

May 6th, 2010

Ceres, California

High Temperature – 77 F

Mostly sunny day with somewhat steady 16mph breeze with gusts to 30mph.

To get a rough idea of the temperature difference experienced between bare galvanized metal and the same coated with Cerama-Tech.

A piece of scrap metal ducting was used for this test. It measures 38” L x 25” W x 8” H.

A piece of ¾ plywood is installed inside to separate the two sections, bare and coated.

Cerama-Tech was applied to one section at and estimated 125 sq ft per gallon.

A double layer of R-19 fiberglass insulation was placed in each side to keep any convected heat transfer to a minimum.

The thermometers were commercial grade “Trend” thermometers with 4” probes. Before the test began the thermometers were placed in a cup of water with ice. Thermometer #1 read 35F, thermometer #2 read 39F. Thermometer #2 was adjusted to also read 35F.

The thermometers were then placed in a cup of heated water and let stand for 4 minutes at which time thermometer # 1 read 161 F and thermometer #2 read 162 F.

The thermometers were then placed into the metal ducts at the mid point of each section at the top. Both probes were touching the underside of the metal 4” off the side of the test unit. They were inserted at 9:50 am. Readings were taken throughout the day.

Thermometer #1 was inserted in the Cerama-Tech coated side and #2 in the bare side.

Time	Thermometer #	Temperature	Ambient air temp	Temp difference
0955 am	1	67F	57F	
0955 am	2	89F	57F	22F
1000 am	1	67F	57F	
1000 am	2	89F	57F	22F
1015 am	1	70F	57F	
1015 am	2	105F	57F	35F
1030 am	1	72F	58F	
1030 am	2	108F	58F	36F
1050 am	1	74F	60F	
1050 am	2	110F	60F	36F

1130 am	1	78F	64F	
1130 am	2	120F	64F	42F
1200 pm	1	81F	65F	
1200 pm	2	125F	65F	44F
1330 pm	1	88F	67F	
1330 pm	2	134F	67F	46F
1450 pm	1	89F	71F	
1450 pm	2	132F	71F	43F
1545 pm	1	87F	73F	
1545 pm	2	125F	73F	38F
1650 pm	1	84F	74F	
1650 pm	2	114F	74F	30F

I failed to get pictures of the 0955 and 1000 hrs readings. All other readings were documented with the pictures below.

One of the big concerns with products like Cerama-Tech (Radiant Barrier coatings) is how the product performs over time. The AC duct you see in these pictures was salvaged from a scrap pile at a home remodel job site early in the summer of 1988. It has been with me through 5 moves and 2 wives in that time period. I had to replace the plywood inside as the original piece rotted out. It stayed outside, leaning against a fence for 18 years. The last 4 years it has been inside a metal shed. ***WHAT YOU SEE IS THE ORIGINAL COAT OF CERAMA-TECH THAT WAS APPLIED 22 YEARS AGO.*** I can bring this sample anywhere and do this same test for anyone. It will NEVER leave my possession and I will NEVER loan it or ship it to anyone under any circumstances, please do not ask. Where it goes, I go.

Many of my former customers remember this piece of AC duct. I carried it in the back of my truck and it sold MANY small jobs when the customers came out to the parking lot and felt the two sides. On a 100 degree F day, the bare side can reach over 190 F and will burn their hand; they seem to always remember that part vividly.

Respectfully submitted.

Hal Skinner
ceramatech_engineering@yahoo.com

Calculations for the temperature readings from 5 6 2010.

Assuming these same reading would result from applications to a metal roof of a building maintaining an interior temperature of 72F.

