

NEW BRUNSWICK INSULATION

---

# Air Sealing & Vapour Barriers

Air sealing techniques, vapour barrier installation,  
blower door testing, and moisture management for  
NB's cold Maritime climate

19 Expert Answers from Insulation IQ

[newbrunswickinsulation.com/construction-brain](https://newbrunswickinsulation.com/construction-brain)

# Table of Contents

---

1. What are the vapour barrier requirements for a newly built home in Fredericton under the 2020 NB Building Code?
2. Where are the most common air leaks in a New Brunswick home? | Insulation IQ?
3. Do I need a vapour barrier when insulating my Fredericton basement? | Insulation IQ?
4. What is the difference between a vapour barrier and an air barrier in NB construction? | Insulation IQ?
5. How do I air seal my attic before adding insulation in New Brunswick? | Insulation IQ?
6. Should I use 6-mil poly vapour barrier in my Moncton home walls? | Insulation IQ?
7. Can air sealing alone reduce my heating bill in New Brunswick? | Insulation IQ?
8. How do I seal air leaks around plumbing and electrical penetrations in NB? | Insulation IQ?
9. What is the best caulk or sealant for air sealing in cold NB climates? | Insulation IQ?
10. Does my Saint John home need a vapour barrier on exterior walls? | Insulation IQ?
11. Can too much air sealing cause indoor air quality problems in NB homes? | Insulation IQ?
12. How do I air seal a dropped ceiling or soffit in my Oromocto home? | Insulation IQ?
13. What is the NB Building Code requirement for vapour barriers in new construction? | Insulation IQ?
14. Should I seal the vapour barrier to the foundation wall in a NB basement? | Insulation IQ?
15. How do I air seal my attic hatch or pull-down stairs in Quispamsis? | Insulation IQ?
16. Can I use spray foam as both insulation and air barrier in my NB home? | Insulation IQ?
17. How do I know if my New Brunswick home has adequate air sealing? | Insulation IQ?
18. What causes condensation on windows in insulated New Brunswick homes? | Insulation IQ?
19. Should I install an HRV after air sealing my home in Edmundston NB? | Insulation IQ?

## What are the vapour barrier requirements for a newly built home in Fredericton under the 2020 NB Building Code?

The 2020 NB Building Code requires a vapour barrier with a permeance rating of 60 nanograms per pascal-second per square metre (ng/Pa-s-m<sup>2</sup>) or less on the warm side of all insulated building assemblies in Fredericton. In practical terms, this means 6-mil polyethylene vapour barrier installed on the interior face of exterior walls, under attic insulation, and on the warm side of any insulated assembly.

### Specific Installation Requirements for New Construction:

The vapour barrier must be continuous across the entire building envelope with all joints sealed using acoustical sealant or approved vapour barrier tape. Every penetration through the vapour barrier — electrical boxes, plumbing stacks, HVAC ducts, pot light housings — must be sealed with acoustical sealant, gaskets, or approved sealing systems. The vapour barrier cannot simply be stapled in place; it must be sealed at all edges where it meets framing members, foundation walls, or other building components.

For **exterior walls**, the 6-mil poly goes on the interior face of the stud cavity, between the insulation and the drywall. The poly must be cut carefully around electrical boxes and sealed with acoustical sealant — never just slit and pushed around the box. For **attic applications**, the vapour barrier goes on the warm (bottom) side of the ceiling insulation, typically stapled to the bottom of the ceiling joists before drywall installation.

### Critical NB Climate Considerations:

Fredericton sits in Climate Zone 6 with approximately 4,800 heating degree days annually and sustained winter temperatures of -20°C to -30°C. At these temperatures, the vapour pressure drive from interior to exterior is enormous — warm, moist interior air (at 21°C and 30-40% relative humidity) will aggressively migrate toward cold exterior surfaces. Without a proper vapour barrier, this moisture reaches the cold sheathing or exterior wall surface, condenses into liquid water, and causes mould growth and wood rot within the wall assembly.

The **dew point calculation** for Fredericton's winter conditions shows that condensation will occur within the wall assembly at temperatures around 2°C to 5°C. In a typical 2x6 wall during a -25°C night, the temperature gradient means the dew point is reached roughly 2-3 inches from the exterior sheathing. This is why the vapour barrier must be on the warm side — it prevents the moisture from entering the wall assembly in the first place.

### Smart Vapour Retarders and Alternatives:

While 6-mil polyethylene remains the code-compliant standard, **smart vapour retarders** like CertainTeed MemBrain are increasingly popular in NB new construction. These variable-permeance membranes act as vapour barriers in winter (low permeance when humidity is low) but become vapour-permeable in summer (high

permeance when humidity is high), allowing walls to dry inward if moisture does get into the assembly. Smart vapour retarders cost 2-3 times more than poly but provide insurance against moisture problems.

**Vapour barrier paint** (special latex paint with vapour-retarding properties) can serve as the vapour barrier on the interior face of basement walls, but it cannot be used as the primary vapour barrier for above-grade walls or ceilings — the permeance is too high for NB's severe climate.

### **Common Code Compliance Issues:**

The most frequent vapour barrier failures in new NB construction are **unsealed electrical penetrations** (every pot light housing, outlet box, and switch must be gasketed or sealed), **unsealed attic hatches** (the hatch cover needs weatherstripping and an insulated cover), and **thermal bridging at the foundation connection** where the vapour barrier must be sealed to the foundation wall or sill gasket.

### **Professional Installation Recommended:**

While the vapour barrier requirement seems straightforward, proper installation requires understanding of building science, attention to detail, and coordination with electrical and mechanical trades. A single unsealed electrical box or poorly taped seam can compromise the entire vapour barrier system. Most builders hire specialized insulation contractors who understand vapour barrier installation and have the tools and materials (acoustical sealant, vapour barrier tape, gasket systems) to achieve code compliance.

Need help finding a professional insulation contractor familiar with NB Building Code vapour barrier requirements? New Brunswick Insulation can match you with experienced professionals through the New Brunswick Construction Network.

---

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

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

[View all contractors ?](#)

## Where are the most common air leaks in a New Brunswick home? | Insulation IQ?

Air leakage is the silent energy thief in most New Brunswick homes. Unlike insulation quality, which you can assess by looking at R-values on a spec sheet, air infiltration is invisible — until you book a blower door test and watch the smoke pencil drift toward a gap you never knew existed. Understanding where these leaks typically occur is the first step toward a warmer, drier, and more energy-efficient home.

The **attic hatch** is consistently one of the worst offenders in older NB homes. A standard pull-down attic ladder or plywood hatch has almost no insulation value and typically no weatherstripping, meaning conditioned air flows freely in and out of your attic every time the pressure differential shifts. In a two-storey home in Fredericton, a poorly sealed attic hatch can account for a surprisingly large fraction of total infiltration. The fix is inexpensive — an insulated box cover, foam weatherstripping, or a commercially available attic hatch cover — but it's overlooked more often than not.

**Electrical outlets and switches on exterior walls** are notorious leakage points. The standard single-gang box has gaps around the wire penetrations and an open back cavity that communicates directly with the wall stud bay. In balloon-frame homes built before the 1960s — common in Moncton's older neighbourhoods and the historic areas of Saint John — those stud bays run from the basement to the attic with no fireblocking, meaning a single outlet can connect to a column of air spanning the full building height. Foam gaskets behind the cover plates cost almost nothing and make a real difference.

**Plumbing stack and drain penetrations** through the top plates of framing, ceiling drywall, and basement rim joists are major leak sites. Where a 3-inch ABS drain punches through the ceiling of a first-floor bathroom into the floor cavity above, there is almost always a gap between the pipe and the rough hole. Spray foam or pre-formed collar seals close these quickly. The same applies to **supply and return duct penetrations** if you have forced-air heating.

The **rim joist** — the band of framing that sits on top of your foundation wall and supports the floor system — is consistently rated one of the top three leakage zones in NB homes. It's exposed to exterior temperatures, rarely well-insulated in homes built before 1990, and sits right where the building pressure differential is highest. Spray foam applied directly to the rim joist boards from inside the basement (typically 2 to 3 inches of closed-cell spray foam, bringing it to approximately R-12 to R-20) simultaneously air-seals and insulates in a single operation.

**Top plates of interior partition walls** that intersect the attic floor are another major pathway. Where a bedroom wall meets the ceiling below the attic, there is typically an open cavity between the drywall and the top plate that connects to the attic air. Blown-in insulation doesn't seal this gap — it requires a deliberate bead of acoustic

sealant, caulk, or spray foam along the top plate before insulation is applied.

**Recessed pot lights** (IC or non-IC rated) penetrate the air barrier at every fixture location. Older non-airtight lights dump conditioned air directly into the attic cavity. Replacing them with airtight, IC-rated fixtures or installing insulated covers from the attic side is a standard part of any professional air sealing package in Climate Zone 6.

Chimneys and **fireplace chases** create significant stack-effect infiltration in two-storey and split-level homes across New Brunswick. The air gap between the framing and the masonry or metal chimney chase is a direct highway for cold attic air to pour into the home in winter. Fire-rated caulk and sheet metal flashing are used to properly seal these penetrations.

From a numbers perspective, New Brunswick homes built before 1980 commonly test at **8 to 12 air changes per hour at 50 Pascals (ACH50)** on a blower door. NB's current building requirements target closer to **3.5 ACH50** for new construction. Comprehensive air sealing — often paired with attic insulation — can cut that number roughly in half in a retrofit context, translating into hundreds of dollars per year in heating savings and potential eligibility for **NB Power rebates** and the **Canada Greener Homes Grant**.

A registered energy advisor can identify exactly where your home leaks most and prioritize the repairs. New Brunswick Insulation contractors listed on the New Brunswick Construction Network regularly work alongside energy auditors to tackle air sealing as part of a whole-home upgrade.

