

QUARTERMASTER CORPS
TENTATIVE
SPECIFICATION.

J. Q. D. No. 208A
October 5, 1942.
Superseding
J. Q. D. No. 208
September 29, 1942.

DUCK; COTTON, PLIED-YARNS (ARMY,
NUMBERED AND TENT DUCK).

A. APPLICABLE SPECIFICATIONS.

A-1. The following specifications, of the issue in effect on date of invitation for bids, shall form a part of this specification.

A-1a. Federal Specifications -

T-T-871 - Twine; cotton, wrapping.
QQ-S-781 - Strapping, flat, nailless; steel, painted and zinc-coated (galvanized).
UU-P-268 - Paper; kraft, wrapping.
UU-P-271 - Paper; kraft, wrapping, waterproofed.
CCC-B-811 - Burlap; jute.
CCC-T-191 - Textiles; general specifications, test methods.

A-1b. United States Army Specifications -

6-280 - Cloth, cotton, osnaburg.
100-2 - Standard specifications for marking shipments.

A-1c. Quartermaster Corps Tentative Specification -

P.Q.D. No. 133 - Cloth, cotton, ~~blain~~ *baling*.

B. TYPES AND GRADE.

B-1. Types.- This specification covers the following types of duck:-

Type I - Numbered duck.
Type II - Dyed numbered duck.
Type III - Army duck.
Type IV - Dyed Army duck.

B-2. Grade.- The grade shall be "Firsts".

C. MATERIAL AND WORKMANSHIP.

C-1. Material.- The material shall conform to the following:-

C-1a. Cotton.- The cotton shall be of suitable length of staple and grade to meet the requirements of this specification.

C-1b. Yarn.- The cotton used in the manufacture of the yarn shall be well carded, drawn, evenly spun and twisted into plied yarns as hereinafter indicated.

C-2. Workmanship.- The duck shall be clean, evenly woven and free from defects which may materially affect its appearance or serviceability.

D. GENERAL REQUIREMENTS.

D-1. Weave.- The weave shall be plain.

D-2. Width.- The width of the goods called for shall be as specified, with the following tolerances:-

Widths up to and including 60 inches, minus 1/4 inch.
61 inches to 120 inches, minus 3/8 inch.

Any reasonable plus tolerance will be acceptable.

D-3. Size content.- The duck shall be woven without sizing. The use of finishing or loading materials to increase the weight or breaking strenght is prohibited.

D-4. Color.- The color (unbleached or dyed) shall be as specified in the invitation for bids.

D-4a. Unless otherwise specified, khaki colors shall be produced with mineral dyes. Other colors shall be produced as specified in invitation for bids.

D-4b. Color Fastness.- Unless otherwise specified, dyed duck shall have good fastness to light and water.

D-5. Water repellent finish.- The invitation for bids may specify a water repellent finish on any type of duck together with requirements for its application and test which it shall meet.

D-6. Vat dyed and sulphur dyed duck.- When vat dyed or sulphur dyed ducks are specified, a minus tolerance of 5% in weight and breaking strength (Tables 2 and 4) will be acceptable.

D-7. Length of bolts or rolls.- Unless otherwise specified, rolls of duck delivered shall average 80 to 110 yards, two piece rolls in which no single piece is less than 25 yards will be acceptable to not in excess of 5% of the contract.

D-8. Contractor's inspection.- The contractor shall thoroughly inspect the duck for compliance with this specification prior to delivery to the United States Government for final inspection.

E. DETAIL REQUIREMENTS.

E-1. Type I. Numbered duck.-

E-1a. The constructions for Type I - numbered duck - shall be as shown in Table I.

TABLE I - REQUIREMENTS.

No. of Duck	Stand-	Mini-	Dis-	Minimum	Breaking
Commercial	ard	mum	tance of	Thread	Strength
Designation	Weight	Weight	Widths ¹	Ply	Count
	per	per	Selvage		(1x1x3 inches
	Linear	Square	Stripe		Per
	Yard	Yard	From		Inch
	22 in.		Edge		(Minimum)
	Wide			Warp:Fill-	Warp:Fill-
				ing	ing
Hard Tex-	Ounces	Ounces	Inches	Inches	lb.
ture					lb.
2/0.....	20	31.90	As Spec-	2	5 : 7 : 24 : 16 : 465 : 435
			ified		
1/0.....	19	30.31	do.	2	5 : 6 : 24 : 16 : 450 : 405
1.....	18	28.71	do.	1-3/4	5 : 5 : 26 : 19 : 440 : 370
2.....	17	27.12	do.	1-3/4	5 : 4 : 26 : 19 : 420 : 345
3.....	16	25.53	do.	1-1/2	4 : 5 : 29 : 20 : 390 : 330
4.....	15	23.93	do.	1-1/2	4 : 4 : 32 : 23 : 375 : 300
5.....	14	22.33	do.	1-1/2	3 : 4 : 36 : 24 : 345 : 285
6.....	13	20.74	do.	1-1/4	3 : 3 : 36 : 26 : 335 : 250
8.....	11	17.55	do.	1-1/8	3 : 3 : 44 : 26 : 285 : 210
10.....	9	14.35	do.	1	3 : 3 : 46 : 28 : 245 : 160
12.....	7	11.16	do.	1	(2 : 2 : 46 : 36) : 195 : 120
Medium					
Texture:					
2/0.....	20	31.90	do.	2	5 : 8 : 24 : 14 : 450 : 405
1/0.....	19	30.31	do.	2	5 : 6 : 24 : 14 : 435 : 380
1.....	18	28.71	do.	1-3/4	5 : 5 : 26 : 15 : 425 : 345
2.....	17	27.12	do.	1-3/4	5 : 4 : 26 : 15 : 410 : 320
3.....	16	25.53	do.	1-1/2	4 : 5 : 29 : 15 : 370 : 315
4.....	15	23.93	do.	1-1/2	4 : 4 : 29 : 17 : 350 : 290
5.....	14	22.33	do.	1-1/2	3 : 4 : 34 : 18 : 315 : 285
6.....	13	20.74	do.	1-1/4	3 : 3 : 34 : 18 : 305 : 250

¹Regular widths as given on P.1 of simplified practice recommendation No. 27 cotton duck (first revision) only should be specified.

²Invitation for bids may require omission of selvage stripe.

E-2. Type II. Dyed numbered duck.-

E-2a. The constructions for Type II shall be as shown in Table II.

TABLE II - REQUIREMENTS¹

No. of Duck	Stan-	Mini-		Dis- ²			Minimum	Breaking
Commercial	ard	mum		tance of	Minimum	Thread	Strength ³	
Designation	Weight	Weight		Selvage	Ply	Count	(1x1x3 inches	
	per	per	Widths	Stripe		Per	Grab)	
	Linear	Square		From		Inch	(Minimum)	
	Yard	Yard		Edge				
	22 in.	3 & 4			Warp:Fill-	Warp:Fill-	Warp:Fill-	
	Wide				ing	ing	ing	
Hard Texture	Ounces	Ounces	Inches	Inches				lb.: lb.
2/0.....	20	31.2	As spec-	2	5	7	24 : 15	:450 : 400
1/0.....	19	29.8	ified	2	5	6	24 : 15	:435 : 360
1.....	18	28.2	do.	1-3/4	5	5	26 : 18	:425 : 340
2.....	17	26.7	do.	1-3/4	5	4	26 : 18	:405 : 310
3.....	16	25.0	do.	1-1/2	4	5	29 : 18	:375 : 300
4.....	15	23.5	do.	1-1/2	4	4	32 : 21	:360 : 275
5.....	14	22.0	do.	1-1/2	3	4	36 : 22	:335 : 255
6.....	13	20.3	do.	1-1/4	3	3	36 : 24	:320 : 225
8.....	11	17.25	do.	1-1/8	3	3	44 : 24	:275 : 190
10.....	9	14.0	do.	1	3	3	46 : 25	:240 : 145
12.....	7	10.9	do.	1	(2	2	46 : 33)	:195 : 110
Medium								
Texture								
2/0.....	20	31.2	do.	2	5	8	24 : 13	:450 : 360
1/0.....	19	29.8	do.	2	5	6	24 : 13	:435 : 340
1.....	18	28.2	do.	1-3/4	5	5	26 : 13	:425 : 310
2.....	17	26.7	do.	1-3/4	5	4	26 : 13	:410 : 290
3.....	16	25.0	do.	1-1/2	4	5	29 : 13	:370 : 280
4.....	15	23.5	do.	1-1/2	4	4	29 : 15	:350 : 260
5.....	14	22.0	do.	1-1/2	3	4	34 : 16	:315 : 250
6.....	13	20.3	do.	1-1/4	3	3	34 : 16	:305 : 225

¹These are the finished materials which will be obtained when the standard Gray Goods specified in Table I are dyed and finished.

²Invitation for bids may require omission of selvage stripe.

³See D-6. for tolerance in weight and breaking strengths of vat dyed duck.

