

Taking Mr. Jones' calculations as correct for the 10 feet tank, we obtained the circumferential tensile stress as 523 pounds per square inch for the lowermost inch, and assuming this to remain constant for the lowermost 12 inches, we had $522 \times 12 = 6264$ pounds, which must be resisted by the four lowermost courses of brickwork. These may fail in two ways (1) either by separating along the line of vertical and horizontal joints, which would develop the adhesive resistance of the cement mortar (2) or by rupture of the bricks by direct tension; the former was the more likely, and the adhesive area called into play would be $4\frac{1}{2} (4\frac{1}{2} \times 4 + 4 \times 3) = 135$ square inches, and $\frac{6264}{135} = 46$ pounds per square inch, which would be well resisted by cement mortar, 1 to 1 (see tables).

He hoped Mr. Jones would complete his experiment by building up the tank and filling it with water until it failed.

Mr. Shellshear also appeared to think that retaining walls should not be reduced on account of the adhesive strength of the mortar, and introduced the question of foundations. Now, a large number of retaining walls failed on account of the defective foundations, by sliding forward bodily, and by yielding to excessive pressure on the outer toe, although they would have had sufficient strength and stability had the foundations been sound. By reducing the thickness of a wall we undoubtedly increased the pressure on the outer toe, and developed tensile stress on the inner toe, so that the design of retaining walls must be considerably influenced by the nature of the foundations. But these objections did not apply to solid rock foundations nor to any case where proper foundations existed or had been provided for independently of the wall which was built upon them.

He did not, however, wish it to be understood that he recommended the reduction of the thickness of the retaining walls to such an extent as to develop the full adhesive resistance of the mortar on the inner toe, but rather that a certain value should be taken as the safe adhesive strength of the mortar used in building the wall, and that the thickness at the base should be such as to insure the tensile stress on the inner toes never exceeding the amount.

TABLE I.

TENSILE STRAIN REQUIRED TO SEPARATE BRICKS CEMENTED TOGETHER IN BLOCKS OF FOUR, WITH PORTLAND CEMENT AND LIME MORTARS, AT END OF TWELVE MONTHS.

Description of Brick.	Average strength by compression per brick in tons.	DIMENSION IN INCHES.						Weight in lbs.		TENSILE STRAIN IN LBS.									Set in Air or Water.	
		Length.	Breadth.	Thickness.	Area.		Cubical Contents.			Portland Cement and Sand.						Lime and Sand.				
					Bed.	Edge.		Dry.	Wet.	Neat.	1 to 1	2 to 1	3 to 1	4 to 1	5 to 1	1 to 2 Blue Lias.	1 to 2 Dorking.	1 to 2 Chalk.		
Gault Clay. Pressed ...	40.04	8-75	4-125	2-75	36-09	24-06	99-25	5-13	6-47	1631-4	1576-4	871	988-2	735-2	br'kein drilling	1448	1520-5	638.7	Air W'ter	
Gault Clay Wire Cut	32.70	9-00	4-125	2-75	37-125	24-75	102-09	5-86	6-85	2400	1558-3	not set	1037	791	772	not set	not set	679.4	Air W'ter	
Gault Clay, Perforated	46.40	9-00	4-375	2-625	39-375	24-625	103-48	4-95	5-76	3898-8	2082	2231-6	1663-2	1088-6	812-6	1763-0	1349-3	547.0	Air W'ter	
Suffolk ...	34.94	9-00	4-5	2-625	40-5	23-625	106-3125	6-18	7-14	3011-0	2721	1834-4	1561-4	933-2	641	2372	1788-2	428.6	Air W'ter	
Stock ... Fareham...	38.74	9-00	4-125	2-625	37-125	23-125	97-45	5	5-57	3231	2484	2238	1934-4	1869	1154-2	1210-6	1479-3	423.8	Air W'ter	
Red ... Staff'rdsh'e	90.4	8-75	4-125	2-625	36-01	22-97	94-74	6-55	7-52	2816-8	2264	1571-8	1516-2	825-8	792-6	1919-0	1743-0	449.0	Air W'ter	
Blue Pres'd with frog	111.04	8-75	4-125	2-75	36-09	24-06	99-25	7-52	7-90	4538	2990	2064	1499	1236	1040	1102-7	1330-6	not set	Air	
Staff'rdsh'e Blue Rough wit'out frog	117.92	8-75	4-125	2-75	36-09	24-06	99-25	7-75	7-81	3445	2455	2009	1580-8	1259-6	845-6	1269-6	1030-8	not set	Air W'ter	
										4449-0	2237	1917	1128	1145	653					
										2563-4	2008-4		1535	1183	752					
											1844									
										1744-4	1701-6	1746	1299-6	988	not set					
										1451	1048-2	1186	1090	843	not set					

TABLE II.

