

Potential applicable credits and points

Leadership in Energy & Environmental Design
Potential points using Spray Polyurethane Foam.



All information contained in this publication is the property of *U.S Green Building Council* and the *Canada Green Building Council*. *Demilec inc.* provides this booklet for information purposes only. All in order to present the various credits to which the *Heatlok Soya/Polarfoam Soya* product from *Demilec inc.* can collaborate in obtaining them. It is the responsibility of the user to ensure that the information in this book is up-to-date.

References used to create this booklet:

- U.S Green Building Council, LEED v4 for BUILDING DESIGN AND CONSTRUCTION, July 08, 2017, 161 pages.
https://www.usgbc.org/sites/default/files/LEED%20v4%20BDC_07.8.17_current.pdf
- Conseil du Bâtiment Durable du Canada, LEED v4 pour la conception et la construction de bâtiments durables- Liste de contrôle de projet C+CBD+, Date of publication unknown, 8 pages.
http://www.cagbc.org/CBDCA/LEED/LEEDv4/RessourcesLEEDv4/CBDCASiteWeb/Programmes/LEED/Ressources_de_LEED_v.aspx?hkey=804f12be-a885-4136-a03d-05afbd6f2ab7
- Conseil du Bâtiment Durable du Canada, Cours préparatoire à l'examen Associé Écologique LEED v4 (Diapositive de présentation). 2016, Book, 238 pages.
- Conseil du Bâtiment Durable du Canada, Cahier du participant (Cours associé écologique LEED v4), Book, 2016, 218 pages.

Credit: Integrative process

BC+D

1-5 points

New Construction and Major Renovation (1 point)
Core and Shell (1 point)
School (1 point)
Retail (1 point)
Data Centers (1 point)
Warehouses and Distribution Centers (1 point)
Hospitality (1-5)
Healthcare (1-5)

Credit Requirements:

- *Create synergy between disciplines; Model building systems to reduce energy and water consumption.*
- *To enable high-performance, cost-effective project-related results through early analysis of interconnections between systems.*
- *Complete a preliminary analysis of the interrelationships between all building systems in order to design a high performance and economical project.*

HEATLOK SOYA/POLARFOAM SOYA Contribution

From the preliminary design phase of your project, *Demilec inc.* helps you determine and implement strategies to ensure optimal energy performance for all your project's assemblies.

Among the free services offered:

- Simulation of the various envelope assemblies using the *CONDENSE W 3.0* software in order to detect these weaknesses and to perfect them from the first design stages of the project;
- Revision of the various details to ensure that each one is appropriate to sprayed urethane and/or to propose other alternatives, if possible, more efficient and less expensive.
- Quality control visit and thickness control, if needed, before, during and after the application of the product, so that the work respects the requirement.

Energy and Atmosphere

Optimize Energy Performance

BD+C

1-20 points

New Construction and Major Renovation (1-18 points)

Core and Shell (1-18 points)

School (1-16 points)

Retail (1-18 points)

Data Centers (1-18 points)

Warehouses and Distribution Centers (1-18 points)

Hospitality (1-18 points)

Healthcare (1-20 points)

Credit Requirements:

Achieve energy performance levels above the standards set in the prerequisite to reduce the environmental and economic impacts resulting from excessive energy consumption.

HEATLOK SOYA/POLARFOAM SOYA Contribution

It's easy and simple to design an efficient and durable building envelope using HEATLOK SOYA. The insulation (RSI 1.05 / 25mm) is obtained with only one material, the air barrier (150 times the CCQ-95 requirements) and the vapor barrier. The R-value being higher, the wall is thinner so less materials used to build. (Example: less concrete on foundations)

Optimizing the building envelope and increasing thermal resistance and airtightness reduce the number and strength of mechanical equipment.

Materials and Resources

Building Life-Cycle Impact Reduction

BD+C

1-6 points

New Construction and Major Renovation (2-5 points)
Core and Shell (2-6 points)
School (2-5 points)
Retail (2-5 points)
Data Centers (2-5 points)
Warehouses and Distribution Centers (2-5 points)
Hospitality (2-5 points)
Healthcare (2-5 points)

Credit Requirements:

Promote adaptive reuse and optimize the environmental performance of products and materials

- Option 1
Reuse of historic buildings
(2-5 points BD+C, 2-6 points Core and Shell)

Maintain the existing building structure, envelope and interior non-structural elements of a historic building or building in a historic neighborhood.

- Option 2
Renovation of abandoned or dilapidated buildings
(2-5 points C+CB, 2-6 points Core and Shell)

Maintain at least 50% of the surface area of the structure, envelope and existing interior structural elements of buildings that meet local criteria for abandoned or dilapidated buildings.

- Option 3
Reuse of buildings and materials
(2-4 points C+CB, 2-5 points Core and Shell)

Reuse or retrieve on-site or off-site construction materials as a percentage of the area as shown in Table 1.

