

JJ-N-180G
July 20, 1978

SUPERSEDING
Fed. Spec. JJ-N-180F
June 27, 1972

FEDERAL SPECIFICATION

NETS, LAUNDRY

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the requirements for a laundry net in the form of bags.

1.2 Classification. The laundry nets shall be of the following types, styles, and sizes, as specified (see 6.2):

- Type I - With grommets.
- Type II - Without grommets.
- Style A - Leno weave (Nylon).
- Style B - Warp knit (Nylon or Nylon/Polyester).
- Size 2 - 12 by 22 inches (305 by 559 mm).
- Size 4 - 24 by 36 inches (610 by 914 mm).

2. APPLICABLE DOCUMENTS

2.1 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:

Federal Specifications:

- V-T-285 - Thread, Polyester
- V-T-295 - Thread, Nylon
- UU-P-268 - Paper, Kraft, Wrapping
- PPP-B-636 - Boxes, Shipping, Fiberboard

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Federal Standards:

- FED-STD-123 - Marking for Shipment (Civil Agencies)
- FED-STD-191 - Textile Test Methods
- FED-STD-751 - Stitches, Seams, and Stitchings

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Philadelphia, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Houston, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Specification:

- MIL-G-16491 - Grommet, Metallic

Military Standards:

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage

(Copies of Military specifications and standards 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 the American Trucking Association, Inc., Traffic Department, 1616 P Street, N.W., Washington, DC 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, IL 60606.)

3. REQUIREMENTS

3.1 Materials (see 6.3).

3.1.1 Fabric.

3.1.1.1 Yarn, nylon. The nylon yarn shall be bright, high tenacity, 260 denier (29 tex), 17 filament nylon having sufficient twist to meet the requirements of table I.

3.1.1.2 Yarn, nylon/polyester. The nylon yarn shall be bright, high tenacity, 840 denier (93 tex) (nominal) nylon 6-6. The polyester yarn shall be 150 denier (17 tex) (nominal).

3.1.1.3 Construction, fabric. The fabric shall be either style A (leno weave) or style B (warp knit) as specified (see 6.2).

3.1.1.3.1 Style A, leno weave. The fabric shall be woven with a 1 and 1 leno weave and shall conform to the requirements shown in table I.

3.1.1.3.2 Style B, warp knit. The fabric shall be of the mesh type knitted on a warp-type knitting machine and shall conform to the physical requirements shown in table I.

TABLE I. Physical requirements

Weave	Yarns (body) per inch(cm)		Filling		Weight per square yard (g/m ²)		Meshes per square inch (/cm ²)		Bursting strength minimum Pounds(N)
	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	
Style A	46 (18)	48 (19)	26 (10)	28 (11)	3.0 (102)	3.6 (122)	598 (93)	675 (105)	175(779)
Style B (Nylon)	-	-	-	-	4.6 (156)	5.5 (186)	38 (6)	50 (8)	175(779)
Style B (Nylon/	-	-	-	-	4.6 (156)	5.5 (186)	12 (2)	16 (2.5)	175(779)

3.1.1.4 Color. The color of the fabric shall be white (natural).

3.1.1.5 Finish. The nylon, or nylon/polyester fabric shall be scoured and heat set.

3.1.2 Thread. The thread shall be nylon thread conforming to type I, II or III, class 1 or 2, subclass A, size E, natural of V-T-295; or polyester thread conforming to type I or II, class 1, subclass A, size E, natural of V-T-285.

