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MILITARY STANDARD
PROVISIONS FOR EVALUATING QUALITY
OF
CLOTH TYPE HOODS



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MIL-STD-1614A

DEPARTMENT OF DEFENSE

Washington, DC 20301

Provisions for Evaluating Quality of Cloth Type Hoods.

MIL-STD-1614A

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2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Officer in Charge, Navy Clothing and Textile Research Facility, 21 Strathmore Road, Natick, MA 01760 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

MIL-STD-1614A

FOREWARD

This standard provides a standardized procedure for evaluating quality of cloth type hoods procured for the Department of Defense. It is intended to list in a single document, defects irrespective of fabrics (i.e., wool or cotton) or end use.

The objectives of this standard are to:

- a. Provide standard descriptions for hood defects.
- b. Standardize examination requirements.
- c. Reduce the size of each hood specification.

As of the date of approval of this document, the following specifications will reference this standard:

<u>Specification</u>	<u>Title</u>
MIL-H-25754	- Hood, Winter, Knit, Wool
MIL-H-29115	- Hood, Chemical Agent, Protective
MIL-H-82244	- Hood, Radioactive Contaminants, Protective

MIL-STD-1614A

CONTENTS

<u>Paragraph</u>		<u>Page</u>
1.	SCOPE	1
1.1	Purpose	1
1.2	Application	1
2.	REFERENCE DOCUMENTS	1
2.1	Issue of documents	1
3.	DEFINITIONS	1
3.1	Fabric defects	1
3.2	Quality assurance terms	1
3.3	Open seam	1
3.4	Terms Outside and Inside	2
3.5	Raw Edge	2
3.6	Knots and slubs	2
4.	GENERAL	2
5.	SAMPLE AND INSPECTION PROVISIONS	2
5.1	End item examination	2
5.2	Dimensional examination	3
5.3	Packaging Inspection	3
6.	INSPECTION	4
6.1	Inspection procedures	4
6.2	Initiation of inspection	5
6.3	Continuation of inspection	5
6.4	Switching procedures	5
6.4.1	Normal to tightened	5
6.4.2	Tightened to normal	5
6.4.3	Normal to reduced	5
6.4.4	Reduced to normal	5

TABLES

<u>Number</u>		<u>Page</u>
I	Sampling Provisions for Cloth Type Hoods	4
II	Classification of Defects	6

1. SCOPE

1.1 Purpose The purpose of this standard is to provide standardized provisions for evaluating the quality of cloth type hoods.

1.2 Application This standard will be made applicable to contracts by reference in the appropriate hood specification.

2. REFERENCE DOCUMENTS

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

STANDARDS

FEDERAL

FED-STD-4 - Glossary of Fabric Imperfections

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection
by Attributes

MIL-STD-109 - Quality Assurance Terms and Definitions

MIL-STD-1491 - Glossary of Knitting Imperfections

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

3. DEFINITIONS

3.1 Fabric defects The fabric defect definitions applicable to the standard are described in FED-STD-4 and MIL-STD-1491. Fabric defects shall be clearly visible when examined at a distance of 3 feet (91.4cm).

3.2 Quality assurance terms and procedures Definitions of quality assurance terms and procedures, where applicable, shall be in accordance with MIL-STD-105 and MIL-STD-109.

3.3 Open seam The seam shall be classified open when one or more stitches joining a seam are broken or when two or more continuous skipped or runoff stitches occur. On double stitched seams, a seam is considered open when one or both rows of the stitching are open.

MIL-STD-1614A

3.4 Outside-inside The terms "outside" and "inside" as used in this standard are defined as follows:

Outside: Any part of hood that is visible when the hoods are laid flat on a table with front closure fastened.

Inside: Any part of hood that is not visible when the hoods are laid flat on a table with front closure fastened.

3.5 Raw edge Raw edge is defined as any edge not finished as specified including any protruding raw edge on the outside of the hoods.

3.6 Knots and slubs Only knots and slubs that exceed the limits specified in the basic cloth specification and are clearly visible when examined at a distance of 3 feet (91.4cm) shall be scored as defects in evaluating quality of the hoods.

