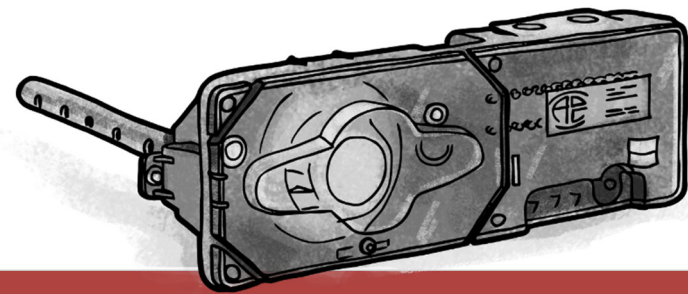


DUCT DETECTOR UNIT REQUIREMENTS – INTERNATIONAL MECHANICAL CODE

An overview of when duct detectors are required under the International Mechanical Code (IMC) for Editions 2000 through 2018.

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DOES A UNIT REQUIRE DUCT-SMOKE DETECTION?

Scenario	Does Unit Have a Fan?	Does Unit Only Serve One Space?	Fan Capacity?	Connected System Capacity?	Area Smoke Detection Provided?	Duct-Detection Required for Each Unit?	Shutdown of Unit Required?	Reasoning	Where?	Basis
1	No	N/A	N/A	-	-	No	No	There is no fan to shutdown.	-	IMC 606.2 Exception
2	Yes	Yes	Any	Any	Any	No	No	Fan only serves a single space; not required where system cannot spread smoke beyond enclosing walls, floors & ceilings from where smoke is generated.	-	IMC 606.2 Exception
3	Yes	No	≤ 2,000 CFM	≤ 2,000 CFM	Any	No	No	Fan is too small to require shutdown.	-	IMC 606.2.1, 606.2.2
4	Yes	No	≤ 2,000 CFM	> 2,000 CFM	No	Yes; in duct or in common return serving unit ¹	Yes	System is large enough to warrant smoke detection.	Options ¹	IMC 606.2.2
5	Yes	No	> 2,000 CFM	Any	Yes	No; may use area detectors for shutdown	Yes	Area smoke detection can be used in lieu of duct-detection.	Area	IMC 606.2.1 Exception
6	Yes	No	> 2,000 CFM	Any	No	Yes	Yes	Large enough-fan to necessitate shutdown.	Return ²	IMC 606.2.1

¹ See IMC Section 606.2.2: Individual smoke detection is not required for each fan-powered terminal unit provided that each unit’s design capacity is 2,000 CFM or less and will be shut down by (1) duct-mounted smoke detectors in common ducted return plenum, (2) approved area smoke detectors in the return plenum, or (3) an area smoke detection system throughout all portions of the building, per IMC 606.4.

² Installed in return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliances.