NEW BRUNSWICK BASEMENTS

Insulation & Energy Efficiency

Basement insulation options including spray foam, rigid foam, R-value requirements, thermal barriers, and energy efficiency for NB climates

18 Expert Answers from Basement IQ

newbrunswickbasements.com/construction-brain

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18. Is there a rebate or incentive program in New Brunswick for upgrading basement insulation to meet modern energy standards?

Q1

Does installing two-inch rigid EPS foam board on a basement wall in Saint John require a thermal or ignition barrier under NB building code?

Yes, two-inch rigid EPS foam board requires a thermal barrier when installed on basement walls in New Brunswick. The NB Building Code requires a 15-minute thermal barrier (typically ½-inch drywall) between foam plastic insulation and interior spaces to prevent rapid flame spread in case of fire.

Thermal Barrier Requirements

Under the NB Building Code, all foam plastic insulation including EPS (expanded polystyrene) must be separated from interior spaces by an approved thermal barrier. The most common and cost-effective thermal barrier is ½-inch drywall, which provides the required 15-minute fire resistance rating. This applies regardless of foam thickness — even one-inch EPS requires the same thermal barrier as your two-inch installation.

The thermal barrier serves two critical functions: it slows flame spread across the foam surface and prevents the foam from contributing fuel to a fire during the crucial first 15 minutes when occupants evacuate. Without this barrier, EPS can ignite quickly and release toxic gases, making it a serious life-safety hazard.

Installation Sequence for NB Basements

For Saint John's heavy clay soils and older housing stock, your typical wall assembly from foundation outward should be: foundation wall, rigid EPS foam board (2 inches), wooden furring strips or steel studs, ½-inch drywall thermal barrier, then your finish (paint, paneling, or additional drywall for smooth walls). The furring strips create an air gap that improves thermal performance and provides attachment points for the drywall.

Saint John Climate Considerations

Two-inch EPS is an excellent choice for Saint John basements given the area's heavy clay soils that hold moisture against foundations. The rigid foam creates a continuous thermal barrier against the cold foundation wall, preventing the condensation issues common in Saint John's humid summers. Unlike batt insulation, EPS won't absorb moisture if minor water infiltration occurs, and it maintains its R-value when damp.

However, ensure your basement is properly waterproofed before installing any insulation. Saint John's clay soils are notorious for poor drainage and hydrostatic pressure against foundation walls. The EPS will perform well once installed, but water infiltration will eventually find its way around the foam edges if underlying moisture issues aren't addressed first.

Professional Installation Recommended

While homeowners can install EPS foam board, getting the thermal barrier installation right requires understanding fire code requirements, proper fastening to foundation walls, and ensuring continuous coverage without gaps. Most Saint John contractors familiar with basement renovations will install the EPS and drywall thermal barrier as a complete system, ensuring code compliance and proper inspection approval.

Need help finding a basement insulation contractor familiar with NB Building Code requirements? New Brunswick Basements can match you with local professionals who understand the thermal barrier requirements and Saint John's challenging soil conditions.

Q2

What does New Brunswick building code require for vapour barriers on basement walls, and does rigid foam board satisfy that requirement without a separate poly sheet?

New Brunswick Building Code requires a vapour barrier on the warm side of basement wall insulation, but rigid foam board 50mm (2 inches) or thicker acts as both insulation and vapour barrier, eliminating the need for separate poly sheeting.

The NB Building Code follows the National Building Code requirements for vapour barriers in basement applications. For basement walls, you need a vapour barrier with a permeance rating of 60 ng/(Pa·s·m²) or less on the warm (interior) side of the insulation assembly. This prevents warm, humid interior air from reaching the cold foundation wall where it would condense.

Rigid foam board solutions that meet code requirements include extruded polystyrene (XPS) or polyisocyanurate foam at 50mm thickness or greater. These materials have extremely low permeance ratings - typically 10-30 ng/(Pa·s·m²) - making them effective vapour barriers. When properly installed with sealed joints using compatible tape or spray foam, rigid foam eliminates the need for separate 6-mil poly sheeting. This is actually the preferred approach in NB's Maritime climate because it creates a continuous thermal barrier against the cold foundation wall while managing vapour transmission.

Installation details matter significantly for code compliance. Rigid foam must be installed with tight-fitting joints, and any gaps sealed with compatible materials. The foam should extend from the basement floor to the rim joist area. When framing interior walls, the vapour barrier requirement is satisfied by the rigid foam - you don't add poly behind the drywall. This prevents creating a double vapour barrier that could trap moisture within the wall assembly.

Why this matters in New Brunswick: Our Maritime climate creates significant temperature differentials between cold foundation walls (often near 0°C at soil contact) and warm interior air. Without proper vapour control, warm humid air condenses on the cold foundation, leading to mold, efflorescence, and deterioration. Many older NB homes have failed basement renovations because contractors used fiberglass batts with poly sheeting, creating moisture traps when the poly was installed incorrectly or damaged.

Thickness requirements: While 25mm rigid foam provides some vapour barrier properties, NB Building Code requires minimum R-12.5 for basement walls, which typically means 50mm of rigid foam. This thickness also provides better thermal performance, reducing condensation risk and improving energy efficiency in our cold Maritime winters.

Professional installation recommended for rigid foam systems because proper sealing and integration with the building envelope affects both code compliance and long-term performance. Building inspectors will verify vapour barrier continuity during the insulation inspection, and improper installation can lead to expensive corrections and delays.

Need help finding a basement contractor experienced with NB Building Code requirements? New Brunswick Basements can match you with local renovators who understand proper vapour barrier installation for our Maritime climate.

Q3

What is the minimum R-value required under the National Energy Code for Buildings as adopted in New Brunswick for a heated basement floor slab?

The National Energy Code for Buildings (NECB) as adopted in New Brunswick requires a minimum R-7.5 (RSI-1.3) for heated basement floor slabs.

This requirement applies specifically to basement floor slabs that are part of the heated building envelope. The insulation must be continuous and installed either under the slab during construction or as a thermal break system above the existing slab during renovation.

For **new construction**, rigid foam insulation is typically installed under the concrete slab before pouring. However, most New Brunswick homeowners are dealing with **existing basement slabs** that have no insulation. In renovation scenarios, you have several options to meet or exceed the R-7.5 requirement:

Dricore-style subfloor systems provide approximately R-1.5 to R-2, which falls short of code requirements but offers some thermal improvement plus crucial moisture protection. To meet the R-7.5 requirement over an existing

slab, you'd need to install rigid foam board (typically 2 inches of polyiso or XPS foam) followed by a plywood subfloor, then your finish flooring. This assembly adds 3-4 inches of floor height, which can be problematic in basements with already-low ceiling heights.