4. GENERAL

4.1 This standard contains the provisions for end item examination, dimensional examination and packaging inspection of cloth type hoods. If there are any inconsistencies between the requirement of the appropriate hood specification and the provisions of this standard, the specification shall control. This standard assigns to the listed defects, point values of 1, 2 or 3, depending on severity. The higher point values are assigned to those defects having the more detrimental effect on the appearance or serviceability of the item.

5. SAMPLE AND INSPECTION PROVISIONS

5.1 End item examination The hoods shall be examined and all defects shall be penalized as indicated in Table II of this standard. The sample size shall be based on lot size, and the acceptable point values shall be as specified in Table I. The sample unit shall be one hood. The lot shall be unacceptable if:

(a) The point value for 3 and 2 point defects exceeds the applicable maximum acceptance point value

OR

(b) Point value for total (3, 2 and 1 point) defects exceeds the applicable maximum acceptance point value.

MIL-STD-1614A

5.2 Dimensional examination The appropriate number of hoods, determined from the table below, shall be examined for conformance to the dimensional requirements cited in the table of measurements of the appropriate hood specification. When a measurement deviates from a dimension and tolerance specified, the hood shall be penalized one point. The lot shall be unacceptable if the total point value resulting from this examination exceeds the maximum acceptable point value. Applicable to MIL-H-25754 Each size of hood present in the lot should be represented in the sample selected for this examination

<u>Lot size</u>	<u>Sample size</u>	<u>Maximum acceptable point value</u>
Up thru 500	8	0
501 thru 3,200	13	1
3,201 thru 35,000	20	2
35,001 and up	32	3

5.3 Packaging inspection An examination shall be made to determine that preservation-packaging, packing and marking requirements are in compliance with Section 5 of the appropriate hood specification. Defects listed below shall be scored one point. The sample size for this examination shall be five shipping containers fully prepared for delivery with the exception that they need not be sealed. Defects of closure listed below shall be examined on shipping containers fully prepared for delivery. The lot shall be unacceptable if one or more points are scored for this examination.

<u>Examine</u>	<u>Defect</u>
Marking (exterior and interior)	Omitted, incorrect, illegible, of improper size, location, sequence or method of application.
Materials	Any component missing, damaged or not as specified.
Workmanship	Inadequate application of components, such as: incomplete closure of container flaps, loose strapping, improper taping, inadequate stapling. Bulging or distorted container.
Content	Number of intermediate packages per container is more or less than required. Number of hoods per intermediate package is more or less than required. <u>1/</u> Size shown on one or more hoods not as specified on shipping container. <u>1/</u> (applicable to MIL-H-25754).

1/ For this defect, one intermediate package from each container in the sample shall be examined.

MIL-STD-1614A

Table I - Sampling Provisions

	Lot size	Sample size	Maximum acceptable point values	
			3&2 point defects	3,2&1 point defects
Normal Inspection	Up thru 90	13	2 points	6 points
	91 thru 150	20	3 points	9 points
	151 thru 280	32	5 points	13 points
	281 thru 500	50	8 points	19 points
	501 thru 1200	80	14 points	30 points
	1201 thru 3200	125	19 points	42 points
	3201 thru 10,000	200	27 points	61 points
	10,001 thru 35,000	315	38 points	88 points
	35,001 and over	500	57 points	129 points
Tightened Inspection	Up thru 90	13	1 point	3 points
	91 thru 150	20	2 points	6 points
	151 thru 280	32	3 points	10 points
	281 thru 500	50	5 points	15 points
	501 thru 1200	80	8 points	23 points
	1201 thru 3200	125	14 points	36 points
	3201 thru 10,000	200	22 points	55 points
	10,001 thru 35,000	315	32 points	88 points
	35,001 and over	500	49 points	115 points
	Lot size	Sample size	Maximum acceptable point values	
			3&2 point defects <u>1/</u>	3,2&1 point defects
Reduced Inspection	Up thru 280	13	2-4 points	6 points
	281 thru 500	20	3-6 points	9 points
	501 thru 1200	32	5-10 points	13 points
	1201 thru 3200	50	8-16 points	19 points
	3201 thru 10,000	80	14-22 points	30 points
	10,001 thru 35,000	125	18-27 points	41 points
	35,001 and over	200	27-35 points	61 points

1/ If the first value is exceeded but the second value has not been exceeded, accept the lot but reinstate normal inspection (see 6.4.4b). The second value is the maximum acceptable point value.

