TESTS ON CONCRETE RESERVOIR.

A series of tests were recently made in England on a covered ferro-concrete reservoir. This reservoir is one of two million gallons capacity, and was built for the Gosport Waterworks Company on the Mouchel-Hennebique system. The reservoir comprises vertical walls 6 in. thick at the bottom and 4 in. thick at the top, a continuous floor-slab 7 in. thick distributing the load over the ground, which is about two tons per square foot. The walls are stiffened by counterforts at frequent intervals on the exterior, and the reservoir is divided by an interior partition wall. The roof is supported by the outer and partition walls and by columns 10 in. square, built up from the floor-slab and spaced apart 16 ft. 8 in. longitudinally and 16 ft. transversely. These columns support 8 in. by 16 in. main beams, and 7 in. by 12 in. secondary beams, each bay being subdivided into three panels by two additional secondary beams. The thickness of the roof slabs is 4 in. throughout. One complete bay between four columns and one main beam were selected for the tests. The normal superload of 2.75 cwt. per square foot was left on during one whole night, and after an equal time had been allowed for recovery the instruments beneath the roof bay showed the permanent deflection of 0.024 in. In the test one instrument showed a maximum deflection of 0.160 in. and the other of 0.168 in. at maximum load, and in the case of the beam tests with a weight on the beam in tons of 36.66 the deflection rose to a maximum of 0.108 in. The tests may be accepted as indicating a high degree of elasticity for the construction.

CEMENT TRADE OF UNITED STATES.

The consumption of foreign cement in the United States shows a marked increase this year, as noted by the imports below for the nine months ending with September; the figures represent short tons of 2,000 pounds.

	1906	1907	Changes.
Belgium	69,436	95,879	I. 26,443
France	4,259	5,293	I. 1,034
Gemany	92,351	120,315	I. 27,964
Great Britain	62,637	72,671	I. 10,034
Other Europe	149	465	I. 316
Total Europe	228,832	294,623	I. 65,791
Canada	1,327	157	D. 1,170
Other countries	29,850	2,816	D. 27,034
Total	260,009	297,596	I. 37,587
Re-exports	2,315	2,804	I. 489
Net imports	257,694	294,792	I. 37,098

The total value of the net imports this year was $1,902,825, as against $1,764,959 in 1906; an increase of $137,866. There is an import duty of 8 cents per 100 lbs. on Roman, Portland and hydraulic cement in barrels and sacks and 7 cents per 100 lbs. in bulk.

Exports of domestic cement for the nine months were 676,792 barrels, valued at $1,110,077, which compares with 448,340 barrels, $714,187, in 1906; an increase of 228,452 barrels, or $395,890.

LIFE OF INCANDESCENT LAMPS.

The useful life of frosted incandescent lamps is only a little more than half that of the corresponding plain bulb lamp. One explanation of this, which is given in the current number of a trade journal, is that the temperature of the frosted lamp is higher, due to the increased absorption by the bulb. Mr. Edward P. Hyde, of the Bureau of Standards, Washington, D.C., claims, however, that this explanation is not correct, but that the decreased efficiency of the frosted lamp depends upon the fact that, although the filament in the frosted bulb emits the same total flux of light as that emitted by the filament in the plain bulb, the light is reflected through the glass of the frosted lamp several times, and the absorption of light by the carbon filament itself becomes so great in that case that the apparent intensity of the frosted lamp at any time during its life is less than that of the plain lamp, and the difference in intensity increases with the length of time a frosted lamp is used.

IRON ORE INDUSTRY.

The official returns give the supplies of iron ore available in Great Britain for the last two years as follows in long tons:—

	1905.	1906.	Changes.
Mined in Great Britain	14,590,703	15,500,406	I. 909,703
Imported	7,344,786	7,823,084	I. 478,298
Pyrites residue	524,059	569,493	I. 45,434
Total	22,459,548	23,892,983	I. 1,433,435
Exports	26,179	18,712	D. 7,467
App. consump'n	22,433,369	23,874,271	I. 1,440902

There was an increase in ore mined in all British districts. The large part of the imports were from Spain, which furnished 5,949,131 tons. Other considerable exports were 391,615 tons from Greece; 363,739 from Norway; 351,736 from Algeria; 222,499 from Sweden; 220,919 from France; 161,953 from Russia.

Assuming that there was no material change in stocks, which is probable, the consumption of iron ore per ton made was 2.34 tons in 1905, and 2.37 tons in 1906. The proportion of domestic ore used, which was 65.1 per cent. of the total in 1905, fell very slightly, to 64.9 per cent. last year.

The demand for all kinds of mathematical instruments all over Canada is an evidence that many important engineering works are projected. We are informed that in connection with this development there has arisen a very gratifying call for Cooke instruments. One of the reasons why this demand is so announced, is that T. Cooke & Sons, the manufacturers of York, and London recognized the necessity for adapting their instruments to this market. This adaptability, coupled with fine workmanship, for which this concern is so well-known, makes the combination a hard one to beat.

Stinson-Reeb Builders' Supply Company, Limited, who have for some time been handling the products of the Imperial Plaster Company of Toronto, has found the demand so heavy that they have just completed the erection of a thoroughly equipped plaster mill. It is conveniently located between the Canal Bank and St. Ambroise Street, with both Grand Trunk and Canadian Pacific Railway shipping facilities. By this arrangement the raw materials can be brought in by both rail and water and shipments of goods made without delay. Imperial plaster, as manufactured under Patent Rights of the Imperial Plaster Company of Toronto will be the product. Besides the above, it is the intention of this firm to manufacture a special finish to be used in connection with their plasters.

The Canada Chemical Manufacturing Company have again built a new addition to their Toronto warehouse, so that they now have a frontage of 200 feet on Mill Street, and the buildings run back to the C.P.R. tracks. The two sidings provide ample facilities for unloading tank cars and other carloads. This is the third addition which has been built to the warehouse since the company has located its distributing warehouse in Toronto, but the rapid growth of the sales for acids and chemicals in the district has necessitated this constant enlargement of storage space. For the last couple of years the Toronto sales office, with Mr. Nieghorn in charge, has been located in the McKinnon Building; but Mr. Nieghorn and his staff are now moving out to the new Mill Street warehouse, where the sales office for Toronto district will be located for the future. The company report that sales of their acids and chemicals so far this year are considerably greater than for any previous year, and that the chemical works at London, as well as their other manufacturing works, are being operated to full capacity in an effort to keep up with the large demand for these products.