

MIL-C-46550C (MU)
13 March 1969
SUPERSEDING
MIL-C-46550B (MU)
8 June 1967

MILITARY SPECIFICATION

CHARGE, DEMOLITION, SHAPED, 40 LB.,
M3A1 AND M3 PRACTICE
METAL PARTS ASSEMBLY

1. SCOPE

1.1 This specification covers the parts and assembling for one type of demolition item designated as Charge, Demolition, Shaped, 40 Lb., M3A1 and M3 Practice.

2. APPLICABLE DOCUMENTS

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

SPECIFICATIONS

MILITARY

MIL-A-2550 - Ammunition and Special Weapons; General Specification for

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes (ABC-STD-105)
MIL-STD-109 - Quality Assurance Terms and Definitions
MIL-STD-1168 - Lot Numbering of Ammunition
MIL-STD-1169 - Packaging, Packing and Marking for Shipment of Inert Ammunition Components
MIL-STD-1235 - Single and Multilevel Continuous Sampling Procedures and Tables for Inspection by Attributes

FSC: 1375

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DRAWINGS

U. S. ARMY MUNITIONS COMMAND

- 8858382 - Charge, Demolition, Shaped, 40 Lb., M3A1 and M3 Practice, Metal Parts Assembly
- 8858394 - Charge, Demolition, Shaped, 40 Lb., M3A1 and M3 Practice, Closing Cap Assembly
- 8858401 - Stand-off Frame Assembly

PUBLICATIONS

U. S. ARMY MUNITIONS COMMAND

ET - 8858382 - Equipment Tabulation

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

3. REQUIREMENTS

3.1 Material.- Materials and parts shall be in accordance with applicable drawings and specifications.

3.2 Assemblies.- The assemblies shall comply with all requirements specified on Drawings (dwgs.) 8858382, 8858394 and 8858401 and with all requirements specified in applicable specifications.

3.3 Welds of stand-off frame assembly.- The weld of each leg of the stand-off frame assembly shall withstand a free fall of 4 feet, minimum, onto a steel or concrete surface, with the leg striking the surface at approximately 30 degrees from a vertical position, without evidence of weld failure, either cracking, separating or pulling apart. The test shall be performed as specified in 4.4.3.

3.4 Waterproofness of closing cap assembly and metal parts assembly.- The closing cap assembly and the metal parts assembly shall withstand an internal air pressure of 2 pounds, minimum, without evidence of leakage, when tested as specified in 4.4.1.

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3.5 Workmanship.- All parts and assemblies shall be fabricated and finished in a thorough, workmanlike manner. They shall be free of cracks, dents, burrs, sharp edges, surface defects, dirt, grease, weld splatter, rust, corrosion and other foreign matter. The cleaning method used shall not be injurious to any part nor shall the parts be contaminated by the cleaning agent. Surface coatings shall be continuous except for a few light scratches. All required marking shall be neat and sharply defined.

3.6 First article inspection.- This specification makes provisions for first article inspection. Requirements for the submission of first article samples by the contractor shall be as specified in the contract.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection.- Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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. Reference shall be made to MIL-STD-109 to define terms used herein. The provisions of MIL-A-2550 shall apply.

4.1.1 Submission of product.- At the time each completed lot of items deliverable under the contract is submitted to the Government for acceptance, the contractor shall supply the following information accompanied by a certificate which attests that the information provided is correct and applicable to the product being submitted:

- a. A statement that the lot complies with all of the quality assurance provisions specified in this specification.
- b. Drawing and specification number and date, together with identification and date of changes thereto.

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c. A statement that all material purchased by the contractor meets requirements, when such material is controlled by Government or commercial specifications referenced in any of the contractual documents, and that certificates of conformance are on file and available for review.

d. Number of items in the lot.

e. Date submitted.

The certificate shall be signed by a responsible agent of the certifying organization. The initial certificate submitted shall be substantiated by evidence of the agent's authority to bind his principal. Substantiation of the agent's authority will not be required with subsequent certificates unless, during the course of the contract, this authority is vested in another agent of the certifying organization.

4.2 First article inspection

4.2.1 Submission.-Prior to the start of regular production, the contractor shall submit a first article sample as designated by the contracting officer for evaluation in accordance with the provisions of 4.2.2. The first article sample shall consist of five (5) assemblies and five (5) complete sets of parts (i.e. five (5) each of every component and every subassembly) 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. **Prior** to submission, the contractor shall inspect the sample to the degree necessary to assure that it conforms to the requirements of the contract and submit a record of this inspection with the sample, including certificates of conformance for materials. A sample containing known defects will not be submitted unless specifically authorized by the contracting officer. A first article sample, or portion thereof, as directed by the contracting officer, shall also be submitted whenever there is a lapse in production for a period in excess of 90 days or whenever a change occurs in manufacturing process, material used, drawing or specification such as to significantly affect production uniformity as determined by the Government.

