

## Sanitizing Procedures for Water Pipes

### DISINFECTION STANDARDS HELP GUARD AGAINST LEGIONELLA

#### WHAT'S IN YOUR DRINKING WATER?

One of the biggest challenges with drinking water systems is to control the growth of bacteria on the inside of the water pipes. These growths, known as *bio-films*, are thin layers of bacteria that attach to the pipe walls and then build upon themselves to create a hard, plaque-like substance. As they grow, they trap nutrients and other materials which promote the growth of Legionellosis and other waterborne pathogens within them. Left uncontrolled, these growths pose a significant risk to the public health.

How do these bacteria enter the system? Some of the causes are new construction, water pipe repairs, renovations, water main failures, and inadequate disinfectant levels in the water supply. Just because a pipe is *new* doesn't mean that it's *clean*. New pipes pick up contaminants while they're sitting at a job site waiting to be installed. They collect dirt from the ground around them, contaminants from the air, small pieces of waste material from the installation process, and bacteria from the workers performing the installation. Once water enters these pipes, the contaminants they carry can become building blocks for corrosion and waterborne pathogens.

#### COMPLYING WITH THE AWWA C651-14 DISINFECTION STANDARD

The best way to avoid these issues is to thoroughly clean and sanitize pipes prior to placing them into service. American Water Works Association (AWWA) Standard C651-14 provides a set of essential procedures for disinfecting new and repaired piping. These processes apply to all new construction, changes to existing structures (repairs, renovations, and extensions) and in cases where pipes are being recommissioned after having sat dormant for a period of time.

To comply with this standard, Solid Blend recommends disinfecting pipes using a chemical effective at killing bacteria and other molecules by oxidizing their cells. The process begins by flushing the pipes with water to remove loose dirt and debris. The pipes are then filled with water that's been blended with the correct amount of disinfectant needed for the volume of pipe being treated. The chemical is then left to stand for a period of time, during which the residual levels are monitored to ensure the disinfectant is maintained at effective levels. The treatment ends when the level of disinfectant remains constant throughout the entire test period. Once that happens, the system can be flushed for a final time, taking care that the disinfectant from the treated pipes is neutralized before being released into the sanitation system. At this point, the system will be refilled and analyzed for waterborne pathogens to validate the success of the disinfection process. Once the disinfection is validated, the system can be placed into service. The final step is then to follow your Water Management Plan to document the disinfection process, record the actions taken and validate that they were successful. If you're not required to have a Water Management Plan, you should still document the disinfection process, the actions taken and the validation of the process.

The AWWA disinfection standard has been proven to be very effective in disinfecting water pipes, inactivating pathogens like Legionellosis, and helping to prevent the formation of bio-film. However, it's also a complex procedure that requires the right knowledge and equipment. We suggest that you engage an expert to ensure that the process is managed correctly. If you have questions or need help, Solid Blend is ready to assist.