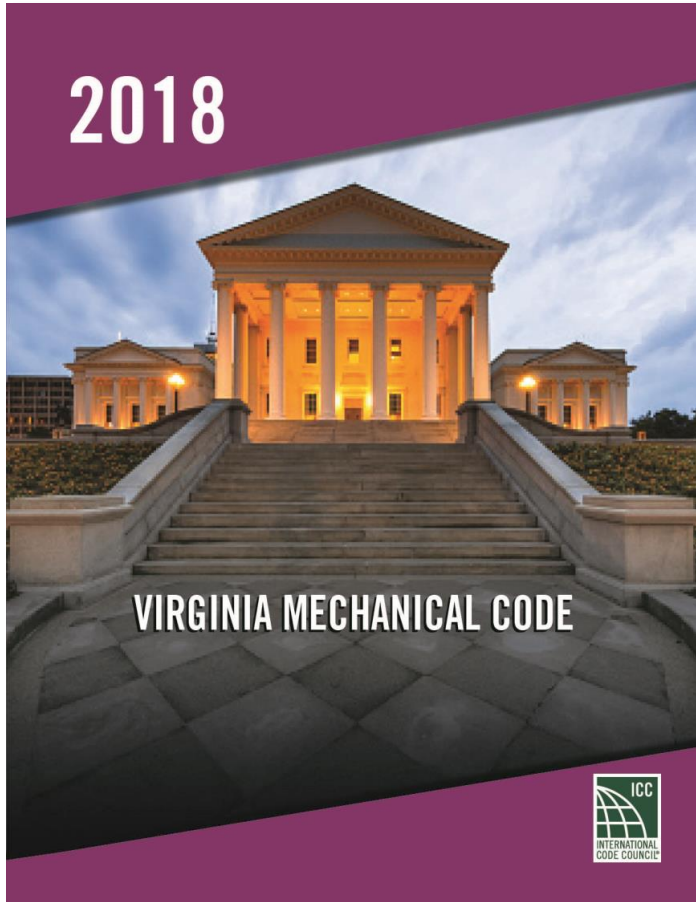


2018 Code Change Training

2018 Virginia Mechanical Code (VMC)

Significant International Changes and
State Amendments





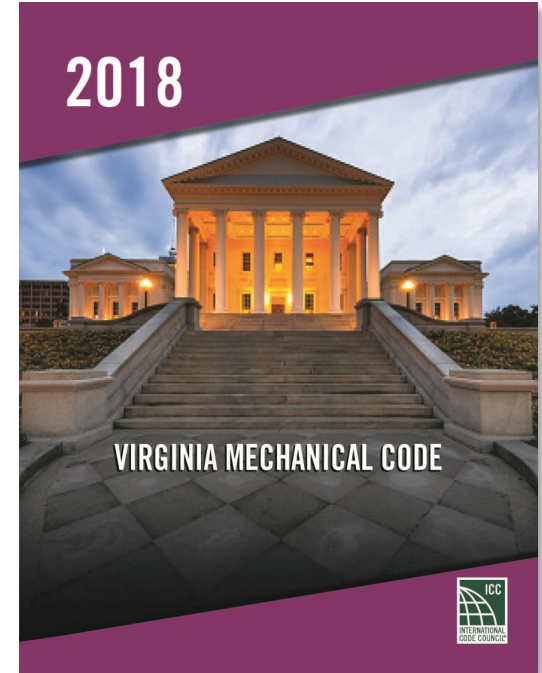
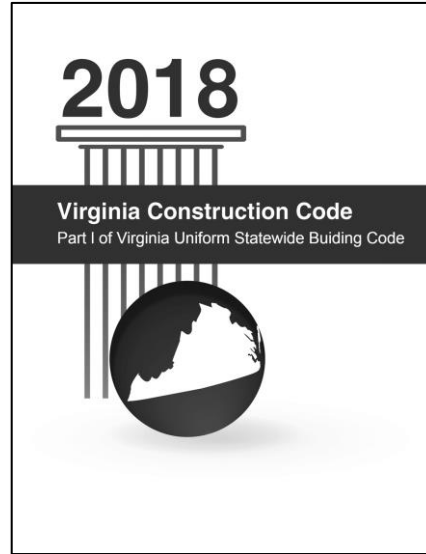
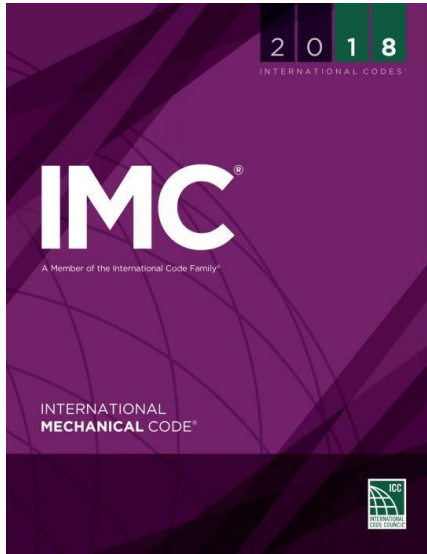
Agenda

