

# THERMA - SHIELD® | 2004

## PRODUCT DESCRIPTION

**THERMA-SHIELD® 2004** is a two-component, closed-cell spray polyurethane foam insulation system formulated with an EPA-approved, zero-ozone-depleting HFO blowing agent featuring an ultra-low Global Warming Potential (GWP < 1). Engineered for use in residential and light commercial applications, **THERMA-SHIELD® 2004** delivers superior thermal performance, strength, and moisture resistance. This system is compatible with most common construction materials and must be processed exclusively with **IPS ISO (A-Side)**.

The benefits of **THERMA-SHIELD® 2004** include: exceptional thermal insulation, minimizes moisture and air infiltration, and enhances structural integrity. This non-fibrous material installs quickly and is classified as a FEMA Class 5 flood damage-resistant material.

## PRODUCT PERFORMANCE DATA

PROPERTY	TEST METHOD	VALUE
Core Density	ASTM D1622	2.0-2.3 pcf
Water Permeance @ 2"	ASTM E96	1.32 perms
Air Permeance @ .5"	ASTM E2178	0.02 cfm/ft <sup>2</sup>
Tensile Strength	ASTM D1623	>32 psi
Dimensional Stability	ASTM D2126	-7.6% @158°F & 97% RH
Flame Spread	ASTM E84	<25
Smoke Development	ASTM E84	<450
Closed-Cell Content	ASTM D6226	>90%
Water Absorption (% Volume)	ASTM D2842	<5%
Compressive Strength	ASTM D1621	>25 psi

## PROCESSING GUIDELINES

### PRECONDITIONING:

Condition drums to **68–86°F** prior to use. Cold material may thicken and cause cavitation.

### MIXING:

Mix resin for at least 30 minutes using an electric or pneumatic mixer. Re-mix as needed based on temperature. Avoid overheating, as it can affect performance.

### PRESSURE SETTINGS:

Use a plural-component proportioner rated for at least **900 psi dynamic pressure**. Maintain static pressure between **900–1200 psi**.

### TEMPERATURE SETTINGS:

Hose & preheater: **110–130°F (both A & B)**. Adjust based on substrate, ambient temperature, and humidity. Warmer temps for winter, cooler for summer.

## PROCESSING PARAMETERS

PARAMETER	RECOMMENDED RANGE
Dynamic Fluid Pressure	1,000 – 1,500 psi
Mixing Ratio	1:1
Hose Heat	110°F – 130°F
Preheat Temperature	"A" & "B" Components: 110°F – 130°F
Recommended Mixing Chamber	02
Storage Temperature	64°F – 86°F
Ambient Range	20°F – 120°F
Ambient Temp During Spray	>5°F above dew point
Moisture Content (Substrate)	<19%
Max Lift per Pass	3.5"

## RECOMMENDED APPLICATIONS

### RESIDENTIAL INTERIOR APPLICATIONS:

Ideal for use in wall cavities, ceilings, attics, crawl spaces, interior foundations, cathedral ceilings, ductwork, and rim joists.

### INDUSTRIAL APPLICATIONS:

Suitable for wall enclosures—including steel structures—both above and below grade, as well as foundation walls and the underside of decks.

### COMMERCIAL INTERIOR APPLICATIONS:

Designed for walls, foundation walls, and the underside of roof decks.

## GENERAL PRODUCT INFO

ITEM	DESCRIPTION
Product Color	Cream
Packaging	55-gallon drum
Re-entry Time (worker)	1 hour
Re-occupancy	1 hour
Third-Party Testing	Intertek Testing Services NA, Inc.
Code Report	CCRR-0510

## THERMAL RESISTANCE

THICKNESS (Inch)	R-VALUE
1.0	7.5
2.0	15
3.0	22.5
3.5	26.25
4.0	29.85
5.0	37.05

## APPLICATION STEPS

Applied at a maximum of **3.5" per pass**.

