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MIL-DTL-46550D
W/AMENDMENT 1
12 SEPTEMBER 2012
SUPERSEDING
MIL-C-46550D(AR)
11 SEPTEMBER 2011

DETAIL SPECIFICATION

CHARGE, DEMOLITION, SHAPED, 40 LB. M3A1, METAL PARTS ASSEMBLY

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

1. SCOPE

1.1 Scope. This specification covers the parts and assemblies for one type of demolition kit designated as Charge, Demolition, Shaped, 40 lb., M3A1.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those specified in the solicitation or contract.

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| Comments, suggestions, or questions on this document should be addressed to Commander ARDEC, ATTN: RDAR-QES-E, Picatinny Arsenal, New Jersey 07806-5000 or emailed to ardecstdznbranch@conus.army.mil . Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil . |
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DEPARTMENT OF DEFENSE STANDARDS

- | | | |
|--------------|---|---|
| MIL-STD-1168 | - | Ammunition Lot Numbering and Ammunition Data Card |
| MIL-STD-1916 | - | DOD Preferred Method for Acceptance of Product |

(Copies of these documents are available online at <https://assist.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue Bldg. 4D, Philadelphia, PA 19111-5-94.)

2.2.2 Other Government documents, drawings and publications. The following other Government documents, drawings and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation (see 6.2).

ARDEC Drawings

- | | | |
|---------|---|--|
| 8858382 | - | Charge, Demolition, Shaped, 40 lb., M3A1, Metal Parts Assembly |
| 8858394 | - | Charge, Demolition, Shaped, 40 lb., M3A1, Closing Cap Assembly |
| 8858401 | - | Stand-off Frame Assembly |

(Copies of these drawings are available from US Army ARDEC, RDAR-EIS-PE, Picatinny, NJ 07806-5000, or online from Drawing-Request@us.army.mil.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supercedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First Article. When specified, a sample shall be subjected to first article inspection in accordance with 4.2.

3.2 Material. Materials, parts and assemblies shall comply with all requirements specified on the applicable drawings and referenced specifications.

3.3 Assemblies. The assemblies shall comply with all requirements specified on applicable drawings and with all requirements specified in the applicable specifications.

3.4 Welds of stand-off frame assembly. The weld of each leg of the stand-off frame assembly shall withstand a free fall of not less than four (4) feet onto a steel or concrete surface, with the leg striking the surface at approximately thirty (30) degrees from a vertical position,

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without evidence of weld failure, either cracking, separating, or pulling apart. The test shall be performed as specified in 4.3.3.1.

3.5 Waterproofness of closing cap assembly and metal parts assembly. The closing cap assembly and the metal parts assembly shall not exhibit leakage when pressurized 2 to 3 psi internally with air for 10 seconds when tested as specified in 4.3.3.2.

3.6 Fit of closing cap assembly and metal parts assembly. The closing cap assembly shall require a force fit to be joined to the metal parts assembly as specified in 4.3.3.3.

3.7 Workmanship. All parts and assemblies shall be accomplished in a thorough workmanlike manner. They shall be clean and free of cracks, dents, burrs, sharp edges, surface defects, dirt, grease, weld splatter, rust, corrosion, and other defects and foreign matter. The cleaning method used shall not be injurious to any part or assembly nor shall the parts be contaminated by the cleaning agent. Surface coatings shall be continuous. All required markings shall be neat and sharply defined.

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4. VERIFICATION

Table I. REQUIREMENTS/VERIFICATION CROSS REFERENCE MATRIX

| Method of Verification | | | | | Classes of Verification | | | |
|--|------------------------------|---------------------|---|---|-------------------------|--------------------|---|-----------|
| 1- Analysis 2- Demonstration (end item test) 3- Examination 4- Test | | | | | A - First Article | | | |
| | | | | | B - Conformance | | | |
| Section 3 Requirements | Description | Verification Method | | | | Verification Class | | Section 4 |
| | | 1 | 2 | 3 | 4 | A | B | |
| 3.1 | First Article | X | | X | X | X | | 4.2 |
| 3.2 | Material | X | | X | X | X | X | 4.3 |
| 3.3 | Assemblies | | | X | X | X | X | 4.3 |
| 3.4 | Welds of stand-off | | | X | X | X | X | 4.3 |
| 3.5 | Waterproofness of assemblies | | | X | X | X | X | 4.3 |
| 3.6 | Fit of assemblies | | | X | X | X | X | 4.3 |
| 3.7 | Workmanship | X | | X | X | X | X | 4.3 |

4.1 Classification of verification. The verification requirements specified herein are classified as follows:

- a. First article inspection (see 4.2)
- b. Conformance inspection (see 4.3)

4.2 First article inspection.

4.2.1 Submission. When specified, a first article sample shall be submitted for evaluation in accordance with the provisions of 4.2.2 and Table II. The first article sample shall consist of five (5) complete sets of parts and sub-assemblies (i.e. 5 each of every component and sub-assembly), which have been produced by the contractor or furnished by a supplier and which have been manufactured using the same production processes, procedures and equipment which will be used in fulfilling the contract. All parts and materials including packaging and packing shall be obtained from the same source of supply as will be used in regular production. A sample containing known defects will not be submitted.

