Gaco Western

SINCE 1955

Product Data Sheet:

GacoOnePass F1850
March 2016
Supersedes 1/16

GacoOnePass F1850
CLOSED CELL SPRAY FOAM INSULATION

DESCRIPTION

GacoOnePass F1850 is a two component HFC-blown (zero ozone-depleting) liquid spray system that cures to a medium-density rigid cellular polyurethane insulation material. GacoOnePass F1850 contains polyols derived from naturally renewable oils, post-consumer recycled plastics, and pre-consumer recycled materials.

GacoOnePass F1850 is a Class A (Class 1) fire rated foam that meets or exceeds the requirements of ICC-ES AC377 *Acceptance Criteria for Foam Plastic Insulation*. See Intertek *Code Compliance Research Report CCRR-1043* for code compliant application information. GacoOnePass F1850 is a Type II foam in accordance with ASTM C1029.

GacoOnePass F1850 is designed to be installed in up to four (4) inch passes when insulation instructions are followed.

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

RECOMMENDED USES

GacoOnePass F1850 will provide excellent performance in a wide range of residential, commercial and industrial applications where in service temperatures are between -40°F and 200°F.

Walls	Attics	Concrete Slabs	Cold Storage	Storage Tanks
Ceilings	Crawlspaces	Residential Ducts	Freezers	Other Industrial Applications
Floors	Foundations	Plenums	Piping	

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.

PROPERTY*	ASTM TEST	VALUE	UNIT
Core Density	D1622	2.1 ± 10%	lbs/ft^3
Aged R-Value **	C518	R 6.5 at 1" ***	$h{\cdot}ft^2{\cdot}°F/Btu$
	C518	R 25 at 3.5" ***	$h{\cdot}ft^2{\cdot}°F/Btu$
Compressive Strength (Parallel to Rise):	D1621	28.5	psi
Tensile Strength	D1623	39.7	psi
Water Vapor Permeance	E96 – Method A	0.44	perm-in
Dimensional Stability	D2126		
At 158°F and 97% RH		L=4.2%, W=5.1%, T=1.2%	% linear change
At 158°F and ambient RH		L=-0.8%, W=-1.1%, T=-1.5%	% linear change
At -20°F and ambient RH		L=0.1%, W=-0.1%, T=0.2%	% linear change
Open Cell Content	D2856	4.4	%
Air Permeance @ 75Pa (Infiltration/Exfiltration)	E2178	0.00 at 1"	$L/s{\cdot}M^2$
Fungi Resistance	C1338	Pass	no growth
Hot Surface Performance	C411	Pass	
VOC Emissions	UL GREENGUARD	Pass	No harmful effects
	UL GREENGUARD Gold	Pass	No harmful effects

*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: a. between 1 inch and 3.5 inch can be determined through linear interpolation; or,
b. greater than 3.5 inches can be calculated based on R 7.2/inch

SURFACE BURNING CHARACTERISTICS

GacoOnePass F1850 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, 2015).

SYSTEM	THICKNESS	FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX
GacoOnePass F1850	4" (10.2 cm)	5	350

LARGE SCALE FIRE TESTING

TEST	PERFORMANCE	LOCATION	FOAM THICKNESS / COATING
AC377	Ignition Barrier	Vertical surfaces	Up to 8.0" (20.3 cm) / No Coating Required
		Horizontal or sloped surfaces	Up to 10.0" (25.4 cm) / No Coating Required
NFPA 286	Thermal Barrier	Vertical surfaces	Up to 7.5" (19.1 cm) / DC315 - 18 mil wet
		Horizontal or sloped surfaces	Up to 9.5" (24.1 cm) / DC315 - 18 mil wet

GacoOnePass F1850 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).

VAPOR RETARDER

GacoOnePass F1850 meets the requirement of one perm or less for a Class II vapor retarder per the International Code Council and ASHRAE when installed at 0.44 inches in depth. However, minimum installed thickness recommended by Gaco Western is 0.75 inches. Water vapor permeability at various thicknesses is provided below:

Thickness	WVP
0.44"	1.00 perms
1.0"	0.44 perms
2"	0.22 perms
3"	0.15 perms
4"	0.11 perms

AIR BARRIER PERFORMANCE

GacoOnePass F1850 is an air impermeable insulation and an air barrier material based on testing in accordance with ASTM E2178 at one inch depth or more.

LEED INFORMATION

GacoOnePass F1850 has a minimum of 9.7% recycled content based on weight, including 1.8% pre-consumer material and 7.9% post-consumer material. It contains 8.5% rapidly renewable content. GacoOnePass F1850 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 1080 ± 100	cps cps
Specific Gravity – "A" Component: Specific Gravity – "B" Component:	77°F (25°C)	D1638	1.24 1.235	S.G. S.G.
Weight/Gallon – "A" Component: Weight/Gallon – "B" Component:	77°F (25°C)		10.34 10.3	lbs/gal lbs/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 – 12 B Component – 4	Months Months

APPLICATION

To ensure optimum performance, a minimum pass thickness of 3/4” (1.9 cm) is recommended with the maximum not to exceed 4” (10.16 cm) 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
GacoOnePass F1850R	30°F to 120°F (-1.1°C to 48.9°C)
GacoOnePass F1850W	20°F to 80°F (-6.7°C to 26.7°C)

EQUIPMENT SETTINGS	VALUE
Pre-Heat: Iso (A)	105°F to 135°F (41°C to 58°C)
Pre-Heat: Poly (B)	105°F to 135°F (41°C to 58°C)
Hose Heat	105°F to 135°F (41°C to 58°C)
Recommended Spray Pressure	1,200 to 1,400 psi (dynamic)

PRODUCT CHARACTERISTICS	VALUE
Cream Time	0.5 - 1.5 sec
Rise Time	3 - 6 sec
Tack Free Time	4 - 8 sec
Cure Time	24 hours

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