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December 1, 1970
SUPERSEDING
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(See 6.5)

FEDERAL SPECIFICATION

WIRE FABRIC, INDUSTRIAL

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 industrial wire fabric (see 6.1) commonly referred to in industry as industrial wire cloth.

1.2 Classification.

1.2.1 Types. Industrial wire cloth shall be of the following types, as specified (see 3.3).

Type I - Square mesh.
Type II - Rectangular (off count) mesh.
Type III - Space cloth, square opening.
Type IV - Space cloth, rectangular opening.
Type V - Intermediate or multiple crimp.
Type VI - Filter screen.

1.2.2 Classes. Industrial wire cloth shall be of the following classes, as specified (see 3.3).

Class 1 - Plain weave.
Class 2 - Twilled weave.

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:

UU-P-268 - Paper, Kraft, Untreated, Wrapping.
PPP-B-576 - Boxes, Wood, Cleated, Veneer, Paper Overlaid.
PPP-B-585 - Boxes, Wood, Wirebound.
PPP-B-591 - Boxes, Fiberboard, Wood-Cleated.
PPP-B-601 - Boxes, Wood, Cleated-Plywood.
PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner.
PPP-B-636 - Box, Fiberboard.
PPP-B-640 - Boxes, Fiberboard, Corrugated, Triple-Wall.

Federal Standards:

Fed. Std. No. 123 - Marking for Domestic Shipment (Civilian Agencies).
Fed. Test Method Std. No. 151 - Metals; Test Methods.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which included 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, Washington, D.C., Atlanta, Chicago, Kansas City, MO., Fort Worth, Denver, San Francisco, Los Angeles and Seattle, Washington.

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

Military Specifications:

MIL-P-116 - Preservation, Methods of.
MIL-P-130 - Paper, Wrapping, Laminated and Creped.
MIL-P-17667 - Paper, Wrapping, Chemically Neutral (Non-Corrosive).

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.

American Society for Testing and Materials (ASTM) Standard:

A90 - Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

Uniform Classification Committee, Agent:

Uniform Freight Classification.

(Application for copies should be addressed to the Uniform Classification Committee, Tariff Publishing Officer, Room 202 Union Station, 516 W. Jackson Blvd., Chicago, IL 60606.)

National Motor Freight Traffic Association, Inc., Agent:

National Motor Freight Classification.

(Application for copies should be addressed to the National Motor Freight Traffic Association, Inc., Agent, 1616 P Street N.W., Washington, DC 20036.)

(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

3. REQUIREMENTS

3.1 Material. The cloth shall be of the following composition as specified (4.5.1):

Steel; low carbon, plain commercial finish.
Steel; high carbon (spring temper), plain commercial finish.
Steel; high carbon, oil (spring) tempered plain commercial finish.
Steel; low carbon, galvanized before weaving.
Steel; low carbon, hot galvanized after weaving.
Steel; low carbon, electrogalvanized after weaving.
Steel; stainless; types 302, 304, 316, 347 and 430.
Brass; high-zinc content (70 percent copper and 30 percent zinc).
Brass; low-zinc content (80 percent copper and 20 percent zinc).
Copper-zinc alloy; "Commercial bronze" - (90 percent copper and 10 percent zinc).
Copper; commercially pure.
Monel; nickel-copper alloy.
Nickel; commercially pure.
Aluminum; type 5056 alloy.
Aluminum; type 1100 alloy.
Bronze, phosphor; (minimum tin content 4.5 percent).
Bronze, phosphor; (type VI only) (tin content 3.0 - 10.0 percent, Phosphorous 0.05 - 0.5 percent, other elements 0.05 percent each, maximum.

3.2 Finish, steel wires. The finish for steel wires used in the industrial wire cloth shall be either plain commercial finish, hot galvanized after weaving, electrogalvanized after weaving, or galvanized before weaving as specified.

3.2.1 Galvanized-before-woven steel wire cloth. Galvanized-before-woven steel wire cloth shall be made of wire which has been commercially coated with zinc before it is woven.

3.2.2 Galvanized-after-woven steel wire cloth. Galvanized-after-woven steel wire cloth shall be coated, by either the hot-dip or the electrolytic process, with zinc of at least 98 percent commercial purity after the cloth had been woven, as specified.