ADHESION OF MORTAR TO BRICKS, 3 BRICKS SET AS IN FIGURE 1, MORTAR 7 DAYS OLD.

No.	Description.	Size of each Joint.	Area of each Joint.	Area of Two Joints.	Total Force Pounds.	Force per Square inch two Joints.	Mean Force per Square inch two Joints.	Force per Square inch one Joint.	Mean Force per Square inch one Joint	Relative Adhesive-ness neat Cement = 1.	Remarks.	
1	Neat Cement ..	4'55x4'25	19'33	38'66	2200 } 1	76'95	82'42	153'90	164'84	1'0000	The Brick sheared as well the joint.	
2		4'55x4'20	19'11	38'22	3750 } 2	98'11		196'22				
3		4'55x4'3	19'56	39'12	2150 } 1	72'22		144'44				
4	Crushed Sandstone and Cement	4'7 x4'2	19'74	39'48	2500	64'60	66'15	129'20	132'30	0'8025	Failed one after the other.	
5		4'5 x4'3	19'35	38'70		2650		67'70				135'40
6	Crushed Sandstone and Cement	4'5 x4'35	19'125	39'14	950	24'83	24'13	49'66	48'26	0'2927	"	
7		4'5 x4'25	19'125	38'25		875		22'63				45'26
8		4'55x4'25	19'33	38'66		975		24'93				49'86
9	2 to 1	4'6 x4'25	19'55	39'10	975	24'93		49'86			do. do.	
10	Crushed Sandstone and Cement	4'5 x4'25	19'125	38'25	215 } 1	16'86	15'01	33'72	30'02	0'1821	do. do.	
11		4'6 x4'25	19'55	39'10	1075 } 2	14'06		28'12				
12	3 to 1	4'6 x4'35	20'01	40'02	430 } 1	14'11		28'22			do. do.	
13	Crushed Sandstone and Cement	4'55x4'3	19'56	39'12	350 } 1	9'58	6'64	19'16	13'28	0'0805	do. do.	
14		4'00x4'25	19'33	38'66	400 } 2	5'17		10'34				
15	4 to 1	4'55x4'25	19'33	38'66	200	5'17		10'34			do. do.	
16	Bluestone Dust and Cement	4'55x4'3	19'56	39'12	1850	47'29	41'48	94'58	82'96	0'5032	do. do.	
17		4'45x4'2	18'69	37'38	2000	53'50		107'00				
18	1 to 1	4' 6x4'25	19'55	39'10	1100 } 1	23'65		47'30			do. do.	

