

Product Data Sheet:

GacoOnePass F1850
March 2017R
 Supersedes 1/17

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 five and one half inch (5½") passes when installation 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 including:

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

GacoOnePass 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 | 2.1 ± 10% | lbs/ft ³ |
| Aged R-Value ** | C518 | R 6.5 at 1" *** | h·ft ² ·°F/Btu |
| | C518 | R 25 at 3.5" *** | h·ft ² ·°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 | L=5.2%, W=1.1%, T=8.5% | % linear change |
| At 158°F(70°C) and 97% RH | | L=-0.3%, W=-0.2%, T=-0.5% | % linear change |
| At 176°F(80°C) and ambient RH | | L=-0.2%, W=-0.2%, T=-1.7% | % linear change |
| At -20°F and ambient RH | | | |
| Open Cell Content | D2856 | 4.4 | % |
| Air Permeance @ 75Pa (Infiltration/Exfiltration) | E2178 | 0.00 at 1" | L/s·M ² |
| Air Barrier Assembly @ 75Pa (Infiltration/Exfiltration) | E2357 | 0.007 at 1" | L/s·M ² |
| Crack Bridging @ -15°F (-26°C) | C1305 | Pass | No-cracking |
| Water Absorption (96 hours, 2" head, 70-74°F (21-23°C)) | D2842 | 2.76 | % by volume |



| | | | |
|---|----------------------------------|------|-------------------------------------|
| Water Absorption | C1763 | 0.21 | % by volume |
| Water Resistive Barrier | ICC-ES AC71, AATCC Method 127 | Pass | |
| UV Weathering | AC71 | Pass | No blistering or delamination |
| Accelerated Aging | AC71 | Pass | No blistering or delamination |
| Hydrostatic Pressure – 55 cm (21.6”) water column | AATCC Method 127 | Pass | No water leakage |
| Pull Adhesion | | | |
| DensDeck | D4541 | 39 | psi |
| Concrete | D4541 | 48 | psi |
| OSB | D4541 | 43 | psi |
| Fungi Resistance | C1338 | Pass | no growth |
| Hot Surface Performance | C411 | Pass | No flaming, charring, or smoldering |
| 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 | FLAME SPREAD INDEX | SMOKE DEVELOPED INDEX |
|--------------------------------|--------------------|-----------------------|
| GacoOnePass F1850 ¹ | 5 | 350 |

¹ Sample tested at 4” (10.2 cm) thickness. May be installed at unlimited thicknesses when covered with ½” gypsum board.

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 | Thickness | WVP |
|-----------|------------|-----------|------------|
| 0.44” | 1.00 perms | 3” | 0.15 perms |
| 1.0” | 0.44 perms | 4” | 0.11 perms |
| 2” | 0.22 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 and has passed air barrier assembly testing in accordance with ASTM E2357 and has been evaluated by the Air Barrier Association of America in accordance with ABAA D-115-010.



INDOOR AIR QUALITY

GacoOnePass F1850 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.

FLOTATION PERFORMANCE

GacoOnePass F1850 meets the requirements of US Coast Guard requirement for flotation materials for both bilge and engine room applications in accordance with Code of US Regulations, Navigation and Navigable Waters Article §183.114 by testing from an independent laboratory.

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 – 5 | 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 5½” (13.97 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°C to 49°C) |
| GacoOnePass F1850W | 20°F to 80°F (-7°C to 27°C) |

| EQUIPMENT SETTINGS | REACTIVITY TIME |
|-----------------------------|-------------------------------|
| Pre-Heaters - Iso (A): | 105°F to 135°F (41°C to 57°C) |
| Pre-Heaters - Poly (B): | 105°F to 135°F (41°C to 57°C) |
| Hose Heat: | 105°F to 135°F (41°C to 57°C) |
| Recommended Spray Pressure: | 1,000 to 1,200 psi (dynamic) |
| | Cream Time: 1 second |
| | Rise Time: 3 - 6 seconds |
| | Tack Free Time: 4 - 8 seconds |
| | Cure Time: 24 hours |

The information herein is believed to be reliable but unknown risks may be present. ALL WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND THAT GOODS ARE OF MERCHANTABLE QUALITY, ARE SPECIFICALLY DISCLAIMED. See Gaco Western for information concerning its limited warranty and its availability.

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