3.3 Mesh, space, and wire size. Industrial wire cloth shall be of the mesh size; or space openings in the case of cloth of types III and IV; and wire sizes (diameters) as specified.

3.3.1 Type I, class 1. Whenever possible, mesh size and wire size (diameter) shall be selected from table I or II and is commercially available as follows:

a. Carbon steel - 60 by 60 mesh.
b. Brass - 120 by 120 mesh.
c. Copper - 100 by 100 mesh.
d. Monel - 200 by 200 mesh.
e. Nickel - 250 by 250 mesh.
f. Stainless steel - 325 by 325 mesh.

3.3.2 Type I, class 2. Whenever possible, mesh size and wire size (diameter) shall be selected from table I or II, and is commercially available as follows:

a. Brass - 120 by 120 mesh.
b. Phosphor bronze - 325 by 325 mesh.
c. Copper - 100 by 100 mesh.
d. Monel - 200 by 200 mesh.
e. Nickel - 250 by 250 mesh.
f. Stainless steel - 325 by 325 mesh.

3.3.3 Type II, classes 1 and 2. Mesh size and wire size (diameter) shall be as specified. Vendors should be consulted as to practical combination of wire diameters and meshes.

3.3.4 Type III. Whenever possible, space openings and wire size (diameter) shall be selected from table III, and is usually made in carbon steel, either plain or galvanized, monel metal, and stainless steel; also made in other metals listed in 3.1.

3.3.5 Type IV. Space openings and wire size (diameter) shall be as specified. Vendors should be consulted as to practical combinations of wire diameters and meshes.

TABLE I. Type I mesh cloth, sizes most frequently produced for general use

Mesh	Wire diameter	Opening	Open area	Mesh	Wire diameter	Opening	Open area
	Inch	Inch	Percent		Inch	Inch	Percent
1 x 1....	0.080	0.920	84.6	24 x 24....	0.014	0.0277	44.2
2 x 2....	.063	.437	76.4	24 x 24....	.0104	.0317	....
3 x 3....	.0800	.2533	....	30 x 30....	.013	.0203	37.1
3 x 3....	.0625	.2708	....	32 x 32....	.0070	.0243	....
3 x 3....	.054	.279	70.1	35 x 35....	.011	.0176	37.9
3 x 3....	.0475	.2858	....	40 x 40....	.010	.0150	36.0
4 x 4....	.047	.203	65.9	50 x 50....	.009	.0110	30.3
4 x 4....	.0348	.2152	....	60 x 60....	.0075	.0092	30.5
5 x 5....	.041	.159	63.2	80 x 80....	.0055	.0070	31.4
6 x 6....	.035	.132	62.7	100 x 100....	.0045	.0055	30.3
6 x 6....	.0286	.1380	....	120 x 120....	.0037	.0046	30.7
8 x 8....	.028	.097	60.2	150 x 150....	.0026	.0041	37.4
10 x 10...	.025	.075	56.3	180 x 180....	.0023	.0033	34.7
12 x 12...	.023	.060	51.8	200 x 200....	.0021	.0029	33.6
14 x 14...	.020	.051	51.0	250 x 250....	.0016	.0024	36.0
16 x 16...	.018	.0445	50.7	270 x 270....	.0016	.0021	32.2
18 x 18...	.017	.0386	48.3	325 x 325....	.0014	.0017	30.0
20 x 20...	.016	.0340	46.2	.....	.....	.....	....

Wire sizes other than above may be specified subject to vendor’s approval as to practicability of weaving.

3.3.6 Type V. Mesh size and wire size (diameter) shall be as specified. Vendors should be consulted as to practical combinations of wire diameters and meshes.

3.3.7 Type VI. Mesh size and wire size (diameter) shall be as specified in the drawing, contract or order. Vendors should consult the applicable drawing.

3.3.8 Carbon steel wire hot galvanized after weaving. Carbon steel wire hot galvanized after weaving should be specified only in course sizes; in general not finer than 8 mesh, depending on the wire diameter.

3.3.9 Carbon steel wire galvanized before weaving or electrogalvanized. Carbon steel wire galvanized before weaving or electrogalvanized should be specified only in medium and course meshes; in general not finer than 40 mesh, dependent on the wire diameter.

