

Thermal Wrap™ Aerogel Blankets



What are aerogel blankets?

Aerogel blankets incorporate **aerogel particles into ultra-thin, flexible nonwovens with superior insulating properties.** Thermal Wrap™ blanket products provide light transmission, light diffusion and high-performance thermal insulation. They are also highly-breathable, while being water repellent.

Our Thermal Wrap™ blanket products are available in multiple thicknesses from 2.5 millimeters up to 8 millimeters, and can be used as thermal insulation in industrial equipment, apparel and thermal break applications in buildings. They are particularly well-suited for applications that require a thin product that can be easily cut, rolled and shaped on the job site.

Thermal Wrap™ blanket's key features

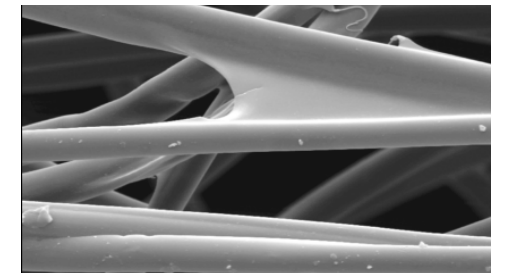
- ◆ Easily cut or sewn
- ◆ Flexible – can be bent and wrapped
- ◆ Lightweight
- ◆ Highly insulative
- ◆ Light transmitting

Thermal Wrap™ product highlights

Thermal Wrap™ aerogel blankets provide the super insulating properties of silica aerogel in a flexible form that is virtually dust-free. They are excellent for engineering projects, ambient and sub-ambient insulating applications, and more. You can easily cut and handle them. Thermal Wrap™ aerogel blankets can be used as a translucent fabric for daylighting and acoustic damping in buildings.

Thermal Wrap™ blankets are made of aerogel granules embedded in non-woven fibers, which produces a flexible, compressible, and highly efficient insulation material. This product produces less dust than competing wraps. Also, uniquely, its thermal conductivity does not degrade under compression, but actually improves. Thermal Wrap™ blankets can be used in a variety of applications from construction to oil and gas pipelines. They are easily laminated to create any thickness, and can be sewn together to make wider layers. Additional layers, such as aluminium foil, can be laminated onto Thermal Wrap™ blankets to reflect infrared energy.

Fibre composition



Thermal Wrap™ blanket's typical applications

- ◆ Medical supplies
- ◆ Cryogenic hoses
- ◆ Low temperature medical valves
- ◆ Low temperature flexible stainless steel tubing
- ◆ Squeezable drinking bottles
- ◆ Industrial Insulation
- ◆ Tensile roof structures
- ◆ Apparel



Product features

- ◆ **Thermal conductivity value:** 0.021 W/mK
- ◆ **Thicknesses:** 2.5, 3.5, 6 and 8 mm
- ◆ **Density:** ~70kg/m³ (~4.4 lb/ft³)
- ◆ **Tensile strength:** ~517 kPA (~75 lb/ in²)
- ◆ **Light transmission:** ~20% at 8mm
- ◆ **Operating temperature:** -200° to 125°C continuous (160° peaks)



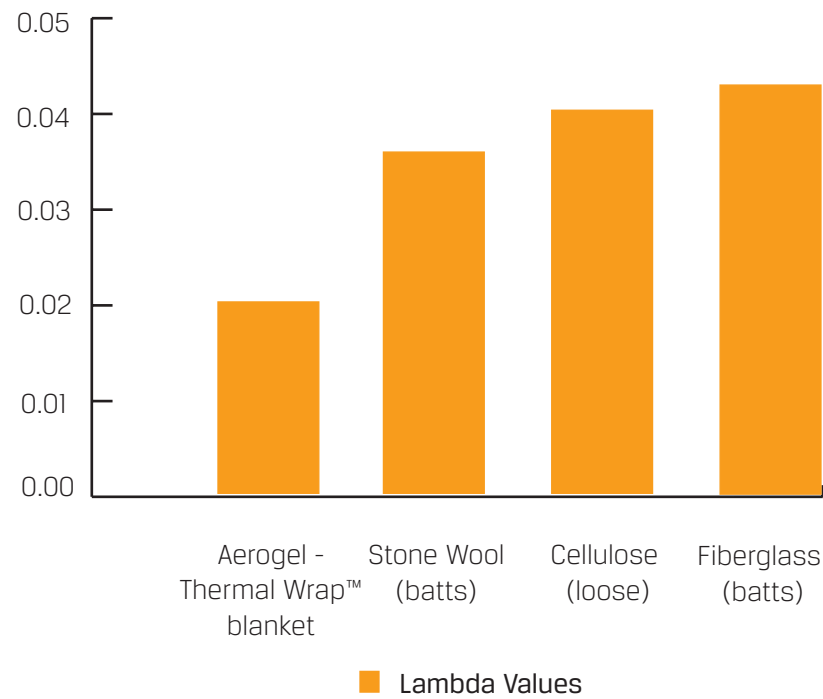
Thermal Wrap™ blanket's detailed information