6. INSPECTION

6.1 Inspection procedures Inspection procedures, except for sampling plans, shall be as specified in MIL-STD-105, except where otherwise indicated in this document.

MIL-STD-1614A

6.2 Initiation of inspection Normal inspection will be used at the start of the inspection unless otherwise directed by the procurement quality assurance element administering the contract.

6.3 Continuation of inspection Normal, tightened or reduced inspection shall continue unchanged on successive lots except where switching procedures in 6.4 require change.

6.4 Switching procedures

6.4.1 Normal to tightened When normal inspection is in effect, tightened inspection shall be instituted when two out of five consecutive lots have been rejected on original inspection (i.e., ignoring resubmitted lots for this procedure).

6.4.2 Tightened to normal When tightened inspection is in effect, normal inspection shall be reinstated when five consecutive lots have been considered acceptable on original inspection.

6.4.3 Normal to reduced When normal inspection is in effect, reduced inspection shall be instituted providing that all of the following conditions are satisfied:

- a. The preceding 10 lots have been on normal inspection and none have been rejected on original inspection; and
- b. The total number of points for 3 and 2 point defects in the samples from the preceding 10 lots is equal to or less than 60 percent of the total maximum acceptable point values for 3 and 2 point defects from the preceding 10 lots; and
- c. The total number of points for 3, 2 and 1 point defects in the sample from the preceding 10 lots is equal to or less than 75 percent of the total maximum acceptable point values for 3, 2 and 1 point defects from the preceding 10 lots; and
- d. Production is at a steady rate; and
- e. Reduced inspection is considered desirable by the procurement quality assurance element administering the contract.

6.4.4 Reduced to normal When reduced inspection is in effect, normal inspection shall be reinstated if any of the following occur on original inspection:

- a. A lot is rejected; or
- b. A lot is considered acceptable but exceeds the applicable first value (see 1/ to Table I); or
- c. Production becomes irregular or delayed; or
- d. Other conditions warrant that normal inspection be reinstated.

MIL-STD-1614A

Table II - Classification of Defects

Defect	Point Value
A. General Defects	
I Material Defects and Workmanship Damages	
a. Smash, hole, cut, tear, burn, loose slub, mend, thin place, needle chew, drill hole, broken or missing yarns, press off, run, snag or drop stitch:	
1. Up to 1/4 inch (6.35mm) inclusive	2
2. More than 1/4 inch (6.35mm)	3
c. Knot, misweave, unsightly slub, loose yarn, kink, coarse yarn, area of no dye penetration, dye streak or woven in waste <u>1</u> /	1
d. Loose knitting	1
e. Racked selvage missing (applicable to MIL-H-25754)	1
f. Knots protruding from surface (applicable to MIL-H-25754) <u>1</u> /	2
II Cleanness <u>1</u> /	
a. Any spot or stain on outside	1
b. Thread ends not trimmed to 1/4 inch (6.35mm) or less or loose threads not removed (to be scored only when condition exists on major portion of hood)	1
c. Two or more shade or size tickets not removed	1
d. Shade marking exposed and visible on outside of hood	1

