

PETITION FOR DECLARATORY STATEMENT
BEFORE THE FLORIDA BUILDING COMMISSION

Company: Midway Services, Inc.
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Statute(s), Agency Rule(s), Agency Order(s) and/or Code Sections(s) on which the Declaratory Statement is sought:

2014 Florida Mechanical Code, Duct Systems, Plenums, Construction, Materials within plenums
Chapter 602.2.1

Background:

Midway Services, Inc. is a national water, gas and electric utility submetering firm who supply and install utility submetering systems in new construction and pre-existing multifamily dwellings such as apartment and condominium buildings. Utility submeters may be installed by Midway Services, Inc. or another licensed plumbing contractor and can sometimes be requested to be installed in plenum-rated spaces during new construction of a multifamily dwelling. As a local supplier and installer of such equipment, Midway Services, Inc. is seeking clarification to Chapter 602.2.1, to ensure that the equipment supplied is being supplied and installed in compliance with the intent of this code, and, further, to seek a uniform interpretation so that the work being performed by Midway Services and/or plumbing contractors licensed in the State of Florida are being uniformly interpreted and implemented for the developer and/or owner of the multifamily dwelling. Petitioner seeks these clarifications as a "substantially affected person" under the procedures set forth in Section 553.775, F.S. (2011).

**SECTION 602
PLENUMS**

602.1 General.

Supply, return, exhaust, relief and ventilation air plenums shall be limited to uninhabited crawl spaces, areas above a ceiling or below the floor, attic spaces and mechanical equipment rooms. Plenums shall be limited to one fire area. Fuel-fired appliances shall not be installed within a plenum.

602.2 Construction.

Plenum enclosures shall be constructed of materials permitted for the type of construction classification of the building.

The use of gypsum boards to form plenums shall be limited to systems where the air temperatures do not exceed 125°F (52°C) and the building and mechanical system design conditions are such that the gypsum board surface temperature will be maintained above the airstream dew-point temperature. Air plenums formed by gypsum boards shall not be incorporated in air-handling systems utilizing evaporative coolers.

602.2.1 Materials within plenums.

Except as required by Sections 602.2.1.1 through 602.2.1.5, materials within plenums shall be noncombustible or shall be listed and labeled as having a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E 84 or UL 723.

Exceptions:

1. Rigid and flexible ducts and connectors shall conform to Section 603.
2. Duct coverings, linings, tape and connectors shall conform to Sections 603 and 604.
3. This section shall not apply to materials exposed within plenums in one- and two-family dwellings.
4. This section shall not apply to smoke detectors.
5. Combustible materials fully enclosed within one of the following:
 - 5.1. Continuous noncombustible raceways or enclosures.
 - 5.2. Approved gypsum board assemblies.

5.3. Materials listed and labeled for installation within a plenum.

6. Materials in Group H, Division 5 fabrication areas and the areas above and below the fabrication area that share a common air recirculation path with the fabrication area.

602.2.1.1 Wiring.

Combustible electrical wires and cables and optical fiber cables exposed within a plenum shall be listed as having a maximum peak optical density of 0.50 or less, an average optical density of 0.15 or less, and a maximum flame spread distance of 5 feet (1524 mm) or less when tested in accordance with NFPA 262 or shall be installed in metal raceways or metal sheathed cable. Combustible optical fiber and communication raceways exposed within a plenum shall be listed as having a maximum peak optical density of 0.5 or less, an average optical density of 0.15 or less, and a maximum flame spread distance of 5 feet (1524 mm) or less when tested in accordance with ANSI/UL 2024. Only plenum-rated wires and cables shall be installed in plenum-rated raceways. Electrical wires and cables, optical fiber cables and raceways addressed in this section shall be listed and labeled and shall be installed in accordance with NFPA 70.

602.2.1.2 Fire sprinkler piping.

Plastic fire sprinkler piping exposed within a plenum shall be used only in wet pipe systems and shall have a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread of not greater than 5 feet (1524 mm) when tested in accordance with UL 1887. Piping shall be listed and labeled.

602.2.1.3 Pneumatic tubing.

Combustible pneumatic tubing exposed within a plenum shall have a peak optical density not greater than 0.50, an average optical density not greater than 0.15, and a flame spread of not greater than 5 feet (1524 mm) when tested in accordance with UL 1820. Combustible pneumatic tubing shall be listed and labeled.

602.2.1.4 Electrical equipment in plenums.

Electrical equipment exposed within a plenum shall comply with Sections 602.2.1.4.1 and 602.2.1.4.2.

602.2.1.4.1 Equipment in metallic enclosures.

Electrical equipment with metallic enclosures exposed within a plenum shall be permitted.

602.2.1.4.2 Equipment in combustible enclosures.

Electrical equipment with combustible enclosures exposed within a plenum shall be listed and labeled for such use in accordance with UL 2043.

602.2.1.5 Foam plastic insulation.

Foam plastic insulation used as interior wall or ceiling finish, or as interior trim, in plenums shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 and shall also comply with one or more of Sections 602.2.1.5.1, 602.2.1.5.2 and 602.2.1.5.3.

602.2.1.5.1 Separation required.

The foam plastic insulation shall be separated from the plenum by a thermal barrier complying with Section 2603.4 of the Florida Building Code, Building and shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 at the thickness and density intended for use.

