

Gaco Western

S I N C E 1 9 5 5

Product Data Sheet:

Gaco 183M
March 2019
Supersedes 9/16

Gaco 183M CLOSED CELL SPRAY FOAM INSULATION

DESCRIPTION

Gaco 183M is a two component HFC-blown (zero ozone-depleting) liquid spray system that cures to a medium-density rigid cellular polyurethane insulation material. Gaco 183M contains polyols derived from naturally renewable oils, post-consumer recycled plastics, and pre-consumer recycled materials.

This closed cell foam is designed to provide: excellent thermal performance; air impermeable insulation; and, an integral part of an air barrier assembly.

Gaco 183M is a Class A (Class 1) fire rated foam that meets the requirements of ICC-ES AC377 *Acceptance Criteria for Foam Plastic Insulation*. Gaco 183M meets the requirements of AC377 Appendix X for use in attic and crawl spaces without an additional ignition barrier. See Intertek Research Report IRR-1002 for code compliant application information.

RECOMMENDED USES

Gaco 183M will provide excellent performance in a wide range of residential, commercial, industrial and agricultural applications where in service temperatures are between -40 °F and 200 °F (-40 °C to 93 °C) including:

Walls	Crawlspaces	Residential Ducts	Cold Storage	Other Industrial Applications
Ceilings	Foundations	Plenums	Freezers	Agricultural Applications including the
Floors	Concrete Slabs	Piping	Storage Tanks	GacoToughFoam Agricultural System
Attics				

Gaco 183M is FEMA Class 5, the highest rating for flood-resistant materials.

PHYSICAL PROPERTIES

The following physical property tests were conducted by independent certified laboratories with traceable samples in accordance ICC-ES AC377 and ASTM C1029 for Type II foam and ABAA D-115-010 for Air Barrier Materials and Assemblies.

PROPERTY*	ASTM TEST	VALUE	UNIT
Core Density	D1622	2.0 ± 10%	lb/ft ³
Aged R-Value **	C518	R 6.4 at 1" (25.4 mm) ***	h·ft ² ·°F/Btu
	C518	R 23.3 at 3.5" (88.9 mm) ***	h·ft ² ·°F/Btu
Compressive Strength (Parallel to Rise)	D1621	32	psi
Tensile Strength	D1623	64	psi
Water Absorption: (96 hours, 2" (50.8 mm) head, 70-74 °F (21-23 °C))	D2842	0.71	% by volume
Water Vapor Permeance:	E96 – Method A	1.12	perm-in
Dimensional Stability (7 Days)	D2126	L=6%, W=5%, T=3%	% linear change
Open Cell Content	D2856	2.6	%
Air Permeance @ 75Pa (Infiltration/Exfiltration)	E283	0.00 at 1" (25.4 mm)	L/s·m ²
	E2178	0.0013	L/s·m ²
Air Barrier Assembly Testing	E2357	0.0027	L/s·m ²
Crack Bridging	C1305	Pass @ -15 °F (-26 °C)	Pass
Pull Adhesion			
	Concrete Masonry Unity	237	kPa
	Gypsum Sheathing (Dens Glass)	162	kPa
Oriented Strand Board (OSB)	210	kPa	
Fungi Resistance	C1338	Pass	no growth

* These items are provided for general information.

** Federal Trade Commission regulations published in the Federal Register 16 CFR Part 460 require that R value testing of polyurethane foam insulation must be conducted on aged samples at a 75 °F mean test temperature. Failure to comply can result in substantial fines by the FTC.

*** To determine R values for thickness not listed: Between 1" (25.4 mm) and 3.5" (88.9 mm) can be determined through linear interpolation; greater than 3.5" (88.9 mm) can be calculated based on R 6.67/inch.



SURFACE BURNING CHARACTERISTICS

Meets Class A (Class 1) requirements when tested in accordance with ASTM E84 (UL 723) as defined in NFPA 101 and Section 803 of the International Building Code (2009, 2012).

