

MIL-C-29133A(NU)  
23 October 1980  
SUPERSEDING  
MIL-C-29133(NAVY)  
6 September 1974

## MILITARY SPECIFICATION

### COVERALLS, DISPOSABLE, GENERAL PURPOSE

This specification is approved for use by the Navy Clothing and Textile Research Facility and is available for use by all Departments and Agencies of the Department of Defense.

#### 1. SCOPE

1.1 Scope. This specification covers the requirements for a general purpose disposable coverall.

\*1.2 Classification. The disposable coveralls covered by this specification shall be of the following types and sizes (see 6.1 and 6.2):

1.2.1 Types I - For light physical activity  
II - For heavier physical activity

1.2.2 Sizes X-Small, Small, Medium, Large, X-Large, XX-Large

#### 2. APPLICABLE DOCUMENTS

\* 2.1 Issues 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 specification to the extent specified herein:

#### SPECIFICATIONS

##### FEDERAL

DDD-L-20 - Label; For Clothing, Equipage and Tentage  
(General Use)

##### MILITARY

MIL-B-17757 - Boxes, Shipping, Fiberboard (Modular Sizes)  
MIL-C-29132 - Cloth, Nonwoven, Disposable Cellulosic  
MIL-C-87019 - Cloth, Nonwoven, Disposable, Spunbonded  
Olefin (Coated and Uncoated)  
MIL-C-87092 - Cloth, Nonwoven, Disposable, Spunbonded  
Polypropylene

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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.

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STANDARDS

FEDERAL

FED-STD-751 - Stitches, Seams, and Stitchings

MILITARY

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

MIL-STD-129 - Marking for Shipment and Storage

LAWS AND REGULATIONS

US POSTAL SERVICE MANUAL

(Copies of the manual may be obtained from the Superintendent of Documents,  
US Government Printing Office, Washington, DC 20402).

(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).

2.2 Other publications. The following documents form a part of this  
specification to the extent specified herein. Unless a specific issue is  
identified, the issue in effect on date of invitation for bids or request  
for proposal shall apply.

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT  
National Motor Freight Classification

(Application for copies should be addressed to American Trucking Associa-  
tion, ATTN: Traffic Department, 1616 P Street, N.W., Washington, D. C.  
20036).

UNIFORM CLASSIFICATION COMMITTEE, AGENT  
Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification  
Committee, Room 1106, 222 South Riverside Plaza, Chicago, Illinois 60606.)

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## 3. REQUIREMENTS

3.1 Guide sample. Samples, when furnished, are solely for guidance and information to the contractor (see 6.3). Variations from this specification may appear in the samples, in which case this specification shall govern.

3.2 First article. When specified, (see 6.2), the contractor shall furnish sample unit(s) for first article inspection and approval (see 4.2).

3.3 Materials.

\*3.3.1 Cloths, nonwoven, disposable. The cloths shall conform to the following specifications:

Coverall	Disposable cloths specification
Type I	- MIL-C-29132 Cloth, Nonwoven, Disposable, Cellulosic (Uncoated, low strength, low breathability, good protection against accidental flame)
Type II	- MIL-C-87019 Cloth, Nonwoven, Disposable, Spunbonded Olefin (Coated, high strength, nonbreathable, good protection against liquids)
	OR
	- MIL-C-87092 Cloth, Nonwoven, Disposable, Spunbonded Polypropylene (Uncoated, high strength, high breathability)

- 3.3.2 Thread. The sewing thread shall be of any commercial type that is suitable for the purpose intended. The color of the thread shall be white or natural.

\*3.3.3 Fastener, slide, interlocking. The interlocking slide fastener shall be any lightweight slide fastener suitable for the purpose intended in the following lengths with a plus or minus 1/2 inch tolerance:

X-Small	-	28 inches
Small	-	29 inches
Medium	-	30 inches
Large	-	31 inches
X-Large	-	32 inches
XX-Large	-	33 inches

\* 3.3.4 Label. Each coverall shall have a combination identification and size label bearing the inscription indicated below. The inscription shall be marked directly on the coverall by printing, stamping or stenciling or shall be printed on a pressure-sensitive label that will adhere satisfactorily to the coverall. The lettering shall be 1/8 to 1/4 inch in height.

