



ROOFING

CONTRACTOR LICENSING

Roofing Contractors doing work within the boundaries of the City of Aurora are required to register with the City of Aurora as a Roofing Contractor. We require:

- Contractor Application
 - Businesses are required to maintain an active business registration with Secretary of State, or they may provide a County DBA Certificate.
- State of Illinois Roofing License
- Certificate of Insurance
 - General Liability \$1,000,000 general aggregate with \$500,000 per occurrence
 - Required to list: City of Aurora is primary & non-contributory additional insured.
 - Worker's Compensation in compliance with Statutory Illinois.
- License Fee \$200

Additionally, any Business/General Contractor who is contracting Roofing services and subbing out the work would be required to register with the City of Aurora as a General Contractor.

PERMIT REQUIREMENTS

- Completed [Permit Application](#) or Online Submission via [e-TRAKiT Online Portal](#).
- Copy of contract
- Ventilation Sheet meeting requirements
- Licensed Contractors
- Permit Fees
- Review approval may be required.

FREQUENTLY ASKED QUESTIONS:

- Can I add a third layer of shingles?
 - No. If there are 2 or more existing roof layers, then all of the existing layers must be removed prior to installation of the new roofing material.
- Is there an inspection for ice and water shield?
 - No, we will only conduct a final roofing inspection, however the code references requirements on ice and water shield
- I'm not touching the soffit, why do I have to tell you what soffit vents I have?
 - Anytime a change is made, it is a requirement that the completed work complies with the code. Therefore, we need to make sure the existing ventilation, meets the current code.
- The attic has fire separation, what should I do?
 - Separate attic spaces call for separate ventilation sheets
- How long does it take to get a residential roof permit?
 - If we receive all the permit requirements & additional reviews are not required, residential roof permits can typically be released same day/over the counter.
(Permits requiring additional review listed in next slide)

ROOF TYPES THAT REQUIRE ADDITIONAL REVIEW

- CATHEDRAL CEILINGS
- FLAT ROOFS
- COMMERCIAL ROOFS
- HISTORIC DISTRICT
- FOXWALK DISTRICT
- REPLACING ANY STRUCTURAL FRAMING
- REPLACING ALL SHEATHING MATERIAL

Review Timeframes available at:

[Permit-Timeframes-and-Inspector-Contact-Handout](http://aurora-il.org/Permit-Timeframes-and-Inspector-Contact-Handout)
[\(aurora-il.org\)](http://aurora-il.org)

CATHERDERAL/VAULTED CEILINGS

- What do we review?
 - Type of materials



FLAT ROOF

- What is a flat roof?
 - A roof where the pitch is less than 2:12 (2" in 12")
 - 2 inch rise for every 12 inch run
- What we review:
 - Materials
 - Flat roofs can not use asphalt shingles
 - Flat roofs do not require ventilation sheet





BRINGING BALANCE TO YOUR ROOF

IMPORTANT TERMS

- **NET FREE VENT AREA (NFVA):** the open area that exists for air to pass through
- **Intake/Soffit vents:** allows outside air to enter into attics and ventilated spaces
- **Exhaust/Roof vents:** allows outside air to exit attics and ventilated spaces
- **Sheathing:** boards or panels that line the walls, floor, and roof
- **Structural framing:** a framework, usually constructed of timber or steel, that is placed on the top of the walls of a building, on which the roof is fastened
- **Ice and water shield:** Ice and water shield, sometimes also referred to as “peel and stick”, is a waterproof roof underlayment membrane developed to protect vulnerable areas on a roof from ice and water damage.
- **Drip edge:** metal sheets, usually shaped like an “L,” installed at the edge of the roof



