MIL-S-10057H(AR)
6 JANUARY 1982
SUPERSEDING
MIL-S-10057G(MU)
21 August 1969

MILITARY SPECIFICATION

SIMULATOR, HAND GRENADE, M116A1 PARTS FOR, AND LOADING, ASSEMBLING AND PACKING

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

1. SCOPE

1.1 This specification contains requirements not covered by the drawings and provides quality assurance provisions for the fabrication of parts for and loading, assembling and packing for one type of simulator designated as *Simulator, Hand Grenade, M116A1.*

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified (see 6.2), 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

MILITARY

MIL-A-2550 - Ammunition and Special Weapons; General Specification for
MIL-A-48078 - Ammunition Standard Quality Assurance Provision, General Specification For

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-331 - Fuze & Fuze Components, Environmental and Performance Tests for
MIL-STD-1234 - Pyrotechnics, Sampling, Inspection and Testing
MIL-STD-1235 - Single and Multilevel Continuous Sampling Procedures and Tables for Inspection by Attributes

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, US Army Armament Research and Development Command, Attn. DRDAR-QA, Dover, New Jersey 07801 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC: 1370

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

DRAWINGS

U. S. ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND (ARRADCOM)

8799714 - Carton, Packing, Ammunition, for Simulator, Hand Grenade, M116A1

8799715 - Box, Packing, Ammunition, for Simulator, Hand Grenade, M116A1

9256467 - Simulator, Hand Grenade, M116A1, Assembly (ALT)

(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).

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

3. REQUIREMENTS

3.1 Materials. Materials shall be in accordance with applicable drawings, specifications and standards.

3.2 Simulator. The simulator assemblies shall comply with all requirements specified on Drawing (dwg.) 9256467, and with all requirements specified in applicable specifications and standards.

3.3 Moisture content of Photoflash powder. The moisture content of the photoflash powder, or of each ingredient if increment loading is used, at the loading station, at the time of loading the simulators shall not exceed 0.10 percent when determined as specified in 4.5.1.1.

3.4 Jumble. The simulator shall comply with the following requirements when tested as specified in 4.5.3. Test shall be performed at a Government proving ground.

a. The simulator shall not function during test.

b. There shall be no loose photoflash powder on the simulator or in the test box after jumbling.

c. After test the simulator assembly shall not fail to ignite at 70 (^{o}F) conditions.

d. The simulator components shall not separate during the test.

3.5 Functioning. The simulators shall function after temperature conditioning at 70 ± 5°F and at cold temperatures (minus 65 ± 5°F), and shall comply with the following requirements when tested as specified in 4.5.4. Test shall be performed at a Government proving ground.

3.5.1 Premature. The simulator shall not function prematurely (less than 5 second delay).

3.5.2 Delay time. The delay time shall be not less than 6 second nor more than 11 seconds. The average of all delay times for the complete acceptance test sample shall be not less than 8.5 seconds.

3.5.3 Sound level. The sound level intensity shall be not less than 125 decibels.

3.5.4 Pull cord failures. The pull cord shall not break or otherwise separate from the pull wire when used to function the simulator.

3.6 Quick leak test. The packed carton sealed in the barrier bag shall shown no evidence of air or water leakage when tested as specified in 4.5.5.

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

3.8 Workmanship. All parts and assemblies shall be fabricated and assembled in a thorough workmanlike manner, nd all parts, assemblies and packing material shall be free from any detectable or visible moisture. They shall be free of burrs, sharp edges, cracks, surface defects, dirt, grease, corrosion product and other foreign material. The cleaning method used shall not be injurious to any part nor shall the parts be contaminated by the cleaning agent.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection and standard quality assurance provisions. Unless otherwise specified herein or in the contract, the provisions of MIL-A-48078 shall apply and are hereby made a part of this detail specification.

