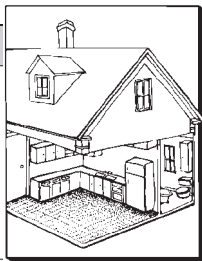


Ventilation: Test Your Knowledge

by Kathleen Gilligan



Ventilation systems are something designers and dealers need to consider in the early stages of any kitchen or bath plan.

Though it is probably the least noticed part of a home, ventilation plays an important part in the home's livability. Well-planned and properly installed ventilation will remove excess heat, moisture, smoke, and odors, and greatly add to the comfort of a kitchen or bath.

Test your knowledge with this quiz, designed to help you better understand ventilation systems.

Good luck!



True or False?

1 Ducted canopy range hoods permit indoor barbecuing when equipped with a high delivery CFM-rated fan.

2 Ductless hoods containing an activated charcoal filter and an aluminum filter are self-cleaning.

3 Kitchen exhaust fans should be mounted as near to the range or cooktop as possible.

4 If a range is located on an exterior wall, the most efficient ventilation solution is to duct horizontally through the wall.

5 If a range is located against the inside wall of a two-story house, it's best to duct through the soffit to the outside wall.

6 A fan or blower should never be installed without a hood.

7 If properly installed, a fan or blower will pull by-products such as grease from the cooking surface.

8 Duct work determines the exhaust capabilities of a range hood ventilation system.

9 If duct work requires two or more elbow turns, duct size should be increased.

10 A hood is just as effective for an over/under range as it is for a standard range.

11 Built-in ovens of all types should always be vented.

12 Duct connections should never be taped.

13 A wall fan installed on an outside wall is the most economical and efficient type of fan to use.

14 When installing range hood ductwork, plastic is the preferred material for elbows.

15 If a bathroom exhaust fan has a capacity of eight air changes per hour or more, it will create a chill in the room.

16 Blowers should never be used for long duct runs.

17 Centrifugal or squirrel-cage blowers are usually installed in ceilings or soffits.

18 The duct path of a bathroom exhaust fan must follow the shortest, straightest route possible.

19 Ceiling and wall exterior fans help maintain a low mechanical sound level in the home.

20 The bathroom is the main source of pollution in the home.

21 It is not necessary to duct a bathroom fan.

22 If the shower has a glass door, the fan should be installed as far away as possible.

23 Showers produce an increase in water vapor pressure in the bathroom.

24 In fans, centrifugal blower wheels are louder than impeller wheels.

25 A humidistat is the best bathroom ventilation-control solution for families with young children or forgetful adults.

26 Ideally, bathroom fans should be installed midway between the sink and the shower.

27 One sone is equal to the sound of a refrigerator running in a quiet kitchen.

Multiple Choice

28 A range hood should be mounted directly over the cooking surface at a height of:

- a) 1 inch to 8 inches
- b) 12 inches to 18 inches
- c) 18 inches to 30 inches
- d) 36 inches or more

29 A range hood should be:

- a) the same width as the cooking surface
- b) ¼ inch wider than the cooking surface
- c) 2 inches wider than the cooking surface
- d) 1 foot wider than the cooking surface

30 The Home Ventilation Institute recommends that kitchen fans should be capable of:

- a) 1 air change per hour
- b) 6 air changes per hour
- c) 15 air changes per hour
- d) 30 air changes per hour

31 Each 90-degree elbow turn in ductwork equals _____ ft. of duct.

- a) 2½
- b) 5
- c) 10
- d) 12

32 Each 90-degree elbow turn in the ductwork of a hood's ventilation system reduces the unit's capacity by

- a) 25 CFM
- b) 50 CFM
- c) 75 CFM
- d) 100 CFM

33 An outside fitting for vertical duct systems is called:

- a) a transition piece
- b) an eave cap
- c) a roof cap or jack
- d) a damper section

34 For ranges installed against a wall, the Home Ventilation Institute recommends fans with a rating of _____ CFM per lineal foot.

- a) 30
- b) 40
- c) 50
- d) 55

35 Bathroom fans should never be louder than:

- a) 2.5 sones
- b) 4 sones
- c) 4.5 sones
- d) 6.5 sones

36 In bathrooms, fan-heaters as well as fan-lights are installed in the ceiling and use a _____ round duct.

- a) 1-inch or 2-inch
- b) 3-inch or 4-inch
- c) 5-inch or 6-inch
- d) 6-inch or 7-inch

37 For a kitchen wall or ceiling fan, the Home Ventilation Institute recommends multiplying the _____ of the room by two to find the needed

CFM.

- a) length
- b) width
- c) height
- d) square footage

38 A piece of duct designed to connect round to rectangle ducts is called:

- a) a transition piece
- b) an eave cap
- c) a roof cap or jack
- d) a damper section

39 The Home Ventilation Institute recommends determining the needed CFM rating for a bathroom fan by multiplying the length and width of the room by _____, assuming an 8-foot ceiling.

