

SIDEWALK REPAIR CRITERIA

The City's comprehensive sidewalk replacement program set minimum standards to help reduce potential accidents due to broken or uneven walkways. To establish sections of sidewalk that need to be replaced, the following criteria were followed:

1. **Rise or drop of more than 3/4"**
2. **Broken or cracked in many pieces throughout.**
3. **Holes more than 3/4" deep.**
4. **Badly spalled.**
5. **Open cracks more than 1/2" wide**
6. **Broken sections with loose pieces of concrete**
7. **Crumbling due to age, weather, and/or improper material used in the original construction, or for other reasons.**
8. **Side slope of more than 8% (1" for every 12")**

ADDITIONAL CONDITIONS: When one section doesn't need to be replaced, but the sections on each side do, all three sections must be replaced. When only a small area (one square foot or less) of a section is missing or broken, it will not need to be replaced provided that there is still 42" of good continuous sidewalk and there is no rise or drop,

Those sections that do not fall within the above criteria but are hazardous will be required to be replaced.

SIDEWALK SIZE: Sidewalks are to be 5' wide with the exception of sidewalks that go around trees, in which case the minimum continuous width must be 42".

SIDEWALKS IN THE TERRACE: Sidewalks that are located in the terrace between the city sidewalk and the curb will be inspected with the same criteria as the City sidewalks and may either be removed or replaced at the owner's choice.

DRIVE APPROACHES: If a drive approach is hazardous with deep holes or raised areas, or other hazards, it will be required to be replaced. If no approach is provided, but cars are crossing the terrace, an approach will be required, provided a legal driveway is permitted by the Zoning Ordinance.

STREET CORNERS & ALLEYS: The City will be responsible for the cost of all replacement of sidewalks at the street corners and where alleys cross the sidewalks. If the sidewalk is to be replaced at corners, it will be made handicapped accessible.

REQUESTING ADDITIONAL SECTIONS TO BE REPLACED: Owners of property will be allowed to request that additional sections of sidewalk that are cracked or broken, but not hazardous, or if the owner wishes to have their total sidewalk replaced. This does not include property owners receiving CDBG funding to pay for their special assessment, the owners will be restricted to the required sections only.

APPEAL PROCESS: If you feel the sidewalk does not meet the above criteria, you may appeal to the City Engineer @ (231) 724-6707. If you are still not satisfied after your appeal, you may request a hearing with the Sidewalk Review Board.

CRITERIA & SPECIFICATIONS FOR REPAIRING SIDEWALKS

MUSKEGON



West Michigan's Shoreline City
www.shorelinecity.com

CITY OF MUSKEGON
Engineering Department
1350 E. Keating Ave.
Muskegon, MI 49442

Hours of Operation
Monday – Friday
8:00am – 4:30pm

(231) 724-6707

SPECIFICATIONS FOR CONCRETE SIDEWALK & DRIVE APPROACHES

SIDEWALK: This work shall consist of a single course of concrete, plain 4" in thickness, If located in a driveway sidewalk must be 6" thick.

DRIVE APPROACHES: Must be 6" in thickness and have a flare 1/3 of the terrace width. Top must be a minimum of 10' wide with an expansion joint between the sidewalk and the approach.

CONSTRUCTION METHODS: Preparation of Subgrade: The subgrade shall be formed by trenching or filling to the required elevation. The subgrade shall be thoroughly tamped and compacted to at least 95% of the maximum unit weight.

FORMS: the forms shall be of wood or metal, straight, and free from warp and of sufficient strength to resist springing during the process of depositing concrete against them. The forms shall be the full depth of the concrete. The side forms shall be firmly staked to the required line and grade and shall provide a transverse slope of 1/4" per foot toward the center of the street.

PLACING AND FINISHING CONCRETE: The subgrade shall be thoroughly wetted and the concrete deposited to the proper depth. The concrete shall also be thoroughly spaded along the faces of the forms, and adjacent to the joints before finishing operations are started. The concrete shall be alternately tamped and struck-off with a strike board until all voids are removed and the surface has the required grade and cross section. The surface shall be floated with a steel trowel just enough to produce a smooth surface free of irregularities, All edges and joints shall be rounded to a radius of 1/4" with an approved finishing tool. The surface

shall then be brushed to slightly roughen the surface and remove the finishing tool marks.

CONTROL JOINTS: Control joints shall be constructed at right angles to the centerline of the sidewalk. They shall be perpendicular to the surface of the sidewalk, be formed by a jointer or saw cut, and shall be formed at 5 foot intervals along the centerline of the sidewalk.

EXPANSION JOINTS: 1/2" expansion joint material extending the full depth of the sidewalk shall be placed wherever the sidewalk abuts existing structures. 1/2" expansion joint material shall be placed at intervals of 100' measured along the centerline on the sidewalk. When the atmospheric temperature is below 70 degrees, and 200' intervals when the temperature is above 70 degrees Fahrenheit. Expansion joint material shall be the full width and depth of the sidewalk and placed at right angles to the centerline and perpendicular to the surface. The top of the expansion joint material shall be flush with the surface of the sidewalk.

REMOVING FORMS: All forms used for the construction of drive approaches or sidewalks, shall be removed upon curing of the concrete.

MIXING: Concrete shall be thoroughly mixed in a batch drum type mixer of approved design and capacity until it is uniform in appearance with all ingredients uniformly distributed. For mixers up to one cubic yard capacity, the mixing period shall be one minute. Fifteen seconds additional time shall be added for each 1/2 cubic yard increase in capacity of mixer. The mixing period shall not start until all materials are in the mixer.

Consistency: The consistency of the concrete mixers shall be as directed by the Engineer and will be determined by the slump cone test as

specified in the A.S.T.M., Designation C-113-58. Tests shall be made of samples taken immediately after the concrete has been placed on the subgrade or in the forms.

CLASSIFICATION: Concrete will be classified and shall be proportioned on the basis of strength requirements. The following table shows the approximate proportions of cement to fine and coarse aggregate, the minimum 28 day compressive strength lb per square inch of concrete; 3500PSI and the minimum quantity of 6 sacks per cubic yard.

PROTECTION OF CONCRETE: (a) Concrete threatened with damage from rain or frost before it has hardened shall be protected by a covering of building paper, burlap or by other approved materials and methods. (b) Temperature- See below (c) Finished concrete shall be cured using curing compound

CONDITIONS: Concrete placed when atmosphere temperature is below 40 degrees Fahrenheit shall be protected from damage by cold weather or freezing by heating the materials and protecting the concrete in accordance with the following requirements:

- 1. The temperature of the concrete during mixing and placing shall no be less than 60 degrees Fahrenheit,**
- 2. After placing and during the curing period the concrete shall be protected by an enclosure, with the surrounding air temperature within such enclosure maintained at not less than 70 degrees Fahrenheit for the entire curing period.**