



Insulthane® Extreme

Product Description:

Insulthane® Extreme is a two component, HFO, closed-cell spray polyurethane (ccSPF) medium-density foam insulation system. Its high yield, superior thermal and moisture performance, environmental benefits and exceptional adhesion make it ideal for residential, industrial and commercial applications. Insulthane Extreme is available in a summer and winter blend.

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, under floor slab, duct work, rim joists etc.

Residential Exterior Construction:

Walls, foundations, roof, exterior framing, and cantilevered areas.

Industrial Construction:

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

Commercial Interior Construction:

Walls, foundation walls and underside of roof decks.

Approvals and Certifications

- Intertek CCRR-0396
- ABAA Evaluated Material
- Meets requirements for ASTM C1029 as a Type II material
- Greenguard Gold Certified – ensures product is acceptable for use in schools and healthcare facilities.

Application Information

Applied at a maximum of 3.5" per pass. Temperatures of initial pass will be recorded to ensure that the core temperature is below 100°F. This process will be repeated for each additional pass to ensure proper heat dissipation. If spraying on heat sensitive materials (PEX pipe, low voltage wiring), spray maximum of 1" of foam and allow to fully cool before additional full thickness passes are added.

Foam must be protected from UV exposure within 90 days of application. Apply ccSPF 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: 50-122°F.
Substrate temperature for Winter Grade: 14-77°F.

Thermal Resistance

Thickness (inch)	R-Value (°F·ft ² ·h/Btu) ⁱ
1.0	7.4
2.0	15
3.0	22
3.5	26
4.0	29

Burn Characteristics

Attribute	Test	Results
Flame Spread	ASTM E84	10
Smoke Development	ASTM E84	300
Surface Burning Characteristics @ 4"	ASTM E84	Class 1 (A)
Ignition Barrier Uncoated	NFPA 286 Appendix X	Pass
DC 315 Thermal Barrier	NFPA 286	Pass
Commercial Fire Resistance	NFPA 286	Certified Compliant Systems ⁱⁱⁱ

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

i – Thermal resistance above 3.5" calculated using R = 7.3/inch. R-values between 1 and 3.5 are interpolated.

ii - Dimensional Stability tested without substrate.

iii - See design details.

Technical Properties

Attribute	Test	Results
Density	ASTM D1622	2.2 lb/ft ³
Water Vapor Transmission	ASTM E96	0.83 perm @1"
Dimensional Stability ⁱⁱ (Volume Change after 7 days)	ASTM D2126	-4.46% @ 158°F & 97% RH
Tensile Strength	ASTM D1623	33 psi
Compressive Strength	ASTM D1621	26.4 psi
Air Permeance @ 75 Pa	ASTM E2178	0.002 L/s·m ²
Water Absorption (% Volume)	ASTM D2842	0.5%
Open Cell Content	ASTM D2856	2.5%
Hot Surface Performance	ASTM C411	194°F
Fungi Resistance	ASTM C1338	Pass, no growth
Re-entry - Worker	10 AHC's	2 hours
VOC Emissions	UL Greenguard	Greenguard Gold
Material Listing	Intertek	CCRR-0396
Color	Material	Cream

Air Barrier Testing Results

The air barrier assembly has been evaluated and meets the ABAA Evaluation process.

ASTM E2357 0.00l L/s·m² @ 75 Pa
 0.0002 cfm/ft² @ 1.57 psf

Processing Parameters

Pressures (dynamic): 1000-1500psi
 Preheat Temperature: A and B, 110-130°F
 Hose Temperature: 110-130°F
 Drum Temperature in Use: 68-77°F
 Surface Temperature: Standard Grade: 50-122°F
 Winter Grade: 14-77°F

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

Liquid Component Characteristics

Component A : 150-250 cps @ 77°F (Viscosity)
 1.24kg/L sg @ 77°F (Specific Gravity)
 Component B : 600 cps @77°F (Viscosity)
 1.18 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, drums should be stored indoors within the temperature ranges referenced below. Please see chart below for shelf life of materials:

Shelf Life	Insulthane Extreme Part B Resin – 9 months	Insulthane ISO Part A 12 months
Storage Temperature Recommendations	68-86°F	68-86°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

Insulthane Extreme will adhere to most construction materials. 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 Extreme 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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