Sheathing



Structural Framing

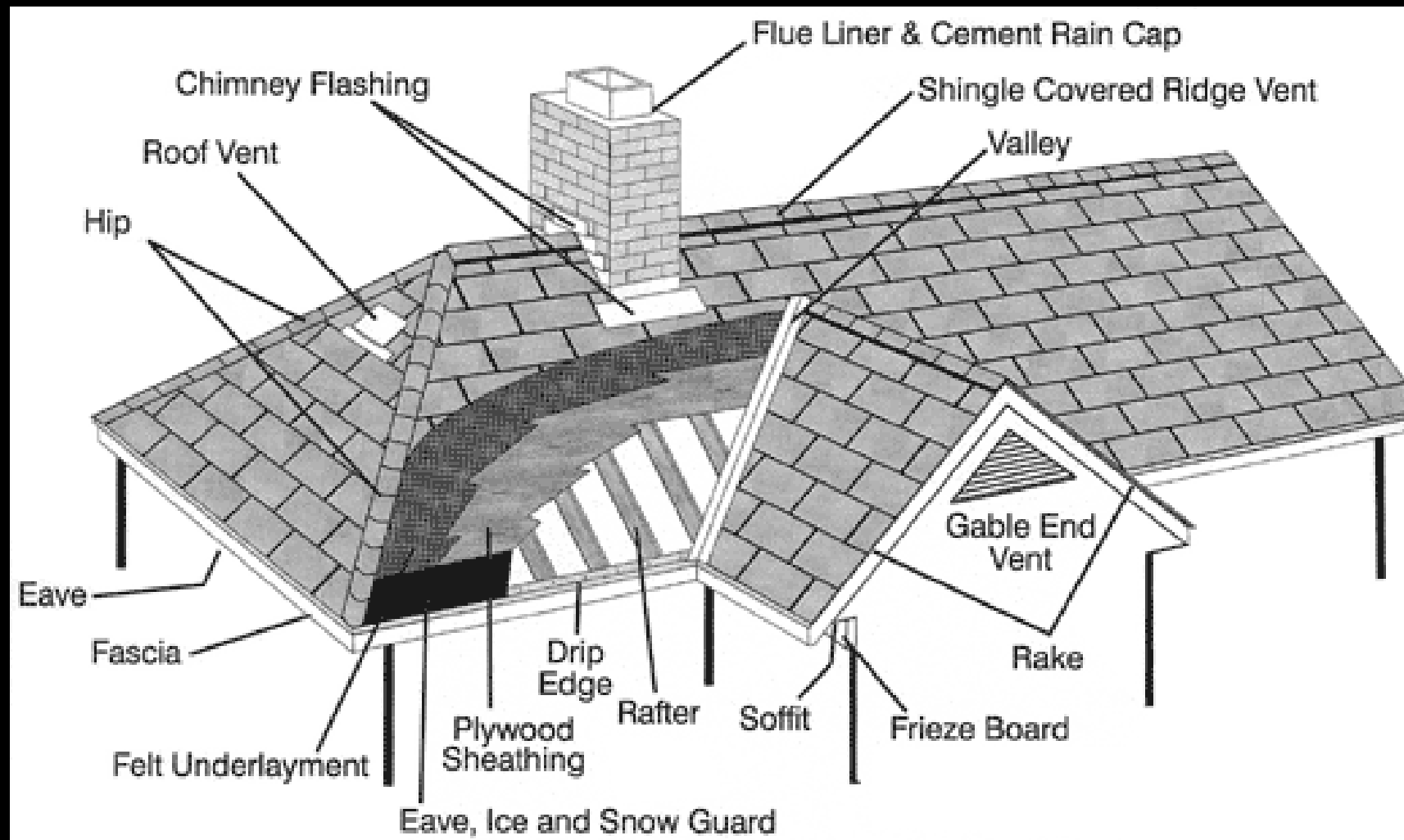


Ice and water shield



Drip edge

PARTS OF THE ROOF



ATTIC SPACE

Please note that In order to properly calculate the required ventilation, an attic inspection should have been conducted to determine the attic area & separation between spaces.

