

INCH-POUND

A-A-52302

6 April 1992

COMMERCIAL ITEM DESCRIPTION

GASKET, SPLIT INTEGRAL,

FOR INLAND PETROLEUM DISTRIBUTION SYSTEM (IPDS) SNAP-JOINT COUPLING

The General Services Administration has authorized the use of this commercial item description.

Abstract.

This item description covers a synthetic rubber gasket for use with the 6-inch IPDS snap-joint coupling. Two identical halves of this gasket are made to be a part of the coupling by manually pushing the protruding buttons into the holes provided in the coupling by hand. The gasket is intended for use with petroleum fuels.

Salient Characteristics.

General. The split integral gasket shall be compatible for use with diesel fuels and jet fuels.

The gasket shall be molded of synthetic rubber and shall be operable at temperatures from -31 °F to +160 °F at 740 psig. The gasket shall be composed of two identical halves with each half being inserted into one coupling half of the IPDS snap-joint coupling. Each gasket half shall be capable of being installed securely into the coupling half gasket pocket without using any tool. The method of attachment shall allow removal and replacement of the gasket half in the coupling half under field conditions without the use of an adhesive or a special tool. The gasket shall have a minimum shelf life of 20 years when properly stored inside an unheated, covered warehouse such as in Sierra Army Depot, Herlong, California.

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and other data which may improve this document should be sent by letter to: Commander, US Army Belvoir Research, Development, and Engineering Center, ATTN: STRBE-TSE, Fort Belvoir, VA 22060-5606.

AMSC N/A

FSC 5330

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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Rubber properties.

The physical properties of the synthetic rubber gasket shall meet or exceed the values of table I when tested in accordance with the ASTM standard test procedures shown.

TABLE I. Physical Requirement of the Gasket and Corresponding Test Methods

| Properties | Requirement Values | ASTM Test Method |
|--|--------------------|------------------|
| Original Properties | | |
| Tensile Strength PSI (Minimum) | 1600 | D412 |
| Ultimate Elongation, % (Minimum) | 300 | D412 |
| Hardness, Shore A Durometer, Points | 65 ± 15 | D2240 |
| Properties After Oven Aging for 46 Hours at 212 °F (100 ±2 °C) | | |
| Tensile Strength Retained, % (Minimum) | 80 | D573 |
| Ultimate Elongation Retained, % (Minimum) | 80 | D573 |
| Hardness Change, Shore A, Points Maximum | 10 | D2240 |
| Compression Set, % Maximum | 40 | D395 |
| Properties After Immersion in ASTM Reference Fuel B for 70 Hours at 73.4 °F (23 ±2 °C) | | |
| Tensile Strength Retained, % Minimum | 45 | D471 |
| Elongation Retained, % Minimum | 60 | D471 |
| Volume Change, % Maximum | + 25 | D471 |
| Maximum Volume Change After Immersion in ASTM Reference Fuel B for 70 Hours at 73.4 °F (23 ±2 °C) | | |
| % Maximum | 15 | D471 |
| Properties After Immersion in Type IV Reagent Water for 166 Hours at 160 °F (70 ±2 °C) | | |
| Tensile Strength Retained, % Maximum | 65 | D471 |
| Volume Change, % Maximum | 35 | D471 |
| Low Temperature Properties after Conditioning for 70 Hours at -31 °F (-35 ±2 °C) | | |
| Compression Set, % Maximum | 50 | D1229 |
| Torsional Stiffness Ratio, Maximum | 10 | D1053 |
| Low Temperature Properties after Extraction in Reference Fuel B for 70 Hours at 73 °F Dried and Cold Conditioning for 70 Hours at (-35 ±2 °C) | | |
| Compression Set, % Maximum | 55 | D1229 |
| Torsional Stiffness Ratio, Maximum | 10 | D1053 |

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Lubricants. High viscosity silicone oil such as Parker's Super-O-Lube or low temperature silicone grease such as Dow Corning's Molykote 55M shall be used as a lubricant for the gasket. Each package of 25 pairs of gasket halves shall be provided with a pint of Parker's Super-O-Lube lubricant or two 5.3 oz tubes of Dow Corning's Molykote 55M grease.

Quality assurance. The split integral gasket shall be examined for the following defects:

1. Gaskets not individually preserved, as specified.
2. Gaskets not consolidated, as specified.
3. Lubricant missing from the consolidated box.
4. Tests passed.
5. Certification provided.

Testing requirements. The gasket shall be tested in a joint consisting of two pipes and one coupling which will be furnished by the Government. The following deflection tests shall be performed to determine the suitability of gaskets as spares for the IPDS. The following deflection tests with the coupling joint located at the midspan of a 9-foot span shall be conducted. Deflection shall be measured in the vertical direction. Cycling time shall not exceed 60 seconds.

| <u>Pressure</u> | <u>Temperature</u> | <u>Deflection in inches</u> | <u>Number of Cycles to be Deflected</u> |
|---------------------------|----------------------------|---------------------------------|---|
| 25 inches of HG vacuum | Ambient (23 \pm 5 °C) | 2.3 inches | 5 |
| 900 psig | (73 \pm 2 °C) | 2.1 inches | 5 |
| 900 psig | (-35 \pm 2 °C) | 2.1 inches | 5 |

The manufacturer of a gasket who has already conducted the tests in this paragraph need not demonstrate the suitability of his gasket for use with the IPDS snap-joint coupling.

Contractor certification. The contractor shall certify that the product offered to the Government meets the salient characteristics of this description and that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices and is the same product as the manufacturer's current product offered by the contractor in the commercial marketplace for at least one year preceding the solicitation. The Government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

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Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within specified tolerances using conversion tables contained in the latest revisions of FED-STD-376, and all other requirements of this commercial item description are met. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch/pound units, a request should be made to the contracting officer to determine if the product is acceptable. The contracting officer has the option of accepting or rejecting the product.

Preservation, packing, labeling, and marking. The preservation, packing, labeling, and marking shall be as specified in the contract or purchase order.

Notes. The contracting activity should specify the inclusion of the following information:

1. Title, number and date of this item description.
2. Any special marking required.
3. Level of preservation, packaging and packing required.

Copies of FED-STD-376 can be obtained from Standardization Documents Order Desk, 700 Robbins Avenue, Bldg. #4, Station D, Philadelphia, PA 19111-5094.

Copies of all ASTMs can be obtained from the ASTM Committee, 1916 Race Street, Philadelphia, PA 19103.

The following is a suggested source of supply for this item description (competition is not limited to this source):

Victaulic Co. of America, P.O. Box 31, Easton, PA 18044-0031

Preparing Activity: US Army Belvoir Research, Development, and Engineering Center, ATTN: STRBE-TSE, Fort Belvoir, VA 22060-5606.

Custodian
Army - ME

Preparing activity
Army - ME

Review activities
Army - CE
Navy - YD
Air Force - 99
DLA - CS

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