

MIL-D-53015 (ME)
9 September 1982

MILITARY SPECIFICATION

DISPLACEMENT AND EVACUATION KIT, 6-INCH HOSELINE

This specification is approved for use by the Mobility Equipment Research and Development Command, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers a displacement and evacuation kit consisting of items such as a ball inlet, ball receiver, displacement ball, pipe couplings, and other necessary items designed to remove water and air from a hoseline system by propelling the displacement ball through the hoseline under air pressure.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

- | | | |
|-----------|---|--|
| WW-C-633 | – | Couplings, Hose; (Half), Pneumatic Universal Type. |
| PPP-B-601 | – | Boxes, Wood, Cleated-Plywood. |
| PPP-T-60 | – | Tape: Packaging, Waterproof. |

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: US Army Mobility Equipment Research and Development Command, ATTN: DRDME-DS, Fort Belvoir, VA 22060 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

MIL-D-53015 (ME)

MILITARY

- MIL-B-121 – Barrier Material, Greaseproofed, Waterproofed, Flexible.
- MIL-T-704 – Treatment and Painting of Materiel.
- MIL-E-52798 – Enamel, Alkyd, Camouflage.

STANDARDS

MILITARY

- MIL-STD-105 – Sampling Procedures and Tables of Inspection by Attributes.
- MIL-STD-129 – Marking for Shipment and Storage.
- MIL-STD-130 – Identification Marking of US Military Property.
- MIL-STD-1188 – Commercial Packaging of Supplies and Equipment.

2.1.2 Other Government drawings. The following other Government drawings form a part of this specification to the extent specified herein.

DRAWINGS

ME

- TA13226E1577 – Displacement and Evacuation Kit, 6-inch Hoseline.

PURCHASE DISCRPTION

- PD 80342 – Hose Assembly, Rubber Lightweight, Collapsible, 6-Inch; for Potable Water.

(Copies of specifications, standards, drawings, and publications required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 Description. The displacement and evacuation kit (hereinafter called "kit"), shall consist of the components shown in TA13226E1577, fitted in a chest and as specified herein.

3.1.1 Drawings. The drawings forming a part of this specification are engineering design drawings. No deviation from the prescribed dimensions or tolerances is permissible without prior approval of the contracting officer. Where tolerances could cumulatively result in incorrect fits, the contractor shall provide tolerances within those prescribed on the drawings to insure correct fit, assembly, and operation of the kit. Any data (e.g., shop drawings, layouts, flow sheets,

MIL-D-53015 (ME)

processing procedures, etc.) prepared by the contractor or obtained from a vendor to support fabrication and manufacture of the production item shall be made available, upon request, for inspection by the contracting officer or his designated representative.

3.2 First article (first produced kit). The contractor shall furnish one or more kits as specified (see 6.2) for examination and testing within the time frame specified (see 6.2) to prove that his production methods will produce kits that comply with the requirements of this specification. Examination and tests shall be as specified in Section 4 and shall be subject to surveillance and approval by the Government (see 6.3).

3.3 Materials. Materials shall be as specified herein and on the drawings. Materials not specified shall be selected by the contractor and shall be subject to all provisions of this specification (see 6.4).

3.3.1 Material deterioration prevention and control (MADPAC). The displacement and evacuation kit shall be fabricated from compatible materials, suitably finished, to provide protection from corrosion and other forms of material deterioration. Assurance shall be given in the form of a finish plan which clearly identifies the specific finish or treatment to be used on the various components and assemblies, to provide protection against the various forms of material deterioration in the applicable operating and storage environments to which they may be exposed.

3.3.2 Galvanic corrosion. Dissimilar metals as defined in MIL-T-704 shall not be used in intimate contact without suitable protection to circumvent galvanic corrosion.

3.4 Displacement ball. The displacement ball shall be a cellular material with a diameter of 6-1/2 inches which will either be spherical or cylindrical in shape.

3.5 Ejector assembly. The ejector assembly shall be a Penberthy ejector, model GL-1, or equal, equipped with universal, pneumatic, quick-disconnect half couplings conforming to WW-C-633, Type II connected to the inlet and suction side of the ejector. The ejector assembly shall be capable of creating a vacuum of not less than 20 inches of mercury when supplied with a driving medium of compressed air at 80 pounds per square inch (psi) with a volume of 110 cubic feet per minute (cfm).

3.6 Performance. The kit shall displace water and evacuate air from 500 feet of 6-inch, collapsible hose. Time for each operation shall not exceed 15 minutes.

3.6.1 Government loaned property. The Government will loan 500 feet of 6-inch, collapsible hose, conforming to PD 80342 (see 6.4).

3.7 Chest. All components of the kit shall be furnished in a steel chest not less than 0.0747 inch in nominal thickness. The chest shall have a hinged cover, fastening devices, and handles. Bins, cradles, or blocking shall be provided for components of the kit to prevent damage during shipment or handling. The chest shall not exceed 22 inches in height. A loading plan indicating the location of all items in the chest shall be furnished. The loading plan shall be permanently attached to the inside of the cover.