3.1.3 Grommets. Grommets for type I nets shall conform to type I, class 1, size 4 of MIL-G-16491.

3.2 Construction, net. The fabric shall be made into a rectangular-shaped bag, formed by cutting the material so that the finished net shall conform to the size specified. Leno-weave fabric shall have the finish running lengthwise of the net. The warp-knit fabric shall have the wales running lengthwise of the net. The fabric shall be folded lengthwise and stitched along the bottom and side, with the stitching continued along the folded-side edge for $4 + 1/2$ inch ($102 + 13$ mm), or along the two sides and bottom if two pieces are used. The selvage to be used for the bottom of the net for size 4 bags shall be reeded alternately 4 ends and 2 ends per dent to a minimum width of $3/4$ inch (19 mm). The selvage for the top pin edge of all sizes shall be reeded 2 ends per dent, skip 1 dent, 2 ends per dent for 2 to $2-1/2$ inches (51 to 64 mm), then alternate 4 ends and 2 ends per dent to a minimum width of $3/4$ inch (19 mm). When thread breaks, run-offs or skip stitching occur during sewing, the stitching shall be repaired by restarting the stitching a minimum of 2-inches (51 mm) back of the defective stitching. Thread breaks, run-offs or two or more consecutive skipped stitches noted during inspection of the item (in-process or end item) shall be repaired by over stitching both ends of the defective stitching. The stitching shall start a minimum of 2-inches (51 mm) in back of the defective area, continue over the defective area, and continue a minimum of 2-inches (51 mm) beyond the defective area on to the existing stitching. Loose or excessively tight stitching shall be repaired by removing the defective stitching, without damaging the materials, and restitching in the required manner. When making the above repairs, the ends of the stitching are not required to be backstitched.

3.2.1 Top. The top of the net shall be folded to the inside with raw edge turned in and over edged with one row of stitch type 504 and stitching type EFab-1 of FED-STD-751 with 10 to 12 stitches per inch (4-5 stitches/cm). A second row of stitch type 504 shall be stitched over the first row. The amount of fabric inclosed by the stitching measured from the needle line of stitching to the raw edge of the material shall be not less than $1/2$ inch (13 mm), and not more than 1 inch (25 mm). The first end of stitches of the second row shall be over stitched at least 2-inches (51 mm).

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3.2.2 Bottom and sides. The bottom and sides of the net shall be folded and overedge stitched with one row of stitch type 504 similar to seam type SSp-1 of FED-STD-751 with 10 to 12 stitches per inch (4-5 stitches/cm). The amount of fabric inclosed by the stitching when measured from the needle line of stitching to the raw edge of the material shall be not less than 5/8 inch (16 mm), and not more than 1 inch (25 mm). The ends of the stitches not caught in other seams or stitches shall be folded back 1/2 to 5/8 inch (13 to 16 mm), and bartacked parallel to the row of stitches. The bartacks shall be $1/2 \pm 1/8$ inch (13 ± 3 mm) long. Alternatively, the ends of stitching chain may be stitched back into the seam by means of the appropriate mechanical device.

3.2.3 Type I net. Type I net shall have two brass grommets as specified in 3.1.3, positioned as follows: One grommet shall be placed $1 \pm 1/4$ inch (25 ± 6 mm) from the side seam and the top folded edge. The other grommet shall be placed on the opposite side, similarly positioned from the folded edge. The cloth shall not break, tear, or become loosened from the grommets when manual pressure is applied after laundering, as specified in 4.2.4.

3.2.4 Dimensions. Outside dimensions of the bags shall be as follows:

- Size 2 - 12 by 22 inches (305 by 559 mm)
- Size 4 - 24 by 36 inches (610 by 914 mm)

Unless otherwise specified, a minus tolerance of 1/2 inch (13 mm), and any plus tolerance in width or length of nets shall be permitted.

3.3 Workmanship. Cloth components shall be free of cuts, tears, broken or missing yarns or snagged yarn (knit). There shall be no hole, smash, mend, run or dropped stitch. The fabric shall not be sleazy or uneven with loose yarns resulting in loops or slippage of mesh or knit, clearly visible. Thread tension shall be maintained so that there will be no loose stitching. Metal components shall be free of burrs, sharp edges, and shall not be broken or malformed.

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 as specified herein. Except as otherwise specified in the contract or 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 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 the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Quality conformance inspection. Except as otherwise specified herein, sampling shall be performed in accordance with MIL-STD-105.

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

4.2.2 End item examination. The end item shall be examined in accordance with tables II and III. The lot size shall be expressed in units of one net. The sample unit shall be one net. The inspection level and acceptable quality level (AQL) for each examination shall be as specified in 4.2.2.3.

