TECHNICAL MEMO

A2L Refrigerants & Fire Rated Shafts

OVERVIEW: The EPA has published new rules requiring that most mechanical systems must use A2L class refrigerants beginning January 1st, 2026. The current edition of the International Mechanical Code requires that these refrigerants be routed through fire rated shafts when they penetrate two or more floor-ceiling assemblies. The I-code development process for the 2027 editions is currently underway and it seems likely this requirement is going away; a proposed modification has passed committee by unanimous vote which would remove this requirement. Please see following section for more information.

RELEVANT FACTS & BACKGROUND:

ASHRAE 15 is the ASHRAE Safety Standard for Refrigerant Systems. ***It has been amended to omit the shaft requirement,*** so long as the quantity of refrigerant does not exceed preset limits. Our systems would not typically exceed those.

→ **Reference:** ASHRAE 15, 9.12.1.5.1, subsection b.

The International Code Council recently held its first hearings for the 2027 cycle. An amendment (M75-24) was proposed to modify the language in the IMC requiring shafts. This proposed amendment passed with a vote of 14-0. The public comment period is now open, but it is widely anticipated to be adopted.

→ **Reference:** M75-24 code modification.

→ **Reference:** Video of the amendment passing at the committee hearings: **cdpACCESS**

The Florida Building Code, Mechanical does not currently require shafts for these refrigerants. It requires the refrigerant either have hard, drawn copper or be routed in a rigid/flexible metal enclosure or pipe duct. The Florida Building Commission Mechanical Technical Advisory Committee (TAC) reviewed the proposed changes in both the 2020 and 2023 and rejected them.

→ **Reference:** Florida Building Code, Mechanical, 1107.3.

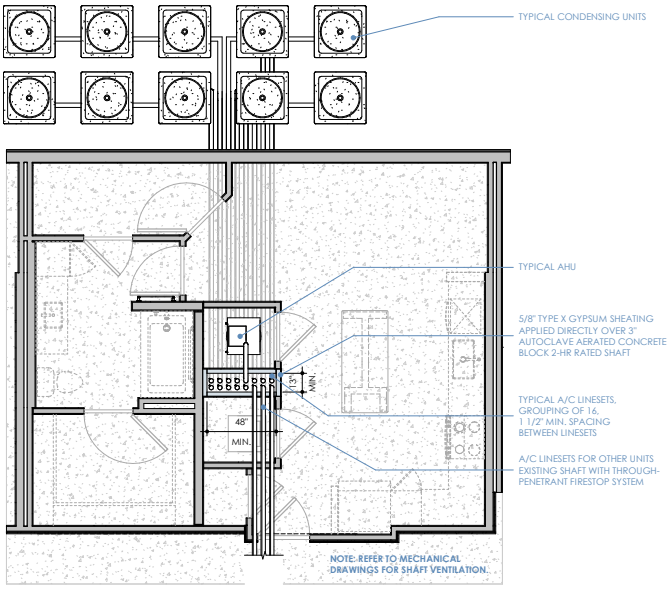
→ **Reference:** Florida Building Commissiong Code Tracking Chart, **Page 330 (shows where proposed change is rejected)**

GUIDANCE

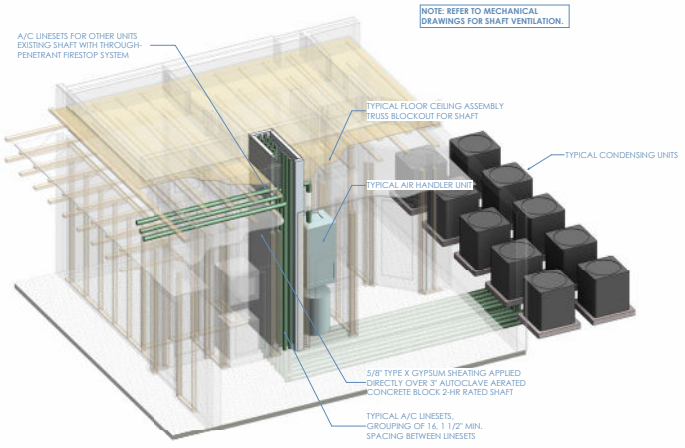
INTERNATIONAL MECHANICAL CODE

Plan to provide these shafts, but also discuss the matter with the AHJ. Some of our MEP partners have had success in lobbying AHJs to allow the use of ASHRAE-15 as the governing standard for refrigerant piping in lieu of Chapter 11 of the IMC/FMC, as ASHRAE-15 is more readily updated than the IMC. If shafts are required, there are a number of design options. Given the restraint on the allowable length of the line sets, we recommend that no more than four units on a given floor be grouped together for a total of sixteen units served by a single shaft. The shaft space may be planned for within the unit or within the corridor. Example of an in-unit retrofit can be found in the exhibits below.

