

ZZ-R-1415A  
November 14, 1977  
SUPERSEDING  
Int. Fed. Spec. ZZ-R-001415 (GSA-FSS)  
September 8, 1970, and  
Fed. Spec. ZZ-B-111B  
December 4, 1950

## FEDERAL SPECIFICATION

### RUBBER BAND

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 rubber bands.

1.2 Classification.

1.2.1 Rubber bands. Rubber bands shall be furnished in the size or shape shown in Table I (see 6.1).

#### 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 Standards:

Fed. Std. No. 123 - Marking for Shipment (Civil Agencies).

(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 includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

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

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

##### Military Standards:

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

(Copies of Military Specifications and Standards required by suppliers 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:

D 412 - Tension Testing of Vulcanized Rubber.

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

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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, NW, Washington, DC 20036.)

Uniform Classification Committee, Agent:

## Uniform Freight Classification

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

## 3. REQUIREMENTS

3.1 **Material.** The rubber bands shall be compounded from natural rubber, synthetic rubber (SBR), or synthetic natural rubber (polyisoprene), or any mixture of the three.

TABLE I. Size designation, count, and inside length

Size No. or shape	Number of bands per pound, minimum	Inside length (inches)
8	7,300	7/8
10	5,200	1-1/4
11	4,050	1-1/2
14	3,200	2
16	2,500	2-1/2
17	2,300	2-3/4
18	2,100	3
19	1,750	3-1/2
30	1,600	2
32	950	3
33	850	3-1/2
62	600	2-1/2
63	500	3
64	425	3-1/2
73	320	3
84	210	3-1/2
107	52	7
Open or rounded oval <sup>1/</sup>	400	2-3/4

<sup>1/</sup> Width of rubber in cross-section  $\frac{3}{8} + \frac{1}{32}$  inch. The band shall be open-oval or rounded-oval (teardrop) in shape, and shall form an open configuration when released on a flat non-restricting surface, (see figure 1).

3.2 **Count and weight.** The number of rubber bands per pound, for each size or shape, shall be in accordance with Table I. The unit weight shall be 1/4 pound or 1 pound, as specified (see 6.1).

3.3 **Length.** The rubber bands shall conform to the length specified in Table I for the respective sizes and shapes. A tolerance of plus or minus 5 percent in the average length obtained in 4.4.1 will be permitted.

3.4 **Tensile strength, breaking force, ultimate elongation, and tensile set.** These requirements for rubber bands shall be as specified in Table II for the respective sizes or shapes (see 4.4.3, 4.4.4 and 4.4.5).

TABLE II. Strength, elongation and set

	STRENGTH			
	Tensile strength, minimum	Breaking force, minimum	Ultimate elongation minimum	Tensile set, minimum
	p.s.i.	pounds	percent	percent
8 through 19	-----	5	700	15
30 through 33	-----	12	700	15
62 through 107	1,200	--	700	15
Open or rounded oval	-----	50	800	10

3.5 Workmanship. The edges of the bands shall be straight and perpendicular to the other surfaces. The bands shall be free from ragged edges, nicked edges, and other defects which affect appearance or which might affect serviceability.

#### 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 Sampling. Sampling for examination and tests shall be performed in accordance with MIL-STD-105, except where otherwise indicated.

4.2.1 Sampling of end item for visual examination and verification of count and weight. Sampling shall be in accordance with the following:

	Inspection level	AQL (Percent defective)
Visual examination	S-4	4.0
Verification of count and weight	S-2	1.5

For visual examination, the sample unit shall be one rubber band, except weight examination shall be one unit package. For count and weight, the sample unit shall be one unit package.

4.2.2 Sampling of end item for tests. A random sample of rubber bands shall be taken from each lot in accordance with inspection level S-2, AQL 2.5 percent defective. The sample unit for tests shall be 30 rubber bands.

4.2.3 Sampling of preparation for delivery. The sample unit shall be one shipping container fully prepared for delivery. The lot size shall be the number of containers in the inspection lot. The inspection level shall be II and AQL shall be 4.0 defects per hundred units.

4.3 Examination of end item for visual defects. Samples taken in accordance with 4.2.1 shall be examined for workmanship. Open or rounded oval rubber bands shall also be examined for conformance with the requirements of footnote 1 of Table I.

4.3.1 Examination of end item for count and weight. Samples taken in accordance with 4.2.1 shall be weighed to determine conformance with Table I as follows: One pound of rubber bands, selected at random from the combined samples, and weighed to the nearest .01 pound, shall be counted to determine conformance with Table I. Only whole rubber bands shall be counted. Failure to meet the minimum number per pound requirement specified in Table I shall constitute failure of the lot. All remaining complete bands shall then be weighed together. This weight shall be combined with the previously established weight to determine the total weight, to the nearest .01 pound. The total shall then be divided by the number of sample units to determine conformance with Table I.

4.4 Tests. Samples taken in accordance with 4.2.2 shall be subjected to the following tests. Unless otherwise specified, the sample rubber bands shall be conditioned at a temperature of  $23^{\circ} \pm 2^{\circ}\text{C}$  ( $73.4^{\circ} \pm 3.6^{\circ}\text{F}$ ) and a relative humidity of  $50 \pm 5$  percent for a period of not less than 24 hours prior to the tests.