19	Bluestone Dust	4' 5x4'2	18'90	37'86	1200	31'74	} 27'91	} 63'48	} 55'82	} 0'3386	do.	do.
20	and Cement	4' 5x4'25	19'125	38'25	1000	26'14					52'28	do.
21	2 to 1	4' 55x4'25	19'33	38'66	1000	25'86	} 14'84	} 28'10	} 29'68	} 0'1800	do.	do.
22	Bluestone Dust	4' 55x4'3	19'56	39'12	550	14'05					12'92	51'72
23	and Cement	4' 5x4'3	19'35	38'70	500	12'92	} 17'57	} 35'14	} 30'56	} 0'1853	do.	do.
24	3 to 1	4' 55x4'3	19'56	39'12	575 } 1 800 } 2	17'57					35'14	do.
25	Bluestone Dust	4' 5x4'2	18'90	37'86	675	17'85	} 15'28	} 22'26	} 33'72	} 0'1853	do.	do.
26	and Cement	4' 6x4'15	19'09	38'18	425	11'13					15'28	do.
27	4 to 1	4' 5x4'2	18'90	37'86	575 } 1 700 } 2	16'86	} 56'62	} 108'62	} 113'24	} 0'6869	do.	do.
28	Nepean River Sand	4' 55x4'2	19'11	38'22	1550	40'55					81'10	do.
29	and Cement	4' 55x4'25	19'33	38'66	2000	75'01	} 54'31	} 108'62	} 113'24	} 0'6869	do.	do.
30	1 to 1	4' 55x4'25	19'33	38'66	1700 } 1 2500 } 2	54'31					do.	do.
31	Nepean River Sand	4' 5x4'25	19'125	38'25	950	24'57	} 18'21	} 24'82	} 36'42	} 0'2209	do.	do.
32	and Cement	4' 5x4'25	19'125	38'25	300 } 1 650 } 2	12'41					18'21	do.
33	2 to 1	4' 55x4'2	19'11	38'22	650 } 1 700 } 2	17'66	} 9'89	} 15'68	} 18'42	} 0'1117	do.	do.
34	Nepean River Sand	4' 5x4'25	19'125	38'25	300	15'68					do.	do.
35	and Cement	4' 55x4'25	19'33	38'66	375 } 1 650 } 2	13'25	} 9'89	} 26'50	} 18'42	} 0'1117	after the	other.
36	3 to 1	4' 55x4'2	19'11	38'22	250	6'54					9'89	26'50
37	Nepean River Sand	4' 6x4'3	19'78	39'56	200	5'05	} 4'97	} 10'10	} 9'94	} 0'0603	One Brick	was broken
38	and Cement	4' 6x4'3	19'78	39'56	150 } 1 300 } 2	5'68					4'97	10'10
39	4 to 1	4' 55x4'25	19'33	38'66	50 } 1 275 } 2	4'20	} 8'40	} 8'40	} 8'40	} 8'40	stood 300	lbs.

TABLE III.

ADHESION OF MORTAR TO BRICKS.

Two Bricks set as in Figure 2, Mortar 7 days old.

No.	Description of Materials.	Size of Joint.	Area of Joint.	Total Force. Pounds.	Force per Square Inch	Mean Force per Square Inch	Relative Adhesiveness. Neat Cement = 1	Remarks.
40	Neat Cement	4'50 x 4'25	19'125	3,650	190'84	171'04	1'1000	
41		4'5 x 4'3	19'35	3,100	160'20			
42		4'5 x 4'25	19'125	3,100	162'09			
43	Crushed Sandstone and Cement, 1 to 1	4'6 x 4'2	19'32	2,100	108'69	102'52	0'5993	
44		4'55 x 4'25	19'33	2,000	103'46			
45		4'5 x 4'25	19'125	1,825	95'42			
46	Crushed Sandstone and Cement, 2 to 1	4'55 x 4'3	19'56	1,350	69'01	57'25	0'3347	
47		4'5 x 4'3	19'35	900	45'50			
48		4'6 x 4'3	19'78	900	45'50			
49	Crushed Sandstone and Cement, 3 to 1	4'5 x 4'3	19'35	425	21'96	22'8	0'1334	
50		4'5 x 4'3	19'35	650	33'59			
51		4'5 x 4'3	19'35	250	12'91			
52	Crushed Sandstone and Cement, 4 to 1	4'5 x 4'3	19'35	450	23'25	19'27	0'1126	
53		4'55 x 4'3	19'56	350	17'89			
54		4'5 x 4'25	19'125	300	15'68			

55	Bluestone Dust and Cement, 1 to 1	{	4'5 x 4'2	18'90	1,450	76'10	}	75'06	0'4388
56			4'5 x 4'25	19'125	1,700	88'88			
57			4'5 x 4'25	19'125	1,150	60'13			
58	Bluestone Dust and Cement, 2 to 1	{	4'5 x 4'3	19'35	750	38'75	}	38'62	0'2257
59			4'50 x 4'25	19'33	750	38'79			
60			4'55 x 4'3	19'56	750	38'34			
61	Bluestone Dust and Cement, 3 to 1	{	4'5 x 4'3	19'35	700	36'17	}	38'92	0'2275
62			4'5 x 4'25	19'125	850	44'44			
63			4'5 x 4'3	19'35	700	36'17			
64	Bluestone Dust and Cement, 4 to 1	{	4'55 x 4'2	19'11	300	15'60	}	16'12	0'0942
65			4'5 x 4'25	19'125	275	14'37			
66			4'55 x 4'2	19'11	350	18'31			
67	Nepean River Sand and Cement, 1 to 1	{	4'55 x 4'2	19'11	2,050	107'27	}	91'49	0'5349
68			4'5 x 4'3	19'35	1,900	98'19			
69			4'55 x 4'3	19'56	1,350	69'01			
70	Nepean River Sand and Cement, 2 to 1	{	4'5 x 4'25	19'125	800	41'83	}	39'47	0'2307
71			4'55 x 4'2	19'11	550	28'78			
72			4'5 x 4'3	19'35	925	47'80			
73	Nepean River Sand and Cement, 3 to 1	{	4'5 x 4'25	19'125	450	23'52	}	21'06	0'1231
74			4'55 x 4'25	19'33	425	21'98			
75			4'6 x 4'3	19'78	350	17'69			
76	Nepean River Sand and Cement, 4 to 1	{	4'55 x 4'25	19'33	200	10'34	}	7'75	0'0453
77			4'55 x 4'25	19'33	100	5'17			
78			4'5 x 4'3	19'35	150	7'75			

