NEW BRUNSWICK CONCRETE

Patios & Walkways

Concrete patios, sidewalks, walkways, and pathway installation with finish options suited to NB Maritime climate

16 Expert Answers from Concrete IQ

newbrunswickconcrete.com/construction-brain

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Q1

What permits do I need to pour a concrete walkway connecting my garage to my home in Fredericton NB?

For a concrete walkway connecting your garage to your home in Fredericton, you typically do not need a building permit. Walkways and sidewalks are generally considered minor site improvements that fall below the permit threshold in most New Brunswick municipalities.

However, there are a few important considerations specific to your situation. Since you're in Fredericton, you'll want to confirm with the City of Fredericton Building Inspection Department, as municipal requirements can vary slightly from the general provincial guidelines. The walkway itself won't require a permit, but if it involves any grading changes that affect drainage patterns around your foundation or if you're connecting to a municipal sidewalk or right-of-way, additional approvals might be needed.

Check your property setbacks and drainage before starting the project. The walkway should maintain proper drainage away from both your house and garage foundations — a minimum 2% slope directing water away from structures. If your walkway will be close to property lines, verify that it complies with setback requirements, though walkways typically have minimal setback restrictions.

For the concrete work itself in Fredericton, you'll want to plan for the Maritime climate challenges. Use air-entrained concrete (essential for NB's 150+ annual freeze-thaw cycles), ensure a proper gravel base of at least 4 inches, and include control joints every 8-10 feet to manage cracking. The walkway should be a minimum 4 inches thick and include wire mesh or rebar for reinforcement. Plan your pour for the May through October window when temperatures consistently stay above 10 degrees Celsius.

Consider the spring thaw factor that's particularly relevant in the Fredericton river valley. The area experiences significant frost heave and spring water movement, so proper base preparation and drainage are crucial. A well-compacted granular base and attention to water management will prevent the walkway from shifting or cracking during freeze-thaw cycles.

While no permit is required, this is still a permanent improvement to your property that should be done right the first time. A typical residential walkway (4 feet wide, 30-50 feet long) costs $8-12 per square foot installed in the Fredericton area. For a project of this scope, many homeowners find it worthwhile to get quotes from local concrete contractors who understand NB climate requirements and can ensure proper base preparation, reinforcement, and finishing.

Need help finding a professional concrete contractor in the Fredericton area? New Brunswick Concrete can match you with local professionals for free estimates on your walkway project.

Q2

How do you properly slope a concrete patio away from a house foundation in Moncton to handle the heavy spring runoff?

Proper patio slope in Moncton requires a minimum 1/4 inch drop per foot (2% grade) away from the foundation, but given the Maritimes' intense spring runoff from snowmelt and frequent rain, a 3/8 inch per foot slope (3% grade) provides better protection against water infiltration and foundation damage.

The key is creating consistent drainage that moves water away from your foundation quickly during Moncton's notorious spring thaw period. When 4-5 feet of frost begins melting in March and April, combined with spring rains, the volume of water around foundations can be overwhelming. A properly sloped patio acts as the first line of defense, directing this water away before it can pool against foundation walls and create hydrostatic pressure.

Establishing the slope starts with setting your forms correctly. Measure from the house foundation to the outer edge of your planned patio, then calculate the total drop needed. For a 12-foot deep patio with 3/8 inch per foot slope, you need 4.5 inches of total drop from house to outer edge. Use a laser level or water level to mark your form boards at the correct heights. The form board against the house should be set 4.5 inches higher than the outer form board. String lines between properly set corner stakes help maintain consistent slope across the entire pour.

During the concrete placement, use a screed board that matches your slope to level the concrete. Many contractors in the Moncton area use a sloped screed rail system — aluminum rails set at the correct grade that guide the screed board. This ensures uniform thickness and consistent slope across the entire slab. After screeding, use a bull float to smooth the surface while maintaining the slope. The final broom finish should follow the slope direction to help channel water flow.

Moncton's clay-heavy soils compound drainage challenges because clay sheds water rather than absorbing it. This means surface water from your patio must be directed to proper drainage outlets — not just away from the house, but to areas where it can infiltrate or flow to storm drains. Consider installing a French drain or drainage swale at the low end of your patio to handle the concentrated runoff. Without proper drainage at the collection point, you're just moving the water problem to a different location.

Control joints should be cut parallel to the house at 8-10 foot intervals to control shrinkage cracking, but avoid creating joints that run perpendicular to your slope direction, as these can create small dams that interrupt water flow. The concrete should be air-entrained (essential for Moncton's 150+ freeze-thaw cycles annually) and sealed with a penetrating sealer within the first year to prevent water absorption that leads to freeze-thaw damage.

