NEW BRUNSWICK CONCRETE

Concrete Driveways

Concrete driveway installation, replacement, design options, thickness requirements, and NB freeze-thaw considerations

19 Expert Answers from Concrete IQ

newbrunswickconcrete.com/construction-brain

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Q1

How thick should a concrete driveway be poured in New Brunswick to withstand freeze-thaw cycles?

A concrete driveway in New Brunswick should be poured 5-6 inches thick minimum to withstand our brutal freeze-thaw cycles and vehicle loads. While 4 inches is sometimes acceptable with proper reinforcement and excellent base preparation, the extra inch of thickness provides crucial durability insurance against NB's 150+ annual freeze-thaw cycles.

Thickness Requirements by Vehicle Type

For standard passenger vehicles and light trucks, 5 inches is adequate with proper reinforcement. If you regularly park heavy trucks, RVs, or commercial vehicles, increase to 6 inches. The additional thickness distributes loads better and provides more concrete mass to resist freeze-thaw damage. Remember that NB's Maritime climate is particularly harsh on concrete — each freeze-thaw cycle forces water into microscopic pores, freezes and expands by 9%, then thaws, gradually weakening the concrete matrix.

Critical Reinforcement and Mix Requirements

Thickness alone isn't enough in NB conditions. Your driveway must use **air-entrained concrete** (4-7% air content) to survive our freeze-thaw cycles — this is non-negotiable. The microscopic air bubbles give freezing water room to expand without fracturing the concrete. Standard concrete without air entrainment will spall and deteriorate within 3-7 years regardless of thickness.

Install welded wire mesh (6x6 W1.4/W1.4) or rebar on 18-inch centers, properly supported on chairs at mid-slab height. The reinforcement holds the slab together after inevitable shrinkage cracks occur, preventing sections from separating and shifting during frost heave.

Base Preparation and Drainage

Under your 5-6 inch slab, install a minimum 6-inch compacted gravel base using 3/4-inch clear stone. This base provides drainage (preventing water from pooling under the slab during spring thaw), load distribution, and a capillary break that reduces moisture wicking into the concrete. In areas with poor drainage or clay soils, increase the base to 8 inches.

Control Joints and Finishing

Cut control joints every 8-10 feet in both directions to control where shrinkage cracks occur. In NB's temperature swings (-25°C to +30°C), concrete expands and contracts significantly. Without control joints, random cracking is guaranteed. Apply a penetrating sealer within the first year and reapply every 2-3 years to repel water and de-icing

salts.

When to Hire a Professional

Driveway installation requires precise timing, proper equipment, and experience with ready-mix concrete placement. A typical two-car driveway uses 8-12 cubic yards of concrete that must be placed, screeded, floated, and finished within a narrow window before the concrete sets. Professional installation costs $8-15 per square foot but ensures proper thickness, reinforcement, and finishing that will last 25-40 years in NB conditions.

Q2

Is a concrete driveway or asphalt driveway better for a property near the Bay of Fundy where salt air is a factor?

For properties near the Bay of Fundy, a properly specified concrete driveway will significantly outperform asphalt in the salt air environment, but only if you use the right concrete mix and maintenance approach.

Salt air from the Bay of Fundy creates a corrosive environment that affects both concrete and asphalt, but in very different ways. **Asphalt deteriorates rapidly in coastal conditions** — the salt air accelerates oxidation of the asphalt binders, causing the surface to become brittle, crack, and ravage within 8-12 years. You'll see this throughout coastal New Brunswick communities where asphalt driveways develop that characteristic gray, weathered appearance and start shedding aggregate after just a few seasons of salt air exposure.

Concrete, when properly specified for coastal conditions, can last 30-40 years near the Bay of Fundy. The key is using a low water-to-cement ratio mix (0.40 or lower) with a minimum strength of 32 MPa, air entrainment for freeze-thaw protection, and most importantly, applying a quality penetrating sealer every 2-3 years. The sealer creates a barrier that prevents salt-laden moisture from penetrating into the concrete matrix where it could cause corrosion of reinforcement or additional freeze-thaw damage.

Bay of Fundy properties face unique challenges beyond just salt air. The extreme tidal range creates high humidity conditions, and many coastal properties deal with both salt air and road salt from winter maintenance. This double salt exposure makes surface protection absolutely critical. A penetrating silane/siloxane sealer ($40-$80 per gallon, applied every 2-3 years) is essential maintenance that most homeowners skip — but it's the difference between a 15-year driveway and a 35-year driveway in your location.

Cost considerations favor concrete long-term. While a concrete driveway costs $8-$15 per square foot installed versus $4-$8 for asphalt, the concrete will likely outlast two complete asphalt replacements in coastal NB conditions. Factor in the cost of asphalt seal coating every 2-3 years ($0.50-$1.00 per square foot) and crack

sealing, and concrete becomes the more economical choice over 20+ years.

For Bay of Fundy properties, specify air-entrained concrete with 32 MPa strength, ensure proper drainage away from the driveway, and commit to sealing every 2-3 years. The initial investment pays dividends in durability and reduced maintenance in your challenging coastal environment.

Need help finding a concrete contractor experienced with coastal conditions? New Brunswick Concrete can match you with professionals familiar with Bay of Fundy requirements for a free estimate.

Q3

How soon after a new concrete driveway is poured in New Brunswick can you park a vehicle on it, especially in cooler fall temperatures?

You should wait a minimum of 7 days before parking a vehicle on a new concrete driveway in New Brunswick, and extend this to 10-14 days during cooler fall temperatures when concrete cures more slowly.

