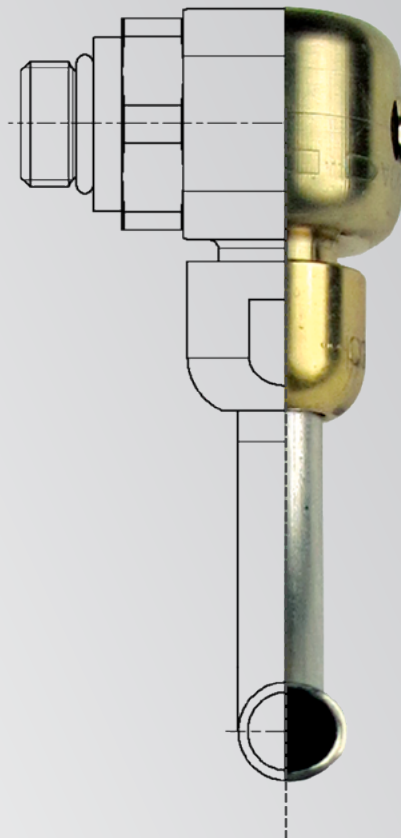




Drinking Water Hygiene. Drinking Water Sampling.



■ made
■ in
■ Germany

H

SAFE WATER

IS

OUR PRIORITY.

Drinking water hygiene and drinking water sampling - H

Drinking water, as the most important food, occupies a high status in the European legislation. It is intended for human use and consumption and thus its particular protection is an obligation. The European Drinking Water Directive 98/83/EC and the German Drinking Water Ordinance stipulate the legal requirements for the special protection of drinking water. This means drinking water systems must be planned, built and operated in such a manner that hazards and illnesses are not caused by the installation. This applies to the complete water supply facility - from water generation to the actual outlets - no matter if it affects steady, mobile or temporary systems.

The German Drinking Water Ordinance 'Ordinance on the quality of water for human consumption' was passed on 21 May 2001 and contains provisions for the protection of drinking water. On 1 November 2011, the first ordinance to amend the Drinking Water Ordinance came into force with the aim of increasing consumer protection and safeguarding the high quality standards for drinking water in Germany.

A second ordinance to amend the Drinking Water Ordinance became effective on 14 December 2012. This amendment included additional and stricter provisions regarding legionella parameters and the materials used in drinking water systems.

Materials

Section 17 of the drinking water ordinance defines - additionally to the generally accepted rules of engineering - that all materials have to conform to the requirements of the German Federal Environment Agency. The positive list of the Environment Agency contains all allowed materials in drinking water systems. Requirements for copper-zinc alloys are especially high.

Drinking water hygiene/ sampling

The Drinking Water Ordinance prescribes regular, systemic inspections for microbiologic parameters for all public or commercially used high-duty systems in the terms of the DVGW Code of Practice W 551. Legionella in particular poses a significant hazard to human health. Thus, special regulations prescribe limits for the presence of legionella in drinking water installations.