Professional installation is recommended for patios larger than 200 square feet or when dealing with challenging drainage situations common in Moncton's river valley location. Proper slope calculation, forming, and

concrete placement require experience to execute correctly — and mistakes in drainage slope are expensive to fix after the concrete has cured.

Need help finding a professional concrete contractor experienced with Moncton's drainage challenges? New Brunswick Concrete can match you with local professionals who understand Maritime climate conditions and proper foundation protection techniques.

Q3

What control joint spacing is recommended for a 30-foot concrete walkway in New Brunswick to prevent random cracking from freeze-thaw cycles?

For a 30-foot concrete walkway in New Brunswick, install control joints every 4-5 feet maximum, creating 6-7 joints total along the length. This tight spacing is essential because NB's 150+ annual freeze-thaw cycles create enormous stress on concrete, and control joints provide relief points where the concrete can crack in a controlled, hidden manner rather than randomly across the surface.

Control Joint Spacing Formula for NB Conditions

The standard rule for control joint spacing is 24-30 times the slab thickness, but NB's harsh Maritime climate demands more conservative spacing. For a typical 4-inch thick walkway, joints should be placed every 8-10 feet maximum under normal conditions, but NB's relentless freeze-thaw cycles justify tighter spacing at 4-5 feet. This prevents the thermal expansion and contraction forces from building up to levels that cause random cracking.

Each joint should be cut to a depth of one-quarter the slab thickness (1 inch deep for a 4-inch walkway) using a concrete saw within 6-24 hours after placement, when the concrete is firm enough to cut cleanly but not so hard that it chips. The joint creates a deliberate weak point where cracking will occur below the surface, invisible from above but relieving the stress that would otherwise cause jagged, unsightly cracks across the walkway.

NB Climate Considerations

New Brunswick's temperature swings from -25°C in winter to +30°C in summer create a 55-degree range that causes significant expansion and contraction in concrete. A 30-foot walkway can expand and contract nearly half an inch seasonally. Without adequate control joints, this movement concentrates stress at random points, creating the spider-web cracking pattern common on older NB sidewalks that were built with inadequate joint spacing.

The freeze-thaw cycles compound this problem. Water enters microscopic cracks, freezes and expands by 9%, then thaws and contracts. This happens 150+ times per year in NB, gradually widening any initial cracks until they

become major structural problems. Proper joint spacing prevents small thermal cracks from becoming major failures.

Installation Details

Cut joints straight across the walkway width using a concrete saw with a diamond blade. Seal the joints with a flexible polyurethane sealant designed for concrete to prevent water infiltration while allowing movement. In NB's climate, unsealed control joints become collection points for water, salt, and debris that accelerate deterioration.

For a 30-foot walkway, also install an expansion joint where the walkway meets the house foundation, driveway, or other fixed structures. This prevents the walkway from pushing against immovable objects during thermal expansion, which can cause cracking or lifting.

When to Hire a Professional

While homeowners can handle small concrete repairs, a 30-foot walkway represents 150-200 square feet of concrete that must be placed, finished, and jointed within a narrow time window. Professional concrete contractors have the experience to properly time the joint cutting, ensure adequate reinforcement placement, and specify air-entrained concrete essential for NB's freeze-thaw conditions. The cost difference between a properly built walkway that lasts 25-30 years and a DIY project that cracks within 5-7 years makes professional installation worthwhile for most homeowners.

Need help finding a professional concrete contractor? New Brunswick Concrete can match you with local contractors experienced in NB's challenging climate conditions.

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Q4

What is the best concrete patio design for New Brunswick backyards?

The best concrete patio design for a New Brunswick backyard balances durability through NB's harsh winters with the aesthetic and functional goals you have for your outdoor space — and a few design decisions made upfront make the difference between a patio that lasts 40 years and one that needs replacing in 10.

For shape and size, simple rectangular designs are the most cost-effective and easiest to properly reinforce and joint. A patio in the range of 200-400 square feet is the sweet spot for most NB backyards — large enough for outdoor furniture and a barbecue, small enough to be practical to maintain and budget-friendly to build. Irregular shapes (L-shapes, curves, or multi-level designs) cost more due to additional formwork and complexity but can integrate beautifully with landscaping and natural yard grades.

From a durability standpoint, the most important design decisions are the mix spec and the jointing plan. Always specify air-entrained concrete (25-32 MPa, 4-7% air content) for any NB patio — this is non-negotiable given our 150+ annual freeze-thaw cycles. Control joints should be cut or tooled every 8-10 feet in each direction, creating a grid pattern that guides inevitable shrinkage cracks into straight, predictable lines rather than jagged surface cracks. An expansion joint between the patio and any adjacent structure (your house foundation, steps, or garage) prevents the patio from pressing against fixed structures as it expands in summer heat.

