BUILDING ENVELOPE PROGRAM

PROGRAM GUIDE

RENOVATE WITH ENERGY EFFICIENCY IN MIND

EFFICIENCY MANITOBA

INTRODUCTION

Efficiency Manitoba's Building Envelope Program (BEP) offers financial incentives to building owners who complete energy efficiency upgrades in existing buildings, including commercial, industrial, agricultural, religious, institutional, and multi-unit residential buildings.

Incentives available for renovation projects include:

- Roof insulation upgrades
- Wall insulation upgrades
- Window replacements
- Door replacements (must include glazing)
- Curtain wall and storefront window system upgrades

Contractors and consultants:

Join our supplier network so you can offer our energy efficiency programs to your customers. Visit **efficiencymb.ca/suppliernetwork** to register your company for free and you'll be included in our online supplier directory and get access to training opportunities and materials offered by our team of experts.

If you have any questions, please email us at **buildingenvelope@efficiencyMB.ca.**

ELIGIBILITY REQUIREMENTS

1. The building owner

- The building owner must be a Manitoba Hydro commercial customer billed at the electrical general service rate.

2. The project

- The building must be used in a commercial, industrial, or agricultural (not a residential) capacity.
- The building's primary heat source is either natural gas or electricity. Buildings heated primarily by other fuels are not eligible for this program.
- Eligible buildings must have indoor space heating systems (e.g. furnace, boiler) permanently installed and adequately sized to meet the whole building's heating requirements. If a new heating system is installed at the time of the building envelope upgrade, proof of purchase and installation must be provided.
- Buildings with an indoor set temperature of less than 15°C (59°F) or any partially or seasonally heated buildings may have their final incentive adjusted according to a prorated fraction of full energy savings for buildings with an indoor set temperature of 20°C (68°F).

3. The supplier

- If a supplier is applying on behalf of a building owner, they must have a Supplier Participation Agreement in good standing with Efficiency Manitoba.
- A supplier is any business supplying or installing the qualifying product — this includes contractors, consultants, installers, vendors, and retailers.

HOW TO PARTICIPATE

1. You plan your project

- A contractor or consultant can assist with the planning and scope of your project.
- Your supplier of choice must be registered with Efficiency Manitoba through our supplier network at **efficiencymb.ca/suppliernetwork**
- To ensure your project qualifies, we offer free technical support during this process.

2. You apply

- Complete your online application through myEM at **efficiencyMB.ca/buildingenvelopeapply**
- An Efficiency Manitoba representative may conduct an on-site verification to confirm project details and/or equipment specifications.
- Once you apply, we'll review your project and let you know your estimated incentive amount.

NOTE: Applications can be completed by the building owner or the supplier on the building owner's behalf.

3. We approve

- Efficiency Manitoba will email writen approval to all project contacts.

DO NOT PURCHASE ANY MATERIALS OR START YOUR PROJECT UNTIL YOU HAVE RECEIVED THIS APPROVAL.

- After approval is received, you have one year to purchase and install your upgrades.

4. You complete the project and get your incentive

- After the project is complete, log into **myEM** to submit the following documents:
  - Completion declaration
  - Detailed project invoice(s)

Invoicing Requirements	Insulation
General information	Date of purchase, vendor's name, customer's name, and install address
Product description	Insulation product name(s) and type(s)
Quantities purchased	Number of square feet, bag count, and thickness of product, etc.
Material & project cost	Unit prices and project totals (separate from labour)

Invoicing Requirements	Fenestration
General information	Date of purchase, vendor's name, customer's name, and install address
Product description	Fenestration product name(s) and type(s)
Quantities purchased	Window make and model number(s), product type (e.g., awning, fixed, etc.)
Material & project cost	Unit prices and project totals (separate from labour)

  - Project photos may be requested.
  - If a new heating system is installed at the time of the building envelope upgrade, proof of purchase and installation must be provided.
- Once all completion paperwork is received by Efficiency Manitoba, the final incentive will be determined based on invoicing, inspection, and any project changes.
- An Efficiency Manitoba representative may conduct an on-site post-verification to confirm installation.
- Efficiency Manitoba will issue a cheque or deposit to the indicated payee.

INSULATION PROJECTS

We offer financial incentives for both roof and wall insulation upgrades. To be eligible, your project must meet the insulation levels listed below.

Effective R-Value

The Building Envelope Program measures insulation levels by considering the entire roof and/or wall assembly. This effective R-value calculation includes the insulation materials plus all the components and other materials that make up the decking, sheathing, framing, finishes, structural elements, and also accounts for air films and thermal bridging of the entire assembly.

