

The property owner may use 80# bags of pre-packaged concrete mix in lieu of ordering from a concrete supplier. (Concrete suppliers normally require a minimum order which usually is in excess of the 1/3 cubic yard that is needed for one 4" thick, 5' x 5' sidewalk block). Approximately 17-80# bags will be needed for one 4" thick, 5' x 5' block. Carefully follow the directions on the package. The full thickness of the concrete must be poured at one time. Finishing and curing should be done as described above under "Hiring a Contractor".

You can also mix your own concrete using 1 part Portland cement, 2 parts fine sand, 3 parts coarse aggregate mixed with 6 gallons of water (maximum) per sack of cement.

#### Inspection

Upon completing the sidewalk replacement, please call 238-4651 or e-mail [rseybert@twp.ferguson.pa.us](mailto:rseybert@twp.ferguson.pa.us) to schedule an inspection.

### **TREE AND SIDEWALK CONFLICTS**

The natural, vigorous growth of healthy street trees occasionally will cause damage to sidewalks due to expanding roots. Several options are available to minimize the occurrence of this situation. Each of the options listed below must be approved by the Township Engineer prior to construction.

#### Reduce Sidewalk Width

The sidewalk block may be reduced to a width of 4' (four feet) around an existing tree. If this option is selected, consideration should be given to the installation of root barriers as described below.

#### Construct Sidewalk Around Tree onto Private Property

If there are multiple sidewalk blocks to be replaced due to tree root damage, a by-pass walk may be constructed on private property. Place concrete on a subbase of 6" of gravel (2A stone), which will provide drainage.

#### Root Removal/Root Barriers

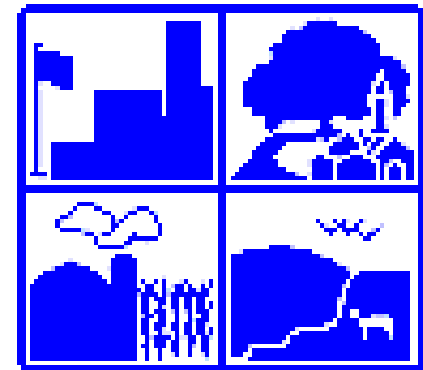
One solution is to remove roots up to 2" in diameter for a depth of 6" to 8" below the sidewalk and install a root barrier. New concrete should be placed on 6" of gravel (2A stone).

#### Temporary Measures

The use of brick, asphalt, or quartered concrete squares may be used as a temporary measure, when approved by the Township Engineer. The temporary measure may only be used until the time the tree is removed. Upon the removal of the tree, the property owner will be expected to replace the temporary material with concrete, as noted in the above guidelines.

Questions on this Fact sheet should be directed to the Ferguson Township Engineer at 814-238-4651 or by e-mail at [rseybert@twp.ferguson.pa.us](mailto:rseybert@twp.ferguson.pa.us).

## **Public Sidewalk Repair and Construction Criteria**



**Ferguson Township Public  
Works Department**

**Rev. 2013**

## Public Sidewalk Repair and Construction Criteria

### TRIP HAZARDS

Repair or replacement of a sidewalk block is necessary when a trip hazard exists. Trip hazards exist when:

- a sidewalk block, or a portion of it, has risen or sunk approximately 1" higher or lower than an adjacent block,
- two adjacent blocks have sunk/risen at a joint forming a "V", the apex being 4" or greater over a 10' span,
- a crack or joint separates more than approximately 1",
- an edge of a crack or joint is chipped or broken, creating a 1" or greater surface opening with a depth greater than approximately  $\frac{3}{4}$ ", or
- the surface has chipped or crumbled to allow exposed aggregates, creating excessive peaks and valleys of more than  $\frac{1}{2}$ ".

Blocks damaged by tree roots may need special attention. Methods of repair are listed below.

### SUGGESTED REPAIR METHODS

#### Patching

Repairs may be made using a half-and-half mixture of Portland cement and sand, or with a commercial two-part epoxy-type concrete patch material. The minimum thickness for a patch is 1". Thickness less than 1" generally do not bond well.

Prior to patching, the deteriorated material should be removed to expose sound concrete.

The surface should be prepared with a bonding material or epoxy as prescribed by the patch material manufacturer.

#### Grinding

The edge of a raised block may be "shaved" off by using a concrete grinder, as long as the height of the raised portion is no more than 1-1/2" and the slope is no greater than 12:1 (If the sidewalk is raised 1 inch, then the wedge is 12 inches long). After grinding, the area should be smooth in texture and level with the adjacent block. Chipping or chiseling of the raised portion is not acceptable.

**Placing a wedge of patch material over a portion of a square is not acceptable because wedges will not adhere properly nor will they withstand frost movement.**

### INSPECTION

**Repairs must be inspected once complete. Please call 238-4651 or e-mail [rseybert@twp.ferguson.pa.us](mailto:rseybert@twp.ferguson.pa.us) to schedule an inspection.**

### SIDEWALK REPLACEMENT

If the deterioration of the sidewalk block is severe, it may be in your best interest to replace the entire block. Please

follow the guidelines listed below for new concrete sidewalk construction.

#### Hiring a Contractor

Contractor names can be found in the Yellow Pages of the telephone book under "Concrete Contractors". The contractor should remove and dispose of the old block. Specify to the Contractor that the concrete is to be Class A, 3000 PSI concrete. The block must be at least 4 inches thick in residential areas, and at least 6 inches thick for a driveway area. Surface edges shall have a  $\frac{1}{4}$ " radius. The finished surface should be made slip resistant by coarse-brooming in a direction perpendicular to the street. Joints should be placed no greater than 6 feet apart and the width of the sidewalk block should be at least 5 feet, unless an exception has been granted by the Township Engineer. A curing compound should be placed on the new concrete after brooming the finish. When having two or more blocks poured continuously, the contractor should create a saw cut at least 6 feet apart and to a depth of 2". An application of boiled linseed oil 45-60 days after the pour should be placed to seal the concrete, which will reduce future salt damage.

#### Do It Yourself

Property owners may complete the work themselves by following the same guidelines listed for contractors.