AERONAUTICAL MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 3653B

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TUBING, ELECTRICAL INSULATION
Standard Wall, Extruded Polytetrafluoroethylene

1. ACKNOWLEDGEMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. FORM: Flexible tubing.

3. APPLICATION: Primarily for electrical insulating sheath at temperatures up to 500 F.

4. TECHNICAL REQUIREMENTS:

4.1 Color: Unless otherwise specified, tubing shall be natural in color, ranging from translucent white to opaque white. When ordered in colors, the colors shall be in accordance with the latest issue of MIL-STD-104.

4.2 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with listed ASTM methods, insofar as practicable.

4.2.1 Ø	Tensile Strength at 200% Elongation, psi	2,500 - 6,000	ASTM D876-59T Temperature: 77 F ± 2
4.2.2 Ø	Elongation, %, min	200	ASTM D876-59T Temperature: 77 F ± 2
4.2.3 Ø	Dielectric Breakdown, v, min, average		ASTM D876-59T Temperature: 77 F ± 2

Nominal Wall Thickness, Inch	
0.009	8,000
0.012	10,000
0.016	13,000
0.020	16,000
0.024	18,000
0.030	20,000
0.035	20,000
0.040	20,000

4.2.4 Ø	Stress Relief (shrinkage), %, max	1.0	ASTM D876-59T Temperature: 500 F ± 5 Medium: Liquid
4.2.5 Ø	Heat Aging (weight loss), %, max	0.05	ASTM D876-59T, Method B Temperature: 572 F ± 5 Time: 3 hr
4.2.6 Ø	Specific Gravity	2.14 - 2.21	ASTM D792-50, Method A (See Note 1)

Note 1. Suitable wetting agent should be added to the water to assure complete wetting of the specimen.

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5. QUALITY: The product shall be uniform in quality and condition, clean, smooth, and free from foreign materials and from imperfections detrimental to fabrication, appearance, or performance of parts.

6. SIZES AND TOLERANCES: Unless otherwise specified, the following sizes are standard, ø and the tolerances apply at 75 - 85 F.

Size No.	Inside Diameter, Inches			Wall Thickness, Inch	
	Nominal	Minimum	Maximum	Nominal	Tolerance plus and minus
30	0.012	0.010	0.015	0.009	0.002
28	0.015	0.013	0.019	0.009	0.002
26	0.018	0.016	0.022	0.009	0.002
24	0.022	0.020	0.027	0.012	0.003
23	0.026	0.023	0.030	0.012	0.003
22	0.028	0.025	0.032	0.012	0.003
21	0.032	0.029	0.036	0.012	0.003
20	0.034	0.032	0.040	0.016	0.003
19	0.038	0.036	0.044	0.016	0.003
18	0.042	0.040	0.049	0.016	0.003
17	0.047	0.045	0.054	0.016	0.003
16	0.053	0.051	0.061	0.016	0.003
15	0.059	0.057	0.067	0.016	0.003
14	0.066	0.064	0.074	0.016	0.003
13	0.076	0.072	0.082	0.016	0.003
12	0.085	0.081	0.091	0.016	0.003
11	0.095	0.091	0.101	0.016	0.003
10	0.106	0.102	0.112	0.016	0.003
9	0.118	0.114	0.124	0.020	0.004
1/8 in.	0.125	0.120	0.130	0.020	0.004
8	0.133	0.129	0.141	0.020	0.004
7	0.148	0.144	0.158	0.020	0.004
6	0.166	0.162	0.178	0.020	0.004
5	0.186	0.182	0.198	0.020	0.004
4	0.208	0.204	0.224	0.020	0.004
3	0.234	0.229	0.249	0.020	0.004
1/4 in.	0.255	0.250	0.260	0.020	0.004
2	0.263	0.258	0.278	0.020	0.004
1	0.294	0.289	0.311	0.020	0.004
5/16 in.	0.321	0.313	0.334	0.020	0.004
0	0.330	0.325	0.347	0.020	0.004
3/8 in.	0.387	0.375	0.399	0.025	0.005
7/16 in.	0.451	0.438	0.464	0.025	0.005
1/2 in.	0.515	0.500	0.530	0.025	0.005
5/8 in.	0.643	0.625	0.662	0.025	0.005
3/4 in.	0.772	0.750	0.795	0.030	0.006
7/8 in.	0.901	0.875	0.927	0.035	0.007
1 in.	1.030	1.000	1.060	0.035	0.007
1 1/4 in.	1.287	1.250	1.325	0.040	0.007