



for Gaz Métro Customers

PARTICIPANT'S GUIDE

BUILDING ENVELOPE RENOVATIONS
for customers consuming less than 150,000 m³

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Foreword

This Manual will help you prepare the file supporting your application for financial assistance from the Energy Efficiency Fund with respect to the eco-energy renovations on your building envelope (insulation of walls, roofs, window replacement, etc.)

EEF programs are only available to present and future customers of Gaz Métro, except Tariff 4 and 5 (VGE) customers. This Manual is for the use of Tariff 1, 3 and M customers who consume less than 150,000 cubic meters annually (if necessary, contact us to find out your consumption).

Customers using 150,000 cubic meters or more need to submit a study prepared by a specialist or other qualified individual (engineer, technician, architect, etc.) evaluating the expected energy savings as a result of the renovations.

To be eligible for the program, the work done must exceed the standards of the Model National Energy Code of Canada for Buildings (MNECB).

The Energy Efficiency Fund (EEF) reserves the right to request additional information. Incomplete files cannot be processed. An EEF representative or an external auditor may visit you to verify the state of the premises before the work starts and/or after the work has been done to ensure it complies with the requirements. For details about the program, go to our website at www.fee.qc.ca

TO SUBMIT YOUR FILE

Gaz Métro - Energy Efficiency Fund

Business Programs
1717 du Havre
Montreal, Quebec
H2K 2X3

By fax: 514-719-8207

For more information, contact us

Montreal area: 514-529-2216
Elsewhere in Quebec: 1-866-529-2216
www.fee.qc.ca
info@fee.qc.ca

Notice

The EEF reserves the right to:

- amend or cancel the program without notice;
- interpret the terms and conditions of the program;
- refuse any proposal that does not meet the program criteria.

The customer agrees that:

- any inaccurate declaration could result in cancellation of the financial support, in which case the EEF could claim a refund of the assistance paid;
- a program may be evaluated at the request of the EEF or a third party mandated by the EEF;
- the EEF may visit a site to verify that the energy efficiency measures for which the financial assistance has been paid have been implemented;
- the following information may be disclosed about the project – type and description of building, reference consumption, eligible project costs, anticipated or actual savings and amount of financial assistance paid).

1. PROJECT INFORMATION

Regardless of the type of project, you must provide the following information:

- Contact person: _____
- Telephone _____
 - E-mail _____
- Gaz Metro account number: _____
- Building
- Address _____
 - City _____
 - Postal Code _____
- Type of occupancy (specify, if necessary):
- | | |
|--|--------------------------|
| Commercial | <input type="checkbox"/> |
| Industrial | <input type="checkbox"/> |
| Institutional | <input type="checkbox"/> |
| Rental (Please indicate the number of units) | <input type="checkbox"/> |
| | _____ |
- Year of construction: _____
- Number of floors: _____
- Gross floor area: _____ sq. ft.
- Are other energies than natural gas used to heat the building?
- Yes
- No
- If so, provide the following information:
- Type of energy _____
 - Area covered by that equipment _____ %
 - Total power of equipment _____
- Date work expected to start: _____
- Date work expected to be completed: _____
- Please provide a photograph or photographs of the facade.

I, the undersigned, declare that the information provided in the documents supporting my application for this program is accurate and complete.

Signature of applicant: _____

Date: ____/____/____
D M Y

2. REPLACEMENT OF WINDOWS WITH HIGH EFFICIENCY WINDOWS

To determine the energy savings that will be realized, you have to specify the type of windows before and after the renovations.

BEFORE RENOVATIONS

Please tick the boxes corresponding to your present windows.

→ **Window type:**

Openable

Fixed

→ **Type of pane:**

Single

Double

→ **Type of glazing:**

Single

Double

Triple

→ **Type of frame:**

Aluminium

Aluminium with thermal barrier

Wood / Vinyl

Fibreglass

→ **Gaseous argon:**

Yes

No

→ **Interstice:**

NA

6.4 mm (1/4 in.)

12.7 mm (1/2 in.)

→ **Low emissivity (Low e):**

Yes

No

AFTER RENOVATIONS

Please tick the boxes corresponding to your new windows.

→ **Window type:**

Openable
Fixed

→ **Type of pane:**

Single
Double

→ **Type of glazing:**

Single
Double
Triple

→ **Type of frame:**

Aluminium
Aluminium with thermal barrier
Wood / Vinyl
Fibreglass

→ **Gaseous argon:**

Yes
No

→ **Interstice:**

NA
6.4 mm (1/4 in.)
12.7 mm (1/2 in.)

