NEW BRUNSWICK INSULATION

Basement & Foundation

Basement wall insulation, foundation insulation, crawl space encapsulation, rim joist insulation, and below-grade moisture management

20 Expert Answers from Insulation IQ

newbrunswickinsulation.com/construction-brain

Table of Contents

Q1

What is the cost difference between insulating a poured concrete foundation with interior versus exterior rigid foam in a Saint John NB home?

Interior rigid foam insulation costs approximately $2,500-$5,500 for a typical Saint John basement, while exterior foundation insulation runs $8,000-$15,000+ for the same space — making interior application roughly 60-70% less expensive upfront, though exterior insulation provides superior long-term performance.

The cost difference stems primarily from excavation and waterproofing requirements. **Interior basement wall insulation** involves applying 2-3 inches of XPS rigid foam directly to the foundation walls using construction adhesive or mechanical fasteners, then framing over it with 2x4 studs for drywall attachment. Material costs run $2.00-$4.00 per square foot, and the work can be completed year-round without weather concerns. A typical Saint John basement (800-1,000 square feet of wall area) requires $1,200-$2,000 in materials plus $1,300-$3,500 in labour.

Exterior foundation insulation requires excavating around the entire foundation perimeter down to the footing level — typically 6-8 feet deep in Saint John due to frost depth requirements. The foundation must be cleaned, waterproofed with membrane or spray-applied coating, then insulated with XPS rigid foam before backfilling. Excavation alone costs $3,000-$6,000 depending on soil conditions, accessibility, and landscaping complexity. Add waterproofing ($2,000-$4,000), rigid foam and installation ($2,500-$4,000), and site restoration ($500-$1,500), and total costs reach $8,000-$15,000+.

Performance differences are significant, however. Exterior insulation eliminates thermal bridging through the concrete, keeps the foundation wall warm and dry, and protects the waterproofing membrane from freeze-thaw damage. Interior insulation leaves the foundation wall cold and exposed to freeze-thaw cycles, though it still provides substantial energy savings and comfort improvement. In Saint John's Maritime climate with wet soils and temperature swings from -25°C to +25°C, exterior insulation offers better long-term durability and moisture management.

Timing considerations favor interior work — exterior excavation is challenging during Saint John's wet fall and winter months when frost depth reaches 4-5 feet. Interior insulation can be installed year-round and is often combined with basement finishing projects. Many Saint John homeowners choose interior insulation for existing homes and specify exterior insulation only during new construction or major foundation repairs when excavation is already required.

For most Saint John basement retrofits, interior XPS rigid foam provides excellent value — typically reducing basement heat loss by 60-80% while costing less than half of exterior insulation. The key is proper installation with continuous foam coverage, sealed joints, and attention to rim joist insulation where the foundation meets the floor

framing above.

Need help finding a professional insulation contractor experienced with foundation work? New Brunswick Insulation can match you with local specialists familiar with Saint John's soil conditions and Maritime climate challenges.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- moose luxury painting
- Thirty Four Renovations
- Brunswick insulation & roofing
- Gionetterenovations
- 3Tone Construction Ltd

View all contractors ?

Q2

What is the recommended insulation strategy for the foundation walls of a New Brunswick ICF (insulated concrete form) new build?

ICF construction already provides excellent foundation wall insulation — typically R-22 to R-25 — that meets or exceeds New Brunswick Building Code requirements for below-grade walls (R-17 to R-20). The integrated foam insulation in ICF forms eliminates thermal bridging and creates a continuous insulation layer that conventional poured concrete foundations cannot match.

Understanding ICF Foundation Performance

ICF blocks consist of expanded polystyrene (EPS) foam forms that remain in place after concrete is poured, creating a sandwich of foam-concrete-foam. Standard ICF blocks provide **R-22 to R-25 continuous insulation** — significantly higher than the NB Building Code minimum of R-17 for below-grade walls. This continuous insulation extends from the footing to above grade, eliminating the thermal bridge that occurs where conventional foundation walls meet the floor framing.

The concrete core provides thermal mass that moderates temperature swings, while the exterior foam layer keeps the concrete warm and prevents condensation. In New Brunswick's climate, where frost penetrates 4-5 feet below grade, this continuous insulation prevents frost-related moisture problems and maintains stable basement

temperatures year-round.

ICF Foundation Strategy for NB Climate

For ICF foundations in New Brunswick, **no additional foundation wall insulation is typically required**. The integrated foam exceeds code requirements and provides superior moisture management compared to conventional foundation insulation methods. However, attention must be paid to several critical details:

Above-grade exposure requires protection of the exterior foam. ICF manufacturers provide various finishing systems — cement-based coatings, synthetic stucco, or rigid cementitious panels — that protect the foam from UV degradation and physical damage while maintaining the thermal envelope. In NB's Maritime climate with freeze-thaw cycles, this protection is essential for long-term performance.

Rim joist connection is critical where the floor framing meets the ICF wall. Standard practice is to continue the ICF blocks 6-8 inches above grade, then attach the rim joist directly to the concrete core. This eliminates the thermal bridge common in conventional foundations where the rim joist sits on an uninsulated concrete wall. Some builders add **2 inches of closed-cell spray foam** to the rim joist cavity for additional air sealing and thermal performance.

Moisture Management and Drainage

ICF foundations excel at moisture management because the exterior foam layer prevents condensation on the concrete core. However, **proper drainage remains essential**. Install a complete foundation drainage system with weeping tile, granular backfill, and dampproofing or waterproofing membrane on the exterior face of the foam. The foam itself should not be relied upon as a waterproof membrane.

Interior humidity control is simplified with ICF because the warm interior foam surface rarely experiences condensation. Unlike conventional basement walls that require vapour barriers and careful moisture management, ICF walls can be finished directly with framing and drywall.

Cost and Performance Considerations

ICF foundations cost approximately **$15-25 per square foot** compared to $8-12 for conventional poured concrete plus insulation. However, the ICF system eliminates the need for separate insulation installation, vapour barriers, and interior framing against the foundation wall. The superior thermal performance typically reduces basement heating costs by 30-40% compared to code-minimum insulated conventional foundations.

For New Brunswick's 4,800-5,200 heating degree day climate, ICF foundations provide **whole-life energy savings** that often justify the higher initial cost within 10-15 years, while delivering superior comfort and moisture management throughout the building's life.

When Additional Insulation Makes Sense

Consider supplemental insulation only for **passive house or net-zero construction** where foundation heat loss must be minimized beyond standard practice. In these cases, adding **2-4 inches of exterior XPS rigid foam** below grade can achieve R-35+ foundation performance, though this requires specialized detailing for drainage and protection.

Need help finding ICF contractors or insulation professionals for your new build? New Brunswick Insulation can match you with experienced contractors through the New Brunswick Construction Network who understand ICF construction and NB climate requirements.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- Brunswick insulation & roofing
- 3Tone Construction Ltd
- moose luxury painting
- Thirty Four Renovations
- Arctic Fox Construction Inc.

View all contractors ?

Q3

What is the best insulation for a New Brunswick basement? | Insulation IQ?

New Brunswick basements present a specific set of challenges that make insulation selection more nuanced than it is for above-grade walls or attics. The combination of **Climate Zone 6 winters**, high groundwater in many areas of the province, the prevalence of older poured concrete and concrete block foundations, and the critical role of moisture management all factor into which insulation approach performs best and lasts longest.

The most important principle in NB basement insulation is this: **the insulation must be positioned on the interior face of the foundation wall, not between studs built away from the wall**, and it must address moisture without trapping it. In a New Brunswick winter, the foundation wall itself sits below the frost line and stays relatively cool — typically 5°C to 10°C on the interior face. Warmer interior air carries moisture vapour toward that cool surface. If fibreglass or mineral wool batts are installed between wood studs built an inch or two away from the foundation wall, humid interior air can circulate into the stud cavity, condense on the cold concrete, and cause mould and rot in the wood framing. This is an extremely common problem in older NB basement renovations.

Closed-cell spray polyurethane foam (ccSPF) applied directly to the interior face of the foundation wall is widely considered the best single-product solution for NB basements. It simultaneously insulates, acts as a vapour barrier, and air-seals the wall. A 2-inch application delivers approximately **R-12 to R-14** and creates a seamless, monolithic barrier against both heat loss and moisture diffusion. Because the foam bonds directly to the concrete, there is no air gap where condensation can form. If full R-value is needed, additional studs and batt insulation can be built inside the foam layer — but the foam layer is the critical moisture management component. Closed-cell foam installed in NB basements typically costs **$2.50 to $4.00 per board foot** (a board foot is one square foot at one inch thickness), so 2 inches on 800 square feet of foundation wall runs roughly $4,000 to $6,400 for the spray foam component alone.

Rigid extruded polystyrene (XPS) or expanded polystyrene (EPS) board fastened directly to the foundation wall is a lower-cost alternative that also performs well when installed correctly. The key is to install the rigid board tight against the concrete with no air gap, and to seal all joints and edges with acoustical sealant or spray foam. XPS at 2 inches delivers approximately R-10; EPS at 2 inches is approximately R-8. A common NB approach is to install 2 inches of EPS directly on the concrete, then build a 2x4 stud wall in front of it and fill the stud cavities with R-14 mineral wool batts, achieving a total system R-value of roughly R-22 — well above the effective R-17 recommended for below-grade walls in Climate Zone 6 under the NB Building Code energy compliance paths.

