

ENERTITE® 1-2-1

Low Density Open Cell Polyurethane Insulation

DESCRIPTION:

ENERTITE 1-2-1 is a low-density polyurethane spray insulation system which combines the properties of insulating materials and air barriers and is installed by qualified applicators trained by BASF Canada Inc. Incorporating water as the sole blowing agent, ENERTITE 1-2-1's superior specifications make it ideal for residential, commercial and institutional applications.

USES:

Intended for residential, commercial, industrial and institutional building applications where insulation is required, ENERTITE 1-2-1 can be installed in new or retrofit constructions. In either case, the product must be installed in open cavities in the following locations in a wood-frame construction that meets the requirements of the 2010 NBC:

- exterior walls including perimeter joists;
- cathedral ceilings;
- floors separating living spaces from a garage;
- cantilever overhang floors; and
- interior below-grade foundation walls (damp proofing required, no contact with wet cement).

ENERTITE 1-2-1 is not designed for use as an exterior roofing system. Cold storage structures (e.g. coolers and freezers) and high humidity rooms (e.g. pools and saunas) demand special design considerations with regards to thermal insulation and moisture-vapour drive. ENERTITE 1-2-1 should not be installed in these types of constructions unless the structure was designed by a design professional.

FEATURES AND BENEFITS

- Does not sag;
- Excellent adhesion;
- Excellent sound absorption;
- Excellent dimensional stability;
- Lack of ozone depletion;
- Good insulating value

APPROVALS AND CREDENTIALS:

- **CCMC 13489-R – Spray-in-place, Open-Cell polyurethane Foam (OPF) Thermal Insulation**
- **GREENGUARD and GREENGUARD Gold Certification** – Enertite 1-2-1 meets the stringent requirements of GREENGUARD Gold, thus ensuring occupant safety through improved indoor air quality.



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The following test data is from an independent laboratory and is in compliance with the product standard.

Property	Value Metric (Imperial)	Test Method
Density (Core)	8.08 kg/m ³ (0.5 lb/ft ³)	ASTM D1622
Water Absorption	74 % by volume	ASTM D2842
Water Vapour Permeance	1449 ng/Pa·s·m ² (25.3 perm) at 25 mm (1.97 in)	ASTM E96
Dimensional Stability	Volume Change (%) after 28 days -0.8 @ -20°C (-29°F) -2.3 @ 70°C (158°F) @ 97± 3% RH -6.0 @ 80°C (176°F)	ASTM D2126
Thermal insulation value	0.61 m ² ·°K/W/25.4 mm (R value, 3.5 [ft ² ·h·°F/Btu]/in)	ASTM C 518
Flame Spread Classification**	418	CAN/ULC-S102
Smoke development	300	Including S127
Time to Occupancy***	24 Hours	CAN/ULC-S774
Hot-Surface Performance	Passed when exposed to 93°C (200°F) for 96 hours	ASTM C 411
Fungi Resistance	After 28 day incubation - no fungal growth exhibited	ASTM C1338
Air permeance	At 5.5 inches 0.0104 L/(s.m ²) At 3.5 inches 0.0170 L/(s.m ²)	ASTM E 2178-03

SOUND ABSORPTION AND SOUND TRANSMISSION ON A WALL ASSEMBLY****

Noise reduction coefficient (NRC):	0.55
Sound absorption average (SAA):	0.53
Sound transmission class (STC):	36
Outdoor – indoor transmission class (OITC):	28

APPLICATION

ENERTITE 1-2-1 must be installed by applicators that are licensed through BASF Canada's Quality Assurance and Training Program – RAISING PERFORMANCE TO NEW HEIGHTS® (QATP) and certified through Caliber Solutions Inc. who is responsible for delivering the Quality Assurance Program (QAP).

Before applying, ensure ambient temperature is:

ENERTITE 1-2-1	-10°C to + 40°C (14°F to 104°F)
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*These physical property values are typical for this material as applied at our development facility under controlled conditions. ENERTITE 1-2-1 performance and actual physical properties will vary with differences in application (i.e. ambient conditions, process equipment and settings, material throughput, etc.). As a result, these published properties should be used as guidelines solely for the purpose of evaluation. Physical property specifications should be determined from actual production material.

**Numerical flame spread ratings are not intended to reflect hazards presented by this or any products made from this material under actual fire conditions. ENERTITE 1-2-1 should not be left exposed and must be protected by a thermal barrier.

***The volatile organic compound (VOC) emissions under consideration were measured with an assumed room ventilation rate of 0.3 air changes per hour as per the NBC requirements for new construction.