---

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

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

[View all contractors ?](#)

---

**Q3**

## **Do I need a vapour barrier when insulating my Fredericton basement? | Insulation IQ?**

Whether you need a vapour barrier in a Fredericton basement depends on how you're insulating it, where the insulation is placed, and what moisture conditions your particular foundation presents. It's not a simple yes-or-no — but with a clear picture of how moisture moves through basement assemblies, you can make the right call for your home.

The core principle is this: **vapour moves from warm, humid air toward cool, dry air**. In a New Brunswick winter, that means vapour is trying to push from the heated interior of your basement outward through the foundation wall. If you have a warm interior finish — drywall over fibreglass batts in a stud wall — and no vapour control layer, moisture can condense inside the wall assembly where it meets cold concrete, leading to mould, rot, and degraded insulation performance. Fredericton's winters are long and cold, with January design temperatures around **-23°C**, which makes this risk very real.

If you're insulating from the **interior** with fibreglass batts or mineral wool in a framed stud wall, a **6-mil polyethylene vapour barrier** on the warm (interior) side of the insulation is required under the National Building Code as adopted in New Brunswick. This is a hard requirement for Climate Zone 6. The poly goes between the insulation and the drywall, lapped and sealed at seams, with acoustic sealant at the bottom plate and around all penetrations. Without it, you're relying on paint alone to slow vapour, which is not sufficient in a Fredericton basement.

However, if you're using **closed-cell spray polyurethane foam (ccSPF)** applied directly to the interior face of the concrete foundation wall, the situation is different. Closed-cell spray foam has a very low **vapour permance** — typically around 1 perm at 2 inches, and lower at greater thicknesses. When applied at 3 to 4 inches (approximately R-20 to R-26), it functions as both insulation and vapour control in one product, and a separate poly barrier is neither required nor recommended. Adding poly over closed-cell foam would trap any residual construction moisture between layers.

**Rigid foam board** (XPS or EPS) applied directly to the concrete wall and then covered with a framed wall follows similar logic. If the rigid foam is thick enough to keep the stud bay warm — typically achieving at least R-10 at the concrete interface before you reach the framing — you can use unfaced mineral wool or fibreglass in the framing cavity without poly, because the dew point stays within the foam layer where condensation can't accumulate. This is actually the **preferred building science approach** in many NB retrofits because it eliminates the poly from a cavity where it could trap moisture if the wall ever gets wet from the concrete side.

One important distinction for Fredericton basements specifically: older homes — particularly those built before 1960 in the Silverwood or Barker's Point neighbourhoods, for example — often have **poured concrete or stone rubble foundations** with no exterior waterproofing. These foundations can allow **liquid water infiltration** during spring thaw or heavy rain. No vapour barrier strategy solves a water management problem. If your basement floor or walls show efflorescence, staining, or seasonal dampness, that needs to be addressed through drainage and

waterproofing before any insulation is installed. Trapping moisture behind insulation on a wet foundation will cause significant damage regardless of how good the vapour barrier is.

For **basement floor insulation**, a vapour barrier under a floating subfloor system is standard in NB and is separate from what you do on the walls. A 6-mil poly on the concrete slab beneath rigid foam and plywood provides a capillary break against slab moisture that can otherwise wick up through the floor assembly.

From a cost perspective, having a vapour barrier properly installed in a typical Fredericton basement — roughly 900 to 1,100 square feet of wall area — adds approximately \$300 to \$600 to the cost of an insulation job when done at the same time as the framing and insulation. Doing it as a separate step later is more expensive. **NB Power's Home Energy Efficiency program** may offer rebates on basement insulation upgrades; eligibility is confirmed through a pre- and post-retrofit energy assessment.

If you're unsure which approach is right for your specific foundation, New Brunswick Insulation professionals listed through the New Brunswick Construction Network can assess your basement conditions and recommend the correct vapour control strategy before any work begins.

---

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

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

[View all contractors ?](#)

## What is the difference between a vapour barrier and an air barrier in NB construction? | Insulation IQ?

These two terms are often used interchangeably in casual conversation, but in building science — and in the National Building Code as adopted in New Brunswick — they refer to **distinct and separate control layers** with different functions. Confusing them leads to assemblies that fail at one job or the other, and in New Brunswick's Climate Zone 6 winters, both jobs matter enormously.

An **air barrier** controls the movement of air through a building assembly. Air carries moisture, heat, and pollutants, and when it moves through gaps in the building envelope it does so in bulk — transporting far more moisture than vapour diffusion ever could. On a cold February night in Moncton, warm humid interior air forced through a small crack by stack effect pressure can deposit significant liquid water on a cold surface deep inside the wall. Air sealing stops this bulk transport. The key requirement of an air barrier system is that it must be **continuous** — every component must connect to the next with no gaps, laps must be sealed, and penetrations must be detailed properly. Materials used as air barriers include 6-mil polyethylene, rigid sheathing (OSB, plywood), rigid foam board with taped joints, closed-cell spray foam, self-adhering membrane, and even well-sealed drywall.

A **vapour barrier** (technically a **vapour diffusion retarder**) controls the slow movement of water vapour through materials by molecular diffusion — not bulk airflow. This is a much smaller quantity of moisture than air leakage carries, but it still matters in cold climates. Vapour diffuses from high concentration to low concentration, and in a NB winter it moves from the warm interior toward the cold exterior. If it reaches a surface below the dew point before it exits the assembly, it condenses into liquid water. The vapour barrier slows this process enough to prevent condensation accumulating to damaging levels. **Vapour permance** is measured in perms — below 1 perm is considered a Class II vapour retarder, and 6-mil poly at around 0.06 perms is effectively a Class I (vapour barrier).

The critical distinction is that **air barriers must be continuous and structural**, while **vapour barriers must be positioned on the warm side of insulation** in cold climates and need not handle any mechanical load. A sheet of 6-mil poly stapled to stud faces and left unsealed at penetrations does a reasonable job as a vapour barrier but a poor job as an air barrier, because any hole or untaped lap allows bulk airflow right past it. Conversely, a carefully detailed layer of taped rigid foam on the exterior of a wall controls air movement well but sits on the cold side of the assembly, where it should NOT act as a vapour barrier (doing so could trap moisture in the wall).

This is why building scientists often describe the goal as a "**smart**" or "**variable permance**" **membrane** in certain assemblies — something like MemBrain or Intello Plus, which tightens up in dry conditions to block vapour outward in winter, but opens up in humid conditions to allow drying inward in summer. These products are increasingly used in New Brunswick high-performance builds where the assembly needs to manage moisture seasonally.

In **practical NB construction**, the two layers are sometimes combined in one material. **Closed-cell spray polyurethane foam** applied to a full wall assembly is both an effective air barrier (zero-permeance continuous layer) and a vapour control layer — it does both jobs at once. This is part of why it's popular in NB rim joist, roof deck, and foundation applications despite the higher cost. Similarly, a **taped and sealed 6-mil poly** wall installation, when properly detailed with acoustic sealant at all perimeters and penetrations, can function as both. But the detailing discipline required to make poly work as an *air barrier* is very high — gaps around wiring, pipes, and outlet boxes are common failure points that a casual installation will miss.

Under the **NBC 2015 as adopted by New Brunswick**, Section 9.25 covers vapour barriers and requires them on the warm side of insulation in walls, ceilings, and floors of heated spaces. The air barrier requirements are addressed through the airtightness requirements in the building envelope provisions. Both must be addressed — they are not optional for new construction or permitted major renovations in Climate Zone 6.

For homeowners planning a basement, attic, or wall insulation project anywhere from Saint John to Bathurst, working with an insulation contractor who understands both layers — and details them correctly — is essential to getting a durable, high-performing result. The New Brunswick Construction Network can connect you with qualified insulation professionals who understand these building science fundamentals.

---

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

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

[View all contractors ?](#)

---

Q5

## How do I air seal my attic before adding insulation in New Brunswick? | Insulation IQ?

Attic air sealing is one of the highest-return energy upgrades you can do in a New Brunswick home — and it must be done *before* insulation is added, not after. Blowing cellulose or fibreglass over a leaky attic floor without sealing

the penetrations beneath is like putting a thick blanket over a screen door: the insulation adds R-value on still days but does almost nothing to stop the convective heat loss that drives most energy waste in New Brunswick's Climate Zone 6 winters.

The first step is to **remove any existing insulation** over the areas you need to work on — typically the top plates of all interior partition walls, the area around the attic hatch, and around every penetration. This is unpleasant work, but there's no way to properly seal the top plate line if you can't see it. In most NB homes built between 1950 and 1990, you'll find fiberglass batts laid between joists with no sealed perimeter, and you'll be surprised how open the framing cavities are to the attic air above.

**Top plates of partition walls** are typically the single largest leakage zone in the attic floor. Where interior walls run below the attic, their top plates sit on the drywall ceiling with gaps at every wire, pipe, and framing irregularity. The standard approach is to apply a continuous bead of **acoustical sealant or low-expansion spray foam** along the top plate on both sides, sealing the gap between the drywall and the plate, and filling any wire notches or holes in the plate itself. For walls running perpendicular to the joists, the entire top of the wall should be treated as an air barrier plane.

**Electrical penetrations** deserve careful attention. Every wire that exits the top plate of a wall and passes through the ceiling drywall or floor sheathing into the attic represents a gap. At each one, use a dab of spray foam or acoustical sealant to fill the hole around the wire. Do not use standard expanding foam around wiring — use the non-expanding variety rated for electrical applications, or acoustical sealant, to avoid pinching conductors.

**Recessed pot lights** are among the worst leakage points in attics across Moncton, Fredericton, and Saint John. Older non-airtight fixtures are essentially open holes in the ceiling. The best solution is to replace them with **airtight, IC-rated LED pot lights** that are sealed to the drywall from below. If replacement isn't possible, construct airtight boxes from rigid insulation board or drywall and seal them over the fixture from above with acoustical sealant — this is called an **IC box** or **pot light cover**, and it also allows you to insulate over the fixture safely.

