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MIL-A-3962D
24 September 1979
SUPERSEDING
MIL-A-3962C
28 February 1968

MILITARY SPECIFICATION

ANCHORS, GROUND, ARROWHEAD WITH DRIVING EQUIPMENT

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers arrowhead ground anchors with single cable assemblies and driving equipment.

1.2 Classification.

1.2.1 Ground anchor assemblies. The ground anchor assemblies shall be of the following sizes, grades, and styles as specified (see 6.2).

Size 4 inch (102 mm)

Grade A	-	Aluminum
Style 1	-	Cable without thimble, 3100 pounds (1406 kg) load
Style 5	-	Cable with thimble, 1500 pounds (680 kg) load
Grade B	-	Malleable Iron
Style 1	-	Cable without thimble, 3100 pounds (1406 kg) load
Style 2	-	Cable with thimble, 3100 pounds (1406 kg) load
Style 5	-	Cable with thimble, 1500 pound (680 kg) load

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: US Army Natick Research and Development Command, Natick, MA 01760, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 4030

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Size 6 inch (152 mm)

Grade A - Aluminum
Grade B - Malleable Iron

Style 3 - Cable without thimble, 5500 pounds (2495 kg) load
Style 4 - Cable with thimble, 5500 pounds (2495 kg) load

Size 8 inch (203 mm)

Grade A - Aluminum
Grade B - Malleable Iron

Style 3 - Cable without thimble, 5500 pounds (2495 kg) load
Style 4 - Cable with thimble, 5500 pounds (2495 kg) load

1.2.2 Driving equipment. The ground anchor driving equipment consisting of driving rod, head and handle shall be of the following sizes, as specified (see 6.2).

Size 4 inch (102 mm)
Size 6 inch (152 mm)
Size 8 inch (203 mm)

2. APPLICABLE DOCUMENTS

2.1 Issues of documents. The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

PPP-B-601 - Boxes, Wood, Cleated-Plywood
PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner
PPP-B-636 - Boxes, Shipping, Fiberboard

MILITARY

MIL-E-52978 - Enamel, Alkyd, Camouflage

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129 - Marking for Shipment and Storage
MIL-STD-1188 - Commercial Packaging of Supplies and Equipment

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DRAWINGS

US ARMY NATICK RESEARCH AND DEVELOPMENT COMMAND

4-1-196	-	Anchors, Ground, Arrowhead, with Driving Equipment, Assemblies and Details, 4-inch Aluminum Anchors.
4-1-197	-	Assemblies and Details, 4-inch Malleable Iron Anchors.
4-1-198	-	Assemblies and Details, 6-inch and 8-inch Malleable Iron and Aluminum Anchors.
4-1-199	-	Miscellaneous Details

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

3. REQUIREMENTS

3.1 Design. The ground anchor assemblies and driving equipment shall conform to the material (see 6.3), construction, finish and marking requirements specified herein and on the drawings listed in 2.1.

3.2 Load requirements for ground anchors with cable assemblies.

3.2.1 Size 4 inch (102 mm), styles 1 and 2. The anchor assembly shall withstand a load of not less than 3100 pounds (1406 kg) without breakage when tested as specified in 4.3.1.

3.2.2 Size 4 inch (102 mm), style 5. The anchor assembly shall withstand a load of not less than 1500 pounds (680 kg) without breakage when tested as specified in 4.3.1.

3.2.3 Sizes 6 and 8 inch (152 and 203 mm), styles 3 and 4. The anchor assembly shall withstand a load of not less than 5500 pounds (2495 kg) without breakage when tested as specified in 4.3.1.

3.3 Finish.

3.3.1 Anchor bodies. Prior to application of finish, anchor bodies shall have all burrs, flashings and sharp edges removed.

3.3.1.1 Aluminum bodies. Aluminum bodies shall be given no further finish.

3.3.1.2 Malleable iron bodies and pins, and pins for aluminum anchor bodies. The assembled malleable iron anchor body and pin and the pin for aluminum bodies shall be coated with aluminum pigmented enamel or coated with enamel conforming to MIL-E-52978 (lusterless forest green in color) or shall be galvanized.

3.3.1.3 Driving rods and driving heads. Driving rods and driving heads shall be cleaned free of oil, grease and other foreign matter and then coated with enamel conforming to MIL-E-52978, lusterless forest green in color. Holes in driving rods and driving heads shall be free of excess enamel to insure proper fit.