Practical considerations for NB basements include the fact that many older homes (pre-1990s) have basement ceiling heights of only 6'8" to 7'2". Adding 3-4 inches of floor insulation assembly can push you below the minimum 6'5" ceiling height required for habitable space. In these cases, you may need to balance code compliance with practical livability.

The **moisture management aspect** is equally critical in New Brunswick's Maritime climate. Any floor insulation system must include a proper vapour barrier and allow for drainage if water infiltration occurs. Closed-cell spray foam applied to the underside of a suspended floor system can provide both insulation and moisture protection, though this approach is more expensive.

When finishing an existing basement, consult with your local building official about compliance strategies that work with your specific ceiling height and moisture conditions. The goal is creating a comfortable, energy-efficient space that meets code requirements while addressing New Brunswick's unique basement challenges.

Need help finding a basement contractor experienced with insulation and code compliance? New Brunswick Basements can match you with local professionals who understand both the NECB requirements and the practical realities of renovating Maritime basements.

Q4

What R-value of insulation is required by New Brunswick building code for basement walls in a finished basement?

The New Brunswick Building Code requires a minimum of R-12.5 for basement walls in a finished basement, though R-20 is strongly recommended for energy efficiency in New Brunswick's cold Maritime climate. Meeting code minimum gets you a passing inspection, but investing in R-20 will make a significant difference in comfort and heating costs given that NB winters routinely push temperatures well below -20°C.

The R-12.5 minimum applies to the full height of the foundation wall from the sill plate down to 600mm below grade. In practice, most NB contractors insulate the entire wall from top to bottom because leaving the lower portion uninsulated creates a massive cold zone that defeats the purpose of finishing the space. The insulation assembly must also include a proper vapour barrier on the warm side of the insulation — this is critical in New Brunswick where cold foundation walls cause condensation throughout the heating season from October through April.

To hit R-12.5, you can use **2-inch rigid foam board** (typically polyiso or XPS), which delivers roughly R-10 to R-13 depending on the product. For R-20, **closed-cell spray foam at 3 inches** is the most effective option because it acts as both insulation and vapour barrier in one application. Another common approach is 2 inches of rigid foam against the foundation wall followed by a 2x4 framed wall with mineral wool batts in the cavities, which can push you well past R-20.

Never use fiberglass batt insulation directly against foundation walls in New Brunswick. The Maritime humidity and the temperature difference between the cold concrete and warm interior air create condensation that gets trapped in fiberglass batts, leading to hidden mold growth. This is the single most common insulation mistake in NB basement renovations, and it often requires a complete tear-out within a few years.

For older homes in Moncton, Saint John, or Fredericton with concrete block foundations, the insulation strategy matters even more. Block walls are porous and wick moisture through mortar joints, so a continuous layer of rigid foam or closed-cell spray foam creates the necessary thermal break and moisture barrier before any framing goes up. Poured concrete foundations from the 1990s onward are easier to insulate, but shrinkage cracks should be repaired with epoxy or polyurethane injection before installing insulation.

When budgeting, expect to pay **$2.50 to $4.00 per square foot installed** for rigid foam board or **$4.00 to $7.00 per square foot** for closed-cell spray foam. For a typical 800-square-foot NB basement, full insulation runs **$5,000 to $15,000** depending on the method and existing conditions. Always get at least three quotes — NB pricing varies 30-40% between contractors for the same scope of work.

A building permit is required when finishing a previously unfinished basement, and the insulation will be inspected before you can close up walls with drywall. The inspector will check R-value, vapour barrier placement, and proper

air sealing. Skipping the permit to save a few hundred dollars risks having to tear out finished walls later if the work does not meet code.

Q5

Should I use spray foam or rigid foam board insulation on my basement walls in Moncton before framing?

Both closed-cell spray foam and rigid foam board are excellent choices for Moncton basement walls, but the best option depends on your budget, the condition of your foundation, and whether you want to maximize R-value or keep costs down. In Moncton's sandy and silty soil conditions, moisture management is critical because while drainage is generally better than in clay-heavy areas like Saint John, settlement cracks in foundations are more common due to soil shifting.

Closed-cell spray foam is the premium choice and the one most NB basement specialists recommend when budget allows. At **$4.00 to $7.00 per square foot installed**, it is more expensive, but it delivers several advantages in one application. Three inches of closed-cell spray foam provides approximately R-18 to R-21, exceeding the NB Building Code minimum of R-12.5 by a comfortable margin. It also acts as a vapour barrier and air barrier simultaneously, meaning you do not need a separate poly sheet. For Moncton basements, where winter condensation on cold foundation walls is a constant concern from November through March, this all-in-one performance is hard to beat. Spray foam also conforms to irregular surfaces, filling gaps around pipes, wires, and any small cracks in the concrete — something rigid board cannot do as effectively.

Rigid foam board (XPS or polyiso) is the more budget-friendly option at **$2.50 to $4.00 per square foot installed**. Two-inch XPS delivers about R-10, while two-inch polyiso provides R-11 to R-13. To meet or exceed code, many Moncton contractors install 2 inches of rigid foam against the foundation wall, seal all seams with Tuck tape or acoustical sealant, and then frame a 2x4 stud wall in front of it with mineral wool batts in the cavities. This layered approach can achieve R-20 or higher at a lower cost than spray foam alone, and it gives you a solid framing cavity for running electrical and mounting drywall.

The key consideration for either method is the current state of your foundation. If your Moncton home has a poured concrete foundation from the 1990s or later, either option works well — just repair any visible cracks with polyurethane injection ($300 to $800 per crack) before insulating. If you have an older concrete block foundation from the 1960s to 1980s, spray foam has an edge because it seals the porous block surface and mortar joints more completely. Block walls wick moisture through capillary action, and rigid board panels leave small gaps at seams that can allow moisture to reach the framing.

Before insulating with either method, make sure your basement is dry. No insulation product can fix an active water problem — if you have water entry during spring thaw or after heavy rain, address waterproofing first. An interior drainage system with a sump pump typically costs $3,000 to $8,000 in the Moncton area and is money well spent before you invest in finishing.

For most Moncton homeowners, the practical recommendation is this: if your budget allows $4.00 to $7.00 per square foot, go with closed-cell spray foam for the simplicity, superior performance, and built-in moisture protection. If you want to keep costs closer to $2.50 to $4.00 per square foot, rigid foam board with a framed wall in front of it is a proven, code-compliant approach that thousands of NB basements use successfully. Either way, hire an insulation contractor who regularly works on basements and understands NB's Maritime humidity challenges.

Q6

How does closed-cell spray foam compare to open-cell spray foam for insulating a basement in New Brunswick?

Closed-cell spray foam is the clear winner for New Brunswick basement walls, and most experienced NB basement contractors will not even offer open-cell spray foam for below-grade applications. The reason comes down to moisture — NB's Maritime climate creates conditions that make open-cell spray foam a risky choice against foundation walls.