⁴This weight is exclusive of water repellent finishes. In order to determine the weight, the water repellent finish (but not dye) should be removed by appropriate methods, the oven-dry weight of the cleaned fiber determined, an allowance of 11-1/2 percent of this weight added (4% to compensate for natural waxes and oils removed from the cotton in the removal of the finish and 7-1/2% for the natural moisture regain of the fiber), and the resulting weight calculated to a square yard basis.

E-3. Type III, Army Duck.-

E-3a. The constructions for Type III shall be as shown in Table III.

TABLE III - REQUIREMENTS.

Commercial Designation (Weight Per Linear Yard, 28-1/2 Inches)	Minimum Weight Per Square Yard	Width, Un- Less Other- wise Specified	Ply Minimum	Thread Count Minimum	Breaking Strength (1x1x3 inches Grab) (Minimum)
			Warp: Fill- ing	Warp: Fill- ing	Warp: Filling
	Ounces	Inches			lb. lb.
Shelter Tent	8.25	35-1/2	2	2	60 : 58 : 125 : 120
8 ounce	9.85	30-1/2 or 37	2	2	52 : 40 : 160 : 110
10 ounce	12.29	30-1/2	3	2	44 : 34 : 210 : 130
12 ounce	14.77	30-1/2	3	3	44 : 28 : 235 : 175
12.6 ounce	15.9	30-1/2	3	3	45 : 34 : 245 : 200
15 ounce	18.48	30-1/4	4	4	42 : 28 : 315 : 200

E-4. Type IV, Dyed Army Duck.-

E-4a. The constructions for Type IV Duck shall be as shown in Table IV.

TABLE IV - REQUIREMENTS⁽¹⁾

Commercial Designation (Weight Per Linear Yard, 28-1/2 Inches) See Table III	Minimum Weight Per Square Yard (2) - (3)	Width, Un- less Other- wise specified (4)	Ply Minimum	Thread Count Minimum	Breaking Strength (1x1x3 inches Grab) (Minimum)
			Warp: Fill- ing	Warp: Fill- ing	Warp: Filling
					(2) : (2)
	Ounces	Inches			lb. lb.
Shelter Tent	7.9	33	2	2	62 : 54 : 120 : 110
8 ounce	9.65	29 1/2 or 36	2	2	53 : 38 : 150 : 95
10 ounce	12.00	29-1/2	3	2	45 : 31 : 200 : 115
12 ounce	14.5	29-1/2	3	3	45 : 26 : 225 : 160
12.6 ounce	15.5	29-1/2	3	3	46 : 32 : 230 : 180
15 ounce	18.1	29-1/2	4	4	43 : 26 : 300 : 180

(1) These are the finished material which will be obtained when the standard gray goods specified in Table III are dyed and finished.

(2) See D-6 for tolerance in weight and breaking strengths of vat dyed duck.

(3) This weight is exclusive of water repellent finishes. In order to determine the weight, the water repellent finish (but not dye) should be removed by appropriate methods, the oven-dry weight of the cleaned fiber determined, an allowance of 11-1/2 percent of this weight added (4% to compensate for natural

waxes and oils removed from the cotton in the removal of the finish and 7-1/2% for the natural moisture regain of the fiber), and the resulting weight calculated to a square yard basis.

(4) See Paragraph H-2.

F. METHODS OF SAMPLING, INSPECTION AND TESTS.

F-1. Sampling.- The number and size of samples selected for testing purposes shall be that determined by the contracting officer or inspector as necessary in order to ascertain if the duck in the delivery conforms to specification requirements. Samples selected for testing purposes will, if they meet specification requirements, be considered as part of the delivery.

F-2. Inspection.- Inspection may be made throughout the entire process of manufacture. The passing as satisfactory of any detail of construction or material shall not relieve the contractor of responsibility for faulty workmanship or material which may be discovered at any time prior to final acceptance. Final inspection of the finished articles shall be made either at point of production or at point of delivery designated in the contract or purchase order of procuring agency. In case of factory inspection, every facility shall be afforded inspectors, by the manufacturer, for the prosecution of their work.

F-3. Tests.- The methods of testing described in Federal Specification CCC-T-191, wherever applicable, shall be followed.

G. PACKING AND MARKING.

G-1. Packing.- Unless otherwise specified in the invitation for bids, contract or order, cotton duck specified in this specification shall be packed as follows:-

- (a). Duck, gray, shall be packed either in bales or in rolls for domestic shipment.
- (b). Duck, finished, shall be packed in loosely wound rolls for domestic shipment.
- (c). Bales shall not exceed a maximum gross weight of 600 lbs. Each bale shall be wrapped in one layer of No. 2 kraft paper, 120 lbs. per 1,000 sheets, based on size 24" x 36", conforming to Federal Specification No. UU-P-268. It shall then be covered with one of the following materials:-
 - (1) Burlap, 8 oz. per sq. yd. of 30" or 40" width, conforming to Federal Specification No. CCC-B-811.
 - (2) Cotton osnaburg cloth, 8 oz. per sq. yd. conforming to U. S. Army Specification No. 6-280.
 - (3) Cotton baling cloth, 8 oz. per sq. yd., Class A, complying with Q.M.C. Tentative Spec. P.Q.D. No. 133.
 - (4) Waterproofed kraft wrapping paper conforming in general to the requirements of Federal Specification UU-P-271, Type E, except that the paper will consist of one sheet of 75 lb. kraft wrapping paper creped in at least one direction and one sheet of 45 lb.

kraft wrapping paper creped in the same direction or directions, both sheets cemented together with asphalt and reinforced with cords or strands of fiber running in both directions of the paper, spaced 1/8" to 1/4" apart and completely embedded in the asphalt.

- (d) Twine shall be used for sewing all bales covered with burlap, osnaburg, or baling cloth. It shall be 16 ply cotton twine conforming to Federal Specification T-T-871. The covering shall be stitched approximately one stitch to the inch and every third stitch knotted. Five inches of surplus covering shall be gathered together on each of the four corners and securely sewn into ears for handles by turning inward the corners of the covering material, sewing the ears through and through, and passing the twine around the ear close to the bale and knotting.
- (e) When the fibre reinforced waterproofed kraft paper specified in (c) (4) above is used, all exposed edges of the paper, except at the ends of the bale, shall be folded under to a depth of not less than 3" and the paper shall be lapped not less than 3" at all seams. The end folds shall be drawn tight and made long enough to be brought around the end of the bale and firmly secured under the outer strap at each end.
- (f) Each bale shall be bound with not less than four flat painted steel straps, not less than 5/8" wide and having a tensile strength of not less than 600 lbs. The strap shall comply with Federal Specification Q-S-781.
- (g) Rolls shall be wrapped with three layers of No. 2 kraft wrapping paper, 120 lbs. per 1,000 sheets, based on size 24" x 36" and shall not exceed a maximum gross weight of 200 lbs; or rolls shall be wrapped with one layer of this paper followed by an outer covering consisting of one of the materials cited in (c) above and shall not exceed a maximum gross weight of 300 lbs.
- (h) Rolls wrapped with burlap, osnaburg, or baling cloth will be sewn with twine in accordance with (d) except that ears are not **required**. Rolls wrapped with three layers of kraft paper or with fibre reinforced waterproofed kraft paper shall be bound with not less than three flat painted steel straps not less than 5/8" wide and having a tensile strength of not less than 600 lbs. The straps shall comply with Federal Specification QQ-S-781. The outer straps shall be placed not less than 4" from the ends of the roll. The end folds of the outer paper wrapping shall be drawn tight and fastened securely under the two outer straps.

(i) When it is required that duck be packed for overseas shipment, unless otherwise specified, the above described packing shall be acceptable with the following exceptions:-

- (1) Bales or rolls having an outer wrapping of burlap, osnaburg, or baling cloth must have an intermediate lining consisting of waterproofed kraft wrapping paper complying with Type B of Federal Specification UU-P-271.
- (2) Rolls wrapped with three layers of kraft paper will not be used for overseas shipment.

G-2. Marking.- Unless otherwise specified in invitation for bids, contract, or order under which shipment is made, shipping packages shall be marked in accordance with United States Army Specification No. 100-2, and as follows:-

All rolls shall be stenciled in accordance with the prescribed marking specifications on both the side and one end of each roll. If the area of the end is too small to permit the use of a stencil, a waterproof tag printed or marked with indellible ink shall be securely attached to one end of each roll.

H. NOTES.

H-1. Unless otherwise specified in invitation for bid, contract, or order, before production is commenced a two (2) yard sample of gray duck or a (3-1/2) three and one-half yard sample of finished or dyed duck shall be submitted to the contracting officer for approval.

H-2. The widths and weights listed in Table IV are made to order in large quantities primarily for military purposes. For commercial purposes, 28-1/2" widths in the grey, or dyed khaki or olive drab, are considered standard and are normally available in jobbers' and manufacturers' stocks.