Concrete gains strength through a chemical reaction called hydration that continues for weeks, but the critical period is the first 7-28 days. In the first 24 hours, concrete reaches only about 25% of its design strength. By 7 days, it typically achieves 65-70% strength, which is generally sufficient for passenger vehicle traffic. However, **New Brunswick's fall temperatures significantly slow this process**.

Fall Temperature Challenges in NB

During September and October in New Brunswick, daytime temperatures may reach 15-20°C, but nighttime temperatures often drop to 5-10°C or lower. Concrete curing slows dramatically when temperatures fall below 10°C, and virtually stops below 4°C. This means your driveway may take 10-14 days to reach the same strength that would develop in 7 days during summer temperatures.

Safe Loading Guidelines

For a standard 5-6 inch thick residential driveway with proper reinforcement, follow these timelines:

- **24-48 hours**: Safe for foot traffic only
- **7 days**: Light passenger vehicles (under 3,000 lbs) in warm weather
- **10-14 days**: All passenger vehicles in fall temperatures
- **28 days**: Heavy vehicles, delivery trucks, or RVs

Protecting Your Investment

Parking too early can cause **permanent surface damage** including tire marks, indentations, and cracking that cannot be repaired without replacing sections of concrete. This is especially problematic with New Brunswick's freeze-thaw cycles — surface damage creates entry points for water that will worsen during winter.

Your concrete contractor should provide specific guidance based on the mix design, weather conditions during placement, and curing methods used. Some contractors use accelerating admixtures or heated curing blankets during fall pours to achieve earlier strength gain, potentially reducing the waiting period to 5-7 days even in cool weather.

When to Hire a Professional

Concrete driveway installation requires precise timing, proper mix design with air entrainment for NB's harsh winters, adequate reinforcement, and professional finishing. The 8-10 cubic yards of concrete must be placed, screeded, and finished within a narrow time window before the material sets. A failed driveway pour is expensive to remove and replace.

Need help finding a professional concrete contractor? New Brunswick Concrete can match you with experienced local professionals who understand Maritime climate requirements and proper fall installation techniques.

Q4

What concrete mix is recommended for a new driveway that needs to handle a heavy farm truck in Carleton County NB?

For a farm truck driveway in Carleton County, you need a minimum 32 MPa (4,500 PSI) air-entrained concrete mix, 6 inches thick, with proper reinforcement. Standard residential driveway concrete at 25 MPa will crack and fail under repeated heavy truck loads, especially when combined with New Brunswick's punishing freeze-thaw cycles.

Heavy-Duty Mix Specifications

Your ready-mix supplier should provide a 32-35 MPa air-entrained mix with 4-7% air content. This higher strength concrete costs approximately $210-$250 per cubic yard delivered in the Carleton County area — about $30-40 more per yard than standard residential mix, but essential for durability under farm truck loading. The air entrainment is non-negotiable for any exterior concrete in New Brunswick, as Carleton County experiences 150+ freeze-thaw cycles annually that will destroy non-air-entrained concrete within 5-7 years.

Specify a maximum water-to-cement ratio of 0.45 and request a 4-5 inch slump for good workability without compromising strength. Adding fibre reinforcement (polypropylene or steel fibre) at $20-30 per cubic yard provides additional crack resistance and impact durability — worthwhile for heavy truck traffic.

Thickness and Reinforcement Requirements

A farm truck driveway requires 6 inches of concrete thickness minimum, compared to 4-5 inches for typical passenger vehicles. The concentrated axle loads from loaded farm trucks create much higher stress on the concrete surface. Use #10M rebar on 12-inch centers both ways, or upgrade to #15M rebar for the heaviest equipment. The rebar must be supported on chairs at mid-slab height (3 inches up from the bottom in a 6-inch slab) — laying it on the gravel base and pulling it up during the pour results in reinforcement sitting at the bottom where it provides minimal benefit.

Base Preparation and Drainage

The gravel base becomes even more critical under heavy loads. Install 8-10 inches of compacted 3/4-inch clear stone, compared to the standard 4-6 inches for residential driveways. Proper compaction with a plate tamper or vibratory roller is essential — loose base material will settle under truck weight, causing the concrete to crack and sink. Ensure positive drainage away from the driveway, as Carleton County's clay soils retain moisture that can cause frost heave and base instability.

Seasonal Timing and Curing

Plan your pour between May and September when ground conditions are stable and temperatures support proper curing. Farm driveways often require 15-25 cubic yards of concrete — a substantial pour that needs professional placement and finishing. The concrete must cure for a minimum 28 days before subjecting it to full farm truck loads, though light vehicle traffic is acceptable after 7 days. Apply a penetrating sealer after 30 days and reapply every 2-3 years to protect against salt and freeze-thaw damage.

When to Hire a Professional

This is definitely a job for an experienced concrete contractor. The volume of concrete, critical timing for placement and finishing, and consequences of failure under heavy loads make professional installation essential. A failed farm driveway disrupts operations and costs $12,000-20,000 to replace.

Need help finding a concrete contractor experienced with heavy-duty farm applications? New Brunswick Concrete can match you with professionals in the Carleton County area who understand agricultural concrete requirements.

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Q5

How thick should a concrete driveway be in New Brunswick?

A residential concrete driveway in New Brunswick should be a minimum of 5 inches (125 mm) thick for passenger vehicles, and 6 inches (150 mm) if you park a truck, SUV, or RV on it regularly. Given NB's aggressive freeze-thaw climate and the frost heave forces that act on your driveway slab every winter, thicker is not a luxury — it is genuine protection for a significant investment.

The often-quoted 4-inch minimum is technically achievable for very light use, but experienced NB concrete contractors rarely pour residential driveways at less than 5 inches. Here is why: NB experiences 150+ freeze-thaw

cycles annually. Each cycle imparts stress on the slab through differential movement between the slab and the gravel base beneath it. A thinner slab cracks sooner under these repeated thermal and moisture stresses. At 5-6 inches, the slab has the mass and strength to absorb these stresses over a 30-40 year lifespan with proper care.

