Downloaded from http://www.everyspec.com

INCH-POUND

MIL-P-3984J
AMENDMENT 2
30 July 1998
SUPERSEDING
AMENDMENT 1
5 April 1996

MILITARY SPECIFICATION

PROPELLANTS FOR SMALL ARMS AMMUNITION

This Amendment forms a part of Military Specification MIL-P-3984J dated 25 May 1992, and is approved for use by all Departments and Agencies of Department of Defense.

Page 2

Paragraph 2.1.2

Delete "8858848 - Marking Diagram and Sealing of Metal Lined Wooded Packing Boxes for Shipment of propellants" and substitute "12972488 - Drum, Fiber"

* 3.1.1, Nitrocellulose, second sentence:

Change from: "Extracted Nitrocellulose or propellant rework…."

To: "Extracted Nitrocellulose or propellant rework or a combination of both……"

Page 12

* Delete page 12 in its entirety and substitute new included page 12.

Page 15

* Delete page 15 in its entirety and substitute new included page 15.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited

Downloaded from http://www.everyspec.com

	"Ballistic Sample" Velocity	"Representative Sample" Velocity Variation	"Representative Sample Velocity Std Dev. Init Test	(max) Retest
5.56MM Ball, M193	3165±10	±25	30	25
5.56MM Tracer, M196	3115±10	±25	30	25
5.56MM Ball, M855	3000±10	±25	30	25
5.56MM Tracer,M856	2990±10	±25	30	25
7.62MM Ball, M80	2750± 5	±20	24	20
7.62MM Ball,M80,EPVAT	2750± 5	±20	24	20
7.62MM Tracer, M62 (GM)	2680± 5	±20	24	20
7.62 Tracer, M62 (GMCS)	2750± 5	±20	24	20
7.62 Dim Tracer,M276 (GM)	2680± 5	±20	24	20
7.62 Dim Tracer,M276 (GMCS)	2750± 5	±20	24	20
Cal. .30 Ball, M2	2740± 5	±20	24	20
Cal. .30 Tracer, M25	2665± 5	±20	24	20
Cal. .45 Ball, M1911	855± 5	±20	21	18
Cal. .45 Tracer, M26	885± 5	±20	21	18
Cal. .50 Ball, M33	2910±10	±20	36	30
Cal. .50 Tracer, M17	2860±10	±25	48	40
20MM, HEI, M56	3380±15	±30	36	30
20MM, TP, M99	2680±15	±30	36	30
20MM, HEI, PGU-17/B	3680±15	±30	36	30
20MM, SAPHEI, PGU-28B	3410±15	±30	36	30
20MM, TP, PGU-18/B	3680±15	±30	36	30
20MM, TP, PGU-27/B	3410±15	±30	36	30
20MM, TPT, PGU-30/B	3410±15	±30	36	30
20MM, MPT-SD M940	3350±15	±30	36	30
30MM, TP M788	2582±30	±50	60	50
30MM, HEDP M789	2582±30	±50	60	50
* 7.62MM Long Range, M118	2580± 5	±20	24	20
7.62MM Match, M852	2550± 5	±20	24	20
9MM Ball M882	1230± 5	±20	21	18

Failure of the propellant to comply with the criteria of the uniformity test shall be cause for rejection of the lot subject to testing of a second sample. The second test shall be made using propellant from the original container in which sample failure occurred in the initial test. The second sample shall consist of twenty rounds. The criteria shall remain the same except for velocity standard deviation which shall not exceed the value indicated above under "Retest". Failure of the second sample to comply with the criteria of the uniformity test shall be cause for rejection of the lot. The velocity uniformity test is not required for cartridges not listed in the above table of cartridges.