4.2 Classification of inspections. The following types of inspection shall be conducted on this item:

a. First Article Inspection

b. Quality Conformance Inspection

4.3 First article inspection

4.3.1 Submission. The contractor shall submit a first article sample as designated by the contracting officer for evaluation in accordance with provisions of 4.3.2. The First Article sample shall consist of the following items in sample quantities as indicated:

Part Description	Drawings	Quantity
Disc	9256461	25
Tube, Inner	9256464	25
Tube, Outer	9256465	25
Disc & Fuze Assembly	9256463	25
Cover & Body Assembly	9256466	25
Cover & Body Loading Assembly (inert)	9257901	25
Simulator, Hand Grenade M116A1	9256467	50

4.3.2 Inspections to be performed. See MIL-A-48078 and Table I specified herein.

4.3.3 Rejection. See MIL-A-48078.

TABLE I - FIRST ARTICLE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-S-10057H

PARAGRAPH	TITLE		SHEET 1 OF 2		DRAWING NUMBER
	Simulator, Hand Grenade, M116A1 Assem.(ALT)				See Below
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
	Disc (Dwg. 9256461) Examination for Defects	25		3.2	4.4.2.1
	Tube, Inner (Dwg. 9256464) Examination for Defects	25		3.2	4.4.2.2
	Tube, Outer (Dwg. 9256465) Examination for Defects	25		3.2	4.4.2.3
	Disc & Fuze Assembly (Dwg. 9266463) Examination for Defects	25		3.2	4.4.2.4

NOTES:

DRDAR-QA Form 160 Jul 77 Replaces SARPA-QA Form 2567 Feb 74 Which is Obsolete

TABLE I - FIRST ARTICLE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

PARAGRAPH	TITLE		SHEET 2 OF 2		DRAWING NUMBER
	Simulator, Hand Grenade, M116A1 Assem. (ALT)				See Below
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
	Cover & Body Assembly (Dwg. 9256466) Examination for Defects	25		3.2	4.4.2.5
	Cover & Body Loading Assembly (Inert) (Dwg. 9257901) Examination for Defects	25		3.2	4.4.2.6
	Simulator Hand Grenand M116A1 Assembly (ALT) (Dwg. 9256467) Examination for Defects	50		3.2	4.4.2.7
	Jumble	25		3.4	4.5.3
	Functioned @ 70°F	(a)		3.5	4.5.4
	Functioned @ Cold (-65±5°F)	25		3.5	4.5.4

NOTES:

(a) Use Jumble Test samples.

DRDAR-QA Form 160 Jul 77 Replaces SARPA-QA Form 2567 Feb 74 Which is Obsolete

4.4 Quality conformance inspection

4.4.1 Inspection lot formation. Inspection lots shall comply with the lot formation provisions of MIL-A-48078. In addition, inspection lots of loaded simulators shall contain:

a. Parts of one kind from one supplier.

b. Safety fuse from not more than one lot interfix number from one manufacturer.

c. Each ingredient of the photoflash powder of one lot interfix number from not more than one manufacturer. (Applicable only when not manufactured by the loading contractor).

d. Blasting fuse igniters from not more than one lot interfix number from one manufacturer.

4.4.2 Examination. See MIL-A-48078.

a. Sampling plans. Unless otherwise specified in the Classification of Defects and Test tables, sampling plans and procedures for major and minor defects shall be in accordance with MIL-STD-105.

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CLASSIFICATION OF DEFECTS & TESTS

MIL-S-10057H

PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER
4.4.2.1	Disc				9256461
					NEXT HIGHER ASSEMBLY
					9257901
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical	None Defined				
Major	None Defined				
Minor					
201	Diameter		0.65%	3.2	Gage
202	Thickness		0.65%	3.2	Gage
203	Evidence of poor workmanship		1.0%	3.8	Visual

NOTES:

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CLASSIFICATION OF DEFECTS & TESTS

MIL-S-10057H

PARAGRAPH	TITLE		SHEET	OF	DRAWING NUMBER
4.4.2.2	Tube, Inner				9256464
					NEXT HIGHER ASSEMBLY
					9256466
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical	None Defined				
Major	None Defined				
Minor					
201	Length, maximum (max.)		0.65%	3.2	Gage
202	Outside diameter, max.		0.65%	3.2	Gage
203	Evidence of Poor Workmanship		1.0%	3.8	Visual

NOTES:

CLASSIFICATION OF DEFECTS & TESTS

PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER
4.4.2.3	Tube, Outer				9256465
					NEXT HIGHER ASSEMBLY 9256466
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical	None Defined				
Major					
101	Length		0.40%	3.2	Gage
102	Wall thickness		0.40%	3.2	Gage
Minor					
201	Inside diameter, minimum (min.)		0.65%	3.2	Gage
202	Evidence of Poor Workmanship		1.0%	3.8	Visual

NOTES:

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-S-10057H

PARAGRAPH	TITLE		SHEET		DRAWING NUMBER
4.4.2.4	Disc and Fuze Assembly				9256463
					NEXT HIGHER ASSEMBLY
					9256466
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical	None Defined				
Major					
101	Length from disc to end of fuse, prior to application of heavy priming paste to end, min.		0.40%	3.2	Gage
102	Disc damaged (punctured or cut)		0.40%	3.2	Visual
103	Disc and fuze not secure (inadequate adhesive)		0.40%	3.2	Visual/Manual
104	Adhesive applied where not required		0.40%	3.2	Visual
105	Primer paste slurry missing		0.40%	3.2	Visual
106	Epoxy fillet inadequate or less than 360°		0.40%	3.2	Visual
Minor					
201	Safety fuse frayed		0.65%	3.2	Visual
202	Evidence of Poor Workmanship		1.0%	3.8	Visual

NOTES:

CLASSIFICATION OF DEFECTS & TESTS

PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER
4.4.2.5	Cover and Body Assembly				9256466
					NEXT HIGHER ASSEMBLY
					9257901
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical	None defined				
Major					
101	Disc and fuse assembly loose or not properly seated		0.40%	3.2	Visual/Manual
102	Either tube wrinkled, deformed, punctured or torn		0.40%	3.2	Visual
103	Tube layers (either tube) unwinding or separating		0.40%	3.2	Visual
104	Thick priming paste missing or damaged		0.40%	3.2	Visual
105	Outer tube crimp less than 360 degrees or unapproved crimping tool used		0.40%	3.2	Visual
106	Height of crimp		0.40%	3.2	Gage
107	Epoxy seal around safety fuse missing or inadequate		0.40%	3.2	Visual
Minor					
201	Epoxy above flush or crimp		0.65%	3.2	Visual
202	Evidence of Poor Workmanship		1.00%	3.8	Visual

NOTES:

QUALITY CONFORMATION INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-S-10057H

PARAGRAPH	TITLE		SHEET 1 OF	DRAWING NUMBER
4.4.2.6	Cover and Body Loading Assembly			9257901
				NEXT HIGHER ASSEMBLY
				9256467

CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical	None Defined				
Major					
101	Lower disc loose or not properly seated		0.40%	3.2	Visual/Manual
102	Lower crimp less than 360 degree or unapproved crimping tool used		0.40%	3.2	Visual
103	Evidence of loose powder on exterior		0.40%	3.2	Visual
104	Assembly damaged to extent that powder may leak		0.40%	3.2	Visual
105	Charge missing		0.40%	3.2	Visual/Manual
106	Epoxy at lower disc missing, above flush or inadequate		0.40%	3.2	Visual
Minor					
201	Length to lower disc, max.		0.65%	3.2	Gage
202	Evidence of Poor Workmanship		1.0%	3.8	Visual

NOTES:

DRDAR-QA Form 160 Jul 77 Replaces SARPA-QA Form 2567 Feb 74 Which is Obsolete

CLASSIFICATION OF DEFECTS & TESTS

PARAGRAPH	TITLE		SHEET	OF	DRAWING NUMBER
4.4.2.7	Simulator, Hand Grenade, M116A1 Assembly (ALT) (Prior to Coating)				9256467
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical					
1.	Charge on exterior of assembly		100%	3 2	Visual
2.	Any opening in assembly through which powder may leak		100%	3.2	Visual
Major					
101	Any component loose		0.40%	3.2	Manual
102	Ferrule missing from safety fuse prior to assembly into igniter		0.40%	3.2	Visual

NOTES:

DRDAR-QA Form 160 Jul 77 Replaces SARPA-QA Form 2567 Feb 74 Which is Obsolete

CLASSIFICATION OF DEFECTS & TESTS

PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER
4.4.2.8	Simulator, Hand Grenade, M116A1 Assembly (ALT)				9256467
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical					
1.	Safety clip missing, not fully engaged or incorrectly located		100%	3 2	Visual
2.	Safety fuse loose at junction with top disc (can be moved by light finger pressure)		100%	3.2	Visual
Major					
101	Fuze tape or sealing tape missing, peeling or incorrectly positioned		0.40%	3.2	Visual
102	Vent holes missing from fuze tape		0.40%	3.2	Visual
103	Disc or tube punctured, cut or torn		0.40%	3.2	Visual
104	Assembly dented, or deformed		0.40%	3.2	Visual
105	Sealant over end disc missing or inadequate		0.40%	3.2	Visual
106	Label missing, peeling, misleading or unidentifiable		0.40%	3.2	Visual
107	Igniter damaged (punctured, torn, dented)		0.40%	3.2	Visual
108	Paint or other evidence of poor workmanship on safety fuse or igniter		0.40%	3.2	Visual
Minor					
201	Protective coating damaged (bare spots)		0.65%	3.8	Visual
202	Tube wrinkled (see para. 6.6)		1.5%	6.6	Visual
203	Evidence of poor workmanship		1.0%	3.8	Visual

