

# Keep Legionella in check while keeping your employees safe



Legionella is a bacteria that is found in many places but has ideal growth conditions in plants where the temperature in several places is between 25-60°C. Legionella can, by inhalation of atomized water (aerosols), for example, during showering - cause both Legionnaires' disease (lung disease) and Pontiac fever (flu-like fever disease). Legionnaires' disease can be fatal especially for people with weakened immune systems.

## Legionella growth has several causes

- Dead ends with stagnant water
- Circulation of the water is hindered by lime, sludge, rust etc.

Pipe Center Instruction 017 (Danish) has made a table of the risk of bacteria formation and Legionella conditional on the water temperature, see the table.

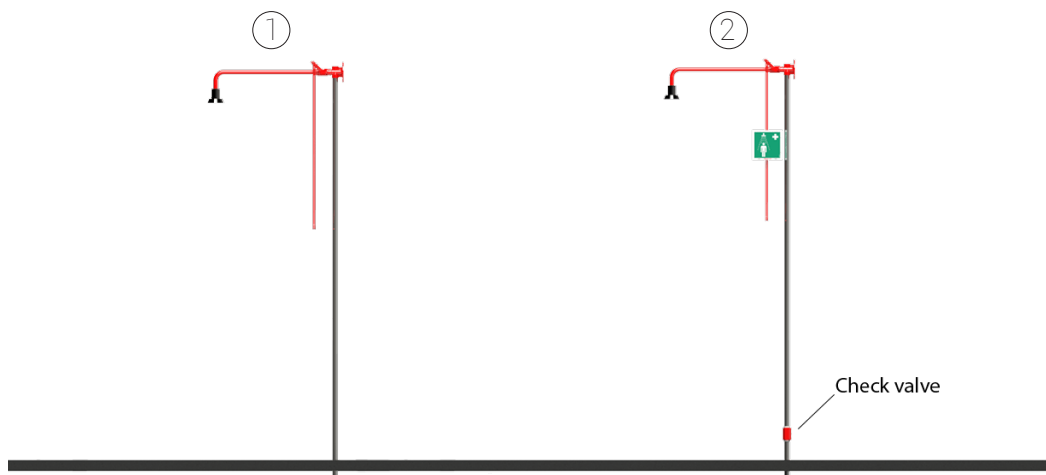
Temperature	Effect on legionella growth
Under 20°C (68°F)	Legionella can survive, but most often in a resting state (Legionella can survive in an ice cube)
20°C–50°C (68°F–122°F)	Legionella can grow - the optimum temperature level is 35°C to 46°C (95°F-114,8°F)
Over 50°C (122°F)	Legionella can survive, but no growth occurs
55°C (131°F)	Legionella dies within 5-6 hours
60°C (140°F)	Legionella dies within half an hour, but there is an increased risk of calcification
66°C (150,8°F)	Legionella dies within 2 minutes

# Conventional ways of avoiding legionella

There are two common ways of avoiding the risk of legionella buildup.

1. A standard Emergency Shower installed in a ramification which requires a weekly flush. If legionella occurs, there is no way of protecting the main pipe from contermination.
2. A solution that prevents legionella from spreading to the main pipe. A check valve is installed right before the T-piece, and prevents stagnant water, from running back into the main pipe.

OBS: According to the EN 15154 as well as the ANSI Z358.1 norms, emergency showers should be flushed with fresh water. This to clear the supply line for any sediment build up and minimize microbial contamination due to stagnant water. Further, this will verify operation of the unit. The test is recommended to be done weekly.



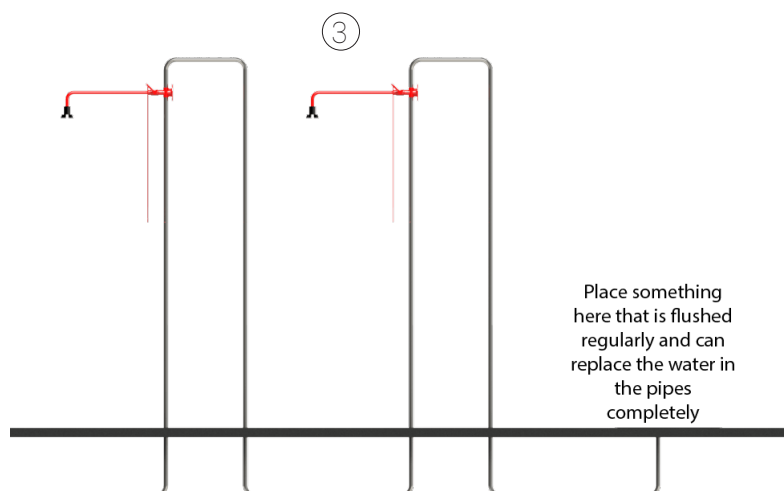
## The optimal way of avoiding legionella

