OTTAWA INSULATION CONTRACTORS

Materials & R-Values

Cellulose, glass fibre, mineral wool, foam board and spray foam: R-values per inch from Natural Resources Canada and where each is used

5 Expert Answers from R-Value IQ

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Q1

Does foil-faced insulation count toward R-value in Ontario?

Foil-faced insulation boards carry an R-value from the foam or fibre core itself, and that core value counts in Ontario. The foil facing does not add to it.

SB-12, the Code's energy standard for housing, says reflective surfaces do not count toward thermal resistance when calculating compliance for new houses and additions. What the foil does across an air gap is not credited in SB-12's R-value accounting. The number that counts is the core material's rated thermal resistance.

Natural Resources Canada publishes design values per inch for common materials: polyurethane board R-6, extruded polystyrene board R-5, expanded polystyrene Type II R-4, Type I R-3.8. A foil-faced polyurethane board, for example, contributes the R-6-per-inch value of its core toward your wall or ceiling assembly, and nothing more from the foil.

This matters when a contractor quotes a product and its claimed R-value includes a reflective credit. Ask to see the core R-value separately. If the quote is for a new house or addition, the contractor should be able to show how the core value meets the SB-12 package requirement without counting the facing. For an existing home, there is no SB-12 minimum for voluntary upgrades, but the same principle applies: the core value is what you are buying.

One thing worth confirming with the contractor: if the board is being used as the vapour barrier, Ontario's Building Code (9.25.4) says insulation serving that role must be thick enough to meet the permeance limit of 60 ng/(Pa·s·m²). Whether a particular foil-faced product meets that limit at the thickness being quoted is a question for the contractor, not something to assume from the product name.

Ask the contractor to write the core R-value and the total thickness on the quote, separate from any claim about the facing, so you can compare it against what SB-12 requires for a new house or what you are targeting for an existing one.

Q2

Glass fibre batts in Ottawa walls: how much R-value per inch?

Natural Resources Canada lists glass fibre batt at R-3.2 per inch. That is a design value; Natural Resources Canada notes that products of the same class vary, so the actual value depends on the specific product installed.

For walls, ask the contractor what total R-value the batts will give in your wall cavities, and whether any continuous insulation is part of the proposal. Ontario's Building Code says batts must fill the full width and length of the space

between the framing and give a reasonably uniform insulating value over the whole face (9.25.2.3). When a renovation opens walls, the renovation rule is that the work cannot leave the house worse than before (11.3.1.1), and where the framing being altered matches the existing framing, lesser amounts of insulation and vapour barrier are acceptable (C207).

If the walls are already closed, Ontario's Building Code permits loose-fill insulation in the wood-frame walls of existing buildings (9.25.2.4.(3)), and its note on that clause warns that adding insulation to existing walls increases the likelihood of moisture damage to framing and cladding. The note suggests sealing openings, applying a low-permeability paint to the inside surface, and checking and repairing siding, flashing and caulking before the work goes in.

If the walls are open, a quote for glass fibre batts should spell out the product's R-value per inch, the total thickness being installed, the finished R-value of the assembly, and what air sealing and vapour barrier work is included. Ontario's Building Code puts the vapour barrier on the warm side of the assembly (9.25.4.3).

Before you sign, get the batt product, the R-value per cavity and the vapour barrier details written into the quote.

Q3

Cellulose or glass fibre for blowing into an Ottawa attic?

Ontario's Building Code lists accepted standards for both cellulose and mineral fibre insulation, so the choice comes down to what each gives and costs. The published price range for blown-in attic insulation is about $1.50 to $3.00 per square foot of attic floor (published 2025-2026 estimates); ask for the area on the quote.

The main difference that affects your decision is the R-value per inch. Natural Resources Canada lists blown cellulose (settled) at R-3.6 per inch and blown glass fibre at R-2.9 per inch. Blown mineral fibre is listed at about R-3. Products of the same class vary, and Natural Resources Canada notes that a long-term value claimed above about R-6.5 per inch may not be substantiated. None of these figures are Code requirements; they are design values for comparing materials.

What moves the price within that range is the area of your attic in square feet, the material chosen, the target R-value, and whether old insulation is removed first. If there is existing insulation that needs to come out, removing clean material runs about $0.75 to $2.00 per square foot before any contamination work. If the existing insulation is vermiculite, Health Canada advises not to disturb it and to hire a professional to test for asbestos before any renovation work; that work belongs to a different specialist.

The Code requires that loose-fill insulation not restrict the free flow of air through the attic, and that it not block soffit vents where those are present. Where preformed baffles are used at the eaves, they keep an unobstructed air space of at least 25 mm and extend at least 50 mm above the top of the insulation. Ask the contractor how they plan to protect the soffit vents and what they use at the eaves.