Drainage is a design decision, not an afterthought. A properly sloped patio sheds water away from the house at a rate of 1/8 to 1/4 inch per foot (roughly 1-2% slope). In Moncton, Fredericton, Saint John, and Riverview where frost heave can subtly shift a patio over time, an adequate cross-slope ensures water never pools near the foundation even after some movement occurs. Grade the excavated area before forming to achieve this slope — it costs nothing extra to build it in from the start.

For finish options, **broom finish** is the most practical for NB conditions — it provides traction when wet or icy, hides minor surface imperfections, and costs the least. **Exposed aggregate** is popular in NB for its texture and natural appearance, and it hides future surface wear well. **Stamped concrete** adds visual appeal at a higher cost ($12-$20 per square foot vs. $10-$18 for broom finish) and requires careful maintenance, especially resealing every 1-2 years to protect the colour and surface texture through NB winters.

For a typical NB backyard patio, budget $2,500-$7,000 fully installed depending on size, finish, and site conditions. New Brunswick Concrete can match you with local patio contractors who know NB soil conditions and can provide detailed quotes for your specific backyard.

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Q5

How thick should a concrete patio slab be in NB?

A concrete patio slab in New Brunswick should be a minimum of 4 inches (100 mm) thick — and in areas that will see any vehicle traffic, heavier furniture, or hot tub loads, 5-6 inches is strongly recommended.

Four inches is the industry-standard minimum for residential pedestrian-use concrete flatwork, and it applies directly to NB patios. A 4-inch slab over a properly prepared 6-inch compacted gravel base provides sufficient strength for outdoor furniture, foot traffic, barbecues, and typical residential use. The critical caveat in NB is that **4 inches is only adequate when the base preparation, concrete mix, and reinforcement are all done correctly** — skimping on any one of those elements means the slab will crack, shift, or deteriorate faster than it should.

Base preparation is as important as slab thickness in NB. The freeze-thaw cycle that causes frost heave affects the soil beneath your patio as much as the concrete surface above. A minimum 6-inch layer of compacted granular gravel (crushed limestone or clean stone) beneath the slab provides drainage and reduces frost heave by minimizing moisture retention in the sub-base. In areas of Fredericton, Miramichi, or Riverview with clay-heavy soils — which hold water and heave significantly — a deeper gravel base (8-10 inches) is worth the extra cost.

Reinforcement in a 4-inch slab. Welded wire mesh (6x6 W1.4/W1.4) placed at mid-slab height on chairs is standard for residential patio slabs. The mesh does not prevent cracking — it holds pieces together after cracking occurs, maintaining the slab's integrity and preventing differential settlement between sections. Rebar (10M at 18-inch centres) is a stronger option for slabs that will support significant loads like a large hot tub or a structure.

For a patio that will support a **hot tub**, increase thickness to 5-6 inches and add rebar rather than mesh. A fully loaded hot tub can weigh 3,000-5,000 kg — spreading that load requires a thicker, better-reinforced slab than a standard patio. Many NB homeowners build a separate thickened pad (6 inches with rebar) for the hot tub location

and tie it into a standard 4-inch patio surrounding it.

For **vehicle access** — if any part of the patio will be driven on or parked on — step up to at least 5-6 inches with rebar reinforcement. Thin residential patio slabs will crack under vehicle loads, particularly after frost heave has created any unevenness in the base. The cost difference between 4 and 5 inches of concrete on a 300 square foot patio is roughly $200-$400 in materials — a minor cost compared to the expense of a premature repair or replacement.

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Q6

Concrete patio vs paver patio for New Brunswick winters?

Both concrete and paver patios can perform well through New Brunswick winters — the difference is in how they handle freeze-thaw movement, and what happens when things go wrong.

A **poured concrete patio** is a single monolithic slab. When properly specified with air-entrained concrete (25-32 MPa, 4-7% air), adequately reinforced, and correctly jointed, it will handle NB's 150+ annual freeze-thaw cycles well for 30-40 years. The vulnerabilities of concrete are surface scaling (if non-air-entrained concrete was used or de-icing salts are applied to unsealed surfaces) and cracking (which is manageable with proper control joints but visible if it occurs out of plan). When a concrete patio cracks significantly or sections shift, repair is more involved — crack injection, slab levelling, or section replacement.

Paver patios handle frost heave differently because they are not monolithic — individual units can heave and settle without cracking. This is often cited as pavers' big advantage in cold climates: a heaved paver can be relevelled relatively easily. However, pavers require a well-designed compacted base with proper drainage to prevent

differential heaving that leaves individual pavers sticking up at different heights, creating trip hazards. NB's clay soils — common in and around Fredericton, Moncton, and Riverview — can cause stubborn frost heave issues that require ongoing relevelling of paver sections year after year.