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3.4 Marking. All characters on the anchor bodies shall be cast in raised letters and shall include the manufacturer's name, trade name or trademark and year of contract. Except as otherwise specified on drawings, characters shall be not less than 1/4-inch size.

3.5 Workmanship. The finished items shall be clean, free of burrs, sharp edges, or corroded areas and shall not be broken or malformed.

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.

4.2 Quality conformance inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated hereinafter.

4.2.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended modified or qualified in this specification or applicable purchase document.

4.2.2 End item inspection. The inspection lot shall be all complete units offered for inspection at one time. The sample unit shall be one completed unit.

4.2.2.1 Visual examination. Examination of the end items shall be in accordance with the defects in table I. The inspection level shall be II with an acceptable quality level (AQL) of 2.5 for major defects and 6.5 for total defects, expressed in terms of defects per hundred units.

TABLE I. Classification of defects

Examine	Defect	Classification Major	Minor
Finish (general)	Type of finish not as specified, or not in accordance with the manufacturer's standard commercial practice		X
	Color is not as specified		X
	Evidence of dirt, grease or foreign matter imbedded in coating		X
	Excessive enamel in driving rod and driving head hole		X

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TABLE I. Classification of defects (cont'd)

Examine	Defect	Classification Major	Minor
Design, construction and workmanship, general (applicable to all components assemblies)	Not size, grade, style, specified	X	
	Any part missing or not as specified	X	
	Metal not clean, free of burrs or sharp edges	X	
	Broken, malformed or corroded area	X	
Marking for identification	Missing, incomplete, not legible or wrong type, size or location		X

4.2.2.2 Dimensional examination. Examination shall be made of the end item for compliance with dimensions specified. Any dimension that is not within the specified tolerance shall be classified as a defect. The inspection level shall be S-2 with an AQL of 4.0 defects expressed in terms of defects per hundred units.

4.2.2.3 End item testing. One item selected at random from the first lot shall be tested as specified in 4.3.1. Failure of the test shall be cause for rejection of the lot.

4.2.4 Packaging inspection. An examination shall be made to determine that preservation, packing, and marking as required by section 5 are complied with. Defects shall be as indicated in table II. The sample unit shall be one shipping container fully packaged, except that it need not be closed. The lot shall be the number of containers offered for inspection at one time. The inspection level shall be S-2 with an AQL of 2.5, expressed in terms of defects per hundred units.

TABLE II. Packaging inspection

Examine	Defect
Markings	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application
Materials	Components missing, damaged, or otherwise defective
Contents (exterior and interior container)	Number per container is more or less than required.

4.3 Test methods.

4.3.1 Load test. With a load tester at a rate not greater than 2000 pounds per minute (15 kg/second) the cable assembly shall meet the load requirements as specified for the 4 inch (102 mm) size in 3.2.1 and 3.2.2 and for the 6 and 8 inch (152 and 203 mm) sizes as specified in 3.2.3. Any evidence of failure shall constitute failure of this test.

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5. PACKAGING

5.1 Preservation. Preservation shall be level A or Commercial as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Ground anchor assemblies. No preserving required.

5.1.1.2 Driving equipment, 4 inch (102 mm) anchor assembly. One driving rod, and driving head and holding handle for 4 inch (102 mm) anchor assembly shall be unit packed in a snug-fitting panel folder conforming to style FPF, type CF, variety SW, or type SF, class weather-resistant of PPP-B-636. The driving rod shall be positioned on top of the holding handle and the driving head inserted on one end of the driving rod. A fiberboard or wood insert shall be placed in the end of the folder opposite the driving head. The insert shall be not less than 3/8 inch (9.5 mm) thick, provided with a hole to accommodate the driving rod, and shall be a snug-fit in the folder to prevent any movement of the rod while in transit. Each box shall be securely closed.

5.1.1.3 Driving equipment, 6 and 8 inch (152 and 203 mm) anchor assembly. One driving rod, and driving head and holding handle for 6 and 8 inch (152 and 203 mm) anchor assemblies shall be unit packed as specified in 5.1.1.2.