Safety devices

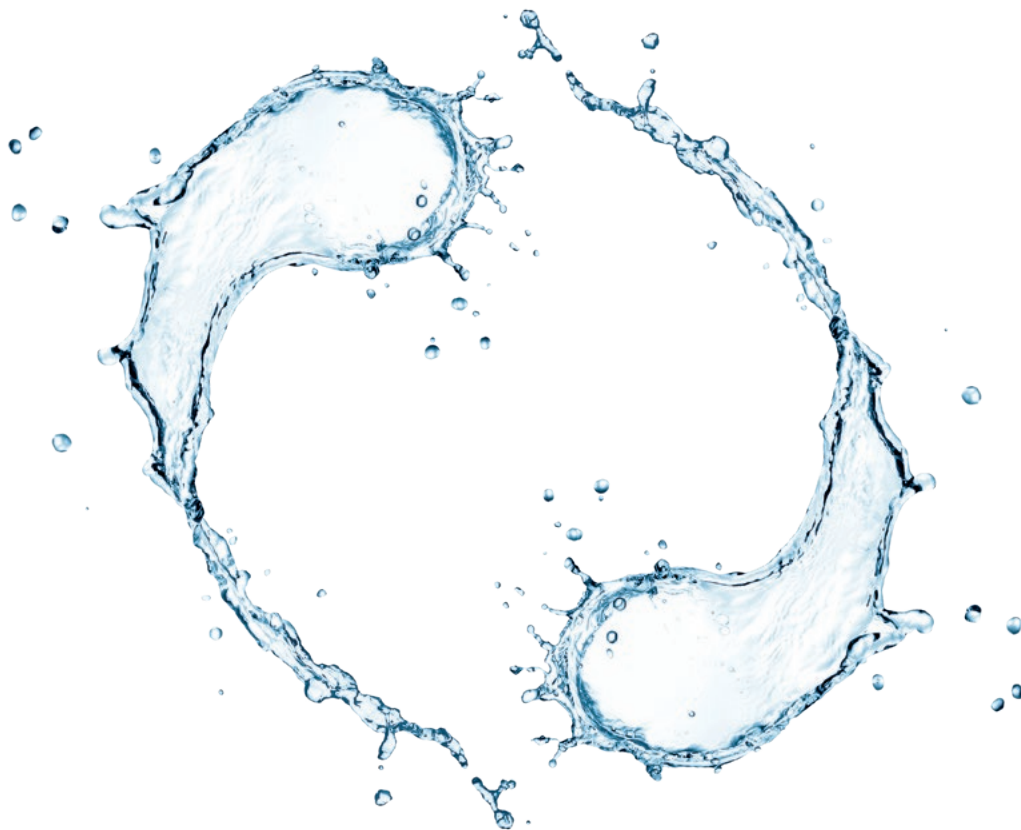
Paragraph 17 of the Drinking Water Ordinance determines the necessity of suitable safety devices acc. to DIN EN 1717 if a drinking water installation is connected with devices that are not self-secured or if it is connected to a conduit for non-potable water. You find these products in our category „mobile drinking water supply and safety devices“.

Sampling of Drinking Water

The European Drinking Water Directive 98/83/EC and the German Drinking Water Ordinance stipulate the legal requirements for the special protection of drinking water. This means drinking water systems must be planned, built and operated in such a manner that hazards and illnesses are not caused by the installation. Current standards and regulations set by the Federal Environment Agency and the DVGW also deal with this issue. Maintaining an overview of all the regulations is often a challenge in and of itself.

Often, a contamination of drinking water results from a non-compliance of technical regulations or inadequate control and activities for drinking water hygiene. Microorganisms like legionella, pseudomonas aeruginosa or E.coli occur most frequently.

Recent findings show, that despite accurate water treatment and processing, a re-appearance of microorganisms in drinking water installations is possible if suitable conditions for a poliferation of these organisms are available. Those conditions may emerge from planning or operating the drinking water system.



Which Drinking Water Systems have to be tested?