Defect	Point Value
A. General Defects (cont'd)	
III. Components and Assembly	
a. Any component part omitted or required operation omitted (unless otherwise classified herein)	3
b. Any component not as specified (type, size, color, etc.)	3
c. Any operation not as specified (unless otherwise classified herein)	2
IV Cutting	
Any part not cut in accordance with directional warp lines indicated on patterns or in accordance with specification requirements	3
V Shaded Parts	
a. Shade of hood other than specified	3
b. Shade varying within a part or between two or more parts	1
c. Shade of thread markedly in contrast with shade of hood	1
VI Seams and Stitching	
a. Accuracy of seaming:	
1. Part of hood caught in any unrelated stitching operation, seriously affecting serviceability	3
2. Seams puckered, twisted or pleated, seriously affecting appearance (unless otherwise classified herein)	1
3. End of stitching when not caught in another seam or stitching not back-stitched as specified	1
4. End of a continuous line of stitching overlapped less than specified	1

MIL-STD-1614A

Defect	Point Value
VI Seams and Stitching (cont'd)	
a. Accuracy of seaming: (cont'd)	
5. Thread breaks not secured or stitching back of break less than 1/2 inch (12.70mm)	1
b. Gauge of stitching:	
1. Irregular, i.e., unevenly gauged, not uniform	1
2. Beyond range of width specified or varies more than 1/16 inch (1.58mm) when no range is specified	1
3. Edge, top or raise stitching sewn too close to edge, resulting in damage to cloth	2
c. Open seam:	
1. Up to 1/4 inch (6.35mm) inclusive	1
2. More than 1/4 inch (6.35mm), up to 1/2 inch (12.70mm) inclusive	2
3. More than 1/2 inch (12.70mm)	3
d. Runoff, skipped or broken stitches:	
1. On joining seam score as open seam	-
2. Edge or top stitching	1
e. Raw edges:	
1. On outside:	
(a) More than 1/4 inch (6.35mm) to and including 3/4 inch (19.05mm)	2
(b) More than 3/4 inch (19.05mm)	3
2. On inside:	
(a) More than 1/2 inch (12.70mm) to and including 2 inches (50.80mm)	1
(b) More than 2 inches (50.80mm)	2

Defect	Point Value
VI Seams and Stitching (cont'd)	
f. Seam and stitching type:	
1. Not specified seam or stitch type	2
2. Looper thread on outside (when 401 stitch is used)	2
g. Stitch tension:	
1. Loose tension resulting in a loose joining seam	3
2. Loose tension on edge or topstitching recognized by loosely exposed loops of lower or top thread	1
3. Tight tension (stitches break when normal strain is applied to the seam or stitching)	3
h. Stitches per inch:	
1. One stitch less than the minimum or any number in excess of the maximum specified	1
2. Two or more stitches less than the minimum specified	2
B. Detailed Defects	
I. Hem	
a. MIL-H-82244 and MIL-H-29115:	
1. Hem finished more than 3/8 (9.52mm) or less than 1/8 inch (3.17mm)	1
II. Direction of Seam Lap	
a. MIL-H-82244 and MIL-H-29115:	
1. Any seam not lapped in the direction specified	1
III. Staggered Seams	
a. MIL-H-82244 and MIL-H-29115:	
1. The center front and center back panel seams staggered more than 1/4 inch (6.35mm) at crown	1

MIL-STD-1614A

Defect	Point Value
IV Fastener Tape	
a. MIL-H-82244:	
1. Misplaced, i.e., out of position in excess of 1/4 inch (6.35mm)	3
2. Other than width or type required	3
3. Other than color required	1
V. Tie Tape	
a. MIL-H-29115:	
1. Not type specified	1
2. Misplaced or insecure	2
3. Finished length not as specified	1
4. One or more tapes omitted	3
VI. Identification Label and Radiation Symbol	
a. Label:	
1. Omitted, incorrect or illegible:	
(a) Size label (applicable to MIL-H-25754)	3
(b) Identification label	2
2. Not attached as specified, misplaced or stitching through the printing	1
b. Radiation symbol (applicable to MIL-H-82244 class 1 only):	
1. Omitted, incorrect or illegible	3
2. Placed less than 1 1/4 inches (31.75mm) or more than 1 3/4 inches (44.45mm) from either front opening or bottom edge of cape	1

1/ The hoods shall be examined from a distance of three feet (91.4cm).

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Project No. 8415-0206

Review activities:

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Navy - CG, YD, OS, AS

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