

STANDARD ELASTOMER STOCKS
Test Slabs

1. SCOPE:

1.1 Form: This specification and its supplementary detail specifications cover various elastomeric standard compounds in the form of molded test slabs 0.075 x 6 x 6 in. (1.9 x 150 x 150 mm).

1.2 Application: Primarily for determining compatibility of the type of elastomer with various lubricating oils, hydraulic fluids, and fuels.

1.3 Classification: The requirements specified herein and in the applicable detail specification define each standard elastomeric stock on the basis of the elastomeric polymer and compounding ingredients; the elastomeric polymer is shown in the title of each detail specification.

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 SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

AMS 2810 - Identification and Packaging, Elastomeric Products

AMS 3021 - Reference Fluid for Testing DiEster (Polyol) Resistant Materials

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

ASTM D297 - Rubber Products - Chemical Analysis

ASTM D412 - Rubber Properties in Tension

ASTM D471 - Rubber Property - Effect of Liquids

ASTM D1765 - Classification System for Carbon Blacks Used in Rubber Products

ASTM D2240 - Rubber Property - Durometer Hardness

ASTM D3182 - Rubber - Materials, Equipment, and Procedures for Mixing

Standard Compounds and Preparing Standard Vulcanized Sheets

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3. TECHNICAL REQUIREMENTS:

- 3.1 Detail Specifications: The requirements for a standard elastomeric test slab shall consist of all the requirements specified herein in addition to the requirements specified in the applicable detail specification. In case of conflict between the requirements of this basic specification and any applicable detail specification, the requirements of the detail specification shall govern.
- 3.2 Material: Shall be elastomeric stocks based on the polymers and compounded with the ingredients, and cured, in accordance with the applicable detail specification. Compounding ingredients specified as "NBS SRM" materials are U.S. National Bureau of Standards Standard Reference Materials.
- 3.3 Properties: Test slabs shall conform to the properties specified in the applicable detail specification; tests shall be performed on the test slabs supplied and in accordance with the following test methods:
- | | |
|------------------|-------------------------------|
| Specific Gravity | ASTM D297, Hydrostatic Method |
| Hardness | ASTM D2240 |
| Tensile Strength | ASTM D412 |
| Elongation | ASTM D412 |
| Fluid Immersion | ASTM D471 |
- 3.4 Quality: Test slabs, as received by purchaser, shall be uniform in quality and condition, clean, and free from foreign materials and from internal and external imperfections detrimental to usage of the slabs.
- 3.5 Sizes and Tolerances: Test slabs shall be 0.075 x 6 x 6 in. (1.9 x 150 x 150 mm) conforming to the tolerances specified in ASTM D3182.

4. QUALITY ASSURANCE PROVISIONS:

- 4.1 Responsibility for Inspection: The vendor of the test slabs shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.5. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the slabs conform to the requirements of this specification and the applicable detail specification.
- 4.2 Classification of Tests:
- 4.2.1 Acceptance Tests: Tests to determine conformance to all technical requirements of this specification and the applicable detail specification are classified as acceptance tests and shall be performed on each lot.

4.2.2 Preproduction Tests: Tests to determine conformance to all technical requirements of this specification and the applicable detail specification are classified as preproduction tests and shall be performed prior to or on the initial shipment of test slabs to a purchaser, when a change in material or processing, or both, requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.2.2.1 For direct U.S. Military procurement, substantiating test data and, when requested, preproduction test slabs shall be submitted to the cognizant agency as directed by the procuring activity, the contracting officer, or the request for procurement.

4.3 Sampling: Shall be as follows:

4.3.1 For Acceptance Tests: Each lot of test slabs shall be sampled at random to provide sufficient product to perform all required tests. The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.

4.3.1.1 A lot shall be all test slabs produced from each batch of compound in one continuous series of operations and presented for vendor's inspection at one time but shall not exceed 300 lb (135 kg). A lot of slabs may be packaged in small quantities under the basic lot approval provided the lot identification is maintained.

4.3.1.2 A batch shall be the quantity of compound run through a mill or mixer at one time.

4.3.1.3 When a statistical sampling plan and acceptance quality level (AQL) for the product have been agreed upon by purchaser and vendor, sampling shall be in accordance with such plan in lieu of sampling as in 4.3.1 and the report of 4.5 shall state that such plan was used.

4.3.2 For Preproduction Tests: As agreed upon by purchaser and vendor.

4.4 Approval:

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

4.4.2 Vendor shall use ingredients, manufacturing procedures, processes, and methods of inspection on production test slabs which are essentially the same as those used on the approved sample slabs. If necessary to make any change 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 or processing, or both, and, when requested, sample test slabs. Test slabs made by the revised procedure shall not be shipped prior to receipt of reapproval.

4.5 Reports: The vendor of test slabs shall furnish with each shipment three copies of a report showing the results of tests to determine conformance to the requirements of this specification and the applicable detail specification. This report shall include the purchase order number, AMS 3217 and the applicable detail specification number, vendor's compound number, lot number, and quantity.

4.6 Resampling and Retesting: If any specimen used in the above tests fails to meet the specified requirements, disposition of the test slabs 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 slabs represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Packaging and Marking: Shall be in accordance with AMS 2810.

6. ACKNOWLEDGMENT: A vendor shall mention this specification number and the applicable detail specification number in all quotations and when acknowledging purchase orders.

7. REJECTIONS: Test slabs not conforming to this specification and the applicable detail specification or to modifications authorized by purchaser will be subject to rejection.

8. NOTES:

8.1 Compounding Ingredients: Sources for compounding ingredients are listed in "Materials, Compounding Ingredients, and Machinery for the Rubber Industry" published by Rubber World, 630 Third Avenue, New York, NY 10017.

8.2 Test Fluids:

8.2.1 AMS 3021 Fluid may be ordered as Stauffer Blend No. 7700 from:

Stauffer Chemical Company
Special Chemical Division
Westport, CT 06880

8.2.2 M2V may be ordered from:

Chevron International Oil Company
555 Market Street
San Francisco, CA 94105