BROEN-LAB recommends the following solution where, there is a constant flow due to this recirculating installation. This ensures that there never is dead water by the ball valve, which unables the legionella bacteria to build up.

This solution comes in a version for 3/4" pipe, which is optimal for smaller buildings, where there aren't many emergency showers and therefore no risk of loss in water pressure.

This solution can be installed in existing buildings, which is a benefit. The emergency showers can be installed on a sub pipe, and several shower could be connected, as long as the last product on the line is something, that is flushed regularly. It could be a toilet or something equal, as long as it is provides enough water to drain the system.

The solution also comes in a version for 1 1/4" pipe, which is optimal for bigger buildings, where there are several emergency showers and also a firehose installed on the main pipe. By installing the emergency shower directly on the main pipe you can have several showers running without losing any pressure.



## Legionella-safe range based on piping dimension 3/4"

This range is optimal for smaller buildings, where a loss of water pressure isn't a risk.



Wall mounted body shower

Product number: 17 544 009



Wall mounted eye/face shower

Product number: 17 543 009

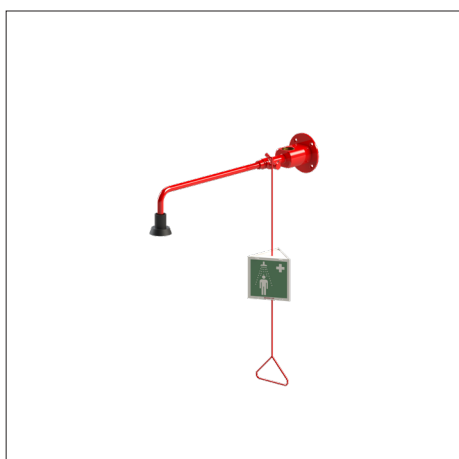


Wall mounted combination shower

Product number: 17 552 009

## Legionella-safe range based on piping dimension 1 1/4"

This range is ideal for bigger buildings. It can be placed directly on the main water supply, to ensure that there won't be any loss in water pressure even with multiple emergency showers and a fire hose on the same pipe.



Wall mounted body shower

Product number: 17 549 009



Wall mounted eye/face shower

Product number: 17 548 009



Wall mounted combination shower

Product number: 17 547 009

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BROEN-LAB develops, manufactures and sells Laboratory Fittings, Emergency Shower Systems and Eye Wash Systems into a broad spectrum of laboratories and industrial locations; sectors include Pharmaceutical, Food&Beverage and Academia. Our expertise and product quality ensure optimal solutions compliant to all relevant international norms setting new standards in risk mitigation in modern research and development facilities.

BROEN-LAB offers solutions that ensure the functionality, compliance, hygiene, durability and safety are of the highest priority. For more than 50 years our products have been integrated into a wide variety of workplaces, laboratories, hospitals and industrial locations, with features that are assessed and designed to be flexible, durable and compliant offering a broad range of options tailored to each location. This inherent design integrity provides confidence in the solution adopted wherever in the world these are applied.

BROEN-LAB is a collaboration partner in the design and layout of your next laboratory and it's integrated safety



### **BROEN-LAB A/S ISO 9001 certification**

In September 1991 BROEN-LAB A/S was certified according to ISO 9001 as one of the first Danish companies. The certification was carried out by Bureau Veritas, Denmark, for our Danish site in Assens.

The quality management system of BROEN-LAB A/S now complies with detailed specifications laid down by the internationally acknowledged EN ISO 9001:2015. This certification will further contribute to reputation for quality and reliability of BROEN-LAB A/S.