

DESCO INDUSTRIES INCORPORATED

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QUALIFICATION REPORT – ANSI/ESD S20.20

DESCO STATFREE® T2 PLUS DISSIPATIVE RUBBER MAT

ANSI/ESD S20.20	DESCO Test Results	Test Methods
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Resistance (ohms) @ 12% RH, 23°C, 48-72 hours conditioning, N=3 specimens, 100V

Resistance-to-Groundable point	< 1.0 x 10 ⁹	See Table 1	ANSI/ESD STM4.1
Resistance Point-to-Point	< 1.0 x 10 ⁹	See Table 2	ANSI/ESD STM4.1

Resistance (ohms) @ 50% RH, 23°C, 48-72 hours conditioning, N=3 specimens, 100V

Resistance-to-Groundable point	< 1.0 x 10 ⁹	See Table 1	ANSI/ESD STM4.1
Resistance Point-to-Point	< 1.0 x 10 ⁹	See Table 2	ANSI/ESD STM4.1

Testing Equipment (Calibration records and test results are located at our corporate lab (Canton, MA)):

- Environment Chamber with ETS Automatic Humidity Controller (Model 514)
- Desco Electrodes for Surface Resistance (Model 50003)
- Desco Surface Resistance Meter (Model 19291)

Test Data:

Table 1 - Resistance-to-Groundable point

ANSI/ESD STM4.1 Test Position	RTG (ohms), at 12%RH, 23°C			RTG (ohms), at 50%RH, 23°C		
	Sample #1	Sample #2	Sample #3	Sample #1	Sample #2	Sample #3
Figure 1 – Position 1	6.77 x 10 ⁶	5.94 x 10 ⁶	5.56 x 10 ⁷	3.06 x 10 ⁶	2.63 x 10 ⁶	7.71 x 10 ⁶
Figure 1 – Position 2	5.78 x 10 ⁶	5.90 x 10 ⁶	3.28 x 10 ⁷	1.25 x 10 ⁶	2.47 x 10 ⁶	5.86 x 10 ⁶
Figure 1 – Position 3	6.72 x 10 ⁶	7.15 x 10 ⁶	2.73 x 10 ⁷	2.83 x 10 ⁶	2.50 x 10 ⁶	8.78 x 10 ⁶
Figure 1 – Position 4	5.62 x 10 ⁶	7.25 x 10 ⁶	3.95 x 10 ⁷	2.29 x 10 ⁶	2.32 x 10 ⁶	2.15 x 10 ⁷
Figure 1 – Position 5	6.63 x 10 ⁶	6.19 x 10 ⁶	4.75 x 10 ⁷	2.60 x 10 ⁶	2.78 x 10 ⁶	7.20 x 10 ⁷
Min. =	5.62 x 10 ⁶	5.90 x 10 ⁶	2.73 x 10 ⁷	1.25 x 10 ⁶	2.32 x 10 ⁶	5.86 x 10 ⁶
Mean =	6.28 x 10 ⁶	6.60 x 10 ⁶	3.60 x 10 ⁷	2.14 x 10 ⁶	2.51 x 10 ⁶	1.68 x 10 ⁷
Max. =	6.77 x 10 ⁶	7.25 x 10 ⁶	5.56 x 10 ⁷	3.06 x 10 ⁶	2.78 x 10 ⁶	7.20 x 10 ⁷

