

DEPARTMENT OF COMMERCE

BUREAU OF STANDARDS

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CIRCULAR OF THE BUREAU OF STANDARDS, No. 307

[Issued April 19, 1926]

UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR
HOSE, PNEUMATIC

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 41b

[Revised March 1, 1926]

This specification was officially promulgated by the Federal Specifications Board on October 6, 1922, for the use of the departments and independent establishments of the Government in the purchase of pneumatic hose.

[The latest date on which the technical requirements of this revision shall become mandatory for all departments and independent establishments of the Government is June 1, 1926. They may be put into effect, however, at any earlier date after promulgation]

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I. GENERAL SPECIFICATIONS

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

II. GRADE

Hose shall be furnished in one grade only and shall be branded "rock-drill" or "pneumatic-tool," as specified.

III. MATERIAL AND WORKMANSHIP

Hose shall be free from defects in material and workmanship.

IV. GENERAL REQUIREMENTS

1. CONSTRUCTION.—Hose shall consist of a rubber tube, cotton-duck reinforcements, and a rubber cover. It shall be of wrapped construction. Length of hose shall be as specified in the proposal.

2. TUBE AND COVER.—Tube and cover shall be smooth, free from pitting, and of uniform thickness. The rubber compounds shall be free from all substances which might injuriously affect their quality.

3. COTTON DUCK.—Cotton duck shall be well, evenly, and firmly woven; as free from unsightly defects, dirt, knots, lumps, and irregularities of twist as is consistent with the best manufacturing practice. The layers shall be applied on a bias of 45°, with edges lapped at least ½ inch (not sewed), and shall be well impregnated with a rubber compound.

4. COUPLINGS.—Each length of hose shall be fitted with couplings and clamps, if, and, as specified in the proposal. Female couplings shall be fitted with a rubber washer cut from a tube of the same composition and cure as the hose tube.

V. DETAIL REQUIREMENTS

Hose shall meet all requirements stated in the table.

Table of physical test requirements

Size:					
Inside diameter.....inches..	$\frac{7}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$
Outside diameter.....do.....	$1\frac{1}{16}$	$1\frac{5}{16}$	$1\frac{1}{2}$	$1\frac{7}{8}$	$2\frac{3}{8}$
Tolerances:					
Inside diameter, plus or minus.....inch..	$\frac{3}{32}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
Outside diameter, plus or minus.....do....	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
Thickness:					
Tube, minimum.....do.....	$\frac{3}{32}$	$\frac{3}{32}$	$\frac{3}{32}$	$\frac{3}{32}$	$\frac{3}{32}$
Cover, minimum.....do.....	$\frac{1}{32}$	$\frac{3}{32}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
Fabric plies, minimum.....	4	4	4	5	5
Hydrostatic test pressure: Coupling and imperfection test, minimum.....pounds per square inch..	250	250	250	250	250
Burst test, minimum.....do.....	650	625	625	600	575
Friction: ¹					
Cover and plies, minimum.....pounds..	15	15	15	15	15
Tube and plies, minimum.....do.....	15	15	15	15	15
Between plies, minimum.....do.....	20	20	20	20	20
Tensile strength: ²					
Tube, minimum.....pounds per square inch..	1,500	1,500	1,500	1,500	1,500
Cover, minimum.....do.....	1,300	1,300	1,300	1,300	1,300
Ultimate elongation: Tube and cover, minimum.....inches..	2-11	2-11	2-11	2-11	2-11
Set, tube and cover:					
Stretch 10 minutes.....do.....	2-9	2-9	2-9	2-9	2-9
Set after 10 minutes rest, maximum.....per cent..	25	25	25	25	25

¹ The rate of separation shall not be greater than 1 inch per minute under the specified loads.

² The tensile strength of tube and cover after being subjected to an accelerated aging test of 96 hours in dry air at 153±2° F. shall show a decrease from the tensile strength determined before heating of not over 40 per cent.

VI. METHODS OF INSPECTION AND TESTS

The manufacturer shall notify the purchaser sufficiently in advance of the completion of the hose to permit of arrangements for inspection.

Inspection and tests shall be made at place of manufacture unless otherwise specified, manufacturer providing a place for conducting tests; also necessary help, equipment, etc.

One length shall be taken from each 2,000 feet or less for test. A 3-foot section shall be cut from each length so selected for hydrostatic burst test, after which further tests shall be made on the same sample. Manufacturer shall refit couplings to said lengths, which shall be accepted as full lengths provided they otherwise conform to specifications. One length in every ten lengths or less, with couplings attached, shall be subjected to the hydrostatic coupling and imperfection test. If hose is ordered without couplings, the manufacturer shall equip one length in ten for the imperfection test. When hose is furnished in lengths under 10 feet, extra lengths shall be furnished at contractor's expense for test purposes.

The inspector shall, after tests, mark the remainder of samples with manufacturer's name, order, requisition, and item numbers and forward them to the testing laboratory for any further tests.

Any lot represented by a sample which fails in one or more tests may be retested at the expense of the contractor. For this purpose two additional samples shall be selected. Failure of either in any respect shall be cause for rejection.

VII. PACKING AND MARKING

Packing shall be as called for in the proposal. Brands shall contain the manufacturer's name and trade-mark. Hose 25 feet or over in length shall have brands of a distinctive color inlaid in the rubber cover at two places on each length, approximately 4 feet from the ends, letters to be at least one-fourth inch high. Hose less than 25 feet in length shall have one inlaid brand approximately in the center. Use words "Pneumatic" on pneumatic hose and "Rock drill" on rock drill hose.

VIII. NOTES

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