Roof insulation	Wall insulation
Surface (e.g. flat roof)	**Surface or Cavity** (above grade)
Final R-value must be at least R-25 Incentives available up to R-30	Final R-value must be at least R-17 Incentives available up to R-20
Cavity (e.g. attic space)	**Surface or Cavity** (below grade)
Final R-value must be at least R-40 Incentives available up to R-50	Final R-value must be at least R-17 Incentives available up to R-20

A minimum of 1,000 ft² of roof or wall area must be insulated for each project application.

Insulation Materials & Technical Requirements

All insulation materials must be new and purchased in Canada and, upon request, have thermal properties (verified R-value) provided in accordance with current recognized Canadian standards prepared by a certified third-party such as the Canadian Construction Materials Centre (CCMC), Intertek Code Compliance Research Reports (CCRRs), or R&D Services Product Listings. If reports are provided by other third-party agencies, they must be reviewed by Efficiency Manitoba to determine eligibility.

All insulation materials, which include blowing agents, will be evaluated based on Long Term Thermal Resistance (LTTR). The properties provided in these reports will form the basis of calculations for the incentives.

For all projects using 3 lb. polyurethane spray foam, contractors must be a participant in an industry supplier-sponsored Quality Assurance Program (QAP). Each team of qualified spray-foam contractors must have a minimum of one installer who is certified under an industry supplier-sponsored QAP. Confirmation of certification must be submitted to Efficiency Manitoba for review and acceptance. The proof of QAP certification will be kept on file and is subject to regular review.

Existing insulation in the roof or wall assembly that is damaged or must be replaced (e.g. for health and safety reasons) will be counted towards the starting effective R-value of the roof or wall assembly.

Insulation incentives

Financial incentives for insulation upgrades are calculated using the formulas below. When you apply online, your incentive will be automatically calculated based on your roof or wall assembly details.

Roof surface: 7.5¢ × R-Value Added × Roof Area (ft²)

Roof cavity: 2.0¢ × R-Value Added × Roof Area (ft²)

Wall surface: 7.5¢ × R-Value Added × Wall Area (ft²)

Wall cavity: 4.0¢ × R-Value Added × Wall Area (ft²)

EXAMPLE 10,000 ft² roof surface insulation upgrade going from R-8 to R-28 (R-Value Added = R-20)
7.5¢ x 20 x 10,000 ft² = $15,000

NOTES
- Roof and Wall R-Values are calculated based on the effective R-Value of the entire assembly (See description above).
- Below grade wall insulation incentives are available for the top three feet of wall area only.
- The final incentive paid will cover up to 100% of the material costs of the insulation installed (not including labour, installation materials, etc.) and cannot exceed the invoiced amount for these materials.

FENESTRATION PROJECTS (WINDOWS & DOORS)

We offer financial incentives for replacing windows and glazed doors, curtain wall projects, and storefront window upgrades. To be eligible, your project must meet the thermal performance values listed below.

Eligible window projects include those that involve a whole window replacement — including the frame. Windows retrofitted with new glass into the existing frame may qualify for an incentive only if the performance of the retrofitted window has been modelled by an accredited, independent agency and the overall U-value of the window, including the existing frame, meets the program's requirements for thermal performance.

Eligible doors must include glazing and can be sliding patio doors, garden doors, single-swinging doors, rolling doors, or folding-style doors.

U-Value

The Building Envelope Program measures window and door performance according to the metric U-Value of the entire assembly, including the frame. A new window's U-Value is typically provided by a certified third-party rating agency like ENERGY STAR® Canada or the National Fenestration Rating Council (NFRC). Window and door performances vary depending on a number of factors including frame materials, number of window panes, and spacers. Metric U-Values are typically between 0.8 and 1.6, a lower number means better thermal performance.

Your project must meet the following thermal performance values:

Windows & glazed doors	Curtain wall & storefront replacement
U-Value must be lower than 1.60 (metric)	U-Value must be lower than 2.00 (metric)
Proof of performance must be provided	Please contact us for specific project eligibility

A minimum of 10m² of window or door area must be installed for each project application.

Fenestration Materials & Technical Requirements

All windows, glazed doors, and curtain wall/storefront systems must be new and have proof of energy performance for standard test size(s). This must be provided by a certified third party such as ENERGY STAR® Canada or the National Fenestration Rating Council (NFRC).

Test reports provided for program eligibility must be in accordance with CSA 440.2 or NFRC-100, or test report in accordance with ANSI/DASMA 105. Results provided in imperial units will be converted to metric (SI) units.