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4.2.2 Inspections to be performed.-Assemblies and components will be subjected by the Government to any or all of the examinations or tests specified in 4.3.2 and 4.3.3 of this specification and any or all requirements of the applicable drawings.

4.2.3 Rejection.-If any assembly or component fails to comply with any or all of the applicable requirements, the first article sample shall be rejected. The Government reserves the right to terminate its inspection upon any failure of any component in the sample to comply with any or all of the stated requirements. In the event of rejection, the Government reserves the right to require the contractor to take corrective action and submit a new first article sample or portion thereof. Until a first article sample is accepted, the contractor is, in no way, authorized by the Government to initiate regular production unless otherwise directed by the contracting officer.

4.3 Inspection provisions

4.3.1 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 specification revision and complies with the provisions for submission of product as specified in MIL-STD-105. 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

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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.- The examinations listed in the following subparagraphs shall be performed on inspection lots (see 4.3.1) of the components or assemblies designated in the applicable paragraph headings. Inspection for critical defects (and major defects, when so specified) shall be 100 percent. Sampling plans for major and minor defects shall be in accordance with MIL-STD-105 except that continuous sampling plans in accordance with MIL-STD-1235 may be used if approved by the Government. Instead of applying the AQL's designated herein to the groups of major and minor defects listed, the contractor may elect to apply AQL's to individual defects using an AQL of 0.40 percent for each major defect and an AQL of 0.65 percent for each minor defect. When this method is elected, it shall be applied to all of the major and minor defects listed in the applicable subparagraph of this section, except where 100 percent inspection is specified, and be documented as part of the contractor's inspection system. Equipment necessary for the performance of the inspections listed shall be in accordance with 4.3.4.

4.3.2.1 Well detonator (see dwg. 8858399 covering a detail of dwg. 8858397).

Categories	Defects	Method of Inspection	Code No. (see 6.2)
Critical:	None defined		
Major:	AQL 0.65 percent		
101.	Diameter and length of cavity...	Gage	01001
102.	Outside diameter of body, maximum (max.).....	Gage	01002
103.	Wall thickness, minimum (min.)..	Gage	01003

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Minor:	AQL 1.50 percent		
201.	Diameter of flange, max.....	Gage	01004
202.	Thickness of flange, max.....	Gage	01005
203.	Length of closed end, max.....	Gage	01006
204.	Evidence of poor workmanship (see 3.5).....	Visual	01007

4.3.2.2 Adapter, well, detonator (see dwg. 8858398 covering a detail of dwg. 8858397).

Categories	Defects	Method of Inspection	Code No.
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Critical: None defined

Major:	AQL 0.40 percent		
101.	Pitch diameter of thread, min...	Gage	02001
102.	Minor diameter of thread, max...	Gage	02004

Minor:	AQL 1.00 percent		
201.	Overall length, min.....	Gage	02006
202.	Evidence of poor workmanship (see 3.5).....	Visual	02007

4.3.2.3 Detonator well assembly (see dwg. 8858397 covering a detail of dwg. 8858394).

Categories	Defects	Method of Inspection	Code No.
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Critical: None defined

Major:	AQL 0.40 percent		
101.	Concentricity of inside diameter with thread.....	Gage	03001

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Minor: AQL 1.00 percent
 201. Assembled length of adapter, min..... Gage 03002
 202. Evidence of poor workmanship (see 3.5)..... Visual 03004

4.3.2.4 Cap, closing (see dwg. 8858396 covering a detail of
 dwg. 8858394).

Categories	Defects	Method of Inspection	Code No.
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Critical: None defined

Major: None defined

Minor: AQL 1.50 percent
 201. Inside depth, min..... Gage 04001
 202. Flange improperly formed..... Visual 04002
 203. Evidence of poor workmanship (see 3.5)..... Visual 04003

4.3.2.5 Closing cap assembly (see dwg. 8858394).

Categories	Defects	Method of Inspection	Code No.
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Critical: None defined

Major: AQL 0.65 percent
 101. Concentricity of inside diameter of closing cap to thread..... Gage 05001
 102. Dent in thread or detonator cavity..... Visual 05002
 103. Tape missing, loose or mislocated..... Visual 05003
 104. Enamel paint or color improper.. Visual 05004

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Minor:	AQL 1.50 percent		
201.	Length and diameter of cavity inside.....	Gage	05005
202.	Paint in detonator well.....	Visual	05006
203.	Protective coating missing, inadequate or improper.....	Visual	05007
204.	Evidence of poor workmanship (see 3.5).....	Visual	05008

4.3.2.6 Cone (see dwg. 8858386 covering a detail of
dwg. 8858382).

Categories	Defects	Method of Inspection	Code No.
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Critical: None defined

