



**DATE:** October 1, 2021  
**INTERPRETATION NO.:** CI2021-0005  
**TITLE:** Fan-Powered Terminal Units  
**RELATED DEPT. & DIVISION:** Development Services Department  
**TOPIC:** HVAC  
**DECISION MAKER:** Beth M. Culver, AIA, CBO, Building Official

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**SUMMARY:** Fan-Powered Terminal Units with a design capacity of less than 2,000 CFM may be used in accordance with the IMC Section 606.2.2 exception standards. If the design capacity is greater than 2,000 FCM, a smoke detector must be installed on the supply side according to the standards of the UMC Section 608.0.

**CODE SECTIONS:** 2015 Uniform Mechanical Code (UMC)

- *Local Amendment:* [§608](#)

2015 International Mechanical Code (IMC)

- [§606.2.1](#)
- [§606.2.2](#)
- [§606.2.3](#)

**CODE INTERPRETATION:**

The City of Austin Mechanical Code (UMC) Section 608.0 requires that all air moving systems in excess of 2,000 cubic feet per minute (CFM) shall have a smoke detector installed in the supply side of the system. This detector shall interrupt power to the system upon detection of smoke. This section does not mention Fan-Powered Terminal Units. A Fan-Powered Terminal Unit (FPTU) is part of a larger air-handling unit. It is not a stand-alone unit. These FPTU's are not specifically addressed by the UMC. They are addressed in the IMC. The IMC does make an exception for FPTU's.

IMC Section 606.2.2, Exception:

*Individual smoke detectors shall not be required for each fan-powered terminal unit, provided that such units do not have an individual design capacity greater than 2,000 CFM (0.9m<sup>3</sup>/s) and will be shut down by activation of one of the following:*

1. *Smoke detectors required by Sections 606.2.1 and 606.2.3.*
2. *An approved area smoke detector system located in the return air plenum serving such units.*
3. *An area smoke detector system as prescribed in the exception to Section 606.2.1.*

The exception states that individual smoke detectors are not required for Fan-Powered Terminal Units that are part of a larger air distribution system that has a method of smoke shut down installed. The individual capacity of these units cannot exceed 2,000 CFM (0.9m<sup>3</sup>/s) and they must shut down by one of the three means listed in the exception. In all cases, the FPTU must shut down, but not necessarily by their own dedicated smoke detectors. If the FPTU design capacity exceeds 2,000 CFM (0.9m<sup>3</sup>/s), the unit is treated as an independent system and an individual smoke detector would be required. The UMC requires smoke detection to be installed in the supply side of a system and IMC requires detection to be installed in the return side of a system. If a conflict arises between the two codes, the UMC supersedes the IMC to the extent of a conflict. All smoke detection shall be installed in the supply side.

**Question:** Are individual Fan-Powered Terminal Units in excess of 2,000 CFM required to have a smoke detector installed in the supply side per the requirements of the 2015 UMC Section 608.0?

**Answer:** Yes.

**Question:** Can a Fan-Powered Terminal Unit with an individual design capacity of less than 2,000 CFM be shut down according to the exception listed in the 2012 IMC Section 606.2.2?

**Answer:** Yes.

**Question:** Is an individual FPTU that has an individual design capacity of less than 2,000 CFM but has a shared supply or return duct or plenum with a combined design capacity greater than 2,000 CFM, required to have a smoke detector installed?

**Answer:** No, but the unit must be shut down per IMC 606.2.2.




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Beth M. Culver, AIA, CBO, Building Official

*This interpretation was previously approved as CI2014-0003 by Dan McNabb, Deputy Building Official.*