2.1 GENERAL

2.1.1 Disinfection of drinking water installations

Principles

Drinking water installations must only be disinfected in proven cases of contamination and only for a limited time. Prophylactic disinfection contradicts the principle of minimisation of the Drinking Water Inspectorate. Disinfection of drinking water installations is only successful when all sources of contamination have been removed. The limit values for disinfectant concentrations specified in the Drinking Water Inspectorate are maximum values, which were set with due consideration of hygienic and toxicological viewpoints. They do not allow any automatic conclusions to be drawn about the resistance of the materials used to disinfectants. Drinking water installations may only be disinfected by skilled persons. The disinfection measures must be recorded in writing.

The disinfection measures place a strain on the materials and components of the potable water installation and may adversely affect its service life. Disinfection measures carried out incorrectly can damage the potable water installation.

BS 8558 and BS EN 806 provide guidance on materials, water quality and cleaning and disinfection, which should be read in conjunction with the information contained here.

Methods of disinfection

Drinking water installations and washbasin taps can be disinfected using thermal or chemical methods. Drinking water can also be disinfected by means of UV radiation.

A combined thermal-chemical disinfection is not admissible.

Thermal disinfection

In the case of thermal disinfection, microorganisms that are found in water are killed off by the effects of temperature.

The following rules must be observed during thermal disinfection:

- The piping system must be thoroughly rinsed before the disinfection process is performed.
- The water heater and the entire circulation must be heated up to at least 70 °C.
- All points of use must be opened step by step or line by line respectively.
- Hot water must be allowed to run at all points of use for at least 3 minutes at 70 °C.
- The temperatures must not decrease during the disinfection process.
- Risk of scalding must be eliminated by taking suitable measures.
- Performance of the disinfection process must be documented in a report.

Chemical disinfection

Effective killing or inactivation of microorganisms is only possible if the disinfectant used can act on the microorganisms directly. In the case of chemical disinfection, a disinfectant is therefore used in a sufficient concentration in all areas of the drinking water installation.

A distinction is made between the following chemical disinfection techniques:

- system disinfection
- drinking water disinfection

Chemical disinfectants corrode the drinking water installation and must only be used in the event of contamination.

Using a combination of several chemical disinfectants is not admissible.

Chemical disinfection can be performed several times throughout the service life of the drinking water installation. The disinfection measures, however, place a strain on the materials and components of the drinking water installation and may adversely affect its service life. It is not possible to provide a specification on the reduction in service life depending on the number of chemical disinfections performed.

System disinfection

For system disinfection, a disinfectant in a high concentration is added to a cold-water pipe over a short period of time.

PCC piping systems and PCC washbasin taps are suitable for system disinfection.

The following rules apply when carrying out system disinfection:

- Concentrations, temperatures and application times of the permitted disinfectants must be adhered to in strict compliance with country-specific regulations.
- Skilled persons must take specific measuring and control technology precautions.
- To prevent increases in concentration, the specific characteristics of the affected drinking water installation must be taken into account.
- Concentrations, temperatures and application times must be documented.
- Cleaning and disinfection measures must be recorded.
- To remove disinfectant and dead germs after disinfection is complete, the drinking water installation must be flushed thoroughly with hygienically perfect drinking water.
- All points of use must be flushed until the limit value of the Drinking Water Inspectorate is reached.
- No drinking water may be consumed during disinfection and the subsequent flushing phase.

Drinking water disinfection

For drinking water disinfection, a disinfectant in a low concentration is added to the drinking water pipe (cold or hot) for a limited time.

PCC piping systems and PCC washbasin taps are suitable for time-limited drinking water disinfection.

The following rules apply when carrying out drinking water disinfection:

- Concentrations, temperatures and the duration of application of the permitted disinfectants must be adhered to in strict compliance with the country-specific regulations.
- Skilled persons must take specific measuring and control technology precautions.
- To prevent increases in concentration, the specific characteristics of the affected drinking water installation must be taken into account.
- Concentrations, temperatures and by-products must be monitored and documented directly after the dosing point using measurement technology.
- The concentration of the agent in the treated water must be measured daily.
- The drinking water disinfection must be kept as short as possible and it should last no longer than it takes for the technical rehabilitation to be realised.