One important note on **vapour barriers in NB basements**: when rigid foam or ccSPF is installed on the foundation wall, a separate poly vapour barrier is generally NOT required behind the subsequent stud wall. The foam itself acts as the vapour control layer. Adding a poly sheet behind the studs in this configuration can actually trap moisture between the poly and the foam — the opposite of the intended effect. This is a detail that some contractors get wrong, and it matters.

Concrete block foundations, which are common in older Moncton, Fredericton, and Saint John homes, have an additional consideration: the hollow cores of the blocks can fill with water during high-water-table events or foundation cracks. Insulating the interior with spray foam before verifying the foundation is watertight can mask ongoing moisture problems. Always address any water intrusion, efflorescence, or active seepage before insulating a block wall.

For **NB Power rebate eligibility**, basement wall insulation typically qualifies as part of the Home Energy Efficiency Upgrade program. The rebate amount depends on the R-value added and the square footage insulated. An NRCan-registered energy advisor can model the savings and confirm eligibility before work begins — and a pre-retrofit assessment is required to unlock the **Canada Greener Homes Grant** if that federal program is still accepting applications.

Expect installed costs in the Moncton to Fredericton corridor to range from **$3,000 to $9,000** for a full basement wall insulation project, depending on foundation perimeter, ceiling height, insulation system chosen, and whether

framing is included. Spray foam jobs run toward the upper end; rigid board with batt infill runs lower. For quotes from insulation specialists serving New Brunswick basements, **New Brunswick Insulation** is a good starting point.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- 3Tone Construction Ltd
- Arctic Fox Construction Inc.
- moose luxury painting
- Brunswick insulation & roofing
- Gionetterenovations

View all contractors ?

Q4

How do I insulate a poured concrete foundation in Fredericton NB? | Insulation IQ?

Poured concrete foundations are extremely common in Fredericton-area homes, particularly in properties built from the 1960s through the 1990s. Insulating them properly requires understanding the thermal and moisture dynamics at play, because a concrete foundation wall in Fredericton behaves very differently from above-grade walls — and the consequences of getting moisture management wrong in a concrete foundation are more severe than in almost any other part of the building envelope.

Poured concrete is dense and relatively air-impermeable, but it is **vapour-permeable and thermally poor**. Uninsulated, a typical 8-inch poured concrete wall provides roughly R-1.5 of thermal resistance — essentially nothing by NB standards. In Fredericton, where January averages around -12°C and cold snaps reaching -25°C are not unusual, an uninsulated basement hemorrhages heat and makes the floor above feel cold no matter how much the furnace runs.

The interior approach is standard for existing Fredericton homes because it doesn't require excavation. The method that performs best and is most resilient to Fredericton's soil conditions and seasonal frost heave is as follows:

First, inspect the entire interior face of the foundation for **cracks, efflorescence (white mineral deposits), or any signs of water infiltration**. Even minor seepage should be addressed before insulating — hydraulic cement can patch active leaks, and a crystalline waterproofing product like Xypex applied to the concrete face adds a permanent barrier against vapour transmission from the soil side. Fredericton's Saint John River valley has areas with high water table, particularly in lower-lying neighbourhoods, and the 2018 and 2019 flooding events demonstrated that many older foundations are not perfectly waterproof.

Once the foundation is verified to be dry, **closed-cell spray polyurethane foam (ccSPF)** applied directly to the poured concrete face is the highest-performance interior insulation method. The foam bonds monolithically to the concrete, seals all minor imperfections in the wall surface, and simultaneously provides insulation, air sealing, and vapour control in one step. For Fredericton's Climate Zone 6 requirements, a minimum of **2 inches of ccSPF** (approximately R-13) is strongly recommended, and 3 inches (R-19 to R-21) is better if budget allows. The NB Building Code energy path for below-grade walls typically targets an effective R-17 or higher.

Alternatively, **rigid foam board — XPS or EPS — fastened directly to the concrete** is a lower-cost option that performs well when installed with careful attention to air sealing. Two-inch XPS (R-10) or three-inch EPS (R-12) should be applied with the boards tight to the wall, joints staggered between layers if using two layers, and all perimeter edges and penetrations sealed with low-expansion spray foam or acoustical sealant. **Do not use**

construction adhesive alone to fasten rigid foam to below-grade concrete — adhesion can fail over time with moisture cycling. Mechanical fasteners (tapcon screws with large washers) through the foam into the concrete provide a reliable attachment.

A common complete assembly for a Fredericton basement renovation: apply 2 inches of XPS directly to the concrete, then build a **2x4 pressure-treated bottom plate wall** (pressure-treated lumber is mandatory in contact with concrete slabs) framed 1/2 inch away from the face of the foam. Fill the 2x4 stud cavities with R-14 mineral wool batts. Finish with 5/8-inch Type X drywall for fire protection (required by the NB Building Code if the foam is exposed in an occupied space — all foam must be covered with a thermal barrier). This assembly achieves a total R-value of approximately R-24, meets code fire protection requirements, and provides a clean finished wall surface.

Spray foam without subsequent framing is also code-compliant if covered with an approved thermal barrier — typically 1/2-inch drywall — fastened to furring strips embedded in or applied over the foam.

For the **rim joist** — the area where the foundation meets the floor framing above — cut-and-cobble rigid foam or two-part spray foam kits are the standard approach in Fredericton homes. The rim joist is often the largest source of air infiltration in a basement, and sealing it with 2 to 3 inches of foam before addressing the walls will have a noticeable impact on basement warmth and overall house performance.

Installed costs in Fredericton for a full interior concrete foundation insulation project typically range from **$4,000 to $10,000** depending on perimeter, ceiling height, and system chosen. NB Power rebates and the Canada Greener Homes Grant may offset a portion of this cost — an energy audit is the first step to confirming eligibility. The professionals listed through **New Brunswick Insulation** and the **New Brunswick Construction Network** can assess your specific Fredericton foundation and recommend the right system.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- moose luxury painting
- Thirty Four Renovations
- Arctic Fox Construction Inc.
- 3Tone Construction Ltd
- Brunswick insulation & roofing

View all contractors ?

Q5

Should I insulate my basement walls from the inside or outside in NB? | Insulation IQ?

This is one of the most common questions New Brunswick homeowners face when planning a basement upgrade, and the honest answer depends on your specific situation — but for most existing homes in NB, **interior insulation** is the practical choice, while **exterior insulation** offers superior performance when it's feasible.

Interior basement wall insulation is by far the more common approach in New Brunswick because it doesn't require excavating around your foundation. It's typically done using either **rigid foam board** (extruded polystyrene or polyisocyanurate) fastened directly to the foundation wall, followed by framing and batt insulation in the stud cavity, or with **closed-cell spray polyurethane foam** applied directly to the concrete. The rigid foam method is preferred by many building scientists because the foam acts as both insulation and a **vapour retarder**, keeping the cold concrete thermally isolated from the warm interior air. In Climate Zone 6 conditions — which covers all of New Brunswick — you need enough continuous rigid foam on the cold side of the stud wall to keep the dew point from falling within the stud cavity. A minimum of **R-7.5 of rigid foam** (typically 1.5" of XPS or about 2" of EPS) against the foundation wall before framing is the generally accepted threshold, though many contractors use R-10 to R-15 to be safe. The remaining R-value can be filled with batt insulation in the framing.

Exterior foundation insulation is the thermally superior option. By wrapping the foundation on the outside with rigid foam, you keep the entire foundation wall mass within the conditioned envelope, which dramatically reduces thermal bridging and moisture movement through the concrete. You also avoid losing any interior floor space. The challenge is cost and disruption — excavating to the footing around a full foundation in Moncton or Fredericton can easily run $15,000–$30,000 or more depending on foundation depth, landscaping, and drainage work required. Exterior insulation also requires careful waterproofing, proper drainage board, and protection of the exposed foam above grade. For most homeowners doing a retrofit, this simply isn't economical unless the foundation is already being excavated for waterproofing reasons.

There is a third hybrid scenario worth knowing: **interior spray foam only**, with no additional stud framing. Closed-cell spray foam applied at 2"–3" directly to the foundation wall gives you R-12 to R-21 in a very thin profile, acts as its own air and vapour barrier, and is moisture-resistant. It doesn't give you stud bays for wiring or the higher R-values of a full assembly, but it's clean and fast.

For a typical New Brunswick home doing an interior renovation, the best practice is rigid foam continuous against the foundation wall (at least R-10), then a 2x4 stud wall framed 1/2" away from the foam, filled with R-12 or R-14 mineral wool or fibreglass batts, for a total assembly of roughly R-22 to R-24 below grade. This meets and exceeds the **NB Building Code** requirement of R-17 for basement walls in Climate Zone 6 under the 2020 NBC as adopted

in New Brunswick.

NB Power's Home Energy Efficiency Upgrade program and the **Canada Greener Homes Grant** both include basement wall insulation as an eligible upgrade — the Greener Homes Grant offered up to $5,000 for basement walls, depending on the R-value improvement achieved, when accompanied by a pre- and post-retrofit EnerGuide evaluation. This can significantly offset the cost of a quality interior insulation system.

If you're unsure which approach makes sense for your home — especially if you have an older foundation, drainage concerns, or limited interior headroom — a qualified insulation professional registered with New Brunswick Insulation can walk you through the options specific to your property.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- Gionetterenovations
- Thirty Four Renovations
- Brunswick insulation & roofing
- moose luxury painting
- 3Tone Construction Ltd

View all contractors ?

Q6

How much does it cost to insulate a basement in Moncton NB? | Insulation IQ?

Basement insulation costs in Moncton — and across New Brunswick generally — vary considerably depending on the method used, the size of the basement, its current condition, and whether you're insulating walls only, floors, or a combination. Here's a realistic breakdown of what homeowners are paying in 2025–2026.

