

DEPARTMENT OF COMMERCE

BUREAU OF STANDARDS

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**UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR
STEAM HOSE**

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 49b

[Revised July 6, 1925]

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 steam hose.

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I. GRADE

Hose shall be furnished in one grade only.

II. MATERIAL AND WORKMANSHIP

Hose shall be free from defects in material and workmanship.

III. 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.

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 one-half 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 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.

IV. DETAIL REQUIREMENTS

Hose shall meet all requirements stated in the table.

Requirement table

Size, inside diameter.....inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Outside diameter.....do.....	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{2}$
Tolerances:					
I. D. plus or minus.....do.....	$\frac{1}{32}$	$\frac{1}{32}$	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{1}{16}$
O. D. plus or minus.....do.....	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
Thickness:					
Tube, minimum.....do.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
Cover, minimum.....do.....	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
Fabric plies, minimum.....do.....	4	4	5	5	5
Hydrostatic test pressure.....lbs./in. ²	800	750	750	750	650
Friction: ¹					
Before steaming—					
Between plies of fabric, minimum.....pounds.....	18	18	18	18	18
Between tube and fabric, minimum.....do.....	14	14	14	14	14
Between cover and fabric, minimum.....do.....	14	14	14	14	14
After steaming—					
Between plies of fabric, minimum.....do.....	13	13	13	13	13
Between tube and fabric, minimum.....do.....	10	10	10	10	10
Between cover and fabric, minimum.....do.....	10	10	10	10	10
Tensile strength, before steaming:					
Tube, minimum.....lbs./in. ²	750	750	750	750	750
Cover, minimum.....do.....	600	600	600	600	600
Ultimate elongation:					
Before steaming, tube and cover, minimum.....inches.....	2-8	2-8	2-8	2-8	2-8
After steaming: ²					
Decrease in tensile strength and ultimate elongation—					
Tube, maximum.....per cent.....	40	40	40	40	40
Cover, maximum.....do.....	50	50	50	50	50

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

² A sample of hose not less than 18 inches long shall be subjected to the action of steam at a pressure of 75 lbs./in.² for two days of seven hours each. Test shall be made by passing steam through hose as described in United States Government General Specification for Rubber Goods, F. S. B. Specification No. 59a, in effect on date of proposal.

V. 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 tests, 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. 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 proper organization 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.

VI. 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.

VII. ADDITIONAL INFORMATION

No details specified.

VIII. GENERAL SPECIFICATIONS

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

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