



Landscape Construction Using Brick in Walks and Patios

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Brick, as a construction material in the landscape, is highly desirable for many reasons: Brick is readily available, inexpensive, easy to handle and work with, and allows a wide variety of choices for the installer. In use for at least the past 90 centuries, brick has proven its value as a tough, resistant surface to weathering and wear.

All brick is not created equal. Types of brick include building brick, face brick, fire brick and paver brick, to name the most popular styles. Used brick of these types are also available.

Building brick is referred to as the standard brick, measuring 2 1/4 inches x 3 3/4 inches x 8 inches. Use only SW (severe weather) grade brick in North Dakota. MW (moderate weather) grade brick may be used in warmer climates but is not suitable for use here.

Face brick is tougher, more uniform in size and more expensive than building brick. Face brick is the same size as building brick. It's sand-finished with a glazed surface and is available in many colors. Face brick is successfully used in high quality garden walks, fences, patios and barbecues.

Fire brick varies somewhat from the standard brick size being 2 1/4 x 4 1/2 x 9 inches. As the name implies, fire brick is used to line furnace fireboxes and can be used in the same manner as building and face brick.

Paver brick comes in many sizes and shapes including rectangles, squares or hexagons. Thickness ranges from 1 5/8 inch to approximately 2 inches, with colors ranging from light rose to reddish brown.

Used brick, an antique collector's delight, is popular, attractive and approximately the same size as building brick. Generally, used brick, especially if pink, is too soft for outdoor work. New brick, made to look old, is also available to simulate used brick.

the bricks to be used in the project and laying it on edge on one side of a 1x6 inch board. Cut the thickness of the brick out of each end of a pre-measured board. This screed is then dragged over the sand surface with the edges or header boards being the guide. The sand should be kept moist throughout the entire operation for proper compaction or firming (Figure 1).

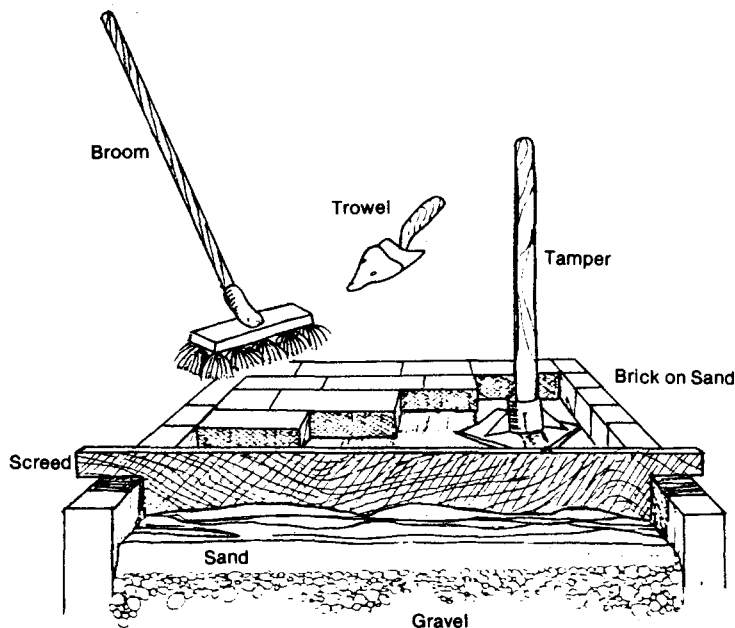


Figure 1. A schematic of the procedure on sand

Laying Brick for Walks and Patios

Brick may be laid on bare ground, sand, mortar, or over old asphalt paving or concrete. The brick are set with sand, wet mortar or dry mortar. In every case, a grade or slope should be established to avoid water collecting, which could freeze or cause algae growth to become established. In walkways, the center should be slightly crowned, falling away evenly to either side. With patio areas, a slope of 1/4 inch per linear foot would provide adequate drainage. In this case, do not depend on just a visual sighting to establish the grade. Use a carpenter's level on narrow walkways and a line level running from one edge to the other on patio areas.

The base upon which brick is laid is very important. Where brick is laid on soil, make sure the drainage is excellent. Once graded, lay the brick in the desired pattern. To lay brick in sand excavate (to 8-9 inches), then lay with 3 inches of gravel, followed with 3 inches of sand. To calculate the material needed, figure approximately 9 cubic yards of material for every 3 inches of depth per 1000 square feet of surface covered.

Once the sand is in place, it should be tamped or firmed before the brick is installed. Use a screed or leveling board to maintain the level on the sand. This can be easily made by taking one of

To summarize the procedure to this point:

1. Excavate the area where brick walkway or patio is to be installed.
2. If the brick is to be directly on the soil (warm climate only) then grade to a slight crown, firm and lay brick.
3. If it is to be in a sand base, then the excavation should go down 8-9 inches, filled in with 3 inches of gravel, 3 inches of sand and a screeder with edging boards (or bricks on end) established. Take a screed board to level the sand, then moisten.
4. Tamp area to receive brick to firm up base. The brick is now ready to put in place.
5. Once bricks are in place, spread sand over surface and sweep into the joints. Mist with water to firm.

The quantity of brick to order for a particular job will depend on the pattern being used. The more complicated patterns such as herringbone will use more brick because of the frequent cutting of the brick along the edges. Generally figure five brick per square foot of area covered in the simple patterns where little or no cutting is involved; six to seven bricks per square foot on the patterns requiring cutting or variation in brick placement.