COVERALLS, DISPOSABLE, GENERAL PURPOSE  
 CONTRACT NO: DLA 100-00-0-000 (Example)  
 STOCK NO: 8415-00-000-0000 (Example)  
 SIZE: X-Large (Example)  
 NAME OF CONTRACTOR:

3.4 Design. The coveralls shall be one piece with a shirt style collar, full length sleeves and a front zipper closure extending the length of the trunk (see Figure 1).

3.4.1 Figure. The figure is furnished for information purposes only. When inconsistencies exist between the written specification and the figure, the written specification shall govern.

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\* 3.5 Patterns. Standard patterns to be used to cut working patterns will be furnished by the Government (see 6.3). The working patterns shall be identical to the Government patterns. Neither the Government patterns nor the working patterns shall be altered in any way.

\* 3.5.1 Pattern parts. The component parts of the coveralls shall be cut from the basic material specified in 3.3.1 in accordance with the following pattern parts:

<u>Nomenclature of pattern parts</u>	<u>Cut parts</u>
Back and Front	2
Sleeve <u>2/</u>	2
Collar <u>1/</u>	1

1/ May be cut as stripping and put in roll form.

2/ May be cut in two pieces.

### 3.6 Construction.

\* 3.6.1 Stitch, seam, and stitching types. The stitch, seam, and stitching types specified herein shall conform to FED-STD-751. Unless otherwise specified herein, the seam type shall be SSa, SSn or SSp used with any 500 stitch type (except 501, 510, 511 or 513) or shall be seam type SSa used with stitch type 515, 516, 517, 518 or 519 or seam type LSc-2 with stitch type 301 or 401. The bight of overedge stitching shall be 1/8 to 3/16 inch.

3.6.2 Stitches per inch. The minimum and maximum number of stitches per inch shall be 6 to 8.

\* 3.6.3 Open seams and ends of seams. The ends of a continuous line of stitching shall be overstitched not less than 1/2 inch. The ends of stitching, other than continuous, shall run off the edge of the coverall forming a stitching chain 1/4 to 1/2 inch in length. Open seams shall be repaired by stitching not less than 1/2 inch beyond each end of the break. Runoffs, skipped stitches, and thread breaks may be repaired by using 301 stitch type. The overedged side of the seam may finish on the inside or outside of coveralls.

3.7 Manufacturing operations requirements. The coveralls shall be manufactured in accordance with the operation requirements specified in Table I. The contractor is not required to follow the exact sequence of operations listed provided that the finished coveralls are identical to those produced by following the sequence of operations listed in Table I.

\* 3.8 Repairs. Any area containing a hole, cut, tear, needle chew or burn less than 1 inch in length shall be repaired using a clear or matching color pressure sensitive tape on the outside of coverall. The tape shall cover the defective area at least 1/2 inch on each end and side of defect. No more than three repairs per coverall shall be permitted.

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Table I - Construction of coveralls

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch	Thread	
					Needle	Bobbin or Looper
1.	<p><u>Cutting.</u> The coverall shall be cut in strict accordance with the Government's patterns which shall show size, shape, directional lines for cutting and notches for proper assembly of all parts. When there is a face side to the material it shall finish on the outside of coverall.</p> <p><u>Replacement of defective components</u> Defective components found during the spreading, cutting, and manufacturing operations that are classified as defects in 4.3.2.1 shall be removed from production and replaced with nondefective components. Material defects listed in 3.8 shall be repaired with pressure sensitive tape.</p> <p><u>Marking.</u> All parts shall be marked or bundled to insure proper sizing of the coverall. The use of metal devices, sew-on tickets or drill holes is not permitted. Adhesive type marking tickets need not be removed from the coverall.</p> <p><u>Make coverall.</u> a. Stitch together the left back and right back to form the center back seam.</p> <p>b. Turn under the front facings 1/2 to 3/4 inch. Position the slide fastener tapes over the turned facings and stitch each tape to its respective facing 1/8 to 1/4 inch from the tape edge, with the stitching passing thru the fronts.</p> <p>NOTE: 1. The top of the slide fastener shall finish even with the neck opening (+0, -1 inch). 2. The bottom of the slide fastener shall finish 4 1/2 (+ 1/2) inches above the intersection of the</p>					
2.						
3.						
4.		301 or 401	Similar to SSS			

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Table I - Construction of coveralls (cont'd)