TABLE IV.

ADHESION OF MORTAR TO BRICKS, 3 BRICKS SET AS IN FIGURE 1, MORTAR 28 DAYS OLD.

No.	Description.	Size of each Joint.	Area of each Joint.	Area of Two Joints.	Total Force Pounds.	Force per Square inch two Joints.	Mean Force per Square inch two Joints.	Force per Square inch one Joint.	Mean Force per Square inch one Joint	Relative Adhiveness neat Cement = 1.	Remarks.
79	Neat Cement ..	4'55x4'1	18'65	37'30	4300	115'28	1'03'04	230'56	206'8	1'0000	
80					3100	91'82		183'64			
81					4000	102'04		204'08			
82	Crushed Sandstone and Cement 1 to 1	4'5 x4'25	19'33	38'66	2000	62'07	59'43	124'14	118'86	0'5767	In No. 82 the brick broke across without shearing of joint.
83					2800	62'16		124'32			
84	Crushed Sandstone and Cement 2 to 1	4'55x4'27	19'42	38'84	1700	54'06	33'89	108'12	67'78	0'3288	In the experiments 82 to 93 and 106 to 117 the joints were sheared off separately.
85					2300	54'06		108'12			
86	Crushed Sandstone and Cement 3 to 1	4'6 x4'3	19'78	39'56	1250	31'59	24'01	63'18	48'02	0'2330	In No. 87, for example, one joint was sheared off at 1,150 and the other at 1,350.
87					1200	37'03		74'06			
88	Crushed Sandstone and Cement 4 to 1	4'5 x4'22	18'90	37'80	1150	33'06	22'75	66'12	45'50	0'2207	In experiment No. 89 the joints yielded one after the other,
89					1350	33'06		66'12			
90	Crushed Sandstone and Cement	4'6 x4'25	19'55	39'10	700	22'37	20'83	44'74	41'66		
91					1050	22'37		44'74			
92	Crushed Sandstone and Cement	4'5 x4'25	19'125	38'25	900	23'52	27'47	47'04	22'75		
93					1000	23'52		47'04			
94	Crushed Sandstone and Cement	4'55x4'2	19'11	38'22	1000	25'16	675	54'94	45'50	0'2207	In experiment No. 89 the joints yielded one after the other,
95					750	19'97		39'94			
96	Crushed Sandstone and Cement	4'5 x4'2	18'90	37'80	760	19'97	675	39'94	45'50	0'2207	In experiment No. 89 the joints yielded one after the other,
97					760	19'97		39'94			
98	Crushed Sandstone and Cement	4'55x4'2	19'11	38'22	1050	27'47	20'83	54'94	45'50	0'2207	In experiment No. 89 the joints yielded one after the other,
99					675	27'47		54'94			
100	Crushed Sandstone and Cement	4'5 x4'2	18'90	37'80	900	23'52	20'83	47'04	45'50	0'2207	In experiment No. 89 the joints yielded one after the other,
101					1000	23'52		47'04			