- Each separate attic space is required to be properly vented & would require a completed vent sheet.



WHAT ABOUT THE GARAGE?

- Attached garage:
 - Conditioned spaces require ventilation
 - A separate attic space will require a separate ventilation sheet for the garage attic only
- Detached garage:
 - Does not require a ventilation sheet unless it is a conditioned space

HOW TO COMPLETE THE VENTILATION SHEET

Step 1: Calculate the Attic Area= Attic Length x Attic Width

**Multiple attic spaces that are connected without fire separation would require the area be calculated separately & added together for the full attic area.*

Step 2: Calculate the required Net Free Vent Area (NFVA):

$\text{Attic Area} \div 300 = \text{NFVA FT}^2$

Step 3: Convert this value from feet to inches:

$\text{NFVA FT}^2 \times 144 = \text{NFVA IN}^2$

The City of Aurora recommends a combination of Exhaust & Intake Ventilation be used to meet the total NFVA required.

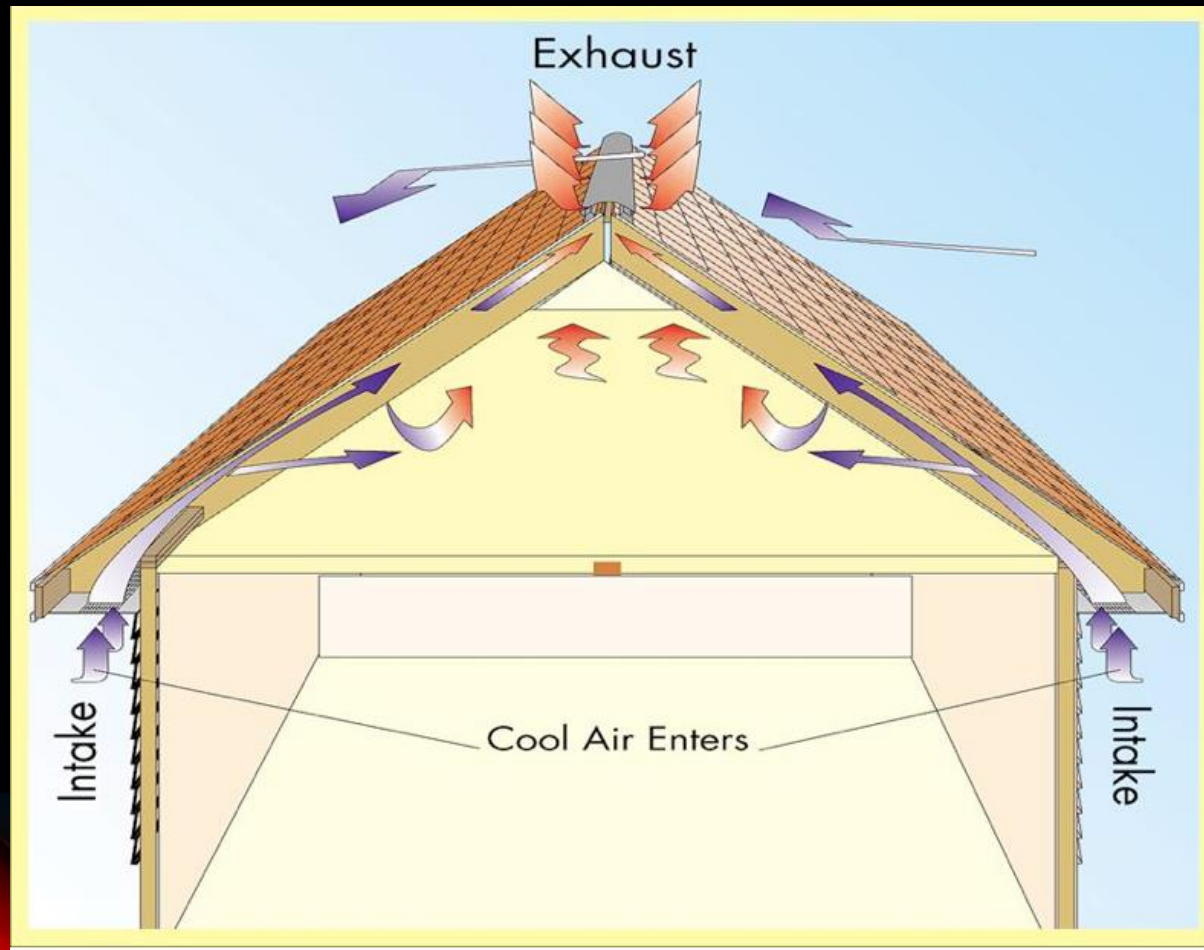
- Exhaust value should be between 40%-50% of the required NFVA IN² calculated.
- Intake value should be between 50%-60% of the required NFVA IN² calculated.

