this is done it is extraordinary what a brick foundation will support.

In connection with the failure of the foundations of the German mill already referred to, I had some experiments made as to what loads a brick pier was capable of sustaining. The test was made on a block of good red brickwork, 3 feet 1 inch by 2 feet 11 inches, and 1 foot 4 inches thick. It was built of five courses bedded in cement, the bricks being pressed close together, with a thin layer of cement between them, and allowed to set for ten days before the test was made. The bricks were made by Messrs. Smethurst, of Oldham (and some of similar quality were tested by Mr. D. Kirkaldy, who found that it took a pressure equal to 480 tons per square foot to crush them). The pier composed of these bricks was inserted between iron plates and placed in a hydraulic press, the area of pressure on the brickwork being 5.3 square feet. Pressure was gradually applied until it reached 622 tons, which is equivalent to about 117 tons per square foot. The pressure was not increased beyond this point, as the press was incapable of anything greater. After the brickwork was removed and examined it exhibited no signs of failure, and was apparently as perfect as it was before the test.

According to the Berlin building regulations, with ordinary brickwork set in lime mortar a load of 7 tons per square foot is allowable for a working pressure, while with good hard bricks laid in cement 11 tons per square foot is recognized. Generally speaking, in this country anything between 2 and 10 tons per square foot is the practice.

With iron or steel pillars resting on stone, brick or concrete foundations, there is another very important matter, frequently lost sight of, which should receive careful attention, and that is the proper bedding of the base of the pillar. When it rests on a block of stone, the stone should be carefully dressed off to a level surface, and the bottom surface of the base of the pillar should also be true. Some engineers insist upon having the latter machined. Even with these precautions, in very important work a layer of sheet lead might be introduced between the two surfaces. I remember several years ago when the present Manchester Guardian newspaper offices were being built, a failure arising from improper bedding occurred. The main cast iron pillars supporting this building sustain very great loads. One day it was discovered that one of the cast iron base plates was fractured, and also that the stone on which it rested was cracked. This occasioned a good deal of alarm for the safety of the building and a celebrated London engineer was called in to report on the matter. He discovered that it arose from imperfect bedding. The top of the stone, instead of being tooled to a level surface, was hollow towards the centre, and the whole pressure was transmitted to two or three points towards the edges, which sufficiently accounted for the failure.

With concrete and brickwork foundations a good plan, when it can be adopted, is to bed the base in cement. This often can be done with a loose base, but in the case of steel pillars, where the base is an integral part of the pillar itself, it cannot be satisfactorily adopted. The modus operandi in such cases is to leave the surface of the foundation rough, and place the pillar upon it with iron wedges inserted at the four corners. By means of these wedges the pillar can be raised to the right level and made plumb. When this is done liquid cement should be carefully run underneath. This effectually fills up all inequalities and evenly distributes the pressure over the foundation. The cement should be of such a nature as to set hard, and may vary in thickness from ¼ inch to 1 inch.

THE PRISM QUESTION.

The story of Luxfer Prisms and their development from the first suggestion as contained in the crude Pennycuick patent, is an interesting chapter in the history of building materials. The large sums of money spent on this device, and its ultimate commercial success, has tempted a great many to imitate the scheme by copying one or more of the numerous refracting angles used by the Luxfer system, making some slight alterations, such as a nick in the top of the prism or a spot in the centre. These imitations have been put on the market from time to time, each having a fancy name indicative of their great light-producing qualities.

It is generally known that the Luxfer device is protected by a series of patents, so that users of imitation devices, when considering the cut prices quoted, will do well to ponder how far they can afford to take chances of a patent suit. So far, we are informed, architects have had no trouble in showing their clients that in Luxfers they get better value for the money expended than from any device yet produced, and, even if some one was daring enough to make an exact copy of the series of angles used by the Luxfer Company so as to give substantially same results, it is doubtful whether the architects would advise their clients to be a party to a patent dispute for the sake of a possible small margin in cost. It cannot be conceived that the Luxfer Company would, after spending so much money on their patent situation, allow any infringer to get a material hold on the market. So far the imitations that have been brought out have, after one or two insignificant installations, dropped out of sight. This will probably be the case with each succeeding attempt, but if it ever becomes possible for an imitation device to get any hold on the market, a lively time may be anticipated by the purchasers thereof, as the Luxfer Company will doubtless, if they consult their interests, take action against the user, who can always be got at, rather than the seller, who is generally an agent for some American company capable of being dissolved as quickly as it was created.

Not only is the building trade indebted to the Luxfer Prism Company, Limited, for the production of Luxfer Prisms, but this company has arranged to put on the Canadian market all the better lines of building materials, such as architectural terra cotta, hydraulic-press brick, marble mosiacs, mycenian marble, ornamental iron and art glass. The showrooms of the company at 100 King street west are a veritable exhibition, where architects and others interested in the building trades will find a large number of interesting things.