



# TOWN OF PEMBROKE

3150 S.W. 52ND AVENUE · PEMBROKE PARK, FLORIDA 33023 · BROWARD (954) 966-4600

<b>FILED</b>	
Department of Business and Professional Regulation	
Deputy Agency Clerk	
CLERK	Brandon Nichols
Date	<b>6/22/2015</b>
File #	

Ashira A. Mohammed  
*Mayor*

Howard P. Clark, Jr.  
*Vice Mayor*

Annette Wexler  
*Clerk Commissioner*

Georgina Cohen  
*Commissioner*

Enma Shoaff  
*Commissioner*

Dr. Robert A. Levy  
*Town Manager*

Christopher J. Ryan  
*Town Attorney*

## PETITION FOR DECLARATORY STATEMENT BEFORE THE FLORIDA BUILDING COMMISSION

**Petitioner:**

Name: Sheila S. Oliver  
Title: Chief Mechanical Inspector/Assistant Building Official  
Telephone: (954) 966-4600 ext.211  
Facsimile: (954) 966-5310  
E-Mail: soliver@townofpembrokepark.com

**DS 2015-075**

**Statutes(s), Agency Order(s) and/or Code Section(s) on which the Declaratory Statement is sought:**

Florida Building Code - Mechanical, 5th Edition (2014)  
Portions of 606.2.1 through [F] 606.3

N.F.P.A 72 - 2010 Edition  
Portions of 17.7.4.2.2, 17.7.5.2.1, 17.7.5.3.1, 17.7.5.4.2.1, 17.7.5.4.2.2(B) and 17.7.5.5

N.F.P.A. 90A - 2012 Edition  
Portions of 6.4.2.1, 6.4.2.3 and 6.4.4.1

Florida Fire Prevention Code 5th Edition  
Portion of 633

**Background:**

During a preliminary design and review meeting with the design engineers for a (6) six story mixed use facility, the Engineering firm requested clarifications for their Mechanical design based on the new 2014 Code which they will be submitting under. In order to direct them properly, I am seeking clarifications in regards to the placement of smoke duct detectors for the air conditioning and exhaust systems. As this building is less than 75 feet in height, there will be no smoke control systems as per Chapter 9—section 909, of the Florida Building Code-5th Edition (2014) Therefore, these detectors are strictly required based on the cfm capacity of the air conditioning and exhaust systems only.

I seek these clarifications based on the conflicts that occur when researching the new Florida Building Code—Mechanical, 5th edition (2014) with the referenced codes given within that same section 606—Smoke Detection Systems Control, in this code book. In addition, the conflicts that also arise between the Fire Prevention Code and this new Mechanical Code, which is now I.C.C. based in lieu of the previous 2010 Florida Mechanical Code which was Florida based.

## Referenced Codes

### Florida Building Code—Mechanical, 5th Edition (2014)

#### Section 606—Smoke Detection Systems Control

**606.2.1 Return air systems:** Smoke detectors shall be installed in return air systems, with a design capacity greater than 2,000 cfm, in the return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliance.

**Exception:** Smoke detectors are not required in the return systems where all portions of the building served by the air distribution system are protected by area smoke detectors connected to a fire alarm system in accordance with the Florida Fire Prevention Code. The area smoke detection system shall comply with section 606.4.

**[F] 606.3 Installation:** Smoke detectors required by this section shall be installed in accordance with N.F.P.A. 72. The required smoke detectors shall be installed to monitor the entire airflow conveyed by the system including return air and exhaust or relief air. Access shall be provided to smoke detectors for inspection and maintenance.

### N.F.P.A. 72—2010 Edition

#### 17.7.4 Heating, Ventilating, and Air Conditioning.

**17.7.4.2.2** Detectors placed in environmental air ducts or plenums shall not be used as a substitute for open area detectors.

#### 17.7.5 Smoke Detectors for Control of Smoke Spread.

**17.7.5.1 Classifications.** Smoke detectors installed and used to prevent smoke spread by initiating control of fans, dampers, doors and other equipment shall be classified in the following manner:

- (1) Area detectors that are installed in the related smoke compartments
- (2) Detectors that are installed in the air duct systems
- (3) Video image smoke detection that is installed in related smoke compartments

#### 17.7.5.2. Limitations.

**17.7.5.2.1** Detectors that are installed in the air duct system in accordance with 17.7.5.1(2) shall not be used as a substitute for open area protection.