For **interior basement wall insulation using rigid foam and batt**, which is the most common retrofit approach, expect to pay **$3,500–$8,000** for a typical 1,000–1,200 sq ft ranch or bungalow basement in Moncton. This price range typically includes 1.5"–2" of XPS or EPS rigid foam fastened to the foundation wall, a framed 2x4 stud wall, R-12 or R-14 batt insulation in the cavities, and vapour barrier poly. It does not include drywall, electrical rough-in, or finishing. Larger basements or those requiring more prep work will push toward the higher end of that range.

Closed-cell spray polyurethane foam applied directly to foundation walls costs more per square foot — typically **$2.50–$4.50 per board foot** in the Moncton market, meaning a full 2" application on a 1,200 sq ft basement wall area could run **$6,000–$12,000** depending on depth and complexity. The advantage is that spray foam does it all in one step: insulation, air barrier, and vapour retarder with no framing required.

Basement ceiling insulation (insulating the floor above an unconditioned crawl space or unheated basement) is a different and often cheaper scope. Batts installed between floor joists from below — typically R-20 or R-28 — generally run **$1,800–$4,000** for a full basement ceiling, depending on access and joist depth.

Rim joist insulation — the band of framing where your floor system meets the foundation wall — is a separate but critically important item. Rim joists are among the biggest sources of heat loss and air infiltration in NB homes. Sealing and insulating rim joists with spray foam or rigid foam cut-and-cobble runs **$400–$1,200** for a typical home and delivers excellent return on investment.

For a **complete basement insulation package** (walls, rim joists, and floor slab with dimple mat and rigid foam if being finished), total costs in Moncton typically range from **$7,000–$18,000** depending on scope and finishing goals.

These figures reflect installed pricing from professional contractors. DIY costs for materials alone on a rigid foam and batt wall assembly might run $1,500–$3,500 for materials, but improper vapour barrier placement or insufficient continuous foam at the cold face is a common DIY mistake that leads to condensation and mould problems in NB's cold winters.

On the rebate side, the **Canada Greener Homes Grant** offered up to $5,000 for basement insulation improvements (with EnerGuide evaluation), and **NB Power's Home Energy Efficiency programs** have historically provided rebates of $0.10–$0.25 per square foot for basement wall insulation meeting minimum R-value thresholds. These programs change year to year, so it's worth checking current availability before starting work — a registered energy advisor can confirm eligibility.

When getting quotes in Moncton or elsewhere in NB, make sure the proposal specifies the **R-value of the complete assembly**, not just the insulation product, and that the air barrier and vapour control strategy is clearly spelled out. A properly insulated basement is one of the best investments a New Brunswick homeowner can make for comfort and energy savings, often reducing heating bills by 15–25%. The team at New Brunswick Insulation and the contractors listed through the New Brunswick Construction Network can help you get accurate quotes for your specific basement.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- Brunswick insulation & roofing
- moose luxury painting
- Arctic Fox Construction Inc.
- Gionetterenovations
- Thirty Four Renovations

View all contractors ?

Q7

Can I insulate a damp basement in New Brunswick without causing mould? | Insulation IQ?

The short answer is yes — but only if you address the moisture source first and choose the right insulation system. Insulating a damp basement with the wrong materials or in the wrong sequence is one of the most reliable ways to create serious **mould and rot problems** in a New Brunswick home. The good news is that with the correct approach, insulation can actually be part of the moisture management strategy, not a liability.

The first principle is non-negotiable: **fix the water before you insulate**. If your basement has visible water intrusion — seepage through cracks, water running in from the perimeter, pooling on the slab — no insulation system will save you. Bulk water must be addressed through exterior grading improvements, eaves trough extensions, interior drainage channels, or in more severe cases, exterior waterproofing. Skipping this step and insulating over a wet foundation is a very common and very costly mistake.

General dampness (meaning the foundation wall feels cool and slightly clammy but isn't actively leaking) is different and more manageable. This typically comes from **vapour diffusion** through the concrete itself or from **condensation** on the cold wall surface during humid summer months. The strategy here is to create an assembly that allows the foundation wall to dry in one direction — ideally to the exterior — while blocking interior warm air from reaching the cold concrete face.

For damp-but-not-wet basements, **closed-cell spray polyurethane foam** applied directly to the foundation wall is the most forgiving and technically sound choice. Closed-cell foam is **completely impermeable to water vapour** (Class II vapour retarder at 2" thickness), so it seals the wall from interior moisture contact and its own moisture resistance means the foam itself won't degrade or support mould growth. Applying 2"–3" of closed-cell foam (R-12 to R-21) directly to concrete — before any framing — is the approach recommended by building scientists for problem basements. It eliminates the risky void between framing and concrete where stagnant humid air would otherwise accumulate.

Rigid foam board (XPS or EPS) fastened tight to the foundation wall and taped at seams is the next best option. Both XPS and EPS are moisture-resistant and will not grow mould. The key is that the foam must be continuous, with no gaps for air to bypass, and it must be thick enough to keep the dew point within the foam layer rather than at the back of the framing cavity. In Climate Zone 6 — all of New Brunswick — building science guidance calls for at least **R-7.5 to R-10 of continuous foam** at the cold face before framing begins.

What you should **never do** in a damp NB basement: install fibreglass or mineral wool batts directly against a foundation wall without a robust continuous vapour and air barrier on the cold side. These materials absorb moisture, can harbour mould, and are nearly impossible to dry out once wet. Paper-faced fibreglass batts touching

a cold concrete wall in a New Brunswick basement are practically a mould guarantee.

Vapour barrier timing also matters. In a rigid-foam-plus-stud-wall assembly, the poly vapour barrier (6-mil polyethylene) goes on the warm side of the framing — between the studs and the drywall — as required by the NB Building Code for below-grade walls. The rigid foam handles vapour control on the cold side; the poly handles it on the warm side.

For older homes in Fredericton or Saint John where basement dampness is chronic, it's worth having the basement assessed by a **building science professional or certified energy advisor** before insulating. They can identify whether the moisture is coming from bulk water infiltration, vapour diffusion, or interior activities like drying laundry, and recommend the appropriate insulation assembly. Many assessments can be bundled with a pre-retrofit EnerGuide evaluation for the **Canada Greener Homes Grant**, so you get both the technical guidance and the grant eligibility pathway at once. Professionals listed through New Brunswick Insulation can help you assess your specific situation and specify an assembly that insulates safely.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- Arctic Fox Construction Inc.
- Thirty Four Renovations
- 3Tone Construction Ltd
- Gionetterenovations
- Brunswick insulation & roofing

View all contractors ?

Q8

What R-value does NB code require for basement wall insulation? | Insulation IQ?

New Brunswick follows the **National Building Code of Canada (NBC) 2020**, which the province adopted with its own amendments. Under the NBC 2020 for Climate Zone 6 — which covers all of New Brunswick — the minimum effective thermal resistance required for **below-grade foundation walls** is **RSI 3.0**, which translates to approximately **R-17** in imperial units. This is the baseline that new construction must meet.

It's worth being precise about what "effective" means here, because it matters in practice. **Effective R-value** accounts for the thermal bridging effect of framing. A 2x4 stud wall filled with R-14 fibre insulation doesn't deliver R-14 across the whole wall — studs, plates, and any other framing members conduct heat and reduce the overall performance of the assembly. This is why building code compliance is assessed on the assembly level, not just the product label. A wall with R-12 batts and R-10 continuous foam, for instance, easily meets R-17 effective because the continuous foam eliminates the bridging penalty.

For **above-grade basement walls** (the portion of the foundation wall above exterior grade), the code requirement is higher: **RSI 3.85 (R-22)** effective, since above-grade walls are exposed to outdoor air rather than insulated by the ground. Many basements in Moncton or Fredericton have 1–3 feet of poured concrete wall above grade, so a compliant system must address both zones.

The code also has requirements for **basement floors** (slab-on-grade): RSI 1.96 (R-11.1) under heated slab edges, though insulating below a full basement slab is not always required for a conditioned basement depending on configuration. Rim joists — the box sill at the top of the foundation wall — are technically part of the above-grade wall assembly and must also meet the R-22 effective requirement. Spray foam is the most common solution for rim joists because it fills the irregular geometry completely.

The 2020 NBC also introduced **Part 9 Compliance Paths**, including a prescriptive path and an EnerGuide performance path. Under the prescriptive path for a fully conditioned basement, a typical compliant below-grade wall assembly in NB might look like: 1.5" XPS (R-7.5) continuous on the cold face of the foundation, plus a 2x4 stud wall with R-14 batt insulation, giving an effective R-value around R-20 to R-22 depending on stud spacing. Many contractors use 2" XPS (R-10) plus R-12 batts to provide additional margin.

For **existing homes doing a renovation**, Part 11 of the NBC governs, and the code generally requires that any new insulation work must bring the assembly up to current standards where reasonably possible — this triggers when you're doing a significant renovation that includes the insulation layer. An older New Brunswick home that never had any basement insulation installed as original construction isn't retroactively non-compliant, but once you pull the trigger on a renovation permit that includes foundation walls, the work must comply.

It's also worth noting that **exceeding code minimums** is strongly encouraged in New Brunswick's climate. R-17 effective is the floor, not the target. The **Canada Greener Homes Grant** tiered its rebates based on improvement over existing performance, so higher R-values meant higher rebates. NB Power's efficiency programs similarly reward going beyond minimum code. From a comfort and energy savings standpoint, there's a meaningful difference between an R-17 basement wall assembly and an R-25 assembly over the 20–30 year life of the insulation.