Closed-cell spray foam has a density of about 2 pounds per cubic foot and delivers **R-6 to R-7 per inch**. Three inches gives you R-18 to R-21, well above the NB Building Code minimum of R-12.5. Critically, closed-cell foam is a vapour barrier at 2 inches or more, meaning it blocks moisture migration from the cold foundation wall into the wall cavity. It also resists water absorption — if your basement ever has a minor leak or condensation event, closed-cell foam will not absorb the moisture. In New Brunswick, where foundation walls stay near 0°C at soil contact through the winter months and Maritime humidity runs 70-85% in summer, this moisture resistance is not a luxury — it is essential.

Open-cell spray foam has a density of about 0.5 pounds per cubic foot and delivers only **R-3.5 to R-4 per inch**. You would need nearly 4 inches to meet code minimum, and even then the performance is mediocre for NB's climate. More importantly, open-cell foam absorbs moisture like a sponge. It is vapour-permeable, meaning water vapour passes through it freely. Against a cold, damp NB foundation wall, this vapour permeability allows moisture to condense within or behind the foam. Over time, this trapped moisture leads to mold growth, musty odours, and potential damage to framing members — exactly the problems you are insulating to prevent.

The cost difference is real but narrower than most homeowners expect. **Closed-cell spray foam runs $4.00 to $7.00 per square foot** installed in the NB market, while **open-cell runs $2.00 to $4.00 per square foot**. For a typical 800-square-foot basement, you might save $1,500 to $2,500 by choosing open-cell, but you would then need to add a separate 6-mil poly vapour barrier over the foam and accept the lower R-value and moisture risk. When you factor in the cost of a separate vapour barrier and the risk of moisture problems requiring tear-out in a few years, the savings evaporate.

There is one scenario where open-cell spray foam has a place in an NB basement: **above-grade rim joists and interior partition walls** that are not against the foundation. For partition walls separating basement rooms, open-cell foam provides decent sound dampening and thermal insulation without the moisture concerns that exist at the foundation wall interface. Some contractors use closed-cell on the foundation walls and open-cell on interior partitions as a cost-saving hybrid approach.

For homes in Saint John with heavy clay soils that hold water against foundations, or coastal areas like Shediac and Bathurst with naturally high water tables, closed-cell spray foam is especially important because these conditions produce the highest moisture loads against foundation walls. In Fredericton and Moncton, the same recommendation holds — NB's climate simply does not allow the vapour permeability that open-cell foam introduces against a below-grade wall.

Hire a spray foam contractor who is experienced with basement applications in New Brunswick and carries proper liability insurance. Spray foam installation requires specialized equipment and training — this is not a DIY project. Always confirm the installer will achieve the thickness needed to meet both your target R-value and the vapour barrier threshold of 2 inches for closed-cell.

Q7

What is thermal bridging in a basement and how do I prevent it when insulating a Fredericton home?

Thermal bridging occurs when heat bypasses your insulation through a more conductive material — typically wood studs or metal fasteners that create a direct path from the warm interior to the cold foundation wall. In a Fredericton basement, where winter temperatures regularly drop to -20°C or colder along the Saint John River valley, thermal bridging can reduce your wall assembly's effective R-value by 15-25%, leaving cold spots, condensation, and higher heating bills.

The most common thermal bridge in a finished NB basement happens when contractors frame a 2x4 stud wall directly against the foundation and fill the cavities with insulation. The wood studs themselves have only about R-4, while the insulation between them might be R-12 or higher. Heat follows the path of least resistance straight through every stud, and in a typical 8-foot basement wall with studs every 16 inches, those studs account for roughly 15% of the wall surface area. On cold winter nights, those stud locations show up as cold stripes where condensation forms — a recipe for hidden mold in Fredericton's humid Maritime climate.

The solution is a continuous insulation layer that covers the entire foundation wall surface without any breaks. The best practice for Fredericton basements is to install **2 inches of rigid foam board (XPS or polyiso)** directly against the concrete, covering the wall from the sill plate to the floor with no gaps at the studs. Seal all seams with Tuck tape or acoustical sealant to create an unbroken thermal and air barrier. Then frame your 2x4 stud wall in front of the rigid foam, leaving a small gap or pressing the studs against the foam. This way, every square inch of foundation wall has at least R-10 of continuous insulation, and the studs never touch the cold concrete.

Closed-cell spray foam at 2-3 inches eliminates thermal bridging even more effectively because it adheres directly to the foundation in a seamless layer with no joints or seams. At $4.00 to $7.00 per square foot installed, it costs more than rigid board, but for Fredericton homes — especially older ones along the river valley where foundation walls stay cold and damp through the long heating season — the investment pays off in comfort and moisture protection.

Do not overlook the **rim joist area**, which is one of the worst thermal bridges in any NB basement. The rim joist sits at the top of the foundation wall where the floor framing meets the sill plate, and in many Fredericton homes it is either uninsulated or stuffed with a loose fiberglass batt that has slumped and compressed over the years. Seal and insulate each rim joist bay with cut-to-fit rigid foam caulked in place, or spray foam directly — this alone can noticeably reduce drafts and heat loss.

Other thermal bridges to watch for include **steel lally columns** that extend from the concrete floor to the beam above, **concrete floor-to-wall joints**, and any **metal hangers, brackets, or fasteners** that penetrate the insulation

layer. While you cannot eliminate every thermal bridge, addressing the major ones — continuous wall insulation and rim joist sealing — captures 90% of the benefit.

For Fredericton specifically, the mixed clay and loam soils along the Saint John River valley mean foundation walls often have higher moisture exposure than in other parts of NB. Ensure your waterproofing is solid before insulating, and never skip the vapour barrier on the warm side of your insulation assembly. A building permit is required for finishing a basement, and the insulation inspection will check for continuous coverage and proper vapour barrier placement.

Q8

Do I need a separate vapor barrier if I use rigid foam insulation on my basement walls in Saint John?

Whether you need a separate vapour barrier depends on the type and thickness of rigid foam you use. In Saint John, where heavy clay soils hold water against foundations and Maritime humidity runs 70-85% in summer, getting the vapour barrier right is critical — a mistake either way leads to trapped moisture, condensation, and mold behind your finished walls.

XPS (extruded polystyrene) at 2 inches has a vapour permeance of about 0.5-1.0 perms, which qualifies as a vapour retarder but not a full vapour barrier under the NB Building Code. Many Saint John contractors still add a 6-mil poly sheet on the warm side of the stud wall as insurance, especially in older homes with concrete block foundations where moisture wicking through mortar joints is a constant concern. If your inspector requires it, do not argue — it is an inexpensive addition at a few hundred dollars for a full basement.