→ **Low emissivity (Low e):**

Yes
No

→ **Indicate the area in square metres (m²) of the windows/sliding doors to be replaced. The windows and sliding doors need to be reported separately.**

Fixed windows: _____ m²

Openable windows: _____ m²

Sliding doors: _____ m²

→ **So that financial assistance may be paid to you, you must provide:**

→ photographs of the windows and sliding doors to be replaced. The photographs must clearly show the window details.

→ a copy of the detailed invoice for the new windows.

3. INSULATION

3.1. Roof

To determine the energy savings that will be realized, you must specify the type of your roof insulation before and after the renovations.

BEFORE RENOVATIONS

→ **Type of roof**

- Gable roof, wood trusses
- Parallel beams, wood trusses
- Flat with concrete slab/steel bridging

Please indicate any other pertinent information about the roof type: _____

→ **If you know the R value of your roof, please indicate it:** _____

→ **Type of insulation:**

- No insulation
- Cavity insulation (mineral fibre/cellulose)
- Insulating shield (rigid insulation)

→ **Insulation thickness:**

- None
- 25.4 mm (1 inch)
- 38.1 mm (1.5 inches)
- 50.8 mm (2 inches)
- 101.6 mm (4 inches)
- 152.6 mm (6 inches)
- 203.2 mm (8 inches)
- 254.0 mm (10 inches)
- 304.8 mm (12 inches)
- 355.6 mm (14 inches)

→ **Roof area to be insulated in square meters (m²) or square feet (sq. ft.) (Clearly indicate the unit of measure used.):** _____

→ **Please provide all other pertinent information or description before the renovations:**

AFTER RENOVATIONS

→ **Insulation products sold in Canada are rated R and RSI. Indicate the rating of the materials to be used for the renovations:** _____

→ **Type of insulation:**

- Cavity insulation (mineral fibre/cellulose)
Insulating shield (rigid insulation)

→ **Thickness of insulation:**

- None
25.4 mm (1 inch)
38.1 mm (1.5 inches)
50.8 mm (2 inches)
101.6 mm (4 inches)
152.6 mm (6 inches)
203.2 mm (8 inches)
254.0 mm (10 inches)
304.8 mm (12 inches)
355.6 mm (14 inches)

→ **In order to complete your file, you must provide:**

- a copy of your contractor's bid for the proposed work;
- a copy of the invoices for work done;
- photographs taken during your insulation work.

3.2. Above-ground Walls

To determine the energy savings that will be realized, you must specify the type of above-ground wall insulation before and after the renovations.

BEFORE RENOVATIONS

→ Using the wall insulation list below, indicate which one corresponds to your present situation.¹

I. Metal Trusses

- a. 92 mm (4 inches) @ 406 mm cc. (16 inches)
 - none
 - mineral fibre/cellulose
- b. 92 mm (4 inches) @ 610 mm cc. (24 inches)
 - none
 - mineral fibre/cellulose
- c. 152 mm (6 inches) @ 406 mm cc. (16 inches)
 - none
 - mineral fibre/cellulose
- d. 152 mm (6 inches) @ 610 CC. (24 inches)
 - none
 - mineral fibre/cellulose

II. Wood Trusses

- a. 89 mm (4 inches) @ 406 mm cc. (16 inches)
 - none
 - mineral fibre/cellulose
- b. 140 mm (6 inches) @ 406 mm cc. (16 inches)
 - none
 - mineral fibre/cellulose
- c. 140 mm (6 inches) @ 610 mm cc. (24 inches)
 - none
 - mineral fibre/cellulose

III. Masonry/Concrete Blocks Without Trusses

IV. Masonry/Concrete Blocks With Wood Trusses

- a. 89 mm (4 inches) @ 406 mm cc. (16 inches)
 - none
 - mineral fibre/cellulose
- b. 89 mm (6 inches) @ 610 mm cc. (24 inches)
 - none
 - mineral fibre/cellulose

¹ Your choice must provide the appropriate data concerning the wall type, the depth of the posts (studs), interaxial (space between the posts, from center to center), as well as the type of insulation in the cavities.

- V. Masonry/Blocks With Metal Trusses**
- a. 92 mm (4 inches) @ 406 mm cc. (16 inches)
 - b. 92 mm (6 inches) @ 610 mm cc. (24 inches)

- VI. Sheet metal with Z strut**
- a. 89 mm (4 inches) @ 1830 mm cc. (72 inches)
 - b. 140 mm (6 inches) @ 1830 mm cc. (72 inches)

→ ***If you know the R value of your above-ground walls before the renovations, please indicate it: _____***

→ ***Please indicate the type and thickness of the insulating shield of your outside wall, if applicable, before the renovations:***

