

## SIDEWALK REPAIR GUIDE

Below are examples of sidewalk deficiencies as defined by Chapter 136 of the Altoona Code of Ordinances. Included with each example is a repair suggestion. Some examples may have more than one method of repair others may only have one. If you have received a letter to repair your sidewalk you will notice that the deficiency has a numerical identifier assigned to it. Match that identifier to the correct one below for guidance. Some examples include commentary that may be helpful to understand why a deficiency exists.

### A. VERTICAL SEPARATIONS EQUAL TO THREE-FOURTHS (3/4) INCH OR MORE.\*



*These pictures depict one panel being 3/4" higher than the adjacent panel. There are several reasons the sidewalk may be in this condition. The majority of time it is because there is a nearby tree that has its roots pushing underneath the walk.*

#### **Repair suggestions**

**Mud jacking:** There are individuals/companies that may be able to core drill a hole in the lower sidewalk panel and inject a concrete/mud slurry mix. When this happens the slurry will raise the panel to a point where the two panels are level. The core-drilled hole will be filled in with the slurry mix. This repair suggestion may not always be the most appropriate way to correct this issue. A “mud jacked” panel over time may settle back down.

**Raising the panel:** This is similar to “mud jacking”. This method would require you to dig adjacent to the edges of the panel to a point where you can actually access underneath the panel. When this is accomplished you can then use a pry bar or some other tool and carefully lift the lower panel up at which time you would be able to fill in the cavity underneath the panel with dirt, sand, rock or concrete mix. Lower the raised panel back into place to verify that the elevation of the panel has risen to a point where it's equal to the adjacent panel. If not even with the adjacent panel, keep repeating the process until you are able to make the two panels equal in height. As mentioned above, this suggestion may not always be the best solution and the raised panel may over time drop again.

**Replacing the panel:** This method of repair is exactly how it sounds. You would break up the concrete panel and remove it from its current location. After this is done you will need to frame up the sides of the panel that are adjacent to the grass. This will help form the edges of the panel. The actual remaining sidewalk panels would form the other two edges. The depth of the sidewalk panel is required to be 4” unless the sidewalk panel is in the driveway area, which would require the panel thickness to be 6”. If you or your hired contractor is replacing the panel there are several additional requirements that must be met such as type of concrete to use, any water valves in the concrete, etc. Please refer to the Approach and Sidewalk handout at <http://www.altoona-iowa.com/departments/building.asp> or contact the Building and Zoning Department for these requirements.

## **B. HORIZONTAL SEPARATIONS EQUAL TO ONE-HALF (1/2) INCH OR MORE\***



*This picture shows a gap of 1/2” or more between the two panels. The expansion joint material deteriorating over time usually creates this condition.*

### **Repair suggestions**

**Fill in the gap:** This is the easiest fix. You can go to your local hardware store and purchase a backer filler. This is commonly called “backer rod” which is merely a foam plastic rope like material that is very flexible. It is usually gray or black in color and comes in a variety of diameters. You take the appropriate sized “backer rod” and stuff it in the crack. Push it down far enough to where there is at least a 1/4” depth measured from the top of the “backer rod” to the top of the sidewalk. Once this is done then apply a weather resistant caulking material over the backer rod. This will help seal the gap and prevent surface water from entering into the crack. Caulking will come in a variety of colors and there is even some self-leveling caulk on the market.

Another option is to replace the entire panel as mentioned above but it will cost more in time and labor.

**C. HOLES OR DEPRESSIONS EQUAL TO THREE-FOURTHS (3/4) INCH OR MORE AND AT LEAST FOUR (4) INCHES IN DIAMETER.\***



**Repair suggestions** -There is only one-way to correct this: Replace the panel.

**Replacing the panel:** This method of repair is exactly how it sounds. You would break up the concrete panel and remove it from its current location. After this is done you will need to frame up the sides of the panel that are adjacent to the grass. This will help form the edges of the panel. The actual remaining sidewalk panels would form the other two edges. The depth of the sidewalk panel is required to be 4" unless the sidewalk panel is in the driveway area, which would require the panel thickness to be 6". If you or your hired contractor is replacing the panel there are several additional requirements that must be met such as type of concrete to use, any water valves in the concrete, etc. Please contact the Building and Zoning Department for these requirements. Please refer to the Approach and Sidewalk handout at <http://www.altoona-iowa.com/departments/building.asp> or contact the Building and Zoning Department for these requirements.