94	Bluestone Dust and Cement 1 to 1	4'55x4'2	19'11	38'22	2400	62'79	} 61'89	125'58	} 123'78	0'6006	In this case the two joints appeared to yield at the same time.
95		4'6 x4'2	19'32	38'64	2100	64'69		129'38			
96		4'5 x4'2	18'90	37'80	2000 2200	58'20		116'40			
97	Bluestone Dust and Cement 2 to 1	4'55x4'25	19'33	38'66	2100	54'31	} 45'33	108'62	} 90'66	0'4399	Here the joints yielded one after the other.
98		4'55x4'27	19'42	38'84	1700	43'76		87'52			
99		4'55x4'2	19'11	38'22	1450	37'93		75'86			
100	Bluestone Dust and Cement 3 to 1	4' 5x4'2	18'90	37'80	1000	30'42	} 27'13	60'84	} 54'26	0'2632	do. do.
101		4' 5x4'25	19'125	38'25	1300	23'52		47'04			
102		4'55x4'2	19'11	38'22	750 1350	27'47		54'94			
103	Bluestone Dust and Cement 4 to 1	4' 6x4'2	19'32	38'64	750	21'02	} 24'34	42'04	} 48'68	0'2362	do. do.
104		4'55x4'3	19'56	39'12	875	25'56		51'12			
105		4' 5x4'2	18'90	37'8	1000	26'45		52'90			
106	Nepean River Sand and Cement 1 to 1	4'55x4'25	19'33	38'66	1950	62'72	} 54'99	125'44	} 100'98	0'5331	Both joints appeared to yield at the same time.
107		4'55x4'25	19'33	38'66	2900	55'61		111'22			
108		4'55x4'3	19'56	39'12	1650 2000	46'65		93'30			
109	Nepean River Sand and Cement 2 to 1	4'5 x4'25	19'125	38'25	900	23'52	} 20'51	47'04	} 41'02	0'1990	do. do.
110		4'55x4'2	19'11	38'22	350 950	17'06		34'12			
111		4' 6x4'15	19'09	38'18	800	20'95		41'90			
112	Nepean River Sand and Cement 3 to 1	4' 6x4'25	19'55	39'10	400	14'06	} 14'56	28'12	} 29'12	0'1413	do. do.
113		4' 6x4'3	19'78	39'56	700	15'16		30'32			
114		4'55x4'25	19'33	38'66	420 700	14'48		28'96			
115	Nepean River Sand and Cement 4 to 1	4' 6x4'2	19'32	38'64	250	6'47	} 5'76	12'94	} 11'52	0'0559	do. do.
116		4'55x4'25	19'33	38'66	300	7'75		15'50			
117		4'55x4'3	19'56	39'12	120			6'12			

2 JOINTS CEMENT MORTARS TO BRICKS.

TABLE V.

ADHESION OF MORTAR TO BRICKS.

Two Bricks set as in Figure 2, Mortar 28 days old.

No.	Description	Size of Joint.	Area of Joint.	Total Force. Pounds.	Force per Square Inch	Mean Force per Square Inch	Relative Adhesiveness. Neat Cement=1	Remarks.
118	Neat Cement ...	4'55 x 4'25	19'33	3,700	191'41	220'76	1'0000	The brick broke with 3250 thus—
119		4'5 x 4'2	18'90	4,800	253'96			
120		4'5 x 4'2	18'90	4,100	216'93			
121	Crushed Sandstone and Cement, 1 to 1	4'55 x 4'15	18'88	3,600	190'67	172'09	0'7795	
122		4'55 x 4'2	19'11	3,100	162'21			
123		4'55 x 4'17	18'97	3,100	163'41			
124	Crushed Sandstone and Cement, 2 to 1	4'5 x 4'2	18'90	1,700	89'94	78'23	0'3543	
125		4'55 x 4'2	19'11	1,400	73'26			
126		4'55 x 4'15	18'88	1,350	71'50			
127	Crushed Sandstone and Cement, 3 to 1	4'55 x 4'2	19'11	800	41'86	36'64	0'1659	These results appear to be inaccurate.
128		4'55 x 4'25	19'33	600	31'03			
129		4'5 x 4'2	18'90	700	37'03			
130	Crushed Sandstone and Cement, 4 to 1	4'5 x 4'2	18'90	1,000	52'91	64'81	0'2935	
131		4'5 x 4'3	19'35	1,400	72'80			
132		4'5 x 4'2	18'90	1,450	76'71			

