

# WALLTITE *ECO*<sup>TM</sup>

## CCMC - 13408-L - Insulation / air barrier material

## CCMC - 13467-R - Air barrier system

**WALLTITE *ECO*** is a medium density polyurethane insulation / vapour / air barrier material, that lowers energy consumption and greenhouse gas emissions. Intended for residential, commercial, industrial and institutional applications, it could be used above or below grade, for interior or exterior building envelope applications, including walls, foundations, ceilings and floors. **WALLTITE *ECO*** can be used as an air barrier system (please refer to our technical binder or call a BASF representative).

- **WALLTITE *ECO*** resin uses a **zero ozone-depleting blowing agent**. The polyol contains both **recycled plastic and renewable carbon content**.
- **WALLTITE *ECO*** meets the requirements of CAN/ULC-S705.1-01 (including amendments 1 & 2) and must be applied by certified contractors as per CAN/ULC-S705.2.
- **WALLTITE *ECO*** is the **first medium density polyurethane to earn the EcoLogo<sup>M</sup> certification**, one of the most widely recognized environmental certifications in North America.
- It has been awarded the **GREENGUARD Children & Schools<sup>SM</sup>** certification for indoor air quality, thus ensuring optimal occupant comfort and safety. Leadership In Energy & Environmental Design (LEED) recognizes the Greenguard certification.
- It has also been recognized as a best in class insulation air barrier system through an **Eco-efficiency analysis** measuring **total cost and ecological impact**. The LCA-calculations are set up according to the rules and principles of ISO 14040 ff. The analysis assesses the lifecycle of a product or manufacturing process from "cradle to grave" over six categories: **materials consumption; energy consumption; emissions to air, soil and water; risk potential for misuse; health effect potential; land use**.
- **WALLTITE *ECO*** meets the requirements of Appendix D of CCMC Technical Guide Masterformat Section 07272 "ABS Durability Criteria for Foam Plastic Insulation" with respect to air permeance reduction and thermal resistance retention after heat aging and accelerated weathering.



**NOTE:**

Major prerequisites for renewable raw materials to become an alternative to fossil resources are their availability at competitive prices for industrial applications, without compromising food production and depleting natural wealth. For insulation material: **WALLTITE ECO™**, BASF Canada has chosen to use renewable content from non-edible crops that do not jeopardize global food production.

	Resin	Isocyanate
<b>Liquid Component Properties</b>		
Viscosity mPa*s @ 25°C (77°F)	200 ± 50	200 ± 30
Specific Gravity @ 25°C (77°F)	1.17	1.22
Flash Point °C (°F)	>200 (>392)	>200 (>392)
Ratio (Parts by volume)	100	100
<b>Quality Control Machine Parameters</b>		
Primary Heater		
- Resin °C (°F)	49 (120)	49 (120)
- Iso °C (°F)	49 (120)	49 (120)
Hose Temperature °C (°F)	49 (120)	49 (120)
Pressure in bar (psi) 59 to 83, (850 to 1200)		
<b>Temperature used in the Laboratory</b>		
Ambient temperature °C (°F)	23 (73)	23 (73)
Substrate (Cardboard) °C (°F)	23 (73)	23 (73)
<b>Quality Control Reactivity Profile</b>		
<b>WALLTITE ECO:</b>	<b>Regular Grade</b>	<b>Cold Temp. Grade</b>
Cream time (sec.)	≤ 1	≤ 1
Gel time (sec.)	1.65 ± 0.25	1.25 ± 0.15
Tack free time (sec.)	3.0 ± 0.5	2.0 ± 0.5
Rise time (sec.)	4.5 ± 1.0	3.0 ± 1.0

The following data was obtained through testing at an independent laboratory.