- 8 oz. 28-1/2" grey duck will finish 27" after dyeing.
- 10 oz. 28-1/2" grey duck will finish 27-1/2" after dyeing.
- 12 oz. 28-1/2" grey duck will finish 27-3/4" after dyeing.
- 15 oz. 28-1/2" grey duck will finish 28" after dyeing.

NOTICE:- When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

NOTE:- Unless otherwise specified in invitation for bid or purchase order, copies of this specification may be obtained at the following point:-

Jeffersonville Quartermaster Depot, Jeffersonville, Indiana.

HISTORICAL FILE COPY DO NOT REMOVE

QUARTERMASTER CORPS
TENTATIVE
SPECIFICATION

J. Q. D. No. 208B

June 8, 1943

Superseding

J. Q. D. No. 208A

October 5, 1942.

DUCK; COTTON, PLIED-YARNS (ARMY,
NUMBERED AND TENT DUCK).

A. APPLICABLE SPECIFICATIONS.

A-1. The following specifications, of the issue in effect on date of invitation for bids, shall form a part of this specification.

A-1a, Federal Specifications:-

- T-T-871 - Twine; cotton, wrapping.
- QQ-S-781 - Strapping, flat, nailless; steel, painted and zinc-coated (galvanized).
- UU-P-268 - Paper; kraft, wrapping.
- UU-P-271 - Paper; kraft, wrapping, waterproofed.
- CCC-B-811 - Burlap; jute.
- CCC-T-191 - Textiles; general specifications, test methods.

A-1b. United States Army Specification:-

6-280 - Cloth, cotton, osnaburg.

A-1c. Quartermaster Corps Tentative Specifications:-

- P.Q.D. No. 133 - Cloth, Cotton, Baling.
- O.Q.M.G. No. 94 - Specifications for marking of outside shipping containers by contractors.

B. TYPES AND GRADE.

B-1. Types. - This specification covers the following types of duck:-

- Type I - Numbered duck.
- Type II - Dyed numbered duck.
- Type III - Army Duck.
- Type IV - Dyed Army Duck.

B-2. Grade. - The grade shall be "Firsts".

C. MATERIAL AND WORKMANSHIP.

C-1. Material. - The material shall conform to the following:-

C-1a. Cotton. - The cotton shall be of suitable length of staple and grade to meet the requirements of this specification.

C-1b. Yarn. - The cotton used in the manufacture of the yarn shall be well carded, drawn, evenly spun and twisted into plied yarns as hereinafter indicated.

C-2. Workmanship. - The duck shall be clean, evenly woven and free from defects which may materially affect its appearance or serviceability.

D. GENERAL REQUIREMENTS.

D-1. Weave. - The weave shall be plain.

D-2. Width. - The width of the goods called for shall be as specified, with the following tolerances:-

Widths up to and including 60 inches, plus or minus
1/4 inch.

61 inches to 120 inches, plus or minus 3/8 inch.

D-3. Size content. - The duck shall be woven without sizing. The use of finishing or loading materials to increase the weight or breaking strength is prohibited.

D-4. Color. - The color (unbleached or dyed) shall be as specified in the invitation for bids.

D-4a. Unless otherwise specified, khaki colors shall be produced with mineral dyes. Other colors shall be produced as specified in invitation for bids.

D-4b. Color Fastness. - Unless otherwise specified, dyed duck shall have good fastness to light and water.

D-5. Water repellent finish. - The invitation for bids may specify a water repellent finish on any type of duck together with requirements for its application and test which it shall meet.

D-6. Vat dyed and sulphur dyed duck. - When vat dyed or sulphur dyed ducks are specified, a minus tolerance of 5% in weight and breaking strength (Tables 2 and 4) will be acceptable.

D-7. Length of Bolts or Rolls. -

D-7a. Length of Rolls. - When roll packing is specified, one piece rolls, 80 yards or more in length shall be delivered. Two piece rolls up to 10% of the contract quantity will be acceptable, but no piece shall be less than 25 yards and no roll less than 80 yards. The pieces will be sewn together with a Merrow (butted) seam on all ducks No. 10 and lighter. On duck heavier than No. 10, the pieces will be lapped and not sewn together. The laps will be marked with a colored thread on the selvage.

D-7b. Length of Bolts.- When bale packing is specified, pieces 80 yards or more in length (double cuts) shall be delivered. Single cuts less than 80 yards will be acceptable up to 10% of the contract quantity provided no piece is less than 35 yards in length. Not more than two single cuts shall be included in an individual bale.

D-7c. Short Pieces.- Yardages less than the minimum shown above may at times be acceptable for certain end uses under terms and conditions to be determined by the contracting agency.

D-8. Inspection.-

D-8a. Inspection may be made throughout the entire process of manufacture. The passing as satisfactory of any detail of construction or material shall not relieve the contractor of responsibility for faulty workmanship or material which may be discovered at any time prior to final acceptance. Final inspection of the finished articles shall be made either at point of production or at point of delivery as designated in the contract or purchase order of the procuring agency. Where inspection is performed at the factory, the manufacturer shall afford inspectors adequate facilities for the performance of their work.

D-8b. The contractor shall carefully inspect and thoroughly burl each and every yard of duck by passing it over a perch, or equivalent process.

D-8c. Imperfections.- Certain types of imperfections will be accepted if they do not occur in excess of one defect to every fifteen yards, even though such goods do not represent the quality desired. An allowance of one quarter yard will be required for every such imperfection as may be accepted. If the defect extends more than one quarter yard, yardage allowance will be required in proportion to the defect. Defects which can be removed by proper burling or that may detract from the appearance of the duck without affecting its serviceability, shall be kept at a minimum. The type of imperfections which can be accepted with the allowances referred to above include the following, which shall be marked at all times by stringing the selvage.

Bad start ups	Two contiguous filling threads missing.
Thin places	Smashes
Thick places	Large slubs
Drawbacks	Kinky filling
Warp or filling floats	Light or mixed filling
Misspicks	Small or washed out oil spots
	Small holes not more than $\frac{3}{8}$ " in diameter.

D-8d. Unacceptable imperfections.- The following imperfections shall not be present in goods offered under this specification, as their presence would render the cloth unsatisfactory:

D-8e. The strings to mark the minor defects shall be allowed to remain on the duck during finishing except when coating would be affected. Retention of these strings is necessary to distinguish between gray and finishing defects. The dyer or finisher shall reinspect the duck after finishing and mark or remove defects as indicated above.

E. DETAIL REQUIREMENTS.

E-1a. The constructions for Type I - numbered duck - shall be as shown in Table I.

No. of Duck	Stand-	Mini-	Dis-	Minimum	Breaking		
Commercial	ard	mum	tance of	Thread	Strength		
Designation	Weight	Weight	Widths	Selvage	Ply	Count	(1x1x3 inches
	per	Per		Stripe		Per	Grab)
	'Linear	'Square'		From		Inch	(Minimum)
	'Yard	'Yard		Edge			
	22 in.				Warp	Fill-Warp	Fill-
	Wide				ing	ing	ing
Hard Tex- ture	Ounces	Ounces	Inches	Inches			lb. lb.
2/0.....	20	31.90	AsSpec- ified	2	5	7	24 16 465 435
1/0.....	19	30.31	do.	2	5	6	24 16 450 405
1.....	18	28.71	do.	1-3/4	5	5	26 19 440 370
2.....	17	27.12	do.	1-3/4	5	4	26 19 420 345
3.....	16	25.53	do.	1-1/2	4	5	29 20 390 330
4.....	15	23.93	do.	1-1/2	4	4	32 23 375 300
5.....	14	22.33	do.	1-1/2	3	4	36 24 345 285
6.....	13	20.74	do.	1-1/4	3	3	36 26 335 250
8.....	11	17.55	do.	1-1/8	3	3	44 26 285 210
10.....	9	14.35	do.	1	3	3	46 28 245 160
12.....	7	11.16	do.	1	(2	2	46 36) 195 120

2/0.....	20	31.90	do.	2	5	8	24	14	450	405
1/0.....	19	30.31	do.	2	5	6	24	14	435	380
1.....	18	28.71	do.	1-3/4	5	5	26	15	425	345
2.....	17	27.12	do.	1-3/4	5	4	26	15	410	320
3.....	16	25.53	do.	1-1/2	4	5	29	15	370	315
4.....	15	23.93	do.	1-1/2	4	4	29	17	350	290
5.....	14	22.33	do.	1-1/2	3	4	34	18	315	285
6.....	13	20.74	do.	1-1/4	3	3	34	18	305	250

²Invitation for bids may require omission of selvage stripe.

E-2a. The constructions for Type II shall be as shown in

TABLE II - REQUIREMENTS¹

- 5 -

¹These are the finished materials which will be obtained when the standard Gray Goods specified in Table I are dyed and finished

²Invitation for bids may require omission of selvage stripe.

³See D-6. for tolerance in weight and breaking strengths of vat dyed duck.

