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(3) Initials of the Referencer lang ✓

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No.	2386-37.	Press.
B.P. No.		Mis.
Dated	9-9-1882.	<u>197</u> .

K.M.K.

Not to be folded or roughly handled

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

No. 77.

READ—the following letter from N. St. B. BEARDMORE, Esq., C.E., Acting Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 31st August 1882, No. 36 W.:—

With reference to G.Os., Nos. 1460-A W. of 12th June 1882, 1837 W. of 18th July 1882, and 2047 W. of 10th August 1882, I have the honor to inform you that I have not yet received the Indian Portland Cement which Messrs. Burn and Co. were requested about 30th June to send to me.

2. As it is now nearly two months since it is said that that firm was requested to send the cement, I think there must be some mistake about it, and perhaps the Government will be interested to have the enclosed record in a tabular statement of a number of tests made from a small parcel (375 lb.) of cement that I myself ordered from Messrs. Burn and Co. of the Indian Portland Cement Company, and received here in June 1882.

3. The cement is not a very strong one, and is rather coarsely ground as may be seen from the residue left on the sieves of 4,900 and 2,500 holes per square inch. Tests with sand, 67, 69 and 70, 1 of cement to 3 of sand, are so strong compared with 147—154 made with the same proportion of sand and of about the same age, and being stronger than, or as strong as, all other tests made with neat cement, that it is thought there must be some mistake, and that those tests (67, 69, and 70) have been in error made with some other cement. There is no other reason to think so however, so they are left standing in the statement. If they are correct and fair, it shows another fault in the cement, viz., that it is uncertain in strength. It may be observed also that the different individual tests at the same age throughout the statement vary a good deal in strength.

4. It appears from comparing the tests of neat cement 56—61 and 155—160, that those of the later period are the stronger, this may have been due to some difference in the atmosphere at the time of making, and to the cement having weathered a little. On the $2\frac{1}{4}$ square inch briquette of neat cement at seven days, the lowest tensile strain is 530 lb., the highest is 753 lb., at 28 days the lowest is 632 lb., the highest 970 lb., all the briquettes having been kept in water.

5. In making the above comparisons it may be remembered that the chief clause in my specification for cement is that the $2\frac{1}{4}$ square inch briquette of neat cement shall bear at seven days a tensile strain of 900 lb., and that at 28 days it shall have increased in strength at least 25 per cent. above what it attained at seven days.

6. The price of Messrs. Burn and Co.'s cement, viz., Rs. 71½ per ton delivered, is prohibitive to me, even if it attained in every point to my specification. I can buy English cement of good and known manufacturers in the open market here at a less price than that.

ENCLOSURE.
TESTS OF PORTLAND CEMENT.

Number of Experiment.	Name of Manufacturer or of Cement, and Date of delivery on the Works.	Size of Bricks, quarts.	Quantity of water used in gauging.	Quantity of dry Cement in each Brickette.	Quantity of sand in each Brickette in measures of Cement.	Date of Gauging.	Date of Breaking.	Age.	Tensile Strain.	Residue of Dry Cement on Sieves.		Weight of Dry Cement per struck Bushel.	Remarks.
										70 X 70	30 X 30		
66	Indian Portland Cement Company, Moore, Burn and Co., of Calcutta. Received on works in June 1882.	sq. 2 1/2	6 1/2	1 1/2	1 1/2	1882. 7th June..	1882. 14th June..	M. 0	134	P. CENT. 26	P. CENT. 18	1124	A fair fracture.
67		sq. 2 1/2	6 1/2	1 1/2	1 1/2	7th "	14th "	0 1	665	"	"	"	Do.
68		sq. 2 1/2	6 1/2	1 1/2	1 1/2	7th "	14th "	0 1	665	"	"	"	Do.
69		sq. 2 1/2	6 1/2	1 1/2	1 1/2	7th "	14th "	0 28	693	"	"	"	Do.
70		sq. 2 1/2	6 1/2	1 1/2	1 1/2	7th "	14th "	0 25	632	"	"	"	Do.
66		sq. 2 1/2	6 1/2	1 1/2	1 1/2	7th "	14th "	0 25	869	"	"	"	Do.
67		sq. 2 1/2	6 1/2	1 1/2	1 1/2	7th "	14th "	0 25	445	"	"	"	Do.
68		sq. 2 1/2	6 1/2	1 1/2	1 1/2	7th "	14th "	0 28	Notes.	"	"	"	Do.
69		sq. 2 1/2	6 1/2	1 1/2	1 1/2	7th "	14th "	0 28	380	"	"	"	Do.
70		sq. 2 1/2	6 1/2	1 1/2	1 1/2	7th "	14th "	0 28	380	"	"	"	Do.
147	Do.	sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th July..	14th Aug.	0 30	130	"	"	"	Do.
148		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	140	"	"	"	Do.
149		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	135	"	"	"	Do.
150		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	132	"	"	"	Do.
151		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	135	"	"	"	Do.
152		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	135	"	"	"	Do.
153		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	281	"	"	"	Do.
154		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	272	"	"	"	Do.
155		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	230	"	"	"	Do.
156		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	714	"	"	"	Do.
157	Do.	sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	721	"	"	"	Do.
158		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	880	"	"	"	Do.
159		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	885	"	"	"	Do.
160		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	870	"	"	"	Do.
161		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	615	"	"	"	Do.
162		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	585	"	"	"	Do.
163		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	715	"	"	"	Do.
164		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	655	"	"	"	Do.
165		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	670	"	"	"	Do.
166		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	705	"	"	"	Do.
167		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	865	"	"	"	Do.
168		sq. 2 1/2	6 1/2	1 1/2	1 1/2	14th "	14th "	0 30	865	"	"	"	Do.