**Plumbing stack and drain pipe penetrations** through the top plate and ceiling into the attic should be sealed with a combination of rigid collar material (sheet metal or rigid foam) and spray foam. For large-diameter pipes — 3-inch or 4-inch ABS stacks common in NB homes — cut a piece of rigid foam to fit snugly around the pipe, slide it down to the plate level, and foam the perimeter. This gives the foam something structural to bridge against and prevents it from shrinking and cracking over time.

**Attic hatch sealing** is straightforward and inexpensive. The hatch itself should have at least **R-20 to R-28 of insulation** glued or fastened to it, and the perimeter should have compressible weatherstripping that seals against the hatch frame when closed. Alternatively, a commercial rigid foam attic stair cover installed from above provides airtightness and insulation in one step and is increasingly common in NB energy retrofits.

**Chimneys and flue pipes** require fire-rated products. Use **high-temperature caulk** and sheet metal flashing to seal the gap between framing and masonry or double-wall metal chimney, maintaining the required clearances. This is not a place for standard spray foam, which is combustible.

Once all penetrations are sealed, the attic is ready for insulation. The NB Building Code and **Canada Greener Homes Grant** guidelines both recommend a minimum of **R-50 to R-60** in the attic for Climate Zone 6 — most pre-1990 NB homes have R-12 to R-24, leaving enormous performance gains on the table. **NB Power's Home Energy Efficiency Upgrade rebates** currently offer meaningful rebates for attic insulation upgrades that meet minimum performance thresholds, with higher rebates for achieving R-50 or better.

A registered energy advisor can document your attic's current airtightness via blower door test and confirm rebate eligibility before work begins. Insulation contractors listed through New Brunswick Insulation and the New Brunswick Construction Network can handle both the air sealing and the insulation top-up as a single coordinated project.

---

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

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

[View all contractors ?](#)

---

Q6

## Should I use 6-mil poly vapour barrier in my Moncton home walls? | Insulation IQ?

In Moncton and across New Brunswick, the **6-mil polyethylene vapour barrier** has been the standard wall assembly component for decades, and for good reason — but whether you need it, where to install it, and how to install it correctly all depend on your wall assembly, insulation type, and renovation scope.

New Brunswick sits firmly in **Climate Zone 6**, one of Canada's more demanding heating climates. Moncton averages around 4,400 heating degree-days, with winters that push moisture from the warm interior toward the cold exterior. Without a properly placed vapour barrier, warm, humid indoor air diffuses through your wall cavity, hits the cold sheathing or exterior cladding, and condenses. Over time that moisture accumulates in batt insulation or structural framing, leading to reduced R-value, mould growth, and wood rot.

The **National Building Code of Canada** (adopted in New Brunswick) and NB's own provincial building standards require a vapour barrier on the **warm side** of insulation in cold climates — that means on the interior face of the wall cavity, directly behind your drywall. The 6-mil poly is the most commonly used material because it's inexpensive (roughly \$0.05–\$0.10 per square foot for materials), durable, and readily available at every building supply in Moncton, Fredericton, and Saint John.

That said, 6-mil poly is only part of the story. **Air sealing is equally important.** Poly installed with gaps around electrical boxes, plumbing penetrations, or partition wall intersections allows warm, moist air to bypass the barrier entirely. The most effective approach is to treat the 6-mil sheet as both a vapour retarder and an air barrier, taping all laps with **acoustical sealant or poly tape**, sealing around every penetration, and caulking the perimeter where the poly meets framing. This "airtight drywall approach" or "poly wrap" technique dramatically reduces interstitial condensation risk.

For **new construction or a full gut renovation** in Moncton, this is straightforward: install your batt insulation (typically R-20 or R-22 mineral wool or fibreglass in 2x6 walls), then staple 6-mil poly across the interior face, lap seams by at least 6 inches over a stud, tape all laps, and seal every penetration before the drywall goes on. **Cost for labour and materials** to properly air-seal and vapour-barrier a typical 1,500-square-foot bungalow in Moncton runs roughly \$800–\$1,800, depending on complexity.

For **partial renovations or add-ons**, the approach gets more nuanced. If you're adding insulation to an existing wall from the interior — say, during a basement conversion or an addition — you still want the 6-mil on the warm side. But if you're adding continuous rigid foam insulation to the exterior (an increasingly popular upgrade that pushes the dew point outward), the requirement shifts. Exterior rigid foam of sufficient thickness (at least R-7.5 for a 2x6 wall assembly in Zone 6) moves the condensation plane entirely outside the framing, meaning you may not need poly at all, or can replace it with a **vapour-permeable smart membrane** like MemBrain that adjusts permeance seasonally.

**Smart vapour retarders** (Class II or variable permeance materials) are an option worth considering in Moncton's climate precisely because the city sees not just cold winters but also humid summers. Poly is largely impermeable year-round, which means any moisture that does get into a wall in summer has difficulty drying inward. Variable permeance membranes allow drying in summer while still restricting vapour drive in winter. They cost more — roughly \$0.30–\$0.60 per square foot — but offer better long-term performance in mixed-humidity climates.

The bottom line: **yes, 6-mil poly belongs in most Moncton wall assemblies**, particularly in wood-framed walls with batt insulation where you're working from the interior. Install it correctly — taped, sealed, unbroken — and it will protect your framing for the life of the building. If you're doing an exterior insulation upgrade or using spray foam, consult with a qualified insulation professional about whether poly is still appropriate for your specific assembly. If you're unsure about your current wall assembly or are planning a renovation, the professionals listed on **New Brunswick Insulation** can assess your specific situation 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 ?](#)

---

## Can air sealing alone reduce my heating bill in New Brunswick? | Insulation IQ?

**Yes — and the savings can be surprisingly significant.** Air sealing is often overlooked because it's invisible once complete, but in a leaky New Brunswick home, it can reduce heating costs by **15% to 40%** depending on how drafty the building is to begin with. In some older homes in Fredericton, Moncton, or Saint John built before the 1980s — when air tightness simply wasn't part of the building culture — air sealing alone can be one of the highest-return investments available.

To understand why, consider how heat actually escapes your home. Most people picture heat flowing outward through walls and ceilings (thermal conduction through insulation), and that's real. But **uncontrolled air leakage** — infiltration — is responsible for 25% to 40% of the total heating load in a typical older Canadian home. This is warm, conditioned air physically escaping through cracks around electrical boxes, plumbing penetrations, attic hatches, around rim joists at the foundation, and at partition wall top plates. Cold air simultaneously enters through similar gaps at lower levels, creating a continuous convective loop called the **stack effect** that intensifies in Zone 6 winters.

New Brunswick's winters are harsh enough that this matters enormously. Fredericton sees average lows of around -13 degrees Celsius in January; Moncton and Saint John aren't far behind. When outdoor temperatures are that far below indoor setpoints, every cubic foot of warm air that escapes is replaced by extremely cold air your heating system must condition. The annual heating cost penalty from a leaky building envelope can run \$400–\$900 or more for a typical 1,500-square-foot home, depending on fuel type. With heating oil prices hovering around \$1.50–\$1.80 per litre in New Brunswick in recent years, that adds up fast.

The most impactful air sealing targets in a typical NB home are:

**The attic floor** is usually the single biggest opportunity. Warm air rises and exits through the top of the building envelope — around pot lights, at the attic hatch, where interior walls meet the top plate, and through any plumbing or electrical penetrations through the ceiling. Sealing the attic floor with spray foam and acoustical sealant before adding blown insulation can dramatically cut infiltration.

**The rim joist** at the foundation-to-floor junction is another major leakage zone, often completely uninsulated and unaired in older homes. Two inches of closed-cell spray foam here (\$300–\$600 for a typical home) both insulates and air seals simultaneously.

**Electrical boxes** on exterior walls and ceilings, plumbing penetrations, and the gaps around bathroom exhaust fans all contribute to leakage that adds up across an entire house.

A **blower door test**, offered by certified energy advisors across New Brunswick, quantifies exactly how leaky your home is and identifies the specific locations of major leakage zones. This test is required as part of the **Canada Greener Homes Grant** application (worth up to \$5,600 for eligible energy efficiency upgrades) and the **NB Power Home Energy Efficiency Rebates** program. Getting a pre-retrofit EnerGuide assessment done first means you can claim rebates on both air sealing and insulation work — often \$500–\$1,500 back for comprehensive air sealing improvements.

The practical answer to your question is nuanced: **air sealing alone can reduce your bill meaningfully**, especially in a pre-1980s home in Moncton or Fredericton, but the biggest wins come when air sealing and insulation upgrades are done together. Insulation without air sealing lets convective looping within cavities undermine the R-value. Air sealing without adequate insulation reduces infiltration losses but doesn't address conductive losses. Done together — particularly attic air sealing followed by blown-in insulation to R-50 or higher — the combination can cut heating bills by 30–50% in some older NB homes.

If you haven't had a professional energy audit done, that's the logical first step. It will tell you precisely where your home is losing the most heat, prioritise your investments, and unlock available rebates. The qualified insulation professionals listed through **New Brunswick Insulation** and the **New Brunswick Construction Network** can guide you through both the air sealing work and the rebate application process.

---

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

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

[View all contractors ?](#)

---

Q8

## How do I seal air leaks around plumbing and electrical penetrations in NB? | Insulation IQ?

Plumbing and electrical penetrations are among the most consistently overlooked sources of air leakage in New Brunswick homes, yet they're often straightforward to seal once you know the right approach and materials. In a typical older home in Fredericton or Moncton, dozens of small gaps around pipes, wires, and conduits can collectively add up to the equivalent of leaving a window open all winter — not an exaggeration when you consider how many penetrations a typical house has through the attic floor, rim joists, and exterior walls.

