



Who is Choosing Copper Now

Copper has been the preferred material for underground water service lines for the past 50 years because of its reliability, durability and longevity, according to a 2010 report conducted by the Copper Development Association (CDA) on the material usage for water service lines¹.

When the first study was conducted (1964), copper tube accounted for 79 percent of the water service line installation, followed by galvanized steel (13 percent), cast iron (6 percent) and plastic (2 percent). In the years that followed, plastic usage saw a steady increase to approximately half of all utility installations. It was first used as a replacement for cast iron and galvanized steel; and later, in the mid 1980s, it was mainly used because of its generally lower cost per foot.

However, since 2000 more utilities—especially those in large northeastern, Midwest and southwest cities—have returned to copper water service tube as their standard because of the reasons cited above, as well as with specific operational concerns with plastic water service that had been installed. These risks include:

- premature failure due to oxidative degradation in underground potable water systems treated with an oxidizing disinfectant, like chlorine
- the permeation of outside contaminants, like hydrocarbons, fuels, insecticides and other organics through the pipe wall and into the treated potable water
- leaching organic and unknown compounds from the pipe wall into the potable water conveyed

By 2009, 78 percent of the water utilities installed only copper service lines, a trend that is expected to continue.

While scheduled replacement programs were triggered by the 1991 Lead and Copper Rule, some lead service lines are still buried within the aging water infrastructure of the country. A risk that with one change of the water supply, or water treatment, citizens can be exposed to unsafe levels of lead in their drinking water.



Photo credit: Madison Water Utility

The Replacement Era

The decisions that city officials and homeowners make and the materials that they select will have consequences long into the future. They could choose the “short-term, money-saving option” that has brought with it issues of cracks, leaks and water loss, or they could choose to make an investment by selecting what nearly 80 percent of all utilities choose for service lines, copper.

Municipalities Choosing Copper

Many municipalities across the country have chosen copper because of its corrosion resistance, ease of installation, join-ability, reliability, recyclability and safety.

¹ Irwin P. Sharpe Et Associates. “Underground Water Service Lines – Material Usage Trends 1965-2009.” Copper Development Association (July 2010): 5-6.



Photo credit: Saint Paul Regional Water Services

Kentucky (Louisville)

Louisville began replacing its lead service lines with copper pipes in the late 1990s as part of a scheduled lead replacement program. The city will replace approximately 1,000 lead service lines in 2016. The goal is to finish replacing all the lead lines by 2025.

Michigan (Lansing and Flint)

Lansing is nearing the end of a large-scale lead replacement project to replace about 14,000 lead water service lines. The program is expected to be completed in 2017.

Flint is beginning a program to replace all of the city's lead and lead-affected service lines with copper.

Wisconsin (Madison and Milwaukee)

Madison replaced more than 8,000 of its lead lines with copper from 2001–2011 after discovering lead levels over the federal limit. Instead of making minor changes and pushing a potential problem to future generations, city officials took action despite public pushback.

The city of Milwaukee has also begun to remove all lead pipes or laterals and replace them with copper. It is estimated that the city has about 70,000 lead service lines.

Minnesota (St. Paul)

With lead levels above the federal limit, St. Paul is looking to replace all of its 14,000 lead water service lines with copper – a move they hope to complete over the next two decades. The project is currently ongoing. Initially, they were required by the EPA Lead and Copper Rule to remove 7 percent of the lead lines for three consecutive years, but decided to continue the replacement project to ensure no further contamination.

Washington (Spokane)

Spokane opted to replace its remaining 486 lead lines with copper over the next two to three years. This makes up less than 1 percent of the city's 75,000 service connections. Spokane had nearly 1,000 lead service lines at one time, but the city opted to replace them as they were uncovered during work on the system.

More Information

Visit www.CopperServiceLines.org to learn more about why copper is the preferred material for water service lines.