MIL-D-53015 (ME)

3.8 Treatment and painting. The ejector assembly and chest shall be cleaned, treated, and painted in accordance with MIL-T-704, Type A, with a finish coat in accordance with MIL-E-52798, Type I, color sand.

3.9 Identification marking. The kit shall be identified in accordance with MIL-STD-130. Marking shall be applied to the outside of the cover of the chest.

3.10 Workmanship. All components of the kit and chest shall be free from dirt, rust, scale, and welding flux.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Component and material inspection. The contractor is responsible for insuring that components and materials used are manufactured, examined, and tested in accordance with referenced specifications, standards, and drawings, as applicable.

4.2 Classification of inspections. Inspection requirements specified herein are classified as follows:

- a. First produced kit inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).
- c. Inspection of packaging (see 4.6).

4.3 First produced kit inspection.

4.3.1 Examination. The first produced kit shall be examined as specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.3.2 Tests. The first produced kit shall be tested as specified in 4.5.2.1 and 4.5.2.2. Failure of any test shall be cause for rejection.

4.4 Quality conformance inspection.

4.4.1 Examination.

4.4.2 Individual. Each kit shall be examined for the defects specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

MIL-D-53015 (ME)

4.4.3 Tests. Each kit shall be tested as specified in 4.5.2.1 and 4.5.2.2. Failure of any test shall be cause for rejection.

4.5 Inspection procedure.

4.5.1 Examination. The kit shall be examined as specified herein for the following defects:

101. Dimensions not as specified.
102. Finish plan not adequate.
103. Material not as specified.
104. Components missing or not as specified.
105. Loading plan missing.
106. Components not packed in chest in accordance with loading plan.
107. Components not anodized as specified.
108. Workmanship not as specified.
109. Dissimilar metals not in compliance with MIL-T-704.

4.5.2 Tests.

4.5.2.1 Displacement. Flake the hose from the flaking box. Fill the hose with water. Insert the displacement ball in the hose and attach the ball inlet. Attach the ball receiver to the other end of the hose. Connect an air supply capable of producing a volume of 110 cfm at 80 psi to the ball inlet. Supply air at approximately 100 cfm. Continue the air supply until the displacement ball reaches the ball receiver. Inability of the displacement ball to displace the water from the hose within 15 minutes or travel through the hose until it is caught in the ball receiver shall constitute failure of this test.

4.5.2.2 Evacuation. Remove the ball receiver and displacement ball, and cap the hoseline. Connect the ejector assembly to the ball inlet. Connect an air supply capable of producing a volume of 110 cfm at 80 psi to the inlet of the ejector assembly. Inability to evacuate and collapse the 500 feet of hoseline within 15 minutes shall constitute failure of this test

4.6 Inspection of packaging.

4.6.1 Quality conformance inspection of pack.

4.6.1.1 Unit of product. For the purpose of inspection, a completed pack prepared for shipment shall be considered a unit of product.

4.6.1.3 Sampling. Sampling for examination shall be in accordance with MIL-STD-105.

4.6.1.3 Examination. Samples selected in accordance with 4.6.1.2 shall be examined for the following defects. AQL shall be 2.5 percent defective.

110. Materials and containers not as specified. Each incorrect material or container shall be considered one defect.

MIL-D-53015 (ME)

111. Land-sealing surface of grooved end fittings not completely covered with barrier material and tape as specified.
112. Application of barrier material and tape not in accordance with figure I, as specified.
113. Chest lid not sealed with tape as specified.
114. Marking missing, illegible, incorrect or incomplete for level A, level B, or commercial.

5. PACKAGING

5.1 Preservation (see 6.6). The land-sealing surface of grooved end fittings shall be completely covered with a single wrap of barrier material conforming to MIL-B-121, Type II, Class 2, (see figure 1). The wrap for the land-sealing surface shall be flush with the end of the fitting and shall extend back beyond the groove not less than 1/4 inch. The wrap of the barrier material shall be covered with a single wrap of tape conforming to PPP-T-60, Type IV. The tape shall be of a width that will completely cover the barrier material and shall extend not less than 1/8 inch beyond the end of the fitting and extend back beyond the barrier material not less than 1/2 inch. The end of the tape extending beyond the end of the fitting, and the tape extending beyond the wrap shall be rolled in place against the end wall of the fitting and against the fitting (see figure 1). The components comprising the complete kit shall then be placed in the chest in accordance with the leading plan. After closure, all edges of the chest lid shall be sealed with tape conforming to PPP-T-60, Type IV.

5.2 Packing. Packing shall be level A, level B, or commercial, as specified (see 6.2).

5.2.1 Level A. The chest containing the kit components shall be packed in a close-fitting box conforming to PPP-B-601, Overseas Type, style optional. Box closure and strapping shall be in accordance with the appendix to the box specification.