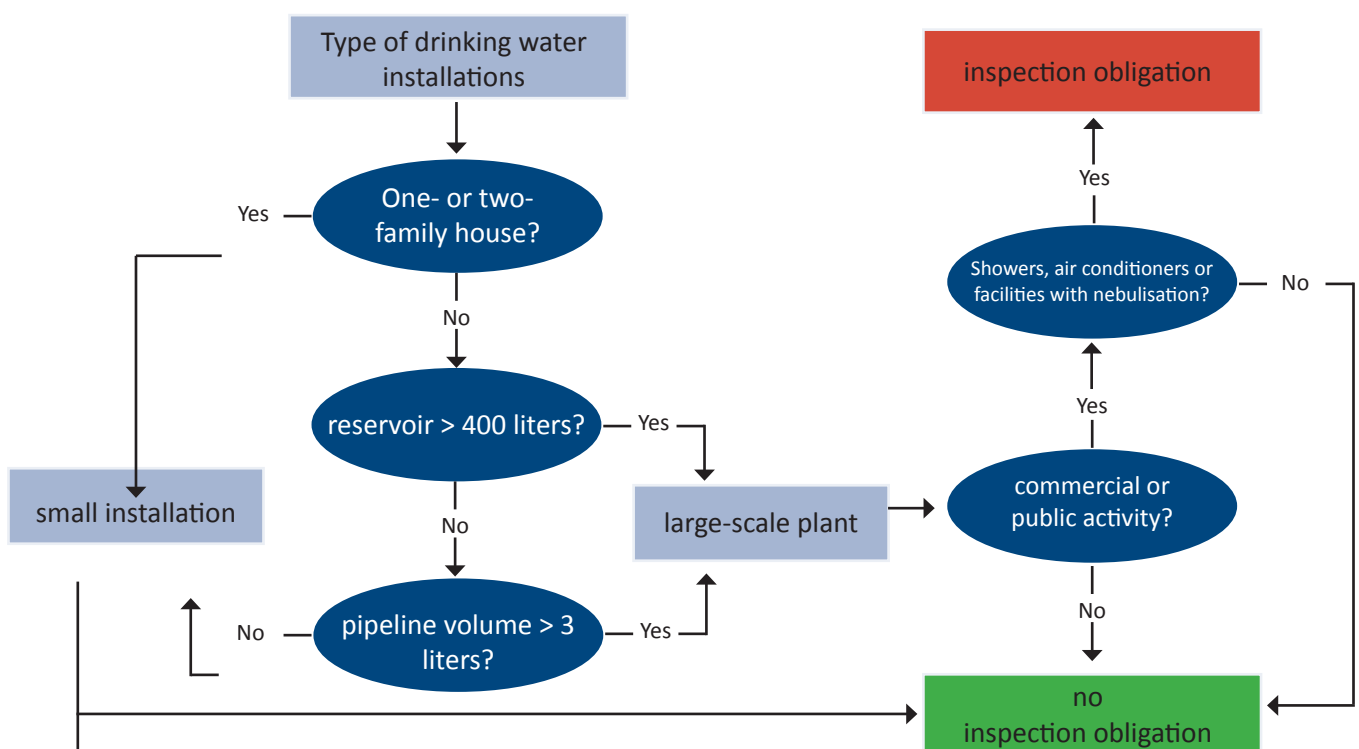
The Drinking Water Ordinance prescribes regular, systemic inspections for legionella for all public or commercially used high-duty systems in the terms of the DVGW Code of Practice W 551. The term 'systemic' makes clear that the inspection procedure does not involve the determination of a lack of legionella at all individual outlets, but rather a sample test to determine possible contamination with legionella in parts of the drinking water installation that can have an influence on a larger number of outlets, in particular in the central parts of the installation such as the distributor, drinking water heating system or the circulation lines.

A second ordinance to amend the Drinking Water Ordinance became effective on 14 December 2012. This amendment included additional and stricter provisions regarding legionella parameters and the materials used in drinking water systems.

Sections 5 and 6 of the drinking water ordinance determine the microbiological and chemical limits of substances in drinking water. But not only limits were redefined - the regulations have redefined the periods of tests as well as the places of tests. Regular water samplings and their test are mandatory.

Affected are apartment buildings, schools, hotels, hospitals, housing associations, daycare centers and sport centers. According to the DVGW code of practice W 551 such a large scale plant is characterized by a water heater containing > 400 litres and or possesses a pipeline volume > 3 litres. Public buildings have to be tested annually, commercial buildings have to be tested all three years.

In Germany, drinking water is protected by various safety systems on its journey from the water supply works to the point of delivery in a building system. The operator of the system is responsible for the quality of the drinking water from the municipal point of delivery (water meter) through to the actual outlet point (such as a tap). The operator can be criminally prosecuted for non-adherence to the legal standards. The operator or proprietor of the drinking water system is therefore responsible for proper and correct inspection and, in the event of positive indicators in testing, for adopting suitable measures.