Polyiso (polyisocyanurate) with foil facing on both sides is essentially a vapour barrier at any thickness. If you tape every seam with Tuck tape or foil tape and seal the perimeter with acoustical sealant, the foil-faced polyiso itself acts as your vapour barrier. In this case, adding a separate poly sheet is not only unnecessary — it can actually cause problems by creating a double vapour barrier that traps moisture between the two layers. This is a common mistake in Saint John renovations where contractors default to adding poly out of habit.

The general rule for Saint John basements: if your rigid foam has foil facing and all seams are properly taped, you do not need a separate poly vapour barrier. If your rigid foam is unfaced or has a vapour permeance above 1.0 perm, add 6-mil poly on the warm side of the framed wall. Never place poly between the rigid foam and the foundation wall — that traps moisture against the concrete in a location where it cannot dry in either direction.

Saint John's heavy clay soils deserve special attention here. Clay holds water against foundation walls much longer than the sandy soils found in Moncton, which means Saint John foundations are under near-constant moisture pressure, especially in spring when the snow melts and the water table rises. Before worrying about your vapour barrier strategy, confirm that your basement is dry. If you see efflorescence (white mineral deposits), damp spots, or active water entry, address waterproofing first — an interior drainage system with sump pump ($3,000 to $8,000) or exterior waterproofing ($8,000 to $20,000) should come before any insulation work.

For the practical installation in a Saint John home, most contractors recommend this assembly from foundation wall inward: foundation concrete, 2 inches of rigid foam (XPS or foil-faced polyiso), taped seams, 2x4 stud wall with mineral wool or left empty, poly vapour barrier if using unfaced XPS, then drywall. This assembly provides a continuous thermal break, manages moisture properly for Saint John's challenging conditions, and meets or exceeds the NB Building Code minimum of R-12.5.

When in doubt, discuss the vapour barrier question with your building inspector before closing walls. Inspection requirements can vary slightly between municipalities, and Saint John's building department processes permits in 1-3 weeks. A quick conversation during the framing inspection can save you from tearing out drywall later.

Q9

How much money can I save on heating bills by properly insulating my basement in a New Brunswick home?

Properly insulating an uninsulated NB basement can reduce your total annual heating costs by 20-30%, which translates to roughly $400 to $900 per year depending on the size of your home, your heating system, and current energy prices. For many New Brunswick homeowners heating with oil or electric baseboard, that means the insulation investment pays for itself within 7 to 15 years — and sooner if energy prices continue to rise.

An uninsulated basement in New Brunswick is a massive energy drain. Foundation walls in direct contact with soil that drops to near 0°C through the winter months act as a giant heat sink, pulling warmth out of your home continuously from October through April. The concrete slab does the same from below. In a typical 1,000-square-foot NB home, the basement can account for **25-35% of total heat loss** when uninsulated — that is heat you are paying for that goes straight into the ground.

The savings depend heavily on your heating fuel. **Oil heat** is the most common in New Brunswick and currently runs around $1.50 to $1.80 per litre. A typical NB home uses 2,500 to 3,500 litres of heating oil per year, costing $3,750 to $6,300 annually. A 25% reduction from basement insulation saves **$940 to $1,575 per year** at current oil

prices. **Electric baseboard heat** is also common, especially in newer NB homes, and at NB Power's residential rate of roughly $0.13 per kWh, annual heating costs run $2,000 to $3,500 — a 25% reduction saves **$500 to $875 per year**. **Heat pump** users will see smaller absolute savings because heat pumps are already more efficient, but insulation still reduces the load and extends the temperature range where the heat pump operates efficiently without needing backup electric heat.

The level of savings also depends on how thoroughly you insulate. Achieving **R-20 on basement walls** with closed-cell spray foam or a rigid foam plus framed wall assembly, combined with **sealing the rim joist area** (one of the biggest sources of cold air infiltration in NB homes), delivers the maximum benefit. Simply insulating the walls to the code minimum R-12.5 without addressing the rim joists and sill plate area leaves a significant gap in your thermal envelope. The rim joist seal alone can reduce drafts noticeably and is one of the highest-return insulation investments in any NB home.

Beyond direct heating savings, a properly insulated basement improves comfort throughout the house. Floors above an uninsulated basement feel cold underfoot, and the temperature difference between the main floor and basement causes convective air currents that make the whole home feel drafty. After insulating, many NB homeowners find they can lower their thermostat by 1-2 degrees and still feel warmer — each degree reduction saves another 2-3% on heating costs.

For a typical 800-square-foot NB basement, insulation costs run **$5,000 to $15,000** depending on the method chosen. Rigid foam board at $2.50 to $4.00 per square foot is the most budget-friendly, while closed-cell spray foam at $4.00 to $7.00 per square foot delivers the best performance. NB Power and various provincial programs occasionally offer rebates for home insulation upgrades — check current availability before starting your project, as rebates of $1,000 to $3,000 can significantly shorten the payback period.

Get at least three quotes from insulation contractors who work in basements regularly. NB pricing varies 30-40% between contractors, and the lowest quote is not always the best value if the installer cuts corners on air sealing.

Q10

What is the best way to insulate a basement rim joist area in Moncton to stop cold air infiltration in winter?

The most effective way to insulate basement rim joists in a Moncton home is to seal each joist bay with closed-cell spray foam or cut-to-fit rigid foam board caulked in place — this stops cold air infiltration and prevents condensation on the cold wood surfaces. The rim joist is one of the leakiest spots in any New Brunswick home, and in Moncton winters where temperatures drop to -15°C to -25°C, uninsulated rim joists are a major source of drafts, heat loss, and frozen pipes.

The rim joist (also called the band joist or header) is the board that sits on top of your foundation wall where the floor framing meets the sill plate. In most Moncton homes, each joist bay — the rectangular space between the floor joists at the perimeter — is either completely uninsulated or has a loose fiberglass batt stuffed in that has slumped, compressed, or pulled away from the surfaces over the years. Cold air infiltrates through gaps around the sill plate, through cracks where the foundation meets the wood framing, and through any penetrations for wires, pipes, or vents. This air leakage accounts for a significant portion of a home's total heat loss.

Spray Foam Method

The fastest and most effective approach is having a professional apply **2-3 inches of closed-cell spray foam** to each rim joist bay. The foam expands to fill every gap, crack, and irregularity, creating an airtight and vapour-tight seal in one step. It bonds directly to the wood and concrete surfaces, eliminating air movement completely. For a Moncton home, this method is ideal because it handles both insulation and air sealing simultaneously — no separate caulking or vapour barrier needed. Cost runs about **$500 to $1,500** for the rim joist area alone, depending on the perimeter length and number of bays.

Rigid Foam Cut-and-Fit Method

The more DIY-friendly option is cutting **2-inch rigid foam board (XPS or polyiso)** to fit each joist bay snugly. Measure each bay carefully — they are rarely perfectly uniform in older Moncton homes. Cut the foam about 1/4 inch smaller than the opening on all sides, press it into the bay against the rim joist, and seal every edge with a continuous bead of **acoustic sealant or expanding foam caulk**. The seal around the perimeter is critical — if you just friction-fit the foam without sealing, air still leaks around the edges and you lose most of the benefit. This approach costs **$200 to $500** in materials for a full basement perimeter and is one of the few insulation tasks a handy homeowner can tackle.

