

# CHARTER TOWNSHIP OF PLYMOUTH

## CONSTRUCTION STANDARDS FOR SIDEWALK CONSTRUCTION

All sidewalks hereafter constructed, repaired or rebuilt shall be constructed, repaired or rebuilt according to the following specifications:

1. **Preparation of Subgrade:** The subgrade shall be prepared by excavating or filling to the required elevation of the bottom of the concrete. The subgrade shall be well drained and cleaned of all sod and organic material. Where necessary for the construction of ramps and drive approaches, the curb shall be cut full depth. Where necessary to cut or remove tree roots, adequate precautions shall be taken so as to protect exposed roots and preserve existing trees; roots shall be removed to a depth of six (6) inches below the bottom of the slab. Any material found to be unsuitable, such as muck, peat, marl, soft clay and other such materials subject to frost heaving, differential frost action, or unable to provide adequate support for surface improvements, shall be excavated and removed from the job site. Any material so removed shall be replaced with Class II granular material as specified in the current Michigan Department of Transportation Standard Specifications. All fills shall be thoroughly compacted to the required grade. The width of all cuts and fills shall be such that they conform with the final grading requirements as hereinafter stated.
2. **Slope and Width:** The surface of all sidewalks and subgrade shall have a slope of one-fourth ( $\frac{1}{4}$ ) to one-half ( $\frac{1}{2}$ ) of an inch to the foot toward the street. All new concrete sidewalks shall have a minimum width of five (5) feet. Those sidewalks constructed prior to the adoption of this Ordinance may be reconstructed to the same width, provided that in no case shall replacement sidewalks be less than (4) feet in width.
3. **Placement:** Sidewalks shall be placed one (1) foot in from the street right-of-way line, except as determined by the Township Engineer and/or public road agency.
4. **Ramps:** Sidewalk ramps shall be installed at all street intersections and constructed in accordance with plan II-28H entitled "Sidewalk Ramp Details" contained in the Michigan Department of Transportation Standard Plans, as amended.
5. **Forms:** The forms shall be of such design of steel or wood as to insure the accurate maintenance of lines and grades. Flexible strips may be used where necessary on curves. After forms are completely set in place, the contractor shall call the Building Department to determine if a form inspection is necessary before any concrete is poured.
6. **Joints:**
  1. **Expansion Joints.** Transverse expansion joints one-half ( $\frac{1}{2}$ ) inch thick shall be placed at every fifty (50) linear feet of sidewalk, and expansion joint material one (1) inch thick shall be placed between the backs of curbs and sidewalks or driveway approaches, and around all utility structures or covers. Expansion joint material shall be a pre-molded strip of bitumen filled fiber, and shall be placed at right angles to the centerline of the sidewalk and perpendicular to the surface, and it shall extend from the surface of the concrete to the subgrade.
  2. **Contraction Joints.** Insofar as possible, contraction joints shall be placed at every five (5) linear feet of sidewalk. They may be formed by the use of divider strips three-sixteenths ( $\frac{3}{16}$ ) inches in thickness or by cutting after floating to a depth of not less than one-quarter ( $\frac{1}{4}$ ) of the thickness of the sidewalk. They shall be straight, perpendicular, and at right angles to the centerline of the sidewalk. When the sidewalk abuts buildings or any special structures, joint details shall be approved by the Township Building Official.

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7. **Depth of Slab:** All concrete sidewalk, except at driveways shall be at least four (4) inches deep. All driveway approaches, and sidewalk abutting a driveway approach, shall be at least six (6) inches deep for residential and eight (8) inches deep for commercial.

8. **Materials:** All materials used in sidewalks shall conform to the Michigan Department of Transportation, 1990 Standard Specifications for Construction, Section 6.11 and the following sections, as amended.

Concrete Grade 30P, 30S, 35P, 35S	7.01
Granular Material Class II	8.02
Steel Reinforcement	8.05
Joint Fillers	8.16
Concrete Curing Materials	8.24

9. **Placing and Finishing:** The subgrade shall be thoroughly moistened and the concrete shall be deposited to the proper depth. The concrete along the edges of forms and joints shall be spaded and the concrete shall be struck off until all voids are removed and the surface has the required grade and cross section. The surface shall be floated and troweled just enough to produce a smooth dense surface, free from irregularities. All joints and edges shall be rounded to a radius of one-quarter (¼) inch with an approved finishing tool.

The surface of sidewalks shall be broomed to slightly roughen the surface. The surface of sidewalk ramps shall be textured with a course broom transversely to the ramp slope.

10. **Curing and Protection:** All walk and approach surfaces shall be treated as per the Standard Specifications of the Michigan Department of Transportation, Section 6.11.07, as amended.

The sidewalk shall be properly protected from the elements and travel for the first 72 hours, except that pedestrian traffic may be permitted after 48 hours. The contractor shall be responsible for the strength and quality of the concrete laid during cold weather and concrete damaged by frost action shall be removed and replaced at the contractor's expense.

11. **Final Grading and Cleanup:** After the concrete has set sufficiently, the forms shall be removed and the spaces shall be backfilled as previously specified. The area between the sidewalk and curb shall be graded and leveled as required to provide a slope of three-eighths (3/8) to one-half (½) inch per foot toward the curb or roadway. The area between the sidewalk and the property line shall be graded and leveled as required to meet the original ground surface. These areas shall also be left free of all rocks, concrete, roots or other debris.

12. **Permits:** The property owner or contractor shall obtain a permit from the Plymouth Township Building Department prior to commencing any work.

13. **Mudjacking:** Where feasible, the sidewalk may be mudjacked by pumping grout through small holes drilled through the concrete slab. This method may successfully repair tipped sidewalk flags that exhibit excessive joint deflection or cross pitch. Sufficient grout should be injected to ensure all voids beneath the walk are filled. Holes should be patched using a sand based pre-bagged concrete patch material and finished flush with the surrounding surface. It should be noted that repairs attempted with mudjacking that are not successful may still require removal and replacement.