

# Austin Cement Stone and Tile Company

## ARE YOU GOING TO TILE?

Some Valuable Information for Farmers on This Important Subject by the Cement Stone & Tile Company, Inc.

### ...Introduction...

The Austin Cement Stone and Tile Company was organized through the interest of the business men of Austin for the development of the surrounding country. These men believe that tiling is essential and urgently needed in this and neighboring counties, and built a local plant to give the farmers the advantage of a yard at home, where tile can be had at all times and at prices that are as low as consistent with high grade products. The standing of these stockholders, and the expenditure for a plant of unusually complete and modern equipment insures good products.

As a local company we ask local patronage. Our plant is located so as to ship in any direction and prompt shipments will be made on all orders accepted.

We ask the public to remember that our tile are Steam Cured. Very few cement tile plants have put out the expense to secure this advantage. All cement is tested with care before it is accepted and it is required to conform to the Am. C. E. specifications, which insures the quality, and poor cement will never be used.

Tile is our principal product, but we are prepared to meet any demand in concrete work anywhere, since we buy cement in large quantities, and have an organization for work, large and small, from furnishing tile and other products to contracting for all classes of concrete or partially concrete construction complete.

Very truly yours,

AUSTIN CEMENT STONE AND TILE CO.

### WHY TILE DRAINAGE IS PROFITABLE.

Tile drainage is profitable for the following reasons:

1. **The Reclamation of Waste Land**—Every pond and slough is subject to taxes, and other charges including interest on the purchase price. Ponds and sloughs are glaring faults attracting the passerby's first attention. Reclaimed land is clear gain.

2. **Assured Production** on otherwise uncertain ground where a man's best efforts may be expended in the spring only to see his hopes drowned out by a summer's shower.

3. **Increased Production** on land that was too wet or too solidly compacted to raise good crops in all seasons.

4. **Easier Plowing**, because of the lighter, more mellow soil.

5. **Timely Plowing**, harrowing, etc., after rains. Getting into the fields quickly is often very important indeed.

6. **Unbroken Fields** are easier to manage.

7. **Lengthened Seasons Between Killing Frosts.** A week to ten days at each end of the season is considered an average.

8. **Reduces the heaving Action of Frost**, thus permitting winter wheat, clover, rye, etc., in localities where such crops would not otherwise be profitable.

9. **Provides Moisture in Dry Seasons** to soil that would otherwise become too dry. This is due to the same principle that causes a pitcher to sweat on a warm day. A tile sweats in dry season.

10. **Tiling Draws the Water Through** the soil, thus eliminating the washing away of the surface as is done by ditches. The water drawn downward leaves channels which fill with air, which supplies air to the plant roots as is necessary for their growth, and the greater the depth of this ventilated soil the deeper the rootlets will penetrate. The advantage in the deeper growth of roots is that more of the fertility in the soil can be utilized, and the better able the plant is to stand dry seasons, and the stronger the plant life at all times. Since tile draws the water downward, fertilizer applied to the surface is carried down into the soil and is deposited in it instead of being washed off the surface to the lower land. Much attention is being given to this feature of tiling where the hills have lost their fertility and where the manure spreader has under other conditions failed to build up the soil.

Airing the soil enables the frost and sun to break up the soil into finer particles, making it richer, making it easier for roots to grow and enabling the plant to draw upon the deeper fertility not reached before. Air is easier to heat by the sun than water, hence a ventilated soil warms up earlier in the spring and remains warmer through the season, increasing the germination and the rate of growth of the seed planted, and producing healthier plant life, with earlier maturity and a larger harvest.

Since waste land becomes productive, crops assured, and larger yields produced, farming becomes a dependable business. Since crops can be raised on tiled land that cannot profitably be raised on the same land without tile, the farmer may manage his crops according to his own ideas, rotating them as desired, and is not limited to a few kinds of grain. Tile and corn are old friends, and corn and high-priced lands go together. Wheat yields 20 per cent to 25 per cent more grain, and other crops are equally benefitted.

As to ditching instead of tiling, it should be remembered that soil washed away can never be restored, that ditches always wash, carrying the finest particles of the soil away, and require reditching, where tiling once well done is done for all time. Ditches, unless deep, remove little more than the standing water, do not drain the land as quickly as do tile, break up the farm into unhandy fields, require bridging and continual attention. A tiler would rather put tile in a new ditch than to dig in an old one, so that ditching is not a first step in tiling, unless to secure an outlet for tile.

The cost of tiling must be studied for each condition. Suppose a pond of five acres is to be drained and requires 30 rods of 6 inch tile and 80 rods of 5 inch tile. Suppose it costs you on an average of 90 cents a rod for tile, laying same, board of tiler and filling trenches. 110 rods at 90 cents gives \$99.00 total cost

of tile in the ground. Add the value of your time hauling the tile, say \$13.00, surveying say \$3.50, giving \$115.50 total cost for draining five acres. This brings the cost to \$23.10 per acre. Now, if your farm is worth when cultivated \$50.00 per acre, then you have gained \$50.00 land at a cost of \$23.10. In placing this new land at a value of \$50.00 the same as the high land, we have not considered the true value, for the new, rich soil of the low land now opened up is more productive than the high land and has every advantage of the tile, therefore the value of the reclaimed land is greater than \$50.00, nearer \$75.00, and the profit of tiling is larger than at first computed.