NOTES:

CLASSIFICATION OF DEFECTS & TESTS

PARAGRAPH	TITLE		SHEET	OF	DRAWING NUMBER
4.4.2.9	Packing Box				8799714
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical	None defined				
Major					
101	Barrier bag missing or damaged		0.40%	3.2	Visual
102	Packing component (filler) missing or improperly positioned		0.40%	3.2	Visual
Minor					
201	Evidence of poor workmanship		1.0%	3.8	Visual

NOTES:

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-S-10057H

PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER
4.4.2.10	Packing Box				8799715
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical	None defined				
Major					
101	Box damaged to the extent that contentsd are exposed or liable to become exposed		0.40%	3.2	Visual
102	Wire binding missing broken or loose		0.40%	3.2	Visual
Minor					
201	Wire binding mislocated or improperly engaged		0.65%	3.2	Visual
202	Contents loose		0.65%	3.2	Visual
203	Marking misleading or unidentifiable		0.65%	3.2	Visual
204	Metallic seal missing, unsealed or incorrectly positioned		0.65%	3.2	Visual
205	Evidence of poor workmanship		1.0%	3.8	Visual

NOTES:

4.4.3 Testing. Unless otherwise specified herein, the following test shall be performed using MIL-STD-105 for Sampling Plan Requirements.

4.4.3.1 Moisture content (See Table II). Major defect.

TABLE II

Material	Inspection Method Paragraph
Photoflash powder (see 3.3)	4.5.1.1
Carton and carton packing material (see dwg. 8799714)	4.5.1.2

NOTE: The contractor shall provide adequate controls to insure that the materials comply with the requirements. For verification, the contractor shall select, and subject to test, one sample of each material as representative of each eight (8) hours of production of simulators. Composite samples shall not be used. If the moisture content of the sample exceeds the requirement, that quantity or sub-lot of material represented by the sample shall not be used in production. If the quantity of material or sub-lot with excessive moisture has been used in loading and packing, the remaining unloaded and unpacked material shall not be used in production, and the loaded and packed simulators shall be rejected. Test shall be performed as specified in 4.5.1.

The contractor shall select a sample of sufficient size from each lot of each ingredient at the time of inserting the ingredient into the simulator for determination of moisture content. The contractor shall provide controls so that the moisture content is maintained under constant temperature and humidity by a graphic recorder up to and at the time of sealing and blending the charge in the simulators. Records of the graphic recorder shall be submitted with each lot of simulators for analysis by the Government representative. If the sample fails to meet the requirements, or if the simulators have been loaded with ingredients containing excessive moisture, the remainder of the ingredient lot shall not be used in further production, and the lot of loaded simulators shall be rejected. Test shall be performed as specified in 4.5.1.

4.4.3.2 Determination of granulation and composition of photoflash powder (see dwg. 9257901) - Major defect - (see Table III).

TABLE III

	Inspection Method Paragraph
Granulation	4.5.2.1
Composition	4.5.2.2

The contractor shall provide adequate controls to insure that the photoflash composition complies with the requirements. The contractor shall test for verification at least, one sample of the composition of sufficient size as

representative of each eight (8) hours production of simulators. A composite sample shall not be used. If the sample fails to meet the requirements for granulation or composition, or if the simulators have been loaded and packed with non-conforming composition, the remaining unloaded composition shall not be used in production and the lot of loaded simulators shall be rejected. Test shall be performed as specified in 4.5.2.

A sample of sufficient size of each ingredient shall be selected for the granulation test at the time of loading the ingredient. A sample of sufficient size shall be taken from a "dummy" body used in conjunction with the loading of the simulators for determination of composition. Test shall be performed as specified in 4.5.2.

4.4.3.3 Jumble (see 3.4) Table IV.

TABLE IV

Defects	Classification
Functions during jumble (see 3.4.a)	Critical
Loose powder (see 3.4.b)	Critical
Parts separation (see 3.4.d)	Major

4.4.3.3.1 Beginning with the first lot produced and continuing until three (3) consecutive lots have complied with the acceptance criteria specified, one hundred and twenty-five (125) assemblies shall be selected for this test. The lot shall be rejected if during the test, a critical defect occurs or any assembly exhibits the major defect listed in Table IV.