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch	Thread Needle	Bobbin or Looper
4.	<p>Make coverall. (cont'd)</p> <p>c. Stitch closed the fronts, from the base of the slide fastener to the crotch.</p> <p>d. Stitch inseam of the one piece sleeve or, as an alternate, stitch inseam and outseam of the two piece sleeve.</p> <p>e. Join the raglan type sleeves to the coverall, stitching to the fronts and back in one continuous operation.</p> <p>f. Stitch the leg inseam in one continuous operation starting at the bottom of one leg, up thru the crotch and then down the other leg thru to the leg bottom.</p>	(301 or 401 permitted)				
5.	<p>8. Turn coverall to finished position. Stitch the collar to the neck edge so seam allowance finishes on the outside of the coverall.</p> <p>h. Mark or adhere the label (see 3.3.4) to the inside of the coverall approximately 2 inches below the neckline and adjacent to the center back seam.</p> <p><u>Repair coverall.</u> Inspect for and repair holes, cuts, tears, burns, needle chews and runoffs as specified in 3.8.</p>					

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\* 3.9 Sizes and measurements. Unless otherwise specified, the finished measurements of the coveralls shall be as listed in Table II. All measurements and tolerances are expressed in inches.

Table II - Sizes and measurements

Size	A Chest	B Leg Inseam Length	C Sleeve Inseam Length	D Body Length
X-Small	20	32	23	32 1/2
Small	22	33	23 3/4	34
Medium	24	34	24 1/2	35 1/2
Large	26	35	25 1/4	37
X-Large	28	36	26	38 1/2
XX-Large	30	37	26 3/4	40
Tolerance	+ 1	+ 3/4	+ 3/4	+ 1

NOTE: Refer to Figure 1 for A, B, C, and D measurements.

- A. Chest - Measure from one inch below the base of the armhole across the chest from folded edge to folded edge.
- B. Leg Inseam - Measure from the center of the crotch seam, down the leg inseam to the leg bottom.
- C. Sleeve Inseam - Measure from the base of the armhole to the sleeve bottom.
- D. Body Length - Measure from top of neck line to crotch seam with coveralls flat and front side up.

3.10 Workmanship. The finished coveralls shall conform to the quality established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality levels.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements as 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.

4.1.1 Certificate of compliance. Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

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4.2 First article inspection When required, the first article submitted in accordance with 3.2, shall be inspected as specified in 4.3.2 for compliance with design, construction, workmanship, and dimensional requirements.

4.3 Quality conformance inspection Sampling for inspection shall be in accordance with the provisions set forth in MIL-STD-105, except where otherwise indicated herein.

4.3.1 Component and material inspection In accordance with 4.1, components and materials shall be inspected and tested in accordance with all the requirements of referenced specifications and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

4.3.2 Examination of the end item Examination of the end item shall be in accordance with 4.3.2.1 and 4.3.2.2. The applicable inspection levels and acceptable quality levels (AQL's) shall be as indicated in 4.3.2.3. The sample unit shall be one finished coverall. The lot size shall be expressed in units of coveralls.

\*4.3.2.1 Visual examination The coveralls shall be examined for defects classified in accordance with the list below.

<u>Examine</u>	<u>Defect</u>
I Material Defects and Workmanship	a. Not specified material. b. Any evidence of delamination. c. Any hole, needle chew, cut, tear or burn: <ol style="list-style-type: none"> <li>1. Less than 1 inch in length and not repaired.</li> <li>2. More than 1 inch in length.</li> </ol>
II Component and Assembly	a. Any component omitted, misplaced, damaged or otherwise defective. b. Any required operation omitted or improperly performed.
III Seams and Stitching	a. Ends of a continuous line of stitching overlapped less than 1/2 inch. b. Thread breaks or two or more skipped or runoff stitches overstitched less than 1/2 inch beyond defective stitching area. c. Any open seam (i.e., one or more broken, skipped or runoff stitches or any raw edge not securely caught in a seam). d. Seam or stitch type not as specified. e. Stitches per inch not as specified. f. Loose stitch tension resulting in a loose seam.