Thickness alone is not the whole story. A 5-inch concrete slab poured over an inadequate base or with the wrong mix will fail faster than a 4-inch slab poured with proper preparation. The critical package for a long-lived NB concrete driveway is: 6-8 inches of well-compacted granular base + 5-6 inches of air-entrained concrete (25-30 MPa) + proper reinforcement (rebar or wire mesh on chairs at mid-slab height) + control joints every 8-12 feet + a quality penetrating sealer applied within the first year.

Heavier loads require more. If you routinely park a pickup truck, cube van, delivery vehicle, or RV in your driveway, or if heavy concrete trucks or oil delivery trucks regularly drive on it, specify 6 inches minimum. For a commercial driveway apron where heavy trucks make frequent turns, 7-8 inches with additional rebar may be warranted. Discuss your actual usage with your contractor before the pour — changing the thickness spec is easy before forming, impossible after.

The cost difference is modest. Going from 4 inches to 5 inches adds roughly 25% more concrete. On a typical two-car NB driveway of 450 square feet, that is approximately 1.5-2 additional cubic yards of concrete — adding $300-$480 in material cost on a project that already costs $4,000-$8,000. For the added durability in NB conditions, this is money very well spent.

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Q6

What type of concrete mix should I use for a driveway in NB?

For a concrete driveway in New Brunswick, specify air-entrained, 30 MPa (4,350 PSI) ready-mix concrete with a water-to-cement ratio of 0.45 or less and a slump of 4-5 inches. This is not the cheapest concrete option, but it is the right specification for NB's freeze-thaw climate — and it is the difference between a driveway that lasts 30-40 years and one that starts scaling and spalling within a decade.

Air entrainment is the most critical specification for NB driveways. When you order ready-mix, ask specifically for an air-entrained mix with 5-7% air content. This is a non-negotiable requirement for any exterior concrete in New Brunswick. The billions of microscopic air bubbles created by air-entraining admixtures give freezing pore water room to expand, dramatically reducing the internal stress that causes surface scaling. Non-air-entrained concrete exposed to 150+ annual NB freeze-thaw cycles will deteriorate within 3-7 years, regardless of strength.

Why 30 MPa instead of 25 MPa: The additional strength of a 30 MPa mix provides better resistance to the abrasion of NB winter maintenance — sand, salt spray from the road, snowplow contact, and ice melt chemicals all work on the surface of your driveway. A denser, stronger concrete resists surface wear significantly better. The cost difference is $15-$30 per cubic yard — about $100-$200 more for a typical driveway, fully worth the durability gain.

Water-to-cement ratio matters more than many homeowners realize. A low water-to-cement ratio (0.45 or less) produces denser, less permeable concrete. When a driver arrives with your ready-mix and the concrete looks stiff, the temptation is to add water to make it more workable. Resist this completely — adding water dilutes the cement paste, increases porosity, and reduces strength. Every extra gallon of water per cubic yard reduces compressive strength by 200-300 PSI. If workability is an issue, your contractor can request a mid-range water reducer (plasticizer) from the ready-mix plant at ordering — this maintains workability at a low water-to-cement ratio.

Fibre reinforcement is a useful addition but not a replacement for wire mesh or rebar. Synthetic polypropylene fibres added to the mix ($15-$25 per cubic yard extra) reduce plastic shrinkage cracking during the finishing stage and add crack resistance throughout the slab life. Many NB contractors specify fibres as standard on driveway pours.

For a typical NB driveway, expect to pay $190-$250 per cubic yard for the proper air-entrained 30 MPa mix delivered. Your contractor should be ordering this specification automatically — if they are not, ask specifically.

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Q7

How long does a concrete driveway last in New Brunswick with freeze-thaw cycles?

A properly specified, installed, and maintained concrete driveway in New Brunswick will last 30-50 years. A concrete driveway with the wrong mix, insufficient base, or no sealer in NB conditions can start failing within 5-10 years. The difference is almost entirely in the specification and maintenance decisions — not luck.

New Brunswick is one of the hardest environments for concrete driveways in Canada. With 150+ freeze-thaw cycles per year, annual road salting from November through April, and spring thaw that saturates the ground beneath the slab, the forces working against your driveway are relentless. Understanding what causes early failure helps you make decisions that add decades of service life.

The primary enemies of NB driveways and how to defeat them:

Freeze-thaw scaling is the most common failure mode — the surface concrete deteriorates in thin layers, exposing the aggregate beneath. The cause is almost always non-air-entrained concrete or concrete with insufficient air content. Specify 5-7% air-entrained ready-mix and this failure mode is largely eliminated.

De-icing salt damage amplifies freeze-thaw cycling at the surface. Road salt spray from the street, runoff from a salted walkway, and direct application of sodium chloride to the driveway surface all accelerate surface deterioration. Use sand for traction instead of salt. If you use de-icers, wait at least one full year after pouring (two is better) before any chemical de-icer contact, and ensure the surface is sealed with a quality penetrating sealer (silane/siloxane formula, $40-$80 per gallon) applied annually for the first three years and every 2-3 years thereafter.

Poor base preparation causes slab cracking from differential settlement. A minimum 6-8 inches of compacted granular base (crushed limestone or bank run gravel) gives the slab a stable, well-drained platform. Organic soil, topsoil, or poorly drained clay beneath the slab allows differential movement under frost heave and vehicle loads.

Inadequate control joints allow random cracking. Joints cut or formed every 8-12 feet in the slab create weakened planes where cracking occurs in controlled, hidden lines. A driveway without control joints will crack randomly, often in the most visible location.

