CALGARY ROOF REPAIRS

Attic Ventilation & Ice Dams

Soffit and ridge venting, attic frost and moisture, ice dams and icicles through Calgary's freeze-thaw cycles

4 Expert Answers from Roof IQ

calgaryroofrepairs.com/construction-brain

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Q1

Should the bathroom exhaust go through the roof in Calgary?

Bathroom exhaust ventilation is mostly a mechanical and building-code question rather than a roofing one, so this sits at the edge of Roof IQ's scope. The short roofing answer: yes, routing the duct through the roof is a common and generally acceptable termination point in Calgary, but the penetration itself matters a great deal to your roof's performance.

The Roofing Part That Matters

When a bathroom exhaust duct exits through the roof, it needs a proper roof vent cap, and the flashing around that cap is one of the more common leak points on Calgary homes. Calgary's freeze-thaw cycle (roughly 128 cycles a year by City of Calgary climate data) works at every imperfect seal. A poorly flashed vent boot cracks, lifts or separates, and water tracks down the duct or along the sheathing before you see a stain on the bathroom ceiling. When a roofer is replacing your shingles, replacing the vent boots and flashings at the same time is standard practice; reusing old rubber boots on a new roof is a common mistake worth avoiding.

The penetration also needs to be sealed against ice damming. Calgary sits in a climate with enough heating degree-days that the National Building Code requires eave protection (ice-and-water shield) extending at least 900 mm up the slope and to a line at least 300 mm inside the inner face of the exterior wall. A roof vent located near the eave sits in that zone and needs careful integration with the underlayment.

Never vent a bathroom exhaust into the attic. Warm, moist air dumped into an attic causes frost in winter and mould in summer, and it shortens the life of your sheathing. The City of Calgary's guidance on attic ventilation is clear that the attic space needs to stay dry; adding a moisture source defeats the purpose entirely.

Where the duct terminates, whether through the roof or through a soffit or wall, is a question for your HVAC or mechanical contractor and your building permit office. The City of Calgary issues building permits for mechanical work of this kind. Roof IQ covers the roofing penetration side; the duct routing, duct sizing and mechanical code requirements are outside this scope.

If you are having roofing work done at the same time, ask the roofer to inspect and replace any existing vent boots and to confirm the flashing is properly integrated with the ice-and-water shield and underlayment. That is a reasonable line item to see spelled out in a written quote.

For the mechanical and ventilation side of this question, a licensed mechanical contractor or the City of Calgary's permit office is the right call. For other trades, you can find contractors through the Calgary Construction Network at calgaryconstructionnetwork.com.

Q2

How much attic ventilation does a Calgary house need?

Attic ventilation in Calgary is governed by the National Building Code – 2023 Alberta Edition, which sets a minimum vent area of **1/300 of the insulated ceiling area** for most houses with a conventional attic. If the roof has a low slope or the rafters double as the ceiling joists (roof-joist construction), that ratio drops to 1/150 because air moves less freely in those assemblies.

How the 1/300 rule works in practice

Take a house with 150 square metres of insulated ceiling. Divide by 300 and you get 0.5 square metres of net free vent area. The code then splits that between high and low: at least 25% of the total must be at or near the ridge (ridge vents, high gable vents), and at least 25% must be at the eaves (soffit vents). That balanced flow, cool air in at the bottom and warm moist air out at the top, is what keeps the attic dry in winter and cool in summer.

Calgary's climate makes this more than a code formality. With roughly 128 freeze-thaw cycles a year, an under-ventilated attic traps heat that melts snow on the roof deck. That meltwater runs to the cold eaves, refreezes and backs up under shingles as an ice dam. The City of Calgary's own guidance points to improving attic insulation and ventilation as the primary fix for ice dams, not just adding more heat cables.

Blocked soffit vents are the most common problem. Insulation batts pushed to the eaves during a renovation, or a roofer who stapled the felt too low, can choke the intake and make the rest of the system nearly useless. When a roofer replaces shingles, it is worth asking them to confirm the soffit baffles are in place and the vents are clear.

A few practical checks you can do yourself: from the attic on a cold day, look for frost on the underside of the sheathing (a sign of moisture from poor ventilation), check that every soffit vent has a clear path to the attic, and confirm the ridge vent runs the full length of the peak. From outside, make sure the ridge vent cap has not been buried under a heavy snowfall or clogged with debris.

When a roof is being replaced, it is the right moment to upgrade ventilation. Adding or extending a ridge vent, replacing old box vents with a continuous system, or installing proper baffles at the eaves adds relatively little to the total project cost but has a real effect on shingle life and ice-dam risk. A roofer who quotes a replacement without mentioning ventilation is worth questioning.

One more Calgary-specific note: the code requires eave protection (ice-and-water shield) extending at least 900 mm up the slope and to a line at least 300 mm inside the inner face of the exterior wall on shingle and shake roofs here. Good ventilation reduces ice-dam pressure on that membrane, but the membrane is still required regardless.

If you are getting quotes for a re-roof, ask each contractor to describe the ventilation plan in writing, including the net free area they are targeting and how they will handle the soffit intake. A like-for-like shingle replacement in

Calgary needs no building permit, but the work still has to meet the code, and ventilation is part of that.

Q3

Why does my roofer talk about intake and exhaust balance in Alberta?

Balanced attic ventilation is one of the most important factors in how long a Calgary roof lasts, and it matters more here than in most Canadian cities because of the freeze-thaw cycle.

