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MADRAS RECORD OFFICE.**Government of Madras.***Public Works* **DEPARTMENT.**

G.O. No. 1356	Press Mis.
19-20	
Dated 1 5 18	68

Not to be folded or roughly handled*5/18*

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*Proceedings of the Madras Government, Public Works Department,
1st May 1868.*

No. 19. Read the following Circular from the Government of India, Public Works Department, (Military Works,) dated Fort William, 27th March 1868, No. 25 :—

Specification for preparing and laying down asphalt on floors.

Read the following :—

Detailed statement showing the method of preparing and laying down asphalt.

1ST.—PREPARATION OF THE BED FOR ASPHALT IN NEW WORK.

1. The ground for receiving the asphalt is levelled, well watered, and rammed; a levelling course of broken bricks is then to be laid down and on this 4 inches of brick or stone concrete, which is then to be well beaten down with wooden beaters to a thickness of 3 inches, and allowed to get perfectly dry before any attempt is made to lay the asphalt.
2. To lay the asphalt on an old existing terraced bed, it is only necessary to fill up the inequalities of the floor with coarse plaster to prevent waste of asphalt.

Old bed.

2ND.—PREPARATION OF MATERIALS.

3. Coarse sand passed through a sieve from 16 to 20 meshes to the square inch, and which has been well washed and dried in the sun, is mixed with an equal quantity (by weight) of pure asphalt, and boiled in an iron cauldron; whilst boiling, add half a pound of coal-tar to every 100 lbs. of the mixture, and keeping the whole well stirred during the operation; at the beginning small quantities of half a hundred-weight to be melted are put into the cauldron at intervals of every quarter of an hour; afterwards a whole hundred-weight at a time may be added until the cauldron is full, when ready for use, it will emit jets of white smoke, and drop freely from the stirrer.

3RD.—METHOD OF LAYING ASPHALT.

4. Prepare four straight pieces or *latties** of wood, so as to form a rectangle about 4' x 1½', the inner edges of these boundary pieces should be levelled down to ½" or ¾" according to the thickness of asphalt required. Four or five large wooden spoons, and as many wooden hand-rubbers or plaster floats will also be required. When these are ready, the boiling mixture is taken from the cauldron (which should be as near to the work as possible) by means of an iron ladle, and as much as will just cover the surface of the rectangle to the proper thickness is laid on and spread; then a handful of the coarse clean sand of a size which will just pass through a sieve, the meshes of which are from 16 to 20 to the square inch, is thrown over the surface and beaten well with the large wooden spoons until it begins to get hard: the surface is then covered with some very fine dry sand, and rubbed well with the wooden rubbers until it becomes perfectly even, when the wooden frame may be removed, and the process continued by laying down another rectangular piece in continuation of the above.

5. Before laying asphalt, care must be taken that the bed is perfectly dry as the slightest moisture or dampness prevents the asphalt from adhering properly, and the steam cracks the asphalt, or raises bubbles.

6. Should the joints between any rectangular patches be uneven, a hot iron, or some bits of lighted charcoal applied for a few seconds, will soften the asphalt, when they may be again rubbed down until made perfectly even.

7. If coarse sand is not procurable, very hard vitrified brick, broken to the size and passed through sieves, will answer quite as well.

8. By increasing or decreasing the quantity of sand, the mixture can be made to suit the heat of the locality where used. If too little sand is used, the heat in the hot weather softening it will cause any ordinarily heavy articles to sink into it; and, on the other hand, if too much

*Proceedings of the Madras Government, Public Works Department,
1st May 1868.*

sand is used, the material will become too brittle, and there will not be enough of the mastic to bind the sand together in the requisite manner.

G. SWETENHAM, Captain, R. E.,
Ex. Engr., Secunderabad Division.

Floors laid under this specification are wearing very satisfactorily.

C. J. MEAD, Captain.,
Offg. Suptg. Engineer, Hyderabad.

Governments of Madras, Bombay, Bengal, North-Western Provinces, and Punjab.
Chief Commissioners of Central Provinces, Oudh, and British Burmah.
Resident at Hyderabad.
Commissioner of Mysore.
Agents of the Governor General in Central India and Rajpootana.
Military Department.
Adjutant General.
Quarter Master General.
Sanitary Commissioner with the Government of India.

ORDER.—Ordered, that a copy of this specification be forwarded for information to the Local Governments and Administrations, and Heads of Departments noted on the margin.

(Signed) C. H. DICKENS, Colonel, R. A.,
Secy. to the Govt. of India.

ORDER THEREON 1st May 1868, No. 1356.

MILITARY WORKS, No. 3.

Communicated to the Superintending Engineers.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government

To the Superintending Engineers.
To Captain Kennedy.

Exd. S. T. Augustin.

CIRCULAR No. 25 PUBLIC WORKS.
GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
MILITARY WORKS.

FORT WILLIAM, MARCH 27, 1868.