Cost comparison for NB 2025-2026: A concrete patio runs $10-$18 per square foot fully installed (broom finish). Paver patios typically run $15-$30+ per square foot depending on paver type (concrete pavers vs. natural stone), pattern complexity, and site prep requirements. On a 300 square foot patio, concrete might cost $3,000-$5,400 versus $4,500-$9,000 for pavers. The higher upfront cost of pavers is sometimes offset by lower repair costs later — but this depends heavily on base preparation quality and soil conditions at your specific location.

Maintenance differs significantly. Concrete patios need sealing every 2-3 years and occasional crack filler. Paver patios need joint sand replenishment (polymeric sand) every few years as it washes out, and sections may need relevelling after harsh winters. Weeds growing through paver joints are a common complaint in NB, especially in shadier, moister areas.

For most NB homeowners who want a low-maintenance, durable outdoor space at a reasonable cost, a properly installed concrete patio is the practical choice. Pavers are better suited for homeowners willing to accept ongoing maintenance in exchange for easier spot repairs and greater design flexibility. New Brunswick Concrete can connect you with contractors who install both, so you can get detailed quotes and professional opinions for your specific backyard.

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Q7

How do I prepare the ground for a concrete patio in NB?

Proper ground preparation is the most critical step in building a concrete patio that will last through New Brunswick winters — more important than any other single factor, because a properly prepared base prevents the frost heave, settling, and drainage problems that destroy NB patios from beneath.

Start by marking out the patio area and excavating to a total depth of 10-12 inches below your desired finished surface height — this accounts for 6 inches of compacted gravel plus 4 inches of concrete. In areas with clay-heavy soils (common in Fredericton, Moncton, and the Saint John River Valley), excavate an extra 2 inches and replace with additional granular material. Remove all topsoil, sod, roots, and organic material completely. Organic material decomposes and creates voids beneath the slab, leading to settlement and cracking. Do not pour concrete over any organic material under any circumstances.

Granular base is non-negotiable in NB. Spread and compact a minimum 6-inch layer of crushed limestone (also called 3/4-inch clear or crusher run) across the entire excavated area. Compact in 2-3 inch lifts using a plate compactor — do not try to compact 6 inches in one pass. The goal is a firm, stable base that does not shift under foot pressure. A properly compacted granular base serves two purposes in NB's climate: it provides load-bearing support for the slab, and it acts as a drainage layer that allows water to move away from beneath the slab rather than accumulating and freezing.

Slope the sub-base for drainage. As you prepare the gravel base, establish the drainage slope — typically 1/8 to 1/4 inch per foot sloping away from the house. This slope should be built into the granular base and maintained through to the finished concrete surface. Water that pools against your foundation is a serious problem in NB, particularly during spring thaw when saturated soil increases hydrostatic pressure on foundation walls.

Form setting and final checks before pouring. Set your forms (2x6 lumber for a 4-inch slab, with stakes driven into the granular base) to your finished height lines. Check that forms are straight, level in the direction across the patio, and sloped in the drainage direction. Place wire mesh or rebar on chairs at mid-slab height before the pour — not on the ground. With NB's short working season, May through September is the ideal window for this work. Avoid starting excavation when the ground is saturated from spring thaw (typically April in southern NB, May in northern areas like Bathurst and Miramichi) — wet, soft soil does not compact properly.

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Q8

What is the best slope for a concrete patio for drainage in New Brunswick?

The standard drainage slope for a concrete patio in New Brunswick is 1/8 to 1/4 inch of fall per foot of distance — a 1-2% grade that moves water efficiently off the surface without creating a noticeably tilted patio.

For a patio 12 feet deep (measuring from the house outward), a 1/8-inch-per-foot slope means the outer edge is 1.5 inches lower than the edge against the house. A 1/4-inch-per-foot slope drops the outer edge 3 inches over the same distance. In practice, 1/8 inch per foot (about 1%) is the minimum you should use for a concrete patio; 1/4 inch per foot (2%) is preferred and provides more reliable drainage, especially as the patio ages and any frost heave effects reduce the intended slope over years.

Why drainage slope matters so much in NB. New Brunswick receives significant precipitation year-round — average annual precipitation in Moncton is around 1,100 mm, with Fredericton and Saint John receiving similar amounts. Spring thaw brings saturated soil and heavy runoff. Summer thunderstorms can dump 50+ mm of rain in an afternoon. A patio with insufficient slope turns into a standing-water problem that accelerates freeze-thaw damage at the surface, creates icy patches in shoulder seasons, and pushes water toward your foundation where it causes much bigger problems.