In places where there is no standing water, but wet or sour soil, or where rains in the growing season injure the crops, there tile will soon pay for themselves, and once paid for continue to pay dividends in all seasons, wet or dry.

Suppose there are five acres of land from which you get an average revenue of \$5.00 per acre where crops are stunted. If you can not get more than that you can not afford to spend much time in cultivating that five acres, yet right there is where the soil is hardest to work and where the most effort is usually applied. Suppose it is tiled at a cost of \$10.00 per acre, which cost frequently covers such a condition—and oftentimes less will do it—how long will it take, the first year in flax, to return that \$10.00? In fact, tiling is now so generally recognized as an improvement of the most substantial kind that one of the first questions a prospective land purchaser usually asks is: "How much tiling has been done on it?"

When every acre that needs tile is tiled and cultivated, when every acre is therefore producing at its best, it will be more profitable to cultivate smaller farms. As the farms increase in productiveness and decrease in size the price of land must advance and the whole community must develop—with local markets in consequence.

Remember tile is an investment—a dividend producer—and not a speculation.

It will be readily seen that the grade and length of drain are important factors. The openness of the soil is another very important consideration, since it determines the depth and distance apart the tile lines may be. A thoroughly under-drained, close, mucky soil may require shallow drains laid about fifty feet apart on flat lands. Equally well drained open soil may draw on each side of the line for five to six rods on flat land for each foot of depth to the tile.

The carrying capacity of the tile may be determined by comparing the squares of their diameters, thus: Six inch tile will carry 36-25 times the water carried by a five inch tile.

### CEMENT TILE.

Cement tile of good quality are not affected by frost as is other material, and may be strung out to winter in the frozen sloughs without damage to them. Clay tile would not stand such treatment. Clay tile in states further south buried three feet deep are below the frost line, where that depth is within the frost line here. Ninety per cent of the tile in the Northwest are laid within the frost line and therefore a material should be used which frost will not effect. Cement tile have long been recognized as suitable for this condition, for the most severe climate, but it has been but three or four years since power machinery was invented that would enable the manufacturer to produce them commercially. There are now some eighty plants operating in Iowa alone and the industry is just begun on a large commercial scale. This season there will be produced in Iowa and Minnesota some 4500 to 5000 car loads of cement tile, or from 13,500,000 to 15,000,000 feet, as a conservative estimate.

### SOMETHING TO READ.

We ship anywhere.

It pays to co-operate with one's neighbor.

Our tile from 5 to 16 inches are machine made.

Long lines of the same size of tile are rarely good practice.

All tile take practically all the water through the joints, says a government report.

Tile not only to get the water off, but to ventilate the soil.

Paying a good ditcher enough to insure good work is money well spent.

Tiles must have good outlets.

In ponds lay the tile with about one sixteenth inch between ends; on steep grades lay them tight.

Tiling is permanent; ditching is temporary.

Our references are any bank or business man of Austin. We refer you to any customer.

The mains must be large enough. All the area draining to the tract tiled must be considered in determining sizes.

Manure applied to tiled land does not wash away.

Improve the farm you have; there is money in it. Minnesota ponds and sloughs should be producing her best crops.

Keep the outlets clear. Box them with a grating to keep out animals, but have the grating removable so as to prevent clogging with rootlets, etc.

Our prices to be consistent must vary with the cost of cement. The latter changes so frequently that we cannot publish fixed prices. Write for prices.

Notice that it costs only the difference in the price of the sizes of tile to put in the next larger size than that which seems barely large enough, for the cost of ditching is the same for all sizes under eight inches. The efficiency of the larger size is greater for the money expended, and the variations in grade produce less serious effects. The tendency is to use too small tile for satisfactory results.

Stake out lines yourself, if desired, drive stakes at exactly 100 feet intervals, using stakes large enough to drive until solid and about an inch above the ground. Number the stakes at the outlet O, and on curves (they should never be sharp curves) drive stakes at 50 foot intervals on the line at one side of the proposed ditch. Lath may be stuck up at each stake to locate the stakes. Keep the lines as straight as possible and avoid sharp curves. Staking out yourself saves the surveyor's time and reduces the expense. If the surveyor does not think the line right he will give a reason; he has a reason for all his work that you are entitled to know about by questioning him.

Fill in directly on the tile first with black top soil then with clay, never use clay or sand directly on the tile. Water may be kept from the tile by putting in clay directly on the tile and sand washes too easily.

