CANADIAN CONTRACT RECORD

A Weekly Journal of Advance Information and Public Works.

ITS PURPOSE: TO SUPPLY TO CONTRACTORS ADVANCE INFORMATION RESPECTING CONTRACTS OPEN TO TENDER, AND TO ARCHITECTS, ENGINEERS, MUNICIPAL AND OTHER CORPORATIONS, A DIRECT MEDIUM OF COMMUNICATION WITH CONTRACTORS.

ITS MERIT: ECONOMICAL AND EFFECTIVE SERVICE.

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Information solicited from any part of the Dominion regarding contracts open to tender.

ADVERTISING RATES ON APPLICATION.

At its Convention held in Toronto, Nov. 20 and 21, 1889, the Ontario Association of Architects signified its approval of the CANADIAN CONTRACT RECORD, and pledged its members to use this journal as their medium of communication with contractors with respect to advertisements for Tenders.

The following resolution was unanimously adopted at the First Annual Meeting of the Province of Quebec Association of Architects, held in Montreal, Oct. 10th and 11th, 1890: "Moved by M. Perrault, seconded by A. F. Dunlop, that we the Architects of the Province of Quebec now assembled in Convention being satisfied that the CANADIAN CONTRACT RECORD affords us a direct communication with the Contractors,—Resolved, that we pledge our support to it by using its columns when calling for Tenders."

The publisher desires to ensure the regular and prompt delivery of this Journal to every subscriber, and requests that any cause of complaint in this particular be reported at once to the office of publication. Subscribers who may change their address should also give prompt notice of same, and in doing so, should give both old and new address.

FACTS ABOUT LIME AND LIMESTONE.

WITH regard to the burning of limestone, or carbonate of lime, pure carbonate of lime may be subjected to the intense heat of the oxyhydrogen blow-pipe without losing its power of slacking when exposed to moist air—a fact but too well known to all who use the lime light. Even natural limestones of considerable purity can be exposed to the highest available temperatures without deterioration of the resulting oxide; and I have myself exposed Buxton limestone to the intense white heat of a steel furnace, and subsequently found it to slake as well as the same stone burnt in the ordinary way. Should any of the limestone be insufficiently burnt—that is, should it still retain its carbonic acid, it will not slake, and the lumps can easily be separated from that which has been converted into a fine powder by the slacking process. The use of wood for burning lime has the great advantage that it does not introduce the deleterious sulphur compounds present in all mineral fuels. The interesting experiments of Wolters, and other observers, have clearly proved that the presence of carbonic acid is not necessary for the setting of mortars, and that mortars will set perfectly well in an atmosphere quite free from carbonic acid. No doubt the ultimate hardness of mortars is much increased by the gradual absorption of carbonic acid; but the process is extremely slow, and as it requires several generations for its completion, we must not rely on it for modern work. Dr. Ziurek found a considerable percentage of caustic lime 500 years old, and a sample of mortar from a bridge over the Great Western Railway, which was removed last April, and was about 50 years old, still contained 27 per cent. of the lime in a caustic state. Air-slacked lime does not absorb carbonic acid unless free water be present. This has been known for 20 years, and yet some persons specify that lime shall be newly slaked. This is in direct contradiction both to the practice of the ancients and modern scientific observation. There is a reason for the use of pulverized marble. Marble, even the finest particles, is crystalline in structure; and it is a fact, well known to chemists, that a particle of crystalline substance will often produce crystallization when added to a mass of identical chemical composition, but amorphous in structure. It is, therefore, highly probable that the presence of these crystalline particles in mortar may cause the carbonate of lime, which is slowly formed, to assume the crystalline structure; and as this is the final and most permanent form of all mineral substances, the result is, no doubt, favorable as regards the permanence of mortar. With regard to the admixture of glue with whiting, this could hardly be very desirable; but caustic lime would have a very different chemical action on the glue. I have used for many years for painting woodwork, out of doors, a mixture of blood and caustic lime, which mixture is much more desirable than a wash of lime, or even Portland cement, and yet the blood alone is a very unstable substance.

A new method for accurately measuring the strains in iron and steel bridges has been invented by a prominent French engineer, and is described as follows: Two brackets are attached to the beam to be tested at some distance apart, on one of which is placed a water chamber, closing by a flexible diaphragm, and connected with an open tube which serves to register by the height of the tube any pressure that may be made on this diaphragm. One end of a pointed rod is connected with this metal covering to the water chamber, while the other is joined to the other bracket. The most important item of the invention is that any motion of the beam, it will be seen, will set the diaphragm in motion and cause the water in the one tube to fall. This is a first-rate apparatus, as we are all familiar with the great number of railroad accidents that are constantly occurring, and in many cases originate from an unsafe and shaky bridge.