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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P. W. DEPARTMENT

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Dated	13 9 1978	197 .

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Not to be folded or roughly handled.

3623

GOVERNMENT OF MADRAS
PUBLIC WORKS DEPARTMENT.

13th September 1878, No. 3,626 W.

Buildings and Roads
Civil Works.

Read the following paper —

No 148. Circular from the Government of India, Public Works Department, (Civil Works—Irrigation), dated Simla, 21st August 1878, No 72 P.W.

In continuation of Circular No 18 P W, dated 2nd May 1877, the undersigned is directed to forward, for information, extract paragraphs 3 to 8 of a letter from Mr Dejoux, No 2,079, dated the 31st May 1878, to the Superintending Engineer, South-Western Circle, regarding Major-General Morgan's cement.

(Signed) G. T. SKIPWITH, Major, R.E.,
Asst Secy. to the Govt. of India

Copy forwarded to the Government of Madras in the Public Works Department, for information, with reference to its letter No 2,792 W, dated the 8th ultimo

(Signed) G. T. SKIPWITH, Major, R.E.,
Asst Secy. to the Govt. of India

Extract of letter from P. DEJOUX, Esq., Executive Engineer, Cement Experiments Division, to the Superintending Engineer, South-Western Circle, No 2,079, dated Calcutta, 31st May 1878

3. I must now reply to the criticisms of Major-General Morgan about my not knowing how to test cement, &c.

I Major-General Morgan says that I use more water than that used by experts at home

To this I say that while he is quite right on the one hand in saying so, he is wrong on the other, because both experience and practice (notwithstanding his remark of my having unpractised hands) confirm the fact that in a country like India, in which there is a great amount of heat as compared to the climate of England, it is necessary, in order to ensure good results and sound bricks, *especially when they are made by Native workmen*, to use more water than at home

II However, with reference to the experiments criticised, I must say that there was a clerical error in the tables attached to the report to which Major-General Morgan alludes; the percentage of water should have been entered at 27 instead of 37. In fact there were some trial-gauge cements extra burnt in which I was obliged to use 37 per cent some days previous to my experimenting on the Madras Cement, and by an oversight those figures (37) were entered throughout the two tables

The cement and sand bricks were correct at 25 per cent, and I consider it on an average the best proportion of water to be used in India

III At any rate bricks made by an European workman very carefully with 20 or 27 per cent of water in India will show very little difference in strength

4. I now proceed to explain why I said before that on account of some curious results the quality of the cement was dubious, and why I was obliged to wait longer to give a definite report

5 The fact of General Morgan's taking out a patent for the manufacture of Portland Cement induced me to suppose that he had effected some combination of the usual components of Portland by means of alkalis and other chemicals.

I have myself made a few experiments with the use of fly-ash, soda, and potash, in which I some times succeeded, and at other times failed, the process being for days and even months a first rate hand, but which to some extent kept decreasing afterwards, especially particularly when mixed with sand.

I was, therefore, quite justified, in my opinion, in obtaining at first, to have some doubts about the fact of the composition of the cement.

Had Major-General Morgan sent me a copy of the specification of his process, it is probable that such doubts would have been removed. I have, however, been furnished with a copy of it from the Home Department, as annexed, I find that the Portland Cement is manufactured with shells, which are pure carbonates of lime and clay, the ordinary components of Portland.

6 Portland Cement is manufactured at home, and in fact all over the world with any kind of limestone or carbonate of lime and clay, a mixture which is burnt to a hard, and at other times it is finely ground in its raw state and mixed with clay.

7 Under such circumstances, I find it is not surprising that a patent has been taken out for such a process, as the cement in question is no more palatable than the Portland Cement's I made for the last three years very similar, which have been made from mixtures of—

- Burat Lunkur, lime and clay (when lime is in excess in the kiln),
- Raw " " and limestone (when lime is in excess),
- " " and clay (when lime is in excess),
- " " and chalk or gravel (when lime is in excess),

and many other mixtures of *limestone* and *clay* of every description and clay.

8 In conclusion, I must add that the Portland Cement according to the sample sent to me, is of very good quality, and it can be compared in every respect (either pure or mixed with sand) with the Portland Cement imported from England.

No. 149 OLDER THIRLON, 13th September 1878, No. 3,626 W.
COMMUNICATED to Major-General Morgan in continuation of G.O., No. 2,791 W,
of the 8th July 1878.

(True Extract)
(Signed) E. A. FOORD, Colonel, R.E.,
Secretary to Govt., P.W.D.
(True Copy)

Major, R.E.,
Under Secy to Govt., P.W.D.