Do not use fiberglass batts for rim joists in Moncton. Fiberglass does not stop air movement, it does not seal gaps, and it allows warm moist interior air to reach the cold rim joist surface where it condenses. In NB's Maritime

climate with high indoor humidity levels in winter from cooking, showers, and daily living, this condensation cycle leads to wood rot and mold on the rim joist and sill plate — structural components you absolutely cannot afford to compromise.

While working on the rim joists, inspect the sill plate for gaps between the wood and the top of the foundation wall. In many older Moncton homes, this joint was never sealed and acts as a continuous gap around the entire perimeter. A bead of acoustic sealant or foam sealant along this joint is a quick fix that makes a noticeable difference in draft reduction. Also check for any plumbing or electrical penetrations through the rim joist — seal each one with fire-rated expanding foam.

Rim joist insulation is one of the highest-return energy upgrades you can make in a Moncton home. It is relatively inexpensive, can often be done without a building permit if it is a standalone project, and the comfort improvement is felt immediately during the first cold snap.

Q11

Can I use fiberglass batt insulation in my basement walls in New Brunswick or will it cause mold problems?

Fiberglass batt insulation directly against basement foundation walls is not recommended in New Brunswick and will very likely cause mold problems within a few years. This is not a theoretical risk — it is the single most common insulation failure NB basement contractors see when tearing out failed finished basements, and the mold growth behind those batts is often extensive by the time homeowners notice the musty smell.

The reason is straightforward physics combined with NB's Maritime climate. Your foundation wall stays cold — near the soil temperature of 2-5°C in winter and 10-12°C in summer where it contacts the ground. Warm, humid indoor air moves through the fiberglass batt (which does nothing to stop air movement) and reaches the cold concrete surface. When that warm air hits the cold wall, the moisture in the air condenses into liquid water. This condensation collects on the back face of the fiberglass, which then acts like a wet sponge held against the concrete. The batt never dries out because it is sandwiched between drywall and a cold foundation wall with no air circulation. Mold colonies establish within months and spread throughout the wall cavity over a year or two.

In New Brunswick specifically, this problem is amplified by several factors. **Maritime humidity** runs 70-85% in summer, so indoor air carries significant moisture even with a dehumidifier running. **Spring thaw** from March through May raises moisture levels in the soil around your foundation, and any minor seepage or vapour transmission through the concrete adds moisture directly into the fiberglass. **Winter condensation** is relentless — with a 30-40°C temperature difference between indoor air and the foundation wall surface, condensation occurs on

every cold night for five to six months straight.

The mold that grows in these wall cavities is hidden behind the drywall. Homeowners often do not realize there is a problem until they notice a persistent musty odour, family members develop respiratory symptoms, or they see mold staining at the base of the drywall. By that point, the fiberglass, the framing lumber, and often the bottom of the drywall are all contaminated. The only fix is a complete tear-out — removing drywall, framing, and insulation down to bare foundation — followed by mold remediation and reinstallation with the correct insulation type. This tear-out and redo typically costs **$10,000 to $20,000 or more**, far exceeding what would have been spent doing it properly the first time.

What to use instead: install **2 inches of rigid foam board (XPS or polyiso)** directly against the foundation wall as a continuous thermal and moisture barrier, then frame your stud wall in front of it. Alternatively, apply **2-3 inches of closed-cell spray foam** directly to the foundation — this provides insulation, air barrier, and vapour barrier in one application. Both methods keep warm moist air away from the cold concrete surface, preventing condensation entirely.

Fiberglass batt insulation does have a place in a basement, but only in **interior partition walls** that are not against the foundation — walls separating basement rooms from each other, where both sides are at indoor temperature and there is no condensation risk. Mineral wool (Roxul) batts at $2 to $4 per square foot are an even better choice for interior partitions because they are naturally moisture-resistant and provide excellent sound dampening between rooms.

If your current basement already has fiberglass batts against the foundation walls, consider having the wall opened for inspection, especially if the insulation has been in place for more than two years. Finding and addressing mold early is far less expensive than waiting until it spreads through the entire basement.

Q12

How do I insulate a fieldstone foundation basement in an older Fredericton home without trapping moisture in the walls?

Insulating a fieldstone foundation in a Fredericton heritage home requires a careful approach that respects the wall's need to manage moisture — the wrong insulation strategy will trap water behind the stones, accelerate deterioration of the mortar, and create serious mold and structural problems. Fieldstone foundations are common in pre-1960s homes throughout Fredericton, particularly in the older neighbourhoods near the Saint John River, and they behave very differently from modern poured concrete.

Fieldstone walls are inherently irregular, porous, and breathable. They were designed to allow some moisture to pass through and evaporate from the interior surface — this is how they have survived for 80 to 150+ years. When you seal the interior surface with impermeable insulation like closed-cell spray foam or foil-faced rigid board, you block that evaporation path. Moisture that enters through the stone and mortar from the outside — driven by Fredericton's mixed clay and loam soils along the river valley — becomes trapped inside the wall with nowhere to go. Over time, this trapped moisture degrades the lime-based mortar joints (which are softer than modern Portland cement mortar), causes stones to spall from freeze-thaw cycles, and creates hidden mold colonies.

The Recommended Approach

The safest strategy for a Fredericton fieldstone basement is a **semi-permeable insulation assembly** that slows heat loss while still allowing some moisture to dry toward the interior. Start by **parging the interior surface** with a breathable morite or lime-based parge coat to create a smoother surface and reduce direct air infiltration through gaps between stones. Do not use Portland cement-based parging on a lime mortar wall — the rigid cement can cause the softer lime mortar to crack and fail.

Next, install **2 inches of unfaced EPS (expanded polystyrene)** against the parged surface. EPS is the most vapour-permeable of the rigid foams, with a perm rating of about 2-5 depending on thickness, allowing some drying toward the interior while still providing a thermal break of approximately R-8. Frame a 2x4 stud wall in front of the EPS with a **1-inch air gap between the studs and the foam**. Leave the stud cavities empty or use mineral wool batts — never fiberglass. Do not install a poly vapour barrier on the warm side in this assembly. The wall needs to dry inward, and poly would trap moisture against the EPS.

Some Fredericton contractors recommend **mineral wool board** (rigid Roxul) against the fieldstone instead of EPS. Mineral wool is vapour-permeable and moisture-tolerant, meaning if moisture does reach it, it dries out without losing its insulating properties or growing mold. At $3 to $5 per square foot for rigid mineral wool board, it costs more than EPS but provides extra peace of mind for a wall that will always have some moisture movement.