The first step is understanding **where the critical penetrations are**, because not all are equally important. The highest-priority locations are any penetration that passes through the **air barrier plane** — the boundary between conditioned and unconditioned space. In most homes this means:

**Attic floor penetrations** are the most impactful. Plumbing vent stacks, bathroom exhaust fans, electrical wires, pot light fixtures (recessed lighting), and HVAC ducts all pass through the ceiling into the attic. Because warm air rises and exits through the top of the building by stack effect — particularly during New Brunswick's Zone 6 winters — these gaps drive significant heat loss and moisture problems. Cold air also enters through gaps at the lower levels, completing the convective loop.

**Rim joist penetrations** where plumbing or electrical enters or exits the foundation area are another major zone. Older homes in Saint John and Fredericton often have completely open rim joists with wiring and pipe sleeves run through gaps that were never properly sealed.

**Exterior wall penetrations** for dryer vents, outdoor taps (hose bibs), gas lines, and cable or internet conduits are also leakage points, though typically smaller contributors individually.

For **materials**, the right product depends on the gap size and the surrounding material:

**Acoustical sealant** (also called acoustic caulk or non-hardening sealant) is the preferred choice where the poly vapour barrier meets framing, electrical boxes, or pipes. It stays permanently flexible, bonds well to poly, and doesn't crack with seasonal movement. It's used extensively in the "airtight drywall approach" and around vapour barrier penetrations. Cost is roughly \$8–\$15 per tube.

**Spray polyurethane foam** — both one-component gun foam and single-use straw cans — is ideal for sealing larger gaps around pipes, wires, and conduits. For gaps up to about 1 inch, low-expansion foam from a straw can works well. For larger gaps or more systematic sealing in the attic floor, a two-component closed-cell spray foam kit provides both air sealing and insulation value simultaneously. **Important caveat:** around plumbing that carries hot water or flues that exhaust combustion gases, you must use **fire-stop materials** (intumescent caulk or fire-rated foam) rather than standard spray foam. NB Building Code and fire codes require fire-stopping at all penetrations through fire-rated assemblies.

**Intumescent fire-stop caulk** is specifically required around any penetration through a fire-rated assembly — typically at the foundation/floor intersection and anywhere near a furnace or fireplace. It expands when exposed to

heat, sealing the gap during a fire. Cost is \$15–\$25 per tube, and it's readily available at building supply stores across NB.

**Rigid foam backing** is useful for large gaps — say, around a plumbing stack that has a 3-inch pipe in a 6-inch rough-in hole. Cut a piece of rigid foam board to fill the gap, foam it in place, then tape and seal the perimeter.

For **electrical boxes on exterior walls and ceilings**, foam gaskets designed specifically for outlet and switch covers (sold as "insulating gaskets" or "air sealing plates") slip behind the cover plate and seal the box perimeter. They cost about \$0.50–\$1 per box and take seconds to install — one of the best return-on-investment air sealing upgrades available. For pot lights (recessed cans), purpose-built **IC-rated airtight covers** installed from the attic side are the proper solution; older non-airtight cans essentially punch a direct hole into the attic.

The most effective workflow is to have a **blower door test** performed by a certified energy advisor — this pressurises the house and makes leakage points detectable by feel or with a thermal camera. NB Power's energy efficiency program covers part of the audit cost, and completing eligible air sealing work qualifies for rebates. Doing a systematic penetration seal in the attic and rim joist typically costs \$500–\$1,500 in labour and materials for a professional crew, with DIY costs of \$100–\$300 for materials if you're comfortable working in the attic. Contractors listed through **New Brunswick Insulation** can assess your home's penetration sealing needs and ensure the work meets NB Building Code requirements.

---

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

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

[View all contractors ?](#)

---

Q9

## What is the best caulk or sealant for air sealing in cold NB climates? | Insulation IQ?

Choosing the right caulk or sealant for air sealing in New Brunswick isn't one-size-fits-all — the best product depends on the joint type, the surrounding materials, whether the application is interior or exterior, and whether fire protection is required. Using the wrong product in a cold climate like Zone 6 can mean premature failure, cracking, and air leakage that returns within a few years.

**Acoustical sealant** (also marketed as acoustic caulk or resilient sealant) is arguably the most important product for interior air sealing work, and it's widely underused by homeowners. Unlike standard latex caulk, acoustical sealant **never fully hardens** — it stays permanently pliable and rubbery throughout its service life. This matters enormously in NB because wood framing expands and contracts with seasonal humidity and temperature swings, and any air seal that bridges a wood-to-poly or wood-to-drywall joint must flex without cracking. Acoustical sealant is the product of choice for sealing the perimeter of 6-mil poly vapour barriers, around electrical boxes before drywall, and at partition wall bottom plates. It's not glamorous, but properly applied it can last the life of the building. Brands like **Tremco Acoustical Sealant** are the industry standard. Cost is roughly \$10–\$18 per tube.

**Low-expansion polyurethane foam** (one-component, available in straw cans or gun cans) is the go-to product for gaps that are too large for caulk — typically 3/8 inch and up — around pipes, wires, conduit, and structural penetrations. For cold-climate applications, choose products rated for use at low temperatures; some foams cure poorly below 5 degrees Celsius. In the NB climate where attics and crawlspaces can be extremely cold in winter, use **gun-grade foam with a slow cure rate** if you're working in cold conditions, or do this work in shoulder seasons when temperatures are above freezing. Foam compresses and expands with temperature, so overfilling a joint can cause buckling — use low-expansion formulas around window and door frames specifically. Cost: \$8–\$15 for straw cans, \$25–\$50 for gun cans with nozzle extenders.

**Silicone caulk** is the best choice for exterior penetrations exposed to weather — around hose bibs, dryer vents, exterior conduit penetrations, and where siding meets trim. Pure silicone has superior adhesion, UV resistance, and temperature performance compared to latex, remaining flexible from roughly -50 to +200 degrees Celsius. **100% silicone** is recommended over silicone-latex blends for exterior NB applications. The downside is that silicone cannot be painted and is messier to work with than latex. Cost is \$10–\$20 per tube.

**Paintable latex or acrylic-latex caulk** is appropriate for interior finishing joints — where trim meets drywall, around window and door casings on the interior, and any interior joint that will be painted. Modern acrylic-latex formulations with silicone additives ("siliconized acrylic") have better flexibility than plain latex and are paintable within an hour. However, they should not be used as a primary air barrier seal in high-movement or critical locations — they're a finishing product, not a primary air sealant. Cost: \$5–\$12 per tube.

**Intumescent fire-stop caulk** is a non-negotiable product where any pipe or wire passes through a **fire-rated assembly** — at the joist space around plumbing stacks, around any penetration through a foundation sill, or near a furnace room. In NB building code compliance (aligned with the National Building Code), fire-stopping at

penetrations through fire-rated assemblies is mandatory. Intumescent caulk chars and expands when exposed to heat, sealing the gap and slowing fire spread. It is **not interchangeable with regular caulk** — you must use it in fire-rated locations. Brands like **3M Fire Barrier Caulk** or **Hilti CP 606** are commonly used by insulation contractors in NB. Cost is \$20–\$35 per tube.

**Butyl rubber sealant** is a specialty product sometimes used for sealing around window and door rough openings during sheathing installation, or for flashing tape backing. It has very aggressive adhesion and remains flexible, making it useful for sealing the gap between house wrap and window frames before exterior cladding. Cost is \$15–\$25 per tube.

For **the most common NB homeowner air sealing project** — sealing the attic floor before adding blown insulation — you'll want: acoustical sealant for the poly-to-framing connections, low-expansion gun foam for pipe and wire penetrations, and fire-stop caulk for the plumbing stack penetrations. This combination, applied carefully before blown cellulose or fibreglass insulation goes in, dramatically reduces attic air infiltration.

Professional insulation contractors typically carry all of these products and know from experience which to apply where. If you're planning a DIY air sealing project in your Moncton, Fredericton, or Saint John home, the qualified professionals at **New Brunswick Insulation** can recommend the right products for your specific assembly or perform the work to meet NB Building Code requirements.

---

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

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

[View all contractors ?](#)

## Does my Saint John home need a vapour barrier on exterior walls? | Insulation IQ?

The short answer is: **almost certainly yes**, especially if your Saint John home has wood-framed walls with batt insulation and you're working from the interior. But the fuller picture involves understanding what a vapour barrier actually does, where it goes, and when alternatives might perform better in Saint John's specific climate.

Saint John sits in **Climate Zone 6** under the National Building Code of Canada framework, with a heating season that regularly produces interior-to-exterior temperature differentials of 30 degrees Celsius or more during the coldest weeks of January and February. When warm, humid indoor air — at, say, 21 degrees and 35–50% relative humidity — contacts the cold sheathing or exterior cladding of a wall without a vapour retarder in place, the moisture in the air can condense within the wall cavity. This interstitial condensation is the enemy of wall assemblies: it saturates insulation (reducing its R-value), promotes mould growth, and causes long-term rot in structural framing.

The **NB Building Code** (which adopts the National Building Code with provincial amendments) requires a **vapour barrier on the warm-in-winter side** of insulation in exterior walls. For the vast majority of Saint John homes, that means a **6-mil polyethylene sheet** installed on the interior face of the stud cavity, directly behind the drywall. This is the "Class I vapour retarder" approach and has been the standard since the 1970s.

For a **standard 2x6 wall assembly** in Saint John — 2x6 studs at 16 inches on centre, R-20 or R-22 fibreglass or mineral wool batts, 6-mil poly, then drywall — this is the correct and code-compliant approach. Materials cost for 6-mil poly is minimal (roughly \$0.05–\$0.10 per square foot), and when properly installed with taped seams and sealed penetrations, it performs reliably for decades. Total labour and materials to vapour barrier and air seal a typical 1,500-square-foot Saint John home during a renovation typically runs \$900–\$2,000.