5.1.2 Commercial. The ground anchor assemblies and driving equipment shall be preserved in accordance with MIL-STD-1188.

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

5.2.1 Level A packing.

5.2.1.1 Ground anchor assemblies. Ground anchor assemblies of one size, grade and style only, shall be packed in the most compact manner in the quantities specified in table III in a snug-fitting shipping container conforming to overseas type, style A of PPP-B-601 or class 2, style 2, 4 or 4-1/2, type 3 load of PPP-B-621. Closure and strapping shall be in accordance with the container specification.

5.2.1.2 Driving equipment. Driving rods and heads, and holding handles, preserved as specified in 5.1, shall be packed in the quantities specified in table III, in a snug-fitting container conforming to overseas type, style A of PPP-B-601

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or class 2, style 2, 4 or 4-1/2, type 3 load of PPP-B-621. The contents shall be arranged within the container so that as far as practical, an equal number of driving heads are at each end of the container in order to evenly distribute the weight. Closure and strapping shall be in accordance with the container specification.

5.2.2 Level B packing.

5.2.2.1 Ground anchor assemblies. Ground anchor assemblies of one size, grade, and style only shall be packed in the most compact manner in the quantities specified in table III in a snug-fitting shipping container conforming to domestic type, style A of PPP-B-601, or class 1, style 2, 4 or 4-1/2, type 3 load of PPP-B-621. Closure and strapping shall be in accordance with the container specification.

5.2.2.2 Driving equipment. Driving rods and heads, and holding handles, preserved as specified in 5.1, shall be packed in the quantities specified in table III in a snug-fitting shipping container conforming to domestic type, style A of PPP-B-601 or class 1, style 2, 4 or 4-1/2, type 3 load of PPP-B-621. The contents shall be arranged within the container so that as far as practical, an equal number of driving heads are at each end of the container in order to evenly distribute the weight. Closure and strapping shall be in accordance with the container specification.

TABLE III. Packing of items

Item	Quantity per shipping container
Ground anchor assemblies:	
Size 4 inch (102 mm), grade A, style 1	150 each
Size 4 inch (102 mm), grade A, style 5	200 each
Size 4 inch (102 mm), grade B, style 1 or 2	75 each
Size 4 inch (102 mm), grade B, style 5	100 each
Size 6 inch (152 mm), grade A, style 3	100 each
Size 6 inch (152 mm), grade A, style 4	75 each
Size 6 inch (152 mm), grade B, style 3 or 4	40 each
Size 8 inch (203 mm), grade A, style 3	50 each
Size 8 inch (203 mm), grade A, style 4	40 each
Size 8 inch (203 mm), grade B, style 3 or 4	20 each
Driving equipment:	
Size 4 inch (102 mm), driving rod, head, and holding handle	15 each
Size 6 and 8 inch (152 and 203 mm), driving rod, head, and holding handle	8 each

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5.2.3 Commercial. Ground anchor assemblies and driving items, shall be packed in accordance with MIL-STD-1188.

5.3 Marking. In addition to any special marking required by the contract, unit packs and shipping containers shall be marked in accordance with MIL-STD-129 or MIL-STD-1188, as applicable.

6. NOTES

6.1 Intended use. The ground anchors assemblies with driving equipment are intended for securing tents, shelters, aircraft, small utility poles, and communication masts to the ground.

6.2 Ordering data. Procurement documents should specify the following:

(a) Title, number, and date of this specification.
(b) Size, grade and style of ground anchor assemblies required (see 1.2.1).
(c) Size of ground anchor driving equipment parts required (see 1.2.2).
(d) Selection of applicable levels of preservation and packing (see 5.1 and 5.2).

6.3 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of the specification.

6.4 Metric equivalents. Metric equivalents, indicated in parentheses throughout this document, are based on practices, conversion factors, and symbols specified in ASTM E 380 Standard for Metric Practice, and are for information only. In each instance, the value stated in US customary units shall be controlling.

6.5 Supersession data. The correlation between the types of product in the superseded MIL-A-3962C and the product specified is as follows:

MIL-A-3962C	MIL-A-3962D
Type I	Retained without the type designation Style 5 (NEW)
Type II	Deleted

6.6 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

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Project No. 4030-0162

☆U.S. GOVERNMENT PRINTING OFFICE: 1979-603-022/4022

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DOCUMENT IDENTIFIER *(Number)* AND TITLE

MIL-A-3962D - Anchors, Ground, Arrowhead with Driving Equipment

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