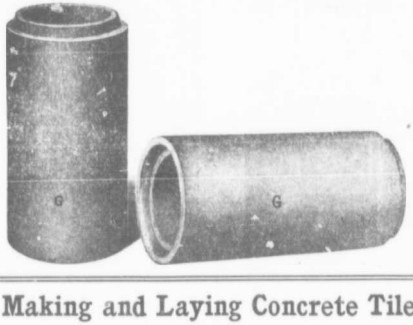

Making and Laying Concrete Tile

The following rules for making concrete tile will be found of the greatest value to those engaged in road-building and making small culverts in road crossing, and also to farmers who have a large amount of land-draining to do:

1. Use a good brand of Portland cement.

2. Use good, clean gravel and sand only (free from loam and clay), composed largely of the former with about sufficient sand to fill all voids. If no gravel is convenient, finely broken stone can be substituted with sufficient sand to fill the voids, as in the case of gravel. If no gravel or stone is available, sharp sand can be utilized, but the amount of cement must be increased to one-third or one-half, according to the coarseness of the sand. The finer the sand the more cement required.

3. Mix the gravel and cement thoroughly before wetting.

Do not pour the water on but apply gradually so as not to wash out the cement. Avoid making it too soft; just enough to work smoothly, about the consistency of newly dug earth.

4. Mix only enough material to fill the mould as any that is left over will be wasted if not used in another mould before the cement sets. Cement will not set a second time.

5. In starting it may be well to oil all parts of the mould that come in contact with the concrete. A mixture of coal oil and another common cheap oil will do, but if the moulds are promptly cleaned after use it will be found oil can be dispensed with.

6. Fill the mould quickly and tramp well as on even and continued tramping depends the strength and smoothness of the tile.

7. Be sure the cement is set before removing the mould. The inner core can be compressed and withdrawn almost immediately after making, but the outer shell usually requires to stand from 1 to 2 hours, according to the state of the weather. Except they can be made in a cellar or some suitable building, do not make in frosty weather or the tile will freeze before being properly set. As before stated, it will be found of advantage to have a few extra bottom rings and in the event of building one size of tile only, an extra outside shell will facilitate the work.

8. In hot weather make in the shade and when finished keep shaded or covered from the sun as much as possible, sprinkling with water for a few days to prevent them drying too fast.

9. Allow them to stand for three weeks or a month before using. Better make one year and use next. If necessary to use them when new, handle carefully. If not subject to a direct strain, they will set in the ground as well as otherwise.

In using concrete tile for road crossings, judgment must be used in determining the size required. Few people realize the amount of water that will flow through a 12-inch tile provided with a good outlet. Of course there are no objections to using larger sizes, but as there ought to be 8 or 10 inches of soil over the tile to prevent the traffic injuring them, it is sometimes difficult to get the required depth without having them below the level of the side ditches. If found impossible to have the above amount of covering over the tiles, less will do, if the tiles used are thoroughly seasoned by having been manufactured not less than six months or one year previously.

Where sufficient depth cannot be obtained, it is better to use two or more of a smaller size than to have to raise the road, as would have to be done if larger were used. If more than one is laid, they should be placed a foot or more apart and great care taken to tramp the earth solidly between and around them, so that no water may work its way around the outside. It makes a neater and more finished job if a mouth-shaped abutment is constructed over the end of the tile. This can be made of cement or stone as is most convenient. See that the bottom of the trench is level, with a necessary fall to conduct the water through freely. Provide as good an outlet as possible, as on the outlet will depend to a great extent the capacity of the tile.

Parties interested in this question will be benefited by writing The Sawyer-Massey Co., Hamilton, for full particulars and mentioning this paper.

Practice and Plan

"An ounce of prevention is worth a pound of cure," so, a very little bit of practice is worth an infinity of plans. How often we find the time to make new plans of all kinds, when many old ones of some real value, if executed, are still left worthless because never put into practice. The place where most of all the maxim, "Union is Strength," holds true, is the army, the place one man plans and thousands execute. The fewer assistants he has in his plans the better, but the more help he has to carry them out the surer and more complete the result will be. The greatest folly of all is to plan without the assurance that one can carry it out well, for even the plan of only common adaptability, if well carried out, is far better than the best plan indifferently executed. Plans are things we can afford to economize. The thing we must be extravagant of is practice.

A short time ago the writer came across a fine looking farm with imposing buildings, among which was a nice commodious shed for implements, its interior well stocked with old abandoned implements and vehicles, while those in active use were allowed to lie around any old corner of the farm. In one corner of a field at least three seasons old in grass, the burdocks flaunted their lusty heads over a pulverizer harrow that would have exterminated even the aspiring sow thistle if applied with energy and persistence. As it lay there it made a good illustration of the folly of plans without practice. In itself a splendidly contrived plan for the eradication of those same weeds which thrived so serenely among its deadly but idle blades, it was still ineffectual because there was no practice. It is a mistake, certainly, to work too hard to have any time to think, but it will last most men longer than to think too hard to take any time for work. J. W. S.