4.2.2 Inspections to be performed. As determined by the Government, the first article samples may be subjected to any or all of the examinations and tests specified in the specification and inspected for compliance with any or all of the requirements of this specification and applicable drawings, including all unlisted characteristics.

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4.2.2.1 Rejection. The first article sample shall be rejected if any of the inspections/tests fail to meet specification or drawing requirements. The Government reserves the right to terminate inspection or test upon failure of any sample to comply with any requirement.

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Table II. FIRST ARTICLE INSPECTION

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CLASSIFICATION OF CHARACTERISTICS

| PARAGRAPH | TITLE Charge, Demolition, Shaped, 40 lb., M3A1 | | | SHEET 1 OF 1 | | DRAWING NUMBER (See below) |
|-----------|--|---------------------------|-----------------------|--------------------------|---|-----------------------------------|
| | | | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | VERIFICATION LEVEL | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE/ INSPECTION METHOD | |
| | | | | | | |
| | Material | 5 | 100% | 3.2 | 4.3 | |
| | | | | | | |
| | Parts and sub-assemblies | 5 | 100% | 3.3 | 4.3 | |
| | | | | | | |
| | Welds of stand-off frame assembly | 5 | 100% | 3.4 | 4.3.3.1 | |
| | | | | | | |
| | Waterproofness of closing cap assembly and metal parts assembly | 5 | 100% | 3.5 | 4.3.3.2 | |
| | | | | | | |
| | Fit of closing cap assembly and metal parts assembly | 5 | 100% | 3.6 | 4.3.3.3 | |
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4.3 Conformance Inspection.

4.3.1 Inspection lot formation. The term "inspection lot" as used in this specification is defined as an essentially homogeneous collection of units of product from which a representative sample is drawn and inspected to determine conformance with applicable requirements. The sample selected shall represent only that quantity of units from which the sample was drawn and shall not be construed to represent any prior or subsequent quantities presented for inspection. Homogeneity shall be considered to exist provided the inspection lot has been produced by one manufacturer in one unchanged process, in accordance with the same drawing, same drawing revision, same specification and same specification revision and complies with the provisions for submission of product as specified in MIL-STD-1916. Changes to the process, specification, or drawing not affecting safety, performance, interchangeability, or storage, as determined by the Government, shall not be deemed to alter the homogeneity of an inspection lot. All material submitted for inspection in accordance with this specification shall comply with the homogeneity criteria specified herein regardless of the type of sampling procedure which is being applied to determine conformance with requirements. Lot numbering, as required, shall be in accordance with MIL-STD-1168. Each inspection lot shall contain assemblies from not more than one lot interfix number from one manufacturer.

4.3.2 Examination. Unless otherwise specified in the Conformance Inspection, sampling plans for major and minor defects shall be in accordance with MIL-STD-1916, Verification Level IV for Major defects and Verification Level II for Minor defects.

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Conformance Inspection

CLASSIFICATION OF CHARACTERISTICS

| PARAGRAPH 4.3.2.1 | TITLE Well detonator | | | SHEET 1 OF 1 | | DRAWING NUMBER 8858399 |
|----------------------|--|---------------------------|-----------------------|--------------------------|---|---------------------------------|
| | | | | | | NEXT HIGHER ASSEMBLY 8858397 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | VERIFICATION LEVEL | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE/ INSPECTION METHOD | |
| <u>Critical</u> | None defined | | | | | |
| | | | | | | |
| <u>Major</u> | | | | | | |
| 101 | Diameter and length of cavity | | IV | 3.2 | Gage | |
| 102 | Outside diameter of body, maximum (max.) | | IV | 3.2 | Gage | |
| 103 | Wall thickness, minimum (min.) | | IV | 3.2 | Gage | |
| | | | | | | |
| <u>Minor</u> | | | | | | |
| 201 | Diameter of flange, max. | | II | 3.2 | Gage | |
| 202 | Thickness of flange, max. | | II | 3.2 | Gage | |
| 203 | Length of closed end, max. | | II | 3.2 | Gage | |
| 204 | Evidence of poor workmanship | | II | 3.6 | Visual | |
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Conformance Inspection

