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EFFECTIVE THERMAL RESISTANCE TESTING OF T-MAX POLYESTER FOIL INSULATION

Prepared for:
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The test results contained in this report pertain only to the samples submitted for testing and not necessarily to all similar products.

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INTRODUCTION:

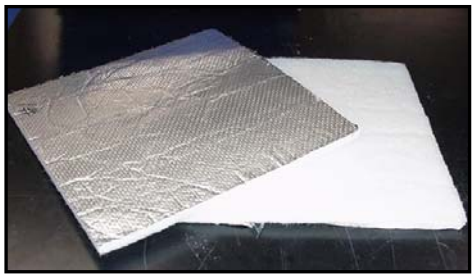
This report presents the results of Effective Thermal Resistance Tests conducted on samples of Polyester Insulation. The testing was authorized by Ms. Sumi Kim of Hueintek Inc. on February 10, 2009. The testing and data analysis were completed on February 16, 2009.

The scope of our work was limited to conducting effective thermal resistance tests on the samples submitted and reporting the results.

SUMMARY OF RESULTS:

Effective Thermal Resistance

Sample	Effective R Value
Foil Facing Hot Plate	1.95
Foil Facing Cold Plate	1.85



SAMPLE IDENTIFICATION:

The samples were identified as Polyester Acoustic Insulation, foil faced.

TEST METHOD:

The specimen was allowed to condition at standard laboratory conditions of 72 ± 4°F and 50 ± 5% relative humidity for at least 40 hours prior to testing. The thermal resistance testing was conducted using ASTM Standard C518-04, "Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus" as a procedural guide. The specimen was placed in a Netzsch Heat Flow Meter, model HFM 436/3/1 ER. Steady-state heat flux measurements were made at a mean temperature of approximately 75°F using a hot face temperature of approximately 100°F and a cold face temperature of approximately 50°F. Specimen thermal resistance and thermal conductivity were determined by comparing the heat flux measurements of the specimen to measurements made on a known Standard Reference Material. Resistance values obtained from the Heat Flow Meter are best utilized for homogenous specimens.

Test Method	Test Method Title	Deviations from Method
ASTM C518-04,	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	NONE

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CALIBRATED TEST EQUIPMENT:

Netzsch Heat Flow Meter, model HFM 436/3/1 ER, S# 284A-1107-606000788, calibrated 12/08
Mitutoyo Digimatic Indicator, MM 160-083, calibrated 11/08
Mitutoyo 12" Dial Caliper, mm 160-008, calibrated 9/08

UNCALIBRATED TEST EQUIPMENT:

Neslab Chiller, model RTE-110, S# 89CML91040-7

TEST DATA:

Tested With Foil Facing Hot Plate

Parameter	Data	Data	Average
Thickness, in	0.487	0.516	0.502
Density lbs/ft^3	3.54	3.35	3.44
TEST CONDITIONS:			
Temperature Gradient °F/in	101.92	97.30	99.61
Mean Temperature, °F	75.33	75.42	75.37
Temperature Range, °F	49.66	50.18	49.92
RESULTS:			
Thermal Conductivity, Btu·in/(h·ft²·°F)	0.259	0.255	0.257
Thermal Conductance, Btu/(h·ft²·°F)	0.531	0.494	0.513
Thermal Resistivity, °F·ft²·h/Btu/in	3.86	3.92	3.89
Thermal Resistance, °F·ft²·h/Btu	1.88	2.02	1.95

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TEST DATA Continued:

Tested With Foil Facing Cold Plate

Parameter	Data	Data	Average
Thickness, in	0.482	0.455	0.468
Density lbs/ft^3	3.54	3.35	3.44
TEST CONDITIONS:			
Temperature Gradient °F/in	103.30	109.58	106.44
Mean Temperature, °F	75.87	75.72	75.79
Temperature Range, °F	49.77	49.86	49.82
RESULTS:			
Thermal Conductivity, Btu·in/(h·ft²·°F)	0.259	0.247	0.253
Thermal Conductance, Btu/(h·ft²·°F)	0.538	0.544	0.541
Thermal Resistivity, °F·ft²·h/Btu/in	3.86	4.04	3.95
Thermal Resistance, °F·ft²·h/Btu	1.86	1.84	1.85

REMARKS:

The test materials will be retained for 14 days from the date of this report and then discarded unless we receive written notification requesting otherwise.

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