

Buy now on
shop.wvgw.de

Deutscher Verein des
Gas- und Wasserfaches e.V.



🔗 www.dvgw-regelwerk.de

Technical Rule – Standard **DVGW W 202** March 2010

**Technical Rules Water Treatment (TRWT) –
Planning, Construction, Operation and Maintenance
of Drinking Water Treatment Plants**

WATER

The DVGW is the technical and scientific association of gas and water engineers and comprises approximately 14,000 members. For more than 150 years, the DVGW has been setting the technical standards for the safe, secure and reliable supply of gas and water, actively initiating the exchange of ideas and information in the gas and water sectors and encouraging and promoting on-going progress in the sectors through practical guidance.

The DVGW is an independent non-profit organisation free from economic lobbying and political influence.

The DVGW Set of Rules is a key instrument for the DVGW to meet its statutable purpose and accomplish its tasks. The DVGW Set of Rules notably defines, on the basis of statutory regulations, the requirements on technical safety, hygiene, environmental protection, fitness for use and consumer protection and organisation for the supply and use of gas and water. The DVGW Set of Rules ensures that the DVGW complies with the statutory principle of self-responsibility of the utilities, for the benefit of technical safety and hygiene as well as environmental and consumer protection.

Note for users

The DVGW Set of Rules rests on the following principles:

- The DVGW Set of Rules has been elaborated in an honorary capacity in accordance with the applicable principles (DVGW Constitution, Rules of Procedure GW 100). On the basis of jurisdiction, both the content and the technical information can be assumed to be correct.
- Everybody can use the DVGW Set of Rules. Duties and obligations may arise from legal or administrative regulations or from a contract or from other legal grounds.
- Nobody can abdicate their responsibility for correct action when applying the DVGW Set of Rules. Anyone applying the DVGW Set of Rules shall ensure its correct application in each concrete case.
- While the DVGW Set of Rules is not the only source of knowledge when looking for professional solutions, it does constitute an important source of such knowledge. It cannot however cover all possible special cases that may require more comprehensive or restrictive measures.

Warning

This English-language version is an informal translation from the German original. However, only the original German language version has been exclusively authorised by the DVGW and its Technical Bodies. The DVGW reserves the right to revise this version at any time due to possible translation errors.

Anybody is free to use the DVGW system of rules. Users are responsible for the proper use of the DVGW system of rules in each individual case.

ISSN 0176-3504

Price group: 6

© DVGW, Bonn, March 2010

DVGW German Technical and Scientific Association for Gas and Water

Josef-Wirmer-Straße 1–3

D-53123 Bonn

Phone: +49 228 9188-5

Fax: +49 228 9188-990

Email: info@dvwg.de

Internet: www.dvgw.de

Reprinting and photomechanical reproduction, also of excerpts, is only permitted with the approval of the DVGW e. V., Bonn.

Distribution: Wirtschafts- und Verlagsgesellschaft Gas und Wasser mbH, Josef-Wirmer-Str. 3, D-53123 Bonn

Phone: +49 228 9191-40 · Fax: +49 228 9191-499

Email: info@wvgw.de · Internet: shop.wvgw.de

Contents

Preamble	5
1 Scope	6
2 Normative references	6
3 Terms, symbols, units and abbreviations	8
3.1 Treatment substance	8
3.2 Intervention level	8
3.3 Redundancy	8
3.4 Raw water	9
3.5 Drinking water treatment	9
3.6 Drinking water treatment plant.....	9
3.7 Target value	9
4 Basic requirements	9
4.1 Quality	9
4.2 Treatment capacity	9
4.3 Legal and normative provisions	10
4.4 Qualification	10
4.5 Economic viability.....	10
4.6 Minimising principle.....	10
4.7 Process reliability	10
5 Planning and construction of drinking water treatment plants	10
5.1 Planning	10
5.1.1 General information	10
5.1.2 Selection and conceptual design of methods	11
5.2 Construction and commissioning	13
5.2.1 Construction.....	13
5.2.2 Commissioning.....	13
6 Operation and maintenance of drinking water treatment plants	14
6.1 Operation	14
6.1.1 General.....	14
6.1.2 Addition of treatment substances	14
6.1.3 Hydraulic operation	14
6.1.4 Monitoring	15
6.1.5 Water analysis	15
6.2 Maintenance.....	16
6.3 Operation documentation	16
6.4 Information of customers and authorities.....	16

7	Inspection of the drinking water treatment plants.....	16
	Annex A (informative) – Significant process and monitoring parameters for important tasks in drinking water treatment	19
A.1	Removal of particles by flocculation as preliminary stage of filtration [cf. DVGW W 217 (A), DVGW W 218 (A), DVGW W 219 (A), DVGW W 220 (A)].....	19
A.2	Removal of particles by means of rapid filtration via silica sand [cf. DVGW W 213-1 (A), DVGW W 213-2 (A), DVGW W 213-16 (A)]	19
A.3	Disinfection with chemical substances [chlorine, hypochlorite, chlorine dioxide, ozone; cf. DVGW W 290 (A), DVGW W 224 (A), DVGW W 225 (A), DVGW W 229 (A)]	20
A.4	Adsorption of organic substances at granular activated carbons.....	20
A.5	Iron removal [iron (II) filtration) and manganese removal (manganese (II) filtration; cf. DVGW W 223-1 (A), DVGW W 223-2 (A)]	21
A.6	Deacidification.....	21
	Annex B (informative) – DVGW Codes of Practice and Technical Standards on Water Treatment (selection).....	23
	Annex C (informative) – DVGW Codes of Practice and Technical Standards with Information on the Maintenance of Water Treatment Plants (selection)	24

Preamble

This code of practice has been prepared by the DVGW Technical Committee "Water treatment methods", with the participation of the Technical Committee "Systems Engineering". It serves as basis for the quality assurance in drinking water treatment and in this regard supplements and substantiates DIN 2000.

This code of practice describes the most important principles of drinking water treatment that need to be taken into account to ensure that aesthetically and hygienically sound drinking water can be made available to consumers at all times. The code of practice provides assistance in assessing whether the overall recognised technical rules have been observed. Due to its manifold references to DVGW codes of practice and technical standards, it can also be used as navigation guide through the DVGW set of rules in the field of drinking water treatment.

The code of practice serves as basis for the quality assurance in water treatment. In applying the code of practice it is assumed that the water resources used are as far as possible protected from contamination and that the legal provisions and technical rules on raw water protection are observed.

The code of practice is closely connected with the provisions of the Drinking Water Ordinance, including the list of treatment substances and disinfection procedures in accordance with § 11 Drinking Water Ordinance (TrinkwV) 2001 as well as DIN 2000 and DVGW W 1000 (A).

Bonn, March 2010

DVGW German Technical and Scientific Association for Gas and Water