⁴This weight is exclusive of water repellent finishes. In order to determine the weight, the water repellent finish (but not dye) should be removed by appropriate methods, the oven-dry weight of the cleaned fiber determined, an allowance of 11-1/2 percent of this weight added (4% to compensate for natural waxes and oils removed from the cotton in the removal of the finish and 7-1/2% for the natural moisture regain of the fiber), and the resulting weight calculated to a square yard basis.

E-3. Type III, Army Duck.-

E-3a. The constructions for Type III shall be as shown in Table III.

TABLE III - REQUIREMENTS.

Commercial Designation (Weight Per Linear Yard, 28-1/2 Inches)	Minimum Weight Per Square Yard	Width, Unless Otherwise Specified	Ply	Thread Count	Breaking Strength (1x1x3 inches Grab)	Minimum Warp Filling		
	Ounces	Inches			lb.	lb.		
Shelter Tent	8.25	35-1/2	2	2	60	58	125	120
8 ounce	9.85	30-1/2 or 37	2	2	52	40	160	110
10 ounce	12.29	30-1/2	3	2	44	34	210	130
12 ounce	14.77	30-1/2	3	3	44	28	235	175
12.6 ounce	15.9	30-1/2	3	3	45	34	245	200
15 ounce	18.48	30-1/4	4	4	42	28	315	200

E-4. Type IV, Dyed Army Duck.-

E-4a. The constructions for Type IV Duck shall be as shown in Table IV.

TABLE IV - REQUIREMENTS (1)

Commercial Designation (Weight Per Linear Yard, 28-1/2 Inches) See Table III	Minimum Weight Per Square Yard (2) - (3)	Width, Unless otherwise specified (4)	Ply	Thread Count	Breaking Strength (1x1x3 inches Grab)	Minimum Warp Filling
	Ounces	Inches			lb.	lb.
Shelter Tent	7.9	33	2	2	62	54
8 ounce	9.65	29 1/2 or 36	2	2	53	38
10 ounce	12.00	29-1/2	3	2	45	31
12 ounce	14.5	29-1/2	3	3	45	26
12.6 ounce	15.5	29-1/2	3	3	46	32
15 ounce	18.1	29-1/2	4	4	43	26

(1) These are the finished materials which will be obtained when the standard gray goods specified in Table III are dyed and finished.

(2) See D-6 for tolerance in weight and breaking strengths of vat dyed duck.

(3) This weight is exclusive of water repellent finishes. In order to determine the weight, the water repellent finish (but not dye) should be removed by appropriate methods, the oven-dry weight of the cleaned fiber determined, an allowance of 11-1/2 percent of this weight added (4% to compensate for natural waxes and oils removed from the cotton in the removal of the finish and 7-1/2% for the natural moisture regain of the fiber), and the resulting weight calculated to a square yard basis.

(4) See Paragraph H-2.

F. METHODS OF SAMPLING, INSPECTION AND TESTS.

F-1. Sampling. - The number and size of samples selected for testing purposes shall be that determined by the contracting officer or inspector as necessary in order to ascertain if the duck in the delivery conforms to specification requirements. Samples selected for testing purposes will, if they meet specification requirements, be considered as part of the delivery.

F-2. Inspection. - See Paragraph D-8.

F-3. Tests. - The methods of testing described in Federal Specification CCC-T-191, wherever applicable, shall be followed.

G. PACKING AND MARKING.

G-1. Packing. - Unless otherwise specified in the invitation for bids, contract or order, cotton duck specified in this specification shall be packed as follows:-

(a). Duck, gray, shall be packed either in bales or in rolls for domestic shipment.

(b). Duck, finished, shall be packed in loosely wound rolls for domestic shipment.

(c). Bales shall not exceed a maximum gross weight of 600 lbs. Each bale shall be wrapped in one layer of No. 2 kraft paper, 120 lbs. per 1,000 sheets, based on size 24" x 36", conforming to Federal Specifi-

cation No. UU-P-268. It shall then be covered with one of the following materials:-

- (1) Burlap, 8 oz. per sq. yd. of 30" or 40" width, conforming to Federal Specification No. CCC-B-811.
- (2) Cotton osnaburg cloth, 8 oz. per sq. yd. conforming to U.S. Army Specification No. 6-280.
- (3) Cotton baling cloth, 8 oz. per sq. yd., Class A, complying with Q.M.C. Tentative Spec. P.Q.D. No. 133.
- (4) Waterproofed kraft wrapping paper conforming in general to the requirements of Federal Specification UU-P-271, Type E, except that the paper will consist of one sheet of 75 lb. kraft wrapping paper creped in at least one direction and one sheet of 45 lb. kraft wrapping paper creped in the same direction or directions, both sheets cemented together with asphalt and reinforced with cords or strands of fiber running in both directions of the paper, spaced 1/8" to 1/4" apart and completely embedded in the asphalt.

(d) Twine shall be used for sewing all bales covered with burlap, osnaburg, or baling cloth. It shall be 16 ply cotton twine conforming to Federal Specification T-T-871. The covering shall be stitched approximately one stitch to the inch and every third stitch knotted. Five inches of surplus covering shall be gathered together on each of the four corners and securely sewn into ears for handles by turning inward the corners of the covering material, sewing the ears through and through, and passing the twine around the ear close to the bale and knotting.

(e) When the fibre reinforced waterproofed kraft paper specified in (c) (4) above is used, all exposed edges of the paper, except at the ends of the bale, shall be folded under to a depth of not less than 3" and the paper shall be lapped not less than 3" at all seams. The end folds shall be drawn tight and made long enough to be brought around the end of the bale and firmly secured under the outer strap at each end.

(f) Each bale shall be bound with not less than four flat painted steel straps, not less than 5/8" wide and having a tensile strength of not less than 600 pounds. The strap shall comply with Federal Specification Q-S-781.

(g) Rolls shall be wrapped with three layers of No. 2 kraft wrapping paper, 120 lbs. per 1,000 sheets, based on size 24" x 36" and shall not exceed a maximum gross

weight of 200 lbs; or rolls shall be wrapped with one layer of this paper followed by an outer covering consisting of one of the materials cited in (c) above and shall not exceed a maximum gross weight of 300 lbs.

(h) Rolls Wrapped with burlap, osnaburg, or baling cloth will be sewn with twine in accordance with (d) except that ears are not required. Rolls wrapped with three layers of kraft paper or with fibre reinforced water-proofed kraft paper shall be bound with not less than three flat painted steel straps not less than 5/8" wide and having a tensile strength of not less than 600 lbs. The straps shall comply with Federal Specification QQ-S-781. The outer straps shall be placed not less than 4" from the ends of the roll. The end folds of the outer paper wrapping shall be drawn tight and fastened securely under the two outer straps.

(1) When it is required that duck be packed for overseas shipment, unless otherwise specified, the above described packing shall be acceptable with the following exceptions:-

- (1) Bales or rolls having an outer wrapping of burlap, osnaburg, or baling cloth must have an intermediate lining consisting of water-proofed kraft wrapping paper complying with Type B of Federal Specification UU-P-271.
- (2) Rolls wrapped with three layers of kraft paper will not be used for overseas shipment.

G-2. Marking.-- Unless otherwise specified in invitation for bids, contract, or order under which shipment is made, shipping packages shall be marked in accordance with Quartermaster Corps Tentative Specification O.Q.M.G. No. 94 and as follows:-

All rolls shall be stenciled in accordance with the prescribed marking specifications on both the side and one end of each roll. If the area of the end is too small to permit the use of a stencil, a waterproof tag printed or marked with indelible ink shall be securely attached to one end of each roll.

H. NOTES.

H-1. Unless otherwise specified in invitation for bid, contract, or order, before production is commenced a two (2) yard sample of gray duck or a (3-1/2) three and one-half yard sample of finished or dyed duck shall be submitted to the contracting officer for approval.

H-2. The widths and weights listed in Table IV are made to order in large quantities primarily for military purposes. For commercial purposes, 28-1/2" widths in the grey, or dyed khaki or olive drab, are considered standard and are normally available in jobbers' and manufacturers' stocks.

8 oz. 28-1/2" grey duck will finish 27" after dyeing.
 10 oz. 28-1/2" grey duck will finish 27-1/2" after dyeing.
 12 oz. 28-1/2" grey duck will finish 27-3/4" after dyeing.
 15 oz. 28-1/2" grey duck will finish 28" after dyeing.

NOTICE:- When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

NOTE:- Unless otherwise specified in invitation for bid or purchase order, copies of this specification may be obtained at the following point:-

Jeffersonville Quartermaster Depot, Jeffersonville, Indiana.

(1) Bales or rolls having an outer wrapping of burlap, canvas, or baling cloth must have an intermediate lining consisting of water-proof kraft wrapping paper complying with Type B of Federal Specification UU-P-271.
 (2) Rolls wrapped with three layers of kraft paper will not be used for overseas shipment.