If you're planning a basement insulation project and want to confirm code compliance for your specific assembly — particularly in a renovation scenario where existing conditions may complicate things — a building permit application to your local municipality (or Service New Brunswick for rural areas) will get you the most authoritative answer. Qualified insulation contractors working through New Brunswick Insulation are familiar with current NB Building Code requirements and can spec an assembly that meets or exceeds what your project requires.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- Gionetterenovations
- 3Tone Construction Ltd
- Thirty Four Renovations
- Arctic Fox Construction Inc.
- moose luxury painting

View all contractors ?

Q9

How do I insulate a fieldstone foundation in an older Saint John home? | Insulation IQ?

Fieldstone foundations are common in older homes throughout Saint John, Fredericton, and rural New Brunswick — particularly in houses built before the 1930s. They are also one of the most challenging insulation scenarios a homeowner can face, because fieldstone is fundamentally different from poured concrete or concrete block in both its thermal behaviour and its moisture dynamics. Getting the insulation right on a fieldstone foundation requires respecting how these walls work rather than fighting them.

The most important principle for fieldstone foundations is this: **they must be allowed to breathe and dry toward the interior**. Unlike poured concrete, a mortared fieldstone wall has countless micro-gaps, irregular surfaces, and variable thickness. Water infiltrates from the exterior through the mortar joints and the stone faces, and the traditional mechanism was for that moisture to evaporate slowly into the basement interior. Old fieldstone houses stayed reasonably dry for a century because nothing blocked that drying path.

This means you should **never apply a vapour-impermeable insulation system directly to the interior face of a fieldstone foundation**. Closed-cell spray foam, XPS rigid foam fully sealed at the edges, or poly vapour barrier

directly against the stone — any of these traps moisture within the wall assembly, accelerates mortar deterioration, and can cause structural damage to the stonework over time. This is the critical mistake to avoid.

The preferred approach for fieldstone is an **interior stud wall framed away from the stone** — typically 1.5"–2" of clear air space between the stone face and the back of the framing — insulated with **vapour-open materials** like **mineral wool (Roxul/Rockwool) batts**. Mineral wool is moisture-resistant, will not grow mould, is vapour-open (allowing drying), and provides excellent thermal performance. A 2x4 stud wall with R-14 or R-15 mineral wool batts, framed 2" away from the stone, provides meaningful insulation without trapping moisture. The vapour control on the warm side can be a smart membrane (variable-permeance vapour retarder) rather than standard 6-mil poly, which allows the assembly to dry both directions during seasonal changes.

Do not use fibreglass batts in direct contact with or immediately adjacent to fieldstone. Fibreglass absorbs moisture readily, stays wet, and will grow mould in the cool, humid environment near the stone. Mineral wool's hydrophobic properties make it a significantly safer choice.

For the **rim joist area** at the top of the fieldstone foundation — where the wooden floor system meets the stone — you have more flexibility. This zone is typically above grade, drier, and can be sealed with closed-cell spray foam in 2" lifts (R-12 to R-14) because the stone below will not be moisture-compromised by sealing the top section. The rim joist is also a major air leakage point in older Saint John homes, so sealing it well has disproportionate benefits.

Before insulating any fieldstone foundation, have the mortar joints assessed. Many fieldstone foundations in Saint John's older neighbourhoods have deteriorated mortar that needs repointing. Insulating over failing mortar locks in a problem that will only worsen. Repointing with a **lime-based mortar** (not Portland cement) is the historically appropriate choice — it remains flexible and vapour-permeable. Portland cement mortar is too rigid for fieldstone and can cause the stones themselves to crack.

On the **drainage side**, make sure the exterior grade slopes away from the foundation and that eavestroughs direct water well clear of the building. Fieldstone foundations tolerate seasonal seepage if they can dry; they fail when bulk water is constant. Many Saint John homes on slopes or with mature tree root disruption near the foundation have chronic drainage issues that are worth addressing before any interior work.

Realistic costs for a professionally done interior mineral-wool stud wall on a fieldstone basement in Saint John currently run **$4,500–$9,000** for a full basement perimeter, depending on size and condition. This is typically not eligible for the same high rebate tiers as more straightforward poured-concrete assemblies, since the approach limits achievable R-value — but NB Power programs and the Canada Greener Homes Grant can still provide partial rebates for documented improvement. A certified energy advisor can assess your specific situation and confirm eligibility. For older homes with fieldstone foundations, the experts at New Brunswick Insulation understand the unique challenges and can recommend a system that protects your foundation while meaningfully improving

comfort.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- Brunswick insulation & roofing
- moose luxury painting
- Gionetterenovations
- 3Tone Construction Ltd
- Thirty Four Renovations

View all contractors ?

Q10

Is spray foam or rigid foam better for NB basement walls? | Insulation IQ?

Both spray foam and rigid foam board are legitimate approaches to insulating basement walls in New Brunswick, but the right choice depends on your wall configuration, budget, and tolerance for DIY complexity. Understanding the strengths of each material — and how New Brunswick's cold, damp climate shapes that comparison — will help you make the best decision for your home.

Spray foam (either open-cell or closed-cell) adheres directly to poured concrete or block walls, sealing every crack, penetration, and cold joint in one pass. This air-sealing quality is its greatest advantage in NB basements, where hydrostatic pressure, freeze-thaw cycling, and bulk water intrusion make gaps particularly costly. **Closed-cell spray foam** (ccSPF) delivers approximately R-6 to R-7 per inch and acts as both an insulator and a Class II vapour retarder, which matters in our Climate Zone 6 environment where the vapour drive pushes inward for a large portion of the year. Spraying 2 to 2.5 inches of closed-cell foam directly onto the foundation wall provides around R-13 to R-17 and eliminates the need for a separate vapour barrier — a real advantage in tight mechanical spaces or irregular masonry walls. **Open-cell spray foam** is less expensive per board foot but is vapour-permeable, so it typically requires a separate 6-mil poly vapour barrier to meet NBC/NB code requirements for below-grade applications. For most NB homeowners, closed-cell is the smarter pick when spraying basement walls.

Rigid foam board — most commonly **extruded polystyrene (XPS)** or **polyisocyanurate (polyiso)** — is the DIY-accessible alternative. XPS delivers R-5 per inch and has excellent moisture resistance, making it well-suited for basement applications. Polyiso delivers R-6 to R-6.5 per inch but can lose effective R-value in sustained cold conditions (below -4°C), so in a Fredericton or Edmundston basement that routinely gets cold, XPS is typically preferred. Rigid foam is installed by cutting panels to fit between or against stud framing, then covering with drywall (minimum 12.7 mm fire protection is required by code). A common NB approach is to frame a 2x4 stud wall 1–2 inches off the foundation, install continuous 2-inch XPS between the wall and foundation, and then batt-insulate the stud cavities to reach R-20 to R-24 total. This meets the NBC 9.36 prescriptive path for a heated basement in Climate Zone 6.

In terms of **cost**, spray foam runs roughly $3.00–$5.50 per square foot installed in the Moncton–Saint John–Fredericton corridor, depending on thickness and accessibility. Rigid foam board with labour runs $1.50–$3.50 per square foot depending on the system complexity. For a typical 1,000 sq ft NB basement perimeter, expect spray foam to cost $3,000–$5,500 and a rigid foam/stud system to cost $1,500–$3,500 including framing materials.

Condensation risk is a major factor in NB. Basement walls that are insulated only on the interior with vapour-permeable materials (unfaced batts, open-cell foam without poly) can experience condensation on the cold

concrete face. Rigid foam and closed-cell spray foam both keep the wall surface warmer, reducing this risk significantly. If you have an older Moncton or Saint John row house with rubble stone or heritage block foundations, spray foam applied directly to the irregular surface is often the only practical option — panels simply won't conform to uneven masonry.

For **Canada Greener Homes Grant** purposes, basement wall insulation upgrades are eligible, but the work must be done by a registered contractor and accompanied by an EnerGuide assessment. Projects that achieve meaningful improvements in the below-grade envelope can qualify for grants up to $5,000 as part of the broader home energy upgrade.

In summary: **closed-cell spray foam** wins on air-sealing, vapour control, and performance in awkward spaces; **rigid foam board** wins on cost and DIY accessibility for standard poured-concrete walls. Many NB professionals use a hybrid — a thin layer of closed-cell spray foam for air-sealing and vapour retardance, followed by rigid board or batts for additional R-value. If you're unsure which system fits your foundation type and budget, the professionals listed on New Brunswick Insulation can assess your specific basement conditions and recommend the right approach.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- Thirty Four Renovations
- Brunswick insulation & roofing
- Gionetterenovations
- 3Tone Construction Ltd
- moose luxury painting

View all contractors ?

Q11

Can I insulate my crawl space myself or do I need a contractor in NB? | Insulation IQ?

Crawl space insulation is one of those projects where the honest answer depends heavily on your crawl space's specific conditions, your comfort with confined-space work, and which insulation method you choose. Some approaches are genuinely DIY-accessible; others involve materials or code requirements that make professional

installation the safer and smarter path.

First, understand what you're dealing with. **New Brunswick crawl spaces fall into two general categories**: vented and unvented (conditioned). Under the National Building Code of Canada as adopted in NB, a vented crawl space relies on cross-ventilation to manage moisture, and insulation typically goes between the floor joists above (insulating the floor, not the walls). An **unvented, sealed crawl space** is insulated at the perimeter walls and foundation, essentially treating the crawl as part of the thermal envelope. Sealed crawl spaces are increasingly recommended in NB's Climate Zone 6 because they eliminate the cold floors, pipe-freezing risk, and mould growth that plague vented crawl spaces in our humid maritime climate.