Realistic life expectancy by maintenance level: With the right concrete mix, proper base, control joints, and sealing every 2-3 years, 40-50 years is achievable in NB. With proper mix but no maintenance, 20-30 years is realistic. With incorrect mix or no air entrainment, expect surface deterioration within 5-10 years. The sealer investment of $200-$400 every few years is the best maintenance dollar you can spend on a concrete driveway in NB.

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Q8

Should I use rebar or wire mesh in my NB concrete driveway?

For a residential concrete driveway in New Brunswick, welded wire mesh (6x6 W2.9/W2.9 or W1.4/W1.4) properly placed at mid-slab depth is the standard choice, while rebar is preferred for heavier-use driveways and areas subject to significant frost heave. Both work; the key is that reinforcement must be at the correct height in the slab — not lying on the ground.

Why reinforcement matters in NB driveways: Concrete slabs crack — this is not a design flaw, it is an expected behaviour of concrete under thermal expansion, contraction, and structural loads. Reinforcement does not prevent cracking (control joints do that by directing cracks to predetermined locations), but it holds the slab together after cracking so pieces do not separate, shift, or become trip hazards. In NB, where frost heave can push one section of slab up relative to another, reinforcement that bridges a crack prevents the classic dangerous lip that develops between unsupported panels.

Wire mesh is the most common residential driveway reinforcement in NB. Standard 6x6 W2.9/W2.9 welded wire mesh sheets (4x8 feet, $4-$7 per sheet) are economical, fast to place, and adequate for passenger vehicle loads on a 5-inch slab with a good granular base. They must be placed on wire chairs or concrete dobies that hold the mesh at 2-3 inches above the bottom of the slab — placing mesh on the ground and pulling it up during the pour is a common mistake that results in mesh sitting near the bottom where it provides little benefit in tension.

Rebar (#10M at 12-18 inch centres both ways) provides more robust reinforcement and is preferred for NB driveways that will see heavy vehicles (pickup trucks, RVs, delivery vans), driveways with challenging soil conditions or areas prone to frost heave, and wider slabs where long spans between control joints are unavoidable.

Rebar adds cost — #10M rebar at $1.50-$2.50 per linear foot plus labour to tie and support it — but the extra strength is worthwhile for the situations noted above.

Fibres as a supplement: Polypropylene fibres added to the concrete mix are increasingly standard for NB driveways and are an excellent complement to either wire mesh or rebar. They control plastic shrinkage cracking during the critical finishing phase and improve the overall durability of the concrete matrix. Fibres do not replace structural reinforcement.

Bottom line: For a typical NB residential driveway, properly elevated wire mesh plus polypropylene fibres in the mix is an excellent specification. If you have heavy vehicles or know your site has frost heave history, step up to rebar. Either way, make sure your contractor places the reinforcement on chairs — not on the ground.

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Q9

How wide should a two-car driveway be in New Brunswick?

A functional two-car concrete driveway in New Brunswick should be 20-24 feet (6-7.3 metres) wide for comfortable side-by-side parking, with 20 feet as the practical minimum and 24 feet providing comfortable door clearance and easy parking for larger vehicles. Width requirements also depend on your lot, municipal setback rules, and whether the driveway serves a detached garage or opens to a parking pad.

Practical width guidance by use: A 16-foot-wide driveway technically fits two cars, but doors open into each other and maneuvering is tight — this width works only if one car is always parked closer to the garage and the other in the front. Most NB homeowners with two vehicles find 20 feet is the usable minimum for genuine side-by-side parking with comfortable door clearance. At 22-24 feet, both drivers can open doors fully, there is room to walk

between vehicles, and winter tire ruts do not become a problem as they do on narrower slabs.

Driveway approach (municipal road connection) may be regulated to a different width than the main driveway. Many NB municipalities and the Department of Transportation limit driveway apron widths at the road edge — typically 4.5-7.5 metres (15-25 feet) for residential properties. Check with your local municipality or the NB Department of Transportation and Infrastructure if your driveway connects to a provincial road.

Length considerations for NB winters: A two-car driveway should be at least 18-20 feet long to accommodate a full-size vehicle with the garage door closed and space to walk behind. For two cars parked in tandem, 36-40 feet is needed. In NB, also consider where snow will go — a wider, longer driveway with a defined area for snow storage is far more practical through an NB winter than one that leaves no room for plowed snow banks.

Typical NB cost by width: At the standard installed rate of $8-$15 per square foot for a broom-finish concrete driveway:

- 20 feet wide x 30 feet long (600 sq ft) = $4,800-$9,000
- 24 feet wide x 30 feet long (720 sq ft) = $5,760-$10,800
- Adding a flared apron, turnaround area, or decorative border increases cost proportionally

  For homes in Moncton, Fredericton, Dieppe, and Riverview where lots tend to be more compact, also confirm your property line setbacks before committing to a width — most NB municipalities require driveways to sit 0.5-1 metre from property lines. New Brunswick Concrete can connect you with local driveway contractors for a free site visit and quote.

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Q10

Can I pour a concrete driveway over an existing asphalt driveway in NB?

Pouring concrete over an existing asphalt driveway in New Brunswick is technically possible but generally not recommended by experienced NB contractors — the added height, bonding issues, and unpredictable behaviour of the existing asphalt under NB freeze-thaw conditions create problems that outweigh the savings of skipping removal. In most cases, removing the old asphalt produces a better, longer-lasting result.

Why it is appealing: Avoiding asphalt removal saves $2-$5 per square foot in demolition and disposal costs — on a 500 sq ft driveway, that is $1,000-$2,500. Some contractors market this approach as an overlay or bonded slab.

