

# Sidewalk Repair Manual

## CONTENTS

### SIDEWALK REPAIR METHOD - GRIND

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##### **Grind**

Concrete grinding, or horizontal saw cutting, is a method typically used to remove “stub toes” that are 1 inch (1”) high or less, perpendicular to the flow of pedestrian traffic. Prior to performing work, verify with the City Engineer to determine if grinding would be an acceptable repair method.

##### **Criteria**

Criteria for allowing horizontal saw cutting methods to remove vertical displacements on concrete sidewalks:

- A) Concrete slab must not have been previously repaired.
- B) The remainder of the panel must be free of chipped, cracked, and/or spalled concrete.
- C) Vertical displacement must not be caused by settlement of an adjacent panel.
- D) Existing concrete slab shall be at least 3 inches thick (standard thickness is 4 inches).
- E) Vertical displacement shall not exceed 1 inch.
- F) Vertical displacement shall be at an existing deep joint and/or score line of the sidewalk.
- G) Spacing width between adjacent panels must not exceed ½ inch.
- H) The finished result shall have a smooth uniform appearance and texture and leave zero point of differential between slabs of crack to both sides of the sidewalk to eliminate trip hazards the full width of the sidewalk.
- I) Repairs shall be performed so that the sidewalk surface has essentially the same or slightly rougher texture as the undamaged portion on either side of the joint or score lines. Repaired surface shall not be smooth or polished and shall have a non-slip surface. Coefficient of friction (ASTM C-1028 standard COF of .5 or above).
- J) Repairs shall be performed in such a manner as to produce a neat perimeter with no stray marks. Temporary repairs shall not mar or otherwise deface adjacent concrete.
- K) Vertical displacements of ½ inch or greater can be sawed if they meet all the above requirements.
- L) Saw cuts shall have a slope not to exceed 1:12.
- M) Grinding can only be selected if the property owner performs or has his or her contractor performs all the sidewalk repairs. The City does not contract for grinding. Repairs are either down by the Owner, his/her contractor, or by the City’s contractor. If the City’s contractor performs the work, only removal and replacement method is an option.

## **Obtain Permit**

A sidewalk permit is required to perform the work. Permits can be obtained in person from the Engineering Department, 106 Jones Street, Watertown, WI 53094 during regular business hours (Monday through Friday 8 a.m. – 4:30 p.m.) or on the Engineering Department's website (<http://www.ci.watertown.wi.us/departments/engineering>).

If you hire a contractor, the contractor will be responsible for obtaining the permit.

Stub toes are areas in the sidewalk where part or all of one square is higher than the one next to it, causing a tripping hazard for pedestrians. It may be possible to eliminate the stub toe hazard by grinding down the high edge.

Grinding repair shall not exceed 1 inch (1") vertically. Grinding repair section surface finish shall conform to the non-slip coefficient of friction per ADAAG code (American Disability Act Accessibility Guidelines or ASTM C-1028 standard COF of 0.5 or above). This can be achieved by roughening the surface with a saw blade or other approved method.

Verify with the City Engineer to determine if grinding would be an acceptable repair method. In some areas, sidewalk sections are lifted up due to the growth of tree roots. If you grind down a stub toe caused by tree roots, **the repair may only be temporary**. Grind off the stub toe so that the concrete and/or sidewalk has a gradual slope or transition. For one half an inch (1/2") of rise, grind back six inches (6"). For a (maximum) 1 inch (1") rise, grind back twelve inches (12").

## **Equipment Needed**

Hand Tools Gloves, Goggles, Hearing Protection, Eye Protection

Power Tools Masonry Grinder

You will need a masonry grinder which can be rented.

Grinding concrete is noisy and dusty. Remember to wear hearing protection and eye protection. If the sidewalk is raised one inch (1") or less and the concrete edges are solid, the concrete may be ground to remove the stub toe hazard. Sidewalks raised greater than one inch (1") cannot be ground as this would compromise the structural integrity of the sidewalk.

Areas raised in the sidewalk greater than one inch (1") are to be removed and replaced at full depth.

Request a final inspection if all posted hazards are approved to be corrected by grinding.

## **Final Inspection**

Call the City Engineer at 920-262-4040 and request a final inspection. Please provide the posted address. If the work is found satisfactory, a "Repairs are Complete" card will be left at the door, excluding businesses and rental properties.

If work is found unsatisfactory, a "Repairs Not Acceptable" card will be left at the door, excluding businesses and rental properties, listing corrections that need to be made. Another final inspection will have to be requested. Inspection cards for businesses and rental properties will be brought back to the office and filed with the corresponding posting.