Substrate temperature range: **14-120°F**

1. Clean surfaces per "Substrate Preparation."
2. If required, apply primer and allow to cure fully.
3. Flush proportioner before switching materials.
4. Spray in smooth, even passes; test pattern before spraying.
5. Allow each lift to cool before re-coating.
6. Regularly inspect foam appearance and adhesion.

## LIQUID PROPERTIES @77°F

PROPERTY	A-SIDE (ISO)	B-SIDE (RESIN)
Specific Gravity	1.24	1.2
Viscosity	150 - 250 cps	500–700 cps

## SUBSTRATE PREPARATION

### WOOD

Ensure substrate is dry and clean.  
Moisture content must be below 19% before spraying.  
Remove dust, oil, or debris.  
Fill gaps with suitable backer rods or fillers.

### STEEL & OTHER METALS

Verify adhesion and suitability through field testing.  
Blasting or priming may be required depending on substrate condition.

### CONCRETE

Must be clean, cured (≥28 days), and free from dust or oil.  
Fill voids or cracks before application.

### PREVIOUSLY APPLIED FOAM

Remove any old or incompatible foam coatings.  
Always test adhesion before full application.

### WIRING & PLUMBING

Fully compatible with CPVC piping (Paschal Engineering Study for SPFA).  
Safe with standard electrical wiring (NEMA Bulletin 95).

## STORAGE & SHELF LIFE

Store between **64°F – 86°F**  
**6-month** shelf life (unopened containers from date of manufacture)  
Do not break product seal during storage  
Keep containers dry and out of direct sunlight

## HEALTH & SAFETY HANDLING

When spraying or handling Therma-Lok® 500EZ ISO and Resin, the following protective measures and equipment are recommended:

### Protective Equipment

- Wear a fabric coverall
- Use nitrile gloves
- Use protective eyewear
- Wear a supplied full-face fresh air respirator
- Always utilize appropriate personal protective equipment

### Exposure Precautions

- Avoid all contact with skin and eyes
- Do not ingest
- Do not inhale vapors
- In the event of exposure, refer to the Safety Data Sheet (SDS) for first-aid procedures

### Spill Response

In the event of a spill, contain and collect material using a non-combustible absorbent such as sand, earth, or clay-based oil absorbent (e.g., kitty litter).

### Disclaimer

The technical information provided herein is intended as general guidance only. Always consult the product label and Safety Data Sheet (SDS) before using this product.

## STORAGE & SHELF LIFE

- Use local exhaust ventilation during spraying.
- Always wear safety glasses, chemical-resistant gloves, protective clothing, and a NIOSH-approved supplied-air respirator in positive pressure mode for confined spaces.
- Avoid contact with eyes and skin; avoid inhaling mist or vapor.
- Dispose of materials per local regulations.
- For full details, consult the **Safety Data Sheet (SDS)**.
- In emergencies, call **CHEMTREC: 1-800-424-9300**

## THERMAL BARRIERS

For details on approved heat and fire protection barriers, refer to Intertek's Code Compliance Research Report **#0510 (CCRR-0510)**.

## ADHESION

Substrates must be clean, dry, and free of grease, oil, dirt, and surface moisture. The moisture content of porous materials must be below 19% prior to foam application. Contact the manufacturer for guidance on material compatibility, surface preparation techniques, and adhesion to common construction substrates.

It is the responsibility of the builder or designer to determine the suitability of this material for each specific project. The installer must verify product compatibility at the time of application, as variations in weather, materials, and site conditions can affect product performance.

## PRECAUTIONS

Like many building materials, spray polyurethane foam is combustible. Installers and occupants must take proper safety precautions to ensure the foam does not come into contact (within 3 inches) with any device or surface that reaches temperatures above 180°F. After installation, the foam must be covered with an approved thermal barrier in accordance with local building code requirements.

## MAINTENANCE

Regular equipment cleaning ensures consistent performance. Follow manufacturer guidelines for long-term maintenance and storage. Report any product or equipment issues to **IPS Technical Support**.

## TECHNICAL SUPPORT

For application questions, troubleshooting, or training:  
**IPS Technical Support: 812.776.6251**  
**Website: sprayips.com**