The outside measurement (OSM) of the window frame, not including the brick mould, is required for window incentive calculations. For combination windows, where two or more window assemblies are mulled together, an OSM of each individual window assembly is required. Similarly, the OSM of the door, not including the brick mould is required.

All window and door area measurements should be provided in square meters (m²): 1m² = 10.76ft².

Fenestration incentives

Financial incentives for window and door replacements are calculated using the formulas below. When you apply online, your incentive will be automatically calculated based on your window or door assembly details.

Windows
$150 × [1.6 - U-Value] × Window Area (m²)

Curtain wall/Storefront
$200 × [2.0 - U-Value] × Storefront Area (m²)

Swinging door
$150 × [1.6 - U-Value] × Door Area (m²)

Sliding door
$200 × [1.6 - U-Value] × Door Area (m²)

EXAMPLE 20 new picture windows
(each sized at 61¾"W × 39"H); U-Value = 0.84
$150 × [1.6 – 0.84] × 30m²= $3,420

APPENDIX A: CHECKLIST

Before you apply

- Gather the project site contact information, including:
  - building owner name
  - company name
  - address
  - phone number
  - email address
- Gather the applicant* contact information, including:
  - applicant name
  - company name
  - address
  - phone number
  - email address

  * The applicant may be the building owner or the supplier on the building owner's behalf.
- Gather the project site details, including:
  - building description or function
  - primary heating type
  - primary heating system
  - is there air conditioning? If yes, what percentage of the building is air conditioned?
  - estimated project start date
  - estimated project completion date
- Gather details about the applicable assembly descriptions. See the list of required fields in Appendix B.

Optional supporting documents
Contractor/supplier quotes
Test reports
Drawings and photographs

To apply

Log into **myEM** to fill in and submit online application.

The building owner will be emailed a link to sign the terms and conditions once the application is submited.

ONCE YOU RECEIVE YOUR APPROVAL EMAIL, YOU MAY START YOUR PROJECT

After the project is completed

Log into **myEM** to submit detailed project invoices.

The building owner will be emailed a link to sign the Completion Declaration once the invoices are submited.

AFTER WE VERIFY YOUR COMPLETION DOCUMENTS, THE INCENTIVE WILL BE SENT TO THE INDICATED PAYEE

APPENDIX B: ASSEMBLY DESCRIPTIONS

ROOF ASSEMBLY DESCRIPTION

The following fields are required for the online application. This is NOT the application form; this is a worksheet to help you collect your project details.

(A) The proposed roof assembly must reach an ending R-value between R-25 to R-30 (surface) and between R-40 to R-50 (cavity).

Description of existing roof assembly			
Layer	**Thickness** (inches or mm)	**Material**	**R-value**
Air films			R-0.79
Roof surface			
Sheathing			
Existing insulation			
Structure			
Interior finish			
Other			
		(B) TOTAL EXISTING R-VALUE → (rounded to the nearest whole number)	

Description of proposed roof assembly			
Layer	**Thickness** (inches or mm)	**Material**	**R-value**
Air films			R-0.79
Roof surface			
Sheathing			
Proposed insulation			
Structure			
Interior finish			
Other			
		(C) TOTAL PROPOSED R-VALUE → (rounded to the nearest whole number)	

(D) Total roof area to be insulated

	ft^2	**Upgrade type** (check one) Surface Cavity

APPENDIX B: ASSEMBLY DESCRIPTIONS

ROOF ASSEMBLY DESCRIPTION (CONTINUED)

Proposed upgrade calculation						
Type of roof upgrade (surface / cavity)	**A**	**B**	**C**	**D**	**E**	**F**
	Ending R-value requirement	**Existing R-value**	**R-value added** (A—B)	**Roof area** (ft^2)	**Incentive factor*** (¢/R/ft^2)	**Incentive amount ($)** (C × D × E)
		-	=	x	x	$
		-	=	x	x	$
					ESTIMATED TOTAL INCENTIVE REQUESTED ($) →	$

* Please refer to Appendix C for current incentive factors and typical R-values (E).
Incentive factor differs based on upgrade type.
Use a separate Roof Assembly Description page for each roof area.

APPENDIX B: ASSEMBLY DESCRIPTIONS

WALL ASSEMBLY DESCRIPTION

The following fields are required for the online application. This is NOT the application form; this is a worksheet to help you collect your project details.

(A) The proposed wall assembly must reach an ending R-value between R-17 to R-20 (surface or cavity).