DIY-friendly scenario: floor joist insulation above a vented crawl space. Installing friction-fit batts between floor joists is within reach of a determined homeowner. You'll need **R-31 or higher** to meet NBC 9.36 prescriptive requirements for a floor assembly over an unconditioned space in Climate Zone 6. Mineral wool batts are preferred over fibreglass in damp NB crawl spaces because they don't absorb water and won't compress over time. You also need to install a **6-mil polyethylene vapour barrier** on the crawl space floor to prevent ground moisture from rising into the framing — this is a code requirement and not optional. The physical challenges are real: you're working in a confined, often low-clearance space, likely with debris, pests, or moisture issues that need to be resolved first. If the access hatch is small, pulling materials in and out becomes genuinely difficult.

Where DIY gets complicated. If you want to seal and condition the crawl space — which is almost always the better long-term strategy in a Fredericton, Moncton, or Saint John home — you're looking at installing rigid foam or spray foam on the perimeter walls and covering the floor with poly and rigid board. This work must comply with NB Fire Code requirements for exposed insulation (spray foam requires a thermal barrier, typically drywall or intumescent coating, if the space is accessible). Spray foam application requires specialized equipment and training — open-cell or closed-cell spray foam is not something you apply with a homeowner-grade two-component kit on a full crawl space and expect code-compliant, uniform results. **Hiring a professional for spray foam is strongly recommended.**

Moisture remediation comes first, regardless of who does the insulation. If your crawl space shows evidence of standing water, efflorescence on the foundation, rotting sill plates, or active mould, those issues must be resolved before insulation goes in. Trapping moisture inside an insulated crawl space accelerates wood decay and creates serious structural and air quality problems. In older homes throughout the Saint John River valley and coastal communities, this pre-treatment step alone can cost $1,500–$4,000 before insulation even begins.

Permit and code considerations. Crawl space insulation in an existing home generally does not require a building permit in most NB municipalities for like-for-like replacement, but significantly altering the crawl space from vented to unvented (sealed) may require a permit and inspection. Check with your local municipality before proceeding — requirements vary between Fredericton, Moncton, Saint John, and rural communities.

For **NB Power and Canada Greener Homes rebates**, both programs require pre- and post-EnerGuide assessments for maximum rebate eligibility. If you're doing the work yourself, you may still qualify for some incentives, but the installation must meet code standards — an assessor will verify. Professional installation generally makes the rebate process smoother and the documentation more bulletproof.

The bottom line: **floor joist batt insulation above a vented crawl space is within DIY reach** for a capable homeowner with basic construction skills. **Sealed crawl space conversions and any spray foam application are best left to professionals.** Given NB's combination of cold winters, humid summers, and frost-heave risk, getting a professional assessment before you start is money well spent. The team at New Brunswick Insulation can help evaluate your crawl space conditions and recommend the most appropriate approach.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- Thirty Four Renovations
- Arctic Fox Construction Inc.
- moose luxury painting
- 3Tone Construction Ltd
- Brunswick insulation & roofing

View all contractors ?

Q12

Should I insulate the floor above an unheated crawl space in Dieppe? | Insulation IQ?

Yes — insulating the floor above an unheated crawl space is one of the most impactful upgrades you can make to a Dieppe home, and it's a project where the return on investment is felt immediately every winter. Dieppe sits in Westmorland County, in the Greater Moncton area, where January average lows hover around -14°C to -16°C. An uninsulated floor above an unheated crawl space is essentially a giant cold radiator pulling heat out of your living area, making hardwood floors feel frigid, inflating heating bills, and stressing your HVAC system through what should be the most comfortable parts of your home.

What the code requires. New Brunswick has adopted the National Building Code of Canada (NBC), which places the greater Moncton/Dieppe area firmly in **Climate Zone 6**. Under NBC 9.36, a floor assembly over an

unconditioned space — which includes an unheated, vented crawl space — must achieve at least **RSI 5.46 (approximately R-31)** in Climate Zone 6. Many older Dieppe homes, particularly those built before 2010, have either no insulation under the floor or outdated fibreglass batts well below this threshold. Upgrading to current code minimums alone can produce significant comfort and efficiency gains.

The preferred approach in NB. For an unheated vented crawl space, the standard method is to install **mineral wool or fibreglass batts** between the floor joists from below. Mineral wool (such as Rockwool Comfortbatt) is strongly recommended over fibreglass in damp Dieppe crawl spaces because it repels moisture, won't sag over time, and resists mould growth better than fibreglass. A common installation achieves R-31 to R-40 using two layers of batts — for example, a layer of R-22 mineral wool (approximately 5.5 inches) combined with a layer of R-14 in the joist cavity can get you to R-36, which exceeds code and provides measurable comfort improvement. The batts should be friction-fitted snugly between joists and held in place with netting, wire rods, or rigid supports — don't rely on gravity alone in a humid crawl space.

Vapour barrier on the ground is mandatory. Regardless of how well you insulate the floor joists, a **6-mil polyethylene ground cover** must cover the crawl space floor. Ground moisture evaporation is substantial and continuous in the Dieppe–Moncton area, and without a ground vapour barrier, that moisture migrates upward into the floor framing, promoting mould, rot, and insulation degradation over time. The vapour barrier should lap up the perimeter foundation walls at least 300 mm and be taped at seams.

Watch for air leakage at the perimeter. The junction between the floor joists and the foundation (the rim joist and header area) is a major thermal bypass that defeats floor insulation if left unaddressed. Cold air infiltrates around the sill plate and travels along the underside of the subfloor. Sealing this area with a bead of acoustical sealant or low-expansion spray foam before installing floor batts ensures your insulation performs as intended. The rim joist area itself should be insulated separately — typically with cut-and-cobble rigid foam or two-component spray foam — to R-10 to R-20.

Comfort impact. Dieppe homeowners who upgrade floor insulation above unheated crawl spaces consistently report that the most noticeable change is tactile — floors that were previously uncomfortable to walk on in bare feet become noticeably warmer. Rooms that sat cold despite adequate HVAC output warm up faster and hold temperature better. For homes with in-floor radiant heat or baseboard heating, reduced heat loss through the floor also translates directly to lower energy consumption.

Cost and rebate picture. Floor joist insulation in a typical Dieppe bungalow or split-level with a 600–900 sq ft crawl space generally runs $1,200–$2,800 installed, depending on accessibility, existing conditions, and target R-value. The **Canada Greener Homes Grant** and **NB Power Home Energy Savings Program** both recognize below-floor insulation upgrades as eligible measures, with rebates calculated against the improvement in your home's energy model after a pre- and post-EnerGuide assessment. A well-documented upgrade can yield $500–$2,000 in

combined grants depending on the overall project scope.

Don't underestimate the value of addressing your crawl space floor before another Dieppe winter. The professionals connected through the New Brunswick Insulation network can assess your specific crawl space conditions and deliver code-compliant results with the documentation needed to support rebate claims.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- moose luxury painting
- 3Tone Construction Ltd
- Gionetterenovations
- Arctic Fox Construction Inc.
- Brunswick insulation & roofing

View all contractors ?

Q13

How do I insulate a basement header and rim joist area in New Brunswick? | Insulation IQ?

The rim joist and header area is one of the most overlooked but highest-impact insulation targets in any New Brunswick home. Positioned at the very top of the foundation wall — where the floor framing meets the concrete or block — this zone is exposed to outdoor temperatures on three sides: the exterior wall, the cold slab or crawl space below, and often inadequate insulation above. In a typical older Fredericton, Moncton, or Saint John home, the rim joist can account for 15–25% of total basement heat loss and is a common entry point for cold drafts, moisture infiltration, and even insects.

Understanding the anatomy. The **rim joist** (also called the band joist) is the outermost joist that runs along the perimeter of the floor system, sitting on top of the sill plate. The **header** refers to the dimensional lumber cap that closes off the ends of the floor joists. Together they form a continuous band of wood around the base of the main floor, typically 9–11.5 inches tall (depending on joist depth), and in an uninsulated basement they are directly accessible from inside.

The two primary methods used in NB.

Cut-and-cobble rigid foam is the DIY-accessible approach. You measure each joist bay, cut **extruded polystyrene (XPS)** or polyisocyanurate to fit snugly, and press it into the cavity flush with or slightly inside the face of the rim joist. Each piece is then sealed around the perimeter with **acoustical sealant** (not caulk — acoustical sealant stays flexible and bonds to wood and foam) to create an air seal. A single layer of 2-inch XPS yields R-10; two layers of 2-inch XPS yields R-20. For Climate Zone 6 compliance under NBC 9.36, targeting **R-10 to R-20** at the rim joist is appropriate, with R-20 being a reasonable target for maximum comfort and rebate eligibility. The advantage of cut-and-cobble is that it's inexpensive (XPS board is roughly $0.60–$1.10 per square foot) and requires no special equipment. The disadvantage is that it's time-consuming on long perimeters and leaves small gaps at corners and framing irregularities.

Two-component spray foam (either professional or large homeowner kits) is faster and provides a complete air seal in one pass. A professional applying **closed-cell spray foam** to 2 inches at the rim joist area achieves approximately R-13 while simultaneously sealing every crack, nail hole, and wood-to-concrete gap. This is the preferred method for homes with irregular framing, notched blocking, or significant air infiltration. Professional rim joist spray foam in a typical NB basement (50–100 linear feet of perimeter) typically costs $600–$1,500 depending on joist depth and accessibility.