G-2. Marking. - Unless otherwise specified in invitation for bids, contract, or order under which shipment is made, shipping packages shall be marked in accordance with Quartermaster Corps Tentative Specification G.O.M.O. No. 94 and as follows:-

All rolls shall be stencilled in accordance with the prescribed marking specifications on both the side and one end of each roll. If the area of the end is too small to permit the use of a stencil, a waterproof tag printed or marked with indelible ink shall be securely attached to one end of each roll.

H. NOTES.

H-1. Unless otherwise specified in invitation for bid, contract, or order, before production is commenced a two (2) yard sample of grey duck or a (3-1/2) three and one-half yard sample of finished or dyed duck shall be submitted to the contracting officer for approval.

H-2. The widths and weights listed in Table IV are made to order in large quantities primarily for military purposes. For commercial purposes, 28-1/2" widths in the grey, or dyed khaki or olive drab, are considered standard and are normally available in 'jobbers' and manufacturers' stocks.

QUARTERMASTER CORPS
TENTATIVE
SPECIFICATION

J.Q.D. No. 208C
3 August 1943
Amendment No. 1
19 September 1944

DUCK; COTTON, PLIED-YARNS
(ARMY, NUMBERED AND TENT DUCK)

This specification is changed as follows:-

Paragraph A-1a - Delete " T-T-871 - Twine; cotton, wrapping.
QQ-S-781 - Strapping, flat, nailless; steel,
painted and zinc-coated (galvanized).
UU-P-268 - Paper; kraft, wrapping.
UU-P-271 - Paper; kraft, wrapping, waterproofed.
CCC-B-811 - Burlap; jute."

Paragraph A-1b - Delete "O.Q.M.G. No. 94 - Specifications for marking of
outside shipping containers
by contractors."

Substitute "J.Q.D. No. 591 - Packing Requirements for
Fabrics for Tentage and
Equipage."

Section G - Delete in its entirety and substitute the following:-

"G. PACKAGING, PACKING, AND MARKING FOR SHIPMENT.

G-1. Packaging, packing, and marking shall conform to the require-
ments of Specification J.Q.D. No. 591, with the following exception:-

G-1a. Dyed and finished duck shall be packed only in rolls."

NOTE:- Copies of this amendment may be obtained at the following point:-

Jeffersonville Quartermaster Depot, Jeffersonville, Indiana.

QUARTERMASTER CORPS
TENTATIVE
SPECIFICATION

J. Q. D. No. 208C

August 3, 1943.

Superseding

J. Q. D. No. 208B

June 8, 1943.

HISTORICAL FILE COPY DO NOT REMOVE

DUCK; COTTON, PLIED-YARNS (ARMY,
NUMBERED AND TENT DUCK).

A. APPLICABLE SPECIFICATIONS.

A-1. The following specifications, of the issue in effect on date of invitation for bids, shall form a part of this specification.

A-1a. Federal Specifications:-

- T-T-871 - Twine; cotton, wrapping.
- QQ-S-781 - Strapping, flat, nailless; steel, painted and zinc-coated (galvanized).
- UU-P-268 - Paper; kraft, wrapping.
- UU-P-271 - Paper; kraft, wrapping, waterproofed.
- CCC-B-811 - Burlap; jute.
- CCC-T-191 - Textiles; general specifications, test methods.

A-1b. Quartermaster Corps Tentative Specification:-

O. Q. H. G. No. 94 - Specifications for marking of outside shipping containers by contractors.

B. TYPES AND GRADE.

B-1. Types. - This specification covers the following types of duck:

- Type I - Numbered duck.
- Type II - Dyed numbered duck.
- Type III - Army Duck.
- Type IV - Dyed Army Duck.

B-2. Grade. - The grade shall be "Firsts".

C. MATERIAL AND WORKMANSHIP.

C-1. Material. - The material shall conform to the following:-

C-1a. Cotton. - The cotton shall be of suitable length of staple and grade to meet the requirements of this specification.

C-1b. Yarn. - The cotton used in the manufacture of the

Scott Field - Bellville Ill.
Chanute - Rantoul Ill.

yarn shall be well carded, drawn, evenly spun and twisted into plied yarns as hereinafter indicated.

C-2. Workmanship.- The duck shall be clean, evenly woven and free from defects which may materially affect its appearance or serviceability.

D. GENERAL REQUIREMENTS.

D-1. Weave.- The weave shall be plain.

D-2. Width.- The width of the goods called for shall be as specified, with the following tolerances:-

Widths up to and including 60 inches, plus or minus 1/4 inch.
61 inches to 120 inches, plus or minus 3/8 inch.

D-3. Size content.- The duck shall be woven without sizing. The use of finishing or loading materials to increase the weight or breaking strength is prohibited.

D-4. Color.- The color (unbleached or dyed) shall be as specified in the invitation for bids.

D-4a. Unless otherwise specified, khaki colors shall be produced with mineral dyes. Other colors shall be produced as specified in invitation for bids.

D-4b/ Color Fastness.- Unless otherwise specified, dyed duck shall have good fastness to light and water.

D-5. Water repellent finish.- The invitation for bids may specify a water repellent finish on any type of duck, together with requirements for its application and test which it shall meet.

D-6. Vat dyed and sulphur dyed duck.- When vat dyed or sulphur dyed ducks are specified, a minus tolerance of 5% in weight and breaking strength (Tables 2 and 4) will be acceptable.

D-7. Length of Bolts or Rolls.-

D-7a. Length of Rolls.- When roll packing is specified, one piece rolls, 80 yards or more in length shall be delivered. Two piece rolls up to 10% of the contract quantity will be acceptable, but no piece shall be less than 25 yards and no roll less than 80 yards. The pieces will be sewn together with a Narrow (butted) seam on all ducks No.10 and lighter. On duck heavier than No.10, the pieces will be lapped and not sewn together. The laps will be marked with a colored thread on the selvage.

D-7b. Length of Bolts.- When bale Packing is specified, pieces 80 yards or more in length (double cuts) shall be delivered.

Single cuts less than 80 yards will be acceptable up to 10% of the contract quantity provided no piece is less than 35 yards in length. Not more than two single cuts shall be included in an individual bale.

D-7c. Short Pieces.- Yardages less than the minimum shown above may, at times, be acceptable for certain end uses under terms and conditions to be determined by the contracting agency.

D-8. Inspection.-

D-8a. Inspection may be made throughout the entire process of manufacture. The passing as satisfactory of any detail of construction or material shall not relieve the contractor of responsibility for faulty workmanship or material which may be discovered at any time prior to final acceptance. Final inspection of the finished articles shall be made either at point of production or at point of delivery as designated in the contract or purchase order of procuring agency. Where inspection is performed at the factory, the manufacturer shall afford inspectors adequate facilities for the performance of their work.

D-8b. The contractor shall carefully inspect and thoroughly burl each and every yard of duck by passing it over a perch or equivalent process.

D-8c. Imperfections.- Certain types of imperfections will be accepted if they do not occur in excess of one defect to every fifteen yards, even though such goods do not represent the quality desired. An allowance of one quarter yard will be required for every such imperfection as may be accepted. If the defect extends more than one-quarter yard, yardage allowance will be required in proportion to the defect. Defects which can be removed by proper burling or that may detract from the appearance of the duck without affecting its serviceability, shall be kept at a minimum. The type of imperfections which can be accepted with the allowances referred to above include the following, which shall be marked at all times by stringing the selvage.

Bad start ups
Thin places
Thick places
Drawbacks
Warp or filling floats
Misspicks

One filling thread missing.

Large slubs.
Kinky filling.
Light or mixed filling
Small or washed out oil spots.
Small holes not more than 1/8"
in diameter, in numbered
duck only.

D-8d. Unacceptable imperfections.- The following imperfections shall not be present in goods offered under this specification, as their presence would render the cloth unsatisfactory: -

Smashes

Large or repeating oil spots
Holes larger than 3/8" in diameter
Continuous reed marks
Torn or curled selvages
Misdraws in excess of one yard in length
One or more warp threads missing
Two or more contiguous filling threads missing.

D-8e. The strings to mark the minor defects shall be allowed to remain on the duck during finishing, except when coating would be affected. Retention of these strings is necessary to distinguish between gray and finishing defects. The dyer or finisher shall reinspect the duck after finishing and mark or remove defects as indicated above.

D-8f. Duck which does not comply with the foregoing may be acceptable for certain end use under terms and conditions to be determined by the contracting agency.

E. DETAIL REQUIREMENTS.

E-1. Type I, Numbered Duck. -

E-1a. The constructions for Type I - numbered duck - shall be as shown in Table I.

TABLE I - REQUIREMENTS.

