

nothing can be done until the inspector has examined it and given in his report, and so no matter how urgent the case may be, he has to wait perhaps one or two days. It is hoped something will be done to remedy this evil, and a competent plumber placed at the head of the office. As matters are now, the inspectors have everything their own way and have a go-as-you-please air about them, and at the best of times are not over courteous.

Another matter which should be looked into, is the granting of certificates on completion of a job of plumbing. The plumber places his work in position, it is duly tested by the city inspector and found all right and passed, but some other contractor has put in the drains, which are found to be not correct. The plumber is refused a certificate because of defective drains which he has had nothing to do with, and is not in any sense responsible for. Certainly the plumber should not be held responsible for work he never performed and over which he has no control. Then on what grounds is he refused a certificate? Perhaps these overworked inspectors can give light on this matter, and much oblige,

A SUFFERER.

CHANGES DESIRED IN THE PLUMBING BY-LAW.

THE Toronto Master Plumbers' Association at their last meeting appointed Messrs. W. J. Burroughes, J. Ritchie and A. Fiddes a committee to wait on the City Engineer to urge some changes in the Plumbing By-law. One of the chief amendments asked for will be the location of the fresh air inlets. It is understood that many of the plumbers have found that this pipe, as it is generally located, is a nuisance and an eyesore, that it should be located not less than ten feet from a window or any opening in a building, and where houses or other buildings are so located that this cannot be accomplished, the pipe should be carried up above the roof of the house on the inside. It is claimed this can be easily accomplished by placing the pipe inside of a partition in the building or set in a recess in the wall left in the brick work for that purpose.

The Medical Health Officer for the city of Toronto has issued instructions to all master plumbers that every charcoal heater in use by them must be connected with a chimney, as the gas given off is injurious to the health of the workmen.

SANDY FOUNDATIONS.

A PROCESS of preparing foundations has been patented by F. Neukirch, of Bremen. Its object is to make loose sand firm and resisting as solid rock. At present the universal method of doing this work, if under water, is to remove all loose material and then make a bottom or other similar sub-structure. The process under consideration, which is only of use where the materials are fairly clean siliceous or calcareous sand, aims at consolidating the grains by covering them with a film of cement, which is forced into the spaces between the particles by compressed air, steam, or water under pressure. Sheet piles are employed to prevent the spreading of the cement over more ground than is necessary. The system has been largely used in the harbor of Bremen, and is to be tried in preparing dry foundations.

THE LIMITING PRESSURE UPON FOUNDATIONS.

VERY little data is available as to the limiting pressure to which foundations may be subjected, says the *Mechanical World*. Since the safe load will vary considerably with the nature of the soil, the only satisfactory method of determining this important factor is by direct experiment.

In the erection of the weighty and lofty structures on the Champ de Mars, in Paris, in connection with the exhibition, experiments were conducted with this object in view, for the purpose of determining the size of foundations.

The method adopted was to level a large surface of ground, and place four rectangular blocks of cast iron, one foot eight inches square, so disposed as to form corners of a square, the distance apart being 11 feet 8 inches from centre to centre. These blocks were bridged by girders of T iron, and these were then loaded with the same until a total weight of 14,923 pounds was reached, when a settlement occurred. The pressure on the ground was 7.31 tons per square foot.

During the night the settlement increased about three-quarters of an inch. The load was increased next day to 20,776 lbs., when some of the corner blocks had sunk out of sight, leaving the girders on the surface of the soil. It was found by these experiments that the soil was capable of resisting a load equivalent to 5.43 tons per square foot.

When the load reached 7.31 tons, settlement took place, and the ground was incapable of supporting a load of 8.14 tons per square foot.

MANUFACTURES AND MATERIALS

THE QUALITY OF ROOFING PLATES.

PHILADELPHIA, March 6th, 1890.

EDITOR CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—In bringing out our roofing plates stamped with the brand and thickness, and doing away with the waster sheets of same, it was the object of this house to put upon the market, not only an article which the architect could specify with security, but also one that would enable the property owner to receive what he was willing to pay for. There is to-day a difference of almost 100 per cent. in price between the poorest and the best roofing plate in the market. Nearly every brand is imported of two different qualities; that is, good plates and bad—or wasters. It is absolutely necessary in these days of competition that specifications should be drawn as to hold each roofer up to his contract. Even the soldering of a roof is such an important matter that the roofer who uses soldering irons weighing but four pounds to the pair cannot possibly apply the amount of solder to the square that should be used; consequently heavy soldering irons should be used so as to allow the solder to soak well into the seams where a first-class job is wanted. The very best material if not properly put on would make the roof a failure. Our object is to assist the architect all in our power, and with this idea in view we have drawn up specifications for both a flat and standing seam roof, of the two sizes of plate which we think will be an aid to every architect who desires to use tin for roofing.

The specifications that we have drawn up are simply intended as a reference for the architects, and while we have inserted our brand of "Merchant's Roofing" in same, yet any brand which the architect may choose to use can of course be written therein. This formula has not been written by us with any intention of dictating to the architect, but rather to assist him in specifying for a roof that will last, as it should, for years, whilst the majority of tin roofs put on to-day will not last five years before repairs commence.

Again the present competition amongst roofers is such that a roofer who desires to make a first-class job and use good material stands but very little chance of obtaining the contract unless he is better protected by the architect in his specifications.

Yours very truly,

MERCHANT & CO.

The Drury Cove Lime Co., at Drury Cove, N. B., expects to manufacture about 75,000 barrels of lime per year.

There is an unconfirmed rumor to the effect that the Melbourne, Que., slate quarry has been sold in England for \$20,000, and that the new proprietors will work it.

The question is often asked whether creosote preserves the color as well as the wood when used in an exterior stain. There seems to be no doubt that it does so. Probably the reason is that the low forms of organism and fungi, which are so fruitful in causing the blackening in oil paints and stains are prevented by the addition of creosote, which is a strong germicide.

An Ottawa despatch says: The application made by Mr. Skinner, M. P., to the Government in regard to decreasing the duty on lime has, it is understood, been favorably entertained. It has been decided therefore to decrease the duty on the article from 20 cents per barrel to 10 cents per barrel, thereby making the duty the same as the American. The lime industry in the maritime provinces has largely increased of late years. New Brunswick alone manufactures over 300,000 barrels per annum.

A company is being established at Kingston, Ont., to manufacture Portland cement. The present capital required is \$50,000. The profit on an establishment, making fifty barrels per day, is estimated at 14 per cent., making due allowance for amortisation. The importation of Portland cement into the Dominion is about 100,000 barrels a year, on which the duty is forty cents a barrel. The enterprise may, under favorable circumstances, take up the manufacture of firebrick. There are said to be within a few miles of Kingston, sandstone equal to any from which gneiss brick is made, dolomite, from which magnesian brick is made, plumbeous, for lining furnaces and making crucibles, in fact, all kinds of refractory materials, except fire clay proper.

Despatches from McKeesport, Pa., announce that the brick manufacturers of that city and Pittsburgh are becoming interested in a patent chemical process for making brick without the usual burning which has always proved necessary. The process is that of a western man, and it is claimed that the brick can be made and hardened in two days at a cost of two dollars per thousand, or at one half of the average price per thousand that stock brick are made in yards where brick is turned. Another feature is, that the process will permit the brick to be made in all colors, and that the hard article for street improvement can also be made. A number of McKeesport capitalists are interested in it, and should it prove what it is claimed, they will locate a large plant to manufacture by this process.

The Barnum Wire and Iron Co., of Walkerville, informs us that they have in press and will publish about the first of April, a very complete and handsome catalogue.