Vapour control considerations. In New Brunswick's cold climate, the rim joist faces inward vapour drive for much of the heating season. Both XPS and closed-cell spray foam act as Class II vapour retarders, which is appropriate

here — you want to keep interior moisture out of the cold framing. Fibreglass batts are the wrong material for rim joists: they allow air movement, don't air-seal, and can trap moisture against the cold wood, leading to mould and wood decay. **Never use unfaced fibreglass batts alone in a rim joist bay.**

Step-by-step for the cut-and-cobble method:

- Clear the area and inspect for any signs of moisture, mould, or rot. Address these before insulating.
- Measure the height of each joist bay and the depth of the rim joist. Bays are typically 14.5 or 22.5 inches wide (for 16" or 24" OC framing).
- Cut XPS panels to fit with a utility knife or circular saw. Aim for a friction-fit, slightly compressing the foam on installation.
- Run a bead of acoustical sealant around all four edges of each panel before pressing it into place.
- Inspect for gaps at corners, blocking, and plumbing/electrical penetrations, and fill with canned spray foam.
- If using two layers, stagger the seams between layers.

Code and permit notes. Interior rim joist insulation in an existing basement typically doesn't require a building permit in most NB jurisdictions for like-for-like upgrades, but confirm with your local authority having jurisdiction (AHJ). Any exposed foam insulation inside the basement must be covered with a **thermal barrier** (minimum 12.7 mm drywall) if the space is a finished or accessible area — this is a fire code requirement under NBC.

Rebate eligibility. Rim joist upgrades count toward your overall air sealing and insulation improvement metrics under the **Canada Greener Homes Grant** and **NB Power Home Energy Savings Program**. They're often included as part of a broader basement insulation project scope in EnerGuide assessments.

Tackling the rim joist properly is straightforward work with significant payoff — most NB homeowners notice a reduction in cold drafts at the floor level within the first heating season after treatment. The professionals featured on New Brunswick Insulation can complete this work efficiently and with the documentation needed for rebate applications.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- moose luxury painting
- Arctic Fox Construction Inc.
- Brunswick insulation & roofing
- 3Tone Construction Ltd
- Gionetterenovations

View all contractors ?

Q14

Does insulating a basement floor help with comfort in NB winters? | Insulation IQ?

Yes, insulating a basement floor makes a meaningful and often surprising difference in comfort during New Brunswick winters — though the mechanism and the appropriate method depend on how you use the space and what's currently under your feet.

Why basement floors are so cold in NB. Basement floors in New Brunswick sit directly on or just above a concrete slab, which is itself in direct contact with the earth. Ground temperatures below the frost line in NB hover around 7–10°C year-round, but the slab surface exposed to interior air can feel significantly colder due to **thermal mass and radiant cooling** — the concrete absorbs heat from your body and the room without warming up appreciably. In an uninsulated basement in Moncton, Fredericton, or Saint John during January, surface temperatures on an uninsulated concrete slab can realistically measure 8–12°C, even when the air temperature in the room reads 18–20°C. Walking on that surface in socks feels frigid. Furniture placed on it stays cold. Humidity condenses on it in summer. Insulating the floor breaks this connection.

The comfort case. When you install insulation under a finished floor in the basement, you raise the surface temperature to something much closer to the ambient air temperature. A properly insulated and finished basement floor will feel warm or at least neutral underfoot rather than actively cold. This also has a secondary effect on overall room comfort: **radiant asymmetry** — the sensation of discomfort caused by large cold surfaces nearby — is reduced, and the room feels warmer at a given air temperature. Homeowners who finish NB basements with insulated subfloors consistently report it as one of the most noticeable comfort improvements in the project.

What insulating a basement floor actually involves. You generally have two approaches:

Sleeper system with rigid foam: The most common method is to install a continuous layer of **extruded polystyrene (XPS) rigid foam** (R-5 per inch) directly on the slab, then install a plywood subfloor on top. A 1.5- to 2-inch layer of XPS (R-7.5 to R-10) is typical, followed by 19 mm (3/4") tongue-and-groove plywood screwed through the foam into sleepers or left floating. This raises the floor height by approximately 70–90 mm total, which must be factored into window sill heights, stair risers, and door clearances. The XPS also acts as a **capillary break** , preventing moisture wicking from the slab into the wood above — critical in NB where basement slabs are often moderately damp.

Dimple mat with subfloor: An alternative is a **drainage mat (dimple mat)** installed directly on the slab, which creates a small air gap that allows any moisture to drain rather than saturate the subfloor. These products (such as Delta-FL) are combined with a plywood subfloor on top and provide some thermal benefit through the air gap, though less R-value than a foam system. This approach is preferred in basements with known moisture intrusion issues.

What the code says. NBC 9.36 does not require a specific R-value for a heated basement floor in a finished basement — the prescriptive table focuses on ceilings, walls, and exposed floors over unconditioned spaces. However, if you're doing a full energy model or pursuing **Canada Greener Homes** documentation, floor insulation contributes to the overall thermal performance rating of the home. NB Building Code does require that the slab moisture barrier (poly) is in place where below-grade moisture is a concern.

Energy savings vs. comfort savings. It's worth being honest: basement floor insulation is primarily a **comfort upgrade** in most NB homes, not a major energy saver. The temperature differential between an insulated and uninsulated slab is modest in energy terms — most heat loss in a typical NB basement comes from the walls and rim joist area, not the floor. But the comfort improvement is real and disproportionate to the modest energy impact. If your goal is maximum energy efficiency, prioritize the basement walls and rim joist first. If your goal is to make a finished basement feel genuinely comfortable and livable through a Fredericton or Saint John winter, the floor is worth doing.

Cost. A typical NB basement floor insulation project (XPS + plywood subfloor, approximately 800 sq ft) runs $2,500–$5,000 installed, depending on the foam thickness, subfloor product, and whether sleeper framing is used. Moisture remediation, if required, adds cost.

For homeowners weighing the full scope of a basement finishing or energy upgrade project, the professionals available through New Brunswick Insulation can help you prioritize the measures that deliver the best combined comfort and efficiency outcome for your specific home.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- 3Tone Construction Ltd
- Arctic Fox Construction Inc.
- moose luxury painting
- Brunswick insulation & roofing
- Thirty Four Renovations

View all contractors ?

Q15

What is the best way to insulate around basement windows in Rothesay NB? | Insulation IQ?

Basement windows are one of the most overlooked weak points in a home's thermal envelope, and in Rothesay — where winter temperatures can easily plunge to -20°C or colder — a poorly insulated window frame can create a noticeable cold draft and significant heat loss. Getting this detail right takes careful attention to the rough framing, the gap between the window frame and the foundation wall, and the transition zone where interior insulation meets the window buck.

The first step is to assess the **window buck** — the wood or treated-lumber frame embedded in the foundation wall that holds the window unit. In older Rothesay homes, these bucks were often installed with no insulation at all around the perimeter, leaving a direct thermal bridge between the cold masonry and the interior living space. Before adding any insulation to the surrounding wall, you want to fill any gaps between the buck and the concrete or block with **low-expansion spray foam**. Do not use high-expansion foam here — it can bow the frame and affect how the window operates. Low-expansion formulations designed for doors and windows are sold at most NB building supply stores for around $10–$15 per can, and one can is typically enough for a single window perimeter.

Once the buck perimeter is sealed, the approach to insulating the surrounding wall depends on the system you're using for the rest of the basement. If you're installing **rigid foam board** (extruded polystyrene, or XPS) against the foundation wall — which is a popular approach in NB climate zone 6 for its moisture resistance — you'll need to cut the panels to fit around the window opening and butt them tight to the buck on all four sides. Seal every seam with **acoustical sealant or foam** to eliminate any air pathways. A common target for basement wall assemblies under the NB Building Code is a total thermal resistance of **RSI 3.52 (R-20)**, though many energy-forward homeowners in Rothesay are now targeting R-24 or better to reduce heating costs with NB Power.

For the **window well** on the exterior side — the recessed area below grade that lets light into a basement window — proper drainage and minimal thermal bridging are equally important. A poorly drained window well can trap moisture, which will eventually find its way through the wall and into your insulation assembly. Make sure the window well has gravel at the bottom and that the exterior insulation wraps into the well as far as practical. **Extruded polystyrene** is the right choice here because it resists moisture absorption even when in direct contact with soil.

The **sill plate area** — the horizontal wood member that sits atop the foundation wall — is another critical zone at every basement window. This framing member is in direct contact with cold concrete, and without a **thermal break** (typically a strip of rigid foam under the plate during construction, or an applied strip of foam board after the fact), it becomes a significant cold bridge. Pair sill-plate treatment with careful air-sealing at the rim joist just above, using

two-part spray foam kits or batt insulation stuffed tightly and then covered with rigid foam.

Finally, consider the **interior window reveal** — the narrow wall surface between the window glass and the interior drywall plane. In a thick foundation wall, this reveal can be 12 inches or more. Framing in a small stud wall and insulating it (with mineral wool batt or rigid foam) before drywalling the reveal keeps that surface warm and prevents condensation on cold days. In Rothesay's humid shoulder seasons, a cold window reveal can be a mould risk, so this detail pays dividends beyond just energy savings.

If you're planning a more comprehensive basement renovation, it's worth consulting with an insulation professional who knows NB climate zone 6 assembly requirements. The New Brunswick Insulation directory lists qualified contractors across the greater Saint John and Kennebecasis Valley region who can assess your window and wall details together as part of a complete thermal envelope upgrade.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- Thirty Four Renovations
- moose luxury painting
- Gionetterenovations
- 3Tone Construction Ltd
- Arctic Fox Construction Inc.

View all contractors ?