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<u>Examine</u>	<u>Defect</u>
III Seams and Stitching (cont'd)	g. Tight stitch tension (stitches break when normal strain is applied to the seam or stitching). h. Runoff chain at end of stitching less than 1/4 inch or more than 1/2 inch in length. i. Stitching resulting in pleats.
IV Repaired areas	a. More than three repairs per coverall. b. Color of tape not clear or does not match - shade of coverall. c. Repair tape has poor adhesion; does not adhere completely. d. Defect not repaired as specified. e. Defective area repaired is more than 1 inch in length.
V Slide Fastener	a. Omitted, malformed or damaged (see Note:) b. The top of the slide fastener finishes above the neck opening or more than 1 inch below the neck opening. c. The bottom of the slide fastener is more than 5 inches or less than 4 inches from the intersection of the lines of stitching at the crotch. d. Not size specified. NOTE: The slide fastener shall be checked for proper functioning by opening and closing the slide fastener at least three times.
VI Label or marking	a. Missing, incorrect or illegible. b. Not adhered securely.

#### 4.3.2.2 Size measurement defects.

- a. Any dimension that is not within the established tolerances specified in Table II shall be scored as a size measurement defect.
- b. Sleeve or leg inseam lengths uneven by 1 inch or more shall be scored as a size measurement defect.

4.3.2.3 Inspection levels and acceptable quality levels. The inspection levels and acceptable quality levels (AQL's), expressed as defects per 100 units, for the visual and dimensional examinations shall be as follows:

	<u>Inspection level</u>	<u>AQL</u>
For visual examination in 4.3.2.1	II	6.5
For dimensional examination in 4.3.2.2	S-3	4.0

4.3.4 Examination of packaging requirements. An examination shall be made to determine that packaging, packing and marking comply with Section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully packaged for delivery with the exception that it need not be closed. Defects of closure listed shall be examined on shipping containers fully packaged for delivery. The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be S-2 and the AQL shall be 2.5 defects per hundred units (DHU).

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<u>Examine</u>	<u>Defect</u>
Marking (exterior)	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, improper taping, loose strapping, or inadequate stapling. Bulged or distorted container.
Content	Number of coveralls per shipping container is more or less than specified. <u>1/</u>

1/ For this defect, two shipping containers in the sample shall be examined.

## 5. PACKAGING

5.1 Packaging. Packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A. Each coverall shall be neatly folded to measure approximately 14 inches in width by 11 inches in length.

5.1.2 Level C (Commercial Packaging). Each coverall shall be packaged to afford adequate protection against physical damage during shipment from the contractor to the first receiving activity. The package and the quantity per package shall be the same as that normally used by the contractor for retail distribution.

5.2 Packing. Packing shall be level A, B, or C as specified (see 6.2).

5.2.1 Level A. Fifty coveralls of one size only, packaged as specified in 5.1, shall be packed in a fiberboard shipping container assembled, closed and reinforced conforming to type SF, class weather-resistant, grade V2s, size 3A of MIL-B-17757. The fiberboard for the box liner shall conform to type CF, class weather-resistant, variety DW, grade V15c of MIL-B-17757. Level A packages shall be packed flat, two in length, one in width, and twenty-five in depth within a shipping container. Each container shall have the contents completely covered on the top and bottom with a sheet of commercial grade kraft paper. Toward the end of the contract or when there are less than the required amount per container of the same size, mixed sizes may be packed within the same container.

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5.2.2 Level B. Fifty coveralls of one size only, packaged as specified in 5.1. shall be packed in a fiberboard shipping container assembled and closed conforming to type CF, class domestic, grade 200, size 3A of MIL-B-17757. The fiberboard for the box liner shall conform to type CF, class domestic, variety DW, grade 200 of MIL-B-17757. Level A packages shall be packed flat, two in length, one in width, and twenty-five in depth within a shipping container. Each container shall have the contents completely covered on the top and bottom with a sheet of commercial grade kraft paper. Toward the end of the contract or when there are less than the required amount per container of the same size, mixed sizes may be packed within the same container.

5.2.2.1 Weather-resistant fiberboard container. When specified (see 6.2), the fiberboard shipping container shall be a grade V3c, W5c or W6c fiberboard box fabricated in accordance with MIL-B-17757 and closed in accordance with the appendix of the container specification.

5.2.3 Level C (Commercial Packing). Coveralls, packaged as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. The quantity per shipping container shall be the same as that normally used by the contractor for retail distribution. Containers shall comply with the U. S. Postal Service Manual, Uniform Freight Classification Rules or National Motor Freight Classification Rules, as applicable.

5.3 Marking. In addition to any special marking required by the contract, shipping containers shall be marked in accordance with MIL-STD-129.