The slope must move water away from the house — this is the most important directional requirement. Never slope a patio toward the foundation wall. Even a minimal slope toward the house concentrates water against your foundation over months and years of rain events, increasing hydrostatic pressure and the risk of basement moisture infiltration. In situations where the backyard grade makes it challenging to slope away from the house, a central drain or linear drain channel at the outer edge of the patio connected to a proper drainage system is a better solution than compromising on drainage direction.

Building the slope into the base. The drainage slope must be established in the compacted gravel sub-base, not created by varying concrete thickness. Varying the concrete thickness to create slope leads to thin spots in the slab

that crack first under frost heave and load. Set the forms at the correct heights to create the proper slope across the entire surface, and pour the concrete to a uniform 4-inch thickness throughout.

For patios adjacent to retaining walls or in yards with complex drainage patterns — situations common on hilly sites in Fredericton and Saint John — consult with a local concrete contractor who can assess the site drainage and recommend additional measures like weeping tile or catch basins. New Brunswick Concrete can connect you with experienced patio contractors in your area.

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Q9

Can I pour a concrete walkway myself in New Brunswick?

A small concrete walkway — 20 to 50 square feet, under 2 cubic yards of concrete — is one of the more achievable DIY concrete projects for a motivated homeowner, but NB's climate demands that you get the mix specification, base prep, and timing right or the result will deteriorate quickly.

The practical threshold for DIY concrete in NB is roughly 1-2 cubic yards. Below that volume, you can use bagged concrete mix (Quikrete or Bomix, available at NB building supply stores for $5-$8 per 30 kg bag) mixed in a rented electric mixer. For a 3-foot wide by 15-foot long walkway at 4 inches thick, you need approximately 0.6 cubic yards — around 30-35 bags of 30 kg mix. That is manageable for a DIYer with a helper and a half-day commitment. Above 2 cubic yards, you need ready-mix delivery, and placing, screeding, and finishing 2+ yards of concrete before it sets is genuinely difficult for inexperienced pourers — there are no second chances once the truck arrives.

For any exterior walkway in NB, the mix specification is critical. If using ready-mix (required for anything over 1-2 yards), always specify air-entrained concrete, 25-32 MPa, 4-6% air content. Do not accept standard non-air-

entrained mix for exterior work — it will scale and deteriorate within 3-7 years under NB's 150+ annual freeze-thaw cycles. If using bagged mix, look for a product labelled as suitable for exterior use in freeze-thaw climates, or add an air-entraining admixture to standard bagged mix.

The excavation and base prep is the most important part. Dig out the walkway area 10-12 inches below finished grade. Remove all topsoil and organic material. Place 6 inches of compacted granular fill. Set forms (2x4 lumber is fine for a 4-inch walkway) at your finished height, sloped 1/8 inch per foot to the side for drainage. Place wire mesh on chairs at mid-height. When pouring, don't add extra water to the mix — use the manufacturer-specified ratio and mix thoroughly.

Finishing is where DIYers struggle. After screeding level, float the surface with a magnesium float to consolidate and smooth, then apply a medium broom finish for texture and traction — drag a stiff-bristled push broom lightly across the surface in one direction. Cut control joints every 4-5 feet along the walkway (every 1.5x the walkway width for wider paths) with a groover tool before the concrete hardens. Cure for 7 days with plastic sheeting or curing compound, keeping the surface moist.

For a standard front walkway in Moncton, Dieppe, Bathurst, or elsewhere in NB, professional installation typically runs $600-$1,200 for a typical 50-100 square foot walkway. The professional benefit is mostly in quality assurance — proper air-entrained mix, efficient finishing, and experience with NB soil conditions. For simple straight walkways, a careful DIYer with good base prep can produce a durable result.

Q10

How wide should a front walkway be in NB?

For a residential front walkway in New Brunswick, 36 to 48 inches (3 to 4 feet) is the recommended width — wide enough for two people to walk side-by-side or comfortably pass one another, and the minimum width that feels welcoming and functional for a main entry.

A 36-inch wide walkway is the minimum recommended for residential use and meets accessibility guidance for a single person with mobility aids. A 48-inch walkway is more comfortable, allows two people to walk side by side, and is the preferred width for main entry walkways at homes where accessibility is a consideration. Walkways less than 36 inches feel cramped and become difficult to navigate with winter boots, groceries, or mobility aids — a practical concern given NB's long winter season.

Longer walkways benefit from being wider. For a walkway that runs 20 feet or more from a driveway or street to the front door, a 48-inch width makes the approach feel proportionate and generous. Short connectors (5-8 feet from a step to the driveway pad) can work well at 36 inches. The proportion of walkway width to house facade also matters aesthetically — a 3-foot path on a wide house can look undersized.

