

Insulthane® 500 HY Open-Cell Spray Foam

Product Description:

Insulthane 500 HY is a two component, open-cell spray polyurethane foam (ocSPF) light-density insulation system. It uses water as the sole blowing agent, and is installed by certified professionals using specialized equipment that uses a fixed ratio foam system. Insulthane 500 HY is a unique ocSPF Insulation in the industry as it employs a proprietary formula that insures adhesion to substrates and itself. It's the ideal insulation for residential, industrial and commercial applications.

Appearance:

The final cured product is yellow in colour.

Recommended Applications:

Residential Interior Construction:

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

Industrial Construction:

Wall enclosures including steel, above or below grade, underside of deck

Commercial Interior Construction:

Walls, foundation walls and underside of roof decks

Approvals and Certifications

- Meets the material requirements of CCMC TG MF 07 21 19.03 as per CCMC 13655-R
- Installed by certified applicators in accordance with a ISO accredited FQAP Program
- GreenGuard Certified – ensures product is acceptable for use in schools and healthcare facilities.

Application Information

A minimum of 15 mm per pass and maximum of 300 mm as per the guidelines of the CAN/ULC-S712.2 application standard. Applying the second pass can be performed after the first pass if required. This process will be repeated for each additional pass.

Apply foamed-in-place polyurethane insulation only when surfaces and ambient temperatures are within manufacturers' prescribed limits.

Substrate temperature: -10 - 35°C

A more in-depth application guide is available in the Insulthane 500 HY applicators manual, please consult the *Elastochem Spray Applied Rigid Polyurethane Foam, Medium Density - Application Training Manual*.

Technical Properties

Attribute	Test	Results
Density	ASTM D1622	0.45 Lb/ft ³ 6.8 kg/m ³
Thermal Resistance (25mm Foam Depth)	ASTM C518	R 3.5 RSI 0.61
Water Vapour Transmission	ASTM E96 (Procedure A)	1580 ng/ (Pa·s·m ²)
Corner Wall Test	CAN/ULC-S127	315
Flame Spread	CAN/ULC-S102 Steiner Tunnel	Flame 210 Smoke 195
Dimensional Stability (Volume Change after 28 days)	ASTM D2126*	-29°C, -0.1% 80°C, 0.0% 70°C @ 97% RH, -0.1%

Attribute	Test	Results
Tensile Strength	ASTM 1623	3.3 psi
Water Absorption (% Volume)	ASTM D2842	17.4%
Compressive Strength	ASTM D1621	N/A
VOC Emissions	CAN/ULC-S774	1 day, pass
Open Cell Content	ASTM D6226	100%
CCMC#		13655-R

All testing performed by an accredited independent third-party test Facility
* Dimensional Stability was tested without a substrate

Processing Parameters

Pressures (dynamic):	70 to 100 bar (1000 to 1500ps)
Preheat Temperature:	“A” and “B” 55-60°C (130-140 ° F)
Hose Temperature:	55-60°C (130-140°F)
Drum Temperature in Use:	26-32°C (80-90°F)
Surface Temperature:	5-50°C (40-120°F)

For optimal processing of ocSPF, Elastochem recommends the above parameters in use with a Graco Fusion AP/CS gun equipped with a AR 4242 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 (Graco Twistork™ mixer) . The materials can be circulated through the processing equipment to raise the temperatures in the drums. Care should be taken to not over overheat the material as this could have adverse effects on the performance.

Liquid Component Characteristics

Component A:	150-350 cP @ 25°C 1.24kg/L sg @ 25°C
Component B (cps):	900 cP @ 25°C 1.1 kg/L sg @ 25°C
Mix Ratio by Volume:	1:1 of A:B

Storage Recommendation

All material provided by Elastochem are to be sealed until ready for use. To ensure proper longevity of the products, unopened materials should be indoors within a temperature range of 15-24°C (60-75°F). Please see chart below for shelf life of materials:

Shelf Life	Insulthane 500 HY Part B Resin - 6 months	Insulthane ISO Part A - 12 months
Storage Temperature Recommendations	15-24°C (60-75°F)	15-24°C (60-75°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 with any heat emitting devices. 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).

Health and Safety Handling

When spraying or handling Insulthane 500 HY ISO and Resin the following protective steps and equipment are recommended:

Protective Equipment

- Fabric coverall (non-porous)
- Nitrile gloves
- 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 the vapours

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.

For larger spills, contact Elastochem 1-877-787-2436 or any agency specialized in chemical damage control (e.g., CANUTEC at 613-996-6666).

Reoccupancy

Wait 24 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 Insulthane 500 HY. 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.

Start-up Procedure

- Mix Resin for 20-30 minutes with air or electric mixer
- Do NOT circulate until mixing is complete
- Reduce speed of mixer or disconnect
- Circulate both materials until the drum temperature is >70°F
- Set ISO and RESIN heaters between 130-140°F
- Set hose heat to the same temperature as the heaters

Conditions and Limitations

The product 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 NBC 2010

- exterior walls including perimeter joists;
 - cathedral ceilings with a vented air space as required by the NBC 2010;
 - floors separating living spaces from a garage;
 - cantilever overhang floors; and
 - interior below-grade foundation walls.
- The building envelope where the product is installed must conform to the requirements of the NBC 2010 for vapour barriers, air barriers, and damp proofing (interior below-grade walls).
 - For retrofit applications whereby there may be occupants in the unaltered part of the building, the qualified installer must ensure that the spraying area is isolated and negatively pressurized by using an exfiltration rate of 0.3 air changes per hour for at least one (1) day. An independent toxicological assessment determined that this ventilation rate must also be in effect for one (1) day before occupancy is permitted in the newly insulated suite.
 - The sprayed material should completely cover the surfaces between the studs, joists and other framing members. The surfaces to be covered should be clean, dry, and not covered in frost, oil, grease, dust or other unsuitable material. As required in Article 9.25.2.3. Installation of Thermal Insulation, of Division B of the NBC 2010, the insulation must be installed so that there is a reasonably uniform insulating value over the entire face of the insulated area.
 - The interior side of the applied semi-flexible polyurethane insulation must be covered with an approved thermal barrier as per Article 9.10.17.10, Protection of Foamed Plastics, of Division B of the NBC 2010.
 - The insulation must be kept away from heat-emitting devices, such as recessed light fixtures and chimneys, at the minimum distance required by building regulations and safety codes.
 - The maximum in-service temperature of the insulation must not exceed 70°C.

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.



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Important Notes:

It's imperative (especially in winter climate) 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 60°F in the best of circumstances. Using an O1 (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.

