

Letters were written to a large number of users of wood block flooring, to obtain information on the character of the floors being laid and the results obtained. One hundred and sixty replies were received. About 75% of the replies describe floors laid in 1912 or later, while only three records were received of floors laid prior to 1909. This indicates the comparatively recent development of this type of flooring. For this reason, also, the time of service of these floors has been so short that not much information can be given upon durability.

The depth of block used varied from 2 to 6 ins., but 3-in. was used in 50% of the floors concerning which replies were received. Southern yellow pine was used in 72% of the cases, while 15% did not reply to the question, the remaining 13% being divided between eight other species of wood.

Concrete foundation was reported in 80% of the replies, the remainder being plank, dirt, tamped earth, etc., or not answering the question. Seventy-one per cent. reported the use of sand cushion, 12% cement grout cushion, and 3% bituminous cushions. Bituminous fillers were reported by 44%, and sand by 25%. Thirty-nine per cent. reported that expansion joints were used, while 41% did not use them, and 20% did not reply to the question.

Summing up, the general practice was to use 3-in. southern yellow pine blocks treated with 15 lbs. or more of creosote per cubic foot by the Bethell process. These were laid with a concrete foundation, sand cushion, bituminous filler, and the question of using expansion joints depended on the local conditions in each case.

Repairs have been reported in 32% of the records, while 62% reported no repairs. In most cases the repairs made were of a minor character, and as a rule, were caused by swelling or shrinking of the wood. In a few cases blocks were badly worn where heavy castings were thrown upon them.

Bleeding of the blocks was reported in 9% of the records, but was said to be objectionable in only 2.5% of the cases. Swelling was reported in 29% and shrinking in 27% of the records, (in some cases both swelling and shrinking were reported), and these troubles were the cause of most of the dissatisfaction reported. Swelling occurred when the blocks became accidentally wet, because of leaky roofs, bursting water pipes, near drinking fountains, and other accidental causes. Shrinking occurred in very warm or hot situations, and resulted in the blocks becoming loose and producing an uneven floor.

An interesting relation may be shown between the kind of filler used, and swelling and shrinking reported. Thirty-three per cent. of those using bituminous filler reported this trouble, compared with 55% of those using sand filler, 75% where cement grout was used, and 55% where no filler was used.

Eighty-nine per cent. replied that the blocks were satisfactory, while 5.6% did not reply to the question, and 5.6, or nine records, stated that the flooring was not satisfactory. Of the nine unsatisfactory floors, shrinkage of the blocks was responsible for dissatisfaction in three cases, swelling in two cases, in two cases the blocks wore out rapidly, poor foundation in one case and improper laying in one case.

In a large proportion of cases it was reported that wood block was easy on the feet of the workmen and that they like to work on it. Noiselessness, ease of repairs, low upkeep cost, good trucking surface, saving of breakage in tools and fragile metal parts dropped on the floor, warmth, and cleanliness were all reported as advantages of wood block flooring in 10 or more of the records.

Durability was reported as an advantage in 77 cases, though it is doubtful if many of the floors had been in service sufficiently long to warrant a statement as to durability.

In 14 records swelling was given as a disadvantage and shrinking in 12 records. Roughness, reported in 11 records, was mostly caused by shrinkage. High cost was given as a disadvantage in 11 cases.

The results of this investigation indicate that treated wood block makes a desirable type of flooring for many purposes, and it is likely that its use for interior work will increase. Since its large use for these purposes is just beginning, one might expect that unforeseen trouble would develop. The records of 160 floors given in this report indicate, however, that serious trouble has developed in a very low percentage of cases.

Most of the trouble has come from shrinkage or expansion of the blocks. To prevent these troubles it is essential to study each case where blocks are to be laid, and to treat the blocks accordingly. For dry situations, the blocks should be well seasoned before treatment and laid in the floor while thoroughly dry. In wet or alternately wet and dry situations, dry blocks would give expansion trouble and, hence, the timber should be green or only semi-air-dried when laid. Even dry interiors are liable to be accidentally subjected to water, however; hence, it would seem desirable as a rule to use bituminous fillers instead of sand filler.

Sand cushions were probably a source of trouble in several cases. If there is any vibration, or if the sand is at all liable to shift, a bituminous or cement grout cushion is to be preferred. Sand cushions are also liable to cause uneven floors if the blocks shrink, and it seems likely that many cases of shrinking would not give serious trouble where bituminous filler and bituminous or cement grout cushions are used.

Bleeding caused very little trouble. In dry and very warm situations, where it is most likely to occur, it would be desirable to carefully consider the method of treating and handling the blocks in order to avoid objectionable bleeding.

In a few cases it seems likely that wood block should not be used. For example, it should not be used where butter or tobacco products are stored. In some foundries, where hot castings are thrown upon the floor, the blocks have burned through to the foundation. Wood blocks may be objectionable where the soiling or staining of certain classes of merchandise would lower the value, and in one case where used in a tennis court wood blocks were a failure and had to be removed.

Wood block was found to be very satisfactory in many cases where heavy castings are thrown about, where heavy trucks are moved, and is liked by workmen because it is warm and is easy on their feet.

The replies from the users of wood block flooring indicate quite strongly that when new wood block floors are to be laid, a careful investigation of all the conditions existing or likely to develop should be made by the manufacturer. The method of treatment and construction of the floor should then be adapted to the special conditions found.

Electrification of steam railroads in the United States last year brought the total of such equipment up to about 2,500 miles.

The British Columbia Electric Railway Company are proceeding with the completion of a large sub-station in Burnaby, B.C., the work on which has been suspended for the past two years.