However, **where and how you insulate changes the calculation**. Saint John sees more precipitation and higher coastal humidity than inland NB cities like Fredericton — this affects both the heating and cooling seasons. Two assembly types warrant specific consideration:

**Exterior rigid foam insulation:** If you're adding continuous rigid foam board to the exterior of your Saint John home (a common deep-energy retrofit approach), the foam moves the dew point outward toward the exterior face of the foam, keeping the wall cavity warmer. If the foam layer is thick enough — at least R-7.5 for a 2x6 wall in Zone 6, or roughly 1.5 inches of polyiso — the sheathing stays warm enough that condensation risk is eliminated, and you may not need interior poly at all. In this case, a **vapour-permeable smart membrane** like MemBrain allows the wall assembly to dry inward during summer while still blocking vapour drive in winter. This is increasingly the preferred approach for high-performance retrofits.

**Closed-cell spray foam in wall cavities:** If you're using two-component closed-cell spray polyurethane foam (SPF) to fill your wall cavities, the foam itself acts as both insulation and vapour retarder. Closed-cell SPF has a perm rating well below 1 perm at 2 inches of thickness, making it a Class II vapour retarder. In this case, a separate 6-mil poly layer may be redundant — though many contractors still install it as belt-and-suspenders, particularly in a coastal city like Saint John where humidity management is important.

**For most Saint John homeowners** dealing with a standard renovation or new construction — wood framing, batt insulation, working from the interior — the answer is clear: **install the 6-mil poly**. Do not skip it. Install it on the warm-in-winter side (interior face of the wall cavity), tape all seams with acoustical sealant or poly tape, and seal every electrical box, pipe penetration, and partition wall intersection. The investment is small, the protection is substantial, and the NB Building Code requires it.

If you're undertaking an exterior insulation upgrade or spray foam project and want to understand how vapour control interacts with your specific wall assembly, a qualified insulation professional can model the dew point and recommend the right approach. The professionals listed through **New Brunswick Insulation** and the **New Brunswick Construction Network** are familiar with Saint John's coastal climate conditions and can ensure your wall assembly performs correctly for the long term.

---

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

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

[View all contractors ?](#)

---

**Q11**

## **Can too much air sealing cause indoor air quality problems in NB homes? | Insulation IQ?**

Yes, and this is one of the most important questions any New Brunswick homeowner can ask before starting a serious air sealing project. The short answer is: **a very tightly sealed home without a deliberate mechanical**

**ventilation strategy can absolutely develop indoor air quality problems.** This is not a reason to avoid air sealing — it is a reason to air seal properly and plan for ventilation at the same time.

The concept is captured in the building science phrase "**build tight, ventilate right.**" In older NB homes, particularly the leaky post-war bungalows common in Fredericton's north end or the drafty century homes in Saint John's south end, the building envelope was so porous that fresh outdoor air was constantly infiltrating through walls, floors, and attic bypasses. This uncontrolled air movement was miserable — it caused cold drafts, ice damming, sky-high NB Power bills — but it did incidentally dilute indoor pollutants. When you seal all those pathways without adding controlled ventilation, you can trap **moisture, volatile organic compounds (VOCs), combustion byproducts, radon, and carbon dioxide** inside the living space.

**Moisture** is the most immediate concern in New Brunswick's climate. Climate zone 6 means cold winters with interior humidity from cooking, bathing, and breathing. In a leaky house, that moisture escaped. In a tight house, it accumulates — leading to condensation on cold surfaces, elevated relative humidity, and eventually **mould growth**, which is a serious health hazard. The NB Building Code and ASHRAE 62.2 both recognize that controlled ventilation is required once a house reaches a certain level of air tightness.

**Radon** is the second major concern specific to New Brunswick. Parts of the province, particularly areas underlain by granite bedrock common around Fredericton and portions of the Saint John River valley, have elevated radon potential. Health Canada's residential guideline is 200 Bq/m<sup>3</sup>. A tight house without sub-slab depressurization can concentrate radon to dangerous levels. If you are air sealing a basement in these areas, radon testing before and after is strongly advised.

**Combustion appliances** present another risk. Natural gas furnaces, oil boilers, wood stoves, and fireplaces all need combustion air. In a very tight house, a drafty old oil furnace may backdraft — pulling flue gases, including **carbon monoxide**, back into the living space instead of exhausting them. This is a life-safety issue. Any serious air sealing project should include an assessment of all combustion appliances and, where needed, ensure they are either direct-vented (sealed combustion) or that dedicated combustion air intakes are provided.

The practical solution for most NB homeowners is to pair aggressive air sealing with a **Heat Recovery Ventilator (HRV)**. An HRV continuously supplies fresh outdoor air and exhausts stale indoor air, recovering 70–80% of the heat energy in the process. This maintains excellent indoor air quality without the energy penalty of simply opening a window all winter. HRV installation typically costs \$1,500–\$3,000 in New Brunswick, and the equipment itself qualifies under **NB Power's Home Energy Savings Program** and may contribute to Canada Greener Homes Grant eligibility.

The NB Building Code (adopting NBC 2015 with provincial amendments) requires mechanical ventilation in new construction once air tightness targets are established. For older homes undergoing deep energy retrofits, the same

logic applies even if it is not always explicitly enforced. A **blower door test** — which pressurizes the house to measure air changes per hour at 50 pascals (ACH50) — tells you exactly how tight your home is and guides how urgently an HRV is needed. Most energy auditors working in Moncton, Fredericton, and Saint John offer blower door testing as part of an EnerGuide evaluation.

In summary: **excessive air sealing without mechanical ventilation can degrade indoor air quality**, but the solution is not to leave gaps in your building envelope. It is to seal deliberately, test with a blower door, install an HRV, and test for radon. Done correctly, a tight, well-ventilated New Brunswick home will have far better air quality than the draughty, pollutant-harboring alternative.

If you are planning a whole-home air sealing project in New Brunswick, connecting with an experienced local insulation contractor through **New Brunswick Insulation** or the **New Brunswick Construction Network** can help you find professionals who understand the climate zone 6 requirements and will design the ventilation strategy alongside the sealing work.

---

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

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

[View all contractors ?](#)

---

**Q12**

## **How do I air seal a dropped ceiling or soffit in my Oromocto home? | Insulation IQ?**

Dropped ceilings and interior soffits are among the most significant hidden air leakage pathways in New Brunswick homes, and they are surprisingly common in the split-levels, raised bungalows, and 1970s-era homes that dominate Oromocto and the surrounding military community. Addressing them properly requires getting into the attic and treating these cavities as the major thermal and air bypasses they really are.

To understand why dropped ceilings are such a problem, you need to visualize what they are structurally. A **dropped ceiling** — whether it conceals HVAC ductwork, pipes, or simply a builder's desire for a different roofline — creates a horizontal framing cavity that typically connects the finished room below to the open attic space above. The sides of the cavity are framed with 2×4 lumber, and the top is often just open to the attic or covered only with drywall that was never sealed. Every wire, pipe, and framing gap becomes a direct path for warm, moist interior air to bypass the insulation and reach the cold attic deck. In Oromocto winters — where temperatures regularly fall to -20°C or colder — this means concentrated moisture deposition, frost, ice damming on the roof, and dramatically elevated heating costs.

The correct approach is to treat the **top of the soffit or dropped ceiling as a critical air barrier plane**. Here is how to do it properly:

**Step 1 — Access the attic and locate the cavity.** From the attic, you will see framed walls or box soffits rising up from the ceiling plane below. The open top of these cavities must be completely sealed before any insulation is added.

**Step 2 — Seal all penetrations in the side walls and top plate.** Using **acoustical sealant (acoustic caulk)** or **low-expansion spray foam**, seal every electrical wire, plumbing stack, and framing gap that penetrates the top plate of the dropped wall. Pay particular attention to pot light openings if IC-rated lights were installed in the soffit ceiling — these are notorious leakage points. For gaps larger than about 3/4 inch, use rigid mineral fibre or rigid foam board strips as backing before foaming.

**Step 3 — Install a rigid air barrier over the open top.** Cut pieces of **rigid foam board (XPS or polyisocyanurate)** or drywall to fit across the entire top of the soffit cavity. XPS is preferable for its moisture resistance in the cold attic environment. Fasten it firmly and tape all seams with **acoustical sealant or high-quality polyethylene tape** rated for cold-temperature application (standard contractor tape fails at -10°C). Every seam, every edge, every gap must be sealed — even a small gap allows warm air to bypass the entire assembly.

**Step 4 — Insulate inside the cavity.** With the top now air-sealed, fill the interior of the dropped ceiling cavity with **batt insulation** to at least the minimum RSI value required by the NB Building Code — for attic assemblies, RSI 8.6 (R-49) for new construction, though RSI 5.28 (R-30) is a common retrofit target. In an existing home, adding dense-pack cellulose or mineral fibre into the cavity from above before capping it is an effective approach.

**Step 5 — Extend attic insulation over the top.** After the cavity is capped, the attic insulation should run continuously over the top of the sealed soffit. There should be no thermal bridge created by the framing.

For **kitchen soffits** — the built-out boxes above upper cabinets common in 1970s–1980s homes throughout Oromocto and CFB Gagetown-era housing — the same approach applies, but access is usually from the attic side only. These are often left completely open to the attic and represent a substantial air leakage and heat loss

pathway.

Costs for this type of work in New Brunswick depend on attic accessibility and the number of soffits. A straightforward attic air sealing project covering dropped ceilings and bypasses typically costs **\$800–\$2,500** in the Oromocto and Fredericton area, and it consistently ranks as one of the highest-return air sealing measures available. NB Power's **Home Energy Savings Program** may provide rebates when this work is done as part of a full EnerGuide audit-and-retrofit pathway.

For accurate scoping and a quote, speak with a qualified insulation contractor familiar with Oromocto's housing stock. The **New Brunswick Construction Network** lists vetted insulation professionals serving the Fredericton and Oromocto area.