Q16

Can I insulate a walkout basement differently than a full basement in NB? | Insulation IQ?

Yes — a walkout basement has a fundamentally different exposure profile than a fully buried basement, and the insulation strategy should reflect that. Understanding the distinction helps you spend your insulation budget wisely while meeting the requirements of New Brunswick's climate zone 6.

In a **full basement**, the foundation walls are almost entirely below grade. The surrounding soil provides meaningful thermal mass and some protection from extreme cold, even if it does not actually insulate the wall to any significant R-value. The primary heat-loss path in a full basement is through the **rim joist assembly** at the top of the foundation wall and through any uninsulated sections of the above-grade wall above the exterior grade line. Moisture management relies on the fact that below-grade walls are protected from wind-driven rain, though groundwater and capillary moisture are still real concerns.

A **walkout basement**, by contrast, has one or more walls that are fully above grade and directly exposed to exterior air temperatures, wind, and rain — exactly like above-grade walls on the main floors of the house. The exposed walls in a walkout basement experience the same thermal and moisture stresses as any exterior above-grade wall. This means they need to be insulated and vapour-managed to the same standard as the rest of the building enclosure, not just to the basement foundation wall standard.

For the **above-grade portions** of a walkout basement, the NB Building Code requires thermal performance equivalent to above-grade exterior walls — a minimum of approximately **RSI 3.52 (R-20)** effective for the whole wall assembly in climate zone 6, though the 2020 NB Building Code amendments push higher thresholds for new construction. Many homeowners achieving an **EnerGuide rating** for grants under the Canada Greener Homes program will want to target R-24 or better in these exposed walls. The assembly here looks much like an above-grade wall: wood or steel stud framing with batt insulation (mineral wool or fibreglass, typically R-20 to R-24), a vapour barrier on the warm side, and exterior sheathing with a drainage plane behind the cladding.

For the **below-grade portions** of the same walkout basement, the approach is consistent with any other buried foundation wall. **Rigid extruded polystyrene (XPS)** or semi-rigid mineral wool board applied against the concrete interior face remains the most moisture-resilient solution. XPS at 2 inches provides roughly R-10, and stacking to 3 or 4 inches gets you to R-15 to R-20 before adding any stud-wall component. A **2x4 stud wall** framed 1 inch away from the rigid foam, insulated with mineral wool batt, and drywalled over can bring total effective R-values well above R-20 while keeping condensation potential safely within the assembly.

The **transition zone** — where a walkout basement wall transitions from below grade to above grade — deserves special attention. This is a common area of both thermal bridging and moisture intrusion. The concrete foundation

wall does not stop and restart; it continues from below grade into the exposed above-grade section. Insulating both sides continuously and sealing all transition details with flexible flashing and sealant is critical. Air infiltration at this transition can also be a significant energy problem in a Fredericton or Moncton winter, so spray foam or canned foam at all gaps is money well spent.

The **floor** of a walkout basement may also behave differently. If the walkout slab is at or near exterior grade, it can experience more aggressive frost heave risk on the perimeter and greater heat loss than a deeply buried slab. Perimeter rigid foam under the slab edge, and under the full slab if possible, is worth including during any renovation or new pour.

Owners of walkout basement homes across NB — whether in the Saint John River Valley communities, in Sussex, or in residential Moncton subdivisions — often find that a blower-door test after insulation improvements reveals persistent air leakage at the above-grade/below-grade wall transition and at the walkout door rough opening. An energy audit through NB Power's **Home Energy Savings Program** can identify these specific weak points and may qualify the project for rebate funding before any insulation work begins.

For a project-specific assessment of your walkout basement assembly, reach out to a qualified insulation contractor listed on the New Brunswick Insulation network.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- moose luxury painting
- Gionetterenovations
- Brunswick insulation & roofing
- Arctic Fox Construction Inc.
- 3Tone Construction Ltd

View all contractors ?

Q17

How do I insulate a block foundation wall in a Campbellton home? | Insulation IQ?

Block foundation walls — typically **concrete masonry units (CMU)** — present a specific set of challenges that poured concrete walls do not. Campbellton, situated in northern New Brunswick and well into climate zone 6, experiences some of the harshest winters in the province, making a well-executed block foundation insulation project genuinely important for both comfort and energy costs.

The core problem with CMU walls is that the hollow cores in the blocks create air pathways that can move cold air through the wall assembly by convection. Even if you apply insulation to the interior face, air circulating inside the block cores can carry heat out of the assembly. The first step before any insulation is to **seal the top course of block** — the row of blocks immediately below the sill plate — with foam or a solid grout fill. This cuts off the chimney effect that allows cold air to rise through the cores and contact the rim joist area above.

For the interior insulation assembly itself, **rigid extruded polystyrene (XPS)** applied directly against the block face is the preferred approach for NB block walls. XPS has a low permeance rating, meaning it resists moisture movement into the assembly, and it does not absorb water even under prolonged contact with damp masonry. This matters in Campbellton, where the frost line is deep and the freeze-thaw cycle is aggressive — block walls in that region can wick significant moisture from the surrounding soil. Two inches of XPS delivers roughly R-10 and is a reasonable starting minimum; three inches at R-15 is better and brings you closer to the NB Building Code target of approximately **RSI 3.52 (R-20)** for basement walls in new construction.

Apply the rigid foam panels using foam-compatible adhesive (not solvent-based adhesives, which can dissolve XPS). Butt the panels tightly together and seal all seams with **acoustical sealant** or compatible tape. Many contractors in northern NB also run a bead of spray foam along each panel edge before pressing it to the wall, which combines adhesion with air sealing in one step.

After the rigid foam layer, most homeowners add a **2x4 stud wall** framed 1 inch proud of the foam face. The cavity can be filled with **mineral wool batt (R-14 or R-15 in a 3.5-inch cavity)** or fibreglass batt. Mineral wool is strongly preferred in below-grade applications because it maintains its insulating performance even when slightly damp and does not support mould growth — a meaningful advantage in northern NB where block walls can be persistently cool and humid in spring. The stud wall also provides a chase for electrical wiring, which keeps the vapour control layer intact.

The **vapour control layer** in a NB block basement assembly goes on the warm side of the insulation — either a 6-mil polyethylene sheet on the warm face of the stud wall, or, if you're using a full rigid foam assembly without studs, the foam itself acts as the vapour retarder at sufficient thickness. Under the NB Building Code and NBC 2015 as adopted by the province, a vapour barrier (6-mil poly or equivalent) is required in climate zone 6 on the warm side of insulation assemblies. Make sure it is lapped and sealed at all seams, and that it ties into the ceiling vapour barrier to create a continuous plane.

At the **rim joist** — the band of framing that sits on top of the block wall at the floor above — fill the cavity with two-part spray foam or cut-and-cobble pieces of XPS, sealed with canned foam at every edge. This zone is disproportionately responsible for heat loss in older Campbellton homes and is almost always accessible once the stud wall framing is in place.

Costs for a block basement insulation project in the Campbellton area typically run **$3,500 to $7,500** depending on square footage, the thickness of the insulation system, and whether spray foam is used in the rim joist area. **NB Power rebates** through the Home Energy Savings Program can offset a portion of this cost, and the Canada Greener Homes Grant may provide additional funding when paired with a pre- and post-retrofit EnerGuide assessment.

For advice specific to Campbellton soil conditions and local contractor availability, the New Brunswick Insulation network is a reliable starting point.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- 3Tone Construction Ltd
- Arctic Fox Construction Inc.
- Thirty Four Renovations
- Brunswick insulation & roofing
- moose luxury painting

View all contractors ?

Q18

Should I seal my basement walls before insulating in New Brunswick? | Insulation IQ?

Sealing basement walls before insulating is not just recommended in New Brunswick — for many homes, it is the most important step in the entire process. Skipping it can trap moisture inside your insulation assembly, creating conditions for mould growth, reduced thermal performance, and structural deterioration over time. Given NB's climate zone 6 winters and the wide variation in soil conditions from Moncton's sandy coastal plain to Saint John's granite and clay mix, the appropriate sealing strategy depends on what kind of moisture problem you're actually dealing with.

There are two distinct moisture issues that commonly affect NB basement walls: **bulk water intrusion** (liquid water entering through cracks or at the wall-floor joint) and **vapour diffusion** (moisture migrating through the wall as a gas from the damp exterior soil). These require different solutions, and insulating before addressing either will make both problems worse.

Bulk water intrusion is the more urgent of the two and must be addressed before any insulation is installed. Signs include visible water stains, efflorescence (white salt deposits), active seeping at cracks, or recurring puddles at the base of the wall. Interior waterproofing products — **crystalline waterproofing compounds** or hydraulic cement patched into active cracks — can manage minor seepage. More significant water problems may require **exterior drainage improvements**, sump pump installation, or in serious cases, a full interior drainage membrane system (like a dimple mat with perimeter drain tile). No amount of good insulation can compensate for a wet foundation wall. Installing rigid foam or stud-wall insulation over a leaking basement in Fredericton simply hides the problem until mould appears.

Vapour diffusion through poured concrete or concrete block walls is a slower, subtler process. In a NB winter, the warm humid interior air can drive moisture toward the cold concrete surface, where it can condense. In summer, the direction reverses — the cool concrete is now on the inside of the building's thermal envelope, and outdoor humid air can drive vapour inward. The **vapour control strategy** in a properly designed NB basement assembly addresses both directions: the interior-side vapour barrier (6-mil poly or rigid foam at sufficient thickness) prevents winter condensation within the assembly, and the foam layer itself — when it is the low-permeance type like XPS — limits summer inward drive.