Step 4: For the exhaust & Intake, please indicate the existing or proposed ventilation in linear feet or quantity of vents.

**Multiply this number by the value indicated in parenthesis to confirm NFVA is meeting code requirements.*



ROOF/RIDGE VENT= EXHAUST
SOFFIT/EAVE VENTING=INTAKE



Types of Roof Vents

NFVA EXHAUST

LF	RIDGE VENT-COBRA @ (12 IN ² /FT) =	IN ²
LF	RIDGE VENT-TALL @ (18 IN ² /FT) =	IN ²
#	ROOF VENTS TYP. 550S @ (50 IN ²) =	IN ²
#	ROOF VENTS XLARGE 770S @ (70 IN ²) =	IN ²
#	TURBINES @ (95 IN ²) =	IN ²
#	800CFM POWER VENTS @ (525 IN ²) =	IN ²
#	1200CFM POWER VENTS @ (775 IN ²) =	IN ²
#	1500CFM POWER VENTS @ (1000 IN ²) =	IN ²



TYPES OF SOFFIT VENTS

NFVA INTAKE

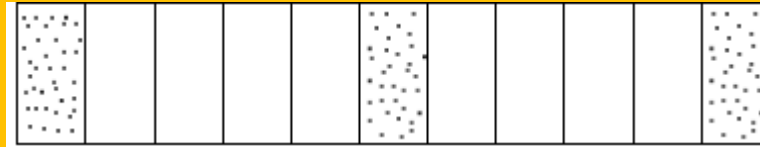
#	4 INCH ROUND VENT@ (2.0 IN2) =	IN2
#	4X16 VENT@ (25 IN2) =	IN2
#	6X16 VENT@ (35 IN2) =	IN2
#	8X16 VENT@ (45 IN2) =	IN2
LF	DECK/FASCIA VENT@ (9 IN2/FT) =	IN2
LF	CONT. STRIP VENT@ (12 IN2/FT) =	IN2
LF	20% VENT'D ALUM SOFFIT @ (4 IN2/LF) =	IN2
LF	25% VENT'D ALUM SOFFIT @ (5 IN2/LF) =	IN2
LF	33% VENT'D ALUM SOFFIT @ (6 IN2/LF) =	IN2
LF	50% VENT'D ALUM SOFFIT @ (10 IN2/LF) =	IN2
LF	100% ALUM SOFFIT VENT@ (20 IN2/LF) =	IN2
#	GABLE VENT@ (40% OF OP'NG) =	IN2
	(GABLE SHAPE: _____)	
	(GABLE SIZE: _____)	



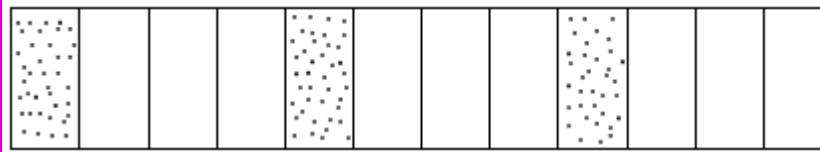
TYPES OF SOFFIT VENTS

NFVA INTAKE

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	(GABLE SHAPE: _____)	
	(GABLE SIZE: _____)	



1 in every 5 panels is vented



1 in every 4 panels is vented



1 in every 3 panels is vented



2 in every 4 panels is vented



All panels are vented

GABLE VENTS

Gable vents can act as intake/soffit ventilation if installed at least 3 feet below ridge.