Major:	AQL 0.40 percent		
101.	Concentricity of lip with either datum diameter.....	Gage	06001
102.	Variation in wall thickness.....	Gage	06002

Minor:	AQL 1.50 percent		
201.	Diameter at lip.....	Gage	06003
202.	Wall thickness.....	Gage	06004
203.	Total height, max.....	Gage	06005
204.	Evidence of poor workmanship (see 3.5).....	Visual	06006

4.3.2.7 Metal parts assembly, prior to painting (see
dwg. 8858382).

Categories	Defects	Method of Inspection	Code No.
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Critical: None defined

Major:	AQL 1.00 percent		
101.	Concentricity of container neck with either datum diameter on cone.....	Gage	07001
102.	Total length.....	Gage	07002

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103.	Sealer missing or improper at junction of cone and body.....	Visual	07003
104.	Cone loose or crimp inadequate..	Visual- Manual	07004
105.	Bracket weld missing or inadequate.....	Visual- Manual	07005
Minor: AQL 1.00 percent			
201.	Outside diameter, max.....	Gage	07006
202.	Evidence of poor workmanship (see 3.5).....	Visual	07007

4.3.2.8 Metal parts assembly (see dwg. 8858382).

Categories	Defects	Method of Inspection	Code No.
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Critical: None defined

Major: AQL 0.65 percent			
101.	Bare spot on interior surface...	Visual	08001
102.	Color coding improper.....	Visual	08002
103.	Paint improper or inadequate....	Visual	08003

Minor: AQL 1.00 percent			
201.	Carrying strap missing, broken, improperly assembled or insecure.....	Visual- Manual	08004
202.	Evidence of poor workmanship (see 3.5).....	Visual	08005

4.3.2.9 Stand-off frame assembly (see dwg. 8858401).

Categories	Defects	Method of Inspection	Code No.
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Critical: None defined

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Major:	AQL 0.40 percent		
101.	Total length, max.....	Gage	09001
102.	Thumb screw missing.....	Visual	09002
Minor:	AQL 1.50 percent		
201.	Color coding improper.....	Visual	09003
202.	Protective coating missing or inadequate.....	Visual	09004
203.	Evidence of poor workmanship (see 3.5).....	Visual	09005

4.3.3 Testing

4.3.3.1 Fit of closing cap assembly and metal parts assembly (see dwg. 8858384) - Major defect - Code No. 05009.- A sample of 25 of each unit shall be selected from each lot for this test. The test shall be performed as specified in 4.4.2. If two (2) or more combinations of parts fails to comply with the drawing requirement, the metal parts assembly shall be classed defective and the lot of those assemblies shall be rejected. If one defective is found, a second sample of 25 of each unit shall be selected and tested. If the combined number of defectives in both the first and second sample totals two (2) or more, the lot of those assemblies shall be rejected.

4.3.3.2 Waterproofness of closing cap assembly and metal parts assembly (see 3.4) - Major defect - Code No. 05010.- A sample of 25 of each assembly shall be selected from each lot and tested using the applicable equipment of 4.3.4. If two (2) or more combinations of units exhibit leakage, they shall be classed defective and the lot shall be rejected. If one defective is found, a second sample of 25 of each unit shall be selected and tested. If the total number of defectives in both the first and second sample totals two (2) or more, the lot shall be rejected. The test shall be as specified in 4.4.1.

4.3.3.3 Welds of stand-off frame assembly (see 3.3) - Major defect - Code No. 09006.- A sample of 25 stand-off frame assemblies shall be selected from each lot for this test. If one or more welds on each of two assemblies fail to meet the requirement, the assemblies shall be classed defective and the lot shall be rejected. If one defective is found, a second sample of 25 stand-off frame

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assemblies shall be selected and tested. If the combined number of defectives in both the first and second sample totals two (2) or more, the lot shall be rejected. The test shall be as specified in 4.4.3.

4.3.4 Inspection equipment.- Equipment Tabulation Number ET - 8858382 identifies the inspection equipment required to perform the examinations and tests prescribed in this section. The contractor shall design inspection equipment in accordance with the instructions in 6.3.

4.3.4.1 Government rights to documentation.- Inspection equipment drawings and lists provided and revised in accordance with the requirements of the ET may be used by DOD activities for design, procurement, manufacture, testing, evaluation, production and receiving inspection, overhaul, shipping, storage, identification of stock, ordering and storage of replacement parts, inspection of items at overhaul, general maintenance of equipment, construction, survey and whenever inspection equipment drawings are needed.

4.4 Test methods and procedures

4.4.1 Waterproofness of closing cap assembly and metal parts assembly.- The assembly shall be connected to the applicable test equipment specified in 4.3.4. 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.

4.4.2 Fit of closing cap assembly and metal parts assembly.- The samples selected shall be assembled for determination of force fit. If one (1) combination of units does not require a force fit for assembly of one to the other, the metal parts assembly shall be classed defective.