NOTE.—Tests 67, 69 and 70, 1 part of cement to 3 parts of sand, broken at 28 days, bore such a high tensile strain per square inch compared with the rest of cement of same age that it is thought they were by mistake made with some other cement.

(Signed) N. ST. B. BEARDMORE, C.E.,
Acting Superintendent, Madras Harbour Works.

9TH SEPTEMBER 1882, No. 2336 W., PUBLIC WORKS.

No. 78.

ORDER—dated 9th September 1882, No. 2336 W., Public Works.

Recorded, and a copy forwarded to the Government of Bengal with reference to their letters Nos. 2159 E., dated 30th June and 2556 E., dated 29th July 1882.

(Here enter No. 2337 W., dated 9th September 1882.)

(True Extract.)

Under Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintendent, Madras Harbour Works.

Exd. S. T. Austin.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1882) Madras.
PUBLIC WORKS.

Dated September, 9th.

Recd.

Encl.

G.O., 9th Sept. 1882, No. 2336 W.

SEPTEMBER.
Nos. 77-78.

Tests of Portland Cement.

A statement of — made by the Superintendent, Madras Harbour Works, ordered to be forwarded to the Government of Bengal.

2336
3
9TH SEPTEMBER 1882, No. 2337 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

No. 77.

READ—the following letter from N. Sr. B. BEARDMORE, Esq., C.E., Acting Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 31st August 1882, No. 36 W.:—

With reference to G.Os., Nos. 1460-A W. of 12th June 1882, 1837 W. of 18th July 1882, and 2047 W. of 10th August 1882, I have the honor to inform you that I have not yet received the Indian Portland Cement which Messrs. Burn and Co. were requested about 30th June to send to me.

2. As it is now nearly two months since it is said that that firm was requested to send the cement, I think there must be some mistake about it, and perhaps the Government will be interested to have the enclosed record in a tabular statement of a number of tests made from a small parcel (375 lb.) of cement that I myself ordered from Messrs. Burn and Co. of the Indian Portland Cement Company, and received here in June 1882.

3. The cement is not a very strong one, and is rather coarsely ground as may be seen from the residue left on the sieves of 4,900 and 2,500 holes per square inch. Tests with sand, 67, 69 and 70, 1 of cement to 3 of sand, are so strong compared with 147—154 made with the same proportion of sand and of about the same age, and being stronger than, or as strong as, all other tests made with neat cement, that it is thought there must be some mistake and that those tests (67, 69, and 70) have been in error made with some other cement. There is no other reason to think so however, so they are left standing in the statement. If they are correct and fair, it shows another fault in the cement, viz., that it is uncertain in strength. It may be observed also that the different individual tests at the same age throughout the statement vary a good deal in strength.

4. It appears from comparing the tests of neat cement 56—61 and 155—160, that those of the later period are the stronger, this may have been due to some difference in the atmosphere at the time of making, and to the cement having weathered a little. On the 2½ square inch briquette of neat cement at seven days, the lowest tensile strain is 530 lb., the highest is 753 lb., at 28 days the lowest is 632 lb., the highest 970 lb., all the briquettes having been kept in water.

