



PANEL WITH EXPANDED POLYSTYRENE CORE

Norlam® architectural panels are high-energy-efficient insulated panels designed for building envelopes.

Norlam® stands out most of all for its versatility and unrivalled price-quality ratio.


VALIDATED ECO-DECLARATION

PRODUCT SPECIFICATIONS	
References	
Norlam®-L Type I Norlam®-L Type II	
Final manufacturing location	
Boucherville, QC J4B 1K7 CANADA	
Composition	
Pre-painted galvanized steel, expanded polystyrene Type I or Type II, sealants, adhesives.	
ATTRIBUTES	
Recycled Content	
Pre-consumer: 21.4% - 23.0% Post-consumer: 35.3% - 37.2%	
Sourcing of raw materials	
The extraction locations of raw materials have been documented for 56.7% to 60.2% of the final product components, based on weight ratio.	
FSC® Certification	N/A
Rapidly renewable materials	N/A
Biobased materials	N/A

ENVIRONMENTAL IMPACTS	
Life Cycle Assessment	-
Product's carbon footprint	-
Environmental Product Declaration	-
ISO 14025:2006	
INGREDIENTS AND EMISSIONS	
Declaration of chemical ingredients	1,000 ppm
Type of declaration	HPD® version 2.0 Health Product Declaration®
Emission test	-
VOCs	0 g/L - 49 g/L
Depending on product used (Sealants applied in-house or on-site) (Adhesives factory applied)	
Formaldehyde	None
Others	-

Product's contribution to LEED® v4

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PRODUCT SPECIFICATIONS	
Tests de performance	Voir page 5
Durée de vie prévue	-
MANUFACTURER'S ENVIRONMENTAL MANAGEMENT	
Certification ISO 14001	-
Extended Producer Responsibility	-
(Take Back Program)	
Corporate Sustainability Report	-
(CSR : GRI, ISO 26000, BNQ 21000 or other)	
CERTIFICATIONS AND CONFORMITIES	
	

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:

VED17-1061-02

Original issue date: **11/2012**

Period of validity: **2017/07 to 2018/07**



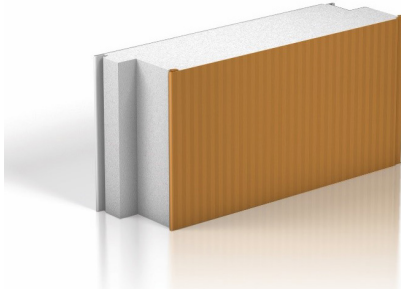
ENVIRONMENTAL DATA SHEET

NORLAM®



Norbec Architectural Inc.

SPECIFICATIONS	Norlam®-L
Description	Horizontal & vertical mounting Joint with concealed fasteners Different architectural arrangements Applications: exterior walls, interior partitions and suspended ceilings
Width	45 ^{1/2} inches
Thickness	3, 4, 5, 6, 7 ^{1/2} & 10 inches
Length	6 to 49 feet
Insulation Value	With type I polystyrene, R II, 85 to R-39,50 With type II polystyrene, RI2, 60 to R-42,00
Steel Inner face	0,019 inch (0,483 mm) standard thickness – 26 Gauge 0,023 inch (0,584 mm) optional thickness – 24 Gauge
Steel Outer face	0,019 inch (0,483 mm) standard thickness – 26 Gauge 0,0285 inch (0,724 mm) standard thickness – 22 Gauge



ATTRIBUTES

RECYCLED CONTENT

Final products	Weight ratio	Pre-consumer	Post-consumer
Norlam®-L Type I (width 45 ^{1/2} inches) *	100%	23.0%	37.2%
Norlam®-L Type II (width 45 ^{1/2} inches) *	100%	21.4%	35.3%
Components (with recycled content)	Weight ratio	Pre-consumer	Post-consumer
Pre-painted galvanized steel	79.2% - 85.1% *	27.0%	42.0%
Expanded polystyrene Type I or Type II	14.9% - 21.8% *	0%	10.0%

* 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%	Boucherville, QC J4B 1K7 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
Pre-painted galvanized steel (recycled)	54.6% - 58.7% *	Hamilton (ON)	Truck
Pre-painted galvanized steel	24.5% - 26.4% *	N/D	N/D
Expanded polystyrene Type I or Type II	13.4% - 18.8% *	N/D	N/D
Expanded polystyrene Type I or Type II (recycled)	1.5% - 2.1% *	Sainte-Marie (QC)	Truck
Sealant 1 and/or Sealant 1	0% - 1.0% *	N/D	N/D
Adhesive 1 and/or Adhesive 2	0% - 1.0% *	N/D	N/D

* 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 56.7% to 60.2% of the final product components, based on weight ratio.

