-compliant. If the proposed combination is prohibited in the manufacturer's installation instructions, it would not be code compliant with Section 304.1. If the proposed combination is not addressed by the manufacturer's installation instructions, the compatibility would be determined at the discretion of the installing contractor using any needed resources such as personal experience, manufacturer's input, and/or input from a registered design professional as necessary to assure a compatible match.^{2,3,4}

There is no guarantee or requirement in the code that an existing portion of an appliance will have a compatible match made for it by a manufacturer.

Inspector responsibilities:

The code official is responsible for verifying code compliance of the technical codes. This will primarily include Section 304.1 Manufacturer's instructions, Section 302 Protection of Structure, and Section 307 for indoor unit replacements.

Footnotes:

¹This listing is referring to the code-defined listing and labeling requirements, such as UL, ETL, etc., but not AHRI, which is a rating.

²If the manufacturer's instructions do not address the proposed combination, it is not the intent of the code or this interpretation of the code, to deny a permit or inspection for a proposed installation. Proceed with the permit/inspection of the applicable portions of the code, and the performance will be addressed by the Board, as referred to in footnote #3 below.

³Section 101.5 of the Mechanical Code references the requirements of other agencies or licensing boards in addition to the requirements in the building codes. Refer to <http://nclicensing.org/> for the NC State Board of Examiners of Plumbing, Heating, and Fire Sprinkler Contractors requirements regarding split system replacement Board requirements.

⁴ When installing both sections new, North Carolina Code does not require anything different than what the National Appliance and Energy Conservation Act (NAECA) requires. This note is regarding erroneous reports that NC requires something different than the NAECA.

Keywords: