

RR-W-365A
September 5, 1980
SUPERSEDING
Fed. Spec. RR-W-365
December 2, 1965

FEDERAL SPECIFICATION

WIRE FABRIC (INSECT SCREENING)

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

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers wire mesh fabric. It does not apply to wire cloth for precision sieves or to industrial wire cloth of any description.

1.2 Classification.

1.2.1 Types and classes. The wire fabric shall be of the following types and classes, as specified (see 6.2).

Type:

- I - Copper
- II - Commercial bronze (brass)
- III - Bronze
- IV - Carbon steel
 - Class 1 - Zinc coated (galvanized)
 - Class 2 - Black painted
- V - Nickel-copper alloy
- VI - Corrosion-resistant steel
- VII - Aluminum alloy

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Standard:

FED-STD-15<UT> - Metals; Test Methods.

(Activities outside the Federal Government may obtain copies of Federal specification, standards, and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards, and Commercial Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

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

(Federal Government activities may obtain copies of Federal specifications, standards, and commercial item descriptions, and the Index of Federal Specifications Standards and Commercial Item Descriptions from Specifications Standards and Commercial Item Descriptions from established distribution points in their agencies.)

Military Standard:

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

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

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

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT:

National Motor Freight Classification.

(Application for copies should be addressed to the American Trucking Associations, Inc., Traffic Department, 1616 P Street, N.W., Washington, DC 20036.)

UNIFORM CLASSIFICATION COMMITTEE, AGENT:

Uniform Freight Classification.

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARDS:

B557 - Tension Testing Wrought and Cast Aluminum and Magnesium Alloy Products.
B211 - Specification for Aluminum Alloy Bars, Rods and Wires.

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

3. REQUIREMENTS

3.1 Material. Material shall be as specified herein. (see 3.6 and 6.4)

3.2 Dimensions.

3.2.1 Width. The width of the wire fabric shall be 24, 26, 28, 30, 32, 34, 36, 42, or 48 inches, as specified (see 6.2), with a permissible tolerance of plus or minus 1/8 inch from outside wire to outside wire.

3.2.2 Length. Unless otherwise specified (see 6.2), the wire fabric shall be provided in rolls of 100 linear feet plus 2 or minus 0 linear feet.

3.2.3 Continuity. Not less than 87.5 percent of the 100-foot rolls of wire fabric shall be in one continuous length; the remaining 12.5 percent shall contain not more than two pieces per roll, neither of which shall be less than 10 linear feet.

3.3 Splices. Splices not more than 1 inch in length, showing no tails, shall be permissible at any point of any individual wire provided that the number of such splices shall not exceed 30 in any 100 linear foot roll, nor more than 2 in any single square foot of finished wire fabric.

3.4 Selvage. The wire fabric shall be selvaged by one or more wires in each edge.

3.5 Mesh size (count) and wire size.

3.5.1 Mesh size (count). The mesh size (count) shall be as specified (see 6.2), and shall be as shown in table I. Permissible tolerance in the mesh size (count) of all types of wire fabric shall be plus or minus 1/4 mesh per linear inch in the warp and plus or minus 1/2 mesh per linear inch in the filing.

3.5.2 Wire sizes. Wire sizes shall be as shown in table I. Permissible tolerance shall be plus or minus 0.0005 inch.

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TABLE I. Mesh and wire sizes.

Meshes per linear inch	Diameter of wire (in inches)					
	Type I	Types II and III	Type IV, classes 1 and 2	Type V	Type VI	Type VIII
16 by 16 heavy	0.015	0.015	-	-	-	-
18 by 14 regular	-	.011	0.011*	-	-	-
18 by 14 heavy	-	-	-	-	0.013	-
18 by 16 heavy	.015	.015	-	-	-	-
18 by 16 regular	.011	.011	.011*	0.009	-	.011
18 by 18 regular	.011	.011	.011*	.009	0.009	.011
20 by 20 regular	.011	.011	-	-	-	.011
22 by 22 heavy	.015	.015	-	-	-	-
24 by 24 regular	-	.011	-	-	-	-

* Bare wire before coating or painting.

3.6 Certification. Unless otherwise specified, wire fabric offered under this specification shall be certified by the contractor to have successfully completed tests for chemical analysis (see 4.5.3 and 6.2).

3.6.1 Type I, copper. Type I wire fabric shall be of hard drawn copper wire of not less than 99.9 percent purity.

3.6.2 Type II, commercial bronze (brass). Type II wire fabric shall be of wire containing 89 to 91 percent copper. The remainder shall be zinc; however, impurities of lead and iron not to exceed 0.05 percent each shall be permitted.

3.6.3 Type III, bronze. Type III wire fabric shall be of wire containing not less than 97.25 percent copper, and 1.5 to 2.0 percent tin. The remainder shall be zinc; however, impurities of lead and iron not to exceed 0.05 percent each shall be permitted.

3.6.4 Type IV, carbon steel. Type IV wire fabric shall be of carbon steel wire.

3.6.5 Type V, nickel-copper alloy. Type V wire fabric shall be of nickel-copper wire. The limiting chemical components shall be as follows (see 4.5.3):

Material	Percent
Iron	2.5 maximum
Manganese	2.0 maximum
Silicon	0.5 maximum
Carbon	0.3 maximum
Sulfur	0.02 maximum
Nickel	63.0-70.0
Copper	Remainder

3.6.6 Type VI, corrosion-resistant steel. Type VI wire fabric shall be of corrosion-resistant steel wire. The chemical components shall be within the following limits:

Material	Percent
Manganese	2.0 maximum
Silicon	1.0 maximum
Phosphorus	0.04 maximum
Sulfur	0.03 maximum
Carbon	0.10 maximum
Chromium	16.0-18.0
Nickel	10.0-14.0
Molybdenum	2.00-3.00
Iron (by difference)	Remainder

3.6.7 Type VII, aluminum alloy. Type VII wire fabric shall be of wire conforming to ASTM B211, Alclad 5056-H392 having a minimum tensile of 50 KSI cladding shall constitute at least 15 percent of the cross-sectioned area of the wire. Chemical composition of the core and cladding alloys shall be within the following limits:

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Element	5056 Core, Percent	6253 Cladding, Percent
Magnesium	4.5 to 5.6	1.0 to 1.5
Silicon	0.30 maximum	45 to 65 percent of actual magnesium
Manganese	0.05 to 0.20	-
Chromium	0.05 to 0.20	0.04 to 0.35
Zinc	0.10 maximum	1.6 to 2.4
Iron	0.40 maximum	0.50 maximum
Copper	0.10 maximum	0.10 maximum
Other elements each	0.05 maximum	0.05 maximum
Other elements total	0.15 maximum	0.15 maximum
Aluminum (by difference)	Remainder	Remainder

3.7 Finish. Wire fabric shall be finished as specified herein.

3.7.1 Zinc coating (galvanize) Type IV, Class 1. Type IV, class 1 wire fabric shall be zinc coated by the hot dip or electrolytic process before or after weaving. The zinc coating shall be not less than five percent of the weight of the bare steel wire. The purity of the zinc shall be not less than 98 percent when deposited.

3.7.2 Paint. Unless otherwise specified (see 6.2), wire fabric type II, IV and VII shall be coated as follows:

Type II	- clear varnish or lacquer
Type IV, Class 1	- gray pigment paint
Type IV, Class 2	- black paint
Type VII	- Aluminum pigment paint

3.8 Workmanship. The wire fabric shall have no defects which adversely affect its serviceability or appearance.

4. QUALITY ASSISTANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The 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 Classification of inspection. Inspection shall be classified as follows:

- (a) Quality conformance inspection (see 4.3).
- (b) Inspection of preparation for delivery (see 4.6).

4.3 Quality conformance inspection.

4.3.1 Unit of product. For purpose of inspection, the unit of product shall be the first 2-foot segment for the entire width of each roll in the sample.

4.3.2 Sampling. Sampling for examination and tests shall be in accordance with MIL-STD-105, inspection level I.

4.3.3 Examination. Samples selected in accordance with 4.3.2 shall be examined as specified in 4.4.1. Acceptable quality level (AQL) shall be 2.5 percent defective.

4.3.4 Tests. Samples selected in accordance with 4.3.2 shall be tested as specified in 4.5. AQL shall be 2.5 percent defective.

4.4 Inspection procedure.

4.4.1 Examination. The wire fabric shall be examined for the following defects.

101. Dimensions not as specified (see 3.2).
102. Continuity not as specified (see 3.2.3).
103. Splices not as specified (see 3.3).
104. Selvage not as specified (see 3.4).
105. Mesh count not as specified (see 3.5).
106. Workmanship not as specified (see 3.10).

(Certification that wire and zinc conform to composition requirements may be supplied in lieu of chemical analysis.)

4.5 Tests.

4.5.1 Zinc coating. The thickness (by weight), of the zinc coating shall be determined in accordance with method 512.1 in FED-STD-151. As an alternate method, weigh a roll of woven bare steel insect screen cloth before galvanizing and again after galvanizing, divide the difference of these weighing by the bare steel weight to determine the percentage of zinc coating. Nonconformance to thickness (by weight), as specified in 3.7, shall constitute failure of this test.

4.5.2 Tensile strength. A specimen shall be taken of the type VII wire fabric and shall consist of undistorted wires from two cut edges at right angles to each other so as to include an equal number of warp and filler wires. The wires shall be tested in accordance with ASTM B557.

4.5.3 Chemical analysis. Each sample selected according to 3.6.5, 3.6.6, and 3.6.7 shall be analyzed by the wet method or spectrographic methods according to method 111 or 112, respectively, of FED-STD-151. In case of dispute, chemical analysis by wet chemical methods shall be the basis of acceptance (see 3.6).

4.6 Examination of preparation for delivery. An examination shall be made to determine compliance with the requirements of Section 5. The sample unit shall be one shipping container fully prepared for delivery. Sampling shall be in accordance with MIL-STD-105. The inspection level shall be S-2 with an AQL of 4.0 expressed in terms of percent defective.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A or commercial, as specified (see 6.2 and 6.5).

5.1.1 Level A. The wire fabric shall be tightly rolled without damaging the fabric. Each roll shall be secured with two evenly spaced bands of reinforced tape conforming to PPP-T-97.

5.1.2. Commercial.

5.1.2.1 Military agencies. Commercial packaging shall be in accordance with MIL-STD-1188.

5.1.2.2 Civil agencies. The wire fabric shall be packaged in accordance with normal commercial practice. The complete package shall be designed to protect the wire fabric against damage during multiple shipments, handling, and storage.

5.2 Packing. Packing shall be level A, level B, or commercial, as specified (see 6.2 and 6.5).

5.2.1 Level A. The wire fabric, packaged as specified in 5.1, shall be packed in close-fitting boxes conforming to PPP-B-621, class 2, or PPP-B-601, overseas type. Gross weight shall not exceed 200 pounds. The boxes shall be closed and strapped in accordance with the appendix to the applicable box specification.

5.2.2 Level B. The wire fabric, packaged as specified in 5.1, shall be packed in close-fitting boxes conforming to PPP-B-636, class weather-resistant, or PPP-B-640, class 2. The boxes shall be closed and strapped in accordance with the appendix to the applicable box specification.

5.2.3 Commercial.

5.2.3.1 Military agencies. The wire fabric, packaged as specified in 5.1, shall be packed in accordance with MIL-STD-1188.