On account of our system of machine mixing, machine packing, sprinkling and steam curing process,

our proportion of one part pure Portland cement and three and one-half graded sand we are enabled to fully guarantee every tile we put on the market. We guarantee our tile to be all that the best grade of tile ought to be—superior in frost proof qualities to any other kind, uniform in quality, permanent, everlasting and absolutely reliable. To make this guarantee without quality would be impossible. We will replace any tile that do not stand under any conditions where clay tile will stand, entirely at our own expense. This guarantee protects you against any of the foolish charges of the enemies of our tile.

A good tile will ring when held up and tapped with metal.

Cement ignorantly used or cement tile cheaply manufactured are not more reliable than any other material ignorantly or cheaply used. Our proposition is clearly and unequivocally highest class, thoroughly reliable products or none.

Cement tile require water to make them. They grow measurably harder for twenty years. Put them in the ground to carry off the water there, in the ground carrying off the water is supplying the cement with the very element it needs to fully crystallize it during these twenty years.

Cement tile grows stronger with age, while clay tile attain their maximum strength when first made. On this point Mr. J. T. Sherer, of the Board of Public Works, Milwaukee, Wis., says: "In all places where we had to replace the sewers that were put in in the early history of Milwaukee we found the concrete pipe to be intact. For instance, only recently we had to take up a 12 inch pipe and replace it with 20 inch, and for the entire length that pipe was found to be in elegant condition—very much stronger than when first placed there. There was no defect or flaw from one end to the other."

Cement tile are not burned, therefore do not warp out of shape in curing. The product of a clay kiln is never uniformly burned—some are hard burned and some are soft burned. Soft burned tile yielded easily to disintegration by frost and an entire string is no better than the softest burned tile in the string. Buy cement tile, steam cured, that are uniform in quality. We can supply you.

The air cured tile should be frequently sprinkled; this method is considered by some as effectual as steam curing; however a great many are adopting the later ideas, and installing up-to-date modern steam curing rooms and car systems, or endless belt conveyors for handling the tile from machine to curing rooms.

At present there are five power drain tile machines manufactured. The Miracle Pressed Stone Company, of Minneapolis and the St. Paul Cement Machinery Company, are the only manufacturers of power drain tile machines in Minnesota; the Electrical Fence Post Company of Lake City, Iowa; McCracken Bros. of Paulina, Iowa and the Waterloo Tile Machinery Company of Waterloo, Iowa, the latter being the pioneers in the manufacture of power machines for making drain tile. These machines are all somewhat similar in construction and have a capacity of from 2,000 pieces of largest sizes up to 5,000 per day of the smaller sizes. One of the serious complaints in the past seems to have been to pack the tile on both ends alike and to a sufficient density—this however, seems to have been overcome.

The average cost of equipping and installing one of these most modern factories, using power mixers, steam curing and car systems, seems to be about \$12,000.00. Good clean, sharp sand, conveniently located to water, and shipping facilities are about the only requisites.

### CEMENT NOTES.

Monterey, Minn., April 27, 1908.

This is to certify that I have used cement pipes in my wells and also for cellar drain since the year 1882 and they have given good satisfaction and have become as hard as granite.

Signed—E. HOWARD FITZ.  
Architect and Builder.

Eighty-four American cities have recently put in concrete sewers.

We are making tile 5 inch to 16 inch by machinery and larger sizes by hand process.

Never lay a tile around or ever a stone—blast the stone out of the way.

Steam penetrates to every tile and all are cured alike. How different from the product of a kiln where the heat of the fire is hot enough for some tile but not hot enough for others. Note the lack of uniformity in burning of clay products.

Factory made V connections save time in the field and make a good job.

Set a tile over each grade stake in your pasture so as to keep the horses and cattle from stepping on the stakes and thus destroying the survey.

We recommend that all tile be laid three feet from the top of the ground to the top of the tile as a general rule.

Too small tile are nearly as discouraging as no tile at all, since tile must remove the surplus water in twenty-four hours, or failing to do so the crop is drowned out or scalded with a few hours of hot sun.

Seldom should a 4 inch tile line be over 350 feet long, 5 inch over 700 feet, 6 inch over 1,200 feet. On flat ground where the lines of tile are very close together small tile may be used for greater lengths.

Backfill with black dirt or with top dirt and clay mixed. Never put clay next to the tile as it is likely to prevent the water from reaching the tile.

Cover all openings of 1/4 inch or over wide with a piece of broken tile.

Lay the tile up fairly close end to end, but remember that the water must get into the line at the joints. Cement tile are easy to lay with 1-16 inch between ends.

Depressions in the grade will fill with dirt and reduce the capacity of the line.

The best way to fill a trench with dirt is to use a plow and a V-shaped drag. Start plowing as close to the ditch the first round as possible. Draw the drag with the point behind.

Roots of willows and cottonwoods, elms and hedges will grow two to three rods to a tile line and will fill the tile up.

Do not take water out of its natural water course at high water and expect your neighbor to be obliged to take care of it.

Fill the trenches as quickly as possible. A shower

CONCLUDED ON FOURTH PAGE.