

- Polyurethane (PUR) Insulation
- Polyisocyanurate (PIR) Insulation

• ABOUT US

Vila Rockwool Co. is one of the largest manufacturer of Rockwool in Iran and it established in 2010 and has been producing thermal and acoustic insulation such as: Panel, Iso Pipe, Iso Blanket, Felt with resin and Iso Therm (crude without resin).

Certificates:

ISO 9001 : 2015 (Quality management system)
 ISO 14001 : 2015 (Environmental Management System)
 ISO IMS (Integrated Management System)
 ISO / TS 29001 : 2010 (Quality Management System for petroleum petro chemical and Natural Gas industries)
 ISO 45001 : 2018 (Occupational Health and Safety Management)
 ISO HSE-MS (Healthy , Safety and Environment Management System)
 ISO 10002 : 2018 (Quality Management , customer Satisfaction)
 ISO 12241 : 2008 (Thermal Insulation for Building Equipment and Industrial Installations)
 ISO 10004 : 2018 (Quality Management Customer Satisfaction)

Additionally we have registered officially in Iranian Petroleum Industries Equipment Manufacturers Association (SIPIEM) Association of Industrial Quality Control Managers (AIQCO) and Ministry of Petroleum vendor list (can be checked in www.ep.mop.ir). Also we have registered in engineering companies such as: Sazeh, Kayson, Dorriz, Gamma, Nargan, Jondishapour, Kherad energy and environment co., Barsoo and Persian Gulf Petrochemical

All the tests took in reliable lab under DIN and ASTM Standards.

Easy to Fit Energy Saving

- Cold Insulation for Oil, Gas and Refinery Industries
- Cryogenic Insulation
- Pipe, Slabs and Board Insulation
- Continuous PUR / PIR Foam Block Production
- Equipment ,Tank , Vessel Insulation
- High Density Thermal Pipe Support Inserts
- High Density Thermal Duct Support Inserts
- High Density Support Spacer



*The Quality Insulation Products
for Many Diverse Application*



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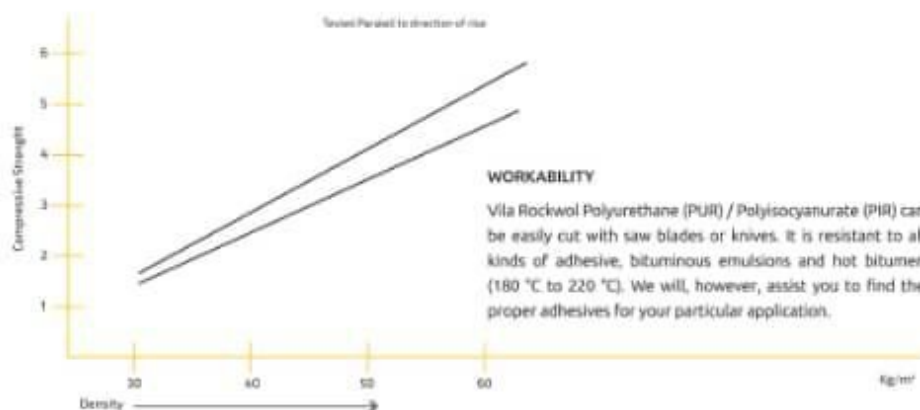
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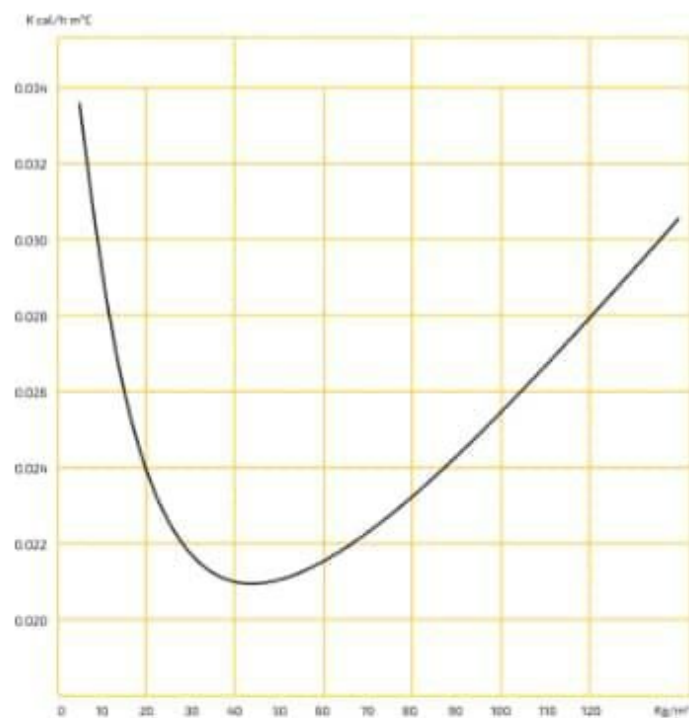
Rigid polyurethane foam insulation represent the most technological and convenient solution for insulation of cold and cryogenic piping systems in oil/gas and petrochemical plants.

