

## THERMAL INSULATION

CCRR #0510

## PRODUCT DESCRIPTION

IPS 2000HFO is an innovative two component, medium density, one to one by volume high yielding spray foam, Class 1 rated wall insulation system designed for commercial, residential & industrial applications. IPS 2000HFO is intentionally formulated without harmful HFCs, leading to an exceptionally low Global Warming Potential (GWP.)

## PRODUCT DATA

PROPERTY	TEST METHOD	VALUE
R-Value	ASTM C518	7.1 @ 1"
Core Density	ASTM D1622	2 pcf
Water Vapor Permeance	ASTM E96	.4 perms @ 2"
Air Permeance	ASTM E2178	0.02 L/sm <sup>2</sup>
Tensile Strength	ASTM D1623	62 psi
Dimensional Stability	ASTM D2126	8%
Viscosity		700 cps
Shelf Life		6 Months
Specific Gravity		1.21

## ENVIRONMENTAL HEALTH & SAFETY INFORMATION:

Prior to engaging with this product, it is imperative to thoroughly review and acquaint yourself with the provided information, including the Safety Data Sheet (SDS), outlining the associated risks, appropriate usage guidelines, and safe handling procedures. All contractors and applicators are required to utilize suitable Personal Protective Equipment (PPE), such as respiratory, skin, and eye protection, when dealing with and processing spray foam systems.



**ADVISORIES & GUIDELINES:**

IPS2000 HFO is engineered for easy integration into standard construction configurations, utilizing commonly used materials such as concrete, metal, and wood products. It is essential to refrain from using the foam when the sustained use temperature of the substrate exceeds 180°F. When installing spray foam in walls or ceilings, there is a potential fire hazard unless adequately shielded by an approved, fire-resistant thermal barrier with a finish rating of at least 15 minutes, as stipulated by building codes. Certain areas like rim joists/header areas, as per the IBC®, might not necessitate additional protection. In attics and crawl spaces, or in accordance with code-approved alternatives, spray foam must be safeguarded against ignition. Adherence to proper application techniques is crucial for all SPF systems. Avoiding improper practices, such as excessive application thickness, off-ratio material usage, and spraying into or under rising liquid foam, is imperative. Off-ratio materials may produce unpleasant odors that could persist. Applicators bear the responsibility of understanding their equipment to ensure proper functionality. Defective products should be promptly replaced with correctly installed materials.

**PROCESSING PARAMETERS**

Dynamic Fluid Pressure	1,000 - 1,500psi
Mixing Ratio	1:1
Hose Heat	105 - 125°F
Preheat Temperature	"A" & "B" Component 105-125°F
Drum Temperature in Use	65 - 88°F
Recommended Mixing Chambers	Graco AR 4242

\*The processing equipment should have the capacity to deliver the polymeric isocyanate (PMDI) and polyol blend in a 1:1 volume ratio at suitable temperatures and spray pressures. The substrate must maintain a minimum temperature that is at least 5 degrees above the dew point. Optimal processing results are achieved when the ambient humidity is below 80%. It is essential that the substrate remains free from any moisture, including dew or frost, as well as any contaminants like grease, oil, solvents, or materials that could negatively affect the adhesion of the polyurethane foam. To prevent fire hazards, such as spontaneous combustion resulting from excessive heat generation, applicators should limit the application thickness of this product to no more than 3.5" per pass after expansion. If additional passes are required, applicators must wait until the foams core temperature has dropped below 100°F to allow dissipation of any reaction heat from prior applications before reapplying the product.

Disclaimer: The data provided in this document is intended solely for professional applicators and individuals who purchase or use this product in the regular course of their business activities. Potential users are responsible for conducting relevant tests to determine the products performance and suitability for their specific applications, as the final decision regarding its fitness for a particular use rests with the buyer. It is the applicators responsibility to have a comprehensive understanding of all equipment technical information and safe operating procedures related to the application of spray polyurethane foam. Any guarantees and warranties related to products supplied by Innovative Polymer Systems are limited to those explicitly expressed in writing by the manufacturer. In the case of material claims, the buyers sole recourse is against the applicator of the product. The information presented in this document is intended as a general guide and is subject to change without prior notice. While the information is believed to be reliable, potential unknown risks may exist. Innovative Polymer Systems makes no warranties, whether expressed or implied, including patent warranties or warranties of merchantability or fitness for use, in relation to our products or the information provided here. To the best of our knowledge, the technical data included in this document is accurate as of the issuance date and is subject to change without prior notice. Users must contact Innovative Polymer Systems to verify its correctness before specifying or placing orders, and no guarantee of accuracy is implied or given. We guarantee our products to meet Innovative Polymer Systems quality control standards but assume no responsibility for coverage, performance, or injuries resulting from use.

**JOB-SITE WARNINGS:**

Applicators must prioritize the safety of the job site and construction personnel. SPF insulation is combustible, and it is essential to display appropriate signs cautioning against any hot work such as welding, soldering, or torch cutting, until a thermal barrier or an approved equivalent is installed over exposed polyurethane foam. Contractors should establish effective communication with other trades operating in the vicinity of the spray application area. Clearly visible warning signs must be posted at each entryway, indicating ongoing spray foam activities and the mandatory use of proper respiratory protection for entry. Non-SPF personnel and occupants should vacate the building during the SPF application. Adequate ventilation, with a minimum of 10 air changes per hour, should be maintained during and after spraying. For re-entry, ventilation for a minimum of 2 hours is required before personal protective equipment is no longer mandatory for trades and inspectors. Regarding re-occupancy, the building may be safely re-entered after 24 continuous hours of ventilation.

**APPLICATION PARAMETERS**

Storage Temperature	60-75°F
Suggested Ambient Ranges	Winter Speed (10-75°F) Summer Speed (50-120°F)
Ambient Temperature	>5°F above dew point
Moisture Content of Substrate	<19%
Max Lift per Pass	3.5"

*Core temp should be 100°F or less before a subsequent pass.*

\* Foam application temperatures and pressures are subject to considerable variation due to factors like temperature, humidity, elevation, substrate, and equipment. While applying IPS foam, it's crucial for the applicator to continuously monitor the sprayed foams characteristics and make necessary adjustments to processing temperatures and pressures to maintain the desired cell structure, adhesion, cohesion, and overall foam quality. The applicator bears the sole responsibility for ensuring that IPS foam is processed and applied within specified parameters. The Equipment Settings chart offers initial optimum settings, but real operating ranges will fluctuate with changes in ambient air conditions, humidity, moisture, and substrate temperatures. Extreme conditions can significantly impact foam yield, adhesion, and cured physical properties, necessitating adjustments by the applicator as conditions change.