5. In making the above comparisons it may be remembered that the chief clause in my specification for cement is that the 2½ square inch briquette of neat cement shall bear at seven days a tensile strain of 900 lb., and that at 28 days it shall have increased in strength at least 25 per cent. above what it attained at seven days.

6. The price of Messrs. Burn and Co.'s cement, viz., Rs. 71½ per ton delivered, is prohibitive to me, even if it attained in every point to my specification. I can buy English cement of good and known manufacturers in the open market here at a less price than that.

(Here enter No. 2337 V., dated 9th September 1882.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

No. 79.

Forwarded.

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1882) Madras.
PUBLIC WORKS.

Dated September, 9th.

Recd.

Encl.

G.O., 9th Sept. 1882, No. 2337 W.

SEPTEMBER.
Nos. 77-79.

Tests of Portland Cement.

FORWARDING a statement of — made by
the Superintendent Madras Harbour Works

No. 36 W

2337
58

FROM

THE ACTING SUPERINTENDENT,
MADRAS HARBOUR WORKS,

TO

The Secretary to Government
Public Works Department
MADRAS, 31st August 1882.

Sir, With reference to G.O. 1460 W of 12th June 1882, 1837 W of 18th July 1882, 2047 W of 10th August 1882, I have the honor to inform you that I have not yet received the Indian Portland cement which Messrs. Burn & Co. were requested about 30th June to send to me.

2 As it is now nearly two months since it is said that that firm was requested to send the cement, I think there must be some mistake about it, and perhaps the Government will be interested to have the enclosed record in a tabular statement of a number of tests made from a small parcel (375 lbs) of cement that I myself ordered from Messrs. Burn & Co. of the Indian Portland cement Co., and received here in June 1882.

3 The cement is not a very strong one, and is rather coarsely ground as may be seen from the residue left on the sieves of 4900 and 2500 holes per square inch. Tests with sand, 67, 69 and 70, of cement to 3 of sand, are so strong compared with 147-154 made with the same proportion of sand and about the same age, and being stronger than, or as strong as, all other tests made with neat cement, that it is thought there must be some mistake and that these tests 67, 69, and 70 have been in error made with some other cement. There

is

is no other reason to think so however, so they are left standing in the statement - If they are correct and fair, it shews another fault in the cement, viz. that it is uncertain in strength - It may be observed also that the different individual tests at the same age, throughout the statement vary a good deal in strength -

4 It appears from comparing the tests of neat cement 56-61 and 155-160 that those of the later period are the stronger, this may have been due to some difference in the atmosphere at the time of making, and to the cement having weathered a little - On the $2\frac{1}{4}$ square inch buquette of neat cement at 7 days, the lowest tensile strain is 530 lbs, the highest is 753 lbs, at 28 days the lowest is 632 lbs, the highest 970 lbs, all the buquettes having been kept in water.

5 In making the above comparisons it may be remembered that the chief clause in my specification for cement is that the $2\frac{1}{4}$ square inch buquette of neat cement shall bear at 7 days a tensile strain of 900 lbs, and that at 28 days it shall have increased in strength at least 25% above what it attained at 7 days.

6 The price of Messrs. Brown & Co's cement viz. Rs 7 $\frac{1}{2}$ per ton delivered, is prohibitive to me, even if it attained in every point to my specification - I can buy English cement of good and known manufacturers

in the open market here at a less price than that

I have the honor to be,
Sir,

Your most obedient Servant,
Wm. H. Beardmore & Co

Ag. Superintendent,
M. Harbour Works

2047 w 8.10 8.82
 1837 w 8.18 7.82
 1460 w 8.12 6.82
 1860 w 8.12 6.82
 1605 w 8.26 6.82

Buildings and Roads

AA No 2336 w 8.9.82

Recorded and
 Recorded

From
 The Ag Superintendent
 M. Hartman Wicks

Copy forwarded to
 the Govt of Bengal
 with reference to their
 letters 2159 & 830 u
 June 4 2556 & 829
 July 1882

