

sufficient water to make a good plastic paste, and rammed into moulds with a pressure of 20 pounds per square inch, must show a tensile strength of not less than

145 lbs. at the end of 7 days (1 in air and 6 in water.)
 225 " " " 28 " (1 " " " 27 " " ")

All briquettes in neat cement and mortar tests will be covered with a moist cloth while setting, to exclude drafts of air.

At least one barrel in every 100 will be tested, and should the sample from the barrel prove defective, the whole 100 barrels shall be rejected.

If the cement used is packed in bags, at least one bag in every 500 will be tested, and, if sample prove defective, the whole 500 bags will be rejected.

The contractor is to keep all cement on hand at least 30 days before using, so as to allow of testing. He may be required to slack cement in weatherproof sheds, if so thought necessary by the Engineers.

In case of any dispute arising as to the interpretation of this specification, or the manner of testing cement, the matter shall be referred to the Faculty of Applied Science of McGill University, Montreal, a decision from whom shall be final and conclusive. The cost of making tests at the University shall be borne by the party in fault.

The details of careful chemical analysis made of three samples of cement taken from 100 barrel lots, on the works, were as follows:—

	No. 1.	No. 2.	No. 3.
Silica	21.93	21.84	21.53
Oxide of Iron and Alumina.	12.84	11.84	12.35
Lime	64.17	65.36	64.41
Magnesia	1.11	1.14	0.96
Carbon Dioxide.	0.22	Trace	0.37
	100.27	100.18	99.62

There was also minute quantities of sulphate present but it is of no special import.

CEMENT TESTS.

The briquette moulds used were made by the Fairbanks Company, having an area of 4 square inches by 1" thickness, the sectional area in the centre being exactly one square inch.

The Fairbanks' patent automatic cement testing machine was used to obtain the tensile strength of the briquettes.

The Portland cement used in all these tests was Hemmoor brand imported from Hanover, Germany, and the fineness test showed a residue of 6 per cent, on a 100 mesh sieve (i. e. 10,000 per square inch), and a specific gravity of 3.18. The volume and soundness tests were satisfactory.