TABLE II. Type I mesh cloth, heavier grades

Mesh	Medium light			Medium			Medium heavy			Heavy		
	Wire dia.	Open-ing	Open area	Wire dia.	Open-ing	Open area	Wire dia.	Open-ing	Open area	Wire dia.	Open-ing	Open area
	Inch	Inch	Percent	Inch	Inch	Percent	Inch	Inch	Percent	Inch	Inch	Percent
1 x 1	0.105	0.895	80.1	0.135	0.865	74.8	0.162	0.838	70.2	0.207	0.793	62.9
2 x 2	.080	.420	70.6	.105	.395	62.4	.135	.365	53.3	.177	.323	41.7
$2\frac{1}{2}$ x $2\frac{1}{2}$	.080	.320	64.0	.105	.295	54.4	.135	.265	43.9	.148	.252	39.7
3 x 3	.072	.261	61.3	.092	.241	52.3	.120	.213	40.8	.135	.198	35.3
4 x 4	.063	.187	56.0	.080	.170	46.2	.105	.145	33.6	.120	.130	27.0
5 x 5	.047	.153	58.5	.063	.137	46.9	.072	.128	41.0	.080	.120	36.0
6 x 6	.047	.120	51.8	.054	.113	46.0	.063	.104	38.9	.080	.087	27.2
8 x 8	.035	.090	51.8	.041	.084	45.2	.047	.078	38.9	.063	.062	24.6
10 x 10	.028	.072	51.8	.032	.068	46.2	.035	.065	42.3	.047	.053	28.1
12 x 12	.025	.058	48.4	.028	.055	43.6	.032	.051	37.5	.041	.042	25.4
14 x 14	.023	.048	45.2	.025	.046	41.5	.028	.043	36.2	.035	.036	25.4
16 x 16	.020	.0425	46.2	.023	.0395	39.9	.025	.0375	36.0	.028	.0345	30.5
18 x 18	.018	.0376	45.8	.020	.0356	41.1	.023	.0326	34.4	.028	.0276	24.7
20 x 20	.017	.0330	43.6	.018	.032	41.0	.020	.030	36.0	.025	.025	25.0
24 x 24	.015	.0267	41.1	.016	.0257	38.0	.018	.0237	32.4	.020	.0217	27.1
30 x 30	.013	.0203	37.1	.0135	.0198	35.3	.015	.0183	30.1	.016	.0173	26.9
35 x 35	.011	.0176	37.9	.012	.0166	33.8	.0135	.0151	27.9	.015	.0136	22.7
40 x 40	.010	.0150	36.0	.011	.014	31.4	.012	.0130	27.0	.0135	.0115	21.2

Wire sizes other than above may be specified subject to vendor's approval as to practicability of weaving.