To Major-General Morgan

Edw T D Ryan
Sydney Copies

TO THE GOVERNMENT OF INDIA
PUBLIC WORKS DEPARTMENT.

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PUBLIC WORKS DEPARTMENT.

TO THE GOVERNMENT OF INDIA
PUBLIC WORKS DEPARTMENT.

3826

Circular No 72 P. W.

GOVERNMENT OF INDIA
PUBLIC WORKS DEPARTMENT.

CIVIL WORKS.

Irrigation

To

THE GOVERNMENT OF MADRAS, IN THE PUBLIC WORKS DEPARTMENT, IRRIGATION AND RAILWAY BRANCHES
THE GOVERNMENT OF BOMBAY, IN THE PUBLIC WORKS DEPARTMENT, GENERAL, IRRIGATION AND RAILWAY BRANCHES.
THE GOVERNMENT OF BENGAL, IN THE PUBLIC WORKS DEPARTMENT, GENERAL BRANCH
THE GOVERNMENTS OF NORTH-WESTERN PROVINCES AND OUDH, AND PUNJAB, IN THE PUBLIC WORKS DEPARTMENT, GENERAL AND IRRIGATION BRANCHES
THE CHIEF COMMISSIONERS, CENTRAL PROVINCES, BRITISH BUTMAH, MYSORE AND COORG AND ASSAM
THE RESIDENT AT HYDRABAD
THE AGENTS TO GOVERNOR GENERAL FOR CENTRAL INDIA, AND RAJPUTANA
THE SUPERINTENDENT, PORT BLAIR, AND CHIEF COMMISSIONER, ANDAMAN AND NICOBAR ISLANDS
THE INSPECTOR GENERAL OF MILITARY WORKS
THE DIRECTORS OF STATE RAILWAYS, CENTRAL, WESTERN AND NORTH-EASTERN SYSTEMS
THE COMMISSIONERS TO THE GOVERNMENT OF INDIA FOR GUARANTEED RAILWAYS, CALCUTTA, LAHORE AND LUCKNOW

Simla, August 21st, 1878.

In continuation of Circular No 18P W, dated 2nd May 1877, the undersigned is directed to forward, for information, extract paragraphs 3 to 8 of a letter from Mr. Dejour, No 2079 dated the 31st May 1878, to the Superintending Engineer, South-Western Circle, regarding Major General Morgan's cement.

G. T. SKIPWITH, Major, R. E.,
Asst. Secy to the Govt of India

Copy forwarded to the Government of Madras in the Public Works Department, for information, with reference to its letter No. 2792W, dated the 8th ultimo.

G. T. Skipwith

Major, R. E.,
Asst. Secy. to the Govt of India

B. 2791 w 3
2792 w 3 - 7 78

GOVERNMENT OF INDIA
PUBLIC WORKS DEPARTMENT
CIVIL WORKS

Circular No 72 P. W.
Dated 14th July 1878
Received

Mr. 3/26/78 13 off 78
For forwarding the
specification of Morgan's
in continuation of
50 No 2791
of the 8th July 1878
267

Enclosed, I send you extract of a letter
from Mr. Dwyer, regarding Major General Morgan's
process.

Circular No 72 P. W. Dated 14th July 1878

Major General Morgan

26-7-78

Oct 10 2791
Oct 11 2792

Enclosure to Circular No 72 P. W., dated 21st August 1878.

Extract of letter from P. Dwyer, Esq., Exec. Engineer, Cement Experiments Division, to the
Supdgr Engineer, South-Western Circle, No 2079, dated Calcutta, 31st May 1878

3 I must now reply to the criticisms of Major General Morgan about my not knowing
how to test cement, &c.

1 Major General Morgan says that I use more water than that used by experts at
Loire.

To this I say that while he is quite right on the one hand in saying so, he is wrong on
the other, because both experience and practice (notwithstanding his remark of my having
unpractised hands) confirm the fact that in a country like India, in which there is a great
amount of heat as compared to the climate of England, it is necessary, in order to ensure good
results and sound bricks, especially when they are made by Native workmen, to use more water
than at home.

11 However, with reference to the experiments criticised, I must say that there was a
clerical error in the tables attached to the report to which Major General Morgan alludes, the
percentage of water should have been entered at 27 instead of 37. In fact there were some
Shahabganje cements extra burnt in which I was obliged to use 37 per cent some days previ-
ous to my experimenting on the Madras Cement, and by an oversight those figures (37) were
entered throughout the two tables.