5.2.3.2 Civil agencies. The wire fabric of like description, packaged as specified in 5.1, shall be packed in fiberboard boxes to insure delivery at destination; provide for redistribution by the initial receiving activity; and be acceptable by common carrier under National Motor Freight Classification and Uniform Freight Classification.

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5.3 Marking.

5.3.1 Military agencies. Marking for military levels of protection shall be in accordance with MIL-STD-129. Commercial marking shall be in accordance with MIL-STD-1188.

5.3.2 Civil agencies. Marking shall be as specified in the contract or order.

6. NOTES

6.1 Intended use. The wire fabric is intended for use in windows, doors, porches, and other openings as a protection against the entrance of flies, mosquitoes, and other insects.

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

- (a) Title, number, and date of this specification.
- (b) Type and class required (see 1.2.1).
- (c) Width of wire fabric required (see 3.2.1).
- (d) Length of wire fabric if other than specified (see 3.2.2).
- (e) Mesh (count) required (see 3.5.1).
- (f) When tests are required in lieu of certification (see 3.6).
- (g) Levels of packaging and packing required (see 5.1 and 5.2).
Level B packaging and packing is intended to provide economical but limited protection, and should be specified only when it is determined that the wire fabric will be held in covered storage.
- (h) Finish, if other than specified (see 3.7).

6.3 Transportation description. The transportation descriptions and minimum weights applicable to this commodity are: types I, II, III, and V.

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

6.5 Specifications and standards applicable to military preparation for delivery requirements. In addition to the documents listed in 2.1, the following documents of the issue in effect on date of invitation for bids or request for proposal, form a mandatory part of this specification for military procurements.

Federal Specifications:

- | | |
|-----------|---|
| PPP-B-601 | - Boxes, Wood, Cleated-Plywood. |
| PPP-B-621 | - Boxes, Wood, Nailed and
Lock-Corner. |
| PPP-B-636 | - Boxes, Shipping, Fiberboard. |
| PPP-B-640 | - Boxes, Fiberboard, Corrugated,
Triple-Wall. |
| PPP-T-97 | - Tape, Packaging/Industrial,
Filament Reinforced. |

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Military Standards:

MIL-STD-129
MIL-STD-1188

- Marking for Shipment and Storage.
- Commercial Packaging of Supplies and Equipment.

MILITARY INTEREST:

Custodians:

Army - ME
Navy - YD
Air Force - 99

Preparing activity:

Army - ME

Review activities:

Army MD, MI, EA
Navy - MS, OS
DLA - IS

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS, PCD
USDA - AFS
HUD - TCS

User activity:

Navy - MC

Project 5335-0139

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.

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 INTERIM AMENDMENT 1 (ME)
 January 29, 1986

FEDERAL SPECIFICATION

WIRE FABRIC (INSECT SCREENING)

This interim amendment, which forms a part of Federal Specification RR-W-365A, dated 5 September 1980, was approved by the Assistant Administrator, Office of Federal Supply and Services, General Services Administration, for the use of all Federal Agencies.

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3.5.2, delete table 1 in its entirety and substitute:

TABLE I. Mesh and wire sizes.

Meshes per linear inch	Diameter of wire (in inches)					
	Type I	Types II and III	Type IV, classes 1 and 2	Type V	Type VI	Type VII
16 by 16 heavy	0.015	0.015	-	-	-	-
18 by 14 regular	-	.011	0.011*	-	-	-
18 by 14 heavy	-	-	-	-	-	0.013
18 by 16 heavy	.015	.015	-	-	-	-
18 by 16 regular	.011	.011	.011*	0.009	-	.011
18 by 18 regular	.011	.011	.011*	.009	0.009	.011
20 by 20 regular	.011	.011	-	-	-	.011
22 by 22 heavy	.015	.015	-	-	-	-
24 by 24 regular	-	.011	-	-	-	-

* Bare wire before coating or painting.

Custodian:
 Army - ME

Preparing activity:
 Army - ME

Project number: 5335-A002

AMSC N/A

FSC 5335

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