4.4.3.3.2 After three (3) consecutive lots have complied with the criteria of 4.3.3.3.1, fifty (50) assemblies shall be selected from each lot for test. The lot shall be rejected if, during the test, a critical defect occurs or any assembly exhibits the major defect listed in Table IV.

4.4.3.4 (see 3.5) Functioning. The simulator assemblies shall be observed for any evidence of failure to comply with the requirements, as classified in Table V when tested as specified in 4.5.4.

TABLE V

Defects	Classification
Premature (see 3.5.1)	Critical
Delay time (see 3.5.2)	Major
Sound level (see 3.5.3)	Major
Pull cord failure (see 3.5.4)	Major
Dud (see 3.4.c and 3.5)	Major

4.4.3.4.1 70°F temperature (see Table V)

4.4.3.4.1.1 Beginning with the first lot produced and continuing until three (3) consecutive lots have complied with the applicable requirements specified, the same samples that were subjected to and have complied with the test specified in 4.4.3.3.1 shall be functioned as specified in 4.5.4. The lot shall be rejected, if a critical defect occurs, if the average of all delay times for the combined samples of 4.4.3.4.1.1 and 4.4.3.4.2.1 is less than 8.5 seconds, or if six (6) or more assemblies exhibit any of the remaining major defects listed in Table V.

4.4.3.4.1.2 After three (3) consecutive lots have complied with the criteria of 4.4.3.4.1.1, the same samples that were subjected to and have complied with the test specified in 4.4.3.3.2 shall be functioned as specified in 4.5.4. The lot shall be rejected, if a critical defect occurs, if the average of all delay times for the combined samples of 4.4.3.4.1.2 and 4.4.3.4.2.2 is less than 8.5 seconds, or if three (3) or more assemblies exhibit any of the remaining major defects listed in Table V.

4.4.3.4.2 Cold temperature (see 3.5 and Table V).

4.4.3.4.2.1 Beginning with the first lot produced and continuing until three (3) consecutive lots have complied with the applicable requirements specified, one hundred and twenty-five (125) assemblies shall be selected for test. The lot shall be rejected, if a critical defect occurs, if the average of all delay times for the combined samples of 4.4.3.4.2.1 and 4.4.3.4.1.1 is less than 8.5 seconds, or if six (6) or more assemblies exhibit any of the remaining major defects listed in Table V. The test shall be performed as specified in 4.5.4.

4.4.3.4.2.2 After three (3) consecutive lots have complied with the criteria of 4.4.3.4.2.1, fifty (50) assemblies shall be selected for test. The lot shall be rejected, if a critical defect occurs, if the average of all delay times for the combined samples of 4.4.3.4.1.2 and 4.4.3.4.2.2 is less than 8.5 seconds, or if three (3) or more assemblies exhibit any of the remaining major defects listed in Table V.

4.4.3.5 Quick leak test - Major defect - Ten (10) cartons in sealed barrier bags shall be selected from each lot for this test. If two (2) or more packages show evidence of air leakage during test or water leakage when packages are opened the lot shall be rejected. The test shall be performed as specified in 4.5.5.

4.4.4 Inspection equipment. The inspection equipment required to perform the examinations and test prescribed herein is described in the 'Paragraph Reference/Inspection Method' column in the tables starting with paragraph 4.4.2.1. The contractor shall submit for approval inspection equipment designs in accordance with the terms of the contract. See Section 6 of MIL-A-48078 and 6.3-herein.

4.5 Methods of Inspection

4.5.1 Moisture content

4.5.1.1 Photoflash powder. Determination of moisture content of photoflash powder shall be performed by transferring a 5 gram sample to a tared weighing dish. Weigh the dish and contents and then place in an oven maintained at 100 degrees Centigrade (C.) for three (3) hours. Cool in a desiccator and weigh. Calculate the loss in weight of the dish and contents as the percentage of moisture in the sample.

NOTE: Moisture content shall be controlled as specified in 4.4.3.1. For verification, a sample shall be taken from the contents of a "dummy" body used in conjunction with the loading of the simulators. Moisture content shall be determined as specified above.

4.5.1.2 Carton and carton packing material. The moisture content shall be determined in accordance with MIL-STD-1234, Method 102.1 except that a 10 gram sample shall be used and dried for 2 hours.

