



Pinhole Leaks

Frequently Asked Questions

DID YOU KNOW?

Blue-green areas on copper pipes are an indication of corrosion, but not necessarily of pinhole leaks

Less than 2% of BCDES' customers have reported pinhole leaks

Pinhole leaks do NOT affect water quality

WHAT ARE PINHOLE LEAKS ?

Pinhole leaks are tiny pits of corrosion inside copper water pipelines that break through the wall of the pipe. Blue-green areas on copper pipes are an indication of corrosion, but not necessarily of pinhole leaks. Some corrosion, as evidenced by blue-green areas, is caused by a pipe being located in a humid environment. An example of this is a cold pipe "sweating" in the summer time.

WHY ARE METAL PIPES USED IF THEY CORRODE?

Metals used in plumbing possess a unique combination of strength, durability, corrosion resistance and low cost. In most cases, these metals retain these characteristics through decades of use. Materials that have failed in practice are no longer used. Other metals which do not corrode significantly, such as gold, are too expensive for common use.

ARE PINHOLE LEAKS A COMMON PROBLEM?

Pinhole leaks occur in water systems throughout the world and are a challenge. In the past ten years, less than 2% of BCDES' customers have reported pinhole leaks.

WHAT CAUSES PINHOLE LEAKS ?

Although research has been conducted, scientists have not yet discovered why pitting that results in pinhole leaks occurs. "Pitting" happens when there is excessive corrosion of a small area on the interior pipe surface, causing a pinhole in the pipe. There is usually no consistent pattern to help identify the cause. Pinhole leaks can form singly, in patterns or at random along a pipe. They can form in some sections, but not others, of the same pipe in the same house.

National experts currently think that pitting in pipes can start from many factors, including:

- substandard pipe manufacturing
- improper installation
- improper electrical grounding
- excess plumbing flux

Once pitting starts, the reaction between the water and the copper pipe contributes to the rate of pinhole growth.

"The water provided by BCDES meets and exceeds all federal and state regulations."

Butler County Department of Environmental Services
130 High Street
Hamilton, OH 45011
www.butlercountyohio.org/des

"We're More Than Water"



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DID YOU KNOW?

You can limit damage by turning off water at the main valve in your house when leaving for an extended period of time

Water alone does NOT cause pinhole leaks

Scientists cannot explain why pitting that results in pinhole leaks occurs

WHAT IS BCDES DOING TO REDUCE PINHOLE LEAKS ?

While we may never know the exact cause, BCDES has been working on the problem to reduce pinhole leak occurrence in our system. We have gathered water chemistry data, information and pipe samples from customers who have pinhole leaks. We have compared this data to information from other utilities that have experienced pinhole leaks. We have also worked with the Ohio EPA, the city of Hamilton and other experts to identify specific actions that may reduce this problem. We continue to participate in nationwide surveys and research projects.

Experts have advised BCDES to add a low dose of sodium carbonate, a common water treatment additive, to increase the buffering capacity of the water. Buffering capacity is the resistance to change in pH values, or pH stability. The pH level is a measure of how acidic or alkaline a substance is. The higher the buffering capacity, the more resistant the water is to change in pH. Water with a stable pH is more likely to create a thin calcium layer inside the water lines. Water is naturally corrosive to metals, and a calcium layer can be a good protective barrier. Unfortunately, this is no guarantee. Pinhole leaks can still occur in copper pipe, regardless of the buffering capacity of the water.

IF MY NEIGHBOR HAS EXPERIENCED PINHOLE LEAKS, DOES THAT MEAN I WILL TOO?

Scientists have not been able to explain why pitting occurs in one section of pipe but not in others, even when the pipe is located within the same home or neighborhood.

WHO IS RESPONSIBLE FOR REPAIRING PINHOLE LEAKS AND RESULTING DAMAGE?

The customer is responsible for the cost of repair and the damages resulting from leaks occurring in their home and in the service line from the meter to the house. BCDES is responsible for the operation, maintenance and repair of the water system up to and including the meter.

WHAT CAN HOMEOWNERS DO TO PREVENT PINHOLE LEAKS?

Currently, there is no way for a homeowner to prevent a pinhole leak. However, there are a few things a homeowner can do to limit potential damage caused by pinhole leaks.

- Turn off the water at the main valve in your house when leaving for an extended period of time.
- Look for leaks regularly.
- If a pinhole is found, patch the leak using a clamp found at local hardware stores or call a plumber.
- Know what your homeowner's insurance covers. Don't be surprised after a leak that your insurance does not cover water damage from a leak or that it does not cover actual replacement cost. Have a conversation with your insurance agent in advance of a water damage claim so that you are clear about your coverage.

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