

Drinking Water

Definition and quality requirements

Drinking water is defined as water which is intended for human consumption. According to the European directive 98/83/EC from 1998, drinking water is "all water either in its original state or after treatment, intended for drinking, cooking, food preparation [...]" (Article 2, 1., (a)). This results in high quality requirements which Xylem can help with. In terms of this quality, the directive lists microbiological, chemical and indicator parameters as contributing factors. A main objective is, "to protect human health by ensuring that it [the drinking water] is wholesome and clean." (Article 1, 2.).

Usage - What's the usage of drinking water?

Besides the above mentioned usage, the following topics are also relevant as drinking water applications:

1. Body care and cleansing
2. Cleaning of goods intended to be in contact with food
3. Cleaning of goods intended to be in contact with the human body
4. All water in any food-production processing facility, undertaking for the manufacture, processing, preservation or marketing of products or substances intended for human consumption

According to the directive 98/83/EC (Article 3, 1.), drinking water excludes:

1. "natural mineral water [...] in accordance to [...] 80/777/EEC [...]"
2. "waters which are medicinal products within [...] 65/65/EEC [...]"

Threshold values - Where are the threshold values for drinking water?

Threshold values were defined for a range of parameters. They are divided into microbiological, chemical, and indicator parameters. One of the most common ones are nitrate and chloride. The associated thresholds are 50 mg/l and 250 mg/l, respectively. The full lists can be visited under this [link \(ANNEX I, parts A to C\)](#).

If thresholds are not met, drinking water is not allowed to be provided. The associated authorities/relevant bodies must then take remedial actions or put in place restrictions to its use.

Drinking water production and treatment - Where does drinking water come from?

The most common sources of drinking water are groundwater (wells) or surface waters (lakes/rivers). Usually, both waters need to be treated, as the quality requirements for drinking water are higher than for ground or surface waters. Depending on the quality of the raw water, a corresponding expense has to be invested into the treatment. Among others, the latter includes filtration and disinfection with [chlorine](#).

Drinking water monitoring - How to monitor drinking water

Frequency and the extent of drinking water monitoring depend on the size of the supplied area and the monitored parameter. In general, larger drinking water plants have to be monitored more often. For example, in a supplied area of 500m³/day, conductivity has to be monitored once a year. A detailed presentation can be found [here \(ANNEX II, Table B1\)](#). Independent of this mandatory minimum surveillance, waterworks are usually monitoring their water quality continuously. Besides the monitoring, these continuous measurements also enable a control of the single processes.