Rigid HD PUF insulation parts

High density rigid polyurethane foam is suitable for the insulation of cold pipe supports where strong mechanical characteristics are necessary as well as high insulation properties. the HD PUF insulation part can be shaped at pipe half section or rectangular block according to project pipe suport drawings.



Support assembly with high density polyurethane foam block.



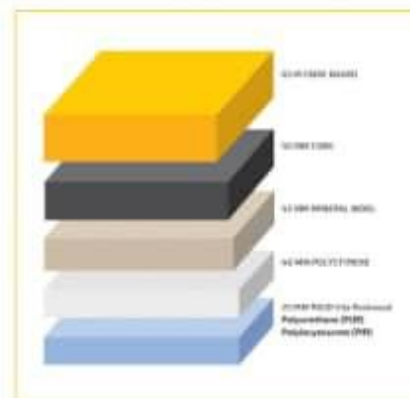
Rigid PUF Typical Properties

Density (kg/m³)	40	160	224	320
Closed Cell Content (% vol.)	>90			
Compressive Strength at 20 °C (MPa)	0.2	2.0	4.0	7.0
Thermal Conductivity at 20 °C (W/m. °K)	0.023	0.032	0.035	0.041
Application Temperature (°C)	-190 up to +120			
Water Absorption (% vol.)	0.19	0.17	0.15	0.12
Flammability	Class B2			

A λ factor, R-value per 100mm, and thicknesses for an R-value of 1 ($m^2 K/W$) for common insulation materials are shown below.



Comparative Thickness for same degree of Insulation (Dry Conditions)



Comparative Thickness (mm) of commonly Specified Insulation Materials Required for Specific Metrics Values of Thermal Resistance (R-value)1