Thermal Wrap™ blanket - Thermal conductivity with temperature

Mean Temp °C	Thermal Conductivity (mW/mK)	Mean Temp °F	Thermal Conductivity (BTU/hr*ft*°F)
-129	13	-200	0.0075
-73.3	17	-100	0.0098
-17.8	20	0	0.0116
23.9	23	75	0.0133
37.8	25	100	0.0144
93.3	32	200	0.0185

Thermal Wrap™ blanket is around R-7.2 per inch of insulation.

Lambda values, W/mk

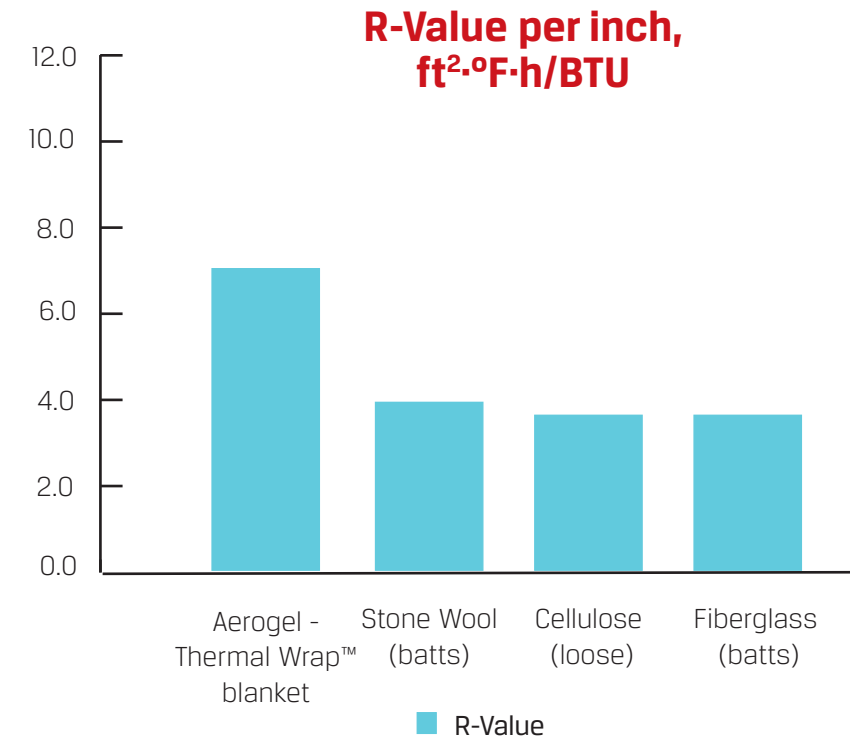


The two main measurements of thermal insulation performance

The two main measurements of thermal insulation performance are lambda (λ), and R-Value.

- ◆ **(λ)** = Thermal conductivity, which is a material property, measures the rate at which heat passes through a material. The smaller the lambda λ , the better the thermal insulation.
- ◆ **R-Value** = Thermal resistance = d/λ . It measures the total resistance to conductive heat flow and is dependent on material thickness (d) and thermal conductivity (λ).

Comparative insulation R-Values



The higher the R-value, the better the insulating performance. The R-value of aerogel per inch is significantly higher than for traditional insulation materials. The R-values are additive, therefore 4" of aerogel Particles is a R-value of 28.8.

Packaging information

Thermal Wrap™ aerogel blanket is made in a continuous sheet, cut to be 30" (0.76m) wide. All sheets are then rolled, bagged and placed a 45x45x38" box.



Product	Width		Thickness	R-Value per Layer	Roll Length		Selling Units	
	m	in			m	ft	ft²/roll	m²/roll
TW 250	0.76	30	2.5	0.71	160	525	1312	122
TW 350	0.76	30	3.5	1	120	394	984	91
TW 600	0.76	30	6.0	1.7	85	279	697	65
TW 800	0.76	30	8.0	2.3	110	361	902	84

These lengths are our standard lengths, but can be customized if necessary.



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