Description of existing wall assembly			
Layer	**Thickness** (inches or mm)	**Material**	**R-value**
Air films			R-0.85
Roof surface			
Sheathing			
Existing insulation			
Structure			
Interior finish			
Other			
		(B) TOTAL EXISTING R-VALUE → (rounded to the nearest whole number)	

Description of proposed wall assembly			
Layer	**Thickness** (inches or mm)	**Material**	**R-value**
Air films			R-0.85
Roof surface			
Sheathing			
Proposed insulation			
Structure			
Interior finish			
Other			
		(C) TOTAL PROPOSED R-VALUE → (rounded to the nearest whole number)	

(D) Total wall area to be insulated

	ft^2	**Upgrade type** (check one) Surface Cavity

APPENDIX B: ASSEMBLY DESCRIPTIONS

WALL ASSEMBLY DESCRIPTION (CONTINUED)

Proposed upgrade calculation						
Type of wall upgrade (surface / cavity)	**A**	**B**	**C**	**D**	**E**	**F**
	Ending R-value requirement	**Existing R-value**	**R-value added** (A—B)	**wall area** (ft^2)	**Incentive factor*** (¢/R/ft^2)	**Incentive amount ($)** (C × D × E)
		-	=	x	x	$
		-	=	x	x	$
					ESTIMATED TOTAL INCENTIVE REQUESTED ($) →	$

* Please refer to Appendix C for current incentive factors and typical R-values (E).
Incentive factor differs based on upgrade type.
Use a separate Roof Assembly Description page for each roof area.

APPENDIX B: ASSEMBLY DESCRIPTIONS

WINDOW, DOOR, CURTAIN WALL/STOREFRONT SYSTEM DESCRIPTION

Window Incentive Estimate

Manufacturer	Model number	Operator type	A Base U-value	B Overall U-value SI units	C U-value difference (A — B)	D Net window area including frame* (m^2)	E Incentive factor ($)	F Incentive amount ($) (C × D × E)
			1.6	-	=	x	x	$
			1.6	-	=	x	x	$
			1.6	-	=	x	x	$
			1.6	-	=	x	x	$
							ESTIMATED TOTAL INCENTIVE REQUESTED ($) →	$

Sliding, swinging, rolling, or folding door incentive estimate

Manufacturer	Model number	Glazing insert (1/4, 1/2, 3/4, full)	A Base U-value	B Overall U-value SI units	C U-value difference (A — B)	D Net window area including frame* (m^2)	E Incentive factor ($)	F Incentive amount ($) (C × D × E)
			1.6	-	=	x	x	$
			1.6	-	=	x	x	$
			1.6	-	=	x	x	$
			1.6	-	=	x	x	$
							ESTIMATED TOTAL INCENTIVE REQUESTED ($) →	$

Curtain wall or storefront incentive estimate

Manufacturer	Model number and glazing description	A Base U-value	B Overall U-value SI units	C U-value difference (A — B)	D Net window area including frame* (m^2)	E Incentive factor ($)	F Incentive amount ($) (C × D × E)
		2.0	-	=	x	x	$
		2.0	-	=	x	x	$
		2.0	-	=	x	x	$
		2.0	-	=	x	x	$
						ESTIMATED TOTAL INCENTIVE REQUESTED ($) →	$

