

DEPARTMENT OF COMMERCE

BUREAU OF STANDARDS

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UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR
RIBBONS, TYPEWRITER

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 167a

[Revised June 10, 1927. Supersedes Federal Specifications Board Specification No. 167]

This specification was officially promulgated by the Federal Specifications Board on June 30, 1924, for the use of the departments and independent establishments of the Government in the purchase of typewriter ribbons.

[The latest date on which the technical requirements of this revision shall become mandatory for all departments and independent establishments of the Government, is September 10, 1927. They may be put into effect, however, at any earlier date, after promulgation]

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I. GENERAL SPECIFICATIONS

There are no general specifications applicable to this specification.

II. TYPES

Typewriter ribbons shall be of the following types:

(a) Single color—(1) Black record, (2) black copying blue, and (3) blue record. (b) Two color—(1) Black and red record and (2) black and red copying. (c) Combined record and copying—(1) Blue record and black copying blue.

III. MATERIAL AND WORKMANSHIP

1. FABRIC.—The cloth shall be made of cotton, thoroughly cleaned, combed, and free from waste. It shall be evenly woven and free from an excessive number of avoidable imperfections of manufacture. The weave shall be plain and the yarn single ply.

2. INKING.—All ribbons shall be nontype filling, and all colors used in the ink shall be as permanent as possible. The ink shall be uniformly applied, and different weights of inking shall be furnished as required for elite or pica type to produce satisfactory work on the different stroke machines. Copying ribbons shall give clear impressions and satisfactory press copies.

IV. GENERAL REQUIREMENTS

See Detail requirements.

V. DETAIL REQUIREMENTS

1. WIDTH.—Uniform, and as required for the machine specified in ordering. See VI, 2, (c).

2. LENGTH.—Ribbons wider than $\frac{9}{16}$ inch.—Not less than 9 yards. Ribbons $\frac{9}{16}$ inch or less in width.—Not less than 12 yards.

3. THREAD COUNT.—Warp.—Not less than 135 threads per inch. Filling.—Not less than 135 threads per inch. See VI, 2, (b).

4. THICKNESS.—Not more than 0.0057 inch. See VI, 2, (d).

5. INKING.—Uniform, of the color required, and otherwise as specified in III, 2.

6. EDGES.—Cut and properly gummed; not wavy. See VI, 2, (a).

7. CHARACTER OF WRITING.—Satisfactory as determined by tests VI, 2, (e) to (g).

8. TYPE FILLING.—None. See VI, 2, (j).

9. PRESS COPIES (COPYING RIBBONS ONLY).—Clear and distinct. See VI, 2, (h).

10. PERMANENCE OF WRITING.—Black record ribbons.—No fading in 96 hours' exposure to direct bright sunshine, or 48 hours' exposure to arc or ultra-violet light.

Colored ribbons and press copies.—Easily legible after 48 hours' exposure to direct bright sunshine, or 24 hours' exposure to arc or ultra-violet light. See VI, 2, (i).

VI. METHOD OF INSPECTION AND TESTS

1. METHOD OF TAKING SAMPLES.—One ribbon from each delivery of 200 dozen or less shall be sent to the testing laboratory in an original unopened container bearing all of the manufacturer's marks.

2. TESTS.—The ribbon shall be examined and tested according to the following methods:

(a) Visual examination shall be made of the sample to determine the nature of the edge and the character of the cloth in regard to its freedom from waste and avoidable imperfections of manufacture, and to ascertain if the cotton had been combed.

(b) The actual number of threads in 1 inch shall be counted in the filling direction at three different places and the results averaged. The total number of warp threads shall be counted and calculated to a basis of 1 inch.

(c) The width shall be determined by laying the ribbon on a flat surface, without tension, and measuring the distance perpendicular to the length between the edges. Three measurements shall be taken at different places on the sample and the results averaged.

(d) The thickness of the ribbon shall be measured at five different points, by means of any suitable gauge, and the results averaged.

(e) The ribbon as received shall be tested on a typewriter or suitable automatic testing machine. If the ribbon as received is on a spool that will not fit the machine used in testing, it shall be transferred to a suitable spool.

(f) Place the ribbon in the machine and wind 2 yards of its free end upon the empty spool. This is done so that the ribbon will shift a definite distance while making the following tests.

(g) A sentence about 30 letters in length shall be written 25 times. At the beginning of each line the ribbon shall be reeled back to the starting point.¹ The first line shall be clear and clean, with no blurring of any of the letters. The last line of the 25 shall be distinct and easy to read. The ribbon shall be allowed to stand at rest for one hour, after which another line shall be written. This line shall be as clear and distinct as the third line of the preceding 25.

(h) In testing copying ribbons, in addition to the above tests, press copies shall be made in the usual way. The copies shall be of good color, sharp, and easily legible.

¹ This is easily done by making a pencil mark across the ribbon at the point where it leaves the spool holder, or at any other convenient fixed point on the machine. The test can not be made by reversing the direction of the ribbon feed at the end of each line, because the ribbon does not travel the same distance in both directions. With some machines it is possible to prevent travel of the ribbon by raising the ribbon-feed pawl. If this can be done, it is preferable to reeling back the ribbon each time.

(i) The writing produced as in (g), or press copies (h), shall be half covered with black paper and exposed to direct, bright sunlight, or at a distance of about 10 inches from an arc or ultra-violet light. Writing made with black record ribbons shall show no appreciable fading after exposure to direct sunlight for 96 hours, or to arc or ultra-violet light for 48 hours. Writing made with colored ribbons, or press copies therefrom, after exposure in a similar way to direct sunlight for 48 hours, or to arc or ultra-violet light for 24 hours, shall still be easily legible.

(j) The small letter "e" shall be thoroughly cleaned and 800 impressions made with it with the normal feed of the ribbon. There shall be no evidence of filling of the type.

VII. PACKING AND MARKING OF SHIPMENTS

Shall be in accordance with commercial practice, unless otherwise specified.

VIII. NOTE

Only the ribbons of type (a) 1 should be used for writing permanent records.

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