---

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

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

[View all contractors ?](#)

---

## What is the NB Building Code requirement for vapour barriers in new construction? | Insulation IQ?

New Brunswick has adopted the **National Building Code of Canada (NBC) 2015** with provincial amendments, and its vapour barrier requirements for new residential construction reflect the demands of a climate zone 6 heating environment. Understanding these requirements is essential for any builder, general contractor, or homeowner overseeing new construction in Moncton, Fredericton, Saint John, or anywhere else in the province.

The core requirement is found in **NBC Part 9 (Housing and Small Buildings), Section 9.25 — Heat Transfer, Air Leakage and Condensation Control**. For walls in climate zone 6 — which covers all of New Brunswick — the code requires a **vapour barrier with a maximum permeance of 60 ng/(Pa·s·m<sup>2</sup>)**, which corresponds to **6-mil (0.15 mm) polyethylene sheeting** or an equivalent product. This is the material most commonly used on the warm-in-winter side of wall and ceiling assemblies in NB new construction.

**Placement is critical.** The vapour barrier must be installed on the **warm side of the insulation** — meaning the interior side of walls and ceilings in New Brunswick's heating-dominated climate. This placement ensures that warm, moisture-laden indoor air encounters the vapour barrier before it can diffuse into the colder insulation layers, where it would condense and cause mould, rot, and insulation degradation.

For **exterior walls**, the 6-mil poly is typically installed over the interior face of the stud cavity after batt insulation is placed, and before drywall is hung. All seams must overlap by a minimum of **300 mm (12 inches)** and be lapped over a structural member where possible, or sealed with acoustical sealant where they fall mid-span. Penetrations — every electrical outlet, switch box, plumbing pipe, and light fixture — must be **sealed with acoustical caulk** using an airtight box or a sealed poly membrane wrapped around the box. The NBC and good building science both treat the vapour barrier as an **air barrier** as well as a moisture barrier, so quality of installation matters enormously.

For **attic assemblies with insulation at the ceiling level**, the vapour barrier is installed across the ceiling plane, again on the warm interior side. Seams are lapped and sealed, and particular care is taken at the **top plate** — the most vulnerable location where the wall vapour barrier must be lapped and sealed to the ceiling vapour barrier continuously. Gaps at this junction are responsible for a large proportion of moisture problems in New Brunswick attics.

For **cathedral ceilings** and other compact roof assemblies, the approach differs. Because there is no ventilated attic cavity, the assembly must either rely on sufficient insulation outboard of the sheathing to keep the sheathing warm enough to prevent condensation (eliminating the need for interior vapour control), or use a well-detailed interior vapour barrier. The **2:1 ratio rule** under NBC guidance requires that at least 2/3 of the total R-value be outboard of the vapour barrier location in cold climate assemblies — this is a critical design consideration for

builders using hybrid assemblies with rigid foam and batts.

For **concrete or masonry foundation walls** that are insulated from the interior, the vapour barrier placement rule is the same — warm-side interior — but in practice, many builders and building scientists now recommend **vapour-permeable assemblies** on below-grade walls, because foundation walls can wet from both the exterior (soil moisture, bulk water) and the interior. A Class III vapour retarder (latex paint on drywall) rather than 6-mil poly is often preferred for basement walls, though this varies by design. The NBC allows some design flexibility here.

The **R-value minimums** mandated by the NB Building Code for new construction are: attic RSI 8.6 (approximately R-49), above-grade walls RSI 3.85 (approximately R-22 effective), and basement walls RSI 2.78 (approximately R-16). These minimums interact with vapour barrier placement — the higher the R-value in the wall, the warmer the vapour barrier plane remains in winter, reducing condensation risk.

For builders and contractors in New Brunswick, **Technical Safety NB** and the provincial Department of Justice and Public Safety administer Building Code compliance. Building permits in Moncton, Fredericton, and Saint John each have municipal building officials who inspect vapour barrier installation during framing inspections.

For expert guidance on vapour barrier specification and installation in NB new construction, the professionals listed on **New Brunswick Insulation** and the **New Brunswick Construction Network** have hands-on experience with provincial code requirements.

---

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

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

[View all contractors ?](#)

---

**Q14**

## **Should I seal the vapour barrier to the foundation wall in a NB basement? | Insulation IQ?**

This question gets at one of the more nuanced points in residential building science — the answer depends on whether you are working on a **poured concrete wall with a polyethylene vapour barrier system** or a different type of assembly, and it matters considerably in New Brunswick's climate zone 6 context.

Let's start with the most common scenario: a homeowner in Moncton, Fredericton, or Saint John finishing a basement, with a poured concrete or concrete block foundation wall, adding interior framing and insulation. The instinct to connect the wall vapour barrier to the ceiling and floor vapour barriers continuously seems logical — keep all the warm interior air sealed away from cold surfaces. **In principle this is correct, but in practice it requires careful thought about foundation wall moisture dynamics.**

Concrete and concrete block foundation walls are **hygroscopic** — they absorb and release moisture from both the exterior soil side and the interior. Unlike an above-grade wood-framed wall, which is designed to stay relatively dry, a foundation wall in New Brunswick regularly experiences ground moisture, spring melt, and capillary wicking from the footing. If you seal a **6-mil polyethylene vapour barrier tightly to the foundation wall** — sandwiching insulation between the poly and the concrete — you create an assembly where any moisture that enters the wall from the exterior has nowhere to go. It accumulates behind the poly, stays in contact with wood framing members (if any are touching the concrete), and creates ideal conditions for **mould and rot**.

This is why the **most widely recommended approach for NB basement walls today** is to use **rigid foam insulation (XPS or EPS)** fastened directly to the concrete face, followed by a stud wall framed with a small gap off the concrete, and then **no polyethylene vapour barrier on the interior side**. Instead, the kraft-facing on any batt insulation, or a coat of latex paint on the finished drywall, provides adequate Class III vapour retardancy. This allows the wall assembly to **dry inward** if moisture enters from the exterior, which is essential for long-term durability.

That said, **the ceiling vapour barrier should absolutely lap down over the top of the wall assembly** by a minimum of 150–300 mm, and should be sealed with **acoustical sealant** to prevent warm interior air from moving down behind the wall framing — this is an air sealing issue more than a vapour control issue. Warm, moist interior air infiltrating behind the insulation will condense on the cold concrete regardless of what vapour retarder strategy you use for diffusion control.

**If your basement assembly uses fibreglass batts in framing built directly against the concrete wall**, the vapour barrier situation changes. In this older (and now discouraged) assembly style, the poly does need to run continuously from ceiling to floor to prevent warm interior air from contacting the cold concrete behind the batts. However, this assembly is prone to failure regardless because it allows no drying. If you are retrofitting this type of basement in a Saint John or Fredericton home, consider replacing the batt-against-concrete assembly with rigid foam against the concrete and a service-cavity stud wall.

For the **floor-wall junction**, the vapour barrier treatment depends on whether the slab has a sub-slab vapour barrier. In new construction under the NB Building Code, a 6-mil poly under the slab is required (NBC 9.16.2). If it is present, connecting the wall and floor vapour barriers is a clean air-sealing detail. In older homes without sub-slab poly, the slab itself is often damp, and covering it with poly should be done carefully to avoid trapping moisture under any finished flooring.

Costs for properly detailing basement insulation and vapour control in New Brunswick typically run **\$3,000–\$8,000** for a standard full-basement retrofit, depending on square footage, wall height, and the complexity of the assembly chosen. NB Power's **Home Energy Savings Program** provides rebates for qualifying basement insulation improvements when completed after an EnerGuide audit, and the **Canada Greener Homes Grant** (for existing homeowners) includes basement wall insulation as an eligible measure.

If you are unsure which approach suits your specific foundation type and basement conditions, an insulation contractor experienced with NB's climate zone 6 requirements can assess your situation. The **New Brunswick Construction Network** and **New Brunswick Insulation** are good starting points for finding qualified professionals in your area.

---

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

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

[View all contractors ?](#)

---

**Q15**

## How do I air seal my attic hatch or pull-down stairs in Quispamsis? | Insulation IQ?

The attic hatch and pull-down stair opening are two of the most notorious air leakage points in any New Brunswick home — and they are particularly overlooked because they sit in a closet or hallway and are easy to ignore. In Quispamsis and the broader Kennebecasis Valley area, where homes range from 1970s-era split-levels to newer

two-storey builds, addressing these openings is one of the highest-return air sealing tasks a homeowner can undertake. The energy penalty is real: an unsealed attic hatch can leak as much air as leaving a small window open all winter.

The reason both fixtures are so problematic is straightforward. The **attic hatch frame and pull-down stair box** create a large rectangular gap between the warm conditioned space and the cold attic. There is typically no insulation on the back of the hatch cover, no weatherstripping on the frame, and — critically — no air seal preventing the warm interior air from rising through every crack around the perimeter. In climate zone 6 conditions typical of Quispamsis (-25°C design temperature), this uncontrolled air flow carries enormous amounts of heat and moisture into the attic, contributing to ice dams on the roof and elevated NB Power heating bills.

### **Attic Hatch Air Sealing**

For a simple plywood or drywall **attic hatch**, the fix has two components: **insulation on the back of the hatch cover** and **weatherstripping on the frame**. On the back of the cover, glue or mechanically fasten rigid foam insulation — **polyisocyanurate (polyiso) or XPS** — to achieve at least RSI 5.28 (R-30), which matches a reasonable attic insulation target for NB retrofits. Polyiso boards at 3 inches thick give approximately R-18; stacking layers gets you to target. The rigid foam should be fully adhered and the edges sealed with foil tape.

Around the perimeter of the hatch frame, install **compression weatherstripping** — either a foam-type or a v-strip profile rated for repeated use. The hatch needs to compress the weatherstripping fully when closed; if the hatch is warped or the frame is uneven, the weatherstripping cannot seat properly. A **latch mechanism** or hook-and-eye closure holds the hatch firmly closed against the weatherstripping compression.

