

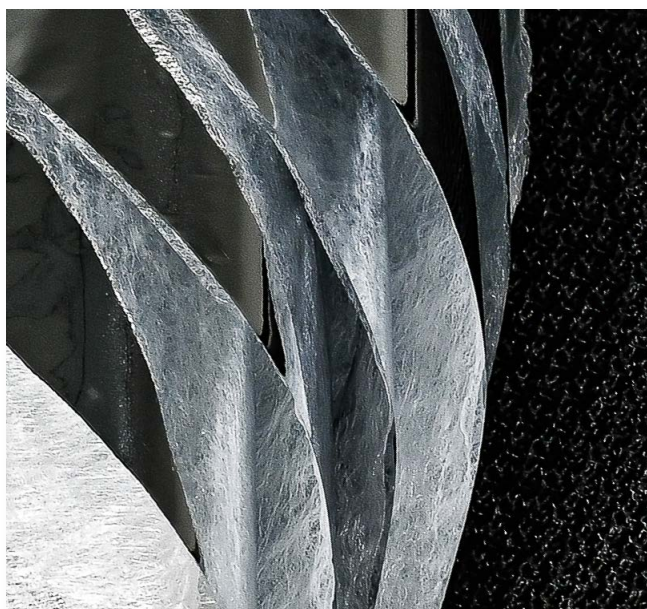


Cryogenic Superinsulation Product

PolaWrap® is a **prefabricated layup** of superinsulation. Available in a variety of standard layer counts or to your custom specification, PolaWrap® is ideal for ground-based cryogenic applications ranging from laboratory settings to industrial storage systems.

Features:

- Ultrathin double aluminized polyester film reflector layers to provide efficient thermal performance with minimal weight and stiffness.
- Reflector separation provided by 5.0 mil (127 µm) thick spun-bond polyester spacers that provide a uniform low conducting barrier.
- PolaWrap® is provided in a standard material width of 56 inches and in a standard length of 10 linear feet. Additional widths (up to 86 inches) and lengths available by special order.
- Additional film treatments:
 - Perforations - offer the ability to decrease vacuum pump down time.
 - Crinkling and embossing - offer a lower layer density and less layer conduction when properly installed.
- All layers are 100% polyester without binder to reduce outgassing contaminants.



Product Number*	Film Treatment	Perforated
PW001-56-XX	None	No
PW002-56-XX	None	Yes
PW003-56-XX	Crinkled	No
PW004-56-XX	Crinkled	Yes
PW005-56-XX	Embossed	No
PW006-56-XX	Embossed	Yes

*XX denotes number of layers in the layup. Can be either 10, 15, or 20 Layers

Material Properties

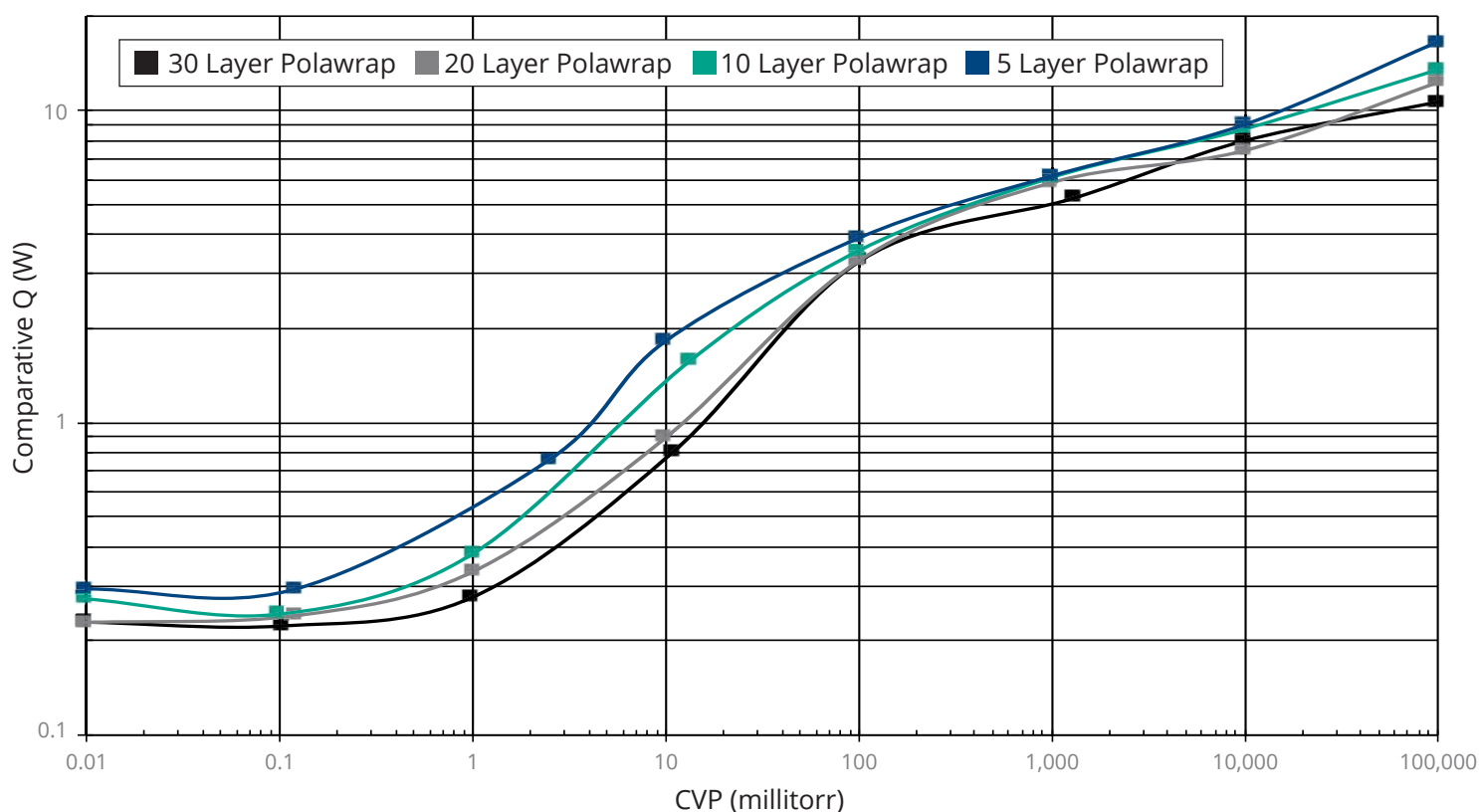
Number of Layers	Areal Density (kg/m ²)	Thickness (cm)	Average Layer Density (layers/cm)	Operating Temperature °F(°C)
10	0.34	.034	29	-452 (-269) to +250 (121)
15	0.51	0.56	31	-452 (-269) to +250 (121)
20	0.68	0.62	32	-452 (-269) to +250 (121)

Applications

Cryostats
 Cryogenic Storage Dewars
 Cryogenic Cabling
 Vacuum-Jacketed Piping
 Large-Scale Cryogenic Storage Tanks
 Quantum Computers
 MRI Machines

Thermal Performance

Comparative Thermal Power (Watts) to Cold Vacuum Pressure (CVP)
 (300K Warm Boundary Temp, 77K Cold Boundary Temp)



Usage

- Used to create fully formed blankets that are easier to apply to structure than individually applying layers of material.
- With a lower cost and easier handling due to its dimensional stability, PolaWrap® offers more efficient installation than blankets made with loose-weave netting.
- PolaWrap® offers improved thermal performance over blankets that don't use a spacer material.