What to avoid: do not apply closed-cell spray foam directly to fieldstone — it creates an impermeable shell that traps moisture and will damage the historic masonry. Do not use fiberglass batts in any part of this assembly. Do not apply any waterproofing membrane to the interior of the stone wall — these walls must breathe.

Before insulating, address any **active water entry**. If water runs down the fieldstone walls during spring thaw or heavy rain, you have a drainage problem that insulation will not fix. Improve exterior grading to slope away from the foundation, extend downspouts at least 6 feet from the wall, and consider an interior drainage channel ($2,000 to $5,000) at the base of the wall that collects water before it reaches the finished space.

Realistically, a fieldstone basement in Fredericton will never achieve the same R-value or comfort level as a modern poured concrete foundation. Many homeowners choose to insulate and partially finish the space while

keeping expectations reasonable — a comfortable rec room or office rather than a fully finished living suite. A conversation with a contractor experienced in heritage foundation work is essential before committing to a plan. Get at least three quotes, and make sure the contractor has specific experience with fieldstone — the techniques are different from standard basement insulation.

Q13

What is the cost per square foot to spray foam insulate a full basement in Moncton in 2026?

Closed-cell spray foam insulation for a full basement in Moncton currently costs $4.00 to $7.00 per square foot of wall area installed, with most projects falling in the $5.00 to $6.00 range for a standard residential application in 2026. For a typical 800-square-foot Moncton basement with roughly 900 to 1,100 square feet of wall area (perimeter walls from sill plate to floor), expect a total spray foam cost of **$4,500 to $7,500** for the walls alone.

Several factors push costs toward the higher or lower end of that range. **Thickness matters most** — 2 inches of closed-cell spray foam delivers about R-13 (meeting the NB Building Code minimum of R-12.5), while 3 inches delivers R-19 to R-21 for better energy performance in Moncton's cold winters. Each additional inch adds roughly $1.50 to $2.50 per square foot to the price. Most contractors recommend at least 2.5 to 3 inches for NB basements to exceed code minimum and ensure the foam functions as a complete vapour barrier.

Foundation condition also affects pricing. A clean, dry poured concrete wall is straightforward to spray and keeps costs at the lower end. Concrete block walls with mortar joints, efflorescence, or minor dampness require more preparation and often more foam to achieve a consistent seal over the uneven surface. If your Moncton home has a block foundation from the 1960s to 1980s, expect pricing closer to the $5.50 to $7.00 range. Walls with active moisture problems need waterproofing ($3,000 to $8,000 for an interior system) before any spray foam can be applied.

Access and preparation factor in as well. A wide-open unfinished basement with nothing on the walls is quick to spray. A basement with existing shelving, stored items, pipes, wires, and ductwork along the walls requires more masking, more careful application, and more labour time. If the contractor has to move or work around obstacles, that adds $0.50 to $1.00 per square foot.

Here is a breakdown of typical total costs for a Moncton basement spray foam project in 2026:

Walls only (900-1,100 sq ft of wall area at 3 inches): **$4,500 to $7,500**. **Rim joists** (perimeter joist bays): add **$500 to $1,500**. **Basement ceiling** (if insulating between floors instead of walls, less common): $3.50 to $5.50 per square foot. **Full basement package** (walls + rim joists + any sill plate sealing): **$5,000 to $9,000** for a standard Moncton home.

Open-cell spray foam is cheaper at **$2.00 to $4.00 per square foot**, but it is not recommended for basement walls in New Brunswick. Open-cell foam absorbs moisture and is vapour-permeable, which leads to condensation and mold against cold NB foundation walls. The cost savings are not worth the risk of a tear-out and redo within a few years.

NB labour rates for spray foam contractors run 15-20% lower than Ontario or BC, so Moncton homeowners benefit from somewhat lower pricing than the national average. However, material costs are comparable since the spray foam chemicals ship from the same manufacturers regardless of location. Always get at least three quotes — NB pricing varies 30-40% between spray foam contractors for the same job. Ask each contractor for the installed R-value, the thickness they will apply, the type of foam (brand and whether it is closed-cell or open-cell), and whether the quote includes rim joist sealing.

Timing affects availability more than price in Moncton. Spray foam contractors are busiest from May through October when new construction and renovation season peaks. Booking a basement spray foam job in late fall or winter may get you slightly faster scheduling, though pricing typically stays consistent year-round. Get matched with a basement insulation contractor through New Brunswick Basements for free estimates on your project.

Q14

Should I insulate the basement ceiling instead of the walls if I only use the space for storage in Bathurst?

Insulating the basement ceiling instead of the walls is a reasonable approach if you genuinely plan to keep the space unheated and use it strictly for storage in Bathurst. Ceiling insulation creates a thermal boundary between your heated main floor and the cold basement below, which can reduce heat loss through the floor and keep your living space warmer. However, there are important trade-offs to consider before committing to this strategy in a northern New Brunswick climate.

When you insulate the ceiling, you are effectively declaring the basement as "outside" the building envelope. This means any plumbing, ductwork, or mechanical systems running through the basement will be exposed to near-freezing temperatures during Bathurst's winters, where it routinely drops to -20°C or colder. **Frozen pipes are a serious risk** if water supply lines run through an unheated basement ceiling assembly. You would need to either relocate those services above the insulation layer or add heat trace cable and pipe insulation to prevent freeze-ups. Your hot water tank, furnace, or boiler also likely sits in the basement — these appliances lose significant efficiency when operating in a cold space, and the heat they generate is wasted rather than contributing to your home's comfort.

From a cost perspective, ceiling insulation using **mineral wool batts (R-23 to R-31)** or fiberglass batts typically runs **$1.50 to $3.00 per square foot installed** for a standard 800 square foot basement, putting the total around **$1,200 to $2,400**. By comparison, insulating the foundation walls with 2-inch rigid foam board (R-10 to R-12.5) costs **$2.50 to $4.00 per square foot**, which totals **$3,000 to $6,000** or more depending on wall area. So ceiling

insulation is cheaper upfront, but wall insulation brings the basement inside the thermal envelope, protecting pipes and mechanicals and giving you the option to finish the space later.

In Bathurst specifically, the frost depth reaches approximately 1.5 metres, and winter temperatures are among the coldest in New Brunswick. An uninsulated basement in this area will hover around 5°C to 10°C in winter even without direct heating, because the earth around the foundation provides some thermal mass. Adding ceiling insulation drops that temperature further — potentially to near-freezing — which increases frost penetration risk along the interior face of your foundation walls and can worsen condensation problems during shoulder seasons when warm humid air enters the cold space.

If you do choose ceiling insulation, use **unfaced mineral wool batts** rather than fiberglass with kraft paper facing. Mineral wool is naturally moisture-resistant, will not absorb water if a pipe leaks, and provides better fire resistance. Ensure there are no gaps around electrical boxes, pipes, or duct penetrations — air sealing is just as important as the insulation itself. Seal the rim joist area with rigid foam or spray foam, as this junction between the foundation wall and floor framing is one of the biggest sources of heat loss and air infiltration in New Brunswick homes.