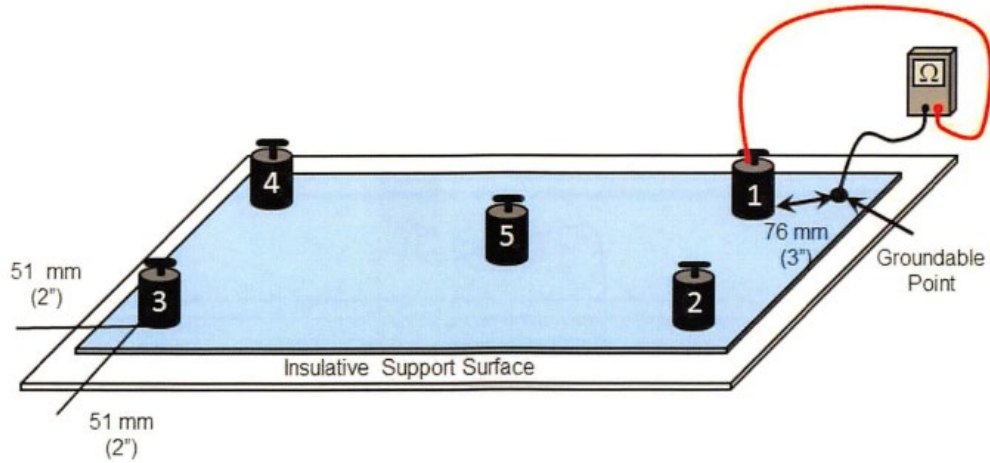
Table 2 - Resistance Point-to-Point

ANSI/ESD STM4.1 Test Position	RTT (ohms), at 12%RH, 23°C			RTT (ohms), at 50%RH, 23°C		
	Sample #1	Sample #2	Sample #3	Sample #1	Sample #2	Sample #3
Figure 2 – Set up A	2.04 x 10 ⁷	1.93 x 10 ⁷	1.59 x 10 ⁸	5.82 x 10 ⁶	1.84 x 10 ⁷	1.65 x 10 ⁷
Figure 2 – Set up B	1.70 x 10 ⁷	1.64 x 10 ⁷	1.45 x 10 ⁸	7.05 x 10 ⁶	5.90 x 10 ⁶	2.96 x 10 ⁷
Figure 2 – Set up C	2.05 x 10 ⁷	1.68 x 10 ⁷	1.17 x 10 ⁸	5.86 x 10 ⁶	5.36 x 10 ⁶	1.21 x 10 ⁷
Figure 2 – Set up D	1.94 x 10 ⁷	1.95 x 10 ⁷	1.06 x 10 ⁸	5.74 x 10 ⁶	5.40 x 10 ⁶	3.33 x 10 ⁷
Min. =	1.70 x 10 ⁷	1.64 x 10 ⁷	1.06 x 10 ⁷	5.74 x 10 ⁷	5.36 x 10 ⁷	1.21 x 10 ⁷
Mean =	1.93 x 10 ⁷	1.80 x 10 ⁷	1.32 x 10 ⁸	6.12 x 10 ⁶	8.77 x 10 ⁶	2.29 x 10 ⁷
Max. =	2.05 x 10 ⁷	1.95 x 10 ⁷	1.59 x 10 ⁸	7.05 x 10 ⁶	1.84 x 10 ⁷	3.33 x 10 ⁷

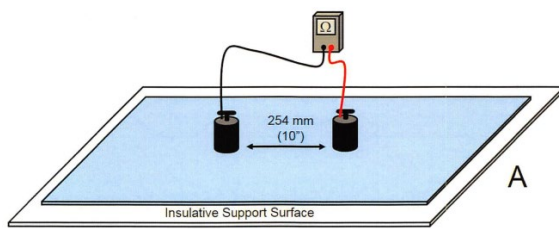
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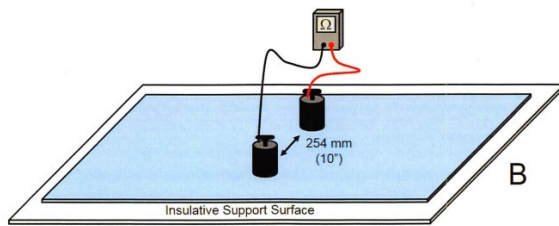
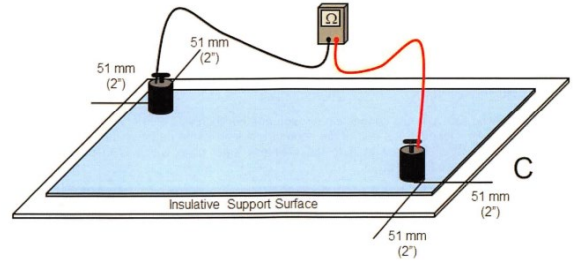
References:



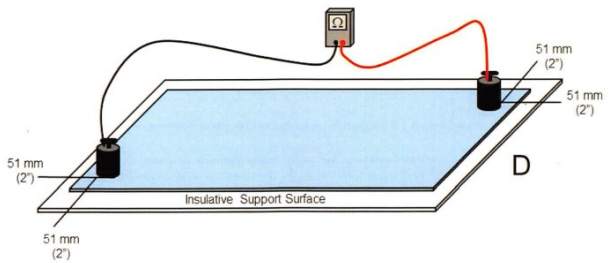
ANSI/ESD STM4.1 – Figure 1: Work-surface – Resistance-to-Groundable Point



NOTE: Locate the geometric center of the sample first.



NOTE: Locate the geometric center of the sample first.



ANSI/ESD STM4.1– Figure 2: Work-surface – Resistance Point-to-Point