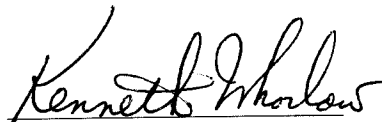


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REPORT ON
THERMAL PROPERTIES OF
einsulation
CALCIUM SILICATE PIPE INSULATION

PREPARED FOR
einsulation.com, inc
508 North Second St.
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TUTCO SCIENTIFIC REPORT NO. E-INS\CALSIL-335.803
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Thermal Conductivity Data**Sample:** einsulation**Material:** Calcium Silicate Pipe Insulation**Sample Data:** Length (in)=35.9375, Nominal Thickness (in)=2.0, Circumference (in)=24.078, Weight (g)=5088, Density = 15.1 pcf (calculated using circumference and nominal pipe size)**Test Method:** The thermal conductivity was determined on 3N2 pipe cover, using the ASTM C335 test apparatus at eight temperatures. The calculated Apparent Thermal Conductivity values were adjusted by the computer program as required using ASTM C1045 to compensate for large hot and cold surface temperature differentials.**Observed Data (temperatures in °F)** - See Figure 1

Data Point	Hot Surf.	Cold Surf.	T Diff.	T Mean	Measured Cond.*
1	315.8	104.3	211.5	210.0	0.446
2	435.3	116.6	318.7	275.9	0.463
3	571.9	128.9	443.0	350.4	0.475
4	710.1	143.9	566.3	427.0	0.502
5	846.1	159.4	686.7	502.7	0.535
6	967.3	169.7	797.5	568.5	0.573
7	1093.8	186.7	907.0	640.3	0.622
8	1201.3	196.0	1005.3	698.6	0.677

Thermal Conductivity Calculated Using ASTM C1045 - See Figure 1

$$k = 4.695E-01 - 2.4392E-04(\text{mean}) + 6.5146E-07(\text{mean}^2)$$

<u>Mean Temp., F (C)</u>	<u>Apparent Cond.,* (**)</u>	<u>Maximum ASTM C533 (Type I),* (**)</u>
200 (93)	0.447 (64.5)	0.45 (65)
300 (149)	0.455 (65.6)	0.50 (72)
400 (204)	0.476 (68.6)	0.55 (79)
500 (260)	0.510 (73.5)	0.60 (87)
600 (316)	0.558 (80.5)	0.66 (95)
700 (371)	0.618 (89.1)	0.71 (102)

* BTU•in/hr•ft²•°F

** mW/mK

Thermal Conductivity (C335)

insulation Calcium Silicate Pipe

Figure-1
8-07-03

