

AEROSPACE MATERIAL SPECIFICATIONS

AMS 3870A

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

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CERAMIC MOLDINGS AND EXTRUSIONS Dense Ultra-High Alumina (99% Al₂O₃)

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **FORM:** Moldings and extrusions.
3. **APPLICATION:** Primarily for high temperature, low electrical loss radomes, microwave windows, and spacers.
4. **TECHNICAL REQUIREMENTS:**
 - 4.1 **Color:** Shall be predominantly white, unless otherwise specified.
 - 4.2 **Metallizing:** When specified, the material shall be capable of being metallized in accordance with procedures and requirements agreed upon by purchaser and vendor.
 - 4.3 **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. Tests shall be performed at 70 - 85 F unless otherwise specified.

4.3.1 Compressive Strength, psi, min	250,000	ASTM D667-44
4.3.2 Flexural Strength, psi, min	40,000	ASTM D667-44
4.3.3 Impact Strength, (1/2 in. diameter rod), in.-lb, min	7.0	ASTM D256-56
4.3.4 Specific Gravity, min	3.8	ASTM C373-56
4.3.5 Water Absorption, %, max	0.015	ASTM D116-59T
4.3.6 Dielectric Strength, 1/4 in. diameter electrodes, v per mil, average, min	260	ASTM D116-59T
4.3.7 Dielectric Constant at 1 MC, max	9.5	ASTM D150-59T
4.3.8 Loss Factor, max		ASTM D150-59T
1 MC	0.005	
10,000 MC	0.002	
10,000 MC at 932 F \pm 10	0.003	
5. **QUALITY:** The product shall be uniform in quality and condition, and free from foreign materials and from internal and external imperfections detrimental to performance of parts.