Before making a final decision, have a contractor assess the basement for **moisture issues, radon levels, and the location of all mechanical systems**. If your furnace, water heater, and main plumbing stack are in the basement, insulating the walls and bringing the space into the conditioned envelope is almost always the better long-term investment — even if you only use it for storage. You will protect your mechanicals, maintain a warmer floor above, and preserve the option to finish the basement down the road.

Q15

What type of insulation should I use under a basement floor slab in New Brunswick to prevent cold floors?

Rigid extruded polystyrene (XPS) foam board is the best insulation to install under a basement floor slab in New Brunswick, providing both thermal resistance and moisture protection against the cold, damp ground conditions found throughout the province. If you are pouring a new slab or replacing an existing one, sub-slab insulation is the most effective way to eliminate cold floors and reduce heat loss into the earth below.

For new construction or full slab replacement, the standard approach is to lay **2 inches of XPS rigid foam (R-10)** directly on top of a compacted gravel drainage layer and beneath the concrete slab. The installation sequence matters: compacted gravel base (minimum 4 inches for drainage), followed by the XPS foam boards with staggered joints and taped seams, then a **6-mil polyethylene vapour barrier** over the foam, and finally the concrete slab on top. The XPS serves a dual purpose — it insulates against the cold ground (which stays around 4°C to 8°C year-

round in New Brunswick) and resists moisture absorption. XPS has a **compressive strength of 15 to 25 psi**, which easily supports a standard 4-inch residential concrete slab and normal basement loads.

The critical distinction is XPS versus EPS (expanded polystyrene). While EPS is cheaper at roughly **$0.60 to $1.00 per square foot for 2-inch thickness**, it absorbs more moisture over time and loses R-value in wet conditions. XPS costs **$1.00 to $1.50 per square foot** for 2-inch boards but maintains its rated R-5 per inch even in damp soil contact — a significant advantage in New Brunswick where groundwater and soil moisture levels are consistently high due to the Maritime climate.

If you are not replacing the slab, you have two above-slab options for addressing cold floors. **Dricore subfloor panels** are engineered OSB panels bonded to a raised plastic membrane that creates a 3/4-inch air gap above the concrete. They cost **$3 to $5 per square foot** and provide roughly R-1.7 plus moisture separation. For more thermal performance, you can install **1-inch or 1.5-inch XPS foam boards directly on the existing slab**, then cover with 3/4-inch tongue-and-groove plywood as a subfloor, adding R-5 to R-7.5. This assembly costs **$4 to $7 per square foot installed** but delivers noticeably warmer floors.

In New Brunswick's climate, the ground temperature beneath your slab stays cold year-round, and concrete is an excellent thermal conductor — meaning without insulation, your basement floor constantly pulls heat out of the room. In Moncton and Saint John where sandy and clay soils hold different moisture levels, sub-slab insulation also helps control **moisture wicking**, where water vapour migrates upward through the concrete and damages flooring materials.

Before installing any sub-slab or above-slab insulation system, test the existing concrete for moisture using the plastic sheet method (tape a 2-foot square of clear plastic to the slab for 48 hours and check for condensation). If significant moisture is present, address the drainage situation first — a sump pump and interior drainage system may be needed before insulation makes sense. Also, test for **radon** before sealing up the slab, as New Brunswick has elevated radon levels in many areas, and sub-slab insulation combined with a vapour barrier is actually part of an effective radon mitigation strategy when paired with a vent pipe.

For most existing New Brunswick basements, the Dricore panel system offers the best balance of cost, ease of installation, and performance. For new construction, always specify 2-inch XPS beneath the slab — it is a modest cost during the pour that pays dividends in comfort and energy savings for decades.

Q16

How does the New Brunswick building code treat basement insulation differently for heated versus unheated basement spaces?

The New Brunswick building code requires insulation on foundation walls only when the basement is a heated or habitable space — unheated basements used purely for storage or utility purposes do not have the same wall insulation requirements, though the thermal boundary must exist somewhere in the building envelope. Understanding this distinction is critical when planning a basement renovation because it determines where you need to insulate and to what R-value.

When a basement is **heated or finished as habitable space**, the NB building code (which adopts the National Building Code of Canada with provincial amendments) requires the foundation walls to be insulated to a minimum of **R-12.5 from grade level down to at least 600 mm below grade** for the below-grade portion. In practice, most contractors insulate the full foundation wall height because partial insulation creates a thermal bridge at the transition point and does not perform well in New Brunswick's cold winters. The recommended target for energy efficiency in NB is **R-20**, which can be achieved with 2 inches of closed-cell spray foam (approximately R-12 to R-14) combined with a framed stud wall with additional batt insulation, or 3 to 4 inches of rigid XPS foam board.

For an **unheated basement**, the code does not require foundation wall insulation, but it does require that the thermal envelope of the house be maintained. This means the floor assembly above the basement — the ceiling of the basement — must be insulated instead. The floor assembly above an unheated space typically needs to meet **R-28 to R-31** depending on the specific code requirements and the heating system. This is a higher R-value than the foundation wall requirement precisely because the temperature differential between the heated main floor and an unheated basement can be substantial, especially in northern NB where winter temperatures in places like Edmundston and Bathurst regularly hit -25°C.

The vapour barrier placement also changes depending on whether the basement is heated or unheated. In a heated basement with insulated foundation walls, the vapour barrier goes on the warm side of the insulation assembly — the interior face, between the insulation and the drywall. Using rigid foam or closed-cell spray foam simplifies this because these materials act as their own vapour barrier. In an unheated basement with ceiling insulation, the vapour barrier goes on the top side of the ceiling insulation (the heated floor side). Getting this wrong in New Brunswick's humid Maritime climate leads to condensation within the insulation assembly, which causes mold growth and structural damage to floor joists.

There is a practical middle ground that many NB homeowners overlook. If your basement houses a **furnace, hot water tank, or plumbing**, treating it as unheated and insulating the ceiling creates freeze risk for those systems and wastes the ambient heat they generate. The NB building code recognizes this reality — if mechanical

equipment that could be damaged by freezing is in the basement, maintaining the space above freezing is the homeowner's responsibility regardless of the insulation strategy.

For permit purposes in New Brunswick, finishing a basement as habitable space triggers a building permit requirement from your municipal building department (in Moncton, Fredericton, or Saint John) or your Regional Service Commission in rural areas. The permit process includes inspections at the framing stage, insulation stage, and final completion. The inspector will verify insulation R-values, vapour barrier placement, and proper air sealing. Converting from unheated to heated status also triggers electrical and possibly plumbing permits if you are adding outlets, lighting, or fixtures.

