

The daily capacity of this kiln is just about 35,000. Its construction requires care and skill and its cost was great, but is well justified by results. The mouths or doors to the chambers are closed and cement sealed during burning. The contents of a chamber may be removed and the chamber be filled again while the rest of the chambers are in full heat. Coal is used, and this fuel, in very fine condition, is fed through many small intakes overhead, sifting down through the bricks to the bottom. There are 1,200 or more of these feeding holes, of a diameter of about 4 in., each provided with a cover. This new kiln was just started last September.

As much as 35,000 stock and 10,000 pressed brick have been turned out in a day. All future orders can be filled up to 30,000 bricks per day.

A small artificial kiln stands near the continuous one, which though only of about 12 feet diameter and 10 feet high, has a capacity of 17,000.

In the spring a new building 20 x 40 is to be constructed to contain burned and dry bricks. Then all parts of the work and stock will be fully under cover. New tracks will be laid to the wharves and other improvements carried out.

The large chimney belonging to the works is 140 feet high and over 6 feet in inside diameter.

About 40 men are now employed in the works. So much machinery is now used the old number has been much lessened.

Altogether the plant has cost about \$62,000 including from \$4,000 to \$5,000 for site and about \$3,000 for rolling stock.

Large shipments have been made to Sydney to the Dominion Coal Co., the Dominion Iron and Steel Co., N. S. Steel Co. and Rhodes, Curry & Co., Cumberland Coal Co. (160,000 M). Orders are in hand for a quarter of a million to Sydney, about 1,000,000 to Prince Edward Island and half a million to Pictou county. A considerable quantity has been shipped to New Brunswick, including an order of 20,000 to Kingston.

At present the bricks are taken over the river to the railway a distance of some few hundred yards in lighters and tugs, but it is the intention to put in a wire cable carrying system which will solve this difficulty.

More business has been found than was anticipated, and the operation of the new plant is in every way successful.

THE COMPOSITION OF SOME CANADIAN LIMESTONES.

(A) For Calcium Carbide ; (B) For Chemical Wood Pulp ; (C) For Portland Cement.
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The rapid development of industries in which lime or limestone is a raw material has given a new interest to this common mineral. The term limestone, however, as generally used includes any rock in which carbonate of lime is the predominant ingredient. This of course gives a wide range of composition. The ideal limestone is pure calcium carbonate containing 56% of lime and 44% of carbon dioxide.

The conditions under which beds of limestone have been deposited were such that it is scarcely possible to find them fully up to our ideal in degree of purity.

Being a sedimentary rock, we usually find limestone containing more or less siliceous matter, either as silica or as silicates. The amount of siliceous matter may vary from a few tenths of one per cent., up to even forty or fifty per cent.; in which latter case it is a question whether we should consider we have a sandy limestone or a calcareous sandstone.

But again, in nature we usually find that carbonate of lime is associated with carbonate of magnesia ; indeed it is scarcely possible to find a limestone that does not contain an appreciable percentage of magnesia ; whilst on the other hand the magnesia may occur in such percentage that the stone becomes a magnesian limestone or Dolomite, which normally contains : Lime 30.40% ; Magnesia 21.70% ; Carbon dioxide 47.90%.

In addition to silica or silicates and magnesia, all limestones contain more or less of what someone has aptly called the "Intruder into everything on earth" viz., iron in the form of iron oxide or iron sulphide.

The principal industries that call for limestone as one of their raw materials are : Calcium carbide, Chemical Wood pulp, Portland cement.

The object of this brief paper is to state in a general way the characters of the limestone required in each of these industries, illustrating by reference to Canadian limestones that have been analysed by the writer.

(A) Calcium carbide.—A limestone to be suitable for the manufacture of this article should be as nearly as possible pure Calcium carbonate. The presence of magnesia is particularly detrimental. A small percentage of siliceous matter and a little iron oxide may be tolerated. These points are illustrated by the following analyses ; 1 is being used in a Canadian Carbide works ; 2 and 3 are unsuitable for Carbide : 2 because of the magnesia it contains ; and 3 on account of the high percentage of siliceous matter.

	I	II	III
Insoluble.....	...	2.14	10.92
Carbonate of lime.....	96.89	52.00	87.71
Carbonate of Magnesia.....	1.64	42.71	.30
Iron Oxide.....	...	2.20	.70

(B) Chemical Wood Pulp—For soda pulp, i. e. pulp made by "cooking" the spruce or other wood in a solution of Caustic soda, any ordinary good lime-stone will yield a lime suitable for causticising the soda.

But in the case of Sulphite pulp, it is otherwise; selected material is required. In this case the presence of magnesia is desirable, indeed the higher the percentage of magnesia, the more desirable is the stone. But iron is decidedly objectionable; its presence causes discoloration of the pulp.

The following analyses are of Canadian limestones.

I is an excellent stone for sulphite pulp. II whilst good in other respects contains too much iron. III does not contain sufficient magnesia.

	I	II	III
Insoluble.....	2.10	2.14	.14
Carbonate of lime.....	56.21	52.00	98.78
Carbonate of magnesia.....	41.20	42.71	Traces
Iron oxide.....	.09	2.20	.19

(C) Portland Cement—This article is made by calcining a mixture containing proper proportions of silica, lime and alumina; this is usually a mixture of limestone and clay. A somewhat wide range of material is admissible in this industry. Magnesia is debarred to the extent that the finished cement must contain less than 3% of magnesia.

A limestone comparatively high in silica is admissible here, provided a clay or shale rich in alumina is obtainable.

A certain kind of impure limestone is the sole raw material for certain kinds of Portland cement. This is commonly known as natural cement rock. It is really an argillaceous or shaly or clayey limestone; that is, it is the materials for Portland cement ready mixed by nature.

The following analyses illustrate the statements just made.

I is an ordinary limestone suitable for cement. II contains too much magnesia. III is a natural cement rock.

	I	II	III
Insoluble.....	1.51	20.23	24.74
Carbonate of lime.....	97.21	50.37	41.80
Carbonate of magnesia.....	1.15	24.63	8.60
Iron oxide.....	.17	2.81	6.30

John W. Edwards and A. T. Hughes, slate manufacturers of Granville, N. Y., have returned from a trip to Newfoundland, and express themselves as much pleased with the slate prospects. A syndicate, in which Granville parties are interested, is now at work there.

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