

Condutividade térmica de isolantes

Fonte: Pressure-relieving and Depressuring Systems
API STANDARD 521 SIXTH EDITION, JANUARY 2014

Table 6—Thermal Conductivity Values for Typical Thermal Insulations

Average Temperature of Insulation °C (°F)	Thermal Conductivity for Selected Material W/m·K (Btu·in./h·ft ² ·°F)						
	Calcium Silicate Type I [23]	Calcium Silicate Type II [23]	Mineral Fiber Mesh Blanket/Block ^a [25] [26] [28]	Cellular Glass Type I Gr 2 [24]	Molded Expanded Perlite Block [27]	Lightweight Cementitious ^b [76]	Dense Cementitious ^b [76]
-18 (0)	—	—	—	0.045 (0.31)	—	0.519 (3.6)	1.760 (12.2)
38 (100)	—	—	0.039 (0.27)	0.053 (0.37)	—	0.519 (3.6)	1.731 (12.0)
93 (200)	0.065 (0.45)	0.078 (0.54)	0.049 (0.34)	0.063 (0.44)	0.079 (0.55)	0.519 (3.6)	1.702 (11.8)
149 (300)	0.072 (0.50)	0.084 (0.58)	0.063 (0.44)	0.075 (0.52)	0.087 (0.60)	0.519 (3.6)	1.673 (11.6)
204 (400)	0.079 (0.55)	0.088 (0.61)	0.079 (0.55)	0.091 (0.63)	0.095 (0.66)	0.519 (3.6)	1.659 (11.5)
260 (500)	0.087 (0.60)	0.092 (0.64)	0.101 (0.70)	—	0.107 (0.74)	0.519 (3.6)	1.630 (11.3)
315 (600)	0.095 (0.66)	0.097 (0.67)	0.128 (0.89)	—	0.115 (0.80)	0.519 (3.6)	1.615 (11.2)
371 (700)	0.102 (0.71)	0.101 (0.70)	0.163 (1.13)	—	0.127 (0.88)	0.519 (3.6)	1.587 (11.0)
427 (800)	—	0.105 (0.73)	—	—	—	0.519 (3.6)	1.572 (10.9)
482 (900)	—	0.108 (0.75)	—	—	—	0.519 (3.6)	1.543 (10.7)
538 (1000)	—	0.111 (0.77)	—	—	—	0.519 (3.6)	1.514 (10.5)
593 (1100)	—	—	—	—	—	0.519 (3.6)	1.486 (10.3)
649 (1200)	—	—	—	—	—	0.519 (3.6)	1.471 (10.2)
	Maximum temperature for example of insulation listed ^d °C (°F)						
	649 (1200)	927 (1700)	649 (1200)	c	c	approx. 870 (1600)	approx. 1090 (2000)
^a "Mineral fiber blanket/block" comprises rock, slag, or glass processed from the molten state into fibrous form. The thermal conductivities shown in the table are the highest values for the various forms of the insulation suitable for the maximum use temperature indicated. ^b Thermal conductivities for lightweight and dense cementitious materials are approximate. ^c Maximum use temperature not given in ASTM C552 [24] and ASTM C610 [27]. ^d There may be other grades of insulation that have higher maximum temperatures.							