



# PIPFOAM 250CG

## TECHNICAL DATA SHEET

PIP Foam 250CG is a two component, closed-cell, urethane rigid foam system, specially formulated for pour-in-place applications. PIP Foam 250CG, uses a zero ozone depleting blowing agent technology with a zero ODS (ozone depletion substances) and <5 GWP (Global Warming Potential).

Applications:

- Insulation panels
- Flotation
- Wall Cavity

PHYSICAL PROPERTIES			
TASTM C 518	Thermal Resistance R (2 in. thick panel, 2 days @ 73°F (23°C))	6.1 – 6.4 ft <sup>2</sup> •h•°F/Btu•in	1.07 – 1.12 m <sup>2</sup> •°C/W
ASTM C 518	Thermal Conductivity K (2 in. thick panel, 2 days @ 73°F (23°C))	0.156 – 0.163 Btu•in/ft <sup>2</sup> •h•°F	0.887 – 0.927 W/m <sup>2</sup> •°C
ASTM D 1621	Density	2.50 pcf	40 kg/m <sup>3</sup>
ASTM D 1621	Compressive Strength	30.5 - 35.0 psi	210 - 241 kPa
ASTM D 1623	Tensile Strength	26 - 28 psi	179 - 193 kPa
ASTM D 2126	Dimensional Stability (% volume change @ 28 days)		
	158°F (70°C), Ambient Relative Humidity		-1.51%
	-22°F (-30°C), Ambient Relative Humidity		0.76 %
<b>US Coast Guard Code ARTICLE 183.114</b>			
ASTM D 2842	Vapor test		Pass
	24hr Gasoline test		Pass
	3,0 days Gasoline test		Pass
	24hr Oil #2 test		Pass
	30 days Oil #2 test		Pass
	24hr Bilge Cleaner test		Pass
	30 days Bilge Cleaner test		Pass
<b>Military Test Standard MIL-P-21929C</b>			
ASTM D 1622	Section 4.6.1 - Density		Pass
MIL-P-21929C	Section 4.6.2 – Homogeneity of Cured Foam		Pass
ASTM D 1621	Section 4.6.4 – Compressive Strength		34.5 psi 237.9kPa
ASTM D 2126	Section 4.6.5 – Volume Change After Heat Aging		2.8 %
ASTM D 2126	Section 4.6.6 – Volume Change After Humidity Aging		1.5 %
MIL-P-21929C	Section 4.6.7 – Compression Set		1.7 %
ASTM D 2842	Section 4.6.8 – Water Absorption		0.05 lb./ft <sup>2</sup>
ASTM D 2842	Section 4.6.9 – Unicellularity		2.85 %
ASTM D 471	Section 4.6.10 – Oil Resistance		No Change

PIP Foam 250CG meets the requirements of the US Coast Guard Specification “Code of US Regulation”: Navigation and Navigable Waters Article # 183-114. Huntsman Solutions Bâtiments PIP Foam 250CG also meets several requirements of Military Test Standard MIL-P-21929C “Military specification for plastic material, cellular polyurethane foam-in-place, rigid” as describe in the physical property table of this Technical Data Sheet. All of these tests were performed at an independent laboratory.

## FIRE TEST RESULTS

ASTM E 84	Surface Burning Characteristics, 6" thick	Class "A"
	Flame Spread	0
	Smoke Development Index	0

Test Performed on Actual end use configuration, consisting of 6" of foam injected inside a wood frame covered on both sides by 5/8" gypsum boards (a thermal barrier)

## LIQUID COMPONENT PROPERTIES\*

PROPERTY	A-PMDI ISOCYANATE	PIP Foam 250CG RESIN
Color	Brown	Greenish
Viscosity @ 77°F (25°C)	150 -350 cps	550 - 650 cps
Specific Gravity	1.24	1.12 - 1.18
Shelf Life of unopened drum properly stored	12 months	6 months
Storage Temperature	50 - 100°F (10-38°C)	50 - 85°F (10 - 29°C)
Mixing Ratio (weight)	100	100

\*See SDS for more information

## REACTIVITY PROFILE

	Cream Time	Gel Time	Tack Free Time	Free Rise Density
Hand Mix*	18 – 23 seconds	90 – 110 seconds	120 – 160 seconds	1.8 – 2.10 lb/ft <sup>3</sup>
Machine Mix**	9 – 14 seconds	60 – 80 seconds	90 – 120 seconds	1.8 – 2.10 lb/ft <sup>3</sup>

\*Hand mixed using a 2" mixer @ 2500 RPM for 10 seconds, liquid components at 68°F (20°C).

\*\*High pressure machine (2500 psi), liquid components at 73°F (23°C).

## PROCESSING RECOMMENDATIONS\*

Type of Machine	High or low pressure PIP machine		Spray Machine	
Isocyanate Temperature	68 - 77°F	20 - 25°C	95 - 105°F	35 - 41°C
Resin Temperature	68 - 77°F	20 - 25°C	110 - 120°F	43 - 49°C
Hose Temperature	—	—	95 - 105°F	35 - 41°C
Mold or Panel Temperature	113 - 131°F	45 - 55°C	110 - 130°F	43 - 54°C
Minimum In-place Density	2.5 lb/ft <sup>3</sup>	40 kg/m <sup>3</sup>	2.5 lb/ft <sup>3</sup>	40 kg/m <sup>3</sup>

\*Foam application temperatures and pressures can vary widely depending on temperature, humidity, elevation, substrate, equipment and other factors. While processing, the applicator must continuously observe the characteristics of the foam and adjust processing temperatures and pressures to maintain proper cell structure, adhesion, cohesion and general foam quality. It is the sole responsibility of the applicator to process and apply PIP Foam 250CG within specification.

**General Requirements:** It is important to monitor the in-place density of the foam as stated in the Processing Recommendations section above. A lower density will result in poor physical properties. Furthermore, proper temperature of the substrates (110 – 130°F (43 – 54°C)) is critical in order to obtain a good adhesion of the foam to the substrate. It is the user's responsibility to test the product to ensure it performs to their expectations. This product should not be used when the continuous service temperature of the substrate is outside the range of -76°F (-60°C) to 300°F (150°C).

**Disclaimer:** The information herein is to assist customers in determining whether our products are suitable for their applications. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, expressed or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent inferred. All patent rights are reserved. The foam product is combustible and must be protected in accordance with applicable codes. Protect from direct flame and spark contact, around hot work for example. The exclusive remedy for all proven claims is replacement of our materials.

