

# COOPERATIVE EXTENSION SERVICE

Departments of  
Human Environment and Design  
Agricultural Engineering  
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## MICHIGAN STATE UNIVERSITY

EXTENSION BULLETIN E-850

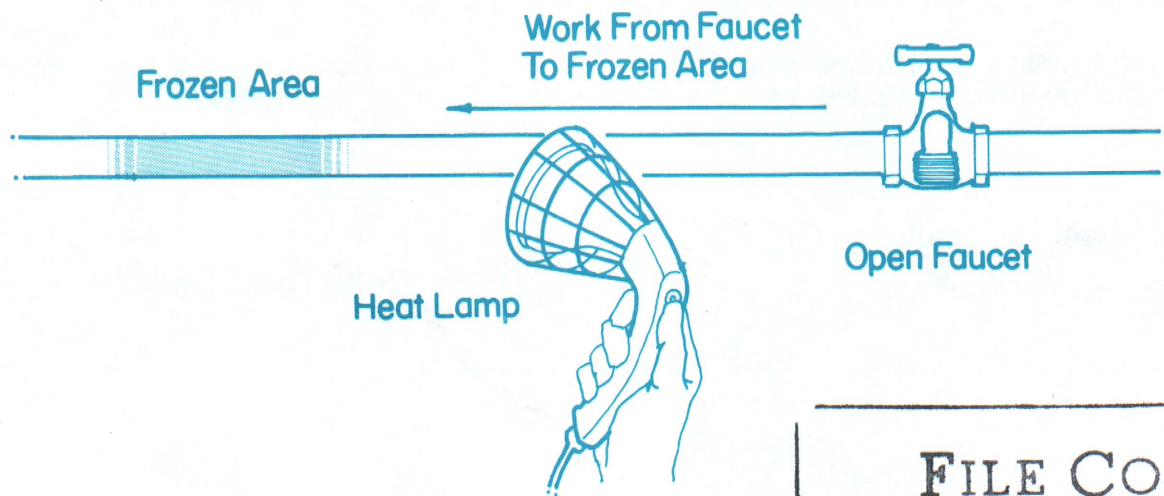
### REPAIRING LEAKY PIPES

#### Thawing Frozen Pipes

Water can freeze in pipes that pass through a cold location, such as an open crawl space or unheated cellar. Water expands when it freezes. Unless the pipe through which it runs also expands, it will burst. Insulation gives a pipe some protection at low temperatures but may not prevent freezing. To keep a pipe from freezing, wrap electrical heating cable around it -- one turn every 2 feet -- then cover the pipe with insulation to conserve the heat. Plug in the cable when the temperature drops below freezing. The same cable device can be used to thaw a pipe.

There are other effective thawing methods. One of the best is pouring boiling water over rags wrapped around the frozen pipe. Heating with a propane torch works quickly, but take care that steam pressure does not burst the pipe. Do not heat a pipe to a higher temperature than your hand can stand.

When thawing pipes with a heat lamp, hair dryer, household iron, or propane torch, always work from an open faucet toward the frozen area. This will keep steam from being trapped by ice and bursting the pipe. With the faucet open, you can see when the ice has melted. Wear gloves to avoid possible shock when using any ungrounded electrical appliance outdoors or near grounded water pipes.



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FIGURE 1. PROCEDURE FOR THAWING A FROZEN PIPE

## Insulating Pipes

Pipe insulation gives two kinds of protection. It will keep cold-water pipes from sweating in warm weather and will reduce heat losses from hot-water piping as well. It comes in a number of forms. The type easiest to use and effective for cold-water pipes is a liquid material containing finely ground cork. This is brushed on in one or more applications to build up the necessary thickness. Often the liquid or paste is asphalt which is messy to handle and does not look good.

More effective is a self-sticking tape that has special insulating qualities. Several versions are available. The putty-like tape is wound spirally around the pipes (see illustration). It is easily formed around fittings and makes a neat installation.

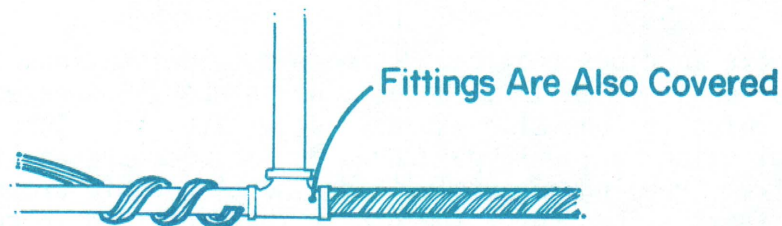


FIGURE 2. A PIPE WRAPPED WITH SELF-STICKING TAPE

Another kind that works well: Asbestos tape wrapped over paste applied to the pipes. At fittings, the tape is soaked in the paste and molded in place.