**Density (Core)**

(ASTM D1622):

kg/m <sup>3</sup> (lb/ft <sup>3</sup> )	28.34	(1.77)
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**Compressive Strength**

(ASTM D1621): Parallel to rise (10% compression)

kPa (psi)	199	(29)
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**Tensile Strength**

(ASTM D1623):

kPa (psi)	396	(57)
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**Open Cell Content**

(ASTM D2856): %

4.56

**Water Absorption**

(ASTM D2842): % by volume

0.62

**Dimensional Stability**

(ASTM D2126): % volume change after 28 days

-20°C (-4°F) ambient humidity	0.96	
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80°C (176°F) ambient humidity	5.11	
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70°C (158°F) and 97% Relative Humidity	8.60	
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**Water Vapour Permeance – With outer skins to simulate actual in-situ conditions**

(ASTM E96-05):

ng/Pa·s·m <sup>2</sup> (perm) @ 25mm (1 in. nominal)	46	(0.80)
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ng/Pa·s·m <sup>2</sup> (perm) @ 50mm (2 in. nominal)	35	(0.60)
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**Volatile Organic Compound (VOC) Emissions During Aging**

CAN/ULC-S774

Below detection limit	24 hrs	
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**Service Temperature**

°C (°F)	-40 to +80	(-40 to +176)
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### Initial Thermal Resistance\*

(ASTM C518):

[m <sup>2</sup> •°K/W] @ 50mm (1.97 in)	2.41	(13.67)
(ft <sup>2</sup> •hr•°F/Btu)/in @ 50.8mm (2 in)	2.45	(13.89)

### Long Term Thermal Resistance (LTTR)

(CAN / ULC-S770)

Thickness ( inches )	Thickness ( mm )	R Value (ft <sup>2</sup> .hr.°F/Btu)/in	RSI (m <sup>2</sup> .°C/W)
1.97	50	10.31	1.82
2	50.8	10.48	1.85
2.5	63.5	13.47	2.37
2.95	75	16.21	2.86
3	76.2	16.46	2.90
3.5	88.9	19.60	3.35
3.94	100	22.39	3.94
4	101.6	22.74	4.01

### Flame Spread Classification\*\*

For a thickness of 50 mm (1.97 in.)

(CAN/ULC-S102 including -S127)

Flame Spread	<500
Smoke Development	<500

### Fungal Growth

When tested to ASTM C1338, the samples of **WALLTITE ECO™** insulation material did not support fungal growth.

\* The initial thermal resistance is used for comparative purposes.

\*\* Numerical flame spread ratings are not intended to reflect hazards presented by this or any other products made from this material under actual fire conditions.

Data presented in this document is based on tests and information, which we believe to be reliable. This document is provided for information purposes only and without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Whether or not this data is used or relied upon is within the sole discretion and judgment of the user. Since BASF has no control over the conditions of handling, storage, use and disposal of the products, BASF does not assume any responsibility or liability and expressly disclaims all liability for any claim, loss, damage, injury or expense resulting therefrom.

## Air Leakage Results

As per the Technical Guide for Air Barrier Systems for Exterior Walls of Low-Rise Buildings, Master Format Section: 07272 prepared by CCMC, NRC.

### Result from Air-Ins Inc. an independent laboratory

#### Material result

L/s/m<sup>2</sup> at 75 Pa 0.000156

#### System result

L/s/m<sup>2</sup> at 75 Pa 0.0054

#### Testing

**WALLTITE ECO™** meets the requirements of Appendix D of CCMC Technical Guide Masterformat Section 07272 " ABS Durability Criteria for Foam Plastic Insulation" with respect to air permeance reduction and thermal resistance retention after heat aging and accelerated weathering.

1. The air permeance after heat aging and after weathering shall be maintained within 100% of the original value. **Result: Satisfactory**
2. The heat aged and weathered samples shall show 90% retention of the thermal resistance. **Result: Satisfactory**

**Adhesion tests** - Air-Ins Inc. an independent laboratory certified by Standards Council Canada (SCC) verified **WALLTITE ECO** over 35 different substrates. Please communicate with our Sales Representative.

**WALLTITE ECO** insulation / vapour / air barrier system exceeds the requirements of the 2005 National Building Code (NBC) for Canada.

## Water Vapour Permeance WALLTITE ECO™

When **WALLTITE ECO** is installed in an exterior insulating sheathing-type application, the water vapour permeance (WVP) value requires that the wall assembly complies with Table 9.25.1.2., Subsection 9.25.4., and Article 9.13.3.3. of the NBC 2005.

"Tests ASTM E96-05", done on **WALLTITE ECO** by an independent laboratory approved by the Standards Council of Canada.

