



### PANEL WITH ROCK-WOOL CORE


The Noroc® architectural panel is a fire-rated, insulated panel designed for the construction of building envelopes.

The core comprises a noncombustible, rigid stone-fiber insulation board made from natural basalt rock and recycled slag.

### VALIDATED ECO-DECLARATION

### Product's contribution to LEED® v4

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PRODUCT SPECIFICATIONS	ENVIRONMENTAL IMPACTS	PRODUCT SPECIFICATIONS
<b>Reference</b> Noroc®-L	<b>Life Cycle Assessment</b> -	<b>Performance tests</b> See page 5
<b>Final manufacturing location</b> Saint-Hyacinthe, QC J2S 8A2 CANADA	<b>Product's carbon footprint</b> -	<b>Expected life</b> -
<b>Composition</b> Fire-rated insulation, pre-painted galvanized steel, sealants, adhesive.	<b>Environmental Product Declaration</b> ISO 14025:2006 -	<b>MANUFACTURER'S ENVIRONMENTAL MANAGEMENT</b>
<b>ATTRIBUTES</b>	<b>INGREDIENTS AND EMISSIONS</b>	<b>ISO 14001 Certification</b> -
<b>Recycled Content</b> Pre-consumer: 34.8% Post-consumer: 16.9%	<b>Declaration of chemical ingredients</b> 1,000 ppm	<b>Extended Producer Responsibility</b> - (Take Back Program)
<b>Sourcing of raw materials</b> The extraction locations of raw materials have been documented for 51.7% of the final product components, based on weight ratio.	<b>Type of declaration</b> HPD® version 2.0 Health Product Declaration®	<b>Corporate Sustainability Report</b> - (CSR : GRI, ISO 26000, BNQ 21000 or other)
<b>FSC® Certification</b> N/A	<b>Emission test</b> -	<b>CERTIFICATIONS AND CONFORMITIES</b>
<b>Rapidly renewable materials</b> N/A	<b>VOCs</b> 0 g/L - 49 g/L Depending on product used (Sealants applied in-house or on-site) (Adhesive factory applied)	
<b>Biobased materials</b> N/A	<b>Formaldehyde</b> None	
	<b>Others</b> -	

For over 35 years, the Norbec Group has been offering innovative, value-added solutions to its customers' needs. With the introduction in 2008 of the Norex® and Noroc® lines, Norbec Architectural now offers a complete range of solutions for building envelopes that combine advances in insulation with construction expertise.

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MasterFormat®: 07 42 43

Validated Eco-Declaration:

**VED17-1061-03**

Original issue date: 2012/11

Period of validity: 2018/09 to 2019/09



# ENVIRONMENTAL DATA SHEET

NOROC®



Norbec Architectural Inc.



SPECIFICATIONS	Noroc®-L
<b>Description</b>	Vertical mounting Joint with concealed fasteners Different architectural arrangements Applications: exterior walls and interior partitions
<b>Width</b>	42 <sup>1</sup> / <sub>2</sub> inches
<b>Thickness</b>	4, 5 & 6 inches
<b>Length</b>	7 to 40 feet
<b>Insulation Value</b>	R-4 per inch
<b>Steel Inner face</b>	0,019 inch (0,483 mm) standard thickness – 26 Gauge 0,023 inch (0,584 mm) optional – 24 Gauge
<b>Steel Outer face</b>	0,019 inch (0,483 mm) standard thickness – 26 Gauge 0,0285 inch (0,724 mm) optional – 22 Gauge

## ATTRIBUTES

### RECYCLED CONTENT

Final product	Weight ratio	Pre-consumer	Post-consumer
Noroc®-L (width 42 <sup>1</sup> / <sub>2</sub> inches) *	100%	34.8%	16.9%
Components (with recycled content)	Weight ratio	Pre-consumer	Post-consumer
Fire-rated insulation	59.8% *	25.0%	1.0%
Pre-painted galvanized steel	40.2% *	27.0%	42.0%

\* The results presented above are specific to panels with the following dimensions: length of 8 feet, 26 gauge steel (inside and outside faces) and 4 inches thick insulating foam. However, Norbec Architectural Inc can provide the results for all of the different configurations.