No. of Duck	Stand-	Mini-		Dis-		Minimum	Breaking
Commercial	ard	'mum	1	tance of	Minimum	Thread	Strength
Designation	Weight	Weight	Widths	Selvage	Ply	Count	(1x1x3 inches
	per	per		Stripe		per	Grab)
	Linear	Square		From		Inch	(Minimum)
	Yard	Yard		Edge			
	22 in.						
	Wide						
					Warp	Fill	Warp
					'ing	'ing	'ing
Hard Tex-	Ounces	Ounces	Inches	Inches			lb.
ture							lb.
2/0.....	20	31.90	As spec	2	5	7	24
			ified				16
1/0.....	19	30.31	do.	2	5	6	24
1.....	18	28.71	do.	1-3/4	5	5	26
2.....	17	27.12	do.	1-3/4	5	4	26
3.....	16	25.53	do.	1-1/2	4	5	29
4.....	15	23.93	do.	1-1/2	4	4	32
5.....	14	22.33	do.	1-1/2	3	4	36
6.....	13	20.74	do.	1-1/4	3	3	36
8.....	11	17.55	do.	1-1/8	3	3	44
10.....	9	14.35	do.	1	3	3	46
12.....	7	11.16	do.	1	2	2	46
							36
							195
							120

Medium											
Texture											
2/0.....	20	31.90	do	2	5	8	24	14	450	405	
1/0.....	19	30.31	do	2	5	6	24	14	435	380	
1.....	18	28.71	do	1-3/4	5	5	26	15	425	345	
2.....	17	27.12	do	1-3/4	5	4	26	15	410	330	
3.....	16	25.53	do	1-1/2	4	5	29	15	370	315	
4.....	15	23.93	do	1-1/2	4	4	29	17	350	290	
5.....	14	22.33	do	1-1/2	3	4	34	18	315	285	
6.....	13	20.74	do	1-1/4	3	3	34	18	305	250	

¹ Regular widths as given on P.1 of simplified practice recommendation No. 27 cotton duck (first revision) only should be specified.

² Invitation for bids may require omission of selvage strips.

E-2. Type II Dyed numbered duck.-

E-2a. The constructions for Type II shall be as shown in

Table II.

TABLE II - REQUIREMENTS.¹

No. of Duck	Stand- ard	Mini- mum	Dis- tance of Selvage	Minimum Ply	Minimum Thread Count	Breaking Strength ³ (1x1x3 in- ches Grab)	Minimum			
							per Inch	per Inch	per Inch	per Inch
Designation	Weight per Linear Yard	Weight per Square Yard	Widths From Edge	Stripes	Warp	Fill	Warp	Fill	Warp	Fill
	22 In. Wide	3 & 4			ing	ing	ing	ing	ing	ing
Hard Texture	Ounces	Ounces	Inches	Inches					lb.	lb.
2/0.....	20	31.2	As speci	2	5	7	24	15	450	400
1/0.....	19	29.8	fied	2	5	6	24	15	435	360
1.....	18	28.2	do.	1-3/4	5	5	26	18	425	340
2.....	17	26.7	do.	1-3/4	5	4	26	18	405	310
3.....	16	25.0	do.	1-1/2	4	5	29	18	375	300
4.....	15	23.5	do.	1-1/2	4	4	32	21	360	275
5.....	14	22.0	do.	1-1/2	3	4	36	22	335	255
6.....	13	20.3	do.	1-1/4	3	3	36	2	320	225
8.....	11	17.25	do.	1-1/8	3	3	44	24	275	190
10.....	9	14.0	do.	1	3	3	46	25	240	145
12.....	7	10.9	do.	1	(2	2	46	33)	195	110
Medium Texture										
2/0.....	20	31.2	do.	2	5	8	24	13	450	360
1/0.....	19	29.8	do.	2	5	6	24	13	435	340
1.....	18	28.2	do.	1-3/4	5	5	26	13	425	310
2.....	17	26.7	do.	1-3/4	5	4	26	13	410	290
3.....	16	25.0	do.	1-1/2	4	5	29	13	370	280
4.....	15	23.5	do.	1-1/2	4	4	29	15	350	260
5.....	14	22.0	do.	1-1/2	3	4	34	16	315	250
6.....	13	20.3	do.	1-1/4	3	3	34	16	305	225

¹ These are the finished materials which will be obtained when the standard Gray Goods specified in Table I are dyed and finished.

² Invitation for bids may require omission of selvage stripe.

³ See D-6. for tolerance in weight and breaking strengths of vat dyed duck.

⁴ This weight is exclusive of water repellent finishes. In order to determine the weight, the water repellent finish (but not dye) should be removed by appropriate methods, the oven-dry weight of the cleaned fiber determined, an allowance of 11-1/2 percent of this weight added (4% to compensate for natural waxes and oils removed from the cotton in the removal of the finish and 7-1/2% for the natural moisture regain of the fiber), and the resulting weight calculated to a square yard basis.

E-3. Type III, Army Duck.-

E-3a. The constructions for Type III shall be as shown in Table III.

TABLE III - REQUIREMENTS.

Commercial Designation (Weight per Linear Yard, 28-1/2 Inches)	Minimum Weight per Square Yard	Width, Un-Less Other-Wise specified	Ply Minimum		Thread Count Minimum		Breaking Strength (1x1x3 inches (Grab) (Minimum))	
			Warp	Filling	Warp per Inch	Filling per Inch	Warp	Filling
	Ounces	Inches					Lb.	Lb.
Shelter Tent	8.25	35-1/2	2	2	60	58	125	120
8 ounce	9.85	30-1/2 or 37	2	2	52	40	160	110
10 ounce	12.29	30-1/2	3	2	44	34	210	130
12 ounce	14.77	30-1/2	3	3	44	28	235	175
13.6 ounce	15.9	30-1/2	3	3	45	34	245	200
15 ounce	18.48	30-1/4	4	4	42	28	315	200

E-4. Type IV, Dyed Army Duck.-

E-4a. The constructions for Type IV duck shall be as shown in Table IV.

TABLE IV - REQUIREMENTS (1)

Commercial Designation (Weight per Linear Yard, 28-1/2 Inches) See Table III	Minimum Weight per Square Yard (2) - (3)	Width, Un-less other-wise specified (4)	Ply Minimum		Thread Count Minimum		Breaking Strength 1x1x3 inches (Grab) (Min.)	
			Warp	Filling	Warp per inch	Filling per inch	Warp (3)	Filling (2)

	Ounces	Inches					lb.	lb.
Shelter Tent	7.9	33	2	3	62	54	120	110
8 Ounce	9.65	29-1/2 or 36	2	3	53	38	150	95
10 Ounce	12.00	29-1/2	3	3	45	31	300	115
12 Ounce	14.5	29-1/2	3	3	45	26	235	160
12.6 Ounce	15.5	29-1/2	3	3	46	32	330	180
15 ounce	18.1	29-1/2	4	4	43	26	300	180

(1)

These are the finished materials which will be obtained when the standard gray goods specified in Table III are dyed and finished.

(2) See D-6 for tolerance in weight and breaking strengths of vat dyed duck.

(3)

This weight is exclusive of water repellent finishes. In order to determine the weight, the water repellent finish (but not dye) should be removed by appropriate methods, the oven-dry weight of the cleaned fiber determined, and allowance of 11-1/2 percent of this weight added (4% to compensate for natural waxes and oils removed from the cotton in the removal of the finish and 7-1/2% for the natural moisture regain of the fiber), and the resulting weight calculated to a square yard basis.

(4)

See Paragraph H-2.

F. METHODS OF SAMPLING, INSPECTION AND TESTS.

F-1. Sampling.-- The number and size of samples selected for testing purposes shall be that determined by the contracting officer or inspector as necessary in order to ascertain if the duck in the delivery conforms to specification requirements. Samples selected for testing purposes will, if they meet specification requirements, be considered as part of the delivery.

F-2. Inspection.-- See Paragraph D-8.

F-3. Tests.-- The methods of testing described in Specification CCC-T-191, wherever applicable, shall be followed.

G. PACKING AND MARKING.

G-1. Packing.-- Unless otherwise specified in the invitation for bids, contract or order, cotton duck specified in this specification shall be packed as follows:-

(a). Duck, Gray, shall be packed either in bales or in rolls for domestic shipment.

(b). Duck, finished, shall be packed in loosely wound rolls for domestic shipment.

- (c). Bales shall not exceed a maximum gross weight of 600 lbs. Each bale shall be wrapped in one layer of No. 2 kraft paper, 120 lbs. per 1,000 sheets, based on size 24" x 36", conforming to Specification No. UU-P-268. It shall then be covered with one of the following materials:-
- (1). Burlap, 8 oz. per sq. yd. of 30" or 40" width, conforming to Specification CCC-B-811.
 - (2). Cotton osnaburg cloth of good commercial grade weighing not less than 6.5 oz. per square yard.
 - (3). Waterproofed kraft wrapping paper conforming in general to the requirements of Specification UU-P-271, Type E, except that the paper will consist of one sheet of 75 lb. Kraft wrapping paper creped in at least one direction and one sheet of 45 lb. kraft wrapping paper creped in the same direction or directions, both sheets cemented together with asphalt and reinforced with cords or strands of fiber running in both directions of the paper, spaced 1/8" to 1/4" apart and completely embedded in the asphalt.
- (d). Twine shall be used for sewing all bales covered with burlap or osnaburg. It shall be 16-ply cotton twine conforming to Specification T-T-871. The covering shall be stitched approximately one stitch to the inch and every third stitch knotted. Five inches of surplus covering shall be gathered together on each of the four corners and securely sewn into ears for handles by turning inward the corners of the covering material, sewing the ears through and through, and passing the twine around the ear close to the bale and knotting.
- (e). When the fibre reinforced waterproofed kraft paper specified in (c) (3) above is used, all exposed edges of the paper, except at the ends of the bale, shall be folded under to a depth of not less than 3" and the paper shall be lapped not less than 3" at all seams. The end folds shall be drawn tight and made long enough to be brought around the end of the bale and firmly secured under the outer strap at each end.
- (f). Each bale shall be bound with not less than four flat painted steel straps, not less than 5/8" wide and having a tensile strength of not less than 600 pounds. The strap shall comply with Specification QQ-S-781.