The problems in NB conditions:

Height and grade issues. Adding 5-6 inches of concrete on top of your existing asphalt raises the driveway surface, which can create problems at garage thresholds, sidewalks, and the street approach. In Moncton, Fredericton, and Saint John, many homes already have tight clearances at the garage door that a concrete overlay would completely eliminate.

Bonding is unreliable. Fresh concrete does not bond predictably to aged asphalt. The asphalt flexes under vehicle loads while concrete is rigid — they move independently, especially during NB's freeze-thaw cycles. This differential movement causes the concrete to crack at the interface and eventually delaminate, creating a worse surface than you started with.

The asphalt base is an unknown. Aged asphalt in NB may have soft spots, cracked sections, depressions, and areas where the gravel base has failed. Covering these problems with concrete locks them in — they will telegraph through and cause the concrete overlay to fail at the same locations.

Reduced effective thickness. A concrete overlay must still achieve the full 5-6 inch thickness to perform properly. Pouring thinner concrete because the asphalt provides some base is a compromise that typically leads to premature cracking.

When overlaying can work: If the existing asphalt is in excellent condition, perfectly flat, and the grade and height changes are manageable, a concrete overlay can work. The asphalt must be milled or scarified for bonding, and a proper bonding agent must be applied. This is the exception, not the rule.

The industry-recommended approach in NB is to remove the existing asphalt entirely, inspect and regrade the granular base (adding material as needed to achieve 6-8 inches of compacted base), and pour fresh concrete. This gives you a driveway that will serve you for 30-40 years without the compromises of an overlay. New Brunswick Concrete can connect you with driveway contractors who can assess your specific situation and provide an honest recommendation.

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Q11

How long before I can drive on a new concrete driveway in New Brunswick?

Wait a minimum of 7 days before driving passenger vehicles on a new concrete driveway in New Brunswick, and 28 days before allowing heavy vehicles like trucks, delivery vans, or RVs. In NB's cooler climate — particularly in spring and fall — extend these timelines, as concrete cures more slowly when temperatures are below 15 degrees Celsius.

Concrete does not simply dry — it cures through a chemical reaction called hydration between cement and water. This process gains strength rapidly in the first few days and continues gradually for months. The 7-day point is when concrete reaches roughly 70% of its 28-day design strength — sufficient for passenger vehicle loads on a properly thick, properly based driveway slab. Full design strength is reached at approximately 28 days.

NB-specific timing considerations: The optimal NB pouring season is May through October, but spring and fall temperatures significantly affect curing speed. In May and early June, when temperatures are cool (10-15 degrees Celsius), curing slows and you should add 2-3 extra days to the minimum wait before driving. In July and August, warm temperatures accelerate curing — 7 days is a solid minimum in warm weather. In September and October, watch the nighttime lows — if temperatures drop near freezing in the first week after the pour, the curing concrete must be protected with insulating blankets, and you should wait longer before loading the slab.

Protecting the curing concrete: The curing period is when your driveway is most vulnerable. Your contractor should apply a curing compound immediately after finishing, or keep the surface moist with wet burlap and plastic sheeting for at least 7 days. Do not let the surface dry out in sun or wind — this causes surface cracking, reduced strength, and poor durability. On sunny NB summer days, check that the curing compound was applied or that the

plastic is still in place.

The 7-day caution: Even at 7 days, avoid sharp turns in place, which concentrate point loads that can damage the surface. Do not spin tires or brake hard on fresh concrete. Keep vehicles off the edges of the slab, which are the thinnest and weakest points — the first 12 inches from the edge of a driveway should not be loaded until 14 days have passed.

The 28-day rule for heavy vehicles: Concrete trucks, oil delivery tankers, moving trucks, and any vehicle over 5,000 kg should stay off the new driveway for at least 28 days. Inform anyone making deliveries during this period — a single oil delivery truck on a 10-day-old slab can cause cracking that would not have occurred a month later.

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Q12

What is the best finish for a concrete driveway in NB winters?

The best finish for a concrete driveway in New Brunswick winters is a medium broom finish — a textured surface created by dragging a stiff-bristled broom across the freshly floated concrete. This finish provides the right balance of traction on icy surfaces, durability through 150+ annual freeze-thaw cycles, and ease of maintenance for NB homeowners.

Why broom finish is the NB standard: The texture of a broom finish creates grip for foot traffic and tire traction on icy driveway surfaces — critical in NB from November through March. Smoother finishes like a trowel finish look excellent but become dangerously slippery when wet or icy, which is a serious safety concern for NB winters. The ridges of a broom finish also channel meltwater away from the surface and give ice slightly less purchase compared to a completely flat surface.

Broom direction matters: Broom the surface perpendicular to the direction of travel (across the width of the driveway), not parallel to it. This creates ridges that vehicle tires cross, maximizing grip. Longitudinal brooming (parallel to traffic) provides less benefit for traction.

Finish depth: A light broom creates fine lines and a subtle texture; a heavy broom creates deeper ridges. For NB driveways, a medium broom finish (0.5-1 mm depth) is ideal — deep enough for traction and snow shovel clearance, not so deep that it is difficult to clean or that de-icing sand accumulates in the grooves.

Exposed aggregate: a premium but durable option. An exposed aggregate finish — where the surface cement paste is washed away while the concrete is still green to reveal the decorative aggregate beneath — is an excellent NB driveway choice. The natural stone aggregate provides outstanding traction and the texture is inherently non-slip. It costs $2-$4 per square foot more than a standard broom finish ($10-$16 per square foot installed) but is extremely durable under NB freeze-thaw conditions when the proper air-entrained mix is used. Many Moncton, Fredericton, and Saint John homeowners choose exposed aggregate for its traction and curb appeal combination.