NB winter conditions should influence your width decision. Snow clearing on a narrower walkway requires more passes, and when piled snow reduces an already-narrow walk, it becomes problematic quickly. A 48-inch walkway gives you room to shovel snow to the sides and still have a clear walking lane through the season. In Moncton, Fredericton, Bathurst, and Miramichi where snow accumulation from January through March can be substantial, the extra foot of width is genuinely practical, not just cosmetic.

From a concrete standpoint, width affects control joint spacing. For a 4-foot wide walkway, cut a control joint down the centre (at 2 feet) to create two 2-foot-wide panels running the length of the walk. Control joints should be spaced no more than 1.5 times the walkway width — so a 4-foot walkway needs a centre joint, while a 3-foot walkway may be acceptable with only transverse joints every 4-5 feet.

A front walkway replacement in NB typically runs $8-$12 per square foot installed. A typical 4-foot wide by 25-foot long walkway (100 sq ft) costs $800-$1,200 professionally installed with a proper gravel base and air-entrained concrete. New Brunswick Concrete can match you with local walkway contractors for free quotes.

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Q11

How to prevent concrete sidewalk heaving in New Brunswick?

Preventing concrete sidewalk heaving in New Brunswick comes down to three things: getting the sub-base right before the pour, directing water away from beneath the slab, and accepting that some movement in NB's climate is inevitable — but proper design minimizes it dramatically.

Frost heave occurs when water in the soil beneath your sidewalk freezes and expands, physically pushing the concrete slab upward. In New Brunswick, where frost depth reaches 4 to 5 feet and the ground freezes and thaws multiple times each winter, this process is relentless. Soils with high clay content — common across much of the Saint John River Valley, in and around Fredericton, and in low-lying areas of Moncton — hold water especially well and are the most susceptible to frost heave.

The most effective prevention is a generous, well-drained granular base. Replace all clay and organic material beneath the sidewalk with 6-8 inches of compacted crushed limestone or clean granular fill. Granular materials are frost-stable because they allow water to drain through rather than accumulating and freezing. The single most common cause of sidewalk heaving in NB is insufficient base preparation — concrete poured over native clay or directly on undisturbed soil will heave every winter.

Drainage is the other critical factor. Water must have a path away from beneath the slab. Slope the finished sidewalk a minimum 1/8 inch per foot to the side. Ensure adjacent landscaping, lawns, and gardens drain away from the walkway, not toward it. Downspout extensions should carry water at least 6-8 feet away from the sidewalk area. Tree roots are a major source of moisture concentration and physical disruption — avoid routing sidewalks through the root zone of established trees where possible. In Riverview, Dieppe, and suburban areas where mature trees line front yards, root intrusion is one of the most frequent causes of sidewalk heaving.

Control joints do not prevent heaving, but they control where cracking occurs when slabs do move. Cut control joints every 4-5 feet along the walkway to create individual panels — smaller panels that heave slightly do so independently, keeping movement manageable rather than cracking across a large slab.

For existing sidewalks with persistent heaving, concrete levelling (mudjacking at $3-$6 per sq ft, or poly foam injection at $5-$10 per sq ft) can re-level heaved sections without full replacement. If heaving is severe and recurring, the sub-base may need to be excavated and properly replaced. New Brunswick Concrete can connect you with contractors who assess and repair heaved sidewalks across NB.

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Q12

What is the minimum concrete thickness for a residential walkway in NB?

The minimum concrete thickness for a residential walkway in New Brunswick is 4 inches (100 mm) — and while this is the industry standard minimum, achieving durability in NB's climate requires that this minimum be paired with proper base preparation and the right concrete mix.

Four inches provides adequate compressive strength for pedestrian traffic under normal conditions. It is the standard used by concrete contractors across NB for front walkways, backyard paths, and sidewalks. A 4-inch slab poured on a properly compacted 6-inch granular base over undisturbed or well-compacted native soil will carry foot traffic, bicycle loads, and light wheelbarrow or cart loads without issue for 25-40 years when the concrete is properly specified and maintained.

The 4-inch minimum only works with the right concrete. In NB, all exterior concrete including walkways must be air-entrained (4-7% air content) to survive the freeze-thaw cycle. A 4-inch slab of non-air-entrained concrete in an NB winter is effectively a 4-inch slab on borrowed time — it will scale and deteriorate within 3-7 years regardless of base quality. Specify a 25-32 MPa air-entrained mix for any exterior walkway, whether you are ordering ready-mix or specifying a concrete contractor's material.

Consider 4.5 to 5 inches for heavy-use or high-frost-risk locations. In northern NB communities like Bathurst and Miramichi where frost depth approaches 5 feet and freeze-thaw severity is greater, or for walkways adjacent to garage aprons that may occasionally see vehicle tire loads, increasing to 5 inches adds meaningful strength and longevity for a modest cost increase. On a 3-foot by 20-foot walkway (roughly 0.7 cubic yards of concrete), the difference between 4 and 5 inches is about 0.2 cubic yards — roughly $50-$80 in additional concrete cost.