Significant Mechanical Code Changes

- International Mechanical Code (IMC) and Virginia changes in chapter order
- Virginia amendments are marked with this VA icon



Virginia USBC and the IMC



2018

Chapter 2

Definitions

VIRGINIA MECHANICAL CODE

New Definition of *Commercial Cooking Appliance*

"Appliances used in a commercial food service establishment for heating or cooking food."



New Definition: *Commercial Food Service Establishment*

"where food is prepared for sale or is prepared on a scale that is by volume and frequency not representative of domestic household cooking."



2018

Chapter 4

Ventilation

VIRGINIA MECHANICAL CODE

Table 403.3.1.1



Minimum Ventilation Rates

- Virginia continues to modify this section for 2018
- For 2018, VA adds three new rows:
 - Medical Procedure Rooms
 - Patient Rooms
 - Physical Therapy Rooms
- Adds footnote I for the new items above (related to ambulatory care facilities and outpatient clinics)



403.3.2.4



Outdoor Air Ventilation for Dwelling Units

- There is a new requirement for labeling of controls for whole-house (dwelling unit) ventilation systems (if equipped)

403.3.2.5



Dwelling Unit Ventilating Equipment

- A new requirement was added for the testing of exhaust fans serving single dwelling units
- Shall be listed and labeled to provide the minimum airflow in accordance with:

**ANSI / AMCA 210
OR
ANSI / ASHRAE 51**

404.1 - Mechanical Ventilation of Enclosed Parking Garages

- Rewritten to clarify the intent with regard to “intermittent” operation, which is that continuous or automatic mechanical ventilation is required.
- Automatic ventilation must cycle between full-on and standby airflow rates (never off).



2018

Chapter 5

Exhaust Systems

VIRGINIA MECHANICAL CODE

504.4

Sealing of Clothes Dryer Exhaust Ducts

- New language in this section speaks to the sealing of dryer exhaust ducts

This was already required per 603.9 (duct sealing) but added here to ensure the requirement isn't missed.



504.4.1 (1 of 2)

Clothes Dryer Exhaust Termination and Passageway Size

- Until now, the code did not specifically address the vent termination itself.
- Some types of vent termination assemblies produce excessive amounts of backpressure.



Example:

- This 4" gooseneck type vent produces .7 inches water column (wci) of backpressure differential (.27 to .97).
- **This is 3.5 elbows worth of added backpressure**

