Attic – Crawl Ventilation

Requirements based on presence of ceiling vapor retarder, climate zone, and vent location.

The International Residential Code 2015 (also 2015 Michigan Residential Code) requirement for attic venting states:

- Minimum net free ventilating area shall be 1/150 of the area of the vented space.
    - Exception: The minimum net free ventilation area shall be 1/300 of the vented space provided *one or more* (IRC 2018 says both) of the following conditions are met:
        - In climate zones 6, 7, and 8, a class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.
        - At least 40% and not more than 50% of the required ventilating area is provided by ventilators located in the upper portion of the attic or rafter space.

Options:

1/150 – One square foot of net free vent area per 150 square feet of attic.

- Most of Michigan south of Saginaw is in Zone 5
- Zone 5 – 1/150 must be used if venting is not high and low

1/300 – One square foot of net free vent area per 300 square feet of attic.

- Most code officials recognize a painted ceiling as a vapor retarder. Therefore, the 1/300 rule will likely apply in most cases in climate zones 6–8.

NFA (net free area) refers to the actual open area available to provide effective ventilation.

- For example, a 12" x 12" vent will provide somewhat less than 144 square inches of NFA because screens and louvers occupy some of the space.
- Vents can be rated by an R-value that relates to their NFA (not to be confused with insulation value). For example, an R-61 roof vent has an NFA of 61 square inches.

Example:

An attic is in Zone 7. The ceiling has been air-sealed, insulated and painted. The vents that will be used have 60 in^2 of net free area. The area of the attic is 1536 ft^2. Per code how many vents are required for this attic?

Vents: _____ (1536 ÷ 300 = 5.12 ft^2 x 144 ÷ 60 = 12.29 – **12 or 13** vents)

*NOTE: Attic ventilation is required for new construction. Typically, adding additional venting to an existing attic is not required as a result of Wx work. Good air sealing and proper insulation will reduce the need for ventilation and will not make existing attic problems worse.

See next page for crawl space ventilation

Crawl space Ventilation

The International Residential Code 2015 (also 2015 Michigan Residential Code) requirement for crawl space venting states:

- 1 ft^2 of vent NFA is needed for every 150 ft^2 of crawl space
- 1 ft^2 of vent NFA is needed for every 1,500 ft^2 of crawl space provided:
    - A Class 1 vapor retarder is installed over the ground

Example:
The crawlspace area is 1050 ft^2. The vents to be used have 50 sq. in. of net free area. How many vents would be required for the following?

Without a vapor retarder: _____ (1050 ÷ 150 = 7 sq.ft. x 144 sq.in. /ft ÷ 50 NFA = **20 vents**)

With a vapor retarder: _____ (1050 ÷ 1500 = .7 sq.ft. x 144 sq.in. /ft ÷ 50 NFA = **2 vents**)