Stamped concrete for driveways: Stamped concrete is visually appealing but every pattern involves textures with peaks and valleys. Some stamped patterns retain more ice than a broom finish. If you are considering stamped concrete for your NB driveway, discuss traction and maintenance with your contractor — and budget for regular sealing (annually for stamped concrete versus every 2-3 years for broom or exposed aggregate).

Avoid smooth trowel finishes on any NB exterior concrete surface that pedestrians or vehicles must use in winter. Save the smooth finish for interior garage floors and basement slabs, where a sealer and grip additive can address traction concerns.

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Q13

How do I prevent my NB concrete driveway from cracking?

You cannot prevent concrete from cracking entirely — but you can control where cracks occur and minimize unplanned cracking through proper mix specification, adequate thickness, a well-compacted base, and properly spaced control joints. In New Brunswick, getting these four elements right is the difference between a driveway that develops fine, invisible cracks along planned joints and one that fractures randomly within a few seasons.

Control joints are the most important crack prevention tool. Control joints are deliberately weakened planes cut or formed into the slab every 8-12 feet that guide the inevitable shrinkage cracking to occur in straight lines at planned locations, rather than randomly across the surface. For a typical NB two-car driveway, this means joints roughly every 10 feet across the width and every 10 feet along the length, creating a grid pattern. Joints should be cut to 1/4 of the slab thickness (1.25 inches deep on a 5-inch slab) either with a saw cut within 4-24 hours of finishing or with a groover tool during the finishing process.

The right concrete mix eliminates one of the biggest cracking causes. Excess water in the mix causes excessive shrinkage as the concrete cures. Every extra gallon of water per cubic yard of concrete increases shrinkage cracking risk significantly. Specify 25-30 MPa air-entrained concrete with a water-to-cement ratio of 0.45 or less, and do not allow water to be added at the jobsite. Polypropylene fibres in the mix ($15-$25/yard extra) significantly reduce plastic shrinkage cracks that form during the first few hours after placement, before the concrete has gained enough strength to resist drying stresses.

A properly prepared granular base eliminates settlement cracking. Six to eight inches of well-compacted granular base (crushed stone or bank run gravel) drains freely and provides uniform support for the slab. Soft spots, organic material, or poorly compacted fill beneath the slab create differential support — the concrete bridges the weak areas until it cracks. If your driveway has clay subsoil, a geotextile fabric between the subgrade and gravel prevents clay from migrating up into the stone over time.

Proper curing reduces surface cracking. Concrete that dries too fast develops surface crazing and shrinkage cracks within the first 24-48 hours. Apply a curing compound immediately after finishing, or cover with wet burlap and plastic sheeting. Keep the surface moist for at least 7 days. On hot NB summer days (July-August), the window between placing and applying curing protection is very short.

Sealing protects against freeze-thaw cracking by preventing water from penetrating the slab. Apply a quality silane/siloxane penetrating sealer in the first fall after your driveway is poured, and reapply every 2-3 years. This single maintenance step dramatically extends the life of any NB concrete driveway.

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Q14

Do I need a permit to widen my driveway in Moncton NB?

In most cases, widening an existing concrete driveway in Moncton requires a driveway entrance permit from the City of Moncton if the widening changes or expands the curb cut or driveway approach at the street — the permit requirement applies at the municipal road interface, not necessarily for the private property portion. Requirements vary depending on whether your property borders a city street or a provincial road, and the specific scope of your project.

City of Moncton permit requirements: The City of Moncton requires a driveway entrance permit for any new driveway or modification to an existing driveway entrance (curb cut) on a city-maintained street. This includes widening the driveway approach at the curb. The permit process ensures the curb cut width, boulevard impact, and sight lines meet city standards. Contact the City of Moncton Planning and Development Department to confirm current requirements and fees before work begins.

Provincial roads in the Moncton area: Some properties in Greater Moncton — particularly in areas that were recently developed or on the outskirts of the urban boundary — front onto provincial roads maintained by the NB Department of Transportation and Infrastructure (DTI). If your driveway connects to a provincial road, the DTI driveway entrance permit applies, not the city permit. Check with DTI (1-800-561-4012) if you are unsure whether your street is city or provincial.

Dieppe and Riverview: If you are in Dieppe or Riverview (adjacent communities to Moncton), contact those municipalities directly — each has its own permit process. Dieppe's Planning and Engineering department handles driveway permits; Riverview's Public Works department manages road approach modifications.

Within the property boundary: The concrete work on your private property (the driveway slab itself, beyond the municipal road allowance) typically does not require a building permit if you are replacing or widening an existing driveway within the same general location. However, you must still comply with property line setbacks — most NB municipalities require driveways to be set back 0.5-1.0 metres from property lines.

Practical advice: Call the City of Moncton at (506) 853-3546 before starting any driveway work. Permit fees for driveway approaches are typically modest ($100-$300), and going without a required permit can result in work stoppage orders and costly corrective action. Contractors familiar with Moncton driveway work will typically advise you on permit requirements as part of the quoting process. New Brunswick Concrete can connect you with experienced Moncton-area driveway contractors who know the local permit landscape.

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Q15

What gravel base is needed under a concrete driveway in New Brunswick?

A concrete driveway in New Brunswick requires a minimum 6-inch (150 mm) compacted granular base of crushed stone or bank run gravel — and 8 inches is a better target, particularly on clay subsoils or sites with drainage challenges. The base is arguably as important as the concrete itself: a properly prepared base provides uniform support, drains water away from the slab, and prevents the differential movement that causes cracking and settlement.