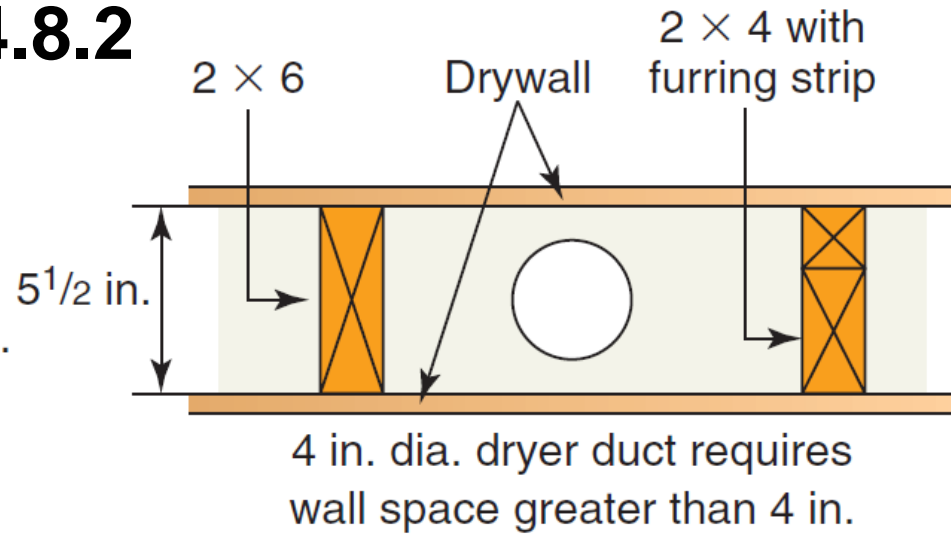
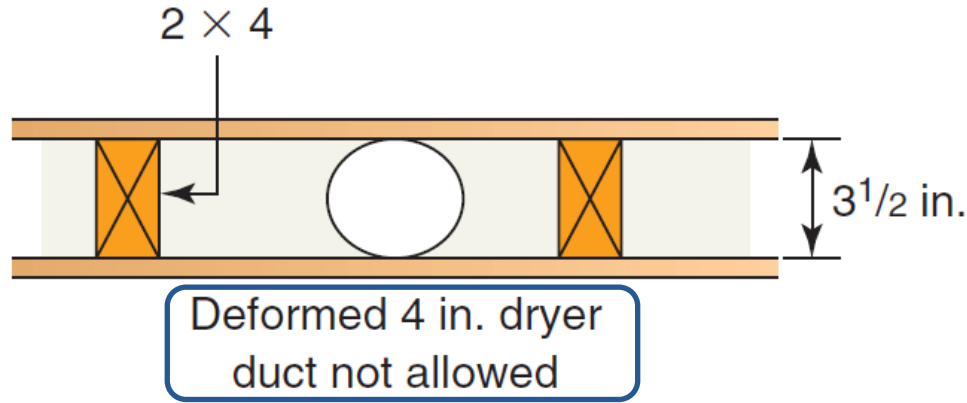
504.4.1 (2 of 2)

Clothes Dryer Exhaust Termination and Passageway Size

New section requires that these terminals be **“undiminished in size, and provide an open area of not less than 12.5 square inches”** (4” round duct equivalent)