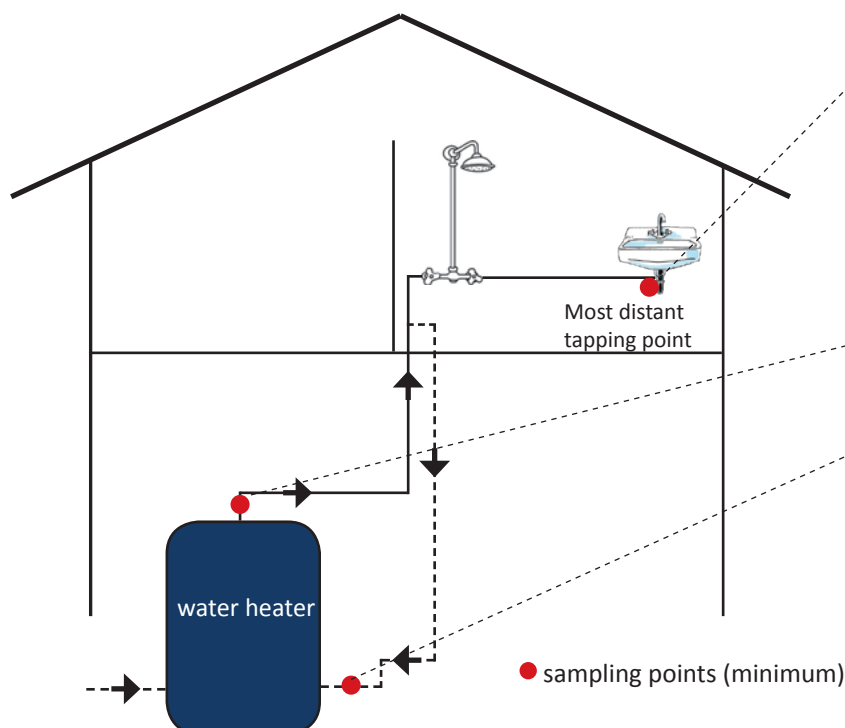


Inspection points for drinking water sampling

The selection of the representative inspection points is conducted by means of a visit or on the basis of the available documentation for the drinking water installation in coordination with the responsible public health department. The standards of the DVGW Code of Practice W 551 and the Federal Environment Agency must be observed. According to the recommendation of the Federal Environment Agency, the ‘inspection points are to be selected by personnel trained in hygiene issues (e.g. technical inspection bodies, specialist planners or installation companies) with demonstrable qualifications. Demonstrable qualifications include in particular the attestation or certification of training, such as according to VDI 6023, or evidence of DVGW training specially for conducting systemic inspections for legionella in drinking water installations.’

With regard to the scope of inspection, the Drinking Water Ordinance distinguishes between a general and an extensive inspection. A general inspection is sufficient for an initial assessment of the microbiological condition of the drinking water. In this case, samples should be taken from at least three points: at the outflow of the line for (warm) drinking water from the drinking water heater as well as at re-entry into the drinking water heater (circulation line) and at the furthest outlet per rising pipe section (e.g. washbasin). Samples do not need to be taken at each rising pipe section. It is sufficient if the sampled rising pipe sections enable assertions regarding the non-sampled rising pipe sections (because they are constructed or used similarly, for example). The tests must be conducted in accordance with DIN EN ISO 19458.

In an extensive inspection, additional samples have to be taken at each circulation main, at the individual floor lines and at the line sections with stagnant water (such as discharge pipes or rarely used outlets).



Products for drinking water sampling



Model 6100

Particularly for the sampling at the user's tap point (e.g. washbasin) BEULCO has developed the sampling valve for taking samples at the angle valve. The valve can be installed in new systems but also used for retrofitting existing systems.

Advantages

- easy installation between the angle valve and the wash basin armature via cone squeeze connection (10mm)
- all parts that come in contact with drinking water are 100% lead-free
- thermically and chemically disinfectable
- rotatable around 360° at 2 axes
- valve can remain in the installation after sampling
- The supplied actuating key guarantees, that a maximum force transmission cannot be exceeded. The valve reliably seals with a force of below 2 Nm

Model 6096

For the sampling at the water inlet and outlet point of the water heater, the BEULCO sampling valve in standard version is ideal.

The valve is also available in a 100% lead-free version, so that the water sample cannot be manipulated through lead emission.

The BEULCO sampling valve is pivotable around 360° on two axes and enables a simple installation at almost all tapping points due to the supplied adapter. Also in inconvenient place conditions the valve is an ideal solution.





