

# Technical Rule – Standard **DVGW W 551-2** August 2022

**Hygiene in Potable Water Installations – Part 2:  
Hygienic-microbial Irregularities;  
Methods and Measures to Remedy**

Hygiene in der Trinkwasser-Installation –  
Teil 2: Hygienisch-mikrobielle Auffälligkeiten;  
Methodik und Maßnahmen zu deren Behebung

WATER

**Unchanged Replacement for:**  
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## Foreword

This standard has been elaborated by the project group “Rehabilitation of Drinking Water Installations” of the Technical Committee on “Hygiene in Drinking Water Installations”. It serves as a basis for assessing and eliminating both microbial irregularities and their causes that might pose a health hazard as well as the related operational and technical deficiencies in drinking water installations. Large or complex drinking water installations are associated with a greater hazard potential and will therefore be discussed in greater detail.

This standard aims to restore the hygienically safe operation of a drinking water installation by ensuring that drinking water installations are used and operated in accordance with regulations. It targets everyone involved in the rehabilitation of a drinking water installation including, in addition to designers and contractors, the operators of drinking water installations as well as hygienists and the competent supervisory authorities.

The standard offers guidance on how to detect, assess and eliminate hygiene-related irregularities in existing drinking water installations that may have been caused by improper execution, improper operation, a lack of inspection or service activities or the negligent execution of necessary repair measures. Chemical and/or physical changes will be discussed to the extent to which they may favour the occurrence of pathogens in the drinking water.

When executing measures designed to decontaminate drinking water installations, care shall always be taken to adequately protect the health of the involved specialist staff and of the consumers.

There are many reasons for rehabilitation, including, among others:

- Microbial contamination: Exceedance of limit values/action values in accordance with §§ 5 to 7 Drinking Water Ordinance; occurrence of pathogens within the meaning of the Infection Protection Act (*Infectionsschutzgesetz, IfSG*). Deficiencies caused by Legionella contamination - discussed extensively in DVGW Standard W 551 - and *Pseudomonas aeruginosa* deserve special attention in this context.
- Organoleptic/aesthetic deficiencies: Foul taste or smell, excessive biofilm growth, black or other coloured coatings
- Technical deficiencies (system/equipment deficiencies)
- Deficiencies caused by improper operation

Drinking water installations shall be rehabilitated if the “drinking water transport” function is impaired. The impairment may affect the transport function (pipe bursts, deposits etc.) or the quality of the drinking water (microbial contamination, chemical changes etc.), or it may be a combination of the two. Initially and regardless of the size of a drinking water installation, it shall be verified that the installation can indeed be technically rehabilitated and it shall be assessed whether it makes more economic sense to perform the necessary rehabilitation measures or to build a new installation.

Depending on the type of irregularity (microbial contamination) and the size of a drinking water installation, immediate action may be required to ensure the ongoing operation of the installation. This standard describes such action as well as the respective rehabilitation planning and implementation methodologies, listing the criteria to be applied when planning and carrying out rehabilitation measures and presenting various rehabilitation methods, broken down by rehabilitation reasons and building material/material used for a drinking water installation.