Reinforcement at any thickness. A 4-inch residential walkway should include welded wire mesh (6x6 W1.4/W1.4) supported on chairs at mid-slab height, or fibre reinforcement added to the mix. The reinforcement does not prevent cracking, but it holds the slab together after cracking, preventing differential settlement between sections. This is especially important in NB where soil movement from frost heave can stress walkway slabs seasonally.

For a typical front walkway in Moncton, Fredericton, Saint John, or Dieppe, professional installation at 4 inches runs $8-$12 per square foot, with materials and base prep included. The walkway's longevity is more dependent on the quality of base prep and concrete spec than on slab thickness alone.

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Q13

How do I fix a sunken concrete sidewalk in Bathurst NB?

A sunken concrete sidewalk in Bathurst can be fixed in most cases without full replacement — the right approach depends on the cause of the sinking, the extent of settlement, and the condition of the existing concrete.

Bathurst's location on the Chaleur Bay coastline and its position in northern New Brunswick means it experiences some of NB's more severe winter conditions, with frost depths approaching 4.5-5 feet and significant spring thaw cycles. Sidewalk sinking in Bathurst is typically caused by one of three things: soil settlement beneath the slab (from organic material decomposing, inadequate compaction, or water erosion of the sub-base), frost heave that lifted the slab and then allowed it to settle unevenly as soil conditions changed, or tree root disruption that moved the soil beneath the slab.

Concrete levelling (mudjacking or poly foam injection) is the most cost-effective fix when the existing slab is structurally sound — no major cracking, spalling, or structural failure. Mudjacking pumps a slurry of cement, soil, and water beneath the slab through small drilled holes to fill voids and lift the slab back to grade. Cost in NB runs $3-$6 per square foot. Poly foam injection (also called polyurethane or foam levelling) uses expanding two-part foam injected through even smaller holes — it lifts faster, is lighter than mud (doesn't add soil pressure to soft sub-base), and cures within minutes. Cost runs $5-$10 per square foot. For a typical 3-foot by 15-foot sunken sidewalk section (45 sq ft), mudjacking costs $135-$270 and poly foam $225-$450 — both far less than the $500-$900+ cost of removal and replacement.

Levelling is not always the right answer. If the slab has significant cracking across multiple panels, the concrete surface is heavily scaled or deteriorated, or settlement is severe enough that the slab has broken into multiple pieces at different levels, replacement is the better long-term investment. Levelling a badly cracked slab addresses the height but not the structural integrity.

After levelling, address the root cause. If poor drainage allowed water to erode the sub-base, improve drainage around the area. If a tree root caused the problem, consider root barrier installation or removal of the problematic tree. Without addressing the cause, the slab will re-sink.

To get the right assessment for your Bathurst sidewalk, New Brunswick Concrete can connect you with local contractors who offer both levelling and replacement services — getting two or three opinions before committing to either approach is well worth the time.

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Q14

Should I put expansion joints between my patio and house foundation?

Yes — an expansion joint between your concrete patio and your house foundation is not just recommended, it is essential in New Brunswick's climate. This is one of the most important details in patio construction and one that is sometimes skipped by less experienced contractors.

Concrete expands when temperatures rise and contracts when temperatures fall. A poured concrete patio is attached to nothing — it is designed to move independently of the house. When a patio is poured directly against the foundation wall without an isolation joint, the patio and foundation press against each other as both concrete masses expand in summer heat. Since the foundation is immovable (it is a structural element anchored below the frost line), the patio has nowhere to go and the force builds until something gives — typically cracking the patio slab, or worse, cracking or staining the foundation wall.

NB's dramatic temperature swings amplify this problem. New Brunswick experiences temperature ranges of 60-70 degrees Celsius between winter lows and summer highs. That thermal range causes measurable expansion and contraction in a concrete slab. A 20-foot concrete patio can expand or contract by 3/8 inch or more across that temperature range. Without an isolation joint to absorb that movement, the stresses accumulate at whatever point the patio contacts the fixed structure.

Installing the joint is straightforward. Use a pre-formed expansion joint filler strip (1/2 inch thick fibreglass or closed-cell foam backer rod, available at any NB building supply store) placed vertically against the foundation wall before the pour. Set the top edge at finished concrete height. Pour the patio concrete up to the filler strip. After curing, apply a bead of self-levelling polyurethane or silicone caulk at the top of the joint to seal against water infiltration — this is the part that needs maintenance every few years as it ages and weathers.

