

A-A-50690
26 Nov 90

COMMERCIAL ITEM DESCRIPTION

TIRE FILL, SOLID POLYURETHANE

This commercial item description authorized
by the Department of Defense

Abstract. This specification covers the requirements for standard polyurethane flat proofing materials for filling pneumatic tires. When correctly filled and cured, the tire shall be rendered deflation proof against punctures, tears and other penetrations.

Applicable documents. The following documents form a part of this commercial item description to the extent specified herein. Unless otherwise specified, the issues of the documents which are Department of Defense (DoD) adopted shall be those listed in the issue of the DoDISS specified in the solicitation. Unless otherwise specified, the issues of the documents not listed in the DoDISS shall be those in effect on the date specified in the solicitation.

AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM) STANDARDS

(Application for copies should be addressed to ASTM, 1916 Race Street. Philadelphia, PA 19103.)

Salient Characteristics.

1. Components. The filling compound shall consist of two separately packaged components (component "A" and "B"). One component shall be the prepolymer (isocyanate) portion of the compound, and the other compound shall be the catalyst (polyol).

- a. **Compatibility:** Components shall have a batch to batch compatibility.
- b. **Chemical specifications:** The prepolymer (isocyanate) and the catalyst (polyol) components shall have the following chemical specifications.

Prepolymer (isocyanate) component tested per ASTM Specification 1638.

%NCO	3.50	(minimum) 3.90	(maximum)
Brookfield viscosity @23.0°C, cps		450 (minimum)	700 (maximum)
Specific gravity		1.00 (minimum)	1.03 (maximum)

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(2) Catalyst component. Catalyst (polyol) component tested per ASTM Specification D2849.

Hydroxyl number	35 (minimum)	45 (maximum)
Moisture, %	0.35 (minimum)	0.45 (maximum)
Brookfield viscosity @23.0°C, cps	500 (minimum)	700 (maximum)
Specific gravity @ 23.9°C	0.99 (minimum)	1.02 (maximum)

2. Cured product.

- a. Hardness. The hardness of the cured samples, after curing as described in paragraph 4, shall be 28 plus or minus 3 Shore "A" points when tested in accordance with ASTM 02240-81.
- b. Tensile strength The tensile strength shall be 200 psi minimum when tested in accordance with ASTM 0412.
- c. Elongation. Ultimate elongation shall be 300 percent minimum when tested in accordance with ASTM D412.
- d. Tear strength. The tear strength shall be 50 lbs per linear inch minimum when tested in accordance with ASTM D624 Die "C" Method.
- e. Rebound. Rebound shall be minimum of 50 percent when tested in accordance with ASTM D2632.

3. Heat stability. The heat aged product shall have good elastomeric properties and show no signs of degradation The Shore "A" hardness shall be no more than 45.

4. Curing time. When the two components are mixed and put in a tire at the required pressure, the resulting compound shall cure in a maximum of 24 hours at an ambient temperature of 70 degrees F.

5. De rating temperature. The filling compound, after curing in a tire, shall operate without damage in ambient temperatures between 120°F and minus 40°F.

6. Shelf life The two components shall be capable of being stored separately for one year minimum without loss of curing performance when mixed. After one year, the addition of extra catalyst is allowed for successful curing.

Certification The contractor shall certify that the product offered meets the salient characteristics of this commercial item description, and that the product conforms to the producer's own drawings, specifications, standards and quality assurance practices and is the same product offered for sale in the commercial marketplace Small businesses that cannot offer products with established commercial market acceptability may compete by submission of bid samples The government reserves the right to require proof of such conformance before first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

Packaging The items shall be packaged according to normal commercial practice and packed to assure acceptance by common carrier and provide product protection against loss and damage during multiple shipment, handling and storage The shipping container shall be in compliance with both national and uniform motor freight classifications Shipping containers shall be marked as specified in the contract order.

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Intended use. Polyurethane filled tires are intended for use on vehicles and trailers used on bomb ranges and those areas and job sites which have a significant history of tire failure and replacement due to environmental foreign object damage. Polyurethane tire fill is also to be used for worn tire replacement on vehicles already procured with this system installed.

Military interests:

Civil Agency Coordinating Activities:
GSA/FSS (F7XE)

(Project: 2630-F029)

Preparing activity:
Air Force-84

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
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I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
A-A-50690

2. DOCUMENT DATE (YYMMDD)
90-11-26

3. DOCUMENT TITLE

IRE FILL, SOLID POLYURETHANE

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON
(If applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME

Michael A. Greene

b. TELEPHONE (Include Area Code)
(1) Commercial
912-926-5616

(2) AUTOVON
468-5616

c. ADDRESS (Include Zip Code)

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Defense Quality and Standardization Office
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466
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