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4.4.1 Length. Place the rubber band on a flat surface and using a straight-edge, press the band together until the inner surface touches throughout the entire length of the band. Measure the length between the inner ends to the nearest 1/32 inch. Ten rubber bands shall be measured and the average reported as the length of the rubber bands in the sample.

4.4.2 Tensile strength and breaking force. Tensile strength and breaking force shall be determined as described in Method B of ASTM D 412. In calculating tensile strength or determining breaking force, the breaking force is the maximum load at rupture. Ten specimens shall be tested and the average reported as the tensile strength or breaking force, as appropriate, of the rubber bands in the sample.

4.4.3 Ultimate elongation. Ultimate elongation shall be determined as described in Method B of ASTM D 412. Ten specimens shall be tested and the average reported as the ultimate elongation of the rubber bands in the sample.

4.4.4 Tensile set. Tensile set shall be determined as described in Method A of ASTM D 412. For the purpose of this test the rubber bands shall be stretched to a 600% elongation. Ten specimens shall be tested and the average reported as the tensile set of the rubber bands in the sample.

4.5 Examination of preparation for delivery. Samples taken in accordance with 4.2.3 shall be examined to determine that packaging, packing and marking, as required by Section 5, are complied with. Defects shall be scored in accordance with Table III.

TABLE III. Classification of preparation for delivery defects	
Examine	Defects
Markings (exterior and interior)	Omitted; incorrect; illegible; or improper size, location, sequence, or method of application.
Materials	Any component missing or damaged.
Workmanship	Inadequate application of components such as incomplete closure of container flaps, loose strapping or inadequate stapling, bulging or distortion of container.

## 5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A or commercial, as specified (see 6.1).

5.1.1 Level A. Rubber bands shall be unit packaged in quantities of 1/4 or 1 pound, as specified (see 6.1). One-fourth pound quantities shall be packaged in a box made of paperboard having a minimum bursting strength of 50 pounds. One pound quantities shall be packaged in a box made of paperboard having a minimum bursting strength of 90 pounds. The box shall be securely closed to prevent accidental opening.

5.1.1.1 Intermediate packaging. Twelve (12) unit boxes of the same size bands of the 1/4 pound boxes shall be intermediate packaged in a fiberboard box or in a box made of paperboard having a minimum bursting strength of 100 pounds per square inch. The box shall be securely closed to prevent accidental opening.

5.1.2 Commercial. Rubber bands shall be packaged in accordance with normal commercial practice. The complete package shall be designed to protect the item against damage during shipment, handling and storage.

5.2 Packing. Packing shall be level A, or commercial, as specified (see 6.1).

5.2.1 Level A. Twelve (12) intermediate boxes of the 1/4 pound packages, or fifty (50) 1 pound boxes of bands of the same size number, shall be packed in a box made from weather-resistant fiberboard with a bursting test strength of not less than 275 pounds per square inch. The box flaps shall be secured with water-resistant adhesive applied to not less than 75 percent of the surface area of contact between the flaps, or with 3 inch wide waterproof tape applied to the full length of the seams and extending over the ends not less than 3 inches. Alternatively, wirebound, cleated plywood, or nailed wood boxes shall be acceptable shipping containers when lined with a waterproof barrier material. The barrier material shall be sealed at the edges with waterproof tape or adhesive.

5.2.2 Commercial. The rubber bands, packaged as specified in 5.1, shall be packed in fiberboard boxes to insure safe delivery at destination, to provide for safe redistribution by the initial receiving activity, and shall be acceptable by common carrier under the National Motor Freight Classification or Uniform Freight Classification.

5.3 Unitization. When shipments to Government depots are full car or truckload, the shipping containers shall be unitized for shipment and handling in accordance with normal commercial practice. The unitized load shall not exceed 2,500 pounds in weight, 63 inches in height, 56 inches in length, and 45 inches in width.

5.4 Marking. Packages, shipping containers, and unitized loads (when applicable) shall be marked in accordance with Fed. Std. No. 123.

## 6. NOTES

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

- (a) Title, number, and date of this specification.
- (b) Size or shape required (see 1.2.1 and Table I).
- (c) Weight of unit packages (see 1.2.2, 3.2, and 5.1.1).
- (d) Selection of applicable level of packaging and packing required (see 5.1 and 5.2).

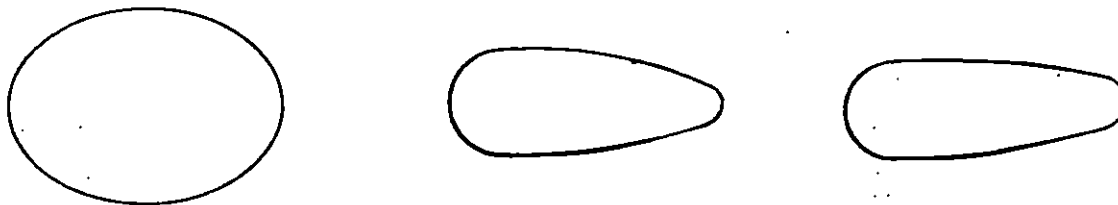


Figure 1. Configuration

These illustrations are intended only to portray the "open" configurations specified in Table I.

Preparing Activity

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U.S. GOVERNMENT PRINTING OFFICE : 1978 - 261-423/1217

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 referred herein. Price 60 cents each.