Specification for preparing and laying down asphalt on floors.

Read the following:—

Detailed statement showing the method of preparing and laying down asphalt.

1ST.—PREPARATION OF THE BED FOR ASPHALTE IN NEW WORK.

The ground for receiving the asphalt is levelled, well watered, and rammed; a levelling course of broken bricks is then to be laid down, and on this 4 inches of brick or stone concrete, which is then to be well beaten down with wooden beaters to a thickness of 3 inches, and allowed to get perfectly dry before any attempt is made to lay the asphalt.

2. To lay the asphalt on an old existing terraced bed, it is only necessary to fill up the inequalities of the floor with coarse plaster to prevent waste of asphalt.

2ND.—PREPARATION OF MATERIALS.

3. Coarse sand passed through a sieve from 14 to 20 meshes to the square inch, and which has been well washed and dried, is mixed with an equal quantity of coal-iron cauldron; whilst boiling, add half a pound of coal-tar to every 100 lbs. of the mixture, and keeping the whole well stirred during the operation; at the beginning small quantities of half a hundred-weight to be melted are put into the cauldron at intervals of every quarter of an hour; afterwards a whole hundred-weight at a time may be added until the cauldron is full,—when ready for use, it will emit jets of light smoke, and drop freely from the stirrer.

3RD.—METHOD OF LAYING ASPHALTE.

4. Prepare four straight pieces or lathies* of wood, so as to form a rectangle about 4' x 14', the inner edges of these boundary pieces should be levelled down to $\frac{1}{4}$ " or $\frac{3}{8}$ " according to the thickness of asphalt required. Four or five large wooden spoons, and as many wooden hand-

* Flat bar-iron $1\frac{1}{2}$ " x $\frac{1}{2}$ " to $\frac{3}{4}$ " thick will answer much better.

rubbers or plaster floats will also be required. When these are ready, the boiling mixture is taken from the cauldron (which should be as near to the work as possible) by means of an iron ladle, and as much as will just cover the surface of the rectangle to the proper thickness is laid on and spread; then a handful of the coarse clean sand of a size which will just pass through a sieve, the meshes of which are from 16 to 20 to the square inch, is thrown over the surface and beaten well with the large wooden spoons until it begins to get hard: the surface is then covered with some very fine dry sand, and rubbed well with the wooden rubbers until it becomes perfectly even, when the wooden frame may be removed, and the process continued by laying down another rectangular piece in continuation of the above.

5. Before laying asphalt, care must be taken that the bed is perfectly dry, as the slightest moisture or dampness prevents the asphalt from adhering properly, and the steam cracks the asphalt, or raises bubbles.

6. Should the joints between any rectangular patches be uneven, a hot iron, or some bits of lighted charcoal applied for a few seconds, will soften the asphalt, when they may be again rubbed down until made perfectly even.

7. If coarse sand is not procurable, very hard vitrified brick broken to the size and passed through sieves will answer quite as well.

8. By increasing or decreasing the quantity of sand, the mixture can be made to suit the heat of the locality where used. If too little sand is used, the heat in the hot weather softening it will cause any ordinarily heavy articles to sink into it; and, on the other hand, if too much sand is used, the material will become too brittle, and there will not be enough of the mastic to bind the sand together in the requisite manner.

* * *
G. SWETENHAM, Captain, R. E.,
Exec. Engr., Secunderabad Division.

Floors laid under this specification are wearing very satisfactorily.

C. J. MEAD, Captain.
Offg. Supdg. Engineer, Hyderabad.

ORDER.—Ordered, that a copy of this specification be forwarded for information to the Local Governments and Administrations, and Heads of Departments noted on the margin.

Governments of Madras, Bombay, Bengal, North Western Provinces and Punjab.
Chief Commissioners of Central Provinces, Oudh, and British Burmah.
Resident at Hyderabad.
Commissioner of Mysore.
Agents of the Governor General in Central India and Rajpootana.
Military Department.
Adjutant General.
Quarter Master General.
Sanitary Commissioner with the Government of India.

(Signed) C. H. DICKENS, Colonel, R. A.,
Secy. to the Govt. of India.

Captain, R. E.,
Indian Secy. to the Govt. of India.

To the Secretary to Govt. of Madras
in the Public Works Department.

P. N. 1868 Rept
Pro. of Govt. for May

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

MILITARY WORKS.

To

No 1349

CIRCULAR No. 25 PUBLIC WORKS.

Dated March 27, 1868.

Received 11th April 1868.

Forwards for information a specification for
preparing and laying down asphalt on floors.

No 1356 - 1st May 1868

With an Order

Civ

Mr. J. H. ...
Engineers -

Communicated to the Superintendent

13th April 1868

W. H. ...
1st May 1868

W. H.

No 19-20

2.1752 April 1868 P. N. 1868

19-20

13th April 1868
W. H. ...

19-20