Rectangular gable vent



Circular gable vent



Triangular gable vent



Octagonal gable vent

CALCULATING RECTANGLE/SQUARE GABLE VENTS

Equation:

$$L \times W \times .4 = \text{IN2 per gable vent}$$



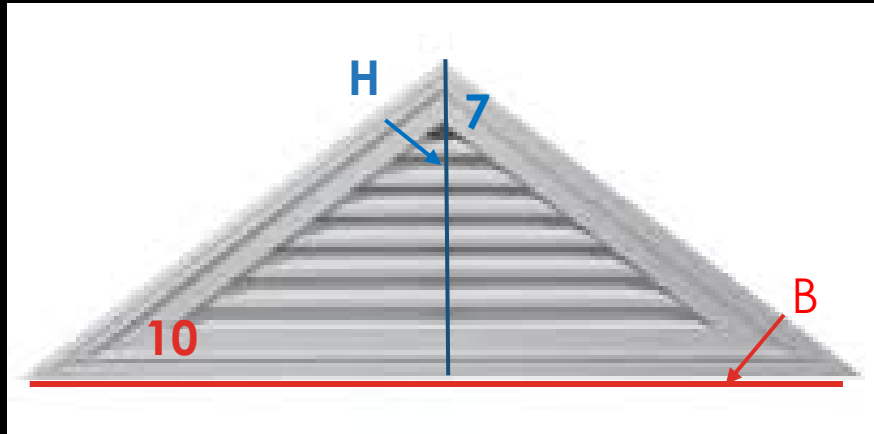
1. Length x width of the gable vent ($12 \times 12 = 144$)
2. $144 / 40$ percent of the opening ($144 / .4 = 57.6 \text{ in}^2$)
3. Each 12x12 gable vent would receive a "point value" of 58 in^2

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LF	50% VENT'D ALUM SOFFIT @ (10 IN2/LF) =
LF	100% ALUM SOFFIT VENT@ (20 IN2/LF) =
#	GABLE VENT@ (40% OF OP'NG) =
(GABLE SHAPE:)	
(GABLE SIZE:)	

CALCULATING TRIANGLE GABLE VENTS

Equation:

$$\frac{1}{2}BH \times .4 = \text{In}^2 \text{ per gable vent}$$

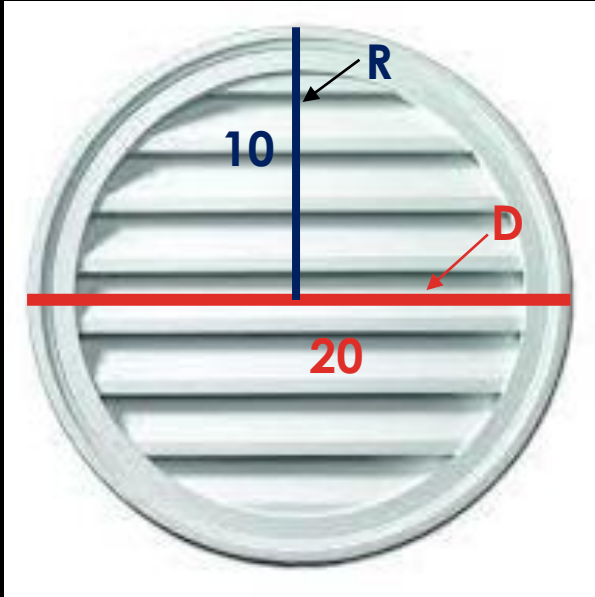


1. BxH of the gable vent (7x10=70)
2. $\frac{1}{2} \times 70 = 35$ (area of triangle)
3. Area x 40% of the opening (35 x .40) = 14 in² per gable vent

