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## BASEMENT FLOODING

Basement flooding is a common occurrence in some areas due to excessive rainfall and saturated ground conditions. One source of basement flooding can be from structural causes such as cracks in basement walls and floors coupled with saturated soils.

Another source of the flooding can be from the backup of sewage from municipal wastewater collection systems. This usually happens when sewers are surcharged after periods of high moisture for several days duration. Water leaks into the collection system and tends to dilute the normal domestic sewage. When the carrying capacity of the pipe is exceeded, the sewage and stormwater tend to back up into customer service lines and through floor drains into basements.

### Prevention

Basement flooding from cracks and openings in basement walls can be prevented only if the walls and floor are in good condition. Footing drains and sump pumps are desirable in preventing flooding from this source. This type of flooding is beyond the scope of this discussion.

Preventing backups from the sewage collection system can be categorized as short term and long term measures. First, the short term or emergency measures will be discussed:

1. Preparation is the key to emergency prevention of basement backups. When backup is imminent, sandbags should be placed on the floor drains and in the plumbing fixtures (toilets) to minimize the amount of water backing up into the basement. An alternative to sandbags would be a rubber plug. These are listed in the USA Bluebook catalog and can also be found at hardware stores and plumbing suppliers. The prices for 3" and 4" plugs are typically less than \$5.

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### **2. Immediately stop all water use in the household when backup conditions are imminent or are occurring!**

3. Call the city or sewer district immediately and inform them of the problem. There may be blockages, pump malfunctions or other problems that can be corrected without much delay.

Long term preventive measures are necessary if basement backups from the collection system are likely to occur. Following are suggested preventive measures:

1. Plumbing modifications may be made. Basement floor drains may be permanently plugged and a sump and sump pump installed. Basement showers and toilets can be modified to pump into the household sewer at or near ground level. Usually water will not back up into plumbing fixtures at the main floor level. The problems occur because of the lesser degree of elevation change between the basement floor and the main sewer line. Again, when sewers are surcharged, minimize the use of water as the sewers can't carry it and it will be discharged into the environment.
2. Another type of plumbing change would be the installation of check valves. This type of valve prevents the reversal of flow or backup of sewage into the basement. Your plumbing contractor should be able to obtain and install this type of valve. These may be obtained from local suppliers of water and wastewater products or plumbing supplies.

These are also listed in the USA Bluebook catalog as "plastic backwater valves." The prices for 3" and 4" valves are in the \$30-\$60 range.

Another type of valve listed is the "Sewer Relief Valve and Cleanout." This valve is installed outside the house and allows overflow

at a predetermined level, thus preventing backup of sewage into the basement. This valve is also in the \$40 range.

A third listing in the Bluebook is the "Elder Valve" which is a valve that can be manually shut off or screwed down to reduce flow. It also serves as a cleanout. The price of this valve is approximately \$80.

For a USA Bluebook catalog call 1-800-548-1234 or find online at [www.usabluebook.com](http://www.usabluebook.com).

### Cleanup

If a backup of sewage does occur, the following steps should be taken to clean up the area:

1. First, remove the remaining standing water. Materials which have been water soaked should be removed from the basement. Such items could include bedding, rugs, upholstered furniture, boxes, carpeting and padding and papers.
2. With the electricity turned off, electrical outlets should be opened and drained and allowed to dry. Duct work should also be drained and allowed to dry.
3. Walls and hard-surfaced floors should be cleaned with soap and water and disinfected with a solution of ½ cup of bleach to one gallon of water. Thoroughly disinfect any food service areas or areas where children play.
4. Wash all linens in hot water or have them dry cleaned. Steam clean all carpeting, if salvageable. If not, discard. All carpet padding should be discarded.
5. If insulation and sheetrock have become wet it will need to be removed. Allow plenty of time for drying before reinstalling insulation to prevent mildew.

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## Personal Hygiene

1. Wear rubber boots and waterproof gloves during a cleanup of sewage.
2. Wash hands with soap and water before preparing or eating food and after handling articles contaminated with sewage.
3. Avoid smoking while working in sewage-contaminated water.
4. If you have any cuts or sores which will be exposed to this water wash them thoroughly afterwards to control infection. If a wound develops redness, swelling or drainage, seek immediate medical attention.
5. Disinfect toys using a solution of 1/8 cup of bleach in 2 gallons of water.
6. Anyone receiving a puncture wound or a cut while cleaning up should have a doctor determine whether a tetanus booster is necessary.

For further information, you can contact us at the telephone number listed or call your nearest KDHE district office:

**North Central District Office - Salina**  
785/827-9639

**Northeast District Office - Lawrence**  
785/842-4600

**Northwest District Office - Hays**  
785/625-5663

**South Central District Office - Wichita**  
316/337-6020

**Southeast District Office - Chanute**  
620/431-2390

**Southwest District Office - Dodge City**  
620/225-0596

**KDHE - Bureau of Water**  
1000 SW Jackson, Suite 420  
Topeka, Kansas 66612-1367  
785-296-5506  
Fax: 785-296-0086

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## *What You Should Know*

**KDHE - Bureau of Water  
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Phone: 785/296-5506