Why the base matters so much in NB: New Brunswick's freeze-thaw climate puts extraordinary stress on concrete driveways. When the ground freezes, soil moisture expands and can push sections of the slab upward (frost heave). When it thaws, sections can settle back unevenly. A well-draining granular base resists frost heave because water drains away rather than accumulating under the slab where it can freeze and expand. Clay soils —

common in parts of Moncton, Dieppe, Fredericton, and river valley communities — retain moisture and are particularly prone to frost heave; a deep granular base over clay is essential.

Granular base material specifications: The base material should be crushed gravel or pit-run gravel with particles ranging from fine sand up to 19-25 mm (3/4 inch) maximum particle size. This gradation compacts well and drains effectively. Avoid using dense clay-like fill, topsoil, or uniformly fine sand as base material — these either do not drain or do not compact adequately. Crushed limestone is excellent where available in NB; bank run gravel sourced from local pits is the most common and economical option.

Compaction is mandatory. Loose gravel is not a base — compacted gravel is. The granular material must be compacted in lifts (layers) of 4-6 inches maximum using a plate compactor or roller. For a typical driveway, this means compacting each 4-inch layer before adding the next, until the full 6-8 inch depth is achieved. On top of the finished compacted base, the surface should be relatively smooth, free of voids, and firm under foot with no soft spots. A proper compaction test (Proctor test) is used on commercial projects; for residential work, an experienced contractor can judge compaction by walking the base and checking for give.

Geotextile fabric between the clay subgrade and the granular base is an excellent addition on NB sites with clay or silt subsoil. The fabric prevents clay particles from migrating up into the gravel over time (a process called pumping that gradually degrades the base), extending the effective life of the base significantly. Fabric costs $0.30-$0.80 per square foot and is a worthwhile investment on challenging soil sites.

Base thickness on different NB soils: On good granular subsoil (sand and gravel), 6 inches of compacted base is adequate. On clay subsoil (common in Moncton, Dieppe, and along the Saint John River valley), 8-10 inches of compacted gravel base with geotextile fabric is recommended. Your driveway contractor should assess the existing subgrade during the excavation phase and adjust accordingly.

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Q16

Concrete driveway vs asphalt driveway for New Brunswick winters?

Both concrete and asphalt driveways work in New Brunswick winters, but they perform differently and require different maintenance strategies — concrete costs more upfront and lasts longer, while asphalt costs less initially but requires more frequent maintenance in NB's freeze-thaw climate. The right choice depends on your budget, aesthetic preference, and long-term plans for the property.

Concrete driveway advantages in NB:

A properly installed concrete driveway lasts 30-50 years in NB with reasonable maintenance. Concrete is rigid and resists rutting from vehicle loads — no wheel track depressions that fill with ice in winter. Concrete reflects more light than asphalt, which can be a modest advantage in NB's short winter days. Concrete does not soften in summer heat, which means the surface stays stable year-round. With the right air-entrained mix and a penetrating sealer applied every 2-3 years, concrete handles NB's freeze-thaw cycles well for decades.

Concrete driveway disadvantages in NB:

Higher upfront cost — $8-$15 per square foot for a broom-finish concrete driveway versus $4-$8 per square foot for asphalt. Concrete can stain from oil, rust, and organics, and these stains are more visible on a light-coloured surface. Concrete cannot be resurfaced or patched as invisibly as asphalt — repairs are permanent and visible. Do not use sodium chloride (rock salt) de-icing products on concrete; use sand or calcium magnesium acetate instead.

Asphalt driveway advantages in NB:

Lower initial cost. Asphalt is more flexible than concrete and can flex slightly under frost heave without cracking as dramatically — small movements that would crack a concrete slab may simply shift and re-settle in asphalt. Road salt and other de-icing products are not harmful to asphalt the way they are to concrete. Repairs and patches blend into the existing asphalt surface reasonably well.

Asphalt driveway disadvantages in NB:

A lifespan of 15-25 years in NB conditions with proper maintenance, compared to 30-50 years for concrete. Asphalt requires sealcoating every 3-5 years and crack filling as needed — skipping maintenance dramatically shortens the lifespan. Asphalt softens in summer heat and can develop ruts under vehicle loads — garbage bins, RV jacks, and heavy vehicles can leave impressions. Potholes and alligator cracking develop faster in NB's freeze-thaw environment on asphalt that has not been maintained.

The long-term cost comparison: When you factor in the 30-50 year lifespan of concrete versus needing to repave asphalt at 20-25 years, concrete often has a lower lifetime cost for NB homeowners. But if upfront cost is the

constraint, a well-maintained asphalt driveway is a legitimate choice for NB winters. New Brunswick Concrete can connect you with contractors for quotes on both options.

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Q17

How do I repair a cracked concrete driveway in NB?

The right repair method depends on the size, depth, and cause of the crack — and in New Brunswick's climate, a proper repair done now prevents a minor crack from becoming a major failure by spring thaw.

For **hairline cracks and surface cracks under 1/4 inch wide**, a DIY repair is reasonable. Clean the crack thoroughly with a wire brush and compressed air or a shop vacuum to remove all debris, loose concrete, and dust. Apply a concrete crack filler — either a polyurethane or epoxy crack filler from your local building supply store — following the manufacturer's directions. These flexible sealants bond well, resist freeze-thaw movement, and stop water infiltration. Avoid standard latex caulk, which breaks down quickly under NB freeze-thaw conditions.

For **cracks wider than 1/4 inch or cracks showing vertical displacement** (one side higher than the other), the repair is more involved. You may need to widen the crack into a V-shape using an angle grinder or cold chisel to create a better bonding surface, then pack with a vinyl concrete patch compound or hydraulic cement. Cracks with displacement indicate underlying movement — soil settlement, tree root intrusion, or frost heave — and patching the surface without addressing the cause means the crack will return.