5.2.2 Level B. Packing shall be as specified for level A except the boxes shall be domestic type.

5.2.3 Commercial. The chest containing the kit components shall be packed in accordance with MIL-STD-1188.

5.3 Marking (see 6.6).

5.3.1 Military. Marking for military levels of protection (level A or level B) shall be in accordance with MIL-STD-129.

5.3.2 Commercial. Marking for commercial packaging shall be in accordance with MIL-STD-1188.

6. NOTES

6.1 Intended use. The kit is intended for use with the 6-inch lightweight, collapsible hoseline system.

6.2 Ordering data. Acquisition documents should specify the following:

MIL-D-53015 (ME)

- a. Title, number, and date of this specification.
- b. Time frame required for submission of first produced kit (see 3.2).
- c. When the Government will conduct any or all of the first produced examinations and tests. When the Government will conduct some but not all of the first produced examinations and tests, the contracting officer should specify which examinations and tests will be conducted by the Government and which examinations and tests will be conducted by the contractor (see 3.2).
- d. Degree of packing required (see 5.2).

6.3 First produced kit. Any changes or deviations of production kits from the approved first produced kit during production will be subject to the approval of the contracting officer. Approval of the first produced kit will not relieve the contractor of his obligation to furnish kits conforming to this specification.

6.4 Government-loaned property. The contracting officer should arrange to loan the property in 3.6.1.

6.5 Recycled material. Unless otherwise specified herein all equipment, material and articles incorporated in the products covered by this specification shall be new, and shall be fabricated using materials produced from recycled materials to the maximum extent practicable without jeopardizing the intended use. The term "recycled materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification unless otherwise specifically authorized (see 3.3).

6.6 Marking. For purposes of preservation/packing, the level marking preservation shall be considered level A.

Custodian:
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Preparing activity:
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MIL-D-53015 (ME)

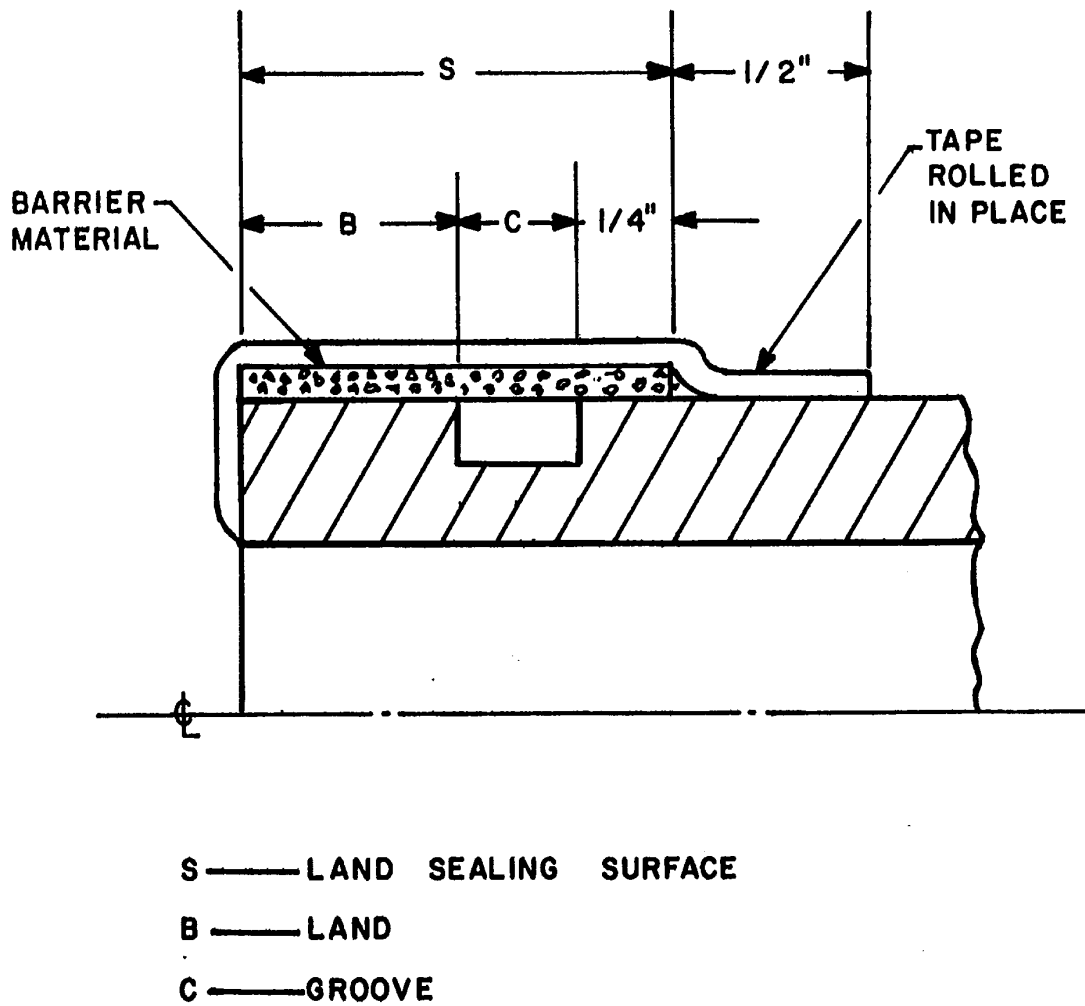


FIGURE 1. Land sealing surface for grooved end pipe, tube end fittings.

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