

To ascertain the crushing strength of each quality of brick, two fair and sound samples were selected and bedded between thin layers of Portland cement, thus giving two parallel planes without injury of any kind to the brick.

The following table shows the crushing strength of the different bricks used:

ULTIMATE CRUSHING STRENGTH OF COMMON AND PRESSED BRICK.

Class of Brick.	Height.	Area Exposed to Crushing in Inches.	Ultimate Load in Pounds.	Crushing Strength in lbs. per sq. inch.
Kingston Road, 1st class...	2½	8¾ x 4 35	132400	3783
“ 2nd “	2½	9 x 4½ 37	62000	1670
“ 3rd “	2½	8¾ x 4½ 36.6	63000	1721
“ 3rd “	2½	9 x 4½ 37	67600	1821
Carleton Clinker.....	2½	8¾ x 4½ 36.6	68000	1857
“ 1st class...	2½	8¾ x 3¾ 33.4	190000	5685
Yorkville... Ist “	2½	8¾ x 4 35	112000	3200
“2nd “	2½	8¾ x 4 34.5	160000	4637
“2nd “	2½	8¾ x 4 35	107000	3057
Humber..... Ist “	2½	8¾ x 4 35	112000	3200
“2nd “	2½	8¾ x 4 35.5	43400	1222
“2nd “	2½	8¾ x 4 34.5	50000	1449
“2nd “	2½	8¾ x 4½ 36.6	72000	1966
Don Valley.....red....	2½	8¾ x 4¼ 36.6	64000	1748
“buff	2½	8¾ x 4 34.3	184000	5372
“buff	2½	8½ x 4½ 35	125000	3571

The piers were built by a skilled bricklayer, who also provided the lime mortar, which consisted of 4½ yards of Bloor street coarse sand to ten barrels of lime, this being about the proportion of two parts sand to one part lime. The cement mortar was mixed in the proportion of three parts sand to one part of good Portland cement. While the piers were being built, two cubes of each class of mortar were prepared and set aside for the purpose of ascertaining their resistance to crushing, thus giving a complete record of all the materials used.

ULTIMATE CRUSHING STRENGTH OF MORTAR 2½ MONTHS OLD.

Class.	Height. Inches.	Area Exposed to Crushing in Inches.	Ultimate Load in Pounds.	Crushing Strength in lbs. per sq. Inch.
Lime mortar—2 to 1.....	5	4¾ x 4¾ 22.5	1200	53
Lime mortar—2 to 1.....	4¾	4¾ x 4¾ 22	1700	77
Cement mortar—3 to 1....	5	5 x 5 25	33800	1352

The piers were built and laid aside to harden in the mechanical laboratory of the School of Practical Science, in a temperature which aver-

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