

INCH-POUND

MIL-C-51179C(EA)

1 November 1990

SUPERSEDING

MIL-C-51179B(EA)

10 July 1986

MILITARY SPECIFICATION

CARRIER, CHEMICAL-BIOLOGICAL MASK, ABC-M13A1

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

1. SCOPE

1.1 **Scope.** This specification covers one type of chemical-biological mask carrier.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 **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 listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Chemical Research, Development and Engineering Center, ATTN: SMCCR-PET-S, Aberdeen Proving Ground, MD 21010-5423 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 4240

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

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SPECIFICATIONS

FEDERAL

CCC-C-419 - Cloth, Duck, Cotton, Unbleached, Plied-Yarns Army and
Numbered

STANDARDS

FEDERAL

FED. TEST METHOD STD. NO. 191 - Textile Test Methods

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 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 are those cited in the solicitation.

U.S. ARMY CHEMICAL RESEARCH, DEVELOPMENT AND ENGINEERING CENTER

DRAWINGS

5-4-348 - Carrier, Chemical-Biological Mask, ABC-M13A1

SPECIAL PACKAGING INSTRUCTIONS (SPI)

P5-4-348 - Carrier, Chemical-Biological Mask, ABC-M13A1

(Copies are available from Commander, U.S. Army Information Systems Command, ATTN: ASQNC-ARI-CT, Rock Island, IL 61229-7300.)

2.2 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, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. Unless otherwise specified, a first article sample shall be produced in accordance with this specification for examination and tests (see 4.3 and 6.2), prior to the start of regular production.

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3.2 Materials and components. All materials and components cited on Drawing 5-4-348 and its subsidiary drawings shall conform to the specifications listed thereon or to the specific characteristics set forth on the drawings.

3.2.1 Reinforcing strip. When rubber-coated duck is used for the reinforcing strip (Drawing 5-4-321), it shall consist of duck weighing 8.25 ounces per square yard, conforming to type III of CCC-C-419, which has been evenly coated on both sides with a cured natural or synthetic rubber compound. The coated duck shall have a minimum weight of 21 ounces per square yard when tested as specified in 4.4.6.1, and the surfaces shall not be tacky to the touch.

3.3 Manufacture and assembly. The carrier shall be manufactured and assembled in accordance with Drawing 5-4-348.

3.3.1 Stitching. All rows of stitching shall be straight or regular lines, free from loose stitches or thread loops. When stitching is not of continuous thread, each thread end or break shall be back stitched (wherever practicable) for not less than 2 inches. All seams and hems shall be back stitched at the ends to prevent raveling.

3.3.2 Fasteners. The male and female components of all fasteners shall be securely attached to the fabric. The pressure used in attaching the fastener components shall be applied so that the fabric will not be weakened or injured. The attached fasteners shall function smoothly and efficiently.

3.3.3 Marking. The finished carrier shall be legibly and indelibly marked as shown on Drawing 5-4-348.

3.4 Workmanship. The carrier shall be free from damage (tears, cuts, and holes) and contamination (grease, oil and foreign matter).

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, 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 this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in

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the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Contractor assurance of compliance. The contractor's quality program or detailed inspection system shall provide assurance of compliance of all characteristics with the applicable drawing, special packaging instruction, and specification requirements using, as a minimum, the conformance criteria specified herein.

4.1.3 Alternative inspection provisions. Alternative inspection procedures, methods, or equipment, such as statistical process control, tool control, and other types of sampling procedures may be used by the contractor when they provide, as a minimum, the level of quality assurance required by the inspection provisions specified herein. Prior to applying such alternative procedures, methods, or equipment, the contractor shall describe them in a written proposal submitted to the Government for evaluation and approval. (See 6.3.) When required, the contractor shall demonstrate that the effectiveness of each proposed alternative is equal to or better than the quality assurance provisions specified herein. In cases of dispute as to whether the contractor's proposed alternative provides equal quality assurance, the provisions of this specification shall apply. All approved alternative inspection provisions shall be specifically incorporated into the contractor's quality program or detailed inspection system, as applicable.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- (a) First article inspection (see 4.3)
- (b) Quality conformance inspection (see 4.4)

4.3 First article inspection.

4.3.1 Inspections to be performed. As determined by the Government, the first article sample items shall be examined and tested in accordance with this specification using either the first article procedures in 4.3.3 or other first article procedures which will be provided by the Government. As determined by the Government, the sample first article items may be subjected to any or all of the examinations and tests specified in this specification and be inspected for compliance with any or all of the requirements of the applicable drawings and special packaging instructions.

