

**DEPARTMENT OF COMMERCE**

**BUREAU OF STANDARDS**

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**CIRCULAR OF THE BUREAU OF STANDARDS, No. 190**

[Issued September 4, 1924]

**UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR  
PLAIN, INLAID, AND PRINTED LINOLEUMS**

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 210

This specification was officially adopted by the Federal Specifications Board on July 30, 1924, for the use of the Departments and Independent Establishments of the Government in the purchase of plain, inlaid, and printed linoleums.

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**I. TYPES**

These specifications are intended to cover plain, jaspe, granite, straight line and molded inlaid, and printed linoleums.

**II. MATERIAL AND WORKMANSHIP**

These linoleums consist of oxidized linseed oil, fossil resin, and rosin intimately mixed with ground cork and pigments and pressed

on a burlap backing. Wood flour may be added in the manufacture of the light colors to get the proper shade and is not considered objectionable.

### III. GENERAL REQUIREMENTS

In the plain, jaspe, granite, and inlaid linoleum the colors and design are in the mix and extend through to the burlap. In the printed linoleum the base is plain linoleum, usually brown in color, upon which designs or patterns in color are printed or stamped. The lines between the designs in straight-line linoleum are distinct and true, whereas those in molded inlaid are somewhat wavy or broken.

Plain, jaspe, granite, inlaid, and printed linoleums shall meet the following requirements:

#### 1. COLOR, PATTERN, AND FINISH

The surface of the linoleum shall be smooth and free from indentations, cracks, and protruding particles of cork. The color, pattern, and finish shall match a sample mutually agreed upon by buyer and seller.<sup>1</sup>

#### 2. SEASONING

The linoleum shall be thoroughly seasoned. The surface of a clean, fresh cut made at an angle of approximately 45° shall show no marked difference in color or grain between the outer edges and the center.

#### 3. WIDTH

Widths shall be as specified. Standard commercial widths are 72, 90, 108, and 144 inches. A tolerance of  $\pm\frac{1}{4}$  inch will be permitted.

#### 4. BURLAP BACKING

The burlap backing shall be finished on the exposed side with a red backing paint.

#### 5. INDENTATION

The linoleum shall not show an indentation of more than 0.010 inch one hour after it has been subjected to a pressure of 80 pounds applied for a period of 60 seconds on a flat-ended cylindrical steel bar 0.282 inch in diameter.

### IV. DETAIL REQUIREMENTS

#### 1. WEIGHT AND THICKNESS

The various types of linoleum covered by these specifications shall have the following weights and thicknesses:

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<sup>1</sup> The current catalogues of the manufacturer or dealer should be used in the purchase of this type of linoleum. It is the custom in the linoleum industry to make changes in patterns and colors every 12 months, usually about October 1.

Kind	Minimum weight per square yard	Thickness	
		Minimum	Maximum
	<i>Pounds</i>	<i>Inch</i>	<i>Inch</i>
Plain and jaspe linoleum "A" gauge.....	6.8	0.137	0.147
Plain and jaspe linoleum "B" gauge.....	6.0	.114	.124
Plain linoleum "C" gauge.....	4.8	.090	.100
Plain linoleum "D" gauge.....	4.0	.075	.085
Straight-line inlaid linoleum, heavy "A" gauge.....	6.8	.110	.120
Straight-line inlaid linoleum, light "D" gauge.....	4.0	.061	.076
Molded and granite inlaid linoleum, heavy "B" gauge.....	5.3	.085	.105
Molded inlaid linoleum, "C" gauge.....	4.0	.064	.084
Printed linoleum, heavy "D" gauge.....	4.2	.079	.089
Printed linoleum, light "E" gauge.....	3.6	.064	.074

2. PLIABILITY

There shall be no cracking or breaking when the linoleum is bent over mandrels of the following diameters, respectively:

	Inches
Plain, Jaspe, molded inlaid, granite and printed linoleum.....	3
Straight-line inlaid.....	5

V. METHOD OF INSPECTION AND TESTS

When required for inspection and tests these linoleums will, in general, be sampled and tested by the following methods, but the purchaser reserves the right to use any additional information to determine whether the material conforms to the specifications.