For a cleaner, more durable solution, prefabricated **attic hatch insulation covers** (sometimes called attic tents or attic hatch covers) are available. These are rigid insulated boxes that sit over the hatch from the attic side, with a compressible foam perimeter seal that rests on the ceiling drywall. Products like the Battic Door brand are available through building supply retailers serving the Saint John and Fredericton markets. These typically achieve R-30 to R-50 equivalent and include built-in weatherstripping. Cost is roughly **\$150–\$350** installed.

### **Pull-Down Stair Air Sealing**

The **pull-down stair (attic ladder)** is a much larger challenge. A standard 54" × 27" rough opening represents a significant thermal breach, and the unit itself — a hinged frame with folding wooden or aluminum ladder sections — has virtually no insulation value and seals poorly even when new. Older units in Quispamsis homes have deteriorated foam or felt weatherstripping that long ago stopped functioning.

The best solution is a **rigid foam insulation box built to fit over the pull-down stair unit from the attic side**. This is essentially a site-built or prefabricated insulated enclosure — typically framed with rigid foam board (2" polyiso on all six sides) with taped joints and a foam-sealed perimeter where it rests on the ceiling drywall. The box

lifts off from inside the attic when you need access and seals firmly with foam compression against the ceiling plane when closed. A well-built box achieves **R-20 to R-30** over the entire opening and dramatically reduces air leakage.

Prefabricated pull-down stair insulation covers are available (Battic Door and similar brands) at roughly **\$250–\$500** for the product, with installation adding \$150–\$300 for a local contractor in the Quispamsis area. DIY foam board fabrication runs around \$80–\$150 in materials.

The **replacement option** — swapping the existing pull-down stair for a modern insulated unit — costs \$600–\$1,200 for product and installation, but is worth considering if the existing unit is worn or the frame is rotted.

Either approach to these openings is eligible for credit toward **NB Power's Home Energy Savings Program** when done as part of a full EnerGuide-audited retrofit. If you are unsure how significant your attic hatch leakage is, an energy auditor can run a blower door test and confirm the air leakage contribution before you invest in materials.

For qualified insulation and air sealing help in Quispamsis and the greater Kennebecasis Valley area, **New Brunswick Insulation** and the **New Brunswick Construction Network** connect homeowners with experienced local professionals.

---

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

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

[View all contractors ?](#)

## Can I use spray foam as both insulation and air barrier in my NB home? | Insulation IQ?

Yes — and in New Brunswick's climate zone 6, this dual-purpose capability is one of the most compelling reasons contractors and energy-conscious homeowners reach for **closed-cell spray polyurethane foam (ccSPF)**. When properly applied, closed-cell spray foam simultaneously fills every crack and void in the assembly, becomes the **air barrier**, and delivers high R-value insulation — all in a single product and a single trade visit.

The NB Building Code (which adopts the National Building Code of Canada) requires a **continuous air barrier system** on the warm side of the thermal envelope. Spray foam satisfies this requirement because, once cured, it bonds rigidly to studs, joists, concrete, and masonry, eliminating the discrete sealing steps that other insulation types demand. **Open-cell spray foam (ocSPF)**, by contrast, is vapour-permeable and does not function as a vapour retarder, which means you'd still need a separate poly vapour barrier on the interior in most New Brunswick wall assemblies. Closed-cell foam at sufficient thickness — typically a minimum of **2 inches (R-14)** — is classified as a Class II vapour retarder and can eliminate the need for a separate 6-mil poly sheet in many applications.

In practical terms, this matters enormously in places like Fredericton and Edmundston, where outdoor temperatures can sit at  $-25^{\circ}\text{C}$  for weeks at a time. Any gap in the air barrier allows warm interior air to migrate into the wall cavity, where it cools below the **dew point** and deposits moisture on cold framing. Over years, that moisture fuels mould, rot, and degraded insulation performance. Closed-cell foam's seamless, rigid skin makes those pathways physically impossible.

For **attic applications**, spray foam applied directly to the underside of the roof deck converts a vented attic to a **conditioned unvented attic assembly**. This is increasingly popular in NB renovations because it brings HVAC equipment, ductwork, and the air handler inside the conditioned envelope — a significant efficiency gain when those systems are located in the attic. The NBC has specific requirements for unvented assemblies; the foam must meet minimum thickness thresholds calculated from the local design temperature to ensure the **condensation plane** falls within the foam, not in the wood decking.

Cost-wise, closed-cell spray foam runs approximately **\$2.50–\$4.50 per board foot** installed in New Brunswick, making it the most expensive per-R-value option on the market. A 2-inch lift over a 1,500 sq ft attic deck can cost \$8,000–\$15,000 depending on accessibility and contractor pricing. Open-cell foam is roughly half that cost but, again, requires the separate vapour control layer and doesn't deliver the structural rigidity or the moisture resistance of closed-cell.

**Where spray foam excels as a combined air barrier/insulation:**

- Rim joists and band joists, where air leakage rates in older NB homes are typically very high
- Cathedral ceilings with no room for ventilation channels
- Crawl space walls and rim joists when converting to a conditioned crawl space
- Irregularly shaped cavities around pipes, chases, and structural members
- Older Saint John or Moncton homes with balloon framing, where traditional batts can't stop air movement through open stud bays

**Where caution is warranted:** spray foam is permanent. If wiring, plumbing, or structural members behind the foam ever need service, removal is destructive and expensive. Some older roof decks in New Brunswick have marginal structural capacity, and the added dead load of foam (especially closed-cell, which is dense) should be reviewed by a designer. There are also **off-gassing concerns** during the first 24–72 hours after application; occupants must vacate the space until the foam has fully cured.

For most NB homeowners, the ideal strategy is **targeted use of closed-cell foam** at the highest-leakage locations — rim joists, transitions, penetrations, and complex geometries — combined with more cost-effective insulation like blown cellulose or fibre glass batts in the field areas. This hybrid approach delivers excellent air control where it matters most without the cost of foam everywhere.

If you're planning a full-envelope upgrade and want to understand whether a foam-based air barrier strategy makes sense for your specific home, a certified energy adviser's **EnerGuide audit** will identify your biggest leakage points and guide the investment. New Brunswick Insulation professionals listed on the **New Brunswick Construction Network** can advise on the right product mix for your assembly type and budget.

---

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

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

[View all contractors ?](#)

## How do I know if my New Brunswick home has adequate air sealing? | Insulation IQ?

Most New Brunswick homeowners don't know their home has an air sealing problem — they just know it feels drafty in January, their heating bills seem high, and some rooms are never quite comfortable no matter how the thermostat is set. The connection between those symptoms and **air leakage through the building envelope** often goes undiagnosed for years, quietly costing hundreds of dollars per winter.

The definitive test is a **blower door test**, performed by a certified energy adviser as part of an **EnerGuide home evaluation**. A blower door is a calibrated fan mounted in an exterior door frame that depressurizes the house to a standard 50 Pascals of pressure differential. The machine measures how much air is flowing through the fan to maintain that pressure — the higher the flow, the leakier the house. Results are reported in **ACH50** (air changes per hour at 50 Pa) or **ELA** (equivalent leakage area). In New Brunswick's climate zone 6, new homes built to the NBC 9.36 energy efficiency requirements must achieve **3.5 ACH50 or better**, and homes qualifying for the **Canada Greener Homes Grant** need to demonstrate improvement toward or below **5.0 ACH50** in a before-and-after test sequence.

Older homes in Moncton, Fredericton, or Saint John commonly test at **8–15 ACH50**, meaning the entire air volume of the house is replaced by cold outdoor air 8 to 15 times every hour when the wind is blowing at pressure. Translated into practical terms: that's roughly equivalent to leaving a window open all winter.

Beyond the formal blower door test, there are **observable signals** that point to inadequate air sealing:

**Ice dams** forming on the eaves after snowfall are almost always an air sealing problem at the attic floor. Warm air escaping through gaps around pot lights, attic hatches, top plates, and electrical boxes heats the underside of the roof deck, melting snow that then refreezes at the cold eave overhang. Fredericton and Edmundston homeowners see this frequently after freeze-thaw cycles.

**Frost or condensation on interior surfaces**, particularly on the upper sections of exterior walls or around window frames in winter, signals that moist interior air is reaching cold surfaces — a clear sign the air barrier is not continuous. This is also a precursor to mould growth inside the wall cavity.

**Visible daylight or cold air** around electrical outlets on exterior walls, around the baseboards on above-grade walls in older homes with plank sheathing, or through attic access hatches are direct air leakage paths.

**High heating bills relative to comparable homes.** NB Power's online energy usage portal lets you compare your consumption year-over-year. If your home consistently uses 20–40% more energy than a similar-sized home built post-2010 in your area, air leakage is usually a significant part of the explanation.

**The smoke pencil or incense test** is a simple DIY diagnostic on a cold, windy day. Turn on all bathroom and kitchen exhaust fans to depressurize the house slightly, then hold a stick of incense near suspect locations — electrical outlets, where walls meet the ceiling, around window and door frames, at the base of exterior walls. Smoke that pulls toward the surface or is deflected by incoming air identifies the leak.

Common **high-leakage locations** in New Brunswick homes include: recessed lighting fixtures in attic floors (each unsealed pot light is roughly a 2-inch hole through the air barrier), **rim joists** at foundation level where the floor framing meets the foundation wall, attic access hatches (often just a bare piece of plywood with no weatherstripping), **top plate penetrations** for wiring and plumbing, and in older homes with balloon framing, open stud bays that run from basement to attic without any barrier.

If your home was built before 1985 and has never had an air sealing upgrade, it almost certainly fails modern standards. The original poly vapour barriers installed in NB homes of that era were often torn, improperly lapped, or terminated with staples rather than acoustic sealant — they provided some vapour control but minimal air barrier function.