The same principle applies to any adjacent fixed structure — garage walls, steps, fence posts set in concrete, or existing concrete slabs. Wherever your new patio meets any fixed element, install an isolation joint. The material cost is minimal (filler strip is $2-$5 per linear foot), and it is infinitely easier to install during the pour than to retrofit afterward.

If you are hiring a contractor for your patio, confirm that expansion joints are included in the scope before signing. It should be standard practice — if a contractor proposes pouring concrete directly against your foundation with no joint, that is a red flag.

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Q15

How many control joints do I need in a concrete patio in NB?

For a standard 4-inch concrete patio in New Brunswick, control joints should be placed on a grid of 8 to 10 feet in each direction — creating panels that are roughly square, with no panel dimension exceeding 2.5 times the slab thickness in feet (10 feet for a 4-inch slab).

Control joints are the most important crack management tool in concrete work. Concrete shrinks as it cures — typically 1/16 to 3/32 inch per 10 feet of length. Without control joints, this shrinkage stress finds the path of least resistance and creates random cracks across the surface. Control joints are tooled or saw-cut grooves that create a weakened plane — when the slab cracks due to shrinkage or movement, it cracks along these pre-planned lines rather than randomly across the surface. The crack is still there, it is just hidden beneath the groove where it cannot be seen or cause tripping hazards.

The rule of thumb: Maximum panel size in feet equals 2.5 times the slab thickness in inches. For a 4-inch slab, that means 10-foot maximum panel dimension in any direction. For a 5-inch slab, 12.5 feet. Most NB concrete contractors use 8-10 foot spacing as the standard for residential patios — panels in this range remain manageable and the joints are effective at directing cracking.

Apply this to real patio dimensions. A 16-foot by 24-foot patio at 4 inches thick needs: joints at 8-foot intervals across the 16-foot dimension (one joint at the 8-foot mark = 2 panels) and joints at 8-foot intervals along the 24-foot dimension (two joints at 8 feet and 16 feet = 3 panels). Total: 6 panels. This creates a manageable joint pattern that controls cracking without making the surface look over-divided.

Joint depth matters. Control joints must be at least 1/4 of the slab thickness deep — 1 inch minimum for a 4-inch slab, ideally cut to 1 to 1.25 inches. A shallow groove does not create an effective weakened plane and will not reliably control cracking. Tooled joints (formed during the finishing process) and saw-cut joints (made within 4-24 hours of placement) both work well when cut to the right depth.

In NB's climate, err toward more joints rather than fewer. The combination of thermal movement (NB's dramatic temperature swings) and frost heave effects means NB concrete slabs see more movement than concrete in milder climates. Wider-spaced panels have more force trying to crack them. An extra joint or two costs nothing and meaningfully reduces random cracking risk.

Q16

What is the best time of year to pour a patio in New Brunswick?

The best time to pour a concrete patio in New Brunswick is between late May and mid-September — with June and early September being the sweet spots that offer both favourable temperatures and reliable curing conditions.

Concrete needs sustained temperatures above 10 degrees Celsius for proper curing (the chemical hydration reaction that gives concrete its strength). Below 10 degrees, the reaction slows significantly. Below 0 degrees, water in the mix can freeze before the concrete reaches minimum strength, permanently weakening the structure. In NB, this practical reality defines a pouring season that runs from May through October, with the heart of that window being mid-May through mid-September.

May and early June are excellent for patio work once the ground has fully thawed and dried (ground thaw is typically complete in southern NB — Moncton, Fredericton, Saint John — by late April to early May, and in northern areas like Bathurst and Miramichi by mid-May). Ready-mix plants are fully operational after the spring thaw. One caution: May and June are peak booking season for NB concrete contractors — if you want a June patio, get your quotes in February or March.

July and August offer reliable warm temperatures but require attention to the opposite problem: heat and low humidity can cause fresh concrete to lose surface moisture too fast, causing plastic shrinkage cracking before the concrete has set. Your contractor should have curing plans in place for hot-weather pours — curing blankets, misting, or curing compound applied immediately after finishing.

September through mid-October is excellent — cooler temperatures slow surface moisture evaporation (actually beneficial for curing), the ground is stable, and contractors often have more availability than during the summer rush. Watch nighttime temperatures after mid-September; if they are forecast to drop below 5 degrees Celsius, the contractor needs to have insulating blankets on hand for overnight protection. In northern NB, this consideration kicks in by early September.

November through April is cold weather concrete territory — possible but significantly more expensive (25-40% cost premium for heated enclosures, hot water mixes, insulating blankets, and extended monitoring) and rarely justified for a residential patio. Unless there is a compelling reason — a construction project on a firm timeline, or a commercial application — wait for spring.

If you are planning a patio for summer enjoyment, start reaching out to contractors in late winter. New Brunswick Concrete can match you with local patio contractors so you can get quotes and book your preferred pouring window before the season fills up.

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