SAMPLING VALVE

Model 6096

made of lead-free brass for sampling all chemical and microbiological parameters

- rotatable around 360° at two axes
- chemically and thermally disinfectable/ deflagratable
- easy installation
- vertical sampling in all installation positions
- lead-free body
- incl. adapter to 3/8" male thread

Item may differ from the picture.

thread	D	W	pkg. unit	EAN no. 4027848-
1/4" / 3/8" (adapter)	●	●	10	356096



SAMPLING VALVE

Model 6096

made of red brass for sampling all chemical and microbiological parameters

- rotatable around 360° at two axes
- chemically and thermally disinfectable/ deflagratable
- easy installation
- vertical sampling in all installation positions
- lead-free body

Item may differ from the picture.

thread	D	W	pkg. unit	EAN no. 4027848-
1/4"	●	●	10	364244



SAMPLING VALVE FOR ANGLE VALVE

Model 6100

chromed, for sampling all chemical and microbiological parameters

- rotatable around 360° at two axes
- chemically and thermally disinfectable/ deflagratable
- easy installation
- all materials in contact with drinking water: lead-free
- incl. actuating key

Item may differ from the picture.

	D	W	pkg. unit	EAN no. 4027848-
outflow 3/8" with squeeze connection Ø 10 mm	●	●	1	369522

APPLICATION	D	● = Drinking water
	W	● = Water



ACTUATING KEY

Model 6101

for sampling valve model 6100

Item may differ from the picture.

	pkg. unit	EAN no. 4027848-
	5	369508



BRIDGING PIPE WITH SAMPLING VALVE

Model 4099BA

consisting of:
bridging pipe made of brass with sampling valve
flaming pipe made of stainless steel

Item may differ from the picture.

dimension	D	W	pkg. unit	EAN no. 4027848-
2" - 180 mm	●	●	1	327935
1 1/4" - 230 mm	●	●	1	328116



SAMPLING VALVE FOR BACKFLOW PREVENTER BA

Model 6096BA

made of **brass** for sampling all chemical and microbiological parameters

- rotatable around 360° and at two axes
- chemically and thermally disinfectable/deflagratable
- easy mounting
- vertical sampling in all installation positions
- Pb-free bod

Item may differ from the picture.

thread	D	W	pkg. unit	EAN no. 4027848-
1/4"	●	●	1	368877



FLAMING TAP

Model 6099

with soldered brass pipe
diameter 10 x 6 mm, 90 mm

Item may differ from the picture.

thread	D	W	pkg. unit	EAN no. 4027848-
1/4" male thread	●	●	5	268092
3/8" male thread	●	●	1	276486
1/2" male thread	●	●	5	271733



TAPPING SET

Model 6098

This box contains all necessary details for tapping samples of water

- 1 St. connecting reduction 1" female x 1/2" male thread
- 1 St. connecting reduction 3/4" female x 1/2" male thread
- 1 St. connecting reduction M 28 x 1 male x 3/4" male thread
- 1 St. connecting reduction M 24 x 1 male x 3/4" male thread
- 1 St. connecting reduction M 22 x 1 male x 3/4" male thread
- 1 St. connecting reduction M 22 x 1 female x 3/4" male thread
- 1 St. connecting reduction M 22 x 1 male x 1/2" male thread
- 1 St. connecting reduction M 22 x 1 female x 1/2" male thread
- 2 St. connection pipe 10 mm chromed, length 11 cm
- 1 St. squeeze connection 1/2" x 10 mm
- 1 St. areator service wrench - high quality

Item may differ from the picture.

	D	W	pkg. unit	EAN no. 4027848-
for flaming commercial sanitary fittings	●	●	1	339747



AREATOR SERVICE WRENCH

Model 6098.1

for flow regulators with the following thread: M 22 x 1, M 24 x 1 and M 28 x 1

Item may differ from the picture.

	D	W	pkg. unit	EAN no. 4027848-
	●	●	1	306572



ASSORTMENT BOX FOR SAMPLING

Model 6200

consisting of:

- 1 x sampling valve for angle valve chromed (item no. 369522)
- 2 x sampling valve made of lead-free brass (item no. 356096)



sampling valve made of lead-free brass

This usefull box includes everything you need for taking samples of drinking water.