504.8.2, M1502.4.2, FG614.8.2



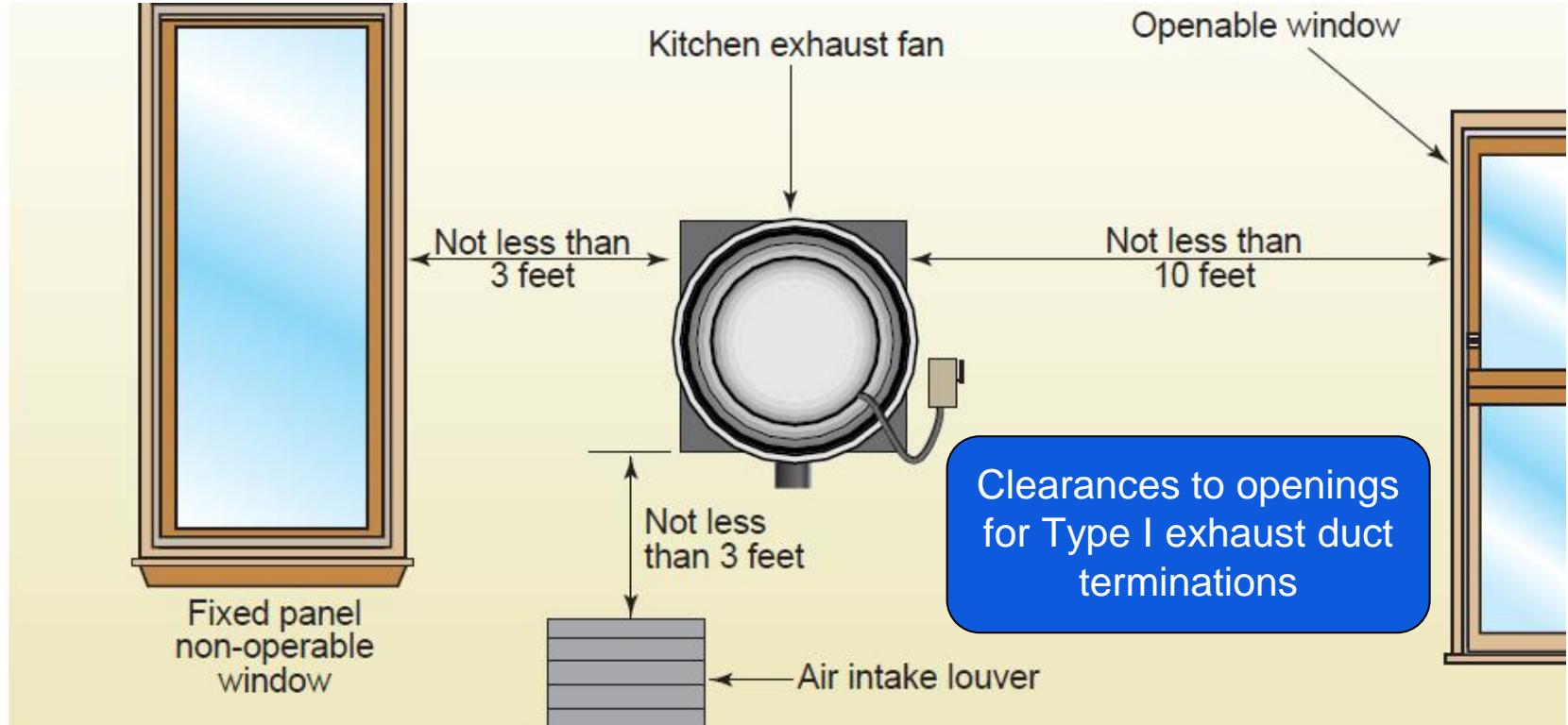
Plan view

Concealed Dryer Exhaust Ducts

- Wall and ceiling cavities enclosing dryer exhaust ducts must provide sufficient space that the 4-inch duct is not squeezed out of its round shape.
- (VA continues to modify this section to not allow fastener penetrations into the duct)

506.3.13 Type I Hood Exhaust Termination

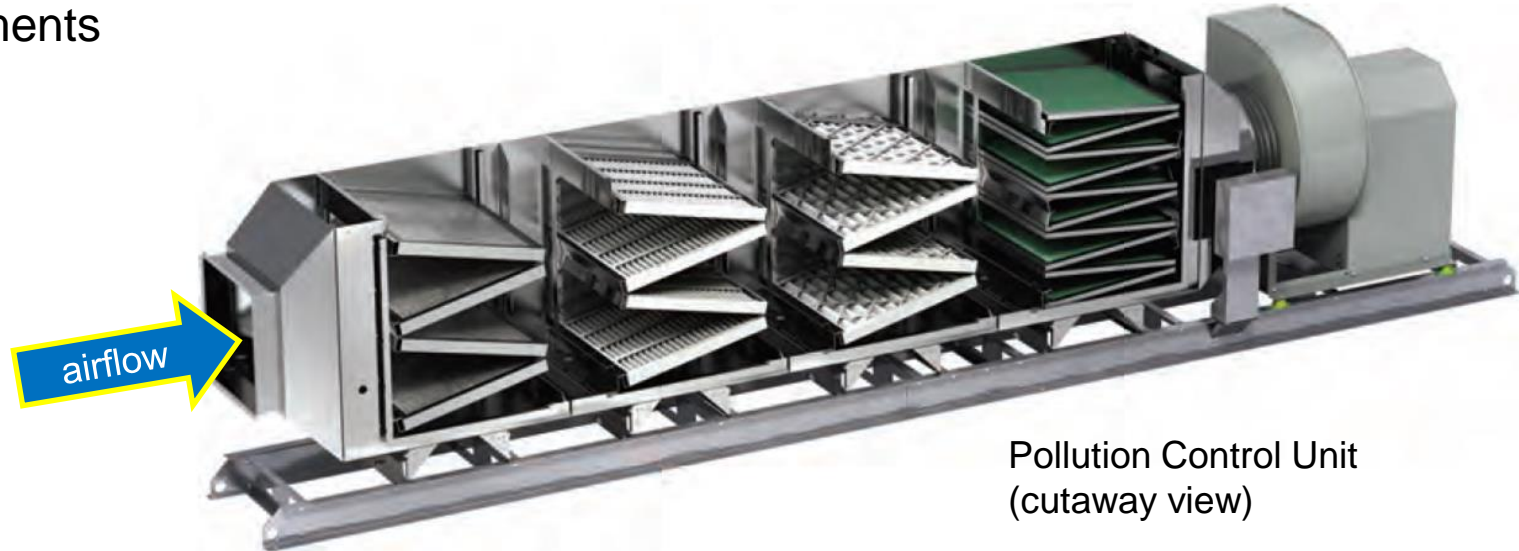
- New wording makes it clear that there can be no less than 3 feet from ANY opening in the exterior wall to the vent termination.