1. SAMPLING

From each 10 rolls select one roll at random for sampling. Preferably from the inside end of the roll, cut a sample approximately 14 inches wide and the full width of the roll. Carefully roll up the sample and transmit it to the laboratory for examination.

2. LABORATORY EXAMINATION

(a) COLOR, PATTERN, AND FINISH.—Examine the sample and compare its color and general appearance with the sample mutually agreed upon for color, pattern, and finish. The back shall be uniformly coated with a red backing paint so that no uncoated burlap shows.

(b) SEASONING.—Cut the sample with a sharp knife at least one-half inch from an outside edge at an angle of 45° and observe the color and grain of the material showing at the cut edge.

(c) WIDTH.—Measure the width of the roll to the nearest one-sixteenth inch.

(d) THICKNESS.—Caliper the sample at 10 equally spaced points, at least three-fourths inch from a cut edge, with a micrometer having flat bearing surfaces at both contact points of not less than one-fourth inch in diameter. Average the readings.

(e) WEIGHT.—Cut a sample 12 by 12 inches, measure accurately, and weigh to the nearest gram (15 grains). From the measurements and weight so obtained, calculate the weight per square yard.

(f) **PLIABILITY.**—Cut two strips 2 inches wide and 8 inches long longitudinally and two strips of the same size transversely of the roll and bring to a temperature of 21° C. (70° F.) to 25° C. (77° F.) by exposure to these conditions for two to two and one-half hours. Now bend each strip with the burlap on the inside at approximately its center over mandrels of the specified diameter through an arc of 180° and at a uniform speed in approximately five seconds time. A 5-inch mandrel shall be used for straight-line inlaid linoleums and a 3-inch mandrel for plain, jaspe, granite, molded inlaid, and printed linoleum.

(g) **INDENTATION.**—Cut five pieces at least 2 inches across from the sample and bring to a temperature of 21° C. (70° F.) to 25° C. (77° F.) by keeping at this temperature for two to two and one-half hours. Support the samples by a smooth steel plate and apply a pressure of 80 pounds to the upper surface for a period of 60 seconds by means of a flat-ended cylindrical steel bar 0.282 inch in diameter. The bar shall be supported in a frame in such a manner as to insure the face of its foot being parallel to the surface of the linoleum. The edges of the face of the bar in contact with the linoleum shall be buffed smooth to prevent cutting the linoleum. The load shall be lowered gently until its entire weight presses upon the linoleum, but in no case shall the load be dropped upon the linoleum.

After 60 seconds the load shall be removed and the indentation immediately measured, and one hour after the removal of the load the indentation shall again be measured, when it shall not exceed 0.010 inch. If the depth exceeds this amount, the linoleum shall be rejected. The surface of the linoleum shall show no sign of being broken or cut, and if such occurs, even though the indentation does not exceed 0.010 inch, the linoleum shall be rejected.

In case of dispute, umpire tests shall be made at 21° C. (70° F.).

## VI. PACKING AND MARKING

These linoleums shall be put up in rolls containing one continuous piece approximately 20 to 30 yards long. They shall be tightly wound on cores or mandrels. The back of each piece of linoleum shall be stamped at the ends and center with the name or trade-mark of the manufacturer and the grade of the goods. The rolls shall be wrapped in heavy paper, securely tied or otherwise fastened, and plainly labeled with the name of the manufacturer, the thickness of the goods, and the yardage, and shall be packed in crates of sufficient strength to withstand ordinary handling during transportation.

## VII. ADDITIONAL INFORMATION

No details.

## VIII. GENERAL SPECIFICATIONS

No details.

Additional copies may be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C. Price, 5 cents.



