

Wrapsulate® Foam Jacket

Product Description:

Wrapsulate® Foam Jacket is a two component, open-cell spray polyurethane foam (ocSPF) insulation system. It uses water as the sole blowing agent and is installed by certified professionals using specialized equipment that uses a fixed ratio dispensing system. Wrapsulate® is a first-of-its-kind open-cell spray foam insulation that can be used in exterior applications. The revolutionary vapour permeable system performs as an effective air and moisture barrier, resulting in a high functioning, breathable building enclosure.

Appearance:

The final cured product is cream in color (natural).

Recommended Applications:

Residential Interior Construction:

Wall enclosures, ceilings, interior foundation, attic, crawl space, cathedral ceiling, duct work, rim joists, etc.

Industrial Construction:

Interior or exterior wall enclosures including steel, interior foundation walls, underside of deck, etc.

Commercial Interior Construction:

Interior or exterior wall, interior foundation walls and underside of roof decks.

Approvals and Certifications

- Meets the material requirements of the National Building Code as per CCMC 14049-R
- Air barrier system evaluated under CCMC MF 07 27 09.01 as per CAN/ULC-S742
- Installed by certified applicators in accordance with an ISO accredited FQAP Program
- GreenGuard GOLD Certified – ensures product is acceptable for use in schools and healthcare facilities.

Application Information

Applied at a maximum of 100 mm per pass. If applying additional passes of foam, the previous pass must be cooled to a core temperature below 100°F.

Foam must be protected from UV exposure within 60 days of application. Apply only when surfaces and ambient temperatures are within manufacturers' prescribed limits. Ambient humidity should be below 80% and substrate temperatures must be more than 3°C above dew point to avoid condensation risks.

Substrate temperature: 5 - 40°C

Thermal Resistance

Thickness	R-Value ⁱ , °F·ft ² ·h/Btu	RSI Value ⁱⁱ , m ² ·K/W
25 mm (1 in)	4.3	0.75
50 mm (2 in)	8.6	1.50
75 mm (3 in)	13	2.25
100 mm (4 in)	17	3.00
125 mm (5 in)	22	3.75
150 mm (6 in)	26	4.50

ⁱ – Thermal resistance calculated using R = 4.3/in. (R-values greater than 10 are rounded)

ⁱⁱ – RSI Value calculated using RSI = 0.75/25 mm

Technical Properties

Attribute	Test	Results
Density	ASTM D1622	1.07 lb/ft ³
Water Vapor Transmission @ 2"	ASTM E96	745 ng/(Pa•s•m ²)
Dimensional Stability ⁱⁱ (Volume Change after 28 days)	ASTM D2126	0.008% @ -20°C -9% @ 80°C -2.3% @ 70°C, 97% RH
Initial Tensile Strength	ASTM D1623	13.6 psi, pass
Air Permeance	ASTM E2178	0.0005 L/s•m ² @ 1½"
Water Absorption (% Volume)	ASTM D2842	1.6%
Water Penetration Resistance	ASTM E331	700 Pa
Flame Spread	CAN/ULC S-102	174
Smoke Development	CAN/ULC S-102	< 500
VOC Emissions	CAN/ULC S774-09	Passed
Re-occupancy	ASTM D8445	25 hours

Attribute	Test	Results
Open Cell Content	D6226	99%
Fungi Resistance	ASTM C1338	No growth
Compression Strength	ASTM D1621	60 kPa
Flexural Strength	ASTM C203	16.07 kPa
Full Scale Wall Test Temp. Limits	NRC TG 072510.09	5°C to 40°C
Adhesion To Substrates	NRC TG 072510.09	Wood, pass Concrete, pass
Color	Material	Cream
Material Listing	CCMC	14049-R
Air Barrier Listing @ 1½"	CCMC	14067-R

All testing performed by an accredited independent third-party test facility

ⁱⁱ - Dimensional Stability tested without substrate

Air Barrier Testing Results

As per CAN/ULC-S742 Air Barrier Systems for Exterior Walls of Low-Rise Buildings: (< 0.05 L/s-m²) @ 75 Pa - A1 Classification

Wall Type Tested	Max. Air Leakage Rate @ 75 PA	Result
Exterior gypsum	< 0.05	0.014 L/(s·m ²)
Exterior concrete	< 0.05	0.011 L/(s·m ²)

Processing Parameters

Pressures (dynamic):	70-100 bar (1000-1500 psi)
Preheat Temperature:	"A" & "B" 55-60°C (130-140°F)
Hose Temperature:	55-60°C (130-140°F)
Drum Temperature in Use:	21-32°C (70-90°F)

For optimal processing of ocSPF, Elastochem recommends the above parameters in use with a Graco Fusion AP/CS gun equipped with an AR 4242 or an AR 4747 chamber. The use of larger gun chambers may result in diminished yield and physical properties.

Mix the resin component for a minimum of 30 minutes with an electric or pneumatic mixer prior to use (expanding blade mixer recommended). Additional mixing throughout the day may be required based on ambient temperature. The materials can be circulated through the processing equipment to raise the temperatures in the drums. Care should be taken not to overheat the material as this could have adverse effects on the performance.