602.2.1.5.2 Approval.

The foam plastic insulation shall exhibit a flame spread index of 25 or less and a smoke-developed index of 50 or less when tested in accordance with ASTM E 84 or UL 723 at the thickness and density intended for use and shall meet the acceptance criteria of Section 803.1.2 of the Florida Building Code, Building when tested in accordance with NFPA 286.

The foam plastic insulation shall be approved based on tests conducted in accordance with Section 2603.10 of the Florida Building Code, Building.

602.2.1.5.3 Covering.

The foam plastic insulation shall be covered by corrosion-resistant steel having a base metal thickness of not less than 0.0160 inch (0.4 mm) and shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 at the thickness and density intended for use.

QUESTION:

Are poly or brass water submeters installed in plenum-rated spaces required to comply with Chapter 602.2.1 which refers to the testing and plenum requirements for *building materials*? In other words, must water submeters be plenum-rated?

Our firm is looking to sell poly (or brass) water submeters to a multifamily builder in South Florida who is building an apartment complex. A water submeter will be installed in each apartment unit's utility closet where the air handler and water heater are located. It will be installed in the utility closet because this is where water first enters the unit before teeing off to individual water fixtures. On almost all of our projects ever performed, the water submeter is installed in the utility closet for this reason. The water submeter's purpose is to measure all water entering the unit so the owner may bill back the resident for their individual water use.

We are finding that when we provide water submeters in South Florida, if the air handler is located in the utility closet, and the water submeter as well, the closet is considered a "*plenum-rated*" space and therefore requires the water submeter to be "*plenum-rated*". Water submeters do not get "*plenum-rated*" by submetering manufacturers because this rating does not apply to water submeters, only *building materials* within the "*plenum-rated*" spaces.

South Florida is the only municipality throughout the US where we have encountered a "*plenum-rated*" requirement for water submeters when installing a water meter in the same space as an air handler.

A material within a plenum space, as defined in Chapter 602.2.1 of the Florida Building Code, Construction, Materials within plenums, require a maximum flame spread and smoke-developed index in accordance with **ASTM E 84** or **UL 723 testing standards**.

The **ASTM E 84 test** is defined as a Standard Test Method for Surface Burning Characteristics of Building Materials. Building materials are defined, in accordance with ASTM International's description as being "applicable to exposed surfaces such as walls and ceilings". In the ASTM E 84 test performed here:

<file:///C:/Users/rmorris/Downloads/Testrapport%20ASTM%20E84%20class%20A1%20-%20IFR%20Xorel.pdf> it describes the test to be "applicable to exposed surfaces such as walls and ceilings."

The ASTM E 84 test is frequently referred to as the **Steiner Tunnel test** which also describes it as a, "widely used method of testing building interior wall and ceiling finishes for their ability to support and propagate fire, and for their tendency to emit smoke." (https://en.wikipedia.org/wiki/Steiner_tunnel_test).

Further, **UL 723** (https://standardscatalog.ul.com/standards/en/standard_723_10) refers to the requirements in the Standard for Fire Tests of Building Construction and Materials, UL 263 (https://standardscatalog.ul.com/standards/en/standard_263_14), as follows, "fire tests are applicable to assemblies of masonry units and to composite assemblies of structural materials for buildings, including bearing and other walls and partitions, columns, girders, beams, slabs, and composite slab and beam assemblies for floors and roofs." It appears not that these tests are to be applicable to products within a plenum rated space and the affect it shall have through fire or smoke toxicity on the building material, but rather the building material and its production of flame and contribution to smoke toxicity. These tests do not appear to be applicable to water submetering products within plenum spaces.

Likewise, submetering manufacturers are only required by the American Water Works Association to follow NSF 61 and AWWA rules, standards, testing and certifications for manufacturing water meters. Manufacturers have stated that Chapter 602.2.1 is not applicable to water submeters and therefore, they do not fire-proof or test their submetering products using ASTM E 84 or UL 723 testing standards or guidelines. With no products meeting these requirements available within the industry, it is our concern that developers and owners will be unable to practice proper water conservation through water submetering in new construction multifamily dwellings. By installing this water meter into each unit, the owner will be able to bill each residential unit back for the water they use on a monthly basis. This will increase conservation efforts and allow the owner to offset major utility costs produced by the residents. Water meter manufacturers have advised us they do not currently do so and do not intend to plenum rate their water submetering equipment as water meters are noncombustible and are not required by code to be rated as such.

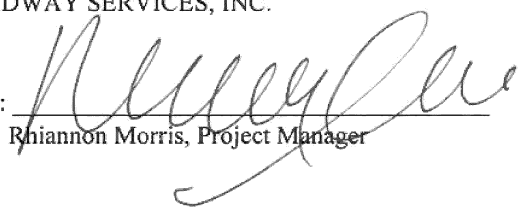
SUMMARY:

Petitioner respectfully believes the answer to the question outlined above is "NO". If the answer is "NO," then, by default, poly or brass water submeters installed in plenum-rated spaces are not required to comply with Chapter 602.2.1 or required to meet a maximum flame spread and smoke-developed index in accordance with ASTM E 84 or UL 723 testing standards. Petitioner fully understands the extensive work of the Commission in developing the new codes for greater safety and improvement for the consumer, and likewise, it would seem reasonable to ensure that the codes are uniformly interpreted.

Respectfully submitted,

MIDWAY SERVICES, INC.

By:


Rhiannon Morris, Project Manager