Validated Eco-Declaration – Recycled Content

Methodology: on-site audit, supply chain evaluation, analysis and validation of the recycled content data according to the weight ratio of each of the components used in manufacturing the final product.

Vertima's procedure: VERT-032008-01, Second Edition.

### SOURCING OF RAW MATERIALS

Weight ratio	Final manufacturing location
100%	Saint-Hyacinthe, QC J2S 8A2 CANADA

Validated Eco-Declaration – Sourcing of raw materials

Methodology: on-site audit, supply chain evaluation, analysis and validation of the sourcing of raw materials data according to the weight ratio of each of the components used in manufacturing the final product.

Vertima's procedure: VERT-032008-02, Second Edition.

Components	Weight ratio	Extraction locations	Transportation
Fire-rated insulation	35.9% *	N/A	N/A
Pre-painted galvanized steel (recycled)	27.7% *	Hamilton (ON)	Truck
Fire-rated insulation (recycled)	23.9% *	Milton (ON)	Truck
Pre-painted galvanized steel	12.5% *	N/A	N/A
Sealant 1 and/or Sealant 2	0% - 1.0% *	N/A	N/A
Adhesive	0% - 1.0% *	N/A	N/A

\* The results presented above are specific to panels with the following dimensions: length of 8 feet, 26 gauge steel (inside and outside faces) and 4 inches thick insulating foam. However, Norbec Architectural Inc can provide the results for all of the different configurations.

The extraction locations of raw materials have been documented for 51.7% of the final product components, based on weight ratio.

The data included in this Environmental Data Sheet has been provided by the client and the suppliers, who are responsible for its veracity and its integrity. Vertima follows a rigorous protocol, including an on-site audit of the factory, an audit of the manufacturer's supply chain documentation, and the analysis and validation of all supporting documents. However, Vertima cannot be held responsible for false or misleading information that may cause any loss or damage suffered, in all or in part, caused by errors and omissions relative to the data collection, compilation and/or interpretation. The analysis protocol used by Vertima is available on request.

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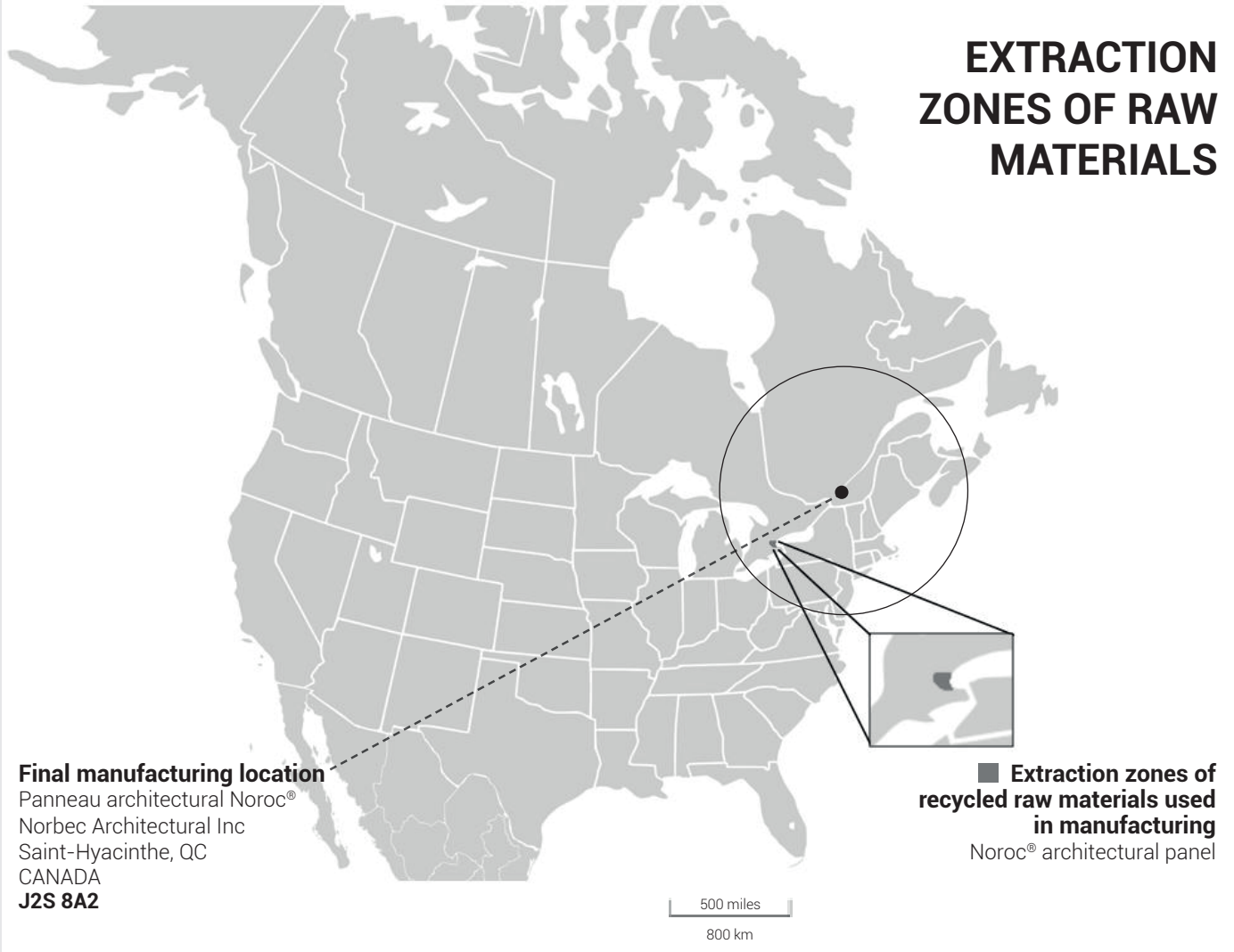
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## ATTRIBUTES (CONTINUED)

