

# DESCO INDUSTRIES INCORPORATED

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## QUALIFICATION REPORT – ANSI/ESD S20.20

### DESCO STATSHIELD® HIGH PUNCTURE MOISTURE BARRIER BAG

ANSI/ESD S20.20	DESCO 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 corporate lab (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	$6.49 \times 10^9$	$2.05 \times 10^{10}$	$3.61 \times 10^8$	$4.96 \times 10^8$	0.49	0.52
2	$6.76 \times 10^9$	$1.22 \times 10^{10}$	$5.05 \times 10^8$	$6.24 \times 10^8$	0.51	0.53
3	$7.60 \times 10^9$	$9.80 \times 10^9$	$3.24 \times 10^8$	$5.52 \times 10^8$	0.52	0.50
4	$8.90 \times 10^9$	$1.22 \times 10^{10}$	$3.47 \times 10^8$	$5.08 \times 10^8$	0.52	0.54
5	$9.02 \times 10^9$	$1.85 \times 10^{10}$	$3.11 \times 10^8$	$4.43 \times 10^8$	0.52	0.51
6	$9.02 \times 10^9$	$1.45 \times 10^{10}$	$3.05 \times 10^8$	$4.20 \times 10^8$	0.54	0.51
7	$1.07 \times 10^{10}$	$1.55 \times 10^{10}$				
8	$9.86 \times 10^9$	$1.52 \times 10^{10}$				
9	$6.85 \times 10^9$	$9.34 \times 10^9$				
10	$1.89 \times 10^{10}$	$1.61 \times 10^{10}$				
Min Ind=	$6.49 \times 10^9$	$9.34 \times 10^9$	$3.05 \times 10^8$	$4.20 \times 10^8$	0.47	0.48
Max Ind=	$1.89 \times 10^{10}$	$2.05 \times 10^{10}$	$5.05 \times 10^8$	$6.24 \times 10^8$	0.56	0.56
Mean of Ind=	$9.41 \times 10^9$	$1.44 \times 10^{10}$	$3.59 \times 10^8$	$5.07 \times 10^8$	0.51	0.52
Std Dev Ind =	$3.62 \times 10^9$	$3.58 \times 10^9$	$7.47 \times 10^7$	$7.42 \times 10^7$	0.02	0.02