Downloaded from http://www.everyspec.com

Table I. Ballistic Requirements for Propellants

	CARTRIDGE CALIBER TYPE AND MODEL		INSTRUMENTAL VELOCITY (FPS) AVERAGE AT 5.5 FT	25.5 FT	53.0 FT	78.0 FT	STANDARD DEVIATION (MAX)	CHAMBER PRESSURE PSI/CUP 1/ MAXIMUM AVERAGE 6/	STANDARD DEVIATION (MAX)	IND. MAX ACTION TIME (MS)	EXTREME TEMPERATURES 5/ IND MAX CHAMBER PRESS(Psi)	IND MAX ACTION TIME (MS)
	5.56MM											
*	BALL	M193				3165±20	25	50000 CU 10/	56000 CU 12/*	2.5	58000 copper *	
*	TRACER	M196				3115±20	25	53000 Piezo	59000 Piezo *	2.5	61000 Piezo *	
	HPT	M197						70000±2000	3000			
	GRENADE	M195	155±5				2					
	BALL	M855				3000±20	25	53000 10/	59000 13/	2.5	58000 17/	2.5
	TRACER	M856				2990±20	25	53000 10/	59000 13/	2.5	58000 17/	
	BLANK	M200										
	7.62MM											
	BALL	M80				2750±15	20	48000 4/	53000 13/	2.5	55000 CUP	
		M80 EPVAT				2765±15	20	50940 4/	56016 13/	2.5	58016 Piezo	
	AP	M61				2750±15	20	48000 4/	53000 13/	2.5	55000	
	TRACER 2/	M62				2750±15	20	48000 4/	53000 13/	2.5	55000 CUP	
		M62 EPVAT				2735±15	20	50940 4/	56016 13/	2.5	58016 Piezo	
	GRENADE 3/	M64	160±5				2					
	HPT	M60						67000±2500	3000			
	FRANGIBLE	M160			1320±30							
*	Long Range	M118 (Note 19)				2580±15	20	52000 4/	57200 13/	2.5		
	MATCH	M852				2550±15	20	48000 4/	53000 13/	2.5		
	BLANK	M82										
	DIM TRACER	M276				2750±15	20	48000 4/	53000 13/	2.5	55000	
	9MM											
	BALL	M882			1230±25		20	31175			36250	
	HPT	M905						48000±2500				
	CALIBER .30											
	BALL	M2				2740±15	20	48000		2.5	60000	
	API	M14				2780±15	20	48000		2.5	60000	
	TPACER	M25				2665±15	20	48000		2.5	60000	
	GRENADE	M3	180±5				12					
	HPT	Ml&M2 ALT						67500±2500	3000			
	MATCH	M72				2640±15		48000				
	BLANK	M1909										

* NOTE: The CU and piezo values are applicable to both the M196 and M193 items.

Downloaded from http://www.everyspec.com

Page 16

TABLE I. Ballistic Requirements for Propellants:

Subheading 30MM delete:

“TP	M788	42,787	18/	58,000	13/	4.0	4.0
HEDP	M789	42,787	18/	58,000	13/	4.0	4.0”

and substitute:

“TP	M788	320 Mpa	18/	58,000	13/	4.0	4.0
HEDP	M789	320 Mpa	18/	58,000	13/	4.0	4.0”

* TABLE I., Section Average chamber pressure limits for the 20mm HPT M54

Change from: “53,000 +/- 2,000”

To: “67,500 +/- 1,500”

* TABLE I. Ballistic Requirements for Propellants:

Subheading 30MM delete:

“TP	M788	320 Mpa	18/	58,000	13/	4.0	4.0”
“HEDP	M789	320 Mpa	18/	58,000	13/	4.0	4.0”

and substitute:

“TP	M788	320 Mpa	18/	4.0	415 Mpa	13/	4.0”
“HEDP	M789	320 Mpa	18/	4.0	415 Mpa	13/	4.0”

* TABLE I. Add Note 19 to read:

“19/ Ballistic tests, velocity, chamber pressure, action time and extreme temperature tests for M118 Long Range shall be tested using M118 Long Range components as follows:

Bullet 12977194
Case 12977196
Primer 10535489-1”

PAGE 18

* TABLE II. Sample Size of Test Cartridge for Ballistic Tests:

Under column heading “TRACE” for Ball M855 remove quantity of 200.

Downloaded from http://www.everyspec.com

Add quantity of 200 for Tracer M856

* TABLE II. Under column heading "Cartridge Caliber Type and Model"

Change from "Special Ball M118"

To: "Long Range M118"

Page 17

TABLE I. Ballistic Requirements for Propellants

Delete Note 13/ in its entirety and substitute with the following:

"13/ Case Mouth Pressure plus three (3) standard deviations as measured in the M230 test barrel (Dwg 9390748)."

Delete Note 18/ in its entirety and substitute with the following:

"18/ The average of peak pressures measured at the case mouth in the M230 test barrel (Dwg. 9390748)."

Page 22

5.1.3 Delete in its entirety and substitute the following:

"Level C (CONUS shipment and short term storage). For trucks or trailer on flat car shipment and short term storage (2 years maximum), not more than 100 pounds net weight for HPC and WC-type propellants nor more than 150 pounds net weight for IMR type propellants shall be packed in a fiber drum IAW drawing 12972488. The fiber drums may be reused if they comply with the inspection requirement of 4.4.3.2."