- (g). Rolls shall be wrapped with three layers of No.2 kraft wrapping paper, 120 lbs. per 1,000 sheets, based on size 24" x 36" and shall not exceed a maximum gross weight of 200 lbs; or rolls shall be wrapped with one layer of this paper followed by an outer covering consisting of one of the materials cited in (c) above and shall not exceed a maximum gross weight of 300 lbs.
- (h). Rolls wrapped with burlap or osnaburg shall be sewn with twine in accordance with (d), except that ears are not required. Rolls wrapped with three layers of kraft paper or with fibre reinforced waterproofed kraft paper shall be bound with not less than three flat painted steel straps not less than 5/8" wide and having a tensile strength of not less than 600 lbs. The straps shall comply with Specification QQ-S-781. The outer straps shall be placed not less than 4" from the ends of the roll. The end folds of the outer paper wrapping shall be drawn tight and fastened securely under the two outer straps.
- (i). When it is required that duck be packed for overseas shipment, unless otherwise specified, the above described packing shall be acceptable with the following exceptions:-
- (1) Bales or rolls having an outer wrapping of burlap or osnaburg, must have an intermediate lining consisting of waterproofed kraft wrapping paper complying with Type B of Specification UU-P-271.
 - (2) Rolls wrapped with three layers of kraft paper will not be used for overseas shipment.

G-2. Marking.-- Unless otherwise specified in invitation for bids, contract or order under which shipment is made, shipping packages shall be marked in accordance with Specification O.Q.I.G. No.94 and as follows:-

All rolls shall be stenciled in accordance with the prescribed marking specifications on both the side and one end of each roll. If the area of the end is too small to permit the use of a stencil, a waterproof tag printed or marked with indelible ink shall be securely attached to one end of each roll.

H. NOTES.

H-1. Unless otherwise specified in invitation for bid, contract or order, before production is commenced, a two (2) yard sample of gray duck or a (3-1/2) three and one-half yard sample of finished or dyed duck shall be submitted to the contracting officer for approval.

H-2. The widths and weights listed in Table IV are made to order in large quantities primarily for military purposes. For commercial purposes, 28-1/2" widths in the gray, or dyed khaki or olive drab, are considered standard and are normally available in jobbers' and manufacturers' stocks.

8 oz. 28-1/2" gray duck will finish 27" after dyeing.
10 oz. 28-1/2" gray duck will finish 27-1/2" after dyeing.
12 oz. 28-1/2" gray duck will finish 27-3/4" after dyeing.
15 oz. 28-1/2" gray duck will finish 28" after dyeing.

NOTICE:- When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

NOTE:- Unless otherwise specified in invitation for bid or purchase order, copies of this specification may be obtained at the following point:-

Jeffersonville Quartermaster Depot, Jeffersonville, Indiana.

QUARTERMASTER CORPS
TENTATIVE
SPECIFICATION

Cancelled - Superseded by 6-342 dated
21 March 1945

J.Q.D. No. 208D

29 December 1944

Superseding

J.Q.D. No. 208C

3 August 1943

Use in lieu of

CCC-D-771b

7 July 1943.

HISTORICAL FILE COPY DO NOT REMOVE

DUCK: COTTON, PLIED-YARNS (ARMY,
NUMBERED AND SPECIAL USE).

A. APPLICABLE SPECIFICATIONS.

A-1. The following specifications and subsidiaries thereto, of the issue in effect on date of invitation for bids, shall form a part of this specification.

A-1a. Federal Specification:-

CCC-T-191 - Textiles; general specifications, test methods.

A-1b. Quartermaster Corps Tentative Specifications:-

J.Q.D. 226 - Dyeing (Vat) and Finishing of Duck and Tent Twill.

J.Q.D. 231 - Dyeing (Mineral) and Finishing of Duck and Tent Twill.

J.Q.D. 242 - Duck, Cotton, Fire, Water and Weather Resistant.

J.Q.D. 541 - Dyeing (Sulfur) and Finishing of Duck and Other Fabrics.

J.Q.D. 550 - Dyeing (Resin-bonded Pigments) and Finishing of Duck and Other Fabrics.

J.Q.D. 591 - Packing Requirements for Fabrics for Tentage and Equipage.

P.Q.D. 447 - Test Methods for Textiles.

B. TYPES AND GRADES.

B-1. Types. - This specification covers six types of duck, cotton:

Type I - Numbered duck - grey

Type II - Numbered duck - dyed and finished

Type III - Army duck - grey

Type IV - Army duck - dyed and finished

Type V - Duck - special use, grey

Type VI - Duck - special use, dyed and finished

B-2. Grade. - This specification covers one grade of duck, cotton.

C. MATERIAL AND WORKMANSHIP.

C-1. Materials.- Shall conform to the following:-

C-1a. Cotton.- Shall be of suitable length of staple and grade to meet the requirements of this specification.

C-1b. Yarn.- The cotton used in the manufacture of the yarn shall be well carded, drawn and evenly spun and twisted into plied yarns as herein-after specified.

C-2. Workmanship.- See Section E.

D. GENERAL REQUIREMENTS.

D-1. Weave.- The weave shall be plain. No selvage strips shall be woven into the fabric unless otherwise specified.

D-2. Width.- The width of the goods shall be as specified in invitation for bids, with the following tolerances permitted:-

Widths up to and including sixty-three (63) inches,
minus one-fourth ($1/4$) inch, plus three-eighths ($3/8$)
inch.

Widths over sixty-three (63) inches minus three-eighths
($3/8$) inch, plus one-half ($1/2$) inch.

D-3. Size Content.- The duck shall be woven without sizing. The use of finishing or loading materials to increase the weight or breaking strength is prohibited.

D-4. Breaking Strength.- Deviation from strength requirements shall not be considered cause for rejection where the combined strength of warp and filling are equal to the combined warp and filling requirements shown in section E, provided the strength in neither is more than five per cent (5%) under the specification requirements.

D-5. Length of Cuts in Bolts or Rolls.-

D-5a. Bolts.- When bale packing is specified, bolts eighty (80) yards or more in length (double cuts) shall be delivered. Single cuts less than eighty (80) yards will be acceptable up to ten (10%) per cent of the contract quantity, provided no piece is less than twenty-five (25) yards in length and not more than two single cuts are included in any one bale, except where otherwise specified in the contract.

D-5b. Rolls.- When roll packing is specified, rolls eighty (80) yards or more in length shall be delivered. Single cuts less than eighty (80) yards will be acceptable up to ten (10%) per cent of the contract quantity, provided no piece is less than twenty-five (25) yards in length and no roll less than eighty (80) yards in length. The pieces shall be sewn together with a butted type seam on all duck No. 10 and lighter in weight, using approximately 10/3 cord cotton thread, and have approximately nine (9) stitches per inch. The

stitching shall be placed not closer than one-half (1/2) inch from the cut or raw edge of the duck. On duck heavier in weight than No. 10 the pieces will be lapped and not sewn together. The number of pieces in the roll will be indicated by stencil marking on the last six inches of the roll on the outer surface.

D-5c. Short Pieces.-- Yardages less than the minimum shown above may, at times, be acceptable for certain end uses under terms and conditions to be determined by the contracting agency.

D-6. Samples for Approval.-- Before production is commenced a two (2) yard sample of the duck to be furnished shall be submitted for approval.

D-7. Contractor's Inspection.-- The contractor shall, before submitting the finished material for final inspection to the United States Government, carefully inspect and thoroughly burl each and every yard of duck by passing it over a perch or equivalent process, keeping defects which can be removed to an absolute minimum.

E. DETAIL REQUIREMENTS.

E-1. Type I Duck.-- The duck for Type I shall conform to the following minimum requirements.