Before installing insulation, the following sealing tasks are worthwhile regardless of whether you have visible water issues:

Crack sealing with polyurethane or epoxy injection (for structural cracks) or hydraulic cement and crystalline compound (for hairline cracks and porous areas) eliminates the most direct paths for moisture and soil gases, including **radon**. Radon is a genuine concern in NB — Health Canada data identifies parts of the province, including areas around Fredericton and the Upper Saint John River Valley, as having elevated radon potential. Sealing foundation wall and floor cracks is one part of a radon mitigation strategy, though sub-slab depressurization is typically required for elevated radon levels.

The wall-floor joint (the cove joint where the wall meets the slab) is one of the most common water entry points in NB basements. A bead of hydraulic cement or a flexible polyurethane sealant applied along this joint, followed by a **dimple membrane** strip if water infiltration is a recurring problem, can significantly reduce moisture entry before insulation goes up.

Efflorescence removal with a stiff brush and mild acid wash (muriatic acid diluted in water, used with proper ventilation and protective gear) cleans the wall surface and allows waterproofing or adhesive products to bond properly. Applying rigid foam adhesive over heavy efflorescence results in poor adhesion and panels that eventually detach.

Costs for pre-insulation wall sealing in a typical NB home run from **$200 to $800** for DIY crack repair and cove-joint sealing up to **$3,000 to $8,000** for a professional interior drainage system with sump pump. The investment pays back in a durable insulation assembly that performs as designed for decades rather than years.

For a moisture assessment before your insulation project, the insulation professionals listed on New Brunswick Insulation can advise on whether your walls need sealing first and what products are appropriate for your specific foundation type.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- 3Tone Construction Ltd
- moose luxury painting
- Gionetterenovations
- Thirty Four Renovations
- Arctic Fox Construction Inc.

View all contractors ?

Q19

What are common mistakes when insulating a New Brunswick basement? | Insulation IQ?

Basement insulation mistakes in New Brunswick are expensive because they tend to be hidden behind drywall for years before they surface as mould, musty odours, or unexpectedly high heating bills. Climate zone 6 is unforgiving — the combination of cold winters, deep frost penetration, and humid shoulder seasons means errors in moisture management and thermal performance compound over time. Here are the most common mistakes NB homeowners and contractors make when tackling this project.

Insulating over a wet or damp wall is the single most damaging mistake. Many NB basements, particularly in older Saint John or Moncton homes built in the 1960s and 70s, have foundation walls that show no active leaking but are perpetually damp from capillary wicking through porous concrete. Installing a stud wall with fibreglass batt directly against that wall, then covering it with drywall, creates a perfect mould incubator. The insulation traps the moisture against the cold concrete, where it condenses and accumulates. The fix is to either apply rigid foam directly against the wall (which is vapour-impermeable and keeps the condensation surface warm enough to prevent moisture accumulation) or address the moisture source before any insulation is installed.

Using fibreglass batt alone against the foundation wall — without a layer of rigid foam between the batt and the concrete — is a design error that contradicts current NB Building Code intent and basic building science for climate zone 6. Fibreglass batt is air-permeable and vapour-permeable. Without a rigid foam thermal break between the cold concrete and the batt cavity, the dew point falls within the insulation assembly, and condensation occurs on the cold wall face. Over a NB winter, this means regular moisture accumulation in the batt, reduced thermal performance, and mould risk. The correct assembly is **rigid foam first** (XPS or polyisocyanurate), then a framed wall with batt if additional R-value is needed.

Leaving the rim joist uninsulated is one of the most common oversights in NB basements. The rim joist — the band of wood framing that sits atop the foundation wall at the floor above — is exposed to exterior temperatures and is a major source of heat loss and air infiltration. It is completely accessible once the basement wall system is framed, yet many projects simply drywall over it without any treatment. Two-part spray foam kits or cut-and-cobble rigid foam sealed with canned foam can reduce heat loss at the rim joist by 40–60% in Fredericton and Moncton homes, and costs very little compared to the rest of the project.

Discontinuous vapour barrier — gaps, unsealed laps, or penetrations in the 6-mil polyethylene sheet — allow interior humid air to reach cold surfaces within the assembly. In NB's cold winters, any pathway for warm moist air to contact cold framing or cold concrete will result in condensation. Every seam needs to be lapped a minimum of 6 inches and sealed with acoustical sealant or vapour barrier tape. Penetrations for electrical boxes and pipes must

be sealed with foam or tape — skipping this is a guaranteed path to long-term moisture problems.

Ignoring the floor slab is a strategic mistake that many NB homeowners regret after finishing their basement. A bare concrete slab in a Moncton or Fredericton basement in January can be 10–12°C, which makes finished floors feel cold even when the walls are well insulated. Installing **2 inches of XPS under a floating subfloor** — or under a sleeper system before the finished floor — adds R-10 under foot, dramatically improves comfort, and reduces the energy load on the heating system. If the ceiling height permits, this step during a basement renovation is far cheaper than going back later.

Skipping the top-of-block seal in CMU foundation walls allows cold air to circulate through the hollow block cores and bypass the interior insulation entirely. The top course of block, just below the sill plate, should be filled with grout or sealed with foam before insulation is applied. This is a quick step that has outsized impact in northern NB communities like Campbellton and Edmundston, where block walls are common in older housing stock.

Underestimating the R-value target rounds out the list. Many homeowners aim for the minimum code requirement and then discover that NB Power's **Home Energy Savings Program rebates** and the **Canada Greener Homes Grant** tier their incentives around higher performance levels. Targeting R-20 effective versus R-12 requires only incrementally more materials but can meaningfully change how much grant funding is available.

Avoiding these mistakes is easier with experienced guidance. The New Brunswick Insulation network connects homeowners across the province with insulation professionals who work in NB basements every day and understand the specific soil conditions, moisture patterns, and code requirements in your area.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- moose luxury painting
- 3Tone Construction Ltd
- Brunswick insulation & roofing
- Thirty Four Renovations
- Arctic Fox Construction Inc.

View all contractors ?

Q20

How deep should exterior foundation insulation go below grade in NB? | Insulation IQ?

Exterior foundation insulation depth is one of those details that separates a properly insulated New Brunswick home from one that loses heat steadily through the slab and lower walls all winter long. The short answer is that insulation should extend down to the **bottom of the footing** — but the reasoning behind that target, and the practical trade-offs involved, are worth understanding before you start digging.

The **NBC 2015 (National Building Code as adopted in New Brunswick)** and provincial energy requirements under the NB Building Act require foundation walls to be insulated to a minimum of **RSI 1.96 (approximately R-11)** in Climate Zone 6, which covers virtually the entire province from Fredericton to Campbellton to Saint John. That R-value must be continuous — meaning thermal bridges through fasteners or gaps at the footing are not acceptable if you're trying to hit code performance.

As for depth, most building science guidance and NB practice targets **600 mm (24 inches) below finished grade** as a minimum for the insulated portion, with the full wall down to the top of the footing strongly recommended for new construction. The reason is frost depth. In central and northern New Brunswick — places like Edmundston, Bathurst, and Miramichi — design frost depth can reach **1.5 to 1.8 metres**. If exterior insulation terminates partway down the wall, the uninsulated section below acts as a thermal conduit, allowing frost to penetrate toward the footing and allowing heat to escape through the very bottom of the foundation where interior insulation offers no protection.

For **existing homes** doing a retrofit, excavating the full depth of the foundation is expensive — typically $8,000 to $15,000 or more for a standard bungalow foundation in Moncton or Fredericton when labour and backfill are included. In these cases, a practical compromise is excavating to at least **900 mm to 1.2 metres below grade** and installing rigid **extruded polystyrene (XPS)** or **expanded polystyrene (EPS)** board, both of which maintain their R-value when wet. EPS is generally preferred from a lifecycle and environmental standpoint; XPS uses HFC blowing agents with high global warming potential, though it performs slightly better in wet soils.

The insulation board should be **2 to 3 inches thick** (roughly R-10 to R-15 depending on product) for a retrofit, and **3 to 4 inches** (R-15 to R-20) for new construction. Above grade, the exposed insulation must be protected from UV and physical damage with a durable cladding — parging, fibre cement board, or a metal Z-flashing and protective panel system are all common in New Brunswick.

One detail many homeowners miss is the **footing-to-wall transition**. Heat escapes readily at this corner because the concrete footing has direct soil contact and acts like a fin radiating thermal energy. Wrapping rigid insulation around the outside corner of the footing, even with just a short horizontal section, meaningfully reduces this loss. Some builders in the Moncton area taper the insulation outward at the base to direct water away from the footing as

an added benefit.

From a **NB Power energy efficiency** standpoint, deeper and thicker exterior foundation insulation can contribute to eligibility for rebates under the Home Energy Efficiency Upgrade program. Pairing foundation work with air sealing and attic upgrades gives you the best chance at a meaningful rebate cheque and a noticeable reduction in your heating bill — critical in a province where most homes still rely on oil or electric baseboard heat.

For a comprehensive assessment of how deep to go on your specific home — especially on older poured-concrete or block foundations common in Saint John's South End or Fredericton's older neighbourhoods — an energy audit from a registered energy advisor, followed by work from an experienced New Brunswick insulation contractor, is the right path. The New Brunswick Construction Network lists vetted insulation professionals across the province who can advise on your foundation's specific conditions.

Looking for experienced contractors? The New Brunswick Construction Network connects homeowners with qualified professionals:

- 3Tone Construction Ltd
- moose luxury painting
- Thirty Four Renovations
- Arctic Fox Construction Inc.
- Brunswick insulation & roofing

View all contractors ?