NFVA INTAKE	
#	4 INCH ROUND VENT@ (2.0 IN2) = _____ IN2
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#	GABLE VENT@ (40% OF OP'NG) = _____ IN2
(GABLE SHAPE: _____)	
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CALCULATING A CIRCULAR GABLE VENT

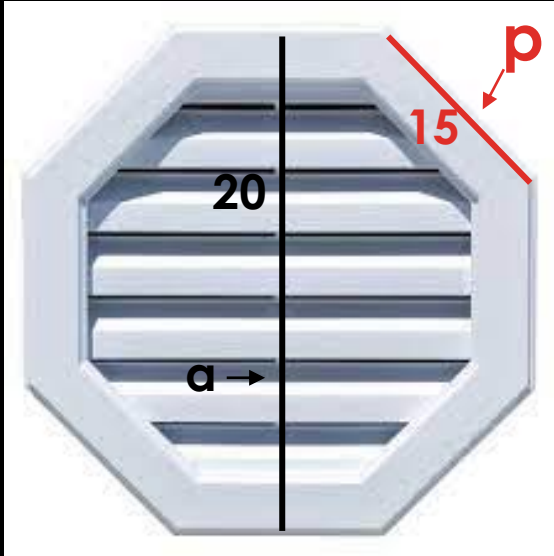
$$\text{Equation: } A = \pi r^2$$



- R (radius) is one half of the diameter
- $\pi(3.14) \times 10^2$
- $3.14 \times 100 = 314$
- $A = 314$
- $314 \times .40 = 125.6 \text{ in}^2$

NFVA INTAKE	
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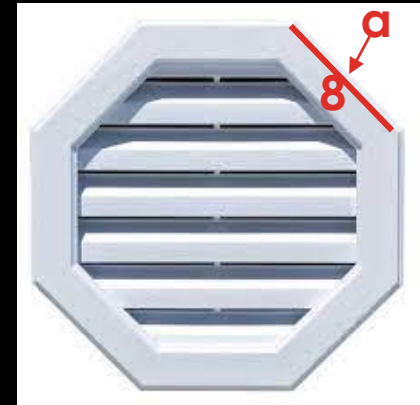
CALCULATING A OCTAGONAL GABLE VENT



Equation 1:
 $A = \frac{1}{2}ap$

- If you are given the lengths of a and p you can use equation # 1.
- $A = \frac{1}{2} (20)(8)(15)$
- $A = 10 \times 120$
- $A = 1200$
- 1200 x 40% percent of opening
- **480in²** per vent

Equation 2:
 $A = 2(1 + \sqrt{2})a^2$



NFVA INTAKE		
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#	GABLE VENT @ (40% OF OP'NG) =	IN2
	(GABLE SHAPE:)	
	(GABLE SIZE:)	

- $2(1 + \sqrt{2}) 8^2$
- $A = 309$
- 309 x 40% percent
- **123.6in²** per vent

THE RESULTS OF FAILING TO PROPERLY BALANCE VENTILATION



Failure to balance the ventilation may result in mold in the attic, ice dams, moisture build up, rust, uncomfortable indoor temperature, may allow snow to come in, and may damage the roofing materials.



TIPS:

- Please provide manufacturer's specifications on any vents that are not listed on the Ventilation form.
- If unsure on what type of vents are currently installed, then please take pictures.
- You may use Roofing Calculators to assist you in meeting code requirements. However, a completed vent sheet is still required.
- If you are new to this process and having trouble completing the ventilation sheet or if you are having trouble balancing the existing ventilation system, then please come into our office & our staff can assist you.