AA No 2337 w 8.9.82
 Forwarded

No 2336 w 8.9.82

6.9.82

Dated 31 August 1882 No 236 w
 Sept 1 Sept 1882

28
 2
 2400
 10/9

No of Enclosures 1

Supt in H Work 23
 Supt in H Work 24

Portland Cement
 Forwards a tabular Statement
 of tests of -

12.9.9
 10.9.9

With order

W

Tests of Portland Cement

Number of Experiment	Name of Manufacturer and date of delivery on the Works	Size of Specimen	Quantity of water used in gauging	Quantity of dry cement in each specimen	Quantity of sand in each specimen in measure of cement	Date of Gauging	Date of Breaking	Age in Months	Time in Strain	Position of Dry Cement on base 50 x 50	Weight of dry cement per strain bushel	Remarks
1	1882	1 1/4	1 1/2	1.8	1.8	1882	1882		118	70 x 70	118	
56	Indian Portland	2 1/4	3 1/2	1.8	1.8	7 th June 1882	1882	7	530	26	113 1/2	a fair fracture
57	Common Company	2 1/4	3 1/2	1.8	1.8	7 th June 1882	1882	7	665	16		"
58	Refuge Burn Co	2 1/4	3 1/2	1.8	1.8	7 th June 1882	1882	7	605			"
59	of Calcutta	2 1/4	3 1/2	1.8	1.8	7 th June 1882	1882	28	643			"
60	Manufactured on Works	2 1/4	3 1/2	1.8	1.8	7 th June 1882	1882	28	632			"
61	in June 1882	2 1/4	3 1/2	1.8	1.8	7 th June 1882	1882	28	869			"
66		1	2	1 1/2	1 1/2	7 th June 1882	1882	28	448			Broken in taking out of mould.
67		1	2	1 1/2	1 1/2	7 th June 1882	1882	28	448			a good fracture
68		1	2	1 1/2	1 1/2	7 th June 1882	1882	28	380			Broken at 300 lb. weight of negative pressure. Fracture in middle of joint. It might have been made it with a good fracture
69		1	2	1 1/2	1 1/2	7 th June 1882	1882	28	380			"
70		1	2	1 1/2	1 1/2	7 th June 1882	1882	28	380			"
147		1	1	1 1/2	1 1/2	15 th July 1882	1882	30	130			"
148		1	1	1 1/2	1 1/2	15 th July 1882	1882	30	140			"
149		1	1	1 1/2	1 1/2	15 th July 1882	1882	30	135			"
150		2 1/4	2 1/2	6	6	15 th July 1882	1882	30	132			"
151		2 1/4	2 1/2	6	6	15 th July 1882	1882	30	138			"
152		2 1/4	2 1/2	6	6	15 th July 1882	1882	30	261			"
153		2 1/4	2 1/2	6	6	15 th July 1882	1882	30	272			"
154		2 1/4	2 1/2	6	6	15 th July 1882	1882	30	320			"
155		2 1/4	2 1/2	1.8	1.8	15 th July 1882	1882	30	714			"
156		2 1/4	2 1/2	1.8	1.8	15 th July 1882	1882	30	753			"
157		2 1/4	2 1/2	1.8	1.8	15 th July 1882	1882	30	721			"
158		2 1/4	2 1/2	1.8	1.8	15 th July 1882	1882	30	880			"
159		2 1/4	2 1/2	1.8	1.8	15 th July 1882	1882	30	895			"
160		2 1/4	2 1/2	1.8	1.8	15 th July 1882	1882	30	970			"
161	Indian Portland	2 1/4	3 1/2	1.8	1.8	24 th July 1882	1882	7	615			"
162	Apurunt Co Ltd	2 1/4	3 1/2	1.8	1.8	24 th July 1882	1882	7	685			"
163	undivided	2 1/4	3 1/2	1.8	1.8	24 th July 1882	1882	7	755			"
164		2 1/4	3 1/2	1.8	1.8	24 th July 1882	1882	7	655			"
165		2 1/4	3 1/2	1.8	1.8	24 th July 1882	1882	7	670			"
166		2 1/4	3 1/2	1.8	1.8	24 th July 1882	1882	28	675			"
167		2 1/4	3 1/2	1.8	1.8	24 th July 1882	1882	28	765			"
168		2 1/4	3 1/2	1.8	1.8	24 th July 1882	1882	28	885			"

Some was put down in weight going to the river bank when it was broken. A good fracture.

Two both above on the section.

Pat & Stearns

At July 14 1882. Part of cement broken at 28 days. Such a high tensile strain per square inch compared with the cement at same age. That is thought to be more by mistake made with some other cement.

5929.

Gobt of (1882) Madras.
PUBLIC WORKS.

XII 11/19

Dated

Recd.

Encl.

G. O. of Dept. 1882, No. 2336W.

74370

Nos.

77 to 79

Tests of Portland Cement

A statement of
made by the Mptt
in Madras works.
ordered to be sent to the
Govt India, Bengal

to a D.O.

For a statement of
made by
the Mptt in Madras.

Copy

State

Added in Receipt Book