Item may differ from the picture.

	D	W	pkg. unit	EAN no. 4027848-
	●	●	1	370894



ASSORTMENT BOX FOR SAMPLING

Model 6200

consisting of:

- 1 x sampling valve for angle valve chromed (item no. 369522)
- 2 x sampling valve made of red brass (item no. 364244)



sampling valve made of red brass

This usefull box includes everything you need for taking samples of drinking water.

Item may differ from the picture.

	D	W	pkg. unit	EAN no. 4027848-
	●	●	1	370900

BEULCO CLEAN DISINFECTANT
Model 4700.1



Environmentally friendly and risk-free disinfection of drinking water supply systems. Effective and powerful against: Legionellae, e-coli bacteria, coliform germs, pseudomonas, streptococci and salmonellae.

Disinfectant on the basis of sodium hypochlorite:

- sustainable
- decomposes naturally by 100%
- no dangerous good due to its composition
- available: 20 l-canister or 1 l-spray bottle

Item may differ from the picture.

type	pkg. unit	EAN no. 4027848-
20 l - canister	1	377978
1 l - spray bottle	1	379644

Information on the disinfection of drinking water distribution systems / standpipes

Due to the frequent lending of standpipes for different purposes, such as construction water supply or drinking water supply in markets and festivals, the standpipe and its components such as backflow preventers and water meters have an increased probability to get in touch with different types of water. The operating conditions (construction, use and dismantling) can influence the drinking water quality. In particular, mobile water supply systems pose an increased health risk for the consumer, since contamination of the system and thus of the water can easily arise, for example as a result of the constant assembly and disassembly at public events or in the construction water supply.

In practice, some disinfectants or chemicals have proven themselves. However, only disinfectants that are specified in European or national standards may be used (DIN EN 806-4). DVGW worksheet W 291 „Cleaning and Disinfection of Water Distribution Systems“ describes the common disinfectant chemicals for system disinfection. Among other things, substances such as hydrogen peroxide, chlorine dioxide or sodium hypochlorite can be found here.

For the disinfection of standpipes, manufacturers offer primarily hydrogen peroxide-based applications. The list of treatment substances and disinfection procedures published by the Federal Environmental Agency in accordance with § 11 of the Drinking Water Ordinance contains a list of the treatment substances that may be used to disinfect the water itself. Here you can find substances such as calcium hypochlorite, chlorine and again sodium hypochlorite. Thus, sodium hypochlorite can be used for the disinfection of (drinking) water and for the disinfection of the distribution system.

Hydrogen peroxide is very aggressive and can attack the material in case of leftovers in the subsequent storage period. After rinsing, the rinse water must be checked for pH to ensure that all leftovers have been rinsed out.

Disinfection with the **sodium hypochlorite-based** BEULCO Clean is carried out as part of a rinse, as soiling or microbial contamination is flushed out directly. In the case of the BEULCO disinfection system, the disinfectant is added to the rinse water via a dosing pump (ratio 3% = 3 ml / liter). The disinfecting effect can be measured by the redox value of the rinse water.

The redox voltage [mV] is a measure of the germicidal and oxidative effect of disinfectants in water.

The higher the redox value of the water, the lower the contamination. During the disinfection process, the system is flushed until the water has a redox value of 650mV - 700mV. At this value, the water and the system or hoses are proven to be germ-free. If the value is not yet reached, the disinfectant works until the last germ is killed and the voltage of 650mV - 700mV is reached. In the case of standpipe disinfection, this process takes between six and ten minutes, depending on the environmental conditions (drinking water quality, purity of the pipes, etc.). Since only very little of the disinfectant is needed, 20 up to 40 standpipes can be disinfected with about 20 liters of BEULCO Clean. When using sodium hypochlorite-based substances, germs cannot develop resistance because the agent acts immediately and no filling or residence time in the standpipe is necessary. In contrast, when filled with hydrogen peroxide-based agents during the residence time of the agent in the standpipe, germs can form resistances to the corresponding disinfectant.

BEULCO Clean is sustainable and decomposes naturally by 100 %.