506.5.2 – Pollution Control Units



- VA remains a code cycle ahead by adopting the 2021 icode language
- The new (12/2019) UL standard 8782 was added, which incorporates most of the previously listed requirements



Pollution Control Unit
(cutaway view)

507.2.6 - Clearances for Type I Hoods

- New exception recognizes Type I hoods listed for clearances to combustibles of **less than 18 inches** in accordance with **UL 710**
- UL 710 was revised and now includes testing for reduced clearances to combustibles



Type I hood

510.7.1.1 (VA)



Hazardous Exhaust Systems - Shaft Penetrations

- *"Hazardous exhaust ducts that penetrate fire-resistance-rated shafts shall comply with Section 713.11 of the IBC."*
- The code change proponent successfully argued that IBC 713.11 is a more appropriate reference, as it includes all necessary requirements for this scenario, including the requirement that shafts be protected by *approved fire dampers*



Skill Check 1

2018

VIRGINIA MECHANICAL CODE



2018

Chapter 6

Duct Systems

VIRGINIA MECHANICAL CODE

602.2.1.8 – Pipe and Duct Insulation within Plenums

- Duct and pipe insulation within plenums must now meet the limitations and conditions specified in this section.



603.5.2

Phenolic Ducts

- Made of a closed cell rigid foam board, covered on both sides by a reinforced aluminum foil membrane
- Self-insulated
- Can comply with UL 181 as a Class I duct



603.8.2

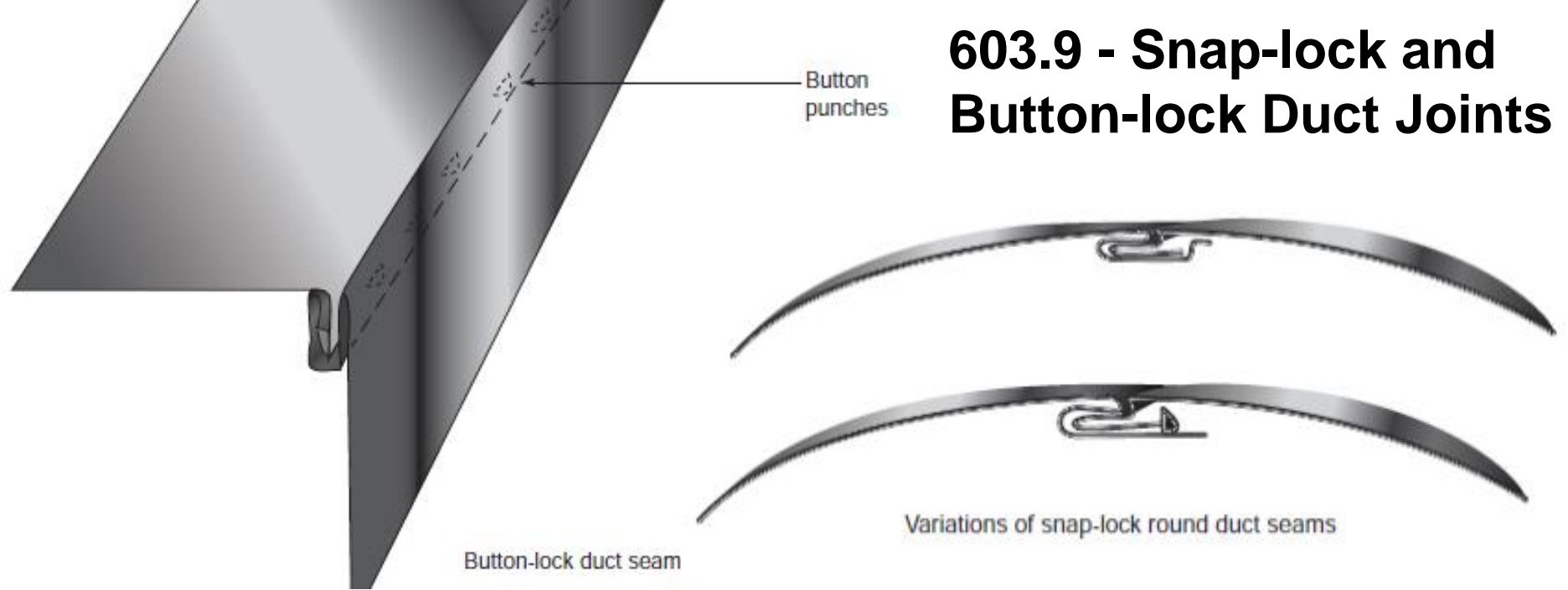
Testing of Underground Ducts

- The code now addresses the **testing** of underground ducts
- Points to C403 of the IECC, which requires a leak test per the SMACNA air duct leakage test manual



Underground ducts require an air leakage test before burial.