What intake and exhaust actually do

Your attic needs a continuous flow of outside air: cool, dry air enters low at the soffits (intake), travels across the attic floor, picks up heat and moisture, and exits high at the ridge or through roof vents (exhaust). When those two sides are balanced, the attic stays close to outside temperature in winter and sheds heat in summer.

The National Building Code (2023 Alberta Edition, in force since May 2024) sets the minimum: total vent area must equal at least 1/300 of the insulated ceiling area, with at least 25% of that area at the top and at least 25% at the bottom. On low-slope roofs or roof-joist construction the ratio tightens to 1/150.

Why Calgary specifically punishes an unbalanced attic: the city averages roughly 128 freeze-thaw cycles a year. Heat escaping through a poorly ventilated attic warms the roof deck, melts snow, and the meltwater refreezes at the cold eave as an ice dam. Water backs up under shingles, soaks the deck, and eventually shows up as stains on your ceiling or frost on the rafters in winter. Chinooks make this worse: a warm afternoon followed by a hard overnight freeze is a weekly event from November through March.

An overheated attic in summer also degrades shingles faster, which matters when you are trying to get 25 to 30 years out of an architectural shingle in hail country.

What goes wrong in practice: blocked soffit vents are the most common problem, usually from insulation pushed against the eave during an attic top-up. Too many exhaust vents without matching intake, or mixing vent types at the same height, can actually short-circuit airflow and draw outside air in through the upper vents instead of exhausting it. A roofer who spots this during a re-roof is doing you a favour by raising it.

What to check from inside: go into the attic on a cold morning and look for frost on the sheathing, daylight through the soffit baffles, or staining around the eave area. From outside, make sure soffit panels have open perforations and are not painted over or clogged with debris.

When a re-roof is the right time to fix it: tearing off old shingles gives a roofer access to the deck and the eave line. That is the moment to add or clear soffit baffles, replace a ridge vent, or correct a vent layout, before the new

shingles go on. Doing it after costs more and may void the shingle manufacturer's warranty if ventilation does not meet their spec.

Ask any roofer quoting your job to note the existing vent area, what they plan to change, and why. A written scope should list the ridge vent length or the number and size of roof vents, plus any soffit work, so you can compare quotes on the same basis.

Q4

Is my Calgary attic too hot in summer?

A Calgary attic that hits 60°C or more on a hot July afternoon is running too hot, and that heat is doing real damage to your roof from the inside out.

What an Overheated Attic Does to Your Roof

Shingles are designed to shed water and resist hail, but they rely on a reasonably stable temperature underneath. When attic air stagnates at extreme heat, the underside of the sheathing cooks, the adhesive strips on shingles soften and lose grip, and the shingles themselves age faster. In Calgary's climate, that same attic that bakes in July will also drive ice dams in January if it is warm enough to melt snow at the eave. Both problems share the same root cause: not enough ventilation moving air through the space.

The National Building Code, 2023 Alberta Edition, sets the minimum at 1 square metre of net free vent area for every 300 square metres of insulated ceiling area, with at least 25% of that venting at the top (ridge or high on the slope) and at least 25% at the bottom (soffits). If your soffits are blocked by insulation pushed to the eave, or your ridge vent is undersized, the math fails and heat builds up. On low-slope roofs or roof-joist construction the ratio tightens to 1 in 150.

Signs your attic is not venting properly: the attic feels like an oven within an hour of sunrise on a warm day; you find frost or condensation on the sheathing in winter; shingles are curling or granules are collecting in the eavestroughs faster than expected; or your upper-floor rooms are noticeably harder to cool than the rest of the house.

The fix usually involves two things together. First, make sure soffit vents are clear and unobstructed, which you can check from inside the attic with a flashlight. Second, confirm that ridge or upper vents are adequate and not blocked by debris or a poorly installed cap. Adding a powered attic fan can help in extreme cases, but most building scientists prefer passive ventilation (balanced soffit-to-ridge airflow) because it works year-round without a motor to maintain.

Insulation matters too. The City of Calgary's guidance on ice dams points to improving attic insulation as the first step, because a well-insulated attic floor keeps conditioned air in the house and unconditioned air in the attic, which is exactly what you want. If the insulation has been pushed aside at the eaves or is compressed, a roofer or insulation contractor can correct it when the roof is next opened up.

One Calgary-specific note: if your house was built before 1990, have a professional check whether any existing insulation or roofing materials contain asbestos before anyone disturbs them. Alberta OHS requires that removal be

handled by trained workers and the waste taken to an approved facility.

A roofer doing a roof inspection, typically $150 to $400 for a paid report, can assess vent placement and count, check whether the soffit baffles are in place, and flag any sheathing damage caused by heat or moisture. If you are already planning a re-roof, this is the right moment to correct the ventilation, since adding vents during a tear-off costs far less than cutting them in afterward. Like-for-like re-roofing in Calgary needs no building permit under Alberta's Permit Regulation, but if structural changes to the roof framing are involved, check with the City of Calgary.

Disclaimer: This guide is provided for informational purposes only by Calgary Roof Repairs. It does not constitute professional advice. Always consult qualified, licensed contractors and your local building authority (the City of Calgary or your own municipality) before starting any roofing project. Information is current as of November 1, 2026 and may change. Visit **calgaryroofrepairs.com** for the latest answers.