### Tests done on WALLTITE ECO by an independent laboratory:

Substrate	Substrate thickness	WVP of the substrate  ng/Pa•s•m <sup>2</sup>	WVP of the substrate + 25.4 mm (1 in) of WALLTITE ECO  ng/Pa•s•m <sup>2</sup>	WVP of the substrate + 38.1mm (1.5 in) of WALLTITE ECO  ng/Pa•s•m <sup>2</sup>	WVP of the substrate + 50.8 mm (2 in) of WALLTITE ECO  ng/Pa•s•m <sup>2</sup>	WVP of the substrate + 76.2 mm (3 in) of WALLTITE ECO  ng/Pa•s•m <sup>2</sup>
Concrete	44.5 mm (1.75 in)	–	7			
OSB board	12.7 mm (0.5 in)	85	26.0			
Plywood board	12.7 mm (0.5 in)	78	16			
Drywall board, interior grade	12.7 mm (0.5 in)	1,585	58	50	47	
Drywall board, exterior grade	12.7 mm (0.5 in)	1686	48	41	39	
DensGlass Gold®	12.7 mm (0.5 in)	1,524	41	38	34	24
Concrete Block	25.4 mm (1 in)	63	30			

## General Application Instructions

**WALLTITE ECO™**, properly mixed, will produce high quality polyurethane foam when applied according to our specifications. Regular grade system must be applied between +5°C to +40°C (41°F to 104°F). Cold temperature grade system must be applied between -10°C to +5°C (14°F to 41°F). Spraying at lower temperatures may result in poor adhesion between the foam and the substrate. The purple foam is produced on site from two liquid components, a resin and an isocyanate, Lupranate 17.

### Equipment Parameters (field)

Primary heater, resin and iso °C (°F)	32 (90) to 49 (120)
Hose temperature °C (°F)	32 (90) to 49 (120)
Mixing pressure in bar (psi)	59 (850) to 83 (1200)

### Storage Recommendations

Resin and isocyanate must be stored on pallets in a dry location, away from sunlight and other sources of direct heat.

	<b>Isocyanate</b>	<b>Resin</b>
Shelf Life	12 months	6 months
Temperature °C	16 - 27	16 - 23
°F	61 - 81	61 - 73

## Health, Safety and Toxicity Considerations

### Handling Recommendations:

#### Isocyanate – Lupranate 17

- Use personal protective equipment (see MSDS)
- Avoid all contact with skin and eyes
- Do not inhale the vapours
- Do not store in a humid environment
- In case of spills, absorb using sand or absorbing material (not sawdust)
- For larger spills, contact BASF Canada at 1-800-454-2673, or any agency specialized in chemical damage control (e.g. CANUTEC at 613-996-6666)

#### Resin WALLTITE ECO™

##### Contains a low boiling point blowing agent:

- Use personal protective equipment (see MSDS)
- Before opening, unscrew the bung slowly to release the gas pressure in the drums
- Avoid all contact with skin



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### Application Safety

While spraying, always work with adequate ventilation. Protective gloves, overalls, eye protection, safety shoes, hard hats and a properly fitting breathing apparatus supplying fresh air **must** be worn by the installers (and others working within 10 meters - 33 feet of the installer) at all times while spraying\*\*\*. Persons with known respiratory allergies must avoid exposure to the isocyanate component. If inhalation of vapours occurs, remove the person from the working area to breathe fresh air and if breathing is still difficult call a physician. Avoid contact with eyes, skin and clothing. In case of eye contact, immediately flush with large amount of water for at least 15 minutes and call a physician immediately. In case of skin contact, wash area with soap and water. Wash soiled clothing before reuse.

Do not apply **WALLTITE ECO™** in excess of 50 mm (two inches) per pass due to the product's exothermic effect. Allow passes to thoroughly cool before applying successive passes.

### Drum Description

Isocyanate: 250 kg (551 lb), steel drum (Red)

Resin: 220 kg (485 lb), steel drum (Purple)

### Fire Hazard

Fires involving either component may be extinguished with carbon dioxide, dry chemical, or an inert gas. Application of large quantities of chemical spray is recommended for spill fires. Personnel fighting the fire must be equipped with self-contained breathing apparatus.

**Note:** **WALLTITE ECO™** is a registered trademark of BASF Canada

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\*\*\* As per standard CAN/ULC-S705.2-05

### BASF Canada

For information, call:

#### Eastern Region

ON, QC, MAR

Toll-Free: 1-866-474-3538

#### Western Region

BC, AB, SK, MB, NWT, YT, NU

1-800-891-0671