



ENERGY REPORT - USING OMEGA 05-652 ENERGY METER (BTU GUN)

Date: June 30, 1998 Time / Location: Pelham, Alabama - 12 noon; Homewood, Alabama - 1 PM

The measurements taken make a comparison of the amount of heat transfer (BTU) that is taking place in the roof area (attic), walls and coolers that face the outside sun all day or are located under the roof. The following study was based upon two (2) different roof systems:

(A) Jacks Family Restaurant - Homewood	(B) Jacks Family Restaurant - Pelham
Roof- 3,000 sq.ft.	Roof- 3,000 sq.ft.
Black rubber membrane	SUPERBASE HS, SuperTherm & Enamo Grip
Cooler Roof Area - 162 sq.ft.	Cooler Roof Area - 162 sq.ft.
Cooler Wall Area- 360 sq.ft.	Cooler Wall Area- 360 sq.ft.
BTU DATA:	BTU DATA:
Ambient Temperature - 95F	Ambient Temperature - 95F
Outside Air Temperature on Roof- 120F	Outside Air Temperature on Roof- 105F
Surface Temperature of Roof - 152F	Surface Temperature of Roof - 101F
Attic Temperature - 102F	Attic Temperature - 80F
Inside Kitchen Area Temperature - 85F	Inside Kitchen Area Temperature - 75F

BTUs per square foot | per hour

attic- 174	attic-159
wall- 148	wall- 137
cooler exposed to outside wall - 123	cooler exposed to outside wall -94
cooler exposed to roof- 121	cooler exposed to roof- 84

CALCULATIONS - ROOF*

Difference: 174 -159 = 15 BTU/sq.ft./hour x 3,000 sq.ft. = 45,000 BTU/sq.ft./hour
 Convert to Kilowatts: 45,000 x0.000293 = 13.2 kilowatts
 Electricity cost: \$0.067 981KW/HR (Alabama Power); \$0.063 7 (B.C. Hydro)
 Roofs estimated to exposed to heat by radiation for 6 hours each day and HVAC is approximately 30% efficient (MAX.) at reducing temperature
 Calculation: (13.2KW) x (\$0.06798) x (6 his/day) /30% = \$17.95 US Dollars per day x 30 days
 Equals **538.50 US Dollars PER MONTH SAVINGS**

CALCULATIONS - COOLERS*

Difference Roof 121-84 = 37 BTU/sq.ft./hour x 162 sq.ft. = 5,994 BTU/sq.ft./hour
 Difference Wall 123-94 = 29 BTU/sq.ft /hour x 360 sq.ft = 10,440 BTU/sq.ft./hour
 Total Difference: 5,994 + 10,440 = 16,434 BTU/sq.ft./hour x 0.000293 =4.82KW
 Calculation: (4.82KW) x (\$0.06798) x (6 hrs/day) / 30% = \$6.55 USD per day x 30 days = **\$196.59 US Dollars PER MONTH SAVINGS**

“R” - VALUE USING BTU GUN

(A) Temperature difference inside & out + 30F	(B) Temperature difference inside & out +30F
Net heat flow (BTU / sq. ft. / hour) = 6 Pt. Diff.	Net heat flow (BTU / sq. ft. / hour) = 3 Pt. Diff
Reading Difference = 10	Reading Difference = 44
Result: Less than R8	Result: R17 - R18

NOTE: Calculations are based on lab studies by Purdue University and V-Tech Labs
 For more information on SPI Products, please send us an email at info@ecosolv.com.
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