4.3.2 Sample. The first article sample shall consist of 50 carriers manufactured and packaged (when military packaging is required) using the same methods, materials, equipment, and processes as will be used during regular production. When rubber coated duck is

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used for the reinforcing strips, the first article sample shall include rubber-coated duck as specified in 4.4.2.2. The first article sample shall be submitted for inspection and approval in accordance with the terms of the contract.

4.3.3 Inspection procedures. Each carrier and each rubber coated duck sample in the first article sample shall be examined and tested for compliance with all the requirements of the applicable drawings, special packaging instructions and this specification.

4.3.4 Acceptance criteria. If any first article sample item fails to comply with any of the applicable requirements, the first article sample shall be rejected. The Government reserves the right to terminate inspection upon any failure to comply with any of the requirements. The contractor shall obtain written approval from the contracting activity prior to proceeding with regular production.

4.4 Quality conformance inspection.

4.4.1 Lotting. A lot shall consist of the items produced by one manufacturer, at one plant, from the same materials, under essentially the same manufacturing conditions, and at essentially the same time.

4.4.2 Sampling.

4.4.2.1 Carrier. Sampling shall be conducted in accordance with the classification of characteristics in 4.4.5 and, when specified, table I. Samples shall be selected at random.

4.4.2.2 Rubber-coated duck. Three cuts, one foot long across the width of the roll, shall be taken at random from each roll of rubber-coated duck being used for the reinforcing strip.

4.4.3 Inspection procedure.

4.4.3.1 Carrier. Every item in the lot shall be inspected for critical characteristics. The lot represented shall be rejected when nonconformance to a critical characteristic is found. Sample carriers and, when applicable, the packaging thereof shall be examined and tested in accordance with the classification of characteristics in 4.4.5. Failure of any sample item to conform to any characteristic in the classification of characteristics based on the sampling and acceptance criteria specified therein shall be cause for rejection of the lot represented.

4.4.3.2 Rubber-coated duck. The sample cuts of rubber-coated duck shall be inspected for tackiness and tested as specified in 4.4.6.1. If any cut of rubber-coated duck fails to meet the requirements of 3.2.1, the roll represented shall be rejected.

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4.4.4 Inspection characteristics. Critical characteristics are characteristics whose nonconformance to specified requirements is likely to result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product or whose nonconformance to specified requirements is likely to prevent performance of the tactical function of a major end item. Major characteristics are characteristics whose nonconformance to specified requirements is likely to result in failure or to reduce materially the usability of the item for its intended purpose. Minor characteristics are characteristics whose nonconformance to specified requirements is not likely to reduce materially the operation or usability of the item for its intended purpose.

TABLE I. Sampling

Lot size	Inspection levels and sample sizes										
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
2 to 8	*	*	*	*	*	*	*	*	5	3	2
9 to 15	*	*	*	*	*	*	13	8	5	3	2
16 to 25	*	*	*	*	*	20	13	8	5	3	3
26 to 50	*	*	*	*	32	20	13	8	5	5	5
51 to 90	*	*	*	50	32	20	13	8	7	6	5
91 to 150	*	*	125	50	32	20	13	12	11	7	6
151 to 280	*	*	125	50	32	20	20	19	13	10	7
281 to 500	*	315	125	50	48	47	29	21	16	11	9
501 to 1200	*	315	125	75	73	47	34	27	19	15	11
1201 to 3200	1250	315	125	116	73	53	42	35	23	18	13
3201 to 10000	1250	315	192	116	86	68	50	38	29	22	15
10001 to 35000	1250	315	294	135	108	77	60	46	35	29	15
35001 to 150000	1250	490	294	170	123	96	74	56	40	29	15
150001 to 500000	1250	715	345	200	156	119	90	64	40	29	15
500001 and over	1250	715	435	244	189	143	102	64	40	29	15

*Indicates one hundred percent inspection. If sample size exceeds lot size, perform one hundred percent inspection.
Accept the lot represented on zero nonconforming characteristics and reject the lot represented on one or more nonconforming characteristics for all inspection levels.

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4.4.5 Classification of characteristics. Quality conformance examinations and tests shall be as specified in the following classification of characteristics paragraphs. When specified herein, accept on 0 and reject on 1 attributes sampling inspection shall be performed on the designated characteristics using the stated levels in table I for selection of sample sizes.