****Wall assembly: Wood 2x4", 16" on-center spacing, 108" wide x 95-1/2" tall. Enertite 1-2-1 filled the full thickness. 1/2" OSB sheathing (exterior), 1/2" gypsum board (interior)

Important! The information, data and products presented herein are based upon information reasonably available to BASF Canada at the time of publication, and are presented in good faith, but are not to be construed as guarantees or warranties, express or implied, regarding performance, results to be obtained from use, comprehensiveness, merchantability, or that said information, data or products can be used without infringing patents of third parties. You should thoroughly test any application and independently determine satisfactory performance before commercialization.

Warning! These products can be used to prepare a variety of polyurethane products. Polyurethanes are organic materials and must be considered combustible.

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QUALITY ASSURANCE PARAMETERS AND REACTIVITY

All Measurements taken at ambient temperatures of 23 °C, using Graco Reactor E30 and Fusion AP 5252 chamber

Hose and Primary Temperatures - °C(°F)	53 (130)
Pressure – Bar (psi)	69 (1000)
Gel Time (seconds)	3 ± 0.5
Rise Time (seconds)	6 ± 1

PACKAGING AND STORAGE RECOMMENDATION

ENERTITE 1-2-1 is sold to licensed installers in drums. It consists of two components: ENERTITE 1-2-1 Resin and Elastospray 8000A Isocyanate.

	ENERTITE 1-2-1 Resin	Elastospray 8000A Isocyanate
Shelf Life	6 months	12 months
Storage Temperature Recommendations	15°C-25°C (59°F-77°F)	15°C-25°C (59°F-77 °F)
Drum Description	Purple steel drum	Red or black steel drum
Drum mass	220 kg (485 lbs)	250 kg (551 lbs)

LIQUID COMPONENT PROPERTIES

	ENERTITE 1-2-1 Resin	Elastospray 8000A Isocyanate
Viscosity – mPa·s @ 25°C (77 °F)	750 ± 150	200 ± 30
Specific Gravity @ 25°C (77°F)	1.105	1.22
Flash Point	>93°C (>200°F)	>200 °C (>390 °F)
Ratio (Parts by Volume)	100	100

HEALTH, SAFETY AND TOXICITY CONSIDERATIONS HANDLING RECOMMENDATIONS:

Always handle and apply ENERTITE 1-2-1 in accordance with the QATP manual.

Elastospray 8000A Isocyanate

- 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)

ENERTITE 1-2-1 Resin

- 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

Application Safety

At all times while spraying, properly fitting breathing apparatus supplying fresh air **must** be worn by the installers and others working within 10 meters (33 feet) of the installer. Protective gloves, overalls, eye protection, safety shoes and hard hats must also be worn while spraying. While spraying, always provide mechanical ventilation with a minimum 0.3 air changes per hour and continuing for 24 hours following installation. People 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.

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Fire Hazard

Fires involving either component may be extinguished with carbon dioxide, dry chemical, or an inert gas. Personnel fighting the fire must be equipped with self-contained breathing apparatus.

PRECAUTIONS/LIMITATIONS

Do not install in locations where a non-combustible insulation is required.

When installed inside a building protect foam in accordance with the building code requirements using a layer of drywall or a suitable thermal barrier.

ENERTITE® 1-2-1 and WALLTITE v.3 using the same machine. These two materials are distinct products with distinct application processes that MUST be stringently observed.

Changing to WALLTITE v.3

- Flush ENERTITE 1-2-1 from coupling block into pail until colour of resin has completely changed from yellow cream to purple. Do not mix resins for recycling purposes; this can result in chemical contamination. Flush resin to be disposed of according to local regulations.
- Spray out a test sample to ensure WALLTITE v.3 meets minimum density criteria (refer to BASF Canada WALLTITE Application Guide). If good, continue with application, otherwise continue flushing and test again.

Changing to ENERTITE 1-2-1

- Use a separate drum pump or wipe down pump shaft before putting into ENERTITE 1-2-1 drum.
- Mix ENERTITE 1-2-1 resin drum on high speed (800 rpm or level 3 on a Twistork) for a MINIMUM of 30 minutes prior to flushing.
- Constant mixing on low speed (400 rpm or level 1.5 on a Twistork) is required during flushing of resin.
- Flush WALLTITE v.3 from coupling block into pail until colour of resin has completely changed from purple to yellow cream. Do not mix resins for recycling purposes; this can result in chemical contamination. Flush resin to be disposed of according to local regulations.
- Spray out a test sample to ensure ENERTITE 1-2-1 meets density criteria. If good, continue to application techniques (refer to BASF Canada ENERTITE 1-2-1 Application Guide), otherwise continue flushing and test again.

TECHNICAL ASSISTANCE

For more detailed information, call:

Toll-Free: 1-866-474-3538

BASF Canada Inc.: www.walltite.com

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