Excellent insulation is obtained with 3-foot-long plastic foam, air-cell asbestos, wool felt, or fiber glass pipe jackets. The thick insulating sections are split so they can be slipped over straight pipe runs.

Regular blanket insulation can be cut in strips and wrapped around the pipe. Peel back the insulation so the asphalt paper can be lapped and taped.

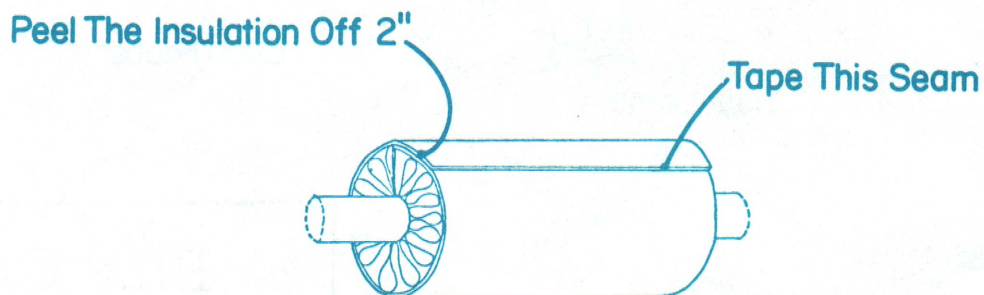
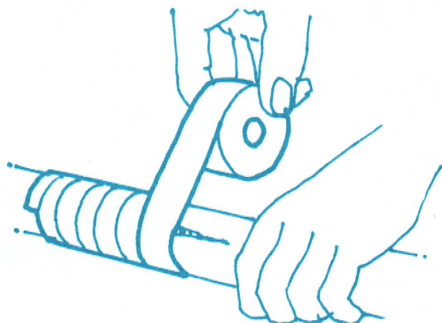


FIGURE 3. INSULATING A PIPE WITH BLANKET INSULATION

## Leaking Pipes

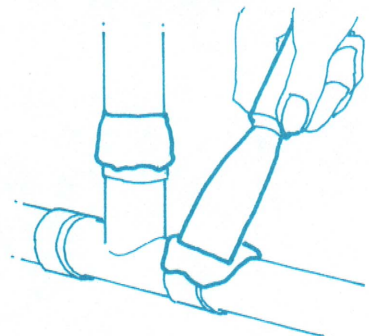
If the pipe does freeze and cracks for several inches or more a new section will be needed. This usually requires the services of a repairman who has tools and equipment.

Sometimes a small hole develops from freezing or other reason. These small holes can be repaired as shown:



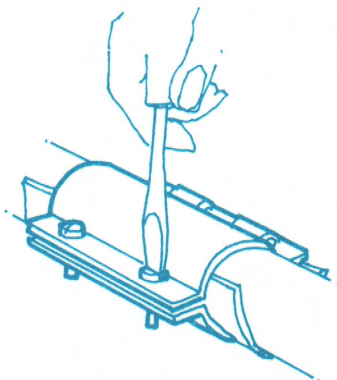
Tape wrapped tightly around a small leak will serve as a temporary repair.

FIGURE 4(a) FOR VERY SMALL LEAKS



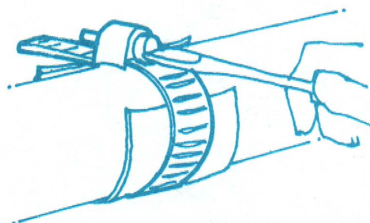
Epoxy paste seals breaks around joints. Water must be off; pipes dry and clean.

(b) EPOXY USUALLY COMES IN TWO TUBES AND MIXED AS IT IS USED.



Pipe clamp bolted over a rubber pad seals larger cracks permanently.

FIGURE 5. REPAIRING LARGER LEAKS IN PIPES



Hose clamp compressing a rubber pad can cure pinpoint leaks or cracks.

Material obtained in part from Complete-Do-It-Yourself Manual published by Readers Digest.

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*Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8, and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Gordon E. Guyer, Director, Cooperative Extension Service, Michigan State University, East Lansing, Michigan 48824. IP-10M-5:75-UP*