None

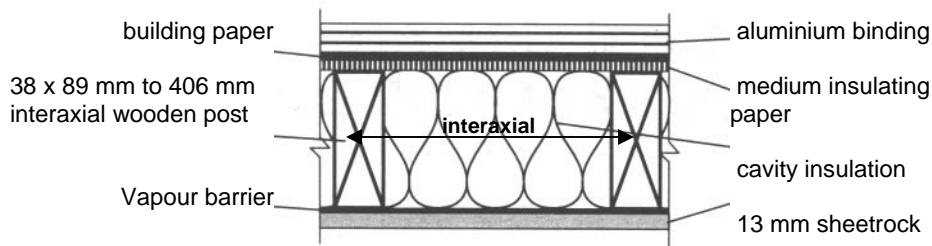
Rigid insulation

- a. 25.4 mm (1 inches)
- b. 38.1 mm (1.5 inches)
- c. 50.8 mm (2 inches)

Spray-applied Insulation

- a. 25.4 mm (1 inch)
- b. 38.1 mm (1.5 inches)
- c. 50.8 mm (2 inches)

Example of woodwork wall construction



Source: Model National Energy Code of Canada for Buildings -1997
National Building Code of Canada and Fire Prevention Commission

→ ***Please indicate the area of the walls, excluding the doors and windows, to be insulated, in square meters (m²) or in square feet (sq. ft.). (Clearly indicate the unit of measure used.) _____***

If the interior area differs from the exterior area, please provide details: _____

AFTER RENOVATIONS

→ **Using the above-ground wall insulation list below, indicate which one corresponds to your situation after the renovations.**

I. Metal Trusses

- a. 92 mm (4 inches) @ 406 mm cc. (16 inches)
- none
- mineral fibre/cellulose
- b. 92 mm (4 inches) @ 610 mm cc. (24 inches)
- none
- mineral fibre/cellulose
- c. 152 mm (6 inches) @ 406 mm cc. (16 inches)
- none
- mineral fibre/cellulose
- d. 152 mm (6 inches) @ 610 CC. (24 inches)
- none
- mineral fibre/cellulose

II. Wood Trusses

- a. 89 mm (4 inches) @ 406 mm cc. (16 inches)
- none
- mineral fibre/cellulose
- b. 140 mm (6 inches) @ 406 mm cc. (16 inches)
- none
- mineral fibre/cellulose
- c. 140 mm (6 inches) @ 610 mm cc. (24 inches)
- none
- mineral fibre/cellulose

III. Masonry/Concrete Blocks Without Trusses

IV. Masonry/Concrete Blocks With Wood Trusses

- a. 89 mm (4 inches) @ 406 mm cc. (16 inches)
- none
- mineral fibre/cellulose
- b. 89 mm (6 inches) @ 610 mm cc. (24 inches)
- none
- mineral fibre/cellulose

V. Masonry/Blocks With Metal Trusses

- a. 92 mm (4 inches) @ 406 mm cc. (16 inches)
- b. 92 mm (6 inches) @ 610 mm cc. (24 inches)

VI. Sheet metal with Z strut

- a. 89 mm (4 inches) @ 1830 mm cc. (72 inches)
- b. 140 mm (6 inches) @ 1830 mm cc. (72 inches)

→ **Insulation products sold in Canada are rated R and RSI. Please provide the rating for the materials to be used for the renovations: _____**

→ **Please indicate the type of exterior wall insulation screen and its thickness, if applicable, after the renovations.**

None

Rigid Insulation

a. 25.4 mm (1 inches)

b. 38.1 mm (1.5 inches)

c. 50.8 mm (2 inches)

Spray-applied Insulation

a. 25.4 mm (1 inch)

b. 38.1 mm (1.5 inches)

c. 50.8 mm (2 inches)

→ **Please provide any other pertinent information or description before or after the renovations.** _____

→ **In order to complete your file, you must forward:**

→ a copy of your contractor's bid for the proposed work;

→ a copy of the invoices for work done;

→ photographs taken during your insulation work.

3.3. Underground walls

To determine the energy savings that will be realized, you must specify the type of underground wall insulation before and after the renovations.

BEFORE RENOVATIONS

→ *Using the wall insulation list below, indicate which one corresponds to your present situation.²*

I. **Concrete Without Trusses**

II. **Concrete Blocks with Wood Trusses**

a. 89 mm (4 inches) @ 406 mm cc. (16 inches)
 none
 mineral fibre/cellulose

b. 89 mm (6 inches) @ 610 mm cc. (24 inches)
 none
 mineral fibre/cellulose

III. **Blocks With Steel Trusses**

a. 92 mm (4 inches) @ 406 mm cc. (16 inches)
 none
 mineral fibre/cellulose

b. 92 mm (6 inches) @ 610 mm cc. (24 inches)
 none
 mineral fibre/cellulose

→ *If you know the R value of your above-ground walls before the renovations, please indicate it: _____*

→ *Please indicate the type of underground wall insulation screen and its thickness, if applicable, before the renovations.*

None a.

