CALGARY ROOF REPAIRS

Flat & Low-Slope Roofs

Torch-on and SBS modified bitumen, TPO and EPDM membranes, garage and addition roofs, ponding water and drains

4 Expert Answers from Roof IQ

calgaryroofrepairs.com/construction-brain

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Q1

Why does water sit on my Calgary flat roof for days?

Ponding water on a flat roof almost always comes down to one of three things: inadequate slope, blocked or undersized drains, or a membrane that has sagged because the insulation beneath it has compressed or gotten wet.

Why Flat Roofs Pond in Calgary

Truly flat roofs are rare. Most are built with a slight slope (typically 1 in 50, or about 2%) toward interior drains or scuppers at the parapet wall. When water sits for more than 48 hours after rain or snowmelt, something is preventing it from reaching those outlets.

The most common causes, in rough order of frequency:

Blocked drains and scuppers are the first thing to check. Calgary's cottonwood season, windblown debris, and gravel from the membrane surface all clog drain covers. A blocked drain can turn a small low spot into a persistent pond.

Compressed or saturated insulation is the sneakier problem. SBS modified bitumen and TPO membranes sit over rigid insulation boards. Once water gets under the membrane through a crack or failed seam, the insulation absorbs it, compresses under foot traffic or snow load, and the surface dips. That dip collects more water, which finds more entry points, and the cycle accelerates. By the time you see a ceiling stain inside, the insulation layer is often already saturated over a wider area than the leak suggests.

Membrane shrinkage and seam failure are common on older TPO and EPDM roofs. Calgary's roughly 128 freeze-thaw cycles a year stress every seam repeatedly. A seam that lifts even slightly lets water in and holds it.

Structural deflection is less common but worth mentioning on older infill houses and garages. If the roof joists or decking have softened from long-term moisture exposure, the deck itself can sag, creating a bowl that no drain can fix without structural work.

Why this matters more in Calgary than in milder cities: water that ponds through autumn will be frozen solid by November. Ice expands, opens seams further, and the spring thaw delivers a larger leak than the fall pond suggested. Ponding water also accelerates membrane degradation significantly, shortening a roof that might otherwise last 20 to 25 years.

What a roofer should do when they inspect it: a proper assessment includes probing the membrane for soft spots (saturated insulation feels spongy underfoot), checking every drain and scuppers for blockage and correct height relative to the membrane surface, and looking at the seams and flashings around any penetrations (vents,

HVAC curbs, skylights). An infrared scan, done in the evening after a warm day, can map wet insulation without cutting the membrane open.

What the repair might cost: clearing and re-setting a blocked drain is a minor repair, often in the $300 to $800 range. Patching failed seams or a small low spot runs $500 to $2,000 depending on access and extent. If the insulation is saturated over a large area, a full membrane and insulation replacement on a detached garage typically runs $4,000 to $9,000; a larger low-slope addition or house roof is $9 to $20 per square foot of roof area. Ignoring ponding and patching repeatedly usually costs more over five years than a targeted replacement of the affected section.

From the ground or through an attic hatch, you can check for ceiling stains, soft drywall, or a musty smell, which all point to water that has already moved inside. Leave the roof surface itself to a roofer with proper fall protection.

A flat roof that holds water is worth a proper look before winter, and our form can put you in touch with local low-slope roofers.

Q2

What warranty comes with an SBS flat roof in Alberta?

Flat roof warranties in Calgary typically come in three layers, and knowing which one applies to your situation can save a significant dispute later.

The Three Warranties on an SBS Flat Roof

Manufacturer's material warranty covers defects in the SBS modified bitumen membrane itself, usually 10 to 20 years depending on the product line and the number of plies. Most manufacturers require a certified installer and a registered installation to activate the full term; if the crew is not on the manufacturer's approved list, you may get a shorter or no material warranty at all. Ask the roofer for the warranty registration number after the job is done.

Contractor's workmanship warranty covers installation errors: seams that lift, blisters from trapped moisture, flashings that pull away, or drains that were not properly integrated. In Calgary, one to five years is typical, though some contractors offer up to ten years on workmanship. This warranty is only as good as the contractor behind it, which is why checking their prepaid contracting licence with Service Alberta and getting a WCB-Alberta clearance letter before you sign matters. A contractor who disappears after the season has no warranty to honour.

Your home insurance policy is not a warranty, but it covers sudden damage from hail, wind or a falling object. SBS membranes are vulnerable to hail punctures, and Calgary sits in what the City of Calgary calls "hail alley," so

this coverage matters. Routine wear, ponding water damage and installation defects are not insured events; those fall to the manufacturer or contractor warranties above.

A few Alberta-specific points worth knowing. There is no provincial trade licence for roofers here, so manufacturer certification is one of the few objective quality signals available. On a flat or low-slope roof, the National Building Code (2023 Alberta Edition) requires proper drainage so water does not pond; a contractor who leaves low spots is not just doing poor work, they are creating a code deficiency. Ponding water is the leading cause of premature SBS failure in Calgary, where freeze-thaw cycles (roughly 128 a year by City of Calgary climate data) turn standing water into ice that works at seams and flashings all winter.

What a proper quote and contract should include for warranty purposes: the exact product name and number of plies, the manufacturer's warranty term and registration process, the contractor's workmanship warranty term in writing, what voids each warranty (foot traffic, rooftop equipment added later, failure to clear drains), and a payment schedule that holds back a portion until the job passes your inspection. The Alberta Consumer Protection Act requires any contract of $200 or more signed at your home to be in writing and include start and completion dates, a detailed scope, and cancellation rights (10 days for any reason after you receive a written copy).