### SOURCING OF RAW MATERIALS (CONTINUED)

## EXTRACTION ZONES OF RAW MATERIALS



#### 1. EXTRACTION LOCATION OF RECYCLED STEEL: (Details available upon request)

**Canada:** Hamilton (Ontario)

#### 2. EXTRACTION LOCATION OF RECYCLED MINERAL FIBERS INSULATION: (Details available upon request)

**Canada:** Milton (Ontario)

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## INGREDIENTS AND EMISSIONS

### DECLARATION OF CHEMICAL INGREDIENTS



**Type of declaration:** Health Product Declaration® (HPD®) version 2.0

**Period of validity:** June 22, 2017 to June 22, 2020

Summary of product contents and results from screening individual chemical substances against HPD Priority Lists<sup>1</sup> and the GreenScreen for Safer Chemicals®<sup>2</sup>.

**Health Product Declaration® URL:** <http://www.hpd-collaborative.org/hpd-public-repository/>

The Health Product Declaration® and logo is owned by the Health Product Declaration® Collaborative and is used with permission.

**Declaration:** Prepared by Vertima  Self-declared  Third party

**Ingredients inventory threshold:** 1,000 ppm

**Full disclosure of intentional ingredients:** Yes

**Full disclosure of known hazards:** Yes

#### Hazards associated with the product ingredients:

This HPD Standard describes a declaration of product content and direct health hazards associated with exposure to its individual contents. The Declaration is not an assessment of risks associated with actual use of the product. It does not address the potential health impacts of substances used or created during manufacture that do not appear in the final product as residuals, nor substances created during combustion or other degradation processes.

**Highest concern GreenScreen® Benchmark:** Benchmark 1<sup>3</sup>

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> PBT (Persistent, Bioaccumulative, Toxic) | <input checked="" type="checkbox"/> Respiratory      | <input checked="" type="checkbox"/> Physical hazard |
| <input checked="" type="checkbox"/> Cancer                                   | <input type="checkbox"/> Neurotoxicity               | <input type="checkbox"/> Global warming             |
| <input checked="" type="checkbox"/> Gene Mutation                            | <input checked="" type="checkbox"/> Mammal           | <input type="checkbox"/> Ozone depletion            |
| <input checked="" type="checkbox"/> Development                              | <input type="checkbox"/> Land toxicity               | <input checked="" type="checkbox"/> Multiple        |
| <input checked="" type="checkbox"/> Reproductive                             | <input checked="" type="checkbox"/> Aquatic toxicity | <input type="checkbox"/> Unknown                    |
| <input checked="" type="checkbox"/> Endocrine                                | <input checked="" type="checkbox"/> Skin or eye      |   |