## Referenced Codes—Continued

### 17.7.5.3 Purposes.

**17.7.5.3.1** To prevent the recirculation of dangerous quantities of smoke, a detector approved for air duct use shall be installed on the supply side of the air-handling systems as required by N.F.P.A. 90A, Standard for the Installation of Air Conditioning and Ventilating Systems, and 17.7.5.4.2.1

### 17.7.5.4 Application.

#### 17.7.5.4.2 Smoke Detection for the Air Duct System.

**17.7.5.4.2.1 Supply Air System.** Where the detection of smoke in the supply air system is required by other NFPA Standards, a detector(s) listed for the air velocity present and that is located in the supply air duct downstream of both the fan and the filters shall be installed.

**17.7.5.4.2.2 Return Air System.** Unless otherwise modified by 17.7.5.4.2.2(A) or in 17.7.5.4.2.2(B), if the detection of smoke in the return air system is required by other NFPA standards, a detector(s) listed for the air velocity present shall be located where the air leaves each smoke compartment, or in the duct system before the air enters the return air system common to more than one smoke compartment.

- (A) Additional smoke detectors shall not be required to be installed in ducts where the air duct system passes through other smoke compartments not served by the duct.
- (B) Where total coverage smoke detection is installed in all areas of the smoke compartment served by the return air system, installation of air duct detectors in the return air system shall not be required, provided that their function is accomplished by the design of the area detection system.

## N.F.P.A. 90A—2012 Edition

### 6.4 Smoke Detection for Automatic Control

#### 6.4.2 Location

**6.4.2.1** Smoke detectors listed for use in air distribution systems shall be located as follows:

- (1) Downstream of the air filters and ahead of any branch connections in air supply systems having a capacity greater than 2000 cfm
- (2) At each story prior to the connection to a common return and prior to any recirculation or fresh air inlet connection in air return systems having a capacity greater than 15,000 cfm and serving more than one story

## Referenced Codes—Continued

**6.4.2.2** Return system smoke detectors shall not be required where the entire space served by the air distribution system is protected by a system of area smoke detectors.

**6.4.2.3** Smoke detectors shall not be required for fan units whose sole function is to remove air from the inside of the building to the outside of the building.

### **6.4.4 Installation.**

**6.4.4.1** Smoke detectors shall be installed, tested, and maintained in accordance with NFPA 72, National Fire Alarm and Signaling Code.

### **Summary:**

Based on Manufacturer's Technical Field Bulletins as well as NFPA 72 - Annex A (Explanatory Material) A.17.7.5.5.2, the primary function for the duct mounted smoke detection was and is to serve the purpose of shutting down the HVAC system or to initiate smoke management. Smoke detectors are installed in the supply air, downstream from the filters, to serve the purpose of providing an alarm indication of the occurrence of a fire in the HVAC unit (filters, belts, heat exchangers, etc). These detector usually serve the purpose of protecting building occupants from the smoke produced by an HVAC unit fire or smoke ingress via the fresh air intake for the unit. They cannot be expected to serve the purpose of providing detection for the return side of the system.

### **Question:**

As I am the Town's Chief Mechanical Inspector as well as the Assistant Building Official, I am the AHJ for this matter.

There appears to be a conflict between section 606.1 and section 606.3 in the Florida Mechanical Code 5th edition.

1. Section 606.1 is requiring the smoke duct detector's to be placed in the return air of an a/c unit over 2000 cfm and/or in the exhaust duct of a fan system. Section 606.3 is requiring me to utilize NFPA 72 for installation which requires it in the supply side. Therefore, does 606.1 supercede 606.3 ?
2. If the answer is yes, then since the Florida Fire Prevention Code also calls for it to be installed in the supply air (NFPA 72 and NFPA 90A) whose code takes jurisdiction, fire or mechanical?

3. Since the original intent of the installation of these smoke duct detectors was to protect the building occupants if the fire and or smoke was to occur in the unit, is this no longer the purpose?
  
4. By installing the smoke duct detectors in the exhaust duct of a fan system, is it now the intent to stop the products of combustion from exiting to the outside?
  
5. By not installing the smoke detectors in a supply fan system, is it the intent to keep these fans operating, even if the fan is bringing in smoke from an adjacent area or from the fan itself?

Respectfully on this date of June 18th, 2015

A handwritten signature in cursive script, appearing to read "Sheila S. Oliver".

Sheila S. Oliver—CMI/ABO/CFM for the Town of Pembroke Park