SYSTEM	THICKNESS	FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX
Gaco 183M	4" (101.6 mm)	10	400

LARGE SCALE FIRE TESTING

Test	Performance	LOCATION	FOAM THICKNESS / COATING
AC377, Appendix X	Ignition Barrier	Attic and crawlspace walls Attic and crawlspace ceiling	Up to 7.5" (19.05 cm) / no coating required Up to 9.5" (24.13 cm) / no coating required
NFPA 286	Thermal Barrier	Vertical surfaces Horizontal or sloped surfaces	Up to 5.5" (13.97 cm) / DC315 - 20 mil wet Up to 7.5" (19.05 cm) / DC315 - 20 mil wet
NFPA 286	Thermal Barrier	Vertical surfaces Horizontal or sloped surfaces	Up to 5.5" (13.97 cm) / DC315 - 6 mil wet primer & 22 mil wet Up to 9.5" (24.13 cm) / DC315 - 6 mil wet primer & 22 mil wet

Gaco 183M meets or exceeds the IBC requirements for exterior walls in type I, II, III, IV and V construction. This includes NFPA 285 and NFPA 259 testing with Intertek Listings (GWL/FIP 30-02, GWL/FIP 30-01) and one-hour fire resistance rating per ANSI/UL 263 (UL Design W426) which is equivalent to ASTM E119.

VAPOR RETARDER

Gaco 183M meets the requirement of one perm or less for a Class II vapor retarder per the International Code Council and ASHRAE when installed at 1.12" (28.4 mm) in depth. Water vapor permeability at various thicknesses is provided below:

<u>Thickness</u>	<u>WVP</u>
1" (25.4 mm)	1.12 perms
1.12" (28.4 mm)	1.00 perms
2" (50.8 mm)	0.56 perms
3" (76.2 mm)	0.37 perms
4" (101.6 mm)	0.28 perms

AIR BARRIER PERFORMANCE

Gaco 183M is an air impermeable insulation (ASTM E283, ASTM E2178); it has passed air barrier assembly testing (ASTM E2357) and has been evaluated by the Air Barrier Association of America in accordance with ABAA D-115-010.

INDOOR AIR QUALITY

Gaco 183M is a low VOC emitting material and is GREENGUARD Gold Certified (29167-410, 29167-420) (formerly known as GREENGUARD Children & Schools Certification) by UL Environment. This program demands strict certification criteria and considers safety factors to account for sensitive individuals (such as children and the elderly), and ensures that a product is acceptable for use in environments such as schools and healthcare facilities. It is referenced by both the Collaborative for High Performance Schools (CHPS) and the Leadership in Energy and Environmental Design (LEED) Building Rating System.

LEED INFORMATION

Gaco 183M has a minimum of 8.6% recycled content based on weight, including 6.6% pre-consumer material and 2.0% post-consumer material. Gaco 183M raw materials are blended in Waukesha, WI. Actual polyurethane foam end product production is done on-site by the applicator.

TYPICAL LIQUID CHEMICAL PROPERTIES

"A" Component contains polymeric isocyanate. "B" Component contains polyol, catalysts, fire retardants, surfactants and blowing agents.



PROPERTY	TEST TEMPERATURE	ASTM TEST	VALUE	UNIT
Viscosity – “A” Component: Viscosity – “B” Component:	77 °F (25 °C)	D2196	200 ± 50 750 ± 50	cps cps
Specific Gravity – “A” Component: Specific Gravity – “B” Component:	77 °F (25 °C)	D1638	1.24 1.20	S.G. S.G.
Weight/Gallon – “A” Component: Weight/Gallon – “B” Component:	77 °F (25 °C)	---	10.34 10.0	lb/gal lb/gal
Mixing Ratio – “A” & “B” Component	---	---	1:1	by volume
Stability When Stored at 50 °F to 70 °F (10 °C to 21 °C)	---	---	A Component – 6 B Component – 6	months months

APPLICATION

To ensure optimum performance, a minimum pass thickness of ¼" (25.4 mm) is recommended with the maximum not to exceed 2" (50.8 mm) per pass. To obtain optimum results substrate temperature should be within the ranges as stated below. All substrates must be dry at the time of application. Do not apply to wood surfaces with a moisture content of above 18%.

Material	Substrate Temperature
Gaco 183M	40 °F to 120 °F (4 °C to 49 °C)
Gaco 183MW	30 °F to 100 °F (-1 °C to 38 °C)

EQUIPMENT SETTINGS		REACTIVITY TIME	
Pre-Heaters - Iso (A)	105 °F to 135 °F (41 °C to 57 °C)	Cream Time	1 second
Pre-Heaters - Poly (B)	105 °F to 135 °F (41 °C to 57 °C)	Rise Time	3 - 6 seconds
Hose Heat	105 °F to 135 °F (41 °C to 57 °C)	Tack Free Time	4 - 8 seconds
Recommended Spray Pressure	1,000 to 1,200 psi (dynamic)	Cure Time	4 hours

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For specific Safety and Health information please refer to Safety Data Sheet.