TABLE III. Type III space cloth for sizing of materials

Opening	Medium light		Medium		Medium heavy		Heavy	
	Wire diameter	Open area	Wire diameter	Open area	Wire diameter	Open area	Wire diameter	Open area
Inch	Inch	Percent	Inch	Percent	Inch	Percent	Inch	Percent
4.....	0.500	79.0	0.625	74.8	0.750	70.9	1.000	64.0
3-1/2....	.4375	79.0	.500	76.6	.625	72.0	0.750	67.8
3.....	.4375	76.2	.500	73.5	.625	68.5	.750	64.0
2-3/4....	.375	77.4	.4375	74.4	.500	71.6	.625	66.4
2-1/2....	.375	75.6	.4375	72.4	.500	69.4	.625	64.0
2-1/2....	....	....	.....	....	....	....	.0625	....
2-1/2....	....	....	.....	....	....	....	.0475	....
2-1/4....	.375	73.4	.4375	70.1	.500	66.9	.625	61.2
2.....	.3125	74.8	.375	70.9	.4375	64.0	.625	58.0
1-3/4....	.3125	71.9	.375	67.8	.4375	64.0	.500	60.5
1-1/2....	.250	73.4	.3125	68.5	.375	64.0	.500	56.3
1-3/8....	.250	71.5	.3125	66.5	.375	61.6	.4375	57.5
1-1/4....	.250	69.4	.3125	64.0	.375	59.2	.4375	54.8
1-1/8....	.225	69.6	.250	67.0	.3125	61.0	.375	55.7
1.....	.225	66.6	.250	64.0	.3125	58.0	.375	52.9
1.....	....	....	....	....	.....	....	.1055	....
7/8....	.207	65.3	.225	63.3	.250	60.5	.3125	54.<UT>
3/4....	.192	63.4	.207	61.4	.250	56.3	.3125	49.8
3/4....	....	....	....	....	....	....	.1055	....
3/4....	....	....	....	....	....	....	.0720	....
3/4....	....	....	....	....	....	....	.0625	....
5/8....	.177	60.7	.192	58.5	.225	54.0	.250	51.0
5/8....	....	....	....	....	....	....	.1055	....
5/8....	....	....	....	....	....	....	.054	....
1/2....	.162	57.1	.177	54.5	.192	52.2	.207	49.8
<UT>/16..	.148	55.8	.162	53.2	.177	50.7	.192	48.3
3/8....	.135	54.1	.148	51.4	.162	48.7	.177	46.1
5/16...	.120	52.2	.135	48.8	.148	46.0	.162	43.4
1/4....	.105	49.6	.120	45.6	.135	42.2	.148	39.4
3/16...	.080	49.1	.092	45.1	.120	37.2	.135	33.8
1/8....	.054	48.7	.072	40.2	.092	33.4	.105	29.5
3/32...	.041	47.6	.047	45.2	.063	35.0	.080	29.6
1/16...	.035	42.3	.041	37.0	.047	33.2	.063	24.6

Wire sizes other than above may be specified subject to vendor’s approval as to practicability of weaving.

3.3.10 Special industrial wire cloth. When industrial wire cloth is needed to be woven of metals or alloys other than those listed in 3.1, or having wire sizes (diameters), space openings, or meshes other than those required by this specification, it is recommended that as many portions of this specification be used as possible, and that the tolerances be those of the regular cloth of this specification most nearly like the special cloth. When it is desired to increase the opening for a given mesh, the wire diameter shall be decreased, and when it is desired to decrease the opening, the wire diameter shall be increased.

3.4 Widths. Widths shall be specified in inches and fractions thereof.

3.5 Lengths. Full rolls shall contain approximately 100 linear feet and shall not be in more than three pieces to the roll. Unless specifically permitted, no piece shall be less than 10 feet in length.

3.6 Tolerances.

3.6.1 Wire diameter. Tolerances for wire diameters before weaving shall be in accordance with Table IV.

TABLE IV. Tolerances for wire diameters

Carbon steel		Stainless steel and all non-ferrous	
Wire diameter	Tolerance	Wire diameter	Tolerance
Inch	Inch	Inch	Inch
0.500 and coarser	+/- 0.003	0.500 and coarser	+/- 0.002
0.4375 to 0.080 incl.	.002	.4375 to 0.063 incl.	.0015
.072 to .035 "	.001	.054 to .047 "	.001
.032 to .028 "	.0008	.041	.0008
.025 to .020 "	.0006	.035	.00075
.018 to .016 "	.0005	.032	.0006
.015 to .011 "	.0004	.028 to 0.020 "	.0005
.010 to .006 "	.0003	.018 to .012 "	.0004
.0055 to .0045 "	.0002	.011 to .008 "	.0003
		.0075 to .0045 "	.00025

3.6.2 Mesh. Tolerances in mesh shall be applied separately for warp and for shoot and in accordance with Table V.

TABLE V. Tolerance in mesh

Mesh sizes	Tolerance in mesh count	
	Warp wires	Shoot wires
	Percent	Percent
30 mesh and coarser	+/- 2	+/- 5
Finer than 30, but not finer than 200	+/- 2	+/- 4
Finer than 200	+/- 3	+/- 4

3.6.3 Average opening of space cloth (types III and IV). The tolerances in average opening of space cloth, types III and IV, shall be in accordance with Table VI.