Order more than enough bricks to complete the job. Some breakage is inevitable, so order by the pallet. If a patio area to be

44.3
19
18
986
1.908

covered is 30 feet x 22 feet (660 square feet) and the brick is delivered at 500 bricks per pallet, then order seven pallets of brick (660 square feet x 5 brick/square foot = 3300 bricks/500 brick per pallet = 6.6 pallets; round up to 7 pallets). This will allow for breakage and some extra for the owner to use for any embellishments desired.

In laying brick with dry mortar, the same procedure is followed as with setting in sand, except the 3/8 inch joints between the bricks are not filled with straight sand. Instead they are filled with a mixture of three parts sand and one part portland cement to one-fourth part lime. The brick surface area can be covered with this mixture, tamped into the joints with a stiff-bristled broom and the entire surface misted with a fine, low pressure spray of water from a garden hose. Over the following three to four days, keep all traffic off the brick surface and mist intermittently to get a proper cure on the mortar mixture.

To set bricks in fresh mortar, a concrete slab must first be poured, leveled and properly cured. It should be approximately 3 inches lower than the finished brick surface. Make up the mortar mixture as described above, making it into a plastic paste, not stiff or sloppy. Spread 1/2 inch thick over an area for four to five bricks. Wet the bricks to improve curing. Put mortar joints of about 3/8 inch between bricks. This type of brick surface installation should be for people experienced in mortar work only.

To establish a brick surface over an old concrete or asphalt area, be sure the old area is clean of crumbling material by scrubbing with a stiff brush. Spread a base of sand (2 inches) over the surface, moisten thoroughly, tamp to firm and level, lay brick and work in the mortar mixture described, finishing as mentioned previously.

Installation Tips

Laying a brick surface requires working on one's knees. This can be painful and even temporarily crippling to some people. To alleviate this problem, two pointers are suggested:

1. Obtain and use knee pads.
2. Place a 2 foot x 4 foot x 1/2 inch piece of plywood over the brick surface as you work on it. This will not only save the knees, but will keep the brick surface from becoming uneven, resulting in a uniform, firm surface.

When it is necessary to move brick from the pallet to the point of installation, use a standard brick carrier. It saves fingers and brick, and lessens labor intensity.

In cutting brick, contractors have come up with many elaborate time saving methods to suit their particular operation. Brick can be easily cut for basic patterns by using a brick chisel and a hammer. Simply mark the line to be cut with a pencil, tap out the line with the chisel, then, placing the brick on a firm surface such as concrete or a solid piece of wood, strike a sharp blow with the chisel at the center of the line. The brick should split along the line. Clean up rough edges with the back end of the hammer.

Brick Paving Patterns

The simpler the pattern, the easier the task is and the lower the cost in materials and labor. If this is the first time laying a brick surface, keep it simple.

Running Bond is the simplest of all patterns, simply laying the brick flat and staggering the joints. Minimal cutting of bricks is required (Figure 2).

Basket Weave. This pattern may be developed by laying the bricks flat in a 2 x 2 pattern, or on edge in a 3 x 3 pattern. Depending on configuration the brick surface will be taking, little cutting of brick could be required (Figure 3).

Herringbone. This attractive pattern is difficult in that it requires extensive cutting using sophisticated power equipment. Greater quantities of brick are used and higher labor intensity is required to complete this pattern (Figure 4).

Pattern variations are possible with brick. The limit is one's imagination, time and budget. Generally the simple brick patterns have the greatest wearability and are easier for repair and maintenance.

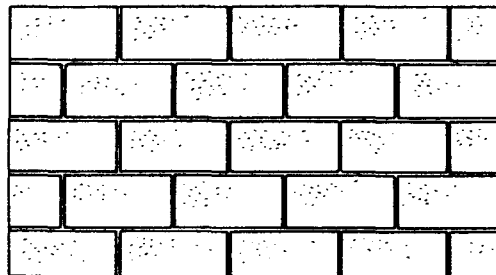


Figure 2. Simple pattern, requiring minimal cutting of brick.

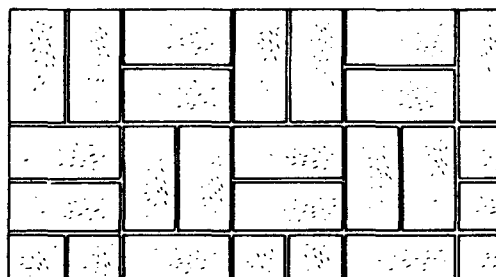


Figure 3. Another simple but attractive pattern. Requires the cutting of more brick.

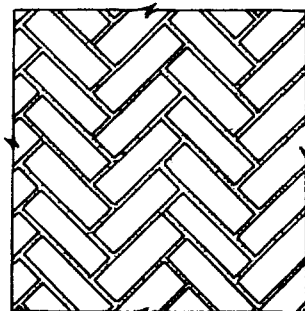


Figure 4. A more complex labor-intensive pattern requiring extensive brick cutting.

Brick Color Important

Study the variations in brick color before installation. Often a supplier will have runs of brick installed at the business site. This will give the homeowner and contractor an opportunity to see the impact of both pattern and color. Make the choice carefully to be sure it is a color everyone likes.

Bricks offer a uniqueness in landscape construction seldom found in other building materials. They offer durability, color, warmth and variation in pattern and form. Brick patio and walk surfaces properly installed and maintained can last a quarter of a century or longer.