The cement and sand bricks were correct at 25 per cent, and I consider it on an average
the best proportion of water to be used in India.

111 At any rate bricks made by an European workman very carefully with 20 or 27 per
cent of water in India will show very little difference in strength.

1 I now proceed to explain why I said before that on account of some curious results
the quality of the cement was dubious, and why I was obliged to wait longer to give a definite
opinion.

5 The fact of General Morgan's taking out a patent for the manufacture of Portland
Cement induced me to suppose that he had made some additions to the usual components of
Portland by means of alkalis and other chemicals.

I have myself made numerous experiments with carbonates of baryta, soda and potash, in
which I sometimes succeeded, and at other times obtained cements possessing for days and even
months a first-rate hardness, but of which the strength kept decreasing afterwards steadily,
particularly when mixed with sand.

I was therefore quite justified, in presence of the curious results obtained at first, to have
some doubts about the future strength of the cement.

Had Major General Morgan sent me a copy of the specification of his process, it is prob-
able that such doubts would not have originated, because by being lately furnished with a copy
of it from the Home Department, as annexed, I find that the Madras Cement is manufactured
with shetts, which are pure carbonates of lime and clay, the ordinary components of Portland

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7 Under such circumstances, I must say that I am surprised that a patent has been
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tures of—

Burnt kunkur, lime and clay (when lime is in excess in the kunkur),

" " " and burnt fat lime (when clay is in excess),

Raw " " and clay (when lime is in excess),

" " " and chalk or ground fat lime (when lime is in excess);

and many other mixtures of burnt and raw fat limes (of every description) and clay.

8 In conclusion, I must admit that on the whole Major General Morgan's Cement
according to the sample sent to me, is of very good quality, and it can be compared in every
respect (either pure or mixed with sand) with the Portland Cement imported from England.

3626
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Circular No 72 P. W.
GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
CIVIL WORKS

Irrigation

To

THE GOVERNMENT OF MADRAS, IN THE PUBLIC WORKS DEPARTMENT, IRRIGATION AND RAILWAY BRANCHES
THE GOVERNMENT OF BOMBAY, IN THE PUBLIC WORKS DEPARTMENT, GENERAL, IRRIGATION AND RAILWAY BRANCHES.
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THE DIRECTORS OF STATE RAILWAYS, CENTRAL, WESTERN, AND NORTH-EASTERN SYSTEMS
THE CONSULTING ENGINEERS TO THE GOVERNMENT OF INDIA FOR GUARANTEED RAILWAYS, CALCUTTA, LAHORE AND LUCKNOW

Simla, August 21st, 1878

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Ray D. D. D.

Major, R. E.,

Asst. Secy. to the Govt. of India.

*To The Secretary to the Govt of Madras.
Public Works Department, Railway Branch*

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W 1005.120*

GOVERNMENT OF INDIA
PUBLIC WORKS DEPARTMENT
CIVIL WORKS
Irrigation

Circular No 72 P. W.

Simla, August 21st, 1878

Forward, for information, extract of a letter from Mr. Dejeux, No. 2079, dated the 31st May 1878, to the Superintendent Engineer, South-Western Circle, regarding Major General Morgan's cement

Circular No 72 P. W. 1878-79

36/6
b.

Circular No 72 P. W.
GOVERNMENT OF INDIA
PUBLIC WORKS DEPARTMENT.
CIVIL WORKS.
Irrigation

To
THE GOVERNMENT OF MADRAS, IN THE PUBLIC WORKS DEPARTMENT, IRRIGATION AND RAILWAY BRANCHES.
THE GOVERNMENT OF BOMBAY, IN THE PUBLIC WORKS DEPARTMENT, GENERAL, IRRIGATION AND RAILWAY BRANCHES.
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R. E. Dejeux

Major, R. E.,

Asst. Secy. to the Govt of India

*To The Joint Secretary to the Govt of Madras
P.W. Department, Irrigation Branch*

12/10053/2A

GOVERNMENT OF INDIA
PUBLIC WORKS DEPARTMENT

CIVIL WORKS

Item No.

Order No. 72 P.W.

of 18/11/1944, USGS

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For information, extract of a letter
from Mr. Depoux, to Mr. Major General Mors
- 10 -

At C. D. 10053/2A, No. 72 P.W. D-72-100

1004³

Major General Morgan

13 Sept 3626 m.
125

Major General Morgan's Comd

Circular from the Gov of
India forwarding for informa-
-tion extract of Mr Depux's
letter regarding — Communi-
-cated to that gentleman

Subd Div Major