<sup>1</sup>Please refer to Annex D of HPD® Open Standard Version 2.0, September 10th 2015. <http://www.hpd-collaborative.org>

<sup>2</sup>GreenScreen for Safer Chemicals® method: <http://www.greenscreenchemicals.org/>

<sup>3</sup>GreenScreen (GS) Benchmark scores of chemical ingredients: Benchmark 1 (Avoid, chemical of high concern), Benchmark 2 (Use but search for safer substitutes), Benchmark 3 (Use but still opportunity for improvement), Benchmark 4 (Prefer, safer chemical).

### TABLE OF INGREDIENTS

Name	Role	Weight ratio	CAS <sup>1</sup>	GreenScreen® <sup>2</sup>	Note(s) (For more details refer to the HPD®)
Fire-rated insulation	Insulation	59.8%	50-00-0	LT-1	LT-P1 and LT-UNK scores also present
Pre-painted galvanized steel	Structural component	40.2%	Multiple	LT-1	LT-P1 and LT-UNK scores also present
Sealant 1	Joint	0% - 1.0%	Undisclosed	LT-P1	LT-UNK and BM-2 scores also present
Sealant 2	Joint	0% - 1.0%	2224-33-1 556-67-2	BM-1	LT-1, LT-P1 and LT-UNK scores also present
Adhesive	Joint	0% - 1.0%	1330-20-7	BM-1	LT-1, LT-UNK and BM-2 scores also present

<sup>1</sup>Only the CAS numbers with the score of highest concern are listed. The complete list of substances can be found in the HPD®.

<sup>2</sup>GS List Translator (LT) scores of chemical ingredients: LT-1, likely GS Benchmark 1; LT-P1, possible GS Benchmark 1; LT-U or LT-UNK, present on GS Specified Lists but there is insufficient information to classify the hazards as LT-1 or LT-P1 (does not mean the chemical is safe).

Validated Eco-Declaration – Declaration of chemical ingredients

Methodology: validation of the documentation confirming the methodology and reporting of chemical ingredients.

Vertima's procedure: VERT-032009-01, Second Edition.

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## INGREDIENTS AND EMISSIONS (CONTINUED)

### VOLATILE ORGANIC COMPOUNDS (VOCs)

Sealants are applied during the manufacturing of Noroc® architectural panel or during installation at the project site. Adhesive is applied during manufacturing only. In the category of products presented below, the values refers to the VOC content of sealants and adhesive in their liquid state.

#### SEALANT PRODUCTS

Manufacturer	Type	Product name	VOC Content
Adfast	Sealant	Adseal 4550	49 g/L
Sika	Sealant	Lastomer 511	0 g/L
EMFI	Adhesive	Isolemfi 50061 / Hardener 521A	48 g/L

Validated Eco-Declaration – Emissions and Volatile Organic Compounds (VOCs)  
 Methodology: validation of documents attesting VOCs emissions.  
 Vertima's procedure: VERT-032009-02, Second Edition.

## TECHNICAL PERFORMANCES

### PERFORMANCE TESTS

Non-exhaustive list of performance tests. See the Noroc® architectural panel specifications sheet for more details.

- CAN / ULC – S101 : Standard Test Methods for fire endurance for building construction and materials
- CAN / ULC – S102 - M07 : Standard Test Methods for surface burning characteristics of building materials and Assemblies
- ASTM-E72 : Standard Test Methods for deflexion of panels for building construction
- ASTM-E84 : Surface burning characteristics of building materials  
 Results : Flame spread < 25 min / Smoke developed < 450 min
- R-Value : 4,00 (ft<sup>2</sup>.°F. h / BTU) per inch

### WARRANTY

Norbec Architectural Inc., as a manufacturer, assures that the product subject to this licence is free from defects and manufacturing defects, including delamination for a period of five (5) years from the date of the installation of the product or after 45 days of delivery, whichever is earlier.