Page 23

5.2.2 Delete in its entirety and substitute the following:

"Level C. The drum shall be marked as required in 49 CFR, 172 Subpart D, Paragraph 172.301 (a) and the following information:

Nomenclature
National Stock Number
Lot Number
Web (if applicable)

Downloaded from http://www.everyspec.com

Grain (if applicable)
Gross Weight
Net Weight
Storage Temperature (if required)

If POP marking is not specified on the applicable drawing(s), or if the POP marking specified is outdated, requiring retesting, then contractor shall conduct POP tests in accordance with paragraph 5.3. After completion of the requirements of paragraph 5.3, POP marking shall be applied to the drum as specified by the government.

Letters shall be a minimum of 1/2 inch high and shall be marked with (a) Ink, Stencil, Black No. 37038, Type I, III or IV of Spec A-A-208 or Printed weatherproof Label (prints shall be in black color)."

5.2.3 Delete in its entirety and substitute the following:

"Special marking. All level C containers shall be marked with the following information:

(a) On a printed label affixed to the side -

AFTER TWO YEARS FROM DATE OF MANUFACTURE, APPROVAL BY THE RESPONSIBLE PROCURING AGENCY IS REQUIRED PRIOR TO THE LOADING OF THIS PROPELLANT INTO SMALL ARMS AMMUNITION

(b) Using letter size and stencil ink per 5.2.2.4 mark front and back of container, 180 degrees apart -

"For CONUS Shipment Only""

Add new paragraph:

"5.3 Performance oriented packing (POP). The exterior pack cited above shall meet all of the POP test requirements in accordance with The Code of Federal Regulations, Title 49 (49 CFR). A POP test report shall be generated IAW DI-PACK-81059 following the tests. POP testing may be waived if an acceptable non-government analogy can be made IAW 49 CFR to another pack which has successfully completed the testing. This analogy must also be documented IAW DI-PACK-81059. When completed, either POP test report must be kept on file by the contractor and must also be submitted to the U.S. Army Research Development and Engineering Center, ATTN: AMSTA-AR-AEP, Picatinny Arsenal, New Jersey, 07806-5000. (NOTE: If a POP test report is prepared against an acceptable analogy, the analogy POP test report must also be submitted to AMSTA-AR-AEP)

Downloaded from http://www.everyspec.com

The POP marking to be applied to the exterior pack shall be as specified by the government after review and acceptance of submitted POP test report”

Add new paragraph:

“5.4 Item hazard classification. All U.S. manufacturers shall make certain that the item is tested in accordance with Part 173, Subpart C, Section 173.58(a) of 49 CFR, Parts 106-180 to assign proper Class and Division for all explosives (Division 1.1, 1.2, 1.3, and 1.4 explosives). Registration with the Associate Administrator of Hazardous Materials safety is required in accordance with Part 173, Subpart C, Section 173.56(b)(1) or 173.56(c) of 49 CFR so that proper markings in accordance with Part 172, Subpart D, Section 172.301(a) and 172.320(a) are met.

All foreign manufacturers shall make certain that the dangerous goods are tested in accordance with United Nations Committee of Experts on the Transportation of Dangerous Goods (as published in UN Document ST/SG/AC.10.11, latest revision, Recommendations for the Transport of Dangerous Goods - Tests and Criteria) to determine the proper class and division (Class 1-9 and Division 1.1 - 1.6 for explosives). Registration for air and vessel transport is required with each manufacturing country’s National Competent Authority is issued in accordance with part 2, paragraph 1.3 of the International Civil Aviation Organization (ICAO) Technical Instructions and approves the hazard classification and compatibility group assignment and assigns the appropriate shipping name to the dangerous goods. The proper packaging, marking and labeling is contained in the United Nations Committee of Experts on the Transport of Dangerous Goods (as published in UN Document ST/SC/AC.10.1, latest revision, Recommendations on the Transport of Dangerous Goods).

For air transport the dangerous goods must comply with the provisions of the International Air Transport Associated (IATA) Dangerous Goods Regulations and for vessel transport, the dangerous goods must comply with the provisions of the Intergovernmental Maritime Organization’s International Maritime Dangerous Goods Code (IMDG Code).

These documents shall be forwarded to the U.S. Army Armament Munitions and Chemical Command (AMCCOM), ATTN: AMSMC-PC, AMSMC-PG and AMSMC-SFS, Rock Island, Illinois 61299-6000.”

Downloaded from http://www.everyspec.com

NOTE: The margins of this amendment are marked with asterisks to indicate where changes from the previous amendment were made. This was done as a 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 and relationship to the last previous amendment.

Custodians:
Army - AR
Navy - OS

Preparing activity:
Army - AR

(Project 1376-0054)