



DESCO INDUSTRIES INC

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## QUALIFICATION REPORT – ANSI/ESD S20.20

### SCS DS 2000 Series

ANSI/ESD S20.20	SCS Test Results	Test Methods
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#### Surface Resistance (ohms) @ 12% RH, 23°C, 48-72 hours conditioning, N=10 specimens, 100V

Interior (Sealing Surface)	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11
Exterior	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11

#### Surface Resistance (ohms) @ 50% RH, 23°C, 48-72 hours conditioning, N=6 specimens, 100V

Interior (Sealing Surface)	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11
Exterior	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11

#### Discharge Shielding (nJ) @ 23°C, minimum 48 hours conditioning, N=6 specimens @ 6 individual readings per specimen

@ 12% RH	< 20	See Table 1	ANSI/ESD STM11.31
@ 50% RH	< 20	See Table 1	ANSI/ESD STM11.31

#### Test Equipment (Calibration records and test results are located at SCS (Sanford, NC)):

For Test Method ANSI/ESD STM11.11:

- ETS Controlled Environment Chamber (Model 5532)
- SCS Surface Resistance Meter (Model 770761)
- SCS Concentric Ring Probe (Model 770007)

For Test Method ANSI/ESD STM11.31:

- ETS Controlled Environment Chamber (Model 5532)
- ETS Shielded Bag Test System (Model 4431T)

**Table 1: Test Results:**

Specimen	Surface Resistance (ohms) 48-72 hours conditioning				Discharge Shielding (nJ) min. 48 hours conditioning	
	Interior @ 23°C, 12%RH	Exterior @ 23°C, 12%RH	Interior @ 23°C, 50%RH	Exterior @ 23°C, 50%RH	@ 23°C, 12%RH (avg 6 individual)	@ 23°C, 50%RH (avg 6 individual)
1	$3.52 \times 10^{10}$	$3.26 \times 10^{10}$	$1.72 \times 10^9$	$2.01 \times 10^9$	0.57	0.64
2	$3.26 \times 10^{10}$	$2.60 \times 10^{10}$	$2.03 \times 10^9$	$1.87 \times 10^9$	0.57	0.62
3	$3.74 \times 10^{10}$	$2.46 \times 10^{10}$	$1.82 \times 10^9$	$1.24 \times 10^9$	0.56	0.62
4	$4.29 \times 10^{10}$	$3.56 \times 10^{10}$	$1.93 \times 10^9$	$1.58 \times 10^9$	0.54	0.60
5	$4.20 \times 10^{10}$	$4.50 \times 10^{10}$	$1.37 \times 10^9$	$9.34 \times 10^8$	0.52	0.59
6	$4.78 \times 10^{10}$	$3.26 \times 10^{10}$	$1.69 \times 10^9$	$1.29 \times 10^9$	0.50	0.58
7	$4.09 \times 10^{10}$	$2.96 \times 10^{10}$				
8	$4.72 \times 10^{10}$	$3.56 \times 10^{10}$				
9	$7.20 \times 10^{10}$	$2.59 \times 10^{10}$				
10	$5.67 \times 10^{10}$	$4.29 \times 10^{10}$				
<b>Min Ind=</b>	$2.46 \times 10^{10}$	$2.46 \times 10^{10}$	$1.37 \times 10^9$	$9.34 \times 10^8$	0.50	0.58
<b>Max Ind=</b>	$7.20 \times 10^{10}$	$4.50 \times 10^{10}$	$2.03 \times 10^9$	$2.01 \times 10^9$	0.57	0.64
<b>Mean of Ind=</b>	$4.55 \times 10^{10}$	$3.30 \times 10^{10}$	$1.76 \times 10^9$	$1.49 \times 10^9$	0.54	0.61
<b>Std Dev Ind =</b>	$1.16 \times 10^{10}$	$6.97 \times 10^9$	$2.30 \times 10^8$	$4.09 \times 10^8$	0.03	0.03