Before deciding on your insulation strategy, have a contractor evaluate your basement's current moisture conditions, mechanical system locations, and your long-term plans for the space. Insulating the walls now — even if you are not finishing the space immediately — often makes more economic sense than insulating the ceiling, because it protects mechanicals, reduces humidity issues, and keeps the option open for future finishing.

Q17

What are the signs that my existing basement insulation in my Miramichi home is failing and needs to be replaced?

The most telling signs that your basement insulation is failing in Miramichi are persistent musty odours, visible mold or dark staining on or behind the insulation, sagging or compressed batts pulling away from the wall, and noticeably cold basement walls or floors despite heating the space. Given Miramichi's location in northeastern New Brunswick with its harsh winters, heavy snowfall, and the area's rocky glacial till soils, insulation failure in basements is common — particularly in homes built during the 1970s and 1980s when fiberglass batt insulation was standard practice against foundation walls.

Moisture-related failures are the most common and most damaging. If you pull back a section of fiberglass batt insulation from the foundation wall and find the back side is damp, discoloured, or has visible mold growth, the insulation has been trapping moisture against the concrete and is no longer performing. In Miramichi, winter condensation is a major culprit — warm indoor air hits the cold foundation wall (which can be near 0°C at soil contact level), and moisture condenses between the batt and the wall where you cannot see it. Over time, this creates a hidden mold factory. **Fiberglass batts lose virtually all their insulating value when wet** because the trapped air pockets that provide R-value are displaced by water. If your batts have been through even one significant wetting event, they may never fully recover their rated performance.

Look for **efflorescence** — white, powdery mineral deposits on the foundation wall surface behind the insulation. This indicates water is migrating through the concrete and evaporating on the interior surface, leaving mineral salts behind. While efflorescence itself is not structurally harmful, it confirms that moisture is active behind your insulation, which means the insulation assembly is compromised.

Physical deterioration is another clear signal. Fiberglass batts that have sagged, compressed, or fallen away from the wall leave gaps in the thermal envelope. Even a small gap allows cold air to bypass the insulation entirely through convective looping — cold air drops behind the insulation, warms against the room side, rises, and cycles back, essentially rendering the insulation useless. In older Miramichi homes, batts were often friction-fit between studs with no mechanical fastening, and decades of gravity and moisture have caused them to slump.

Energy performance clues include cold floors above the basement, drafts near the basement walls, frost or ice forming on the interior surface of rim joists during cold snaps, and higher than expected heating bills. If your basement feels cold despite running heat, the insulation is likely not performing to its rated R-value. A thermal imaging camera (available for rental at some NB building supply stores for $50 to $100 per day) can quickly reveal cold spots, thermal bridging, and areas where insulation is missing or compressed.

Pest damage is also worth checking. Mice and other rodents commonly nest in fiberglass batt insulation in New Brunswick basements, compressing and contaminating it. If you find droppings, nesting material, or chewed sections, the affected insulation should be removed and replaced.

If your Miramichi home's basement insulation shows any of these signs, the replacement approach matters as much as the decision to replace. **Do not simply install new fiberglass batts against the foundation wall** — this repeats the original problem. The modern best practice for New Brunswick basements is **2-inch rigid XPS or polyiso foam board applied directly to the foundation wall** (providing R-10 to R-13 and acting as a moisture and vapour barrier), followed by a framed stud wall with optional additional batt insulation in the stud cavities. Alternatively, **closed-cell spray foam at 2 inches (R-12 to R-14)** applied directly to the foundation wall eliminates the moisture trap entirely and provides an air and vapour barrier in one application, costing **$4 to $7 per square foot installed**.

Before re-insulating, have a contractor assess the foundation for active water leaks, cracks, or drainage issues. Insulation replacement without addressing the moisture source will lead to the same failure again.

Q18

Is there a rebate or incentive program in New Brunswick for upgrading basement insulation to meet modern energy standards?

Yes, New Brunswick homeowners can access rebates for basement insulation upgrades primarily through the Canada Greener Homes Grant program and NB Power's energy efficiency programs, though program details and funding availability change frequently. It is worth checking current program status before starting your project, as some programs have waitlists or funding caps that close enrollment periodically.

The **Canada Greener Homes Grant** (federal program administered through Natural Resources Canada) has been the most significant incentive for basement insulation upgrades in New Brunswick. This program offers rebates of up to **$5,000 for insulation improvements** as part of a broader home energy retrofit. The process requires a **pre-retrofit EnerGuide evaluation** (typically $300 to $600, with a partial rebate available) by a certified energy advisor who assesses your home's current performance, followed by the insulation upgrade, and then a **post-retrofit evaluation** to confirm the improvement. Basement wall insulation and rim joist insulation are both eligible categories. The rebate amount depends on the measured improvement in your home's energy performance — upgrading an uninsulated basement to R-20 foundation wall insulation typically qualifies for **$1,000 to $2,500 in rebates** depending on the scope and measured improvement.

NB Power offers its own energy efficiency programs for residential customers, which have historically included rebates for insulation upgrades. Their **Total Home Energy Savings Program** provides incentives for comprehensive energy improvements including basement insulation. Contact NB Power directly or visit their website to confirm current program availability and rebate amounts, as these programs are updated annually and sometimes have limited funding windows.

The **Canada Greener Homes Loan** program (separate from the grant) offers **interest-free loans up to $40,000** with a 10-year repayment term for eligible energy-efficient retrofits, including basement insulation. This can be combined with the grant program, making a significant basement insulation project much more affordable. For an 800 square foot basement requiring full foundation wall insulation with rigid foam and spray foam, which might cost **$5,000 to $15,000**, combining a $2,000 grant with an interest-free loan substantially reduces the financial barrier.

To maximize your rebate, schedule the pre-retrofit energy evaluation before doing any work. The energy advisor will identify which upgrades deliver the biggest energy improvement for your specific home. In many older New Brunswick homes — particularly those in Moncton, Saint John, and Fredericton built before the 1990s with no basement insulation — adding foundation wall insulation produces a dramatic improvement in the EnerGuide rating, which translates to higher rebate amounts. The advisor will also check for **radon levels** during the evaluation, which is important because sealing and insulating a basement can affect radon concentrations.

A few practical tips for navigating the rebate process: keep all contractor invoices and receipts with detailed descriptions of materials and R-values used. Ensure your contractor uses insulation that meets the program's minimum performance requirements — typically **R-12.5 minimum for basement walls** per NB building code,

though aiming for R-20 qualifies for higher rebates. The pre- and post-evaluations must be completed by a **registered NRCan energy advisor** — ask for one familiar with New Brunswick housing stock.

Program funding and availability can shift, so contact NB Power and check the Natural Resources Canada website for the most current information before committing to a project timeline. A qualified basement renovation contractor familiar with these programs can also guide you through the application process.