TABLE I - REQUIREMENTS FOR NUMBERED DUCK

Number of Duck Commercial Designation	Weight per Square Yard (Minimum)	Yarn Ply (Minimum)		Thread Count per inch (Minimum)		Breaking Strength (1x1x3 in.) (Grab) (Minimum*)	
		Warp	Fill- ing	Warp	Fill- ing	Warp	Fill- ing
Hard Texture	Ounces					lb.	lb.
12/0	48.00	9	9	20	12	800	430
2/0	31.90	5	7	24	16	465	435
1/0	30.31	5	6	24	16	450	405
1	28.71	5	5	26	19	440	370
2	27.12	5	4	26	19	420	345
3	25.53	4	5	29	20	390	330
4	23.93	4	4	31	22	375	300
5	22.33	3	4	35	23	345	285
6	20.74	3	3	35	25	335	250
8	17.55	3	3	43	25	285	210
10	14.35	3	3	45	27	245	160
11	12.75	3	2	45	34	240	140
12	11.16	2	2	45	35	195	120
Medium Texture							
1	28.71	5	5	26	15	425	345
2	27.12	5	4	26	15	410	320
3	25.53	4	5	29	15	370	315
4	23.93	4	4	29	17	350	290
5	22.33	3	4	34	18	315	285
6	20.74	3	3	34	18	305	250

*Note: See par. D-4.

E-1a. Color.- The duck shall be grey (unbleached).

E-2. Type II Duck.- The duck for Type II before finishing shall conform to all the requirements of Type I. Unless otherwise specified in the invitation for bids, the dyed and finished duck shall conform to the requirements of the applicable finishing specifications listed in Section A-1b. (See Notes Paragraph H-2).

E-3. Type III Duck.- The duck for Type III shall conform to the following minimum requirements.

TABLE II - REQUIREMENTS FOR ARMY DUCK

Weight per Square Yard (Minimum)	Ply (Minimum)		Yarn Count per Inch (Minimum)		Breaking Strength (1x1x3 inches) (Grab) (Minimum)	
	Warp	Fill- ing	Warp per inch	Fill- ing per inch	Warp	Fill- ing
Ounces					lb.	lb.
8.25 (Shelter Tent)	2	2	60	58	125	120
9.85	2	2	52	40	160	110
12.29	3	2	44	34	210	130
14.77	3	3	44	28	235	175
15.90	3	3	45	34	245	200
18.48	4	4	42	28	315	200

E-3a. Color.- The duck shall be grey (unbleached).

E-4. Type IV Duck.- The duck for Type IV before finishing shall conform to all the requirements of Type III. Unless otherwise specified in the invitation for bids, the dyed and finished duck shall conform to the requirements of the applicable finishing specification listed in Section A-1b. (See Notes Paragraph H-2).

E-5. Type V. Duck.- The duck for Type V. shall conform to the following minimum requirements.

TABLE III - REQUIREMENTS FOR SPECIAL USE DUCK

Weight per Square Yard (Minimum)	Ply (Minimum)		Yarn Count Per Inch (Minimum)		Breaking Strength (1x1x3 inch) (Grab Method) (Minimum)	
	Warp	Fill- ing	Warp	Fill- ing	Warp	Fill- ing
Ounces					lbs.	lbs.
18.00	4	4	23	23	270	260
20.74	3	4	31	22 (1)	335	250

(1) Two picks woven as one (Axminster).

E-6. Type VI Duck.- The duck for Type VI before finishing shall conform to all the requirements of Type V. Unless otherwise specified in the invitation for bids, the dyed and finished duck shall conform to the requirements of the applicable specifications listed in Section A-1b (See Note, Paragraph H-2).

E-7. Imperfections.- Certain imperfections will be accepted even though such goods do not represent the quality desired, but imperfections listed in Par. E-7c below as unacceptable shall not be present in the goods delivered.

E-7a. Imperfections Acceptable Without Penalty.- The imperfections listed below will be accepted without penalty within the limits as stated; and need not be strung:

<u>Type</u>	<u>Definition</u>	<u>Limitation on Acceptance</u>
Occasional double picks, mispicks and jerked in filling	Two picks in one shed	Not to occur more frequently on the average than one per five linear yards, or within six inches of each other.
Small slubs, lumps and gouts	Thick place in the yarn or bunch of fiber caught into the yarn or fabric, not to exceed three times the diameter of normal yarn.	Goods containing definitely excessive numbers of slubs, lumps, or gouts will be unacceptable
Streaky cloth	Color variations caused by mixed stock or yarns.	No limit unless otherwise stipulated.
Reed marks	Streaks running warpwise in which two adjacent warp ends have been spread apart, unless of such a nature as to reduce the hydrostatic resistance of the cloth.	No limit unless otherwise stipulated.
Thick places	Heavy streaks across the fabric containing more than the normal amount of filling.	No limit unless otherwise stipulated.

E-7b. Penalty Imperfections.- Certain imperfections will be accepted if they do not occur in excess of one defect to every fifteen linear yards on goods 38 inches and narrower, or in excess of one defect to every 7 1/2 linear yards on goods wider than 38 inches, even though such goods do not represent the quality desired. An allowance of one-eighth linear yard will be required for every such imperfection which may be accepted unless otherwise indicated below. The imperfections which are acceptable under this paragraph shall be marked by a cotton string knotted in the selvage:

<u>Type</u>	:	<u>Definition</u>
Broken or missing pick	:	A pick from which part or all of the yarn is missing.
Misdraws less than five yards in length	:	Warp yarns not drawn through proper harness eye.
Occasional oil spots	:	
Sloughed-off filling	:	Defect caused by yarn leaving the quill or bobbin in excess of normal quantity.
Draw backs	:	An irregularly woven place in the cloth, caused by tight warp ends less than 1/2 inch in either direction.
Missing warp threads	:	Less than one yard in length.
Multiple double picks, mispicks, and jerked in filling	:	Two picks in one shed, occurring within six inches of each other.

E-7c. Unacceptable Imperfections.- Goods containing the following imperfections will not be acceptable. :

<u>Type</u>	:	<u>Definition</u>
Defective selvage	:	Ragged, broken corded, curled, scalloped, loose or tight selvage.
Holes	:	
Large or Repeating Oil Spots	:	
Large slubs	:	Slubs more than three times the diameter of normal yarn.
Light filling or thin places	:	A filling-wise band in the fabric with less than the normal amount of filling which reduces the hydrostatic resistance.
Missing warp ends	:	More than one yard in length.
Smashes	:	Thin or open places where filling has been distorted, usually characterized by a number of broken warp ends and filling floats.

H. NOTES.

H-1. Revisions. - The revisions in this specification over preceding specification consists in the following:

- a. General re-editing.
- b. Deletion of certain items of numbered and Army duck.
- c. Addition of Table covering special use duck.

H-2. When Type II, Type IV, or Type VI duck is purchased, or requisitioned, from the United States Government the color should be specified and also the finishing specification and class.

H-3. In view of the uses to which duck is put by the Using Services requiring maximum resistance to water leakage, it is considered essential that every practicable step be taken by manufacturers to insure a high degree of resistance to the passage of water. All contractors are expected to take every feasible action to see that their product is so manufactured as to obtain this objective. The contracting agencies will assist in providing information and running tests directed toward this purpose.

NOTICE:- When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

NOTE:- Unless otherwise specified in invitation for bids, copies of this specification may be obtained from the following point:-

Jeffersonville Quartermaster Depot, Jeffersonville, Indiana.

E-7c. Unacceptable Imperfections (Cont'd).

<u>Type</u>	<u>Definition</u>
Misdraws in excess of 5 yards in length	Warp yarns not drawn through proper harness eye.
Misweaves not specifically defined elsewhere	Defects which cause weak places or low hydrostatic resistance in the fabric such as bad reed marks or a series of skips, floats or drawbacks in which the total dimension is <u>one-half inch</u> or more in the combined warp and filling directions except where otherwise stipulated.

F. METHODS OF SAMPLING, INSPECTION AND TESTS.

F-1. Sampling.- Samples of any materials, not furnished by the United States Government, entering into the manufacture of the cotton duck covered herein, shall be selected from time to time by the Government Inspector, and carefully examined and tests made to determine if they are in accordance with this specification.

F-2. Inspection.- May be made throughout the entire process of manufacturing. The passing as satisfactory of any detail in manufacturing of materials shall not relieve the contractor of responsibility for faulty workmanship or materials which may be discovered at any time prior to final acceptance. Final inspection of the finished commodity shall be made either at the point of production or at point of delivery designated in the contract or purchase order of the procuring agency. In case of factory inspection, every facility shall be afforded inspectors by the contractor for the prosecution of their work.

F-3. Tests.-

F-3a. Samples for Tests.- Shall be as required by the Inspection Officer.

F-3b. Necessary physical, chemical and other tests shall be conducted to see that the material is in accordance with this and other applicable specifications. The methods of testing, described in Specifications CCC-T-191 and P.Q.D. No. 447, wherever applicable, shall be followed.

F-3c. It is to be understood that the methods of testing described in this specification will in general be used; however, the Government reserves the right to use such additional information or methods deemed necessary to determine compliance with the letter and spirit of this specification.

G. PACKAGING, PACKING AND MARKING.

G-1. Packaging, packing, and marking shall conform to the requirements of Specification J.Q.D. No. 591, with the following exception:-

G-1a. Dyed and finished duck shall be packed only in rolls.