# Bathroom Fan Venting Code Basics

Bathrooms are wet, smelly places that often are closed-in and unventilated. Smells are merely an annoyance. Moisture, though, is the real problem since it can create potentially [hazardous mold](https://www.thespruce.com/hidden-bathroom-dangers-4171736) and mildew, eating away at your walls, ceiling, and trim. Bathrooms can only benefit from some type of [exhaust venting system](https://www.thespruce.com/how-to-install-a-bathroom-exhaust-fan-4147975). But which type do you need and what does the bathroom exhaust fan venting code have to say about the matter?

[Bathroom code](https://www.thespruce.com/bathroom-code-basics-4125928) does address the issue of moving odor- and moisture-laden air from the bathroom to the outside. Surprisingly, bathroom fans are not required by some building codes. All municipalities have different requirements, but some do not draw a hard line on requiring exhaust fans. In those areas, [ventilation in bathrooms](https://www.thespruce.com/bathroom-fan-locating-tips-1152360) is required, but it can be from a window or fan, your choice.

## What Is the Bathroom Exhaust Fan Venting Code?

Building code is a model code that each community can adopt and adapt according to its own needs. So, you will need to check with your city or county planning and [permitting department](https://www.thespruce.com/facts-about-building-permits-1822416) to find out code requirements regarding bathroom fans. Also, the code numbering in your area may differ from those listed here.

Section R303 of the [International Residential Code](https://www.thespruce.com/international-building-code-3972525) discusses light and ventilation regulations in general. Section R303 works in conjunction with all of International Residential Code Section M1507, Mechanical Ventilation.

## Bathroom Exhaust Fan Venting Code Summary

### Section R303.3: Bathrooms Must Have Windows

When this section is adopted by a community, it essentially says that, for venting purposes, bathrooms must have windows that open. The code reads that the window must have "aggregate glazing area...of not less than 3 square feet (0.3 m2), one-half of which must be openable."

Summarized, if you install a window in the bathroom, it must be at least 3 square feet in area. This window only needs to be able to open halfway. This means that the total open window space would be 1 1/2 square feet.

Windows that open can provide highly effective ventilation in bathrooms that have no shower or tub. With no bathing facilities, far less moist air is produced. While powder rooms can benefit from exhaust fans, they can usually operate just as well with a window that opens.

### Section R303.4: Bathrooms Require Exhaust Venting Fans

In some communities, this section may be in lieu of Section R303.3 or in addition to it. If Section R303.4 is included but the previous section has been struck-through or not included, this may mean that your bathroom must have a bathroom fan and that a window cannot be used as a substitute venting method. Be sure to clarify this with your local permitting department.

### Section M1507.2: Exhausted Air Terminal Point

This section notes that air exhausted from the bathroom must be sent outdoors, not indoors to the same residence or indoors to any other dwelling unit. It cannot move air to a crawlspace or attic. While this may seem obvious, homeowners may, out of convenience, direct the vent into either of these locations. While this is not smart, it is understandable: attics and [crawlspaces](https://www.thespruce.com/how-to-fix-water-in-crawl-space-1821953) are often the shortest possible route for the vent. Routing vertically out of the roof or routing through the upper part of the wall (to the exterior) are time-consuming, invasive projects. The end of the vent run should also have a grille or screen to prevent vermin from entering your home.

### Section M1507.4: Exhaust Capacity

This section discusses the minimum exhaust capacity of the exhaust fan: 50 cubic feet per minute (cfm) intermittent or 20 cfm continuous.

## Why Your Bathroom Should Have an Exhausting Vent Fan

Bathroom venting fans are about more than just eliminating noxious odors. Bad odors are annoying but are hardly life-threatening, and they do not impact the integrity of the building structure at all.

Bath exhaust fans are about keeping your house in top shape by moving water out of your bathroom. Water is everywhere in a bathroom: splashing on the floor, beading up on the walls, dripping down the mirror. And there is one other invisible place where you will find water in the bathroom: in the air.

Venting fans pull moisture-laden air out of that small space, slowing or altogether preventing it from condensing on walls, on the ceiling, or worst of all, in the ceiling. It can be an ugly sight to crawl above a poorly ventilated bathroom's ceiling. You might find mounds of black-moldy [blown-in insulation](https://www.thespruce.com/blowing-in-insulation-vs-rolling-out-fiberglass-1821913), as well as joists and rafters weakened from years of moisture abuse.

When moisture spreads in a home, one thing quickly leads to another. Moist environments attract termites. When these cellulose-hungry insects begin feeding on your home's wood framework, you need to act quickly. Costs spiral from there as you put the home under a pest control contract and undergo extensive [remodeling work](https://www.thespruce.com/remodel-small-bathrooms-efficiently-1821379) to shore up weakened studs.

When the fan is located directly above a shower or bathtub, it needs to be connected to a [GFCI-protected](https://www.thespruce.com/kitchen-electrical-code-basics-1821527) circuit. This can either be in the form of a [GFCI outlet](https://www.thespruce.com/electrical-code-for-outlets-1821513) or upstream, in-line GFCI protection.

Because windows provide light as well as ventilation, if you go the fan-only route you need to install artificial lighting. This should already be a given, as electrical code requires that habitable rooms be supplied with a switch-controlled light.

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