1330 hrs (110 – 72) ua (74 – 72) ua (38 – 2) / 38*100 = 94.7% reduction in heat transfer

1450 hrs (132 – 72) ua (89 – 72) ua (60 -17) / 60*100 = 71.7% reduction in heat transfer

1545 hrs (125 – 72) ua (87 – 72) ua (53 - 15) / 53*100 = 71.7% reduction in heat transfer

1650 hrs (114 – 72) ua (84 – 72) ua (42 – 12) / 42*100 = 71.4% reduction in heat transfer

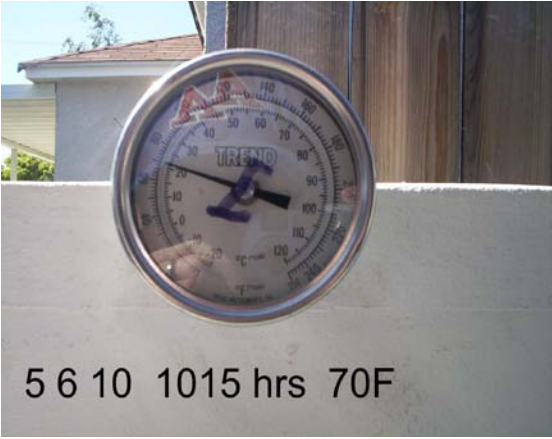
Assuming the same readings for a building maintaining 40F

1330 hrs (110 – 40) ua (74 – 40) ua (70 – 34) / 70*100 = 51.4% reduction in heat transfer

1450 hrs (132 – 40) ua (89 – 40) ua (92 – 49) / 92*100 = 46.7% reduction in heat transfer

1545 hrs (125 – 40) ua (87 – 40) ua (85 – 47) / 85*100 = 44.7% reduction in heat transfer

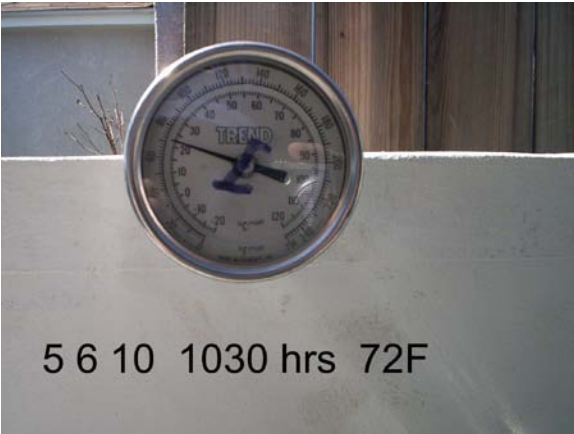
1650 hrs (114 – 40) ua (84 – 40) ua (74 – 44) / 74*100 = 40.5% reduction in heat transfer



5 6 10 1015 hrs 70F



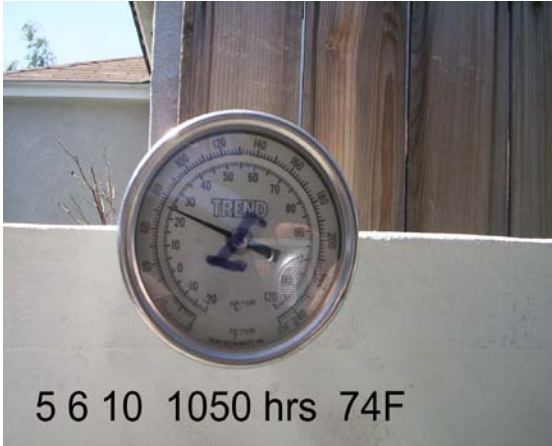
5 6 10 1015hrs 105F



5 6 10 1030 hrs 72F



5 6 10 1030 hrs 108F



5 6 10 1050 hrs 74F



5 6 10 1050 hrs 111F



5 6 10 1130 hrs 78F



5 6 10 1130 Hrs 120F



5 6 10 1200 hrs 81F



5 6 10 1200 hrs 124F



5 6 10 1330 hrs 88F



5 6 10 1330 hrs 134F



5 6 10 1450 hrs 89F



5 6 10 1450 hrs 132F



5 6 10 1242 hrs 87F



5 6 10 1545 hrs 125F