Before the job starts, ask the roofer two questions: are you certified by this membrane manufacturer, and will you register the warranty in my name? If the answers are vague, that is a signal worth taking seriously.

Q3

Why are flat roofs common on new Calgary infills?

Flat and low-slope roofs show up on Calgary infills almost by necessity, not by preference. The City of Calgary's narrow infill lots, combined with its rules on maximum building height and setbacks, leave builders very little room to work with. A pitched roof on a two-storey infill can easily push the ridge above the permitted height limit, so a flat or low-slope profile is often the only way to get the square footage the market demands while staying within the envelope the city allows.

Why the geometry works out this way

A standard Calgary infill lot is typically 25 to 33 feet wide. Stack two storeys, add a usable floor plan, and a conventional gable or hip roof would add another four to six feet of height at the ridge. That extra height often conflicts with the City's residential district rules on maximum building height, shadow impact on neighbours, and angular plane requirements that protect adjacent yards from being walled in. A flat or very low-slope roof keeps the roofline clean and compliant. It also allows a rooftop patio or mechanical equipment space, which adds value on a

lot where outdoor ground space is already tight.

There is a design element too. Contemporary infill architecture favours clean horizontal lines, large windows and flat parapets. A steep-pitched roof would look out of place on that aesthetic and would waste interior volume under the slope.

The trade-off is real, though. Calgary's climate is hard on flat roofs. About 128 freeze-thaw cycles a year, heavy spring snowloads, and the rapid melt-and-refreeze pattern that chinooks create all stress the membrane. Ponding water is the main enemy: any area where water sits for more than 48 hours after rain is accelerating the membrane's deterioration. Proper drainage, tapered insulation to direct water to drains or scuppers, and a quality membrane are not optional extras here.

What flat roofs on Calgary infills typically use: two-ply SBS modified bitumen (torch-on) is the most common system, and TPO and EPDM single-ply membranes are also used. Installed costs on a residential flat roof run roughly $9 to $20 per square foot depending on the membrane type, the number of layers being removed, and whether the deck or insulation needs work. A detached garage or small addition roof often comes in at $4,000 to $9,000; a full infill rooftop is larger and will sit toward the higher end of that range.

On the permit side, the City of Calgary does not require a permit for replacing or repairing roofing materials in kind. If you are changing the membrane type or doing structural work, confirm with the City's Development Services whether a building permit applies before the work starts.

Because these roofs are largely out of sight, problems often go unnoticed until water is already inside. An annual inspection, ideally in spring after the freeze-thaw season and again in fall before snow, is the best way to catch blistering, cracking seams or blocked drains early. A roofer familiar with low-slope systems in Calgary will know what to look for around parapet walls and roof penetrations, which are the most common failure points.

Q4

Does a white roof membrane make sense for a Calgary home?

White and light-coloured membranes are a reasonable choice for Calgary flat roofs, but the climate here tilts the math differently than it does in warmer cities, and it's worth understanding why before you commit.

What a white membrane actually does in Calgary

A white or light-coloured TPO membrane reflects solar radiation rather than absorbing it, which reduces cooling loads in summer. In hot, sunny climates that benefit is substantial. Calgary sits at about 1,045 metres elevation with intense UV and genuinely hot summer days, so there is a real cooling benefit from roughly June through August. The problem is that Calgary winters are long and cold, and a reflective roof also bounces away the solar heat gain that would otherwise help melt snow and reduce heating loads in January and February. In a heating-dominated climate like Calgary's, the winter heating penalty can partly or fully offsets the summer cooling savings, depending on the building's insulation level and how it is heated.

That said, the cooling-versus-heating trade-off matters most for conditioned space directly below the roof. If your flat roof covers a heated living area with good attic or roof insulation (which the National Building Code requires), the membrane colour has less impact on your energy bill than the insulation thickness does. If the flat section covers an unheated garage or addition, the colour choice matters even less.

Where white TPO genuinely earns its place in Calgary is durability and UV resistance. Calgary's UV index is high for its latitude, and white TPO membranes are formulated to resist UV degradation. They also stay cooler on the surface, which reduces thermal expansion and contraction stress on seams. Given that Calgary averages about 128 freeze-thaw cycles a year, anything that reduces daily thermal movement in the membrane is worth considering.

White TPO is also one of the more affordable flat-roof options, typically falling toward the lower end of the $9 to $20 per square foot installed range for flat and low-slope work in Calgary. Two-ply SBS modified bitumen (the traditional torch-on system) tends to run toward the upper end of that range and usually comes in grey or mineral-surfaced finishes rather than white.

A few practical points to raise with any roofer quoting this job. Ask about membrane thickness (60-mil is more durable than 45-mil in Calgary's climate), seam welding quality (hot-air welded seams are the standard), and the insulation board beneath the membrane, since that is where most of your energy performance actually comes from. Also confirm whether the existing roof structure needs a permit: like-for-like re-roofing with no structural change needs no permit from the City of Calgary, but switching from a built-up or SBS system to a single-ply membrane is a change of type, so it is worth confirming with the City's permit office whether that triggers a permit requirement in

your specific situation.

One thing to check before any flat-roof work: if the building was constructed before 1990, some existing roofing materials may contain asbestos. A qualified contractor should assess this before tear-off begins.

For most Calgary homeowners with a flat or low-slope section, white TPO is a sensible, durable, mid-range option. It is not a dramatic energy saver in this climate the way it would be in Phoenix, but it holds up well under UV and freeze-thaw stress. Get two or three written quotes that specify membrane brand, thickness, insulation R-value, warranty terms and a decking inspection allowance before you decide. Our request form sends the details to local roofers who do low-slope work.

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.