APPENDIX C: TYPICAL R-VALUES

TYPICAL R-VALUES OF COMMON INSULATION TYPES

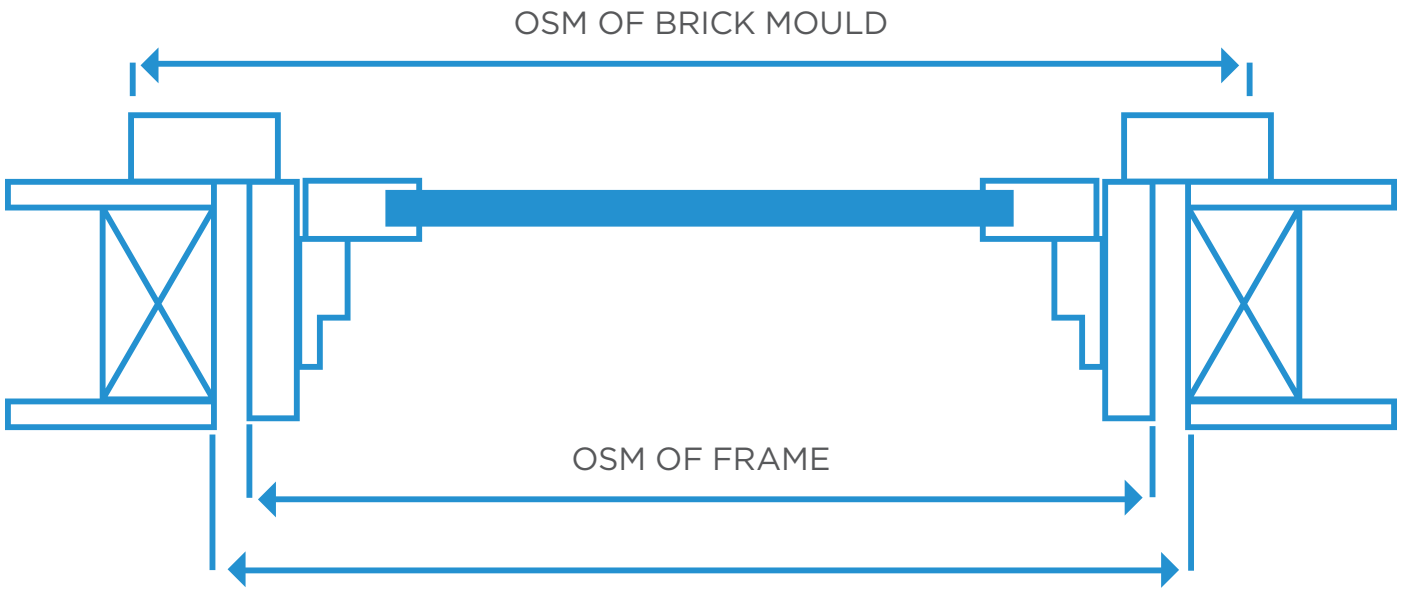
NOTE: some insulation types have a range of values.

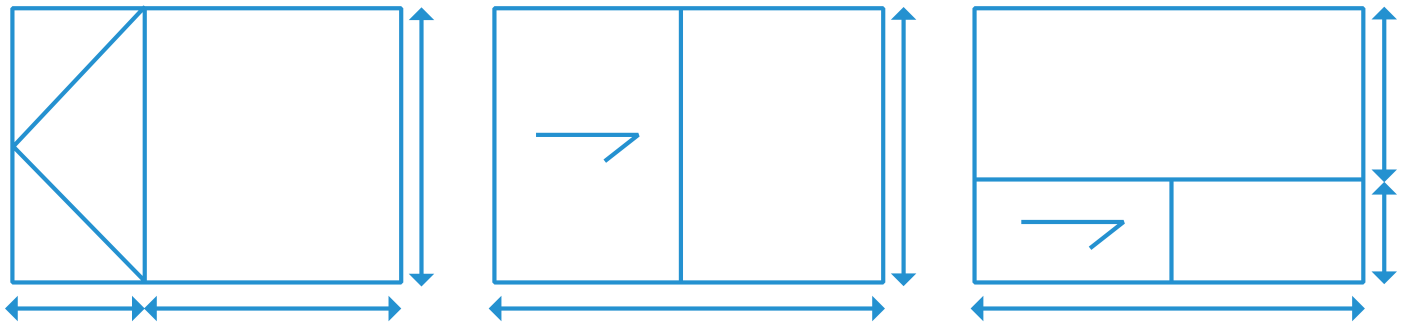
Insulation	Common types of insulation and properties	R-value per inch
Surface	Strawmit	2.30
	Glass fibre (semi-rigid)	4.00
	Polyisocyanurate	5.70
	Polystyrene (EPS) — Type 1	3.75
	Polystyrene (EPS) — Type 2	4.00
	Polystyrene (GPS) — Type 2 with graphite	4.70
	Polystyrene (XPS) — Type 4	5.00
	Low-density polyurethane foam (sprayed)	3.60
	Polyurethane (sprayed)	6.00
Cavity	Wood chips/shavings	2.15
	Glass fibre (blown)	2.65
	Glass fibre (batt or blanket)	3.45
	Cellulose — loose or blown	3.60
	Glass fibre (semi-rigid)	3.99
	Mineral fibre or rock/slag wool (batt)	3.75
	Polyurethane (sprayed)	6.00
	Low-density polyurethane foam (sprayed)	3.60

TYPICAL R-VALUES OF AIR FILMS AND CAVITIES

Component	Material	Description	Details	R-value per inch	Total R-value
Air films	Exterior	Ceiling, walls			0.17
	Interior	Ceiling			0.62
		Walls			0.68
Air cavities	Ceiling (heat flow up)	Empty cavity			0.90
	Walls (heat flow horizontal)	Empty cavity			1.00

APPENDIX D: WINDOW MEASUREMENTS





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