- a) 1.1
- b) 1.7
- c) 1.8
- d) 2.7

40 Side discharge fans use a _____ rectangular duct.

- a) 3x10-inch
- b) 3¼x10-inch
- c) 4x12-inch
- d) 6x10-inch

41 Island or peninsula range hoods should have a CFM rating of _____ per lineal ft.

- a) 30
- b) 40
- c) 50
- d) 55

42 A piece that is attached to the top of a ceiling fan, or used when ducting to prevent back draft is called:

- a) a transition piece
- b) an eave cap
- c) a roof cap or jack
- d) a damper section

43 For extra warmth and/or ventilation, fan heaters in the _____ watt range provide complete bathroom comfort.

- a) 220 to 440
- b) 600 to 800
- c) 900 to 1,100
- d) 1,200 to 1,500

44 The Home Ventilating Institute recommends that kitchen fans should not be louder than:

- a) 6.5 sones
- b) 9 sones
- c) 15 sones
- d) 25 sones

45 HUD/FHA recommends a minimum of _____ CFM for range hoods.

- a) 20 to 50
- b) 50 to 100
- c) 150 to 160
- d) 200 to 220

46 A bathroom fan will free the room of moisture _____ as no fan at all.

- a) twice as fast
- b) five times as fast
- c) ten times as fast
- d) 15 times as fast

47 The Home Ventilating Institute recommends that bathroom fans have the capacity to change the air _____.

- a) six times per hour

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- b) eight times per hour
- c) ten times per hour
- d) 12 times per hour

48 Exhaust fans are the most economical and effective method of ridding the bath of:

- a) odors
- b) humidity
- c) soap film
- d) heat

49 If an exhaust fan is used immediately after showering, air moisture content is lower within _____ than within 20 minutes in an unventilated bath.

- a) 2 minutes
- b) 5 minutes
- c) 8 minutes
- d) 10 minutes

50 An outside fitting for duct discharge that includes a back-draft damper and flush-mounted grill is called:

- a) a transition piece
- b) an eave cap
- c) a roof cap or jack
- d) a wall cap

Answers

1 True. As stated by Home Ventilating Institute, Arlington Heights, Ill.

2 False. These filters return air to the kitchen through louvers in the hood front, and must be cleaned regularly according to manufacturer's recommendations.

3 True. As recommended by the Home Ventilating Institute, Arlington Heights, Ill.

4 False. Duct through the attic to a roof or eave.

5 True. As recommended by the Home Ventilating Institute, Arlington Heights, Ill.

6 False. Fans can be installed with or without hoods.

7 False. According to the book *Beyond the Basics: Advanced Kitchen Design*, by Ellen Cheever, CKD, ASID, manager of product and design services, Whirlpool Kitchens, Inc., the old story about the fan pulling from the cooking surface is not true. Vapors must rise naturally.

8 True. Resistance created by long angled ductwork can render the system inoperable.

9 True. This will help compensate for loss in CFM.

10 False. The hood will only be effective for the upper oven.

11 False. Ideally, they should be vented. However, a separate hood is helpful for ovens that do not offer a built-in ventilation system.

12 False. Duct connections should be securely taped.

13 True. These fans discharge directly through the wall, so no ductwork is needed.

14 False. Never use plastic ductwork for a range hood.

15 False. Eight air changes per hour is recommended by the Home Ventilating Institute. Anything above that will cause a chill.

16 False. Blowers overcome duct resistance and are very good for long duct runs.

17 True. Most use 3/4x10-inch duct and discharge directly through the roof or horizontally between joists.

18 True. As recommended by Ellen Cheever, *The Basics of Bathroom Design ...and Beyond*.

19 True. These fans mount on the outside of the building and pull rather than push air through the duct. The mechanical sound stays outside.

20 False. The kitchen is the main source of pollution in the home.

21 False. If not ducted, the fan will not remove moisture.

22 False. The fan should be installed directly above a shower with a glass door.

23 True. This can force moisture into the walls, floor, and ceiling and eventually cause damage.

24 False. Centrifugal blower wheels are quieter than impeller wheels.

25 True. Humidistat's sensors will monitor the humidity in the room and automatically turn the fan on at a preselected time.

26 False. Fans should be installed as close to the shower as possible.

27 True. As determined by the Home Ventilating Institute, Arlington Heights, Ill.

28 c) As recommended by the Home Ventilating Institute, Arlington Heights, Ill.

29 a) As recommended by the Home Ventilating Institute, Arlington Heights, Ill.

30 c) 15 air changes per hour

31 c) 10

32 b) 50 CFM

33 c) a roof cap or jack

34 b) 40

35 d) 6.5 sones

36 b) 3-inch or 4-inch

37 d) square footage

38 a) a transition piece

39 a) 1.1

40 b) 3/4x10-inch

41 c) 50

42 d) a damper section

43 d) 1,200 to 1,500

44 b) 9 sones

45 c) 150 to 160

46 b) five times as fast

47 b) eight times per hour

48 b) humidity. Exhaust fans will rid the bath of all others as well, but humidity is the major problem.

49 a) two minutes

50 b) an eave cap

Score Yourself on Ventilation Savvy

0 to 10: Nothing fancy

11 to 20: Need to fan out in new directions

21 to 30: Keep fanning the flames

31 to 40: Deserving of fanfare

41 to 50: Fantastic!