

CEMENT CRUSHING MACHINE.

Mr. Geo. E. Perley, C.E., of Ottawa, has been at Portage la Prairie, Man., recently, making a cement crushing machine to use for testing purposes at the Government works at St. Andrew's Rapids. The machine is the invention of Mr. Perley, and we understand has been found so satisfactory that it has been adopted by the Dominion Public Works Department for use in all their laboratories.

In explaining the testing process Mr. Perley said that the cement is sifted through three sieves, the first of 2,500 holes to the square inch, then through one of 10,000 and another of 40,000. The neat cement is made up into briquettes and after being allowed to remain one day in air and six days submerged in water must stand a tensile strain of 400 pounds to the square inch. The cement must also undergo the 27 day test of one day in air and 26 in submersion, when it is subjected to a tensile strain of 650 pounds to the square inch, otherwise it is rejected. In the crushing test the cement in the seven days test must stand a crushing strain of 3,500 pounds to the inch and 6,000 pounds after the 27 day test.

Briquettes are also made of three parts sand to one part cement, and these must stand a tensile strain of 115 pounds to the square inch after the seven day test and 125 pounds after 27 days. They must also undergo a crushing strain of 1,000 pounds after the seven day test and 2,500 pounds after one day in air and 27 of submersion. In addition to this the cement is judged by its sampling, color, fineness of grain, specific gravity and water used in gauging. The system is very elaborate and complicated and the tests extend to the sand and stone used in the concrete and the mixing and depositing of the concrete.

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Mr. Perley's crushing machine and the Fairbanks tensile strain machine are both worked by a leverage system. To one end of a lever a tin receptacle is attached, and when the tests are made the shot runs automatically into this and automatically discontinues when the briquettes break under either the tensile or crushing strains. Each pound of shot, by the adjustment of the leverage, represents a strain of 100 pounds, and in this way the exact strength of the cement can be ascertained.

In not a few of the granite cutting yards in Aberdeen lady draughtmen (or draught-women) are employed. This opens up a new field for female skill, and demonstrates once more that ladies are filling with considerable success vocations which formerly belonged exclusively to men.

In an official report received from Germany it is announced that the Prussian Minister of Public Works has issued new regulations for the testing of cement. The railway authorities have therefore established a department for that purpose in their technical bureaux. No particular technical knowledge is necessary for the testing operation; only experience is wanted. In cases of dispute the last appeal is to be made to the Royal Mechanical Technical Experiment Institution (Department for Building Materials) at Charlottenburg. The judgment of experts at this institution is always called into requisition when large quantities of cement are delivered for important buildings.

DATE OF PUBLICATION.

Architects, engineers, municipal authorities and others are reminded that the **CONTRACT RECORD** is printed every Tuesday afternoon, and that advertisements should reach the office of publication not later than 2 o'clock p.m. on that day to insure insertion in the issue of the current week. Advertisements are frequently received too late for insertion, to avoid which special attention is directed to this announcement.

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Correspondence invited.

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