The endless supply of water knowledge, solutions and support
Committed to water quality for commercial potable water systems

Seventy-one percent of the Earth is covered with water. While essential to the planet and life, water hygiene remains a challenge, and at times, a significant health threat. Viega is helping to address the challenge with the knowledge and solutions that engineers need to ensure water quality for commercial potable water systems.
The challenge

Each year, an estimated 56,000 to 113,000 people are infected with the Legionella bacteria in the U.S.* Estimated fatalities due to Legionella are around 4,000 annually.

Legionnaire’s disease is a severe, often lethal, respiratory infection, caused by the Legionella bacteria. Waterborne pathogens like Legionella rank among the top causes of outbreaks in public water systems in the U.S. Legionella bacteria are found naturally in the environment, usually in warm, stagnant water—in domestic potable water plumbing systems, dental equipment, cooling towers, hot water tanks, decorative fountains and pools and spas.

Legionella bacteria that reside in stagnant water conditions will flourish within a broad temperature range, typically 68°F to 122°F, as they’re largely undisturbed and allowed to colonize without disruption. Because bacteria multiply exponentially every few minutes, undisturbed sections of the piping can be the source of Legionella contamination for the entire system. Hospital buildings and senior facilities have complex water systems, and many people in hospitals already have illnesses that increase their risk for Legionella infection. Large hotels and hospitality centers, as well as educational facilities and college dormitories, are especially susceptible to waterborne pathogens, as the buildings are not always continuously occupied year round, making the conditions more conducive to Legionella colonization.


5,723 Number of U.S. Registered hospitals (AHA 2012)

99K Public elementary and secondary schools (National Center for Education Statistics 2012)

52,887 Hotel properties (American Hotel & Lodging Association 2014)
Our **solution**

Viega is committed to water quality and microbial reduction through plumbing design. Design strategies like recirculation, piping fixtures to minimize stagnation and reducing dead legs will make conditions inside the plumbing system less favorable for microbial colonization.

Increasing emphasis on building water hygiene and Legionella prevention from ASHRAE Guideline 12 and ASHRAE Standard 188P has set the stage for innovative plumbing solutions from Viega.

Our theory in plumbing design is to maintain flow and temperature of water inside a plumbing system. These two conditions can reduce the risk of microbial colonization.

**Designed to address water stagnation and water temperature**

**Design strategy**

Dead legs can result in stagnation, because the water trapped in a dead leg is not subject to flow for extended periods and not exchanged with fresh water. Once stagnant, water temperatures will reach that of the surrounding environment, which, in most cases, lies exactly in the temperature range conducive to Legionella colonization.

However, series and ring installations can help minimize dead legs and promote flow through seldom-used fixtures up to the point of connection.
Series (Daisy Chain) Installation

Using flow-through fittings in a series installation compared to standard branch-and-tee, moves the tee closer to the fixture, reducing the potential for stagnation in the supply lines of unused fixtures.

- Circulates supply water (from operating a fixture) within inches of other unused fixtures
- Every time a fixture is operated, fresh water flows through the supply piping of every fixture upstream of the fixture used
- Periodically operating the fixture farthest from the riser can reduce stagnation in the supply piping to all fixtures in the series
- Placing the most frequently used fixture at the end of the series can significantly reduce stagnation

Ring Installation

Ring installations utilize the same flow-through fittings and operate by the same principle—operating a fixture circulates fresh water through the supply piping of other unused fixtures.

- Every time a single fixture is used, fresh water flows through the supply piping to every other fixture in the same ring
- The use of any fixture, regardless of its location in the ring, can minimize dead legs and reduce stagnation for all fixtures on the ring

According to ASHRAE Guideline 12

“Where practical in health care facilities, nursing homes and other high risk situations, cold water should be stored and distributed below 68°F, while hot water should be stored above 140°F and circulated with a minimum return temperature of 124°F.”

“Where practical in other situations, hot water should be stored at temperatures of 120°F or above.”

According to ASHRAE standard 188P draft 4


The standard is intended for use by building owners and managers and those involved in the design, construction, installation, commissioning, operation, maintenance and service of centralized building water systems and components.
Innovation that helps make easy work of water quality

Viega is committed to improving water quality, reducing stagnation points, increasing flow through seldom-used pipes and reducing the risk of waterborne pathogens. Each solution offers a professional appearance and is constructed with the same trusted Viega Zero Lead materials.

NEW! Viega ProPress Double Drop Elbows

This unique fitting keeps fresh water close to each fixture. The fitting will allow flow up to the point of connection, even if the fixture is not being used.

- Improves water quality by reducing stagnation
- Minimizes dead legs between tee and wall penetration
- Used in series or ring installations
- Can be used in hot or cold water systems
- Threaded fixture connections
- Integrated mounting plates
- Patented Smart Connect® feature, the only guaranteed method in the industry to verify secure pipe connection

NEW! Viega ProPress Venturi Press Insert

This fitting induces flow in remote, seldom-used fixtures using the same principle used to balance single loop radiant systems.

- Improves water quality by reducing stagnation
- Manipulates pressure to alter the path of least resistance and induce flow
- Reduces stagnation in supply piping of seldom-used, individual fixtures
- Can be used in hot or cold water systems
- Installed vertically or horizontally
- Installed between Viega ProPress tees
- Can be used with Viega ProPress Double Drop Elbows to supply remote fixtures while promoting flow
EXCLUSIVE! VIEGA SmartLoop™ System

Viega’s proprietary internal recirculation system keeps water hotter longer, reducing water waste, increasing energy savings and maintaining temperature. This system uses the supply riser to insulate the internal recirculation line and is perfect for long or tall structures such as hotels, schools or hospitals.

- Lowers heat loss associated with the return line of a conventional recirculation system
- Requires fewer fittings and supports
- Saves time on installation
- Eliminates the need for a separate return pipe
- Eliminates return pipe core drilling
- Eliminates fire caulking and insulation
- Installed vertically or horizontally
- Can save up to 40% in energy and water consumption
- No solder or flame
- Resistant to corrosion and dezincification

Continually Improving Upon Water Quality

Viega is a true innovator among imitators. It shows in our SmartLoop System, in our Venturi press insert, our Double Drop Elbows—and in our long-term commitment to water quality, education and design strategies.

Never satisfied with “good enough,” Viega is ever innovating and improving upon the best, to help engineers excel at their jobs, and help improve the quality of water hygiene worldwide.
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