

DEPARTMENT OF COMMERCE

BUREAU OF STANDARDS
George K. Burgess, Director

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UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR
THE CONSTRUCTION OF BUILT-UP ROOFING, TYPE 4TWS

FEDERAL SPECIFICATIONS BOARD, SPECIFICATION No. 154

This specification was officially adopted by the Federal Specifications Board on June 1, 1924, for the use of the Departments and Independent Establishments of the Government in the construction of built-up roofing, type 4TWS.

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I. TYPE

This roofing shall consist of four layers or plies of coal-tar saturated rag felt cemented together with coal-tar pitch and surfaced with slag, gravel, or similar surfacing materials, as called for in the proposal for the work.

Flashings of the type required under the specification for the building shall be included and shall conform to United States Government Master Specifications for Flashings No. 156 or No. 157.

II. MATERIAL AND WORKMANSHIP

No details.

III. GENERAL REQUIREMENTS

No details.

IV. DETAIL REQUIREMENTS

1. MATERIALS

Roofing of type 4TWS shall contain not less than the following quantities of materials per 100 square feet:

	Pounds
One layer sheathing paper or unimpregnated felt.....	5
Four layers coal-tar saturated rag felt (F. S. B. Spec. No. 81).....	60
Coal-tar pitch (F. S. B. Spec. No. 80).....	120
Roofing gravel (F. S. B. Spec. No. 82).....	400
or	
Roofing slag (F. S. B. Spec. No. 82).....	300

2. WORKMANSHIP

The coal-tar pitch shall not be heated above 375° F., and shall be hot when the felts are laid.

The sheets of felt shall be laid so as to be free from wrinkles and buckles and so that pronounced ridges are not formed at the laps.

When the roof surface is of gypsum block, the sheathing paper may be omitted.

The surfacing material shall always be dry when applied, and, in addition, shall be heated in cold weather.

The board roof surface installed by other contractors before being considered satisfactory for laying the roof covering shall be smooth and free from loose boards, large cracks, or projecting ends which might injure the roofing. All loose and foreign material shall be removed. Precast gypsum slabs shall be firmly set, well pointed, and free from any unevenness which might injure the roofing.

3. APPLICATION

Roofing of type 4TWS shall be laid in the following manner:

(a) Lay one layer of sheathing paper over the entire roof surface, lapping the sheets at least 1 inch and nailing along the edges to hold them in place until the felt is laid.

(b) Lay two layers of 32-inch coal-tar saturated felt over the sheathing paper over the entire roof surface, lapping each sheet 17 inches over the preceding sheet. Lap the ends of the sheets not less than 4 inches. Carry these layers of felt up, abutting vertical surfaces at least 4 inches. When 36-inch felt is used, lap the sheets 19 inches. Nail the sheets along the edges sufficiently to hold them in place until the remaining felts are laid, using nails driven through flat tinned disks.

(c) Mop the entire surface of this felt with a uniform coating of hot coal-tar pitch, using not less than 25 pounds per 100 square feet.

(d) Over this coating of coal-tar pitch lay two additional layers of 32-inch coal-tar saturated felt over the entire roof surface, lapping

each sheet 17 inches over the preceding sheet and nailing each sheet approximately 6 inches from its upper edge with nails driven through flat tinned disks. Lap the ends not less than 6 inches. When 36-inch felt is used, lap the sheets 19 inches. Cut off these layers of felt at abutting vertical surfaces. Mop each of these two sheets the full width of the lap with hot coal-tar pitch, using not less than 25 pounds per 100 square feet in each mopping.

(e) Over the entire surface apply a uniform coating of hot coal-tar pitch, using not less than 70 pounds per 100 square feet.

(f) Into this pitch, while hot, embed the surfacing material.

V. INSPECTION

No details.

VI. PACKING AND MARKING

No details.

VII. ADDITIONAL INFORMATION

Roofing of type 4TWS is adapted to board sheathing with inclines not exceeding 3 inches to the foot or precast gypsum slabs or blocks with inclines not exceeding 1 inch to the foot and shall not be used on inclines greater than these.

Roofing constructed in the manner specified is durable and should not require repairs or renewals on account of the action of the elements for a period of 10 years.

VIII. GENERAL SPECIFICATIONS

No details.

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J. H. GOLDSTEIN AND
R. F. W. WILSON
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