<i>% of completed project area reused</i>	<i>Points BD+C</i>	<i>Points BD+C (CS)</i>
<i>25</i>	<i>2</i>	<i>2</i>
<i>50</i>	<i>3</i>	<i>3</i>
<i>75</i>	<i>4</i>	<i>5</i>

HEATLOK SOYA/POLARFOAM SOYA Contribution

If the building already contains sprayed polyurethane, it is possible to spray directly onto an existing polyurethane. The HEATLOK SOYA/POLARFOAM SOYA product is durable for the life of the building and remains 100% tied to its support. It resists demolition work. The airtightness properties are always maintained. The product limits the efflorescence of the masonry. No exfiltration of air.

Materials and Resources

Construction and Demolition Waste Management

BD+C

2 points

Credit Requirements:

Recycle or recover construction waste, from demolition.

- Option 1. Waste diversion (1-2 points)

Method 1

Diversion of 50% of waste and 3 waste streams (1 point)

OR

Method 2

Misuse of 75% of waste and 4 waste streams (2 points)

- Option 2. Reduction of total waste (2 points)

Do not generate more than 12.2 Kg of construction waste per square meter (2.5 pounds of construction waste per square foot) of the building's surface area.

HEATLOK SOYA/POLARFOAM SOYA Contribution:

HEATLOK SOYA is delivered in 3 different size containers:

- 250 Kg steel barrel, which is recyclable
- Barrels will produce - 300 ft³ of foam
- Totes (1000 Kg plastic container) = (-1 200 ft³ of foam), the totes are reusable
- Bulk (40 000 Kg tanker truck): The liquid is transferred to bulk containers in truck = (-48 000 ft³ of foam)

With Spray Polyurethane Foam, there is no trimming or adjustment, no glue, no mechanical fastening, no tapes at joints. The spray foam follows any shape of the building and always gives the high performance result without any complex details. This result in minimum insulation waste. The windows protection could be used by the spray foam contractor and the masonry contractor.

Materials and Resources

Building Product Disclosure and Optimization - Material Ingredients

BD+C

*For information only.

HEATLOK SOYA/POLARFOAM SOYA Contribution:

Base on the weight of the rigid foam spray in place, HEATLOK SOYA/POLARFOAM SOYA contains 7.5% post-consumer recycled product and 10.5% post-industrial recycled product.

Indoor Environmental Quality

Low-Emitting Materials

BD+C

1-3 points

New Construction and Major Renovation (1-3 points)
Core and Shell (1-3 points)
School (1-3 points)
Retail (1-3 points)
Data Centers (1-3 points)
Warehouses and Distribution Centers (1-3 points)
Hospitality (1-3 points)
Healthcare (1-3 points)

Credit Requirements:

- Option 1. Product category calculations

Complied with two or more of the seven categories

- Option 2
Method of calculating the budget

If some products in one of the categories do not meet the requirements, calculate the percentage compliance using a weighted average.

HEATLOK SOYA/POLARFOAM SOYA Contribution:

HEATLOK SOYA/POLARFOAM SOYA content: 0% FORMALDÉHYDE, 0% CFC, 0% HCFC

VOC: conform to:

- CAN/ULC S705.1 Standard for Thermal Insulation Spray Applied Rigid Polyurethane Foam, Medium Density, Material Specification.
- CAN/ULC S774 : Standard Laboratory Guide for the Determination of Volatile Organic Compound Emissions from Polyurethane Foam
RESULT: pass 24 HRS

The total of all VOC components content in HEATLOK SOYA/POLARFOAM SOYA are after:

- 12 hours = 0.0000115 grams / Litre
- 30 days = 0.00000194 grams / Litre

The LEED requirements for VOC are 50 g/L

The product is also certified GREENGUARD GOLD by UL independent laboratory, the highest level (see document in annex).

- Product applied exclusively by accredited third party contractors conform to: CAN/ULC S 705.2 Standard for Thermal Insulation Spray Applied Rigid Polyurethane Foam, Medium Density, Installer's Responsibilities - Specifications.

Indoor Environmental Quality

Thermal Comfort

BD+C

1 point (Other than Core and Shell)

New Construction and Major Renovation (1 point)
Core and Shell (1 point)
School (1 point)
Retail (1 point)
Data Centers (1 point)
Warehouses and Distribution Centers (1 point)
Hospitality (1 point)
Healthcare (1 point)

Credit Requirements:

Provide a comfortable thermal environment that promotes the productivity and well-being of building occupants.

- Option 1. Norm ASHRAE 55-2010

Design HVAC systems and building envelope in accordance with the requirements of ASHRAE 55-2010

OR

- Option 2. Norm ISO and CEN

HVAC systems and the building envelope must conform to the following standards:

- *ISO 7730-2005, Ergonomics of the Thermal Environment*
- *CEN Standard EN 15251 : 2007, Indoor Environmental Input Parameters for Design and Assessment of Energy Performance of Building*

HEATLOK SOYA/POLARFOAM SOYA Contribution

HEATLOK SOYA/POLARFOAM SOYA provides comfort for the lifetime of the building.
(Example: Net Zero house by CMHC)