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CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER 5-4-348
4.4.5(a)	Carrier, chemical-biological mask, ABC-M13A1			NEXT HIGHER ASSY
CATEGORY	CHARACTERISTIC	SAMPLING AND ACCEPTANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD
Critical	None defined			
Major				
101	Specified components correct and correctly assembled	Table I, Level VII	3.2, 3.3	VI
102	Hardware functional	Table I, Level VII	3.3	CE
103	Inside diameter of grommet no less than 0.880 inch	Table I, Level VII	3.3	CE
104	Marking evident, correct and legible	Table I, Level VII	3.3.3	VI
105	Workmanship	Table I, Level VII	3.4	VI
Minor				
201	Seams turned	Table I, Level IX	3.3	VI
202	Stitching correct	Table I, Level IX	3.3.1	CE
*203	Reinforcing strip tacky to the touch	Table I, Level IX	3.2.1	Tactile
204	Hardware coating evident, adequate and correct	Table I, Level IX	3.2	CE
NOTES:				
* Inspect prior to assembly. CE - Commercial inspection equipment VI - Visual inspection				

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CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER SPI P5-4-348
4.4.5(b)	Packaging			NEXT HIGHER ASSY
CATEGORY	CHARACTERISTIC	SAMPLING AND ACCEPTANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD
Critical	None defined			
Major				
101	Item completely clean and dry prior to packing	Table I, level IX	5.2	VI and CE
102	Unit pack marking evident, correct, and legible	Table I, level IX	5.2	VI and CE
NOTES: This paragraph is not applicable to packaging for interplant shipment. CE - Commercial inspection equipment VI - Visual inspection				

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4.4.6 Test.

4.4.6.1 Rubber-coated duck weight (Drawing 5-4-321). The weight per square yard of the rubber-coated duck shall be determined in accordance with method 5041 of FED. TEST METHOD STD. NO. 191.

5. PACKAGING

5.1 Interplant shipment (see 6.4). Military packaging as specified in 5.2 is not applicable to interplant shipments. The carriers shall be packaged to provide adequate protection from physical damage, and marked to identify the carriers and provide any other required data during shipment from the source to the first receiving activity.

5.2 Repair or replacement parts. For all shipments, other than interplant shipments (see 6.4), packaging (preservation, unit packing, packing and marking) shall be as specified in SPI P5-4-348.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The ABC-M13A1 carrier is intended to support and protect M25A1 chemical-biological tank masks.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- (a) Title, number, and date of this specification
- (b) Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1)
- (c) First article:

(1) Time allowed for contractor submission of samples for Government test and evaluation after award of contract when testing is performed by the Government.

(2) Name and address of test facility and shipping instructions when testing is performed by the Government.

(3) Time required for the Government to notify the contractor whether or not to proceed with production.

(d) Whether interplant shipment or military packaging is required.

(e) Level of packing required.

6.3 Submission of alternative inspection provisions. Proposed alternative inspection provisions should be submitted by the contractor to the procuring contracting officer for

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evaluation and approval by the technical activity responsible for preparation of this specification.

6.4 Interplant shipment. Packaging and marking for interplant shipment is for supplies and materials that do not directly enter the military supply system. Typical interplant shipments are shipments from a vendor to a subcontractor or a prime contractor, or between contractors and subcontractors, or from a vendor or contractor to a military arsenal, plant or other activity for evaluation, immediate use, or further processing as specified in the applicable contract.

6.5 International interest. Certain provisions of this specification are the subject of international standardization agreement QSTAG 216. When amendment, revision, or cancellation of this specification is proposed that will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations.

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

6.7 Subject term (key word) listing.

Rubber-coated duck
Seams
Stitching
Thread

Custodian:

Army - EA

Preparing activity:

Army - EA

International interest (see 6.5)

Project No. 4240-A007

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of this form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-C-51179C(EA)	2. DOCUMENT DATE (YYMMDD) 1 November 1990
3. DOCUMENT TITLE CARRIER, CHEMICAL-BIOLOGICAL MASK, ABC-M13A1		
4. NATURE OF CHANGE <i>(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)</i>		
5. REASON FOR RECOMMENDATION		
6. SUBMITTER		
a. NAME <i>(Last, First, Middle Initial)</i>	b. ORGANIZATION	
c. ADDRESS <i>(Include Zip Code)</i>	d. TELEPHONE <i>(Include Area Code)</i> (1) Commercial (2) AUTOVON <i>(If Applicable)</i>	7. DATE SUBMITTED <i>(YYMMDD)</i>
8. PREPARING ACTIVITY		
a. NAME U.S. Army Chemical Research, Development and Engineering Center	b. TELEPHONE <i>(Include Area Code)</i> (1) Commercial (2) AUTOVON (301) 671-3259 DSN 584-3259	
c. ADDRESS <i>(Include Zip Code)</i> Commander U.S. Army CRDEC ATTN: SMCCR-PET-S Aberdeen Proving Ground, MD 21010-5423	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	