Exceeding the concentration for use and duration can adversely affect the service life of the piping system.

UV disinfection

PCC PRESS piping systems

PCC PRESS piping systems are suitable for UV disinfection without restriction.

2.1.2 PCC piping systems for treated water

Table 60: Use of PCC PRESS pipes for treated water

Use	System pipes					Fittings						Seals		
	PCC PRESS Stainless Steel 1.4401 / 316	PCC PRESS Stainless Steel 1.4521 / 444	PCC PRESS Stainless Steel 1.4301 / 304	PCC PRESS Carbon Steel 1.0034	PCC PRESS Copper	Stainless steel 1.4401/316	Gunmetal (CuSn5Zn5Pb2-C)	Brass (CW617N)	C-steel 1.0034	Copper (CU-DHP copper CW024A)	CIIR, black	EPDM, black	Centellen® R WS 3825	Centellen® HD WS 3822
Softened water ≥ 5 °dH	✓	✓	✓ 2)	✓ 2)	✓	✓	✓	✓	✓ 2)	✓	✓	✓	✓	✓
Softened water < 5 °dH	✓	✓	✓ 2)	✓ 2)	✓ 1)	✓	✓ 1)	–	✓ 2)	✓ 1)	✓	✓	✓	✓
Water in heating circuits in accordance with VDI 2035-1 (saline)	✓	✓	✓ 2)	✓ 2)	✓	✓	✓	✓	✓ 2)	✓	✓	✓	✓	✓
Water in heating circuits in accordance with VDI 2035-1 (low-saline)	✓	✓	✓ 2)	✓ 2)	✓	✓	✓	✓	✓ 2)	✓	✓	✓	✓	✓
Water in cold and cooling circuits in accordance with BTGA Regulation 3.003 (saline)	✓	✓	✓ 2)	✓ 2)	✓	✓	✓	✓	✓ 2)	✓	✓	✓	✓	✓
Water in cold and cooling circuits in accordance with BTGA Regulation 3.003 (low-saline)	✓	✓	✓ 2)	✓ 2)	✓	✓	✓	✓	✓ 2)	✓	✓	✓	✓	✓
Fully desalinated water Level of purity 3	✓	✓	✓ 1)	–	–	✓	–	–	–	–	✓	✓	✓	✓
Fully desalinated water Level of purity 2	✓	✓	✓ 1)	–	–	✓	–	–	–	–	✓	✓	✓	✓
Fully desalinated water Level of purity 2+	✓	✓	✓ 1)	–	–	✓	–	–	–	–	✓	✓	✓	✓
Fully desalinated water Level of purity 1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Fully desalinated water Level of purity 1+	–	–	–	–	–	–	–	–	–	–	–	–	–	–

✓ Suitable

– Not suitable

1) Upon request

2) For closed heating and cooling circuits

2.1.3 Disposal

Recycling

At the end of its service life, the PCC PRESS system can be broken down into its individual parts and recycled according to the materials.

Table 61: Recycling of PCC PRESS

Component	Material	Recycling	Remarks
System pipes	CrNiMo steel 1.4401	Scrap metal	Material collection by recycling companies
System pipes	CrMoTi steel 1.4521	Scrap metal	
System pipes	CrNi steel 1.4301	Scrap metal	
System pipes	Carbon steel 1.0034	Scrap metal	
System pipes	Carbon steel 1.0215	Scrap metal	
System pipes	CuNi10Fe1.6Mn	Scrap metal	
Fittings made of metal	CrNiMo steel 1.4401	Scrap metal	
Protective caps and plugs	PE-LD/PE-HD	Plastic recycling	
Outer packaging	HDPE Cardboard box	Plastic recycling Paper recycling	

Recycling code for the pressing indicator and protection plug

Table 62: Plastic elements in PCC PRESS pressfittings

Plastic element	Material designation	Abbreviation	Recycling code
Pressing indicator	Multilayer film	PET-PS-PET	
Protection plug	Polyethylene, low-density	PE-LD