A complete quote for this job should state:

- the material (cellulose, glass fibre or mineral fibre) and the brand or product
- the attic area in square feet
- the finished depth and the R-value that depth achieves for that specific product
- whether any existing insulation is removed first, and what happens if vermiculite is found
- who is responsible for confirming whether a permit is needed with the City

Before you commit to a contractor, ask them to show you the R-value per inch for the specific product they plan to use, so you can compare quotes that may be using different materials to reach the same finished depth.

Q4

How do I read the R-value on an Ottawa insulation quote?

When a contractor writes an R-value on a quote, it is the thermal resistance of the insulation material itself, measured in imperial units. A higher number means more resistance to heat flow. The number does not include the wall framing, the drywall, the sheathing or any air gap unless the quote says so explicitly.

What the number on the quote actually covers

The R-value a contractor quotes is the nominal value of the insulation product at the thickness being installed. Natural Resources Canada publishes design values per inch: blown cellulose (settled thickness) about R-3.6 per inch, glass fibre batt about R-3.2, mineral fibre batt about R-3.4, closed-cell spray foam about R-6, open-cell spray foam about R-3.6, extruded polystyrene board about R-5. Natural Resources Canada notes that products of the same class vary, and that a long-term value claimed above about R-6.5 per inch may not be substantiated. If a quote claims a higher per-inch figure than those, ask the contractor for the product's published data sheet.

The quote should also say where the insulation goes: the full attic floor, the basement wall from top to bottom, the rim joist, or the wall cavity. R-value without a location is incomplete, because the same number means different things depending on what assembly it is part of.

A few things to check on any quote:

- Is the R-value the finished, in-place value after installation, or the product's rated value per inch?
- Does the quote separate the insulation R-value from any continuous insulation layer? The Ontario Building Code's energy standard for housing, SB-12, treats continuous insulation (written "ci") as a distinct layer.
- If there is existing insulation, does the quoted R-value describe only the new material, or the combined total? Ask which one.
- For attic work, does the quote state the finished depth across the whole attic floor?

One thing the R-value on a quote does not tell you is whether the air barrier and vapour barrier work is included. Ontario's Building Code (section 9.25.1.1.(2)) requires thermal insulation, an air barrier system and a vapour barrier together wherever heated space meets unheated space, outside air or the ground. A quote that lists only an R-value may be pricing only the insulation material and its installation. Ask the contractor to confirm in writing what air sealing and vapour barrier work, if any, is part of the price.

If the quote is for a new house or an addition, SB-12 sets minimum R-values by assembly: for example, R-60 in an attic with attic space, R-20 ci for a basement wall, under Package A1. Those are minimums for new construction and additions only, not targets for existing homes.

Before you sign, ask the contractor to write the finished R-value, the material and the thickness for each part of the house the quote covers.

Q5

Foam board on an Ottawa house: what R-value per inch does XPS give?

Extruded polystyrene board (XPS) gives R-5 per inch, according to Natural Resources Canada's design values.

That figure is for the material itself. A few things shape how it translates into a finished assembly. XPS is a rigid board, so the R-value you reach depends on the thickness of board you can fit in the space available, whether you are stacking layers, and whether the installation leaves any gaps at edges or penetrations. Natural Resources Canada notes that products of the same class vary, and that any long-term claim above about R-6.5 per inch may not be substantiated.

For comparison, Natural Resources Canada lists other rigid boards: expanded polystyrene Type I runs R-3.8 per inch, Type II R-4, and polyurethane board R-6. Closed-cell spray foam also reaches R-6 per inch. Those are all Natural Resources Canada design values, not Code minimums.

If your project involves a new house or an addition, the Code's energy standard for housing, SB-12, sets minimum values for the whole assembly, not just the board. For a new house in Ottawa (Zone 1 of SB-12), above-grade walls call for R-22, and basement walls call for R-20 ci, meaning continuous insulation. Where XPS is used as the continuous layer, the board thickness has to add up to that target. Those values apply to new houses and additions only.

For an existing house, the Code's Part 11 renovation rule says a materially altered building system must perform at least as well afterward as it did before. We found no Code number that sets a minimum R-value for voluntarily adding foam board to an existing wall or basement. What the assembly has to meet depends on what is being altered and how, which is a question for the City's Building Code Services or the contractor doing the work.

A quote for foam board work should name the product, the thickness in millimetres, the R-value per inch and the total R-value of the finished layer, the area being covered, and how joints, edges and penetrations will be sealed. If a vapour barrier is part of the assembly, that should be spelled out as well. Under Ontario's Building Code, insulated walls separating heated space from outside air or the ground require both an air barrier system and a vapour barrier on the warm side.

Ask for the board product, its thickness and the finished R-value of the layer to be written into the contract.

Disclaimer: This guide is provided for informational purposes only by Ottawa Insulation Contractors. It does not constitute professional advice. Always consult qualified contractors and your local building authority (the City of Ottawa) before starting any insulation project. Insulation on its own is not named on the City's permit lists, but work that comes with it can need a permit, so ask the City first. Information is current as of November 15, 2026 and may change. Visit **ottawainsulationcontractors.ca** for the latest answers.