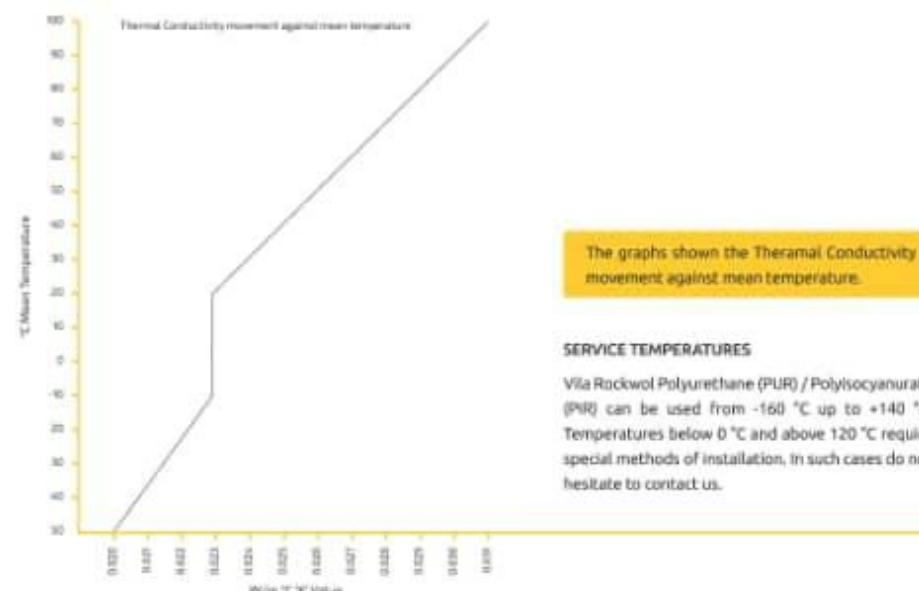
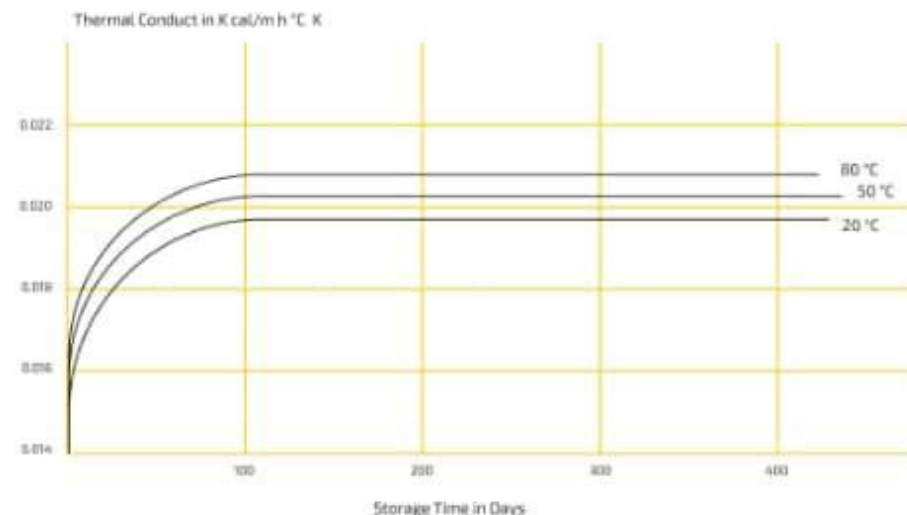
Insulation Material	Thermal Resistance - Metric R-Value ¹							
	1.43	4.75	4.33	3.75	3.17	2.74	1.87	1.58
Thermal Conductivity (λ) ²	0.022	0.023	0.024	0.034	0.041	0.047	0.052	0.054
PUR/PIR 0.022 $W/m^2 K$	100	91	87	75	63	55	37	32
Expanded Polystyrene 0.033 $W/m^2 K$	181	158	149	125	106	91	62	53
Phenol Resin 0.034 $W/m^2 K$	181	158	149	125	106	91	62	53
Glass Fibre 0.034 $W/m^2 K$	181	158	149	125	106	91	62	53
Mineral Wool 0.041 $W/m^2 K$	229	198	180	155	132	114	78	6
Expanded Cork 0.047 $W/m^2 K$	259	226	205	179	151	130	89	76
Adhesives Fibre 0.052 $W/m^2 K$	288	250	228	197	167	144	98	84
Foam Glass 0.054 $W/m^2 K$	301	264	241	208	178	152	94	80
Foam Concrete 0.054 $W/m^2 K$	301	264	241	208	178	152	94	80
Compressed Straw Slabs 0.1 $W/m^2 K$	543	475	433	375	317	274	187	158

1 Metric R = $1 \frac{m^2 K}{W}$ Corresponds to British Thermal Unit R-Factor 1 (Btu) (in) (ft2) (°F) (hr)
 $2 \lambda = W/m^2 K$ Corresponds to British Thermal Unit K-Factor (Btu) (in) (ft2) (°F) (hr)

Thickness of Vile Rockwool Polyurethane (PUR) / Polyisocyanurate (PIR) for Calculated

mm	Thermal Conductivity ¹	Thermal Resistances (R-Value) ²
	$\lambda = \frac{W}{m^2 K}$	$1/\lambda = \frac{m^2 K}{W}$
25	0.020	1.25
38	0.0129	1.58
41	0.018	1.73
48	0.0089	1.87
51	0.0102	2.01
54	0.0095	2.36
60	0.0089	2.30
64	0.0079	2.60
73	0.0074	2.74
76	0.0072	2.88
83	0.0064	3.02
86	0.0062	3.17
89	0.0059	3.32
92	0.0057	3.46
95	0.0054	3.61
99	0.0053	3.75
102	0.0050	3.99
108	0.0049	4.03
111	0.0047	4.28
114	0.0046	4.33
118	0.0044	4.47
121	0.0043	4.61
124	0.0041	4.75
127	0.0040	4.90
130	0.0039	5.05
134	0.0038	5.26
143	0.0037	5.33

Increase in thermal conductivity at various temperatures and prolonged storage time For low temperature application Vile Rockwool Polyurethane (PUR) / Polyisocyanurate (PIR) must be covered with a vapour barrier to avoid condensation or icing.





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