TABLE VI. Tolerances on openings for space cloth

Openings	Tolerance (Plus or Minus)
Inches	Inch
1/16 to 1/8 incl.	0.007
Over 1/8 to 3/16 incl.	.010
Over 3/16 to 1/4 incl.	.012
Over 1/4 to 3/8 incl.	.015
Over 3/8 to 1/2 incl.	.017
Over 1/2 to 3/4 incl.	.020
Over 3/4 to 1 incl.	.030
Over 1 to 1-1/2 incl.	.045
Over 1-1/2 to 3 incl.	.075
Over 3	.100

3.6.4 Width. Permissible tolerance in the width of the industrial wire cloth shall be in accordance with Table VII.

TABLE VII. Tolerances in the width of the industrial wire cloth

Mesh sizes	Tolerance in width
	Inch
5 mesh and coarser	+/- 1/4
6 to 50 mesh	+/- 1/8
Finer than 50 mesh	+/- 1/16

3.6.4.1 In the case of selvaged cloth (3.7), measurements of the width shall be made from the outside of the loop of the selvage to the outside of the loop of the opposite selvage.

3.6.5 Total length. Permissible tolerance in the length shall be plus or minus 10 percent for total length specified.

3.7 Edges. Medium and fine meshes of Types I and II of industrial wire cloth are furnished commercially either with or without selvage edges. Coarse meshes of Types I and II, and all industrial wire cloth of Types III, IV and V are generally not obtainable with selvage edges; vendors should be consulted before specifying.

3.8 Workmanship. Industrial wire cloth shall be made of commercially high grade wire and shall be first class in every respect. The cloth shall have smooth edges, and be free of tearing, projecting ends and rust pits.

4. QUALITY ASSURANCE PROVISIONS

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

inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2 Acceptance tests. Test methods for acceptance shall consist of examination and testing.

4.3 Sampling for lot acceptance.

4.3.1 Inspection lot. A lot shall consist of 100 rolls (approximately 10,000 ft.) of industrial wire cloth or fraction thereof, of the same type, class, material and coating manufactured under like conditions and offered for delivery at one time.

4.3.2 Sampling for visual and dimensional examination. A random sample of material shall be selected from each lot in accordance with MIL-STD-105, Inspection Level S-3. The Acceptable Quality Levels (AQL) shall be as specified in Table VIII.

4.3.3 Sampling for test.

4.3.3.1 Sampling for chemical analysis. For determining the chemical composition, two samples of wire cloth shall be selected from each lot presented for acceptance, or as otherwise stated in 4.5.1.

4.3.3.2 Sampling for adequacy of zinc coating. Samples for adequacy of zinc coating shall be selected in accordance with MIL-STD-105, Inspection Level S-3, acceptance number zero. When it is necessary to cut a sample from the roll in order to make inspection tests, that sample shall be a strip of approximately 15 inches across the entire width of the roll.

4.3.3.3 Sampling for preservation, packaging, packing and marking. Samples for inspection of preservation, packaging, packing and marking shall be selected in accordance with MIL-STD-105, Inspection Level S-4. The Acceptable Quality Level (AQL) shall be 2.5 percent defective.

4.4 Examination of product.

4.4.1 Visual and dimensional examination. Sample of wire cloth shall be examined to verify compliance with the requirements of this specification as stated in 4.4.2.

4.4.2 Classification of defects. Inspection shall be conducted as follows:

TABLE VIII. Classification of Defects

Categories	Defects	Method of Inspection
Critical	None defined	
Major	AQL = 2.5 percent	
101	Protective finish (3.2)	Visual
102	Mesh not as specified (3.3)	Measure
103	Wire size (3.3)	Measure
104	Dimensions (3.4 & 3.5)	Measure
105	Edges not as specified (3.7)	Visual
106	Workmanship (3.8)	Visual
Minor	AQL = 4.0 percent	
201	Packaging (5.2)	Visual
202	Packing (5.3)	Visual
203	Marking (5.4)	Visual

4.4.3 Mesh count. Mesh count, in both warp and shoot, shall be determined by the actual count of the mesh openings for an interval of 1 linear inch for fine-mesh cloth, (6.3.12) an interval of 6 linear inches for medium-mesh cloth, (6.3.11) and an interval of 12 linear inches for coarse-mesh cloth, (6.3.10) in not less than 5 places, taken at random on the finished cloth.