4.5.1.3 Alternate method (For photoflash powder and carton and packing material). - The moisture content shall be determined in accordance with Method T101.4 of MIL-STD-386. Timer shall be set to the minimum time required to obtain constant readings. Temperature settings shall be 100 $\pm$ 5° Centigrade.

4.5.2 Photoflash powder

4.5.2.1 Granulation. This test shall be performed in accordance with the photoflash powder Specification requirements on dwg. 9257901.

NOTE: In order to avoid the dangerous operation of screening the photoflash powder composition, the contractor may perform this test by screening the individual ingredient prior to blending.

4.5.2.2 Composition. This test shall be performed in accordance with the photoflash powder specification requirements on dwg. 9257901.

NOTE: This test may be conducted, for verification, by taking a sample of sufficient size from a "dummy" body used in conjunction with the loading of the simulators.

4.5.3 Jumble. The simulators shall be subjected to the jumble test in accordance with MIL-STD-331, except that the test duration shall be not less than 20 minutes. Examination of the simulator and the test box shall be made to determine compliance with 3.4. Test shall be conducted in accordance with Aberdeen Proving Ground Acceptance Test Procedure, SIM-GNH-1.

4.5.4 Functioning. The simulators shall be stored at the specified temperature for a min. of 16 hours and fired within 5 minutes after removal from the conditioning chamber. The simulator shall be mounted horizontally on a rigid horizontal support and fired by means of a lanyard attached to the fuse igniter cord. The simulator shall not be shaken or agitated in any manner other than normal handling within two (2) hours prior to this test. Measuring of sound level intensity shall be accomplished with Impact (sound) Analyzers, microphone systems and Sound Level Meters and the pick-up of the sound level shall be located 75 plus or minus 0.5 feet from the simulator test fixture. Test shall be conducted in accordance with Aberdeen Proving Ground Acceptance Test Procedure, SIM-GNH-1 (latest revision).

4.5.5 Quick leak test. (Vacuum Differential Method). - The filled and sealed packages, after conditioning at ambient temperature (70 ± 5 degrees F.) for a least four (4) hours, shall be tested for leakage by submerging in water contained in a vacuum vessel. A vacuum differential of 216 mm (8 1/2 inches) of mercury from ambient conditions shall be drawn and held for 30 seconds (min.) while observing for leakage of air. A steady stream of recurring succession of bubbles from any surface or seam shall be cause for rejection. Where there is no emission of bubbles observed, the package shall be dried, opened and inspected. Evidence of water within the barrier, or on the carton shall also be cause for rejection.

5. PACKAGING

5.1 Packaging requirements

5.1.1 Level A. Packaging shall be as specified on dwg. 8799714.

5.2 Packing

5.2.1 Level A. The cartons shall be packed in accordance with dwg. 8799715.

5.3 Marking. Marking shall be as specified in dwgs. 8799714 and 8799715.

6. NOTES

6.1 Intended use. The components covered by this specification are intended for use on the Simulator, Hand Grenade, M116A1.

6.2 Ordering data. See MIL-A-48078.

6.3 Submission of inspection equipment for design approvals. See MIL-A-48078. Submit designs as required to: Commander, US Army Armament Research and Development Command, ATTN: DRDAR-QAT-I, Dover, NJ 07801.

6.4 Inspection lot size. It is noted that the size of inspection lots of components, assemblies or items of delivery may differ from the actual quantities contractually scheduled for delivery. However, in order to facilitate scheduling of tests or deliveries, inspection lots of items of delivery may be equivalent to such contract quantities provided all of the lot formation criteria and sampling provisions of this specification are maintained.

6.5 Proving Ground test summary. One half of the number of samples received for testing shall be subjected to the jumble test. If jumble requirements are met (see Table IV), the following number of samples shall be temperature conditioned for the functioning test.

Lot	Conditioning Temp.F +70°±5°	-65°±5°	Requirements
First article	*25	25	See Table V
Regular Production (First three consecutive acceptable lots)	*125	125	See Table V
Remaining	*50	50	See Table V

* Simulators that were subjected to jumble test.

6.6 Outer tube wrinkles. Wrinkles on the outer tube within one half (.5) inches of the crimped end shall be acceptable provided there is no damage to the tube (cuts, holes or tears).

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DOCUMENT IDENTIFIER *(Number)* AND TITLE

MIL-S-10057H SIMULATOR, HAND GRENADE, M116A1 PARTS FOR, AND LOADING, ASSEMBLING AND PACKING

NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER

☐ VENDOR ☐ USER ☐ MANUFACTURER

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