

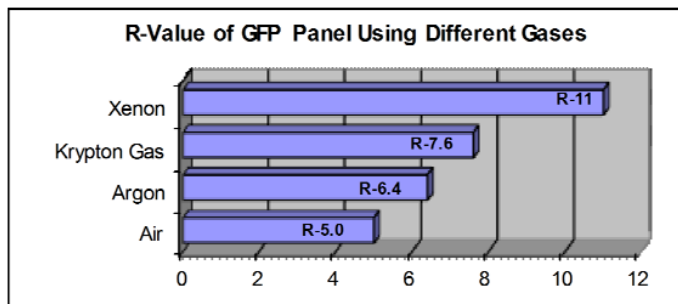
## GFP Insulation™

GFP Insulation™ is an advanced insulation technology. The product is composed of two external aluminum foil / polymer laminates and five internal specially formulated, aluminum metalized films. When expanded, the internal, low-emittance aluminum layers form a honeycomb structure. These sealed exterior aluminum foil barrier films provide thermal resistance, flammability protection, and properties to contain air or a low-conductivity inert gas. GFP Insulation™ incorporates an advanced design and specially formulated components to effectively address the three methods of heat transfer: radiation, conduction, and convection.

### Features & Benefits

GFP Insulation™ has distinct advantages over conventional insulation products including:

- Unique thermal characteristics and performance
- Increased thermal performance with low conductive inert gases
- Fiber-free and no harmful off-gassing.
- Mold Resistant - contains no cellulose or food for mold and will not absorb moisture
- Compact - packaged flat and expanded for installation
- Lightweight - easy to transport and install
- Meets LEED and other Green Building Program Requirements



Gas Volume Requirements for Expansion			
Gas Type	16"o.c. Gas lbs.	24"o.c. Gas lbs.	24"o.c. Gas lbs.
Air	0.057 lbs	0.087 lbs	0.0435 lbs
Argon	0.078 lbs	0.120 lbs	0.060 lbs
Krypton	0.164 lbs	0.252 lbs	0.126 lbs
Xenon	0.258 lbs	0.395 lbs	0.198 lbs

### Test Data

ASTM E-96 - Water Vapor Permeance, Un-Expanded.....	0.00
ASTM E-84-07 - Flammability	
Flame Spread Rating.....	< 20
Smoke Development Rating.....	< 65
Interior Wall & Ceiling Finish Classification.....	Class A
ASTM D-3310 - Corrosivity.....	None
ASTM C-1224-99 (9.2.1 & 9.2.2) Adhesive Performance	
Bleeding.....	None
Delamination.....	None
Pliability.....	No signs of cracking or delamination
ASTM C-1338 - Mold & Mildew.....	Pass
ASTM C-1371 - Foil Emittance.....	0.03
ASTM E-2129.....	Contributes to Building Sustainability

Product Information						
Panel	16"o.c. (40.64cm)		24"o.c. (60.96cm)		24"o.c. (60.96cm)	
Width Un-expanded	17"	43.2cm	25"	63.5cm	25"	63.5cm
Width Expanded	15"	38.1cm	23"	58.4cm	23"	58.4cm
Length Un-expanded	66"	1.68m	66"	1.68m	25"	63.5cm
Length Expanded	48"	1.22m	48"	1.22m	23"	58.4cm
Thickness Un-expanded	1/64"	0.4mm	1/64"	0.4mm	1/64"	0.4mm
Thickness Expanded	1 1/2"	3.8cm	1 1/2"	3.8cm	1 1/2"	3.8cm
Weight Un-expanded	8.8 oz		13.4 oz		6.7 oz	
Weight Expanded	8.9 oz		13.5 oz		6.75 oz	
Weight: Pounds / SQFT	.111		.105		.105	
Coverage	5 SQFT		8 SQFT		4 SQFT	

### Thermal Performance

Through the use of an dual-action pump or with a regulated compressor, GFP Insulation™ can be expanded with air. To expand GFP Insulation™ with other inert gases for greater thermal performance, use a tank with a regulator. Argon and other inert gases such as Xenon or Krypton can be used to achieve R-values up to R-11 for the 1 1/2" GFP Insulation™ panel.

### System Thermal Performance

Due to the high reflectivity and low emissivity of the exterior surfaces of GFP Insulation™, the overall resistance to heat flow will be increased when the outer surfaces of the GFP panel are exposed to air. For example; installing GFP argon filled insulation in the center of a 2"x4" wall assembly, will achieve an R-13.1. Furthermore, GFP Insulation™ can be combined with other insulations for hybrid solutions. For example, combining GFP Insulation™ filled with xenon and a 1/2" of R-6 per inch spray applied foam, will result in an R-value of R-20 in a 2"x4" wall cavity. Test results and calculations are available on [www.gfpinsulation.com](http://www.gfpinsulation.com).

