

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 3653A

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

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TUBING, ELECTRICAL INSULATION Extruded Polytetrafluoroethylene

1. **ACKNOWLEDGMENT:** 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, the tubing shall be natural in color, ranging from translucent white to opaque white.
 - 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 Tensile Strength at 77 F $\pm$ 2, psi, min	2000	ASTM D876-54T
4.2.2 Elongation at 77 F $\pm$ 2, %	100 - 300	ASTM D876-54T
4.2.3 Dielectric Strength at 77 F $\pm$ 2, v per mil, min		ASTM D876-54T
Wall Thickness, in.		
0.010 to 0.020, incl	900	
Over 0.020 to 0.035, incl	500	
Over 0.035 to 0.060, incl	400	
4.2.4 Stress Relief (shrinkage) at 350 F $\pm$ 2, %, max	2.0	ASTM D876-54T
4.2.5 Heat Aging (weight loss) after 3 hr at 572 F $\pm$ 2, %, max	0.05	ASTM D876-54T, Method B
4.2.6 Specific Gravity	2.14 - 2.20	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.
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. STANDARD SIZES AND TOLERANCES: Unless otherwise specified, the following sizes are standard, and the tolerances apply at 75 - 85 F.

Size No.	Inside Diameter, Inches			Wall Thickness, Inch	
	Nominal	Minimum	Maximum	Nominal	Tolerance plus and minus
24	0.022	0.020	0.026	0.012	0.003
23	0.026	0.023	0.030	0.012	0.003
22	0.028	0.026	0.032	0.012	0.003
21	0.032	0.029	0.036	0.012	0.003
20	0.034	0.032	0.039	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	0.072	0.016	0.003
13	0.076	0.072	0.082	0.016	0.003
12	0.085	0.081	0.089	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	0.329	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	0.462	0.025	0.005
1/2 in.	0.515	0.500	0.524	0.025	0.005
5/8 in.	0.643	0.625	0.655	0.030	0.006
3/4 in.	0.772	0.750	0.786	0.030	0.006
7/8 in.	0.901	0.875	0.911	0.035	0.007
1 in.	1.030	1.000	1.036	0.035	0.007
1 1/4 in.	1.287	1.250	1.290	0.040	0.007

7. REPORTS:

- 7.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product meets the requirements of this specification. This report shall include the purchase order number, material specification number, form or part number, and quantity.