4.4.3 Welds of stand-off frame assembly.- The assembly shall be tested using applicable test equipment specified in 4.3.4. Any stand-off assembly failing to comply with the applicable requirement shall be classed defective.

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5. PREPARATION FOR DELIVERY

5.1 Packaging, packing and marking

5.1.1 Level C.- The assemblies shall be packaged, packed and marked in accordance with MIL-STD-1169.

6. NOTES

6.1 Ordering data.- Procurement documents shall specify the following:

- a. Title, number and date of this specification.
- b. Data cards.- Data cards shall be prepared for each lot in accordance with the information specified in Standard MIL-STD-1167.
- c. Provisions for submission of first article samples.

6.2 Inspection code numbers.- The five digit code numbers assigned to the inspections herein are to facilitate future data collection and analysis by the Government. These code numbers are also used to correlate the characteristics cited on Equipment Lists with the inspections listed in this specification. In addition, they should be cited as references on drawings of equipment designs submitted by the contractor to the Government for approval (see 6.3.5).

6.3 Inspection equipment.- The contractor shall design inspection equipment as required by the inspection Equipment Lists (EL) referenced on the applicable ET in accordance with the instructions of paragraphs 6.3.1 through 6.3.5.

6.3.1 Inspection equipment lists (EL).- Inspection equipment lists indicate the availability of inspection equipment designs by showing in the "number" column of the list of inspection equipment (Form SMUPA 1010) the numbers of drawings or Federal Stock numbers of existing equipment designs, or codes as indicated in paragraph 6.3.2. Design action required of the contractor is described in paragraphs 6.3.3 and 6.3.4. The contractor will be required to prepare detailed drawings in accordance with 6.3.4 for all the equipment coded as "Contractor Design" in the number column. These contractor designs must be approved by the Government prior to fabrication or procuring of the equipment. Designs shall be submitted for approval as specified in 6.3.5.

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6.3.2 Inspection equipment list codes.- The inspection equipment as defined in 6.3.3 and 6.3.4 will be designated in the EL by the following codes:

- CD - Contractor design on controlled contractor format and/or commercial equipment.
- MU - Army design, mandatory for use.

6.3.3 Army designs.- Army designs are reflected on detailed drawings which completely depict all the information necessary for the fabrication of the item of inspection equipment. The contractor need provide no design when an Army design is listed for an item of inspection equipment. Army designs fall into two basic classifications; mandatory (designated "MU") and non-mandatory (indicated by drawing or Federal Stock Number). When an inspection equipment list references mandatory Army designs, the contractor shall comply with, and use these designs accordingly. The contractor may, however, in connection with non-mandatory designs, design alternate inspection equipment or use comparable commercial equipment to facilitate his operations. Such contractor prepared designs or commercial equipment selections must be approved by the Government prior to fabrication or procuring of the equipment. Designs shall be submitted for approval as specified in 6.3.5.

6.3.4 Contractor designs.- Contractor designs are designs of inspection equipment for which the Government has assigned design responsibility to the contractor. Contractor designs shall be supported by detailed drawings which depict all information necessary to completely fabricate, calibrate and operate an item of inspection equipment. This requires that the necessary views, dimensions, materials, finish, notes, operating and calibration instructions be properly depicted in accordance with approved practices to the extent that further calculation or clarification will not be required. Unless otherwise specified, contractor designs may be developed on the format the contractor normally employs in his equipment design procedure provided such format reflects the detail and information specified above, subject to the following controls: All submitted contractor designs shall conform to MIL-D-1000, Category A, Form 2. Legibility and reproducibility shall permit conventional making of clearly understandable, high contrast reproductions. Contractors shall submit three copies of final designs as a flat set. Designs shall be submitted for approval as specified in 6.3.5.

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6.3.5 Submission of contractor designs.- All submitted designs shall contain a reference to the applicable five digit Code Number contained in Section 4 of this specification and the appropriate component or assembly drawing number and revision letter to which the specific design applies. Unless otherwise specified on the EL, all designs of equipment for inspection of defects classified as critical and major shall be submitted for approval to the Commanding Officer, Picatinny Arsenal, ATTN: SMUPA-ND15. All other designs of inspection equipment shall be approved by the inspection element of the agency administering the contract; submission shall be as directed by the contracting officer. Partial submission of inspection equipment designs is permissible and encouraged. However, the Arsenal completion date for design review will be based on the date of the final submission of designs. Picatinny Arsenal design review will be accomplished normally within one month after receipt.

Custodian:
Army-MU

Preparing activity:
Army-MU

Project Number: 1375-A-037

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 114-N004
INSTRUCTIONS		
This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity.		
SPECIFICATION		
ORGANIZATION	CITY AND STATE	
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A		
<input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?		
A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE?		
<input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE

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