NB's freeze-thaw cycle is the underlying enemy here. Water enters a crack, freezes, expands by 9%, and widens the crack with every cycle. New Brunswick experiences over 150 freeze-thaw cycles annually — more than almost anywhere else in Canada. Even a hairline crack left unrepaired over a Moncton or Fredericton winter will

typically be 2-3 times wider by April. The best time to repair cracks is late spring (May-June) after the ground has fully thawed and stabilized, or early fall (September-October) before temperatures drop below 5 degrees Celsius at night.

Before you repair, seal. Once your cracks are filled and cured, apply a penetrating silane-siloxane sealer across the entire driveway surface. This is the single most effective step you can take to extend the life of NB driveway concrete — it repels the salt-laden water that causes 80% of concrete deterioration in our climate.

If your driveway has extensive cracking, surface scaling over a large area, or cracks that keep returning in the same location, patching is a losing battle. At that point, replacement with a properly specified 5-6 inch air-entrained concrete slab is the better long-term investment. New Brunswick Concrete can match you with local driveway contractors for a free assessment and quote — use the matching service to compare a few opinions before committing either way.

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Q18

Should I seal my new concrete driveway in New Brunswick?

Yes — sealing a new concrete driveway in New Brunswick is not optional. It is one of the most cost-effective things you can do to protect a significant investment, and skipping it in NB's climate will shorten your driveway's lifespan dramatically.

New Brunswick concrete faces a uniquely punishing combination: 150+ freeze-thaw cycles per year, heavy road salt exposure from November through April, and coastal salt air in communities near the Bay of Fundy, Shediac, and the Gulf of St. Lawrence coastline. Unsealed concrete is essentially a sponge — its porous surface absorbs

water and dissolved salts, which then freeze and expand within the concrete matrix, causing the surface deterioration (called scaling or spalling) that makes NB driveways look like gravel within a few years.

Wait before you seal. A new concrete driveway needs to cure fully before sealing — minimum 28 days, and ideally 60-90 days in NB conditions. Sealing too early traps moisture in the concrete and can cause surface blistering and adhesion failure. If your driveway was poured in late summer or fall, wait until the following spring after one full winter to seal it.

Choose the right sealer for NB conditions. A **penetrating silane-siloxane sealer** is the best choice for NB driveways. It soaks into the concrete and chemically bonds to the pores, repelling water without changing the surface appearance or creating a film that can peel. Cost is roughly $40-$80 per gallon, covering 150-250 square feet. For a typical two-car driveway (400-600 sq ft), budget $100-$250 in materials. Avoid acrylic sealers for driveways exposed to vehicle traffic and salt — they sit on the surface as a film and will peel in NB conditions, creating a new maintenance headache.

Application is a manageable DIY project. Clean the driveway thoroughly (pressure wash and degrease any oil spots), let it dry completely for 24-48 hours, then apply with a pump sprayer or paint roller on a dry day when temperatures are above 10 degrees Celsius and no rain is forecast for 24 hours.

Reapply every 2-3 years — penetrating sealers don't last forever. Many NB homeowners make sealing a fall maintenance task, applying a fresh coat in September before the salt season begins. This simple habit keeps driveway concrete in excellent condition for 30-40 years. For driveways that also receive de-icing products, this regular sealing schedule is particularly important.

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Q19

What causes concrete driveway scaling in New Brunswick?

Concrete driveway scaling — the flaking and peeling of the top surface layer — is caused by a combination of freeze-thaw damage, de-icing salt, and in many cases, concrete that was not properly specified or finished for New Brunswick conditions.

The physical process starts with water. Concrete is porous, and in an NB winter, water from rain, snowmelt, and salt-laden slush migrates into the surface. When that water freezes, it expands by about 9%, generating enormous internal pressure. Over New Brunswick's 150+ annual freeze-thaw cycles, this repeated expansion and contraction physically fractures the concrete matrix just below the surface, causing thin layers to delaminate and flake off. The technical term is freeze-thaw scaling, and it progresses from a slightly rough surface to full aggregate exposure to deep deterioration if left unchecked.

De-icing salt dramatically accelerates the process. Sodium chloride (road salt) and calcium chloride lower the freezing point of water, which sounds helpful — but the result is more freeze-thaw cycles at the concrete surface than the ambient temperature would otherwise produce. The salt also attacks the paste matrix that binds aggregate particles together. In communities like Moncton, Fredericton, and Saint John where streets are heavily salted from November through April, driveways absorb this chemical assault from salt-laden splash and runoff every day of the winter.

Premature scaling often points to a problem with how the concrete was placed or finished. Finishing concrete while bleed water is still rising to the surface traps that water in a weak paste layer near the top. Overworking the surface with a steel trowel closes the pores and creates a dense skin that actually increases moisture retention. Adding water to the ready-mix truck at the jobsite to improve workability is another common cause — every extra gallon per cubic yard weakens the surface significantly. These are contractor errors, not homeowner errors, but they explain why some NB driveways that are only 5-7 years old look as bad as 20-year-old ones.

The most preventable cause is using non-air-entrained concrete. For all exterior flatwork in NB, the concrete mix must include 4-7% air content through air entrainment. The billions of microscopic bubbles this creates give freezing water room to expand without damaging the concrete matrix. Contractors who use standard ready-mix without specifying air entrainment for exterior work are setting NB driveways up to fail within 3-7 years.

If your driveway is scaling, a penetrating sealer can slow further deterioration on lightly affected surfaces. Moderate to severe scaling generally requires resurfacing with a bonded overlay or, in severe cases, full driveway replacement with properly specified air-entrained concrete. New Brunswick Concrete can connect you with local

contractors who can assess the extent of damage and advise whether resurfacing or replacement makes more sense for your situation.

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