U. S. Gov't
Master
Specification
No. 292

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
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CIRCULAR OF THE BUREAU OF STANDARDS, No. 230

[Issued May 26, 1925]

UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR RUBBER INSULATING TAPE

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 292

This specification was officially promulgated by the Federal Specifications Board on May 20, 1925, for the use of the departments and independent establishments of the Government in the purchase of rubber insulating tape.

CONTENTS

I. TYPE

Rubber insulating tape shall be of a single type as described below. Specifications for friction tape may be found in Federal Specifications Board Specification No. 291.

II. MATERIAL AND WORKMANSHIP

1. The tape shall be well, evenly, and smoothly calendered with surface entirely free from holes, cut in uniform width, and tightly

wound in rolls with a glazed cloth, linen, or parchment paper separator interposed between adjacent layers.

2. The separator shall be attached to and cover the outer side of the tape. When unwound from the original roll it shall show no tendency to stick to the rubber.

III. GENERAL REQUIREMENTS

This specification covers the requirements for rubber insulating tape to be used for insulating joints in electric wires and cables.

IV. DETAIL REQUIREMENTS

1. The tape shall consist of an unvulcanized rubber compound so compounded that it can be vulcanized after application to the joint. The compound shall contain not less than 65 per cent by volume of the best quality Hevea rubber, not more than 1 per cent of free sulphur by weight, and not more than 4 per cent waxy hydrocarbons by weight. The remainder shall consist only of suitable dry inorganic fillers. The sulphur contained in barytes, if present, shall not be included in the allowable sulphur content.

2. The thickness and weight of tapes shall conform to the following table:

Width	inch	½	¾	1
Tolerance (in width) plus or minus	do	3/32	3/32	3/32
Thickness, minimum	do	0.027	0.027	0.027
Thickness, maximum	do	.033	.033	.033
Weight per roll, nominal	pound	½	½	1
Weight per 100 rolls, net,[1] minimum	pounds	50	50	100
Length per pound of tape [2] only, minimum	yards	26¼	17½	13

[1] Exclusive of box, wrapping, and core.
[2] Exclusive of box, wrapping, core, and separator.

V. METHOD OF INSPECTION, SAMPLING, AND TESTS

1. Sampling.—One roll from each 250 rolls or fraction thereof shall be selected at random for test. At least 2 feet of the outer layers shall be removed and discarded before taking specimens for test.

2. Tensile Strength.—The tensile strength shall be not less than 250 lbs./in.^{2}

3. Heat.—The tape when wrapped to a thickness of one-fourth inch and heated to a temperature of 65° C. for 20 minutes shall fuse into a homogeneous mass.

4. Dielectric Strength.—The dielectric strength shall be determined by placing a sample between two flat electrodes, one-fourth inch wide and 4 inches long, having square edges and rounded ends. Under an electrode pressure of 3.3 lbs./in.^{2} a 60-cycle voltage of practically sine wave form shall be applied at a value less than 1,000 volts and raised at the rate of 1,000 volts per second, until puncture

occurs. The breakdown voltage shall be not less than 350 volts per mil of thickness. In order to prevent flash over the test is made in castor oil.

5. Weight and Dimensions.—The thickness shall be measured with a micrometer graduated to 0.001 inch, having a circular foot 0.24 to 0.26 inch in diameter, and with a pressure of 3 ounces on the specimen. Five measurements shall be made at random in a length of not less than 3 feet, and no measurement shall be outside the limits specified in the table.

The net weight of the entire delivery shall be determined by taking the net weight of 1 roll in each 100 rolls or fraction thereof. The box and wrapping shall be removed, the tape entirely unrolled from the core, and the core discarded. The unrolled tape with separator attached shall then be weighed alone, and this weight multiplied by 100 shall be not less than the value, in pounds, shown in the table. The length of this unrolled tape shall then be measured and the length, in yards per pound based on the weight of tape with separator removed, shall be not less than the value shown in the table. It is not necessary to remove the separator from each roll. The net weight of rubber may be determined by deducting the weight of separator determined from a single roll.

VI. PACKING AND MARKING

Each roll shall be wrapped in oiled paper or metal foil and inclosed in a paper carton unless otherwise specified. Each box shall be marked with the month and year of manufacture, name of manufacturer, and the nominal width and weight of the tape.

VII. ADDITIONAL INFORMATION

No detailed information.

VIII. GENERAL SPECIFICATIONS

All tests and analyses shall be made in accordance with the methods described in United States Government General Specifications for Rubber Goods, Federal Specifications Board Specification No. 59a, in effect on date of proposal.

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