paste, plus (2) an amount equal to the surface area of the sand in square inches divided by 210, that is,

$$\text{Water (cc.)} = \left(\begin{matrix}\text{Weight of cement (g.)} \times \text{Percentage required} \\ \text{to produce "normal" consistency paste}\end{matrix}\right) + \frac{\text{(Total surface area of sand (sq. in.).}}{210}$$

With a water content determined by the above equation each of the five test sands J, K, L, M and N, described under heading "Composition and Preparation of Test Sands" (see Table V.) was used in the preparation of two test mortars having cement contents proportioned 1 g.

Table VI.—Consistency Tests: Composition of Mortars

Sand Letter.	Surface Area per 1000 g., sq. in.	Cement Content 1 g.: 10 sq. in.		Cement Content 1 g.: 15 sq. in.	
		Cement, g.	Water, cc.	Cement, g.	Water, cc.
J	7151	715.0	193.0	477.0	140.0
K	7301	730.0	197.5	487.0	143.5
L	5745	574.5	155.0	383.0	112.5
M	8811	881.0	238.0	587.5	172.5
N	6498	650.0	175.5	433.0	127.5

cement to 10 sq. ins. sand area and 1 g. cement to 15 sq. ins. sand area, respectively. The composition of these mortars is shown in Table VI. Standard briquettes for

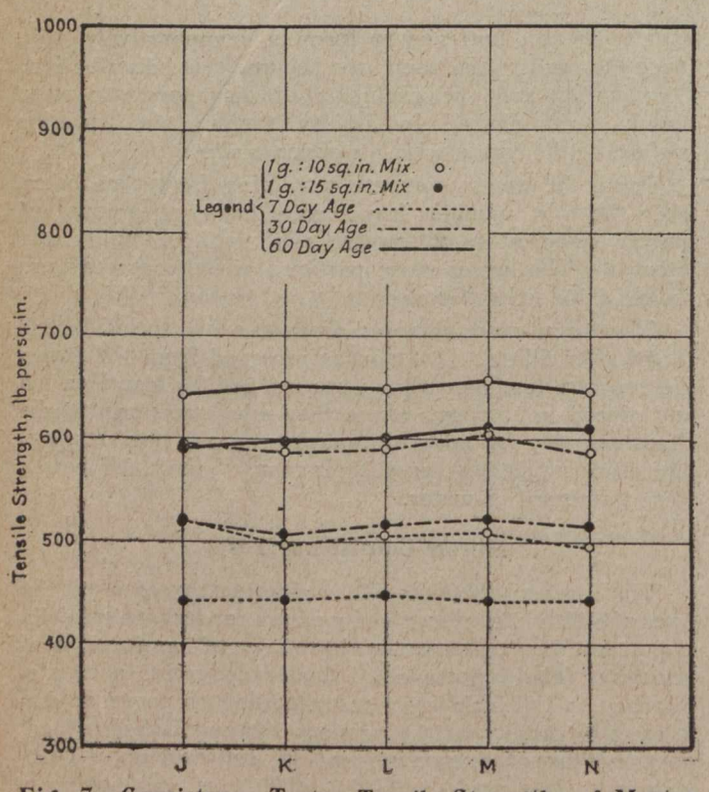

Fig. 7—Consistency Tests—Tensile Strengths of Mortar Briquettes

tension tests were made from each mortar. The strengths of these briquettes are shown in Fig. 7.

(Concluded in the next issue.)

Contracts will soon be awarded for the construction of three concrete bridges on the Toronto-Hamilton Highway. The Lewis Construction Co., of Toronto, who were recently awarded the contract for the Bronte bridge by the Highway Commission, have moved the old bridge so that it can be used during the construction of the new one, and have begun work on the new concrete bridge.

SHIPBUILDING PLANT AT HALIFAX

ACCORDING to public statement made recently by J. W. Norcross, president of the newly incorporated Halifax Shipyards, Limited, within three months the keels of three 10-ton steel freighters will have been laid on their berths. Mr. Norcross says that the expenditure will be between $3,700,000 and $4,300,000. Tenders were called to be in at noon yesterday for the necessary excavating, filling, grading, piling, track-laying, sewers, water mains and concrete wall construction.

The chairman of the board of directors is James Carruthers; president, J. W. Norcross; vice-president and managing director, Roy M. Wolvin; vice-president, M. J. Haney; treasurer, F. S. Isard. S. M. Brookfield, formerly president of the Halifax Graving Dock Company, has been retained by the new company in an advisory capacity. H. M. Brown, of Vancouver, is in Halifax to assist President Norcross with the preliminary details.

"When our plant is completed," says Mr. Norcross, "we will have one of the finest shipyards in America. All of the labor available at Halifax will be used first. Some 3,500 men will be required at the new plant. We will use shipwrights who are now engaged in Halifax and others in Nova Scotia who are proficient in wooden shipbuilding."

WINNIPEG AQUEDUCT BOOKLET

BY authority of the administration board of the Greater Winnipeg Water District, a 48-page and cover 6" x 9" booklet has been issued under the title of "Aqueduct Construction Scheme, What It Is and What It Means."

The booklet gives a brief history of Winnipeg's water supply, the reasons leading up to the adoption of the Shoal Lake scheme, the chief features of the design, the progress that has been made year by year in the construction, and a study of the approximate saving to the people of Winnipeg and district by the use of the softer and purer water from Shoal Lake instead of the present supply.

There is also a financial statement showing that the board has issued securities totalling $10,782,112. It is stated that the work will be completed very close to the original estimate of $13,045,000. The booklet contains a number of photographs printed on coated paper and also a supplement showing profile of the aqueduct. The chief engineer of the commission is W. G. Chace, Winnipeg, Man.

CORRECTION

TWO minor errors crept into the article on the Chippawa-Queenston power development which appeared in *The Canadian Engineer* for June 20th, 1918. As a matter of record, correction of these errors is desirable. The capacity of the 84-inch Traylor jaw crusher was referred to as being 20,000 cubic yards of crushed stone per day. This was a typographical error, the correct figure being 2,000. On page 546, in the second paragraph of the second column, substitute the word "net" for the word "gross" and substitute "305 ft." for "316 ft."