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| PARAGRAPH | TITLE | | | SHEET 1 OF 1 | | DRAWING NUMBER 8858394 |
|-----------------|---|---------------------------|-----------------------|--------------------------|---|---------------------------|
| 4.3.2.5 | Closing cap assembly | | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | VERIFICATION LEVEL | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE/ INSPECTION METHOD | |
| <u>Critical</u> | None defined | | | | | |
| | | | | | | |
| <u>Major</u> | | | | | | |
| 101 | Concentricity of inside diameter of closing cap to thread | | IV | 3.3 | Gage | |
| 102 | Dent in thread or detonator cavity | | IV | 3.3 | Visual | |
| 103 | Tape missing, loose, or mislocated | | IV | 3.3 | Visual | |
| 104 | Enamel paint or color improper | | IV | 3.3 | Visual | |
| | | | | | | |
| <u>Minor</u> | | | | | | |
| 201 | Length and diameter of cavity inside | | II | 3.3 | Gage | |
| 202 | Paint in detonator well | | II | 3.3 | Visual | |
| 203 | Protective coating missing, inadequate, or improper | | II | 3.3 | Visual | |
| 204 | Evidence of poor workmanship | | II | 3.6 | Visual | |
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Conformance Inspection

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|----------------------|--|---------------------------|-----------------------|--------------------------|---|---------------------------|
| PARAGRAPH 4.3.2.7 | TITLE Metal parts assembly, prior to painting | | | SHEET 1 OF 1 | | DRAWING NUMBER 8858382 |
| | | | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | VERIFICATION LEVEL | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE/ INSPECTION METHOD | |
| <u>Critical</u> | None defined | | | | | |
| | | | | | | |
| <u>Major</u> | | | | | | |
| 101 | Concentricity of container neck with either datum diameter on cone | | IV | 3.3 | Gage | |
| 102 | Total length | | IV | 3.3 | Gage | |
| 103 | Sealer missing or importer at junction of cone and body | | IV | 3.3 | Visual | |
| 104 | Cone loose or crimp inadequate | | IV | 3.3 | Visual/Manual | |
| 105 | Bracket weld missing or inadequate | | IV | 3.3 | Visual/Manual | |
| | | | | | | |
| | | | | | | |
| <u>Minor</u> | | | | | | |
| 201 | Outside diameter, max. | | II | 3.3 | Gage | |
| 202 | Evidence of poor workmanship | | II | 3.6 | Visual | |
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4.3.3 Test methods and procedures.

4.3.3.1 Welds of stand-off frame assembly. Unless otherwise noted, a sample of twenty-five (25) stand-off frame assemblies shall be selected from each lot for this test. Verify by test that there are no weld failures. Presence of a weld failure shall reject the lot.

4.3.3.2 Waterproofness of closing cap and metal parts assembly. Unless otherwise noted, a sample of twenty-five (25) closing cap assemblies and twenty-five (25) metal parts assemblies shall be selected from each lot for this test. The required air pressure shall be applied and the assembly shall then be completely submerged in water. Observation shall be made for a stream or streams of bubbles, of any frequency, indicating leakage in the assembly. Any assembly exhibiting leakage shall be classed defective and shall reject the lot. Alternate test methods are allowed (see 6.5).

4.3.3.3 Fit of closing cap assembly and metal parts assembly. Unless otherwise noted, a sample of twenty-five (25) closing cap assemblies and twenty-five (25) metal parts assemblies shall be selected from each lot for this test. The samples of closing cap assemblies and metal parts assemblies shall be segregated into combinations consisting of one unit of each. The closing cap assembly shall be assembled to its metal parts assembly using applicable equipment. Failure to require a force fit shall class a combination defective. Failure of one or more combinations in meeting the requirement shall reject the lot. Any unit failing to meet the requirement shall be classed defective.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2f). When actual packaging of material is to be performed by DOD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

6.1 Intended use. The 40 lb. Shaped Demolition Charge is primarily employed for burring holes in earth, metal, concrete, and paved or unpaved roads

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number and date of this specification.
- b. Provisions for submission of first article samples.
- c. Requirements for Ammunition Lot Numbering, if applicable.

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- d. Requirement for acceptance inspection equipment (AIE) designs.
- e. Certificate of Conformance for each lot or shipment of product.
- f. Preservation, packaging, and marking.

6.3 Acceptance inspection equipment. Provisions concerning the AIE and test facilities that will be used to verify the requirements of this specification should be specified in the contract.

6.4 Distribution of ammunition data cards. Distribution of data cards should include the following: Commander RDECOM-ARDEC, U.S. Army, ATTN: RDAR-QEM-G, Picatinny, NJ 07806-5000.

6.5 Alternate waterproofness tests. Alternate tests for waterproofness of assemblies (e.g. leak/decay detection) are allowed when shown to be equivalent to the water submersion method of 4.3.3.2 and with prior approval from the Government Technical Agency.

6.6 Subject term (key word) listing.

Ammunition
Body
Cap

6.7 Changes from previous issue. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Custodian:
Army - AR
Navy-OS

Preparing activity:
Army - AR
(Project 1375-2012-013)

Reviewing activity:
Navy – MC