



Insulthane® 450 NM

Product Description:

Insulthane 450 NM is a two component, no mix open-cell spray polyurethane (ocSPF) light-density foam insulation system. It uses water as the sole blowing agent and is installed by professionals using specialized equipment that uses a fixed ratio foam system. Insulthane 450 NM is a unique ocSPF insulation in the industry as it employs a proprietary formula that ensures adhesion to substrates and itself. It's the ideal insulation for residential, industrial and commercial applications.

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:

Wall enclosures including steel, above or below grade, foundation walls, underside of deck, etc.

Commercial Interior Construction:

Walls, foundation walls and underside of roof decks.

Technical Properties

Attribute	Test	Results
Density	ASTM D1622	0.5 lb/ft ³
Water Vapor Transmission	ASTM E96	9.35 perms @ 2"
Dimensional Stability ⁱⁱ (Volume Change after 7 days)	ASTM D2126	-4% @ 158°F & 97% RH
Tensile Strength	ASTM D1623	3 psi
Air Permeance @ 3.5"	ASTM E283	0.0013 cfm/ft ²
Water Absorption (% Volume)	ASTM D2842	33%
Open Cell Content	ASTM D6226	97%
Fungi Resistance	ASTM C1338	No Growth
Re-entry – worker	ASTM D8445	1 hour
Re-occupancy		2 hour
Material Listing	Intertek	CCRR-0396
Color	Material	Cream

Approvals and Certifications

- Intertek CCRR-0396
- Greenguard Certified – ensures product is acceptable for use in schools and healthcare facilities.

Application Information

Applied at a maximum of 12" per pass.

Foam must be protected from UV exposure within 90 days of application. Apply ocSPF insulation only when surfaces and ambient temperatures are within manufacturers' prescribed limits. Ambient humidity should be below 80% and substrate temperatures must be more than 5°F above dew point to avoid condensation risks.

Substrate temperature for Standard Grade: 14-120°F.

Thermal Resistance

Thickness (inch)	R-Value (°F-ft ² -h/Btu) ⁱ
1.0	4.1
2.0	7.3
3.0	11
3.5	13
4.0	15
5.0	18
16	59

ⁱ – Thermal resistance calculated using R = 3.67/inch (excluding 1" value)

Burn Characteristics

Attribute	Test	Results
Flame Spread	ASTM E84	15
Smoke Development	ASTM E84	450
Surface Burning Characteristics @ 4"	ASTM E84	Class 1 (A)
Unvented Attic Without Ignition Barrier	UVA	Walls - 18" Ceiling - 18"
Ignition Barrier	AC377	Walls - 8"
4 mils WFT DC 315	Appendix X	Ceiling - 12"

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

ⁱⁱ - Dimensional Stability tested without substrate

Processing Parameters

Pressures (dynamic):	1000-1500psi
Preheat Temperature:	A and B, 120-130°F
Hose Temperature:	120-130°F
Drum Temperature in Use:	68-86°F
Surface Temperature:	14-120°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 to an AR 5252 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 expanding blade mixer). 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 to not overheat the material as this could have adverse effects on the performance.

Liquid Component Characteristics

Component A :	150-250 cps @ 77°F (Viscosity) 1.24kg/L sg @ 77°F (Specific Gravity)
Component B :	500-100 cps @77°F (Viscosity) 1.15 kg/L sg @ 77°F (Specific Gravity)
Mix Ratio by Volume:	1:1 of A:B

Storage Recommendation

All material provided by Elastochem are 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	Insulthane 450 NM Part B Resin – 6 months	Insulthane ISO Part A 12 months
Storage Temperature Recommendations	64-86°F	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 180°F. 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).

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.

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 Insulthane 450 NM ISO and resin the following protective steps and equipment are recommended:

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.

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