133	Bluestone Dust and Cement, 1 to 1	{	4'5 x 4'15	18'67	2,560	137'11	} 148'26	0'6715
134			4'55 x 4'15	18'88	2,650	140'36		
135			4'5 x 4'25	19'125	3,200	167'32		
136	Bluestone Dust and Cement, 2 to 1	{	4'55 x 4'2	19'11	1,500	78'49	} 77'39	0'3505
137			4'55 x 4'2	19'11	1,400	73'26		
138			4'55 x 4'1	18'65	1,500	80'42		
139	Bluestone Dust and Cement, 3 to 1	{	4'5 x 4'2	18'90	750	39'68	} 35'14	0'1591
149			4'5 x 4'2	18'90	650	34'39		
141			4'5 x 4'25	19'125	600	31'37		
142	Bluestone Dust and Cement, 4 to 1	{	4'6 x 4'25	19'55	600	30'69	} 32'77	0'1484
143			4'5 x 4'25	19'125	700	36'60		
144			4'55 x 4'25	19'33	600	31'03		
145	Nepean River Sand and Cement, 1 to 1	{	4'5 x 4'15	18'67	2,000	107'12	} 100'75	0'4563
146			4'55 x 4'25	19'33	1,650	85'35		
147			4'5 x 4'25	19'125	2,100	109'80		
148	Nepean River Sand and Cement, 2 to 1	{	4'6 x 4'27	19'64	1,100	56'00	} 48'17	0'2182
149			4'55 x 4'25	19'33	700	36'21		
150			4'55 x 4'2	19'11	1,000	52'32		
151	Nepean River Sand and Cement, 3 to 1	{	4'55 x 4'2	19'11	400	20'93	} 19'11	0'0865
152			4'55 x 4'25	19'33	350	18'10		
153			4'55 x 4'2	19'11	350	18'31		
154	Nepean River Sand and Cement, 4 to 1	{	4'55 x 4'2	19'11	300	15'69	} 17'43	0'0789
155			4'55 x 4'2	19'11	300	15'69		
156			4'55 x 4'2	19'11	400	20'93		

Brick sheared at
Joint.

TABLE VI.

SUMMARY OF RESULTS DETAILED IN TABLES II, III, IV, AND V.

	12.43	10.11	46.12	106.22	35.22	72.11	22.50	118.50
	50.63	12.10	125.0	75	100.00	52.37	103.15	Mean Adhesive Strength in Pounds per Square Inch after 7 days.
	46.9	36.0	50.0	36.0	36.0	66	69.8	Mean Adhesive Strength in Pounds per Square Inch after 28 days.
Description of Materials:								
Neat Cement	168	213	
Crushed Sandstone and Cement, 1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	117	146	
Do. do. 2 to 1	2 to 1	2 to 1	2 to 1	2 to 1	2 to 1	53	73	
Do. do. 3 to 1	3 to 1	3 to 1	3 to 1	3 to 1	3 to 1	26	48	
Do. do. 4 to 1	4 to 1	4 to 1	4 to 1	4 to 1	4 to 1	16	45	
Bluestone Dust and Cement, 1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	79	136	
Do. do. ... 2 to 1	... 2 to 1	... 2 to 1	... 2 to 1	... 2 to 1	... 2 to 1	47	84	
Do. do. ... 3 to 1	... 3 to 1	... 3 to 1	... 3 to 1	... 3 to 1	... 3 to 1	34	45	
Do. do. ... 4 to 1	... 4 to 1	... 4 to 1	... 4 to 1	... 4 to 1	... 4 to 1	23	41	
Nepean River Sand and Cement, 1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	1 to 1	102	105	
Do. do. 2 to 1	2 to 1	2 to 1	2 to 1	2 to 1	2 to 1	38	45	
Do. do. 3 to 1	3 to 1	3 to 1	3 to 1	3 to 1	3 to 1	20	24	
Do. do. 4 to 1	4 to 1	4 to 1	4 to 1	4 to 1	4 to 1	9	14	

TABLE VII.

TENSILE STRAIN.—1" x 1" Briquettes mixed with "L" ("Castle") Cement and different kinds of Sand, in the proportion of 3 to 1 by weight.

No.	Description of Sand used.	Tensile Strain in Pounds per sq. in.			
		Quantity of Water.	At 3 days.	At 7 days.	At 28 days.
1	Sand obtained from <i>Crushed Sandstone</i> , as used in the tests	10 %	104	191	219
2	<i>Yellow Sand</i> from Dowling Street	7½ %	43	177	215
3	<i>White Sand</i> from Dowling Street	7½ %	132	183	219
4	<i>Nepean River Sand</i> , (residue on 900-mesh sieve—57½ per cent.)	7½ %	123	182	232
5	<i>Do. do.</i> (passed through 400 and caught on 900-mesh sieve)...	7½ %	111	173	234

N.B. In the case of both Nos. 2 and 3 the sand would *all* pass through a sieve of 900 meshes to Square Inch.