4.2.2.1 Visual examination. The end item shall be examined for the following defects.

TABLE II. Classification of defects

Defects	Classification	
	Major	Minor
Material defects (leno and knit fabrics as applicable):		
Broken or missing yarns or snagged yarn (knit):		
Two or more continuous	X	
Single		X
Thin places		X
Hole, smash, mend, run or dropped stitch	X	
Sleazy or uneven fabric, loose yarns - resulting in loops or slippage of mesh or knit, clearly visible at normal inspection distance (approximately 3 feet)		
(1 m)		X
Color - other than white (natural)		X

Workmanship:

Grease, oil or other foreign matter, spots or stains, except ink stains:

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TABLE II. Classification of defects (cont'd)

Defects	Classification	
	Major	Minor
Workmanship: (cont'd)		
More than 2 inches (51 mm) in combined directions	X	
More than 1/2 inch (13 mm) but not more than 2 inches (51 mm) in combined directions		X
Ink stains, more than 2 inches (51 mm) in combined directions		X
Cut, tear, or needle chews:		
Resulting in a weak place	X	
Not resulting in a weak place		X
Open seams	X	
NOTE: A seam shall be classified as open when one or more stitches joining a seam are broken or when two or more continuous skipped stitches or run-offs occur.		
Raw edge - more than 2 inches (51 mm) in length		X
NOTE: Raw edges not securely caught in stitching shall be classified as open seams.		
Wrong seam or stitch type		X
Stitches per inch: (cm)		
Less than 8 (3)	X	
Eight or 9 (3) or more than 12 (5)		X
Stitch tension - loose - resulting in loosely secured seam or tight - resulting in puckering, clearly visible at normal inspection distance (approximately 3 feet) (1 m)	X	
Stitching:		
Thread breaks, run-off or skip stitching not repaired	X	
Thread breaks, run-offs or two or more skipped stitches repaired by over stitching less than 2-inches (5 mm)		X
Loose or excessively tight stitching not repaired as specified		X

TABLE II. Classification of defects (cont'd)

Defects	Classification	
	Major	Minor
Construction:		
Top:		
Not turned under	X	
Fabric inclosed by stitching less than 1/2 (13 mm) or more than 1 inch (25 mm)		X
Not overedged with one row of stitching		X
When the first end of the stitches of the second row is not overstitched	X	
When the first end of stitches of the second row is overstitched less than 2 inches (51 mm)		X
Bottom and sides:		
Not folded under	X	
Fabric inclosed by stitching less than 5/8 (16 mm) or more than 1 inch (25 mm)		X
Stitching continued along folded edge for less than 3-1/2 (89 mm) or more than 4-1/2 inches (114 mm)		X
When the ends of the stitches not caught in other seams or stitches are not folded back nor bartacked or ends of stitching chain not stitched back into seam	X	
Bartack not of specified dimensions		X
• Grommets (type I nets only):		
One or both missing or not securely attached	X	
Located more than 1-1/4 (32 mm) or less than 3/4 inch (19 mm) from the side seam and the top folded edge		X
Net:		
Net formed with filling running other than lengthwise direction of net (leno)	X	
Net formed with wales running other than lengthwise direction of net (knit)	X	
Net not specified type, style and size	X	

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4.2.2.2 Examination for dimensions. Examination for dimensions shall be in accordance with the classification of defects listed in table III.

TABLE III. Classification of dimension defects

Defects	Classification	
	Major	Minor
Any measurement less than the specified dimension and twice the minus tolerance	X	
Any measurement less than the specified dimension and minus tolerance, but not less than twice the minus tolerance		X
Any measurement more than the specified dimension including the plus tolerance		X

4.2.2.3 Inspection level and acceptable quality levels. The inspection levels and AQLs expressed in defects per 100 units shall be as follows:

Examination	Inspection level	AQL	
		Major	Total
4.2.2.1	I	2.5	6.5
4.2.2.2	S-3	1.5	4.0

4.2.3 Packaging inspection. An examination shall be made to determine that the packaging, packing and marking comply with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully prepared for delivery with the exception that it need not be closed. Defects of closure listed below shall be examined on shipping containers fully prepared 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, expressed in terms of defects per hundred units, shall be 2.5.

<u>Examine</u>	<u>Defect</u>
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing or damaged.
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 bundles per shipping container more or less than required. Nets of different type or size in same bundle. <u>1/</u> Number of nets per bundle not as required. <u>1/</u>

1/ Two bundles from each shipping container in the sample shall be examined.