5.3.1 Labels, mixed sizes. Each shipping container, packed with mixed sizes only, shall have securely attached to the end and side, directly under the printing or stenciling, a white paper label 5 by 4 inches with the words "MIXED SIZES" plainly stamped or printed thereon and under these words shall be legibly stamped or printed the correct quantity and sizes contained therein.

## 6. NOTES

6.1 Intended use. The disposable coveralls are intended to be worn as a general purpose garment by civilian and military personnel for protection against dirt, grease, paint, water, selected liquids and accidental flame. This coverall is not to be used for protection against micro-sized asbestos or fibrous glass particles.

6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number and date of this specification.
- b. Type and sizes required (see 1.2).
- c. First article requirements (see 3.2).
- d. Selection of the applicable levels of packaging and packing (see 5.1 and 5.2).
- e. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).

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6.3 Samples and patterns. For access to samples and patterns, address the procuring activity issuing the invitation for bids.

6.4 Changes from previous issue. The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue 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 issue.

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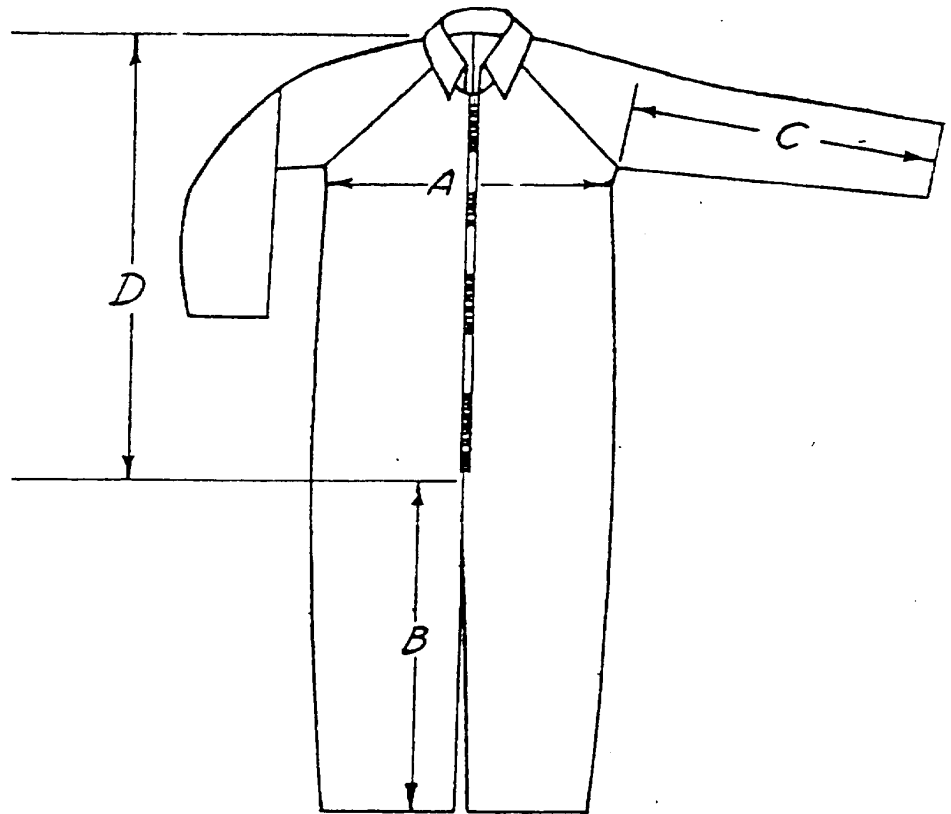


FIGURE 1 - COVERALLS, DISPOSABLE, GENERAL PURPOSE



**INSTRUCTIONS:** In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 6, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

**NOTE:** This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification 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.

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## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

*(See Instructions - Reverse Side)*

1. DOCUMENT NUMBER	2. DOCUMENT TITLE
3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION (Mark one)
3b. ADDRESS (Street, City, State, ZIP Code)	<input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER (Specify): _____
5. PROBLEM AREAS	
a. Paragraph Number and Wording:	
b. Recommended Wording:	
c. Reason/Rationale for Recommendation:	
6. REMARKS	
7a. NAME OF SUBMITTER (Last, First, MI) - Optional	7b. WORK TELEPHONE NUMBER (Include Area Code) - Optional
8. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional	9. DATE OF SUBMISSION (YYMMDD)

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