Society of Automotive Engineers, Inc.
400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096

AEROSPACE MATERIAL SPECIFICATION

AMS 3839A
Superseding AMS 3839

Issued 9-1-65
Revised 1-15-76

FABRIC, WIRE-REINFORCED ASBESTOS
Polytetrafluoroethylene Impregnated, Sintered

1. SCOPE:

1.1 Form: This specification covers one type of wire-reinforced asbestos fabric impregnated with polytetrafluoroethylene resin in the form of woven sheet or strip and braided tubing or strip.

1.2 Application: Primarily as an anit-chafing cushion between metal tubes and tube clips operating at temperatures up to 500°F (260°C).

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM D299 - Asbestos Yarns
ASTM D792 - Specific Gravity and Density of Plastics by Displacement
ASTM F36 - Compressibility and Recovery of Gasket Materials

2.3 Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Material and Fabrication: The product shall be made from selected long-fiber, Grade A or better (Ref. ASTM D299) chrysotile asbestos yarn woven or braided into the desired form, with each yarn in the fabric being reinforced with brass, copper, or corrosion-resistant steel wire and the fabric being impregnated with polytetrafluoroethylene resin and sintered.

3.2 Color: Shall be white to dark brown.

3.3 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with specified methods:

Printed in U.S.A.

3.3.1	Specific Gravity, 73.4/73.4°F (23/23°C)	1.80 - 2.25	ASTM D792, Method A
3.3.2	Compressibility	12 - 25%	ASTM F36, Procedure A
3.3.2.1	Recovery, min	15%	
3.3.3	Weight Loss at 600°F or 315°C based on original dry weight, max	5%	4.5.1
3.3.4 ø	Weight Loss at 900°F or 482°C based on original dry weight	45 - 55%	4.5.1
3.3.5	Brittleness After Sintering	Bend flat with no breaks in fabric	4.5.2

3.3.6 Corrosion: The product shall not have a corrosive effect on other materials when exposed to conditions normally encountered in service. Discoloration of metal shall not be considered objectionable.

3.4 Quality: The product shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication, appearance, or performance of parts.

4. QUALITY ASSURANCE PROVISIONS:

4.1 ø Responsibility for Inspection: The vendor of the product shall supply all samples and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.6. Purchaser reserves the right to perform such confirmatory testing as he deems necessary to ensure that the product conforms to the requirements of this specification.

4.2 Classification of Tests:

4.2.1 ø Acceptance Tests: Tests to determine conformance to specific gravity (3.3.1), compressibility and recovery (3.3.2), and weight loss on heating (3.3.3 and 3.3.4) are classified as acceptance or routine control tests.

4.2.2 ø Qualification Tests: Tests to determine conformance to all technical requirements of this specification are classified as qualification or periodic control tests.

4.2.2.1 ø For direct U.S. Military procurement, qualification test material and supporting test data shall be submitted to the cognizant qualification agency as directed by the request for procurement, the procuring activity, or the contracting officer.

4.3 Sampling: Shall be as follows; a lot shall be all product of the same size and form produced in a continuous run and presented for vendor's inspection at one time:

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Requirement	Paragraph Reference	Number of Specimens: Acceptance Tests	Number of Specimens: Qualification Tests
Specific Gravity	3.3.1	1	3
Compressibility and Recovery	3.3.2	2	3
Weight Loss	3.3.3, 3.3.4	1	3
Brittleness	3.3.5	--	3

4.4 Approval:

4.4.1 Sample material shall be approved by purchaser before material for production use is supplied, unless such approval be waived. Results of tests on production material shall be essentially equivalent to those on the approved sample.

4.4.2 Vendor shall use ingredients, manufacturing procedures, processes, and methods of inspection on production material which are essentially the same as those used on the approved sample material. If any change is necessary in ingredients, in type of equipment for processing, or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in material and processing and, when requested, sample revised material. No production material made by the revised procedure shall be shipped prior to receipt of reapproval.

4.5 Test Methods:

4.5.1 Weight Loss: Place a 2-g ± 0.1 sample in a tared crucible and heat at 220°F ± 2 or 105°C ± 1 to constant weight (original dry weight) at room temperature. Heat the crucible and contents to 600°F ± 10 or 315°C ± 5, hold at heat for 24 hr ± 0.3, cool in a desiccator, and reweigh. Reheat the crucible and contents to 900°F ± 25 or 480°C ± 15, hold at heat for 3 hr ± 0.3, cool, weigh, and calculate the weight losses occurring during the 600°F or 315°C and the 900°F or 480°C heatings.

4.5.2 Brittleness After Sintering: Heat a specimen to 600°F ± 10 or 315°C ± 5 and hold at heat for 24 hr ± 0.3. Transfer the specimen to an oven which is at 725°F ± 25 or 385°C ± 15, heat to 725°F ± 25 or 385°C ± 15, hold at heat for 1 hr ± 0.1, and quench in water. Bend the specimen flat on itself. Specimens of tubing shall be split open and bent with the outside surface of the tube wall on the inside of the bend. Formed, raised edges may be removed from strip to facilitate bending.

4.6 Reports:

4.6.1 The vendor of the product shall furnish with each shipment three copies of a report showing the results of tests to determine conformance to the acceptance test requirements and stating that the product conforms to the other technical requirements of this specification. This report shall include the purchase order number, material specification number and its revision letter, vendor's material designation, form, size, and quantity.

4.6.2 The vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number and its revision letter, contractor or other direct supplier of material, supplier's material designation, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.

4.7 Resampling and Retesting: If any specimen in the above tests fails to meet the specified requirements, disposition of the product may be based on the results of testing three additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the product represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Packaging and Identification:

5.1.1 Packaging shall be accomplished in such a manner as to ensure that the product, during shipment and storage, will be protected from exposure to weather or any normal hazard.