4.2.4 Testing of the end item. The test methods listed in table IV shall be in accordance with FED-STD-191, except as otherwise noted herein. The values specified in section 3 apply to the average of the number of test specimens selected for a sample unit for test purposes as specified in the applicable test methods. The sample unit shall be two finished nets. The lot size shall be expressed in units of one net each. The sample size shall be as follows and the lot shall be unacceptable if one or more sample units fail to meet any requirement specified:

<u>Lot size (nets)</u>	<u>Sample size (No. of sample units)</u>
800 or less	2
801 up to and including 22,000	3
22,001 and over	5

TABLE IV. End item testing

<u>Characteristic</u>	<u>Requirement reference</u>	<u>Test method</u>
Fabric weave and type of knit	3.1.1.3.1 and 3.1.1.3.2	Visual <u>1/</u>
Top selvage weave (style A)	3.1.1.3.1	Visual <u>1/</u>
Bottom selvage weave (style A)	3.1.1.3.1	Visual <u>1/</u>

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TABLE IV. End item testing (cont'd)

Characteristic	Requirement reference	Test method
Yarns per inch (/cm):		
Warp	3.1.1.3.1	5050
Filling	3.1.1.3.1	5050
Weight, ounces per square yard (g/m ²)	3.1.1.3.1 and 3.1.1.3.2	5041
Meshes per square inch (/cm ²)	3.1.1.3.2	Visual <u>2/</u>
Bursting strength, pounds (N)	3.1.1.3.1 and 3.1.1.3.2	5120
Grommet attachment (type I net)	3.2.3	Visual <u>1/</u>

1/ One determination per sample unit and the results reported as pass or fail.

2/ Five determinations per sample unit and the average reported to the nearest whole number.

5. PREPARATION FOR DELIVERY

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

5.1.1 Level A. Twelve nets of one type, style and size only, shall be neatly folded and alternately stacked in a bundle and securely tied with cotton tape or twine.

5.1.2 Level C. Nets shall be packaged to afford adequate protection against physical damage during shipment from the supply source 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. One hundred and forty-four size 2 nets, or 72 size 4 nets of one type and style only, packaged as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC-L, grade V2s of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class weather-resistant, variety

DW, grade V15c of PPP-B-636. Each container shall have the contents completely covered on the top and bottom with a sheet of 30-pound minimum basis weight (49 g/m²) kraft paper conforming to type I, grade B of UU-P-268. Each shipping container shall be closed in accordance with method III, waterproofed in accordance with method V, and reinforced as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.2.3.

5.2.2 Level B. One hundred and forty-four size 2 nets, or 72 size 4 nets of one type and style only, packaged as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC-L, class domestic, type CF (variety SW or SF), grade 275 of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class domestic, variety DW, grade 200 of PPP-B-636. Each container shall have the contents completely covered on the top and bottom with a sheet of 30-pound minimum basis weight (49 g/m²) kraft paper conforming to type I, grade B of UU-P-268. Shipping containers shall be closed in accordance with method II as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.2.3.

5.2.2.1 Weather-resistant containers. When specified (see 6.2), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with method III as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.2.3.

5.2.3 Level C. Nets, 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 be in accordance with Uniform Freight Classification or National Motor Freight Classification, as applicable.

5.3 Marking. Marking shall be in accordance with 5.3.1 or 5.3.2 as specified (see 6.2).

5.3.1 Civil agencies. In addition to any special marking required by the contract or order, interior packages and shipping container shall be marked in accordance with FED-STD-123.

5.3.2 Military requirements. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. The nets are intended for use in laundries when washing items of clothing.

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6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents.

- (a) Title, number, and date of this specification.
- (b) Type, style and size required (see 1.2 and 3.1.1.3).
- (c) Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
- (d) When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).

6.3 Recycled material. It is encouraged that recycled material be used when practicable as long as it meets the requirements of the specification (see 3.1).

6.4 Metric equivalents. Metric equivalents, indicated in parentheses throughout this document, are based on practices, conversion factors and symbols specified in ASTM E 380 Standard for Metric Practice, and are for information only. In each instance, the value stated in US customary units shall be controlling.

Custodians:

Army - GL
Navy - YD
Air Force - 99

Review activity:

Navy - MC

Preparing activity:

Army - GL

Civil Agency Coordinating Activities:

GSA-FSS
HEW-NIH
VA-DMS

Project No. 3510-0237

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