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ATTRIBUTES (CONTINUED)

SOURCING OF RAW MATERIALS (CONTINUED)



- 1. **EXTRACTION LOCATION OF RECYCLED STEEL:** (Details available upon request)
Canada: Hamilton (Ontario)
- 2. **EXTRACTION LOCATION OF RECYCLED EXPANDED POLYSTYRENE TYPE I / TYPE II:** (Details available upon request)
Canada: Sainte-Marie (Quebec)

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ENVIRONMENTAL DATA SHEET

NORLAM®

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 Lists¹ and the GreenScreen for Safer Chemicals®².

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 1³

- ☒ PBT (Persistent, Bioaccumulative, Toxic)
- ☒ Cancer
- ☒ Gene Mutation
- ☒ Development
- ☒ Reproductive
- ☒ Endocrine

- ☒ Respiratory
- ☐ Neurotoxicity
- ☒ Mammal
- ☐ Land toxicity
- ☒ Aquatic toxicity
- ☒ Skin or eye

- ☒ Physical hazard
- ☐ Global warming
- ☐ Ozone depletion
- ☒ Multiple
- ☐ Unknown

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

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

³GreenScreen (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 ¹	GreenScreen® ²	Note(s) (For more details refer to the HPD®)
Pre-painted galvanized steel	Main component	79.2% - 85.1%	Multiple	LT-1	Pointages LT-P1 and LT-UNK scores also present
Expanded polystyrene Type I or Type II	Insulation	14.9% - 20.8%	Multiple	LT-P1	Pointages LT-UNK and BM-2 scores also present
Sealant 1	Joint	0% - 1.0%	Undisclosed	LT-UNK	LT-UNK and BM-2 scores also present
Sealant 2	Joint	0% - 1.0%	2224-33-1 556-67-2	BM-1	Pointages LT-1, LT-P1, LT-UNK scores also present
Adhesive 1	Joint	0% - 1.0%	68920-06-9 8002-74-2 6683-19-8	LT-UNK	-
Adhesive 2	Joint	0% - 1.0%	110-80-5	LT-1	Pointages LT-P1 and LT-UNK scores also present

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

²GS 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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NORLAM®

INGREDIENTS AND EMISSIONS (CONTINUED)

VOLATILE ORGANIC COMPOUNDS (VOCs)

Sealants are applied during the manufacturing of Norlam® architectural panel or during installation at the project site. Adhesives are applied during manufacturing only. In the category of products presented below, the values refers to the VOC content of sealants and adhesives 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
Demilec	Adhesive	Polyol WR 425 / Isocyanurate A100-4	0 g/L
Henkel	Adhesive	Technomelt Quickpac	0 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 Norlam® architectural panel specifications sheet for more details.

- 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
- S138 : Standard Test Methods for Fire growth of insulated building panels in a full-scale room configuration
- R-Value : 3,75 (ft². °F. h / BTU) per polystyrene inch Type I & 4,00 per polystyrene inch Type II

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 (CO₂) 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	Minimum Energy Performance 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	TECHNICAL PERFORMANCES The Norlam® architectural panel contributes to this prerequisite. Its expanded polystyrene Type I or Type II insulation has a thermal insulation factor of R-3,75 or R-4,00 per inch of thickness depending on the Type I or Type II.
	EA Optimize Energy Performance 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)		Contribute The Norlam® architectural panel contributes to this credit. Its expanded polystyrene Type I or Type II insulation has a thermal insulation factor of R-3,75 or R-4,00 per inch of thickness depending on the Type I or Type II.
MATERIALS AND RESOURCES		PRODUCT CONTRIBUTIONS	
MR	Building Product Disclosure and Optimization – Sourcing of Raw Materials 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	ATTRIBUTES Recycled Content Pre-consumer (21.4% - 23.0%) Post-consumer (35.3% - 37.2%)
	MR Building Product Disclosure and Optimization – Material Ingredients Option 1: Material ingredients reporting (1 point) The Norlam® 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.		Contribute INGREDIENTS AND EMISSIONS HPD® version 2.0 Health Product Declaration®
INDOOR ENVIRONMENTAL QUALITY		PRODUCT CONTRIBUTIONS	
EQ	Low-Emitting Materials 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 contribute¹	INGREDIENTS AND EMISSIONS ¹Must be tested and determined compliant to the California Department of Public Health (CDPH) Standard Method v1.1-2010. (The Norlam® architectural panel does not contain any added formaldehyde, including urea formaldehyde, phenol formaldehyde, and urea-extended phenol 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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