4.4.4 Wire diameter. Wire diameter shall be measured by any standard instrument capable of producing results which are accurate to 0.0001 inch. In the case of galvanized wire cloth, these measurements of wire diameter shall be made with the zinc coating removed. Not less than 5 warp wire and 5 shoot wires taken at random from the finished cloth shall be measured.

4.4.5 Preservation, packaging, packing and marking. The preservation, packaging, packing and marking of the industrial wire cloth shall conform to the requirements of this specification.

4.5 Tests.

4.5.1 Chemical composition. Chemical composition of the basis metal and coatings shall be determined in accordance with Method 111.2 or 112.2 of Fed. Test Method Std. No. 151. Separate analysis of the warp and shoot wires shall be made (3.1). The sample shall be analyzed by a Government approved laboratory. When permitted by the procuring agency (see 6.2), the metal manufacturer's certificate of conformance showing the chemical composition is acceptable.

4.5.2 Adequacy of zinc coating.

4.5.2.1 Preparation of specimens. Specimens for determining the uniformity of zinc coating shall be cut from the finished wire cloth. These specimens may be of convenient size, but should have the least possible exposure to cut edges. These specimens shall be free from abrasions or cuts in the zinc coating. Each specimen shall be cleaned with a volatile organic solvent such as carbon tetrachloride, gasoline or benzol, then rinsed with alcohol, and finally thoroughly washed with clean water and wiped dry with a clean cotton cloth.

4.5.2.2 Immersion. When tested, the galvanized-before-woven or galvanized-after-woven industrial wire cloth shall withstand the number of immersions stipulated in Table IX without the appearance of bright adherent copper indicating that the steel beneath the zinc coating has been exposed. The appearance of copper within 1 inch of a cut edge shall not be considered an end point, or failure of the specimen to meet the requirements of this test. Appearance of a small amount of copper on the zinc coating, a deposit which can readily be removed with a fiber-bristle brush, ink eraser, or the back of a knife blade, shall likewise not be construed as failure as an end point or failure of the specimen to meet the requirements of this test.

TABLE IX. Number of one-minute immersions required

Galvanized before weaving		Galvanized after weaving	
Diameter of wire	Immersions	Diameter of wire	Immersions
Inch		Inch	
0.0009 to 0.0479	1/2	0.014 to 0.0199	1
.048 to .0549	1	.020 to .0259	1 1/2
.055 to .0639	1 1/2	.026 to .0499	2
.064 and heavier	2	.050 to .0629	2 1/2
		.063 to .0809	3
		.081 and heavier	3 1/2

4.5.2.3 Specimens prepared in accordance with 4.5.2.1 shall be tested in accordance with ASTM A90 of Fed. Test Method Std. No. 151.

5. PREPARATION FOR DELIVERY

5.1 Industrial wire cloth packaging and packing shall be as specified for the mesh size of the cloth.

5.2 Packaging. Packaging shall be Level A or C, as specified (6.2).

5.2.1 Level A. Industrial wire cloth greater than 100 x 100 mesh furnished in the form specified (6.2) shall be securely fastened, blocked or tied in such a manner to prevent looseness if in sheet or shape form, or unravelling if in roll form.

5.2.1.1 Sheets, shapes or rolls of mesh described in 5.2.1 shall be further overwrapped in wrapping paper conforming to UU-P-268, MIL-P-130, MIL-P-17667 or package in fiberboard box conforming to PPP-B-636, at the option of the contractor. For Army shipment, overwrap as specified above and in addition package Method III of MIL-P-116 in a fiberboard box conforming to PPP-B-636, class water-resistant.

5.2.1.2 Industrial wire cloth 100 by 100 mesh or coarser will not require intimate wraps or boxes, except shall be tied as specified in 5.3.

5.2.2 Level C. Industrial wire cloth shall be packaged in accordance with supplier’s commercial practice. For Army shipment, packaging shall be the same as specified in 5.2.1.1 except the fiberboard box shall conform to PPP-B-636, class domestic.

5.3 Packing. Packing shall be Level A, B, or C, as specified (6.2).

5.3.1 Levels A and B. Industrial wire cloth shall be furnished in compact rolls except as specified for wire mesh greater than 100 by 100 (5.1) and shall be securely fastened to prevent loosening during shipment and handling as follows:

10 by 10 mesh wire or smaller shall have two soft annealed wire ties minimum .0475-inch diameter (18 ga.) spaced approximately six inches from each end. Wire rolls greater than twenty-four inch width shall have an intermediate tie applied equidistant or every twenty inches between outer ties.