EXHIBITS: SHAFT GRAPHIC



PROPOSED RETROFIT SHAFT SOLUTION



ISOMETRIC VIEW OF PROPOSED RETROFIT SHAFT SOLUTION

FOR PROJECTS PERMITTING UNDER THE FLORIDA BUILDING CODE, MECHANICAL:

No shaft is currently required and will not likely be required under the ninth edition which shall take effect on January 1st, 2026. We are currently monitoring the FBC-M TAC committee meetings and will provide a further update once their position becomes known. Given that the requirement has been removed from ASHRAE, will likely be removed from the IMC, and was never adopted in Florida, we find it highly unlikely that the commission will move to require shafts. Pipe ducts are currently required and should be detailed in the mechanical drawings. Fire stop assemblies will be required for these penetrants. It is expected that this requirement may be omitted in the ninth edition of the code. Again, we highly recommend that the project team discusses the matter with the AHJ and takes a route similar to IMC projects.

CBA remains committed to providing the highest quality experience and safety for the occupants of our communities. We will continue to evaluate any potential impacts to occupant safety, related to this issue and all others. At this time, we defer to expertise of the code authorities who appear to unanimously agree that this refrigerant does not pose sufficient risk to occupant safety so as to warrant the inclusion of these shafts within our structures. Where current codes require shafts, they shall be so provided.

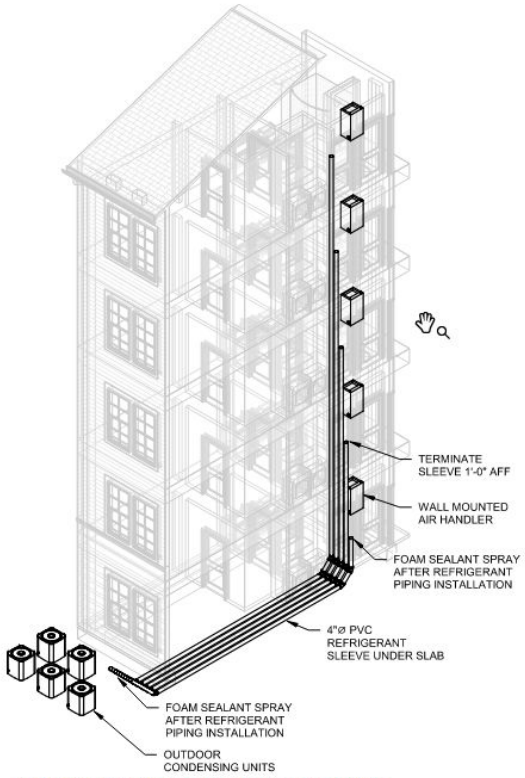
FOLLOW LINKS BELOW FOR REFERENCES:

M75-24 Code Amendment →

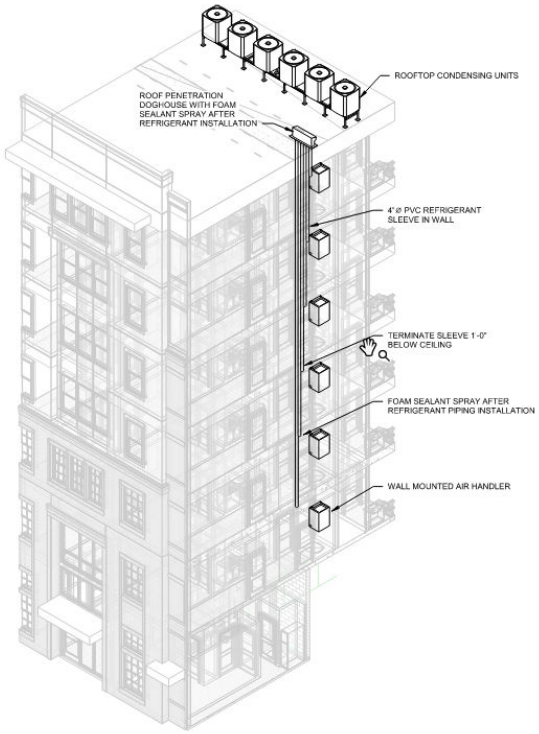
ASHRAE-15 →

PIPE DUCT GRAPHICS

CREDIT JOSEPH, LAWRENCE & CO



1 REFRIGERANT SLEEVE DETAIL



1 REFRIGERANT SLEEVE DETAIL

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