



MICROSTAT LABORATORIES
RIVER'S EDGE TECHNICAL SERVICE

Specialists in Materials Testing and Technical Services

TEST REPORT

Transforming Technologies
Workstation Mat

TESTED FOR

Point-to-Point Resistance
Point-to-Groundable-Point Resistance
Per ANSI/ESD S4.1-2006

Report #: 2008-083
October 17, 2008

SUMMARY

Six samples of worksurface mat material were received for testing. The samples were supplied in 24" x 12" panels and had two groundable points fixed 2 inches from the edges in the bottom two corners of the mat samples. Testing per paragraph 6.2 "Material Evaluation" of ANSI/ESD S4.1-2006 was requested. All worksurface samples were in the high 10^6 to low 10^7 ohms range for point-to-groundable-point resistance measurements, and in the low 10^7 ohms range for point-to-point resistance measurements.

EXPERIMENTAL AND DISCUSSION

All testing was carried out per the methods defined in paragraph 6.2 of ANSI/ESD S4.1-2006. Samples 1 – 3 were conditioned at 12% R.H. and 72°F for 52 hours prior to testing them in the controlled environment. Samples 4 – 6 were conditioned at 50% R.H. and 72°F for 51.5 hours prior to testing them in the controlled environment. All data is included below in Tables 1 and 2.

Table 1
Point-to-Groundable-Point Resistance Measurement Data

Test Location	12 % R.H. Samples			50 % R.H. Samples		
	1	2	3	4	5	6
A to 1	$1.05 \times 10^7 \Omega$	$9.43 \times 10^6 \Omega$	$9.56 \times 10^6 \Omega$	$6.42 \times 10^6 \Omega$	$6.81 \times 10^6 \Omega$	$7.22 \times 10^6 \Omega$
A to 2	$1.01 \times 10^7 \Omega$	$1.07 \times 10^7 \Omega$	$9.25 \times 10^6 \Omega$	$6.33 \times 10^6 \Omega$	$8.06 \times 10^6 \Omega$	$6.67 \times 10^6 \Omega$
A to 3	$1.01 \times 10^7 \Omega$	$9.40 \times 10^6 \Omega$	$1.03 \times 10^7 \Omega$	$5.52 \times 10^6 \Omega$	$7.07 \times 10^6 \Omega$	$8.07 \times 10^6 \Omega$
B to 1	$1.04 \times 10^7 \Omega$	$9.94 \times 10^6 \Omega$	$9.26 \times 10^6 \Omega$	$5.94 \times 10^6 \Omega$	$7.48 \times 10^6 \Omega$	$7.00 \times 10^6 \Omega$
B to 2	$1.00 \times 10^7 \Omega$	$1.03 \times 10^7 \Omega$	$9.45 \times 10^6 \Omega$	$6.36 \times 10^6 \Omega$	$7.45 \times 10^6 \Omega$	$7.14 \times 10^6 \Omega$
B to 3	$9.84 \times 10^6 \Omega$	$9.46 \times 10^6 \Omega$	$1.15 \times 10^7 \Omega$	$5.88 \times 10^6 \Omega$	$6.65 \times 10^6 \Omega$	$7.80 \times 10^6 \Omega$
Minimum	$9.25 \times 10^6 \Omega$			$5.52 \times 10^6 \Omega$		
Median	$9.99 \times 10^6 \Omega$			$6.91 \times 10^6 \Omega$		
Maximum	$1.15 \times 10^7 \Omega$			$8.07 \times 10^6 \Omega$		

Table 2
Point-to-Point Resistance Measurement Data

Test Location	12 % R.H. Samples			50 % R.H. Samples		
	1	2	3	4	5	6
A	$2.72 \times 10^7 \Omega$	$2.44 \times 10^7 \Omega$	$2.18 \times 10^7 \Omega$	$1.51 \times 10^7 \Omega$	$1.85 \times 10^7 \Omega$	$1.65 \times 10^7 \Omega$
B	$2.25 \times 10^7 \Omega$	$2.26 \times 10^7 \Omega$	$2.32 \times 10^7 \Omega$	$1.48 \times 10^7 \Omega$	$1.88 \times 10^7 \Omega$	$1.51 \times 10^7 \Omega$
Minimum	$2.18 \times 10^7 \Omega$			$1.48 \times 10^7 \Omega$		
Median	$2.29 \times 10^7 \Omega$			$1.58 \times 10^7 \Omega$		
Maximum	$2.72 \times 10^7 \Omega$			$1.88 \times 10^7 \Omega$		

EQUIPMENT USED FOR ELECTRICAL TESTING

- Keithley Model 6517a Electrometer/High Resistance Meter – Calibration Date 12/28/2007.
- 5-lb Electrodes per paragraph 6.1.2 of ANSI/ESD S4.1-2006 – Temp and RH Controller Calibration Date 12/30/2007.
- Environmental Chambers per paragraph 6.1.3 of ANSI/ESD S4.1-2006
- Specimen Support Surface per paragraph 6.1.4 of ANSI/ESD S4.1-2006 – Point-to-Point resistance measured immediately prior to testing – $1.37 \times 10^{14} \Omega$.

The results provided in this report are accurate within the limits appropriate to each test standard. The results of this report are statistically significant only to the samples submitted for testing. MicroStat Laboratories/River's Edge Technical Service, Inc. has no controls, and assumes no responsibility for the tested product's functionality or use.

 

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Date