12 by 12 mesh wire through 100 by 100 mesh shall be individually packed, and mesh wire greater than 100 by 100 packaged as described in 5.1 shall be overpacked in any of the containers conforming to the following specifications at the option of the contractor.

Specification	Level A	Level B
	Type or class	
PPP-B-636	Class Weather Resistant	Class Domestic
PPP-B-591	Class II	Class I
PPP-B-585	Class 3	Class 1 or 2
PPP-B-576	Overseas Type	Domestic Type
PPP-B-640	Class 2	Class 1

5.3.1.1 For Army and Navy, PPP-B-585, class 3; PPP-B-621, class 2; and PPP-B-601, overseas type only shall be authorized.

5.3.1.2 Boxes shall be closed, strapped or banded in accordance with the applicable box specification or appendix thereto. Strapping will not be required for level 3 shipments. The gross weight of the boxes shall not exceed the applicable requirements of the box specification or appendix thereto.

5.3.2 Level C. Industrial wire cloth furnished in the form specified (6.2) shall be packed in a manner conforming to the supplier's commercial practice as to insure carrier acceptance and safe delivery to destination at lowest rates. Containers and packing shall comply with Uniform Freight Classification rules, or National Motor Freight Classification rules. For Army, PPP-B-636, class domestic; PPP-B-640, class 1; PPP-B-585, class 1 or 2; PPP-B-601, domestic type, and PPP-B-621, class 1 only shall be authorized.

5.4 Marking.

5.4.1 Civil agencies. In addition to any special markings required (6.2), shipments shall be marked in accordance with Fed. Std. No. 123.

5.4.2 Military agencies. Unless otherwise specified, each roll or package of cloth shall be marked with the name and type of material, width, mesh sizes, finish of wire and the names of the contractor and manufacturer.

5.4.2.1 In addition to any special markings required by the contract or order, interior containers (fiberboxes and wrapped rolls or sheets) and unpacked rolls of wire shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. Industrial wire cloth, covered by this specification, is intended for general purpose use. It is not intended for insect wire screening, hardware cloth, poultry netting, Fourdrinier wires, diamond-mesh and spiral-mesh wire cloth.

6.2 Ordering data. Purchasers should exercise any desired options offered herein, and procurement documents should specify the following:

(a) Title, number and date of this specification.
(b) Type and class required (1.2).
(c) Finish required for steel wires (3.2).
(d) Type of metal required for the cloth (3.1).
(e) Whether steel wire cloth shall be galvanized before or after being woven (3.2.1, 3.2.2).
(f) Meshes per linear inch in each direction and wire size required for types I, II, V and VI (3.3).
(g) Mesh size and wire size (diameter) required for types III and IV (3.3).
(h) Applicable drawing number for type VI (3.3.7).
(i) Width required (3.4).
(j) Lengths of full rolls and acceptable number and lengths of pieces (3.5).
(k) Edges required (3.7).
(l) If certificate of conformance is acceptable for chemical analysis (4.5.1).
(m) Level of packaging, packing and marking desired (5).

6.3 Definitions.

6.3.1 Mesh. The number of openings per linear inch, counting the number of meshes and fractional parts of a mesh from the center of one wire to a point 1 inch distant.

6.3.2 Square mesh. Woven wire cloth having the same number of openings per linear inch and the same diameter of wire in the shoot as in the warp, thus producing a square opening.

6.3.3 Rectangular (off count) mesh. Woven wire cloth in which the number of wires in the shoot is different (usually less) than in the warp, thus producing a rectangular opening. The diameter of the shoot wires may be either the same or different from those in the warp.

6.3.4 Plain weave. Woven wire cloth in which the warp and shoot wires pass over one and under one in both directions.

6.3.5 Twilled weave. Woven wire cloth in which the warp wires and the shoot wires pass over two and under two wires in both directions.

6.3.6 Space cloth. Woven wire cloth which is designated by the width of the open spaces between the inside faces of adjacent parallel wires, expressed in inches.