Rigid Insulation

a. 25.4 mm (2 inches)
 b. 38.1 mm (1.5 inches)
 c. 50.8 mm (2 inches)

Spray-applied Insulation

a. 25.4 mm (1 inch)
 b. 38.1 mm (1.5 inches)
 c. 50.8 mm (2 inches)

² Your choice must provide the appropriate data as to wall type, depth of the posts (studs), interaxial (space between the posts, center to center), as well as the type of insulation in the cavities.

→ *Please provide any other pertinent information or description before or after the renovations.* _____

→ *In order to complete your file, you must forward:*

- a copy of your contractor's bid for the proposed work;
- a copy of the invoices for work done;
- photographs taken during your insulation work.

Additional Measures

Indicate which of the following measures will be part of your renovations.

- Installing a vestibule in an entrance
- Installing automatic industrial door system
Indicate number of doors involved
- Installing additional curtains or doors between inside and outside
for industrial doors
Indicate number of doors involved
- Sealing or partitioning of building envelope

General sealing of the building envelope is eligible for the financial assistance under this program. The work must be part of a project involving the entire building and performed by a specialist. Contact one of our advisors for information about how to submit an application.

APPENDIX

Insulation effectiveness

R-values and their metric equivalent, RSI-values, are used to rate the effectiveness of insulating materials. The higher the R-value or RSI-value the more resistance the material has to the movement of heat. Insulation products sold in Canada are labelled with R and RSI ratings. Provincial building codes specify minimum R or RSI values for new construction, with different values for different applications. It is important to know what your local building code requires when planning a construction project.

Proper installation of insulation plays a large role in its effectiveness. Compressing the insulation, leaving air spaces around it or allowing air movement in the insulation all reduce the actual R-value of the insulation.

Insulation material	R/in. (RSI/m)	Appearance	Advantages-Disadvantages
Batt type			
Fibreglass	3.0-3.7(21-26)	All batts come in plastic wrapped bales. The products are like fibrous blankets, about 1.2 m (48 in.) long and wide enough to fit snugly between wall studs.	Readily available.
Mineral wool	2.8-3.7 (19-26)	Same as fibreglass.	Somewhat better fire resistance and soundproofing qualities than fibreglass.
Cotton	3.0-3.7(21-26)		Not readily available.
Loose fill (All loose fill typically requires a professional installer.)			
Fibreglass	3.0-3.7(21-26)	A very light fibrous fill, usually pink or yellow.	Can be affected by air movement in attics.
Mineral fibre	2.8-3.7(19-26)	A very light fibrous fill, usually brown.	
Cellulose fibre	3.0-3.7(21-26)	Fine particles usually grey in colour, more dense than glass or mineral fibre.	Provides more resistance to air movement than other loose fill insulations. Can have settlement problems if not installed properly.

Board stock			
Type I and II (expanded) polystyrene or EPS	3.6-4.4(25-31)	White board of small (about 8 mm—0.3 in. - diameter) foam beads pressed together.	Typically no HCFCs used in production. Must be covered.
Type III and IV (extruded) polystyrene or XPS	5.0 (35)	Commonly blue or pink homogeneous foam board.	Works well in wet conditions, can act as a vapour retarder. HCFC (an ozone depleter and greenhouse gas) usually used in production. Must be covered.
Rigid fibreglass	4.2-4.5(29-31)	A dense mat of fibres, typically less rigid than the polystyrene.	Drains water away. Sometimes hard to find.
Rigid mineral fibre	4.2-4.5(29-31)	See rigid fibreglass above.	Drains water away.
Polyisocyanurate	5.6-7.7(39-53)	Foil-faced rigid foam.	HCFC usually used in production.
Spray applied			
All spray-applied insulations fill cavities very well. They must be applied by specialized contractor.			
Wet spray cellulose	3.0-3.7(21-26)	Fine particles held in place by a binder.	
Polyisocyanurate	3.6(25)	A soft, spray foam that expands into the cavity.	Can act as the air barrier. Must be covered.
Polyurethane	5.8-6.8(40-47)	A foam that expands into the cavity and sets up fairly rigid.	Can act as the air barrier and vapour retarder HFC used in production must be covered.

Note: All values are approximate and for general comparison only. Some insulation may cause irritation or pose a danger during installation. Read the manufacturers' recommendations and instructions on insulation packaging for information on proper respiratory, eye and skin protection.

*Excerpt from the [Canada Mortgage and Housing Corporation](#) Web site.