**D. SPALLING OVER FIFTY PERCENT (50%) OF A SINGLE SQUARE OF THE SIDEWALK WITH ONE OR MORE DEPRESSIONS EQUAL TO ONE-HALF (1/2) INCH OR MORE.\***



*This picture, though hard to see in detail, shows what is considered spalling. Spalling is basically a condition where the top portion of the concrete starts to pop off in pieces. There are two common reasons for this. First is the placement of salt and/or deicing chemicals on the concrete during the winter months. The salts and chemicals actually eat away at the concrete surface leaving it pitted. The second is how the concrete is finished. In order to finish concrete correctly one needs to work the concrete until a thick cream rises to the top. This creamy topping is then troweled to provide a nice sealed surface. Sometimes people will either add too much water to the concrete mix or add water to the surface of the concrete creating a thin milky type of film. Though this film will seal the concrete it will not last long. Add salt and chemicals to this and you have a rapidly deteriorating sidewalk surface. I am assuming that is what happened in this photo as you will see the panel looks new compared to the surrounding concrete panels.*

**Repair suggestions** -There is only one-way to correct this: Replace the panel.

**Replacing the panel:** This method of repair is exactly how it sounds. You would break up the concrete panel and remove it from its current location. After this is done you will need to frame up the sides of the panel that are adjacent to the grass. This will help form the edges of the panel. The actual remaining sidewalk panels would form the other two edges. The depth of the sidewalk panel is required to be 4" unless the sidewalk panel is in the driveway area, which would require the panel thickness to be 6". If you or your hired contractor is replacing the panel there are several additional requirements that must be met such as type of concrete to use, any water valves in the concrete, etc. Please contact the Building and Zoning Department for these requirements. Please refer to the Approach and Sidewalk handout at <http://www.altoona-iowa.com/departments/building.asp> or contact the Building and Zoning Department for these requirements.

**E. SPALLING OVER LESS THAN FIFTY PERCENT (50%) OF A SINGLE SQUARE OF THE SIDEWALK WITH ONE OR MORE DEPRESSIONS EQUAL TO THREE-FOURTHS (3/4) INCH OR MORE.\***

This is the same as indicated above at D. The only difference is that the depressions or "pits" are deeper and the percentage of them is less than 50% of the sidewalk panel surface.

**F. A SINGLE SQUARE OF SIDEWALK CRACKED IN SUCH A MANNER THAT NO PART THEREOF HAS A PIRCE GREATER THAN ONE SQUARE FOOT.\***



This description is pretty self-explanatory and the only correct way to fix this would be the by the replacement of the sidewalk panel.

**Replacing the panel:** This method of repair is exactly how it sounds. You would break up the concrete panel and remove it from its current location. After this is done you will need to frame up the sides of the panel that are adjacent to the grass. This will help form the edges of the panel. The actual remaining sidewalk panels would form the other two edges. The depth of the sidewalk panel is required to be 4" unless the sidewalk panel is in the driveway area, which would require the panel thickness to be 6". If you or your hired contractor is replacing the panel there are several additional requirements that must be met such as type of concrete to use, any water valves in the concrete, etc. Please contact the Building and Zoning Department for these requirements. Please refer to the Approach and Sidewalk handout at <http://www.altoona-iowa.com/departments/building.asp> or contact the Building and Zoning Department for these requirements.

#### **G. A SIDEWALK WITH ANY PART THEREOF MISSING TO THE FULL DEPTH.\***

This description is pretty self-explanatory and the only correct way to fix this would be to replace the sidewalk panel. Please see above for information on replacing a panel.

#### **H. A CHANGE FROM THE DESIGN OR CONSTRUCTION GRADE EQUAL TO OR GREATER THAN THREE-FORUTH (3/4) INCH PER FOOT.\***



**Repair suggestions** -The only way to correct this is by replacement. Re-grading the sub-grade will be required to make the panels level. There may be times where one will have to cut trees roots out in order for the panels to have a level elevation.

**Replacing the panel:** This method of repair is exactly how it sounds. You would break up the concrete panel and remove it from its current location. After this is done you will need to frame up the sides of the panel that are adjacent to the grass. This will help form the edges of the panel. The actual remaining sidewalk panels would form the other two edges. The depth of the sidewalk panel is required to be 4” unless the sidewalk panel is in the driveway area, which would require the panel thickness to be 6”. If you or your hired contractor is replacing the panel there are several additional requirements that must be met such as type of concrete to use, any water valves in the concrete, etc. Please contact the Building and Zoning Department for these requirements. Please refer to the Approach and Sidewalk handout at <http://www.altoona-iowa.com/departments/building.asp> or contact the Building and Zoning Department for these requirements.

### **OTHER ITEMS\***

**Grinding the sidewalk or patching it such as shown in the photos below is NOT a recognized and acceptable fix.**



### **Patching Examples**



## **WATER SHUT OFF VALVES**



*This picture depicts a water shutoff service cap raised above the surrounding concrete surface. This happens when the ground freezes in the wintertime and heaves the shaft and cap upward. Most of these can be set flush with the surrounding concrete by using a rubber mallet and gently tapping it back down. Some of the “stop boxes” in the community have been painted with pink paint and some have not. Staff has generated a list of properties that have this condition only. That list will be turned over to the Water Department. If you are uneasy with tapping the “stop box” down please contact the Water Department at 515-967-2454.*