Liquid Component Characteristics

Component A :	150-250 cps @ 25°C / 77°F (Viscosity) 1.24 kg/L sg @ 25°C / 77°F (Specific Gravity)
Component B :	250-400 cps @ 25°C / 77°F (Viscosity) 1.15 kg/L sg @ 25°C / 77°F (Specific Gravity)
Mix Ratio by Volume:	1:1 of A:B

Storage Recommendation

All material provided by Elastochem is to be sealed until ready for use. Keep drums closed during storage and out of a humid environment.

A nitrogen blanket should be used in ISO barrels for long term storage. ISO and resin barrels should be sealed when not in use. A desiccant air dryer should be used on Iso barrel to allow pressure to equalize in drum when in use. Keep drums out of direct sunlight. To ensure proper longevity of the products, unopened materials should be indoors within the temperature ranges referenced below. Please see chart below for shelf life of materials:

Shelf Life	Part B (Resin) – 6 months	Part A (ISO) - 12 months
Storage Temperature Recommendations	18-30°C / 64-86°F	18-30°C / 64-86°F

Precautions

Like many construction materials, spray polyurethane foam is a combustible product. Therefore, installers and occupants are to take precautions and safety measures to ensure the foam does not come into contact (within 3") of any devices that have a surface temperature exceeding 70°C. Once application is completed, foam shall be protected with a thermal barrier in accordance with the local building code requirements for a suitable thermal barrier (e.g., drywall).

Adhesion

Substrates must be free of grease, oil, dirt, and surface moisture. Moisture content of porous materials must be below 19% before application of foam.

Manufacturer can be contacted for material compatibility, surface preparation techniques and adhesion on commonly encountered construction materials.

It is up to the builder or designer to determine the suitability of the material for any project. The installer must verify the compatibility of the product at the time of application due to the variability of weather conditions, material suppliers and site conditions which may impact the performance of the product.

Health and Safety Handling

When spraying or handling Wrapsulate® Foam Jacket ISO and Resin, the following protective steps and equipment are required:

Protective Equipment

- Fabric coverall (non-porous)
- Nitrile gloves
- Protective eyewear
- Supplied full face fresh air respirator (while spaying)
- Use personal protective equipment (see SDS)

Exposure

- Avoid all contact with skin
- Avoid all contact with eyes
- Do not ingest
- Do not inhale vapors

In case of exposure, please refer to the SDS for first-aid measures.

Spills

In case of spills, contain and collect spillage with a non-combustible absorbent material, such as: sand, earth, clay-based oil absorbent (kitty-litter), etc.

Disclaimer: Technical information as shown in this document is intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product.

Reoccupancy

Wait 25 hours post-application with ventilation before re- occupancy of the living space.

Properly fitting breathing apparatus supplying fresh air must also be worn by the installers and all other trades or helpers within 10 meters (33 feet) working distance of the installer. Protective gloves, coveralls, eye protection, safety shoes and hard hats must also be worn while spraying. Mechanical ventilation with a minimum 0.3 air changes per hour is also required during and after spray installation.

Certified Installers Only

Only individuals who are trained by Elastochem Specialty Chemicals Inc. and certified by Urethane Foam Consultants (UFC) are approved to install Wrapsulate. UFC is the third-party certification organization specified by Elastochem Specialty Chemicals Inc. to provide a certified training program. Services provided by UFC include follow-up inspections, certification and remediation.

Conditions and Limitations

The CCMC compliance opinion in Section 1 is bound by the “Wrapsulate® Foam Jacket” being used in accordance with the conditions and limitations set out below:

- As specified by the manufacturer, the product must be manufactured on-site by qualified installers trained by Elastochem Specialty Chemicals Inc. and approved by a third-party certification organization (UFC).¹ This organization must be specified by Elastochem Specialty Chemicals Inc. to administer an ISO/IEC 17024 compliant field quality assurance program (FQAP), including administration of a training program and conducting random follow-up inspections of field applications of the product according to the principles of CAN/ULC-S705.2.
- The installation must be performed according to the manufacturer’s instruction manual and the principles of CAN/ULC-S705.2. A copy of those instructions must be always available at the job site during the installation for review by the building officials.
- The sprayed material must be applied only to above-grade plywood, oriented strandboard (OSB), gypsum, concrete, and cement board substrates. The product must completely cover the substrate surface, forming a continuous envelope around the building. The surface to be covered should be clean, dry and not covered in frost, oil, grease, dust or other unsuitable material.
- The product is installed with a minimum 19 mm vented air space between the product and the cladding.
- A concealed air space exceeding 25 mm in width must contain proper fire blocking in accordance with Subsection 9.10.16., Fire Blocks, of Division B of the NBC 2015.

LIMITED WARRANTY INFORMATION: The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are only intended for sale to industrial and commercial customers. Customer assumes full responsibility for quality control, testing and determination of suitability of products for its intended application or use. We warrant that our products will meet our written liquid component specifications. We make no other warranty of any kind, either express or implied, by fact or law, including any warranty of merchantability or fitness for a particular purpose. Our total liability and customers’ exclusive remedy for all proven claims is replacement of nonconforming product and in no event shall we be liable for any other damages.



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Important Notes:

It's imperative (especially in colder climates) that the hose insulation is in good shape and completely covers the hose including any unheated whip.

The machine can only increase the temperatures by approximately 60°F in the best of circumstances. Using a 01 (AR 4242) chamber will slow the output of chemical through the machine enough for the chemical to reach the heater target values. An added benefit to a smaller chamber size is increased mix and greater product yield.