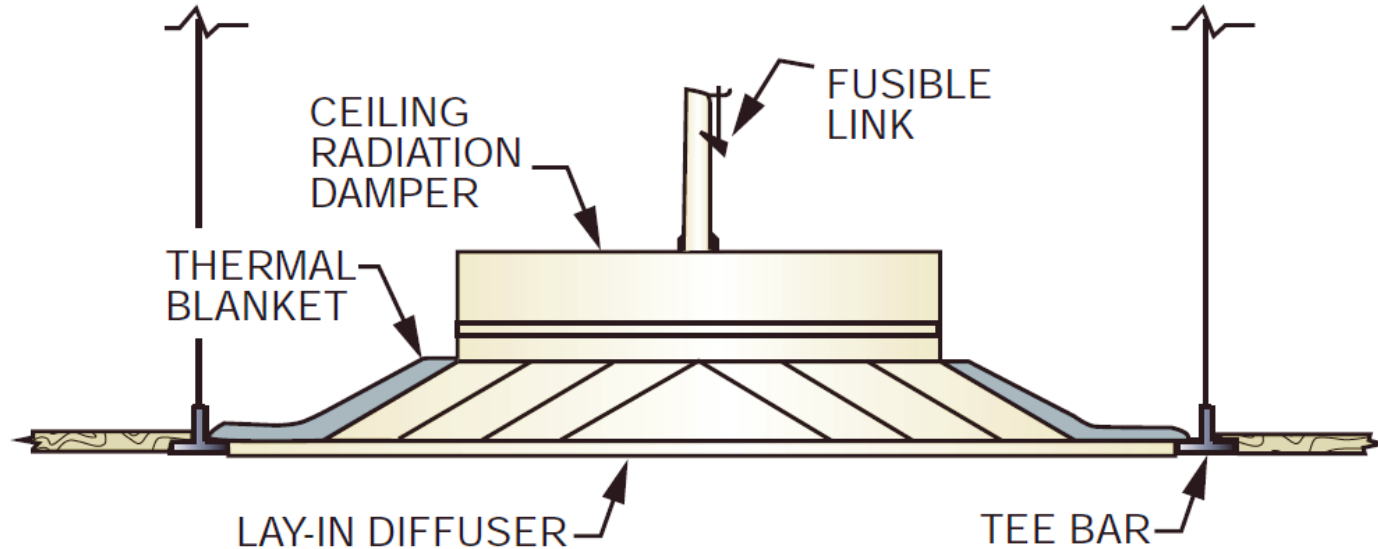
603.9 - Snap-lock and Button-lock Duct Joints



- The code is now less restrictive for snap and button-lock joints for ducts having a static pressure below 2" w.c.
- If located **within the building envelope**, additional sealing is not required

607.3.1 - Ceiling Radiation Dampers

- Fire dampers must be the dynamic-rated-type where they are expected to close against air flow (this part is not new)
- This section has been modified to clearly state that the **same requirement applies to ceiling radiation dampers**



2018

Chapter 9
Ventilation

Chapter 11
Refrigeration

Chapter 14
Solar Thermal Systems

VIRGINIA MECHANICAL CODE





The code has added coverage for high-volume large-diameter (HVLD) fans, as well as a new definition

- "Where provided, these fans shall be tested and labeled in accordance with AMCA 230, listed and labeled in accordance with UL 507, and installed in accordance with the manufacturer's instructions."

HIGH-VOLUME, LARGE-DIAMETER FAN.

A low-speed ceiling fan that circulates large volumes of air and that is greater than 7 feet (2134 mm) in diameter.

1107.2 – Refrigerant Piping Locations

- This section was rewritten to clearly state the intent regarding the prohibited locations for refrigerant piping.
- Readability and clarity is improved, as this section now includes a numbered list of specific restricted locations.



Chapter 14

Solar Thermal Systems

- This chapter was substantially rewritten for consistency with current technology.
- Now references a new standard – ICC 900/SRCC 300

Note: This is **not** referencing Solar Photovoltaic (PV) systems.

**ICC 900/
SRCC 300-2015**
**Solar Thermal System
Standard**

American National Standard



Skill Check 2

2018

VIRGINIA MECHANICAL CODE



Thank You for Attending!

2018 Virginia Mechanical Code (VMC)

Significant International Changes and
State Amendments