The good news is that targeted air sealing is often the **highest-ROI upgrade** available to NB homeowners. Sealing the rim joist, attic floor bypasses, and recessed lights alone can reduce heating costs by 10–20% in many homes. When combined with NB Power's **Home Energy Efficiency Program** rebates and the federal **Canada Greener Homes Grant** (up to \$5,600 for qualifying retrofits), the payback period on a comprehensive air sealing project is frequently under five years.

A qualified energy adviser from the **New Brunswick Construction Network** directory can arrange a blower door test and produce a prioritized retrofit plan specific to your home.

---

**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 ?](#)

## What causes condensation on windows in insulated New Brunswick homes? | Insulation IQ?

Condensation on windows is one of the most common complaints from New Brunswick homeowners after an insulation upgrade — and it's frequently misdiagnosed as a window defect or a sign that the new insulation is "not working." In most cases it is neither. Understanding what's actually happening requires a quick review of the physics of **moisture and dew point** in a cold-climate building.

When warm, humid interior air contacts any surface cooled below its **dew point temperature**, the moisture in the air condenses into liquid water on that surface. Windows — even good double- or triple-pane units — are almost always the coldest interior surface in a New Brunswick home during winter because glass conducts heat far more readily than an insulated wall. In Fredericton or Moncton, a standard double-pane window has an effective centre-of-glass R-value of roughly **R-2 to R-3**. A well-insulated wall beside it might be R-22 to R-30. The window surface temperature in a -20°C night can easily drop to 5–8°C at the interior face — cold enough to condense moisture from air at normal indoor humidity levels.

**Why does insulation seem to make the problem worse?** Before an insulation upgrade, heat moved relatively freely through the walls and ceiling, keeping surfaces warmer and also drying out the house by drawing conditioned air in and out constantly through leaks. After air sealing and insulating, the house retains more of the moisture generated by occupants — cooking, bathing, breathing, houseplants, and even fresh concrete or lumber in newer homes all add litres of moisture to the interior air daily. A family of four generates approximately **8–12 litres of moisture per day** through normal activity. If that moisture can't escape and accumulates in the interior air, the **relative humidity** rises and condensation begins appearing on the coldest available surfaces: window glass, window frames, and sometimes exterior wall corners.

This is a healthy sign that the air sealing is working — but it also flags a need for **controlled ventilation**. The NBC requirement for mechanically ventilated homes (particularly airtight new or retrofitted homes) is specifically designed to address this: a **Heat Recovery Ventilator (HRV)** or Energy Recovery Ventilator (ERV) continuously exhausts stale, humid interior air and replaces it with fresh outdoor air, recovering 70–85% of the heat energy in the process. Without this mechanical exchange, a well-sealed NB home accumulates humidity to the point where window condensation is predictable and **mould growth inside wall cavities** becomes a real risk.

**Surface condensation vs. interstitial condensation** is an important distinction. Condensation you can see on the glass is a nuisance and can damage window sills, paint, and casings, but it's visible and manageable. **Interstitial condensation** — moisture depositing inside the wall assembly where you can't see it — is the more serious problem and eventually produces mould, rot, and structural degradation. A continuous **vapour retarder** (the 6-mil

poly sheet behind the drywall in most NB homes) is supposed to prevent warm humid air from reaching the cold sheathing layer, but any penetration, gap, or improperly lapped seam lets moisture migrate inward.

Specific causes of increased window condensation in recently insulated homes:

**Elevated indoor humidity** from the tighter envelope not being matched with ventilation upgrades. Target indoor relative humidity of **30–40% in winter** for most NB homes. Above 40% RH at -20°C outdoor temperature will produce condensation on standard double-pane windows.

**Thermal bridging at the window frame.** Even if the glazing unit performs well, aluminium or older vinyl frames conduct cold effectively. Interior condensation can be heavier at the frame edges than at the centre of glass — look at the pattern.

**Blocked or absent window convection.** Heavy curtains or cellular blinds closed tightly against windows in winter reduce the natural air circulation that keeps the glass surface temperature up. Keeping blinds slightly open at the bottom and top allows warm room air to circulate across the glass.

**Cooking and bathing practices.** In a tight house, running a bathroom exhaust fan for only five minutes after a shower is often insufficient. NB energy advisers typically recommend running bathroom fans for at least 20–30 minutes after each shower once the house is air-sealed.

The long-term solution is properly **balancing the mechanical ventilation** system to the airtightness level of the home. NB Power offers rebates under its **Home Energy Efficiency Program** for HRV installation, and the **Canada Greener Homes Grant** can contribute up to \$1,000 toward ventilation equipment as part of a broader retrofit package. Professionals listed through the **New Brunswick Construction Network** can assess whether your current ventilation rate is matched to your home's post-upgrade airtightness and humidity load.

---

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

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

[View all contractors ?](#)

## Should I install an HRV after air sealing my home in Edmundston NB? | Insulation IQ?

The short answer is almost certainly yes — and in Edmundston specifically, it's one of the most important decisions you'll make for your home's long-term health and comfort.

Edmundston sits in the Madawaska region of New Brunswick, firmly in **climate zone 6**, with design temperatures regularly reaching  $-30^{\circ}\text{C}$  and heating seasons that stretch from October through April. The combination of extreme cold and an air-sealed envelope creates conditions where a **Heat Recovery Ventilator (HRV)** isn't just a luxury — it's a fundamental component of a healthy, durable building system.

Here's the core issue: **air sealing and ventilation are not opposites — they are partners**. Sealing your home tightly eliminates uncontrolled, random air leakage through cracks and gaps. That uncontrolled leakage was providing some fresh air exchange, but at enormous cost: it brought in cold air at exactly the worst locations, created uncomfortable drafts, deposited moisture inside wall assemblies, and forced your heating system to work much harder than necessary. Air sealing eliminates those problems. But it also means the house no longer self-ventilates. **The moisture and pollutants generated by daily living** — cooking vapours, bathroom humidity, carbon dioxide from breathing, off-gassing from flooring and furnishings, combustion byproducts if you have a gas appliance or wood stove — now have nowhere to go without mechanical assistance.

A **Heat Recovery Ventilator** solves this elegantly. It draws stale, humid indoor air from bathrooms and kitchens, exhausts it outdoors, and simultaneously draws fresh outdoor air into the home through a separate duct — but the two airstreams pass through a heat exchanger core before the outgoing air leaves the building. In Edmundston's climate, a quality HRV recovers **75–85% of the heat** in the outgoing air and transfers it to the incoming fresh air stream. You get full fresh-air ventilation at a fraction of the heating energy cost of simply opening a window.

The **National Building Code of Canada** (adopted by New Brunswick) requires mechanical ventilation in new construction that meets the airtightness requirements of Section 9.36. Practically, this means any NB home brought to below **3.5 ACH50** through air sealing upgrades should have an HRV as part of the system. Even if your home isn't technically below that threshold, any meaningful air sealing work reduces the home's natural ventilation rate, and NB Power's energy advisers consistently recommend HRV installation as part of any comprehensive retrofit package.

**Sizing matters in Edmundston's climate.** The HRV must be correctly sized for your home's floor area and occupancy, and critically — the unit must be rated for **Efficient Heat Transfer at  $-25^{\circ}\text{C}$  ( $-13^{\circ}\text{F}$ )**. Some lower-cost HRV units are not rated for extreme cold and can frost up, triggering defrost cycles that reduce efficiency or even

shut the unit down entirely during the coldest nights. In Edmundston, you want a unit with a **Sensible Recovery Efficiency (SRE)** of at least 75% at -25°C, not just at 0°C where most marketing figures are reported. Brands with strong cold-climate performance track records include Venmar, Lifebreath, and renewAire, among others — but verify the cold-temperature specs on the unit's HVI certification.

**Installation considerations specific to Edmundston:** The HRV's two exterior wall penetrations should be on sheltered sides of the house where possible, as ice and frost accumulation at the intake and exhaust ports is a real operational issue in severe cold. Penetrations should be caulked with sealant rated for extreme temperature cycling, and the exterior hoods should be positioned to minimize snow infiltration. Interior ductwork should be insulated where it runs through unconditioned spaces to prevent condensation on the duct exterior.

**Costs and rebates:** HRV units for a typical NB home (1,500–2,000 sq ft) range from approximately **\$1,200–\$2,500** for the equipment, with installation adding \$800–\$1,800 depending on ductwork requirements. If the home already has a forced-air system, the HRV can often connect to existing ductwork, reducing installation complexity. NB Power's **Home Energy Efficiency Program** offers rebates for HRV installation as part of a qualifying retrofit, and the **Canada Greener Homes Grant** includes ventilation upgrades within its eligible measure list (up to \$600 for HRV, as part of the broader \$5,600 maximum grant). To access both programs, you need a certified energy adviser to conduct an EnerGuide evaluation before and after the work.

**Operational notes for Edmundston winters:** Run your HRV on its lowest continuous setting year-round, and boost it manually during cooking and bathing. Reduce the ventilation rate slightly during the coldest -35°C stretches if your unit shows frost accumulation issues — but don't shut it off entirely, as this causes rapid humidity build-up in the tight envelope. Clean or replace the filter every three months in heating season.

If you're planning air sealing work in Edmundston and want guidance on matching HRV capacity to your actual airtightness level, a qualified insulation and ventilation professional listed through the **New Brunswick Construction Network** can help you sequence the work correctly.

---

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

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

[View all contractors ?](#)

---

**Disclaimer:** This guide is provided for informational purposes only by New Brunswick Insulation. It does not constitute professional advice. Always consult qualified, licensed contractors and your local building authority before starting any insulation project. Information is current as of April 5, 2026 and may change. Visit [newbrunswickinsulation.com](https://newbrunswickinsulation.com) for the latest answers.