For full details, please see the full warranty.

## MANUFACTURER'S ENVIRONMENTAL MANAGEMENT PROGRAM

### MANUFACTURER'S COMMITMENT

Norbec Architectural Inc. attribute great importance on building sustainable and eco-responsible buildings.

Norbec Architectural Inc. relies on recycling and contributing on reducing raw materials and waste by reusing plastic packaging, wood, cardboard and paper. The steel used in the panels is 100% reusable.

Norbec Architectural Inc. recycles panels from waste (colour varied, varied sizes, minimal defects, etc.) in offering a line of quality B panels.

All materials used in Norbec Architectural Inc.'s products are non-toxic and environmentally friendly.

Norbec Architectural Inc. panels are designed to contribute to reducing carbon dioxide (CO<sub>2</sub>) emissions by providing better energy efficiency and in pursuit of a sustainable development policy.

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## PRODUCT CONTRIBUTION SUMMARY

### LEED® v4 requirements for Building Design + Construction (BD+C)

New Construction, Core and Shell, School, Retail, Data Centers, Warehouse and Distribution Centers, Hospitality and Healthcare.

### LEED® v4 requirements for Interior Design + Construction (ID+C)

Commercial Interiors, Retail and Hospitality.

ENERGY AND ATMOSPHERE		PRODUCT CONTRIBUTIONS	
EA Prerequisite 2	<b>Minimum Energy Performance</b> Option 1: Whole-building energy simulation or at the scale of the rental space, according to the system Option 2: Prescriptive compliance: ASHRAE 50% Advanced Energy Design Guide Option 3: Prescriptive compliance: Advanced Buildings™ Core Performance™ Guide	Contribute	<b>TECHNICAL PERFORMANCES</b> The Noroc® architectural panel contributes to this prerequisite. Its mineral fibers insulation has a thermal insulation factor of R-4,00 per inch of thickness.
	<b>Optimize Energy Performance</b> Option 1: Whole-building energy simulation or at the scale of the rental space, according to the system BD+C (1-20 points) and ID+C (1-25 points) Option 2: Prescriptive compliance: ASHRAE Advanced Energy Design Guide BD+C (1-6 points) and ID+C (1-16 points)		<b>TECHNICAL PERFORMANCES</b> The Noroc® architectural panel contributes to this credit. Its mineral fibers insulation has a thermal insulation factor of R-4,00 per inch of thickness.
MATERIALS AND RESOURCES		PRODUCT CONTRIBUTIONS	
MR	<b>Building Product Disclosure and Optimization – Sourcing of Raw Materials</b> Option 2: Leadership extraction practices (1 point) May also contribute to the location valuation factor if the product is extracted, manufactured and purchased within 160 km of the project site.	Contribute	<b>ATTRIBUTES</b> Recycled Content Pre-consumer (34.8%) Post-consumer (16.9%)
	<b>Building Product Disclosure and Optimization – Material Ingredients</b> Option 1: Material ingredients reporting (1 point) The Noroc® architectural panel contributes with his Health Product Declarations® and is valued as 1 whole product out of the 20 needed for the purposes of credit achievement calculation.		<b>INGREDIENTS AND EMISSIONS</b> HPD® version 2.0 Health Product Declaration®
INDOOR ENVIRONMENTAL QUALITY		PRODUCT CONTRIBUTIONS	
EQ	<b>Low-Emitting Materials</b> Option 1: Product category calculations (1-3 points) Additional conditions apply for healthcare and schools. Batt insulation products may contain no added formaldehyde, including urea formaldehyde, phenol formaldehyde, and urea-extended phenol formaldehyde.	Do not contribute <sup>1</sup>	<b>INGREDIENTS AND EMISSIONS</b> <sup>1</sup> Must be tested and determined compliant to the California Department of Public Health (CDPH) Standard Method v1.1-2010. (The Noroc® architectural panel does contain added formaldehyde.)

It is important to consider that the total amount of possible points reflects the number of achievable points in each credit category. The product itself cannot achieve this score, as defined above, but is considered as a beneficial element in order to achieve LEED® credits.

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