Panasonic

U-Vacua™ Vacuum Insulation Panels

U-Vacua™ vacuum insulation panels (VIPs) are thin, non-structural thermal insulation panels for use in applications that require superior R-value performance, especially useful in space constrained designs. U-Vacua™ VIPs offer excellent thermal insulation, low flame spread and smoke development (Class A) values desirable in building construction, are resistant to water infiltration, and offer long-term performance life.

Features:

- Thermal conductivity of 0.002 W/mK, which equates to a Center-of-Panel R-value of over R-60 for an inch thick panel. *(See Table 1. Standard Sizes and Thermal Performance for specific R-values).*
- Class A fire and smoke rating for Building Materials
- Made from a minimum of 70% recycled content
- Mold, fungi and rodent resistant

Applications: U-Vacua™ VIPs are configured to perform best for these applications - Commercial Roofing, Residential + Commercial Building Envelope, Refrigeration Equipment, Cold Chain Containers and structures.

Standards: U-Vacua™ vacuum insulation panels have been third party tested by a certified lab to ASTM C1484, ASTM E84, ASTM C165, ASTM C1667, ASTM D2126, ASTM C1363.

Materials: U-Vacua™ panels consist of a unique glass fiber core and an adsorbent surrounded by laminate film. Together, the adsorbent and outer film maintain the integrity of the vacuum over many years. All materials comply to the RoHS Directive regulation, and the Panasonic Group Chemical Substances Management Rank Guidelines for Products, that prohibit select chemicals due to their negative environmental impact.

Technology: The majority of a VIP's insulating value is from the inner vacuum. In a vacuum, heat cannot travel through the air by conduction or convection. This limited ability for heat to travel in a vacuum is what gives vacuum insulation panels such a high thermal performance and R-value. As a result, it is important to maintain the integrity of the vacuum, particularly during handling and installation.

Table 1. Standard U-Vacua™ Standard Sizes + R-value

Part Number	Panel Dimensions				R-Value - Center of Panel[2]	R-Value - Effect-ive[3]	Weight / panel	Per Pallet	
	inches		mm		h.Ft2.F/Btu		lbs.	Pieces	Sq Ft
	W	L	W	L					
0.94 inches / 24 mm Thick Panel Sizes									
TZB7780E	12.0	15.2	305	385	66	22	1.79	108	136
TZB7790E	15.0	19.9	380	505	66	26	2.88	132	272
TZB7800E	15.0	23.8	380	605	66	27	3.42	99	326
TZB7840E	24.0	24.0	610	610	66	32	5.49	66	264
TZB7860E	22.4	24.0	570	610	66	31	5.14	66	247
TZB7870E	12.0	24.0	305	610	66	25	2.80	99	264
TZB7880E	12.0	12.0	305	305	66	20	1.44	108	108
0.59 inches / 15 mm Thick Panel Sizes									
TZB9810E	15.4	18.5	390	470	45	16	1.78	200	394
TZB9820E	16.1	37.8	410	960	45	19	3.76	100	423
TZB9830E	10.2	19.9	260	505	45	14	1.30	150	211
TZB9840E	26.4	38.2	670	970	45	23	6.12	50	349
TZB9850E	22.4	23.4	570	595	45	20	3.23	100	365
TZB9860E	11.8	20.7	300	525	45	15	1.54	100	169

Read This Before You Buy

What You Should Know About R-values

The chart shows the R-values of this insulation. R means resistance to heat flow. The higher the R-value, the greater the insulating power. Compare insulation R-values before you buy.

There are other factors to consider. The amount of insulation you need depends mainly on the climate you live in. Also, your fuel savings from insulation will depend upon the climate, the type and size of your house, the amount of insulation already in your house, and your fuel use patterns and family size. If you buy too much insulation, it will cost you more than what you'll save on fuel.

To get the marked R-value, it is essential that this insulation be installed properly.

2. R-values per ASTM C 1484/C 1667.
3. Wall Assembly Effective R-value determined per ASTM C 1484/ C 1363 - Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus. The Center of Panel (CoP) R-value reported is measured at the center of the panel. The Wall Assembly Effective R-value considers thermal edge effects for a specific wall assembly configuration.

General Specifications:

Property	Value	Test
Flame Spread Index	Class A (10)	ASTM E84
Smoke Development Index	Class A (15)	ASTM E84
Density (Lbs/Ft^3) 15mm / 24mm	15 / 13.9	ASTM C1667
Compressive Strength @ 25% (psi) 15mm / 24mm	9.8 / 14.3	ASTM C165
Recommended Use Temperature Range	-40°C to 60°C / -40°F to 140°F	
Max. Use Temperature Range	-70°C to 100°C / -94°F to 212°F	

Service Life:
Standard U-Vacua™ VIPs are a Superinsulation as defined in the ASTM C 1484 standard, determined to have a center of panel R-value greater than 12 at 60 years. Specific environmental and implementation conditions can impact the service life.

Handling + Installation:

WARNING: Vacuum insulation panels cannot be handled or installed in the same manner as traditional thermal insulation products. Precautions should be taken to maintain the internal vacuum. Without the vacuum, the thermal insulating performance is similar to a standard fiberglass batt, or about R-5 for one inch.

Installing:

- Hotmelt, standard industry adhesives and tapes compatible with polyethylene, spray foam, and combining with protective layers are common ways to install VIPs.
- To get the marked R-value, it is essential that this insulation be installed properly. If you do it yourself, get instructions and follow them carefully. Follow installation guidelines provided by your supplier or at www.na.industrial.Panasonic.com or www.na.industrial.panasonic.com/building.

Safety:
Intact VIPs are safe to handle. However, exposure to the inner contents of a panel may cause skin and serious eye irritation. The inner materials, such as glass fibers or powder, should not be inhaled, and eyes and skin should be protected. If exposure occurs, rinse eyes cautiously with water for several minutes, and wash skin with soap and water.

PANASONIC CORPORATION OF NORTH AMERICA

U-VACUA™ VACUUM INSULATED PANEL

Intertek
Control No. 5011721

CERTIFIED TO:

ASTM C1484
ASTM C165
ASTM C1667
ASTM D2126
ASTM C1363
ASTM E84

Refer to the Intertek Directory of Building Products for detailed information.

Disclaimer: The technical information provided here has been determined through testing to industry standards. Panasonic is not responsible for specific design implementations, or for panels that are improperly stored, handled, or installed.