



Production and maintenance of drains and sewers

Quality and Test Regulations

Gütesicherung RAL-GZ 961

Güteschutz Kanalbau



Quality and Test regulations

© Copyright 2016 - Güteschutz Kanalbau e. V.
Alle Rechte vorbehalten.
Nachdruck, auch auszugsweise, nur mit schriftlicher
Genehmigung.

Herausgeber:
Güteschutz Kanalbau
Gütegemeinschaft Herstellung und Instandhaltung
von Abwasserleitungen und -kanälen e. V.
Linzer Straße 21
53604 Bad Honnef
Telefon +49 2224-9384-0
Telefax +49 2224-9384-84
E-Mail info@kanalbau.com
www.kanalbau.com



Quality and Test Regulations

Quality and Test Regulations Production and maintenance of drains and sewers

1 Area of application

These quality and test regulations are applicable for the production of public and private drains and sewers and the associated structures.

2 General conditions

The generally accepted rules of technology, described in DIN and/or DIN EN standard specifications and in the relevant Set of Rules and Standards of the DWA (German Association for Water, Wastewater and Waste) apply for the production and maintenance of drains and sewers

3 Quality regulations

3.1 Executive groups and appraisal groups

If the requirements on one of the following ranges of performance are fulfilled an enterprise is classified in the appraisal group of the same name.

Appraisal Group AK3 is component part of Appraisal Group AK2. Appraisal Groups AK3 and AK2 are component parts of appraisal Group AK1.

Appraisal Group V0 is component part of Appraisal Group V0D. Appraisal Group VM is component part of Appraisal Group VMD.

Users of the Quality Marks with the Appraisal Groups AK1, AK2, AK3, R, I, D und S, under the prerequisite that the required knowledge, equipment, standards and rules are available, fulfil the requirements of the Quality Mark Private Property Drainage (RAL-GZ 968) construction, structural maintenance, rehabilitation and testing in accordance with Table 1:

Quality Mark Sewer Construction	Quality Mark Private Property Drainage
Appraisal Group: AK1	Appraisal Group: K-GE 1 and K-GE 2
AK2	K-GE 1 and K-GE 2
AK3	K-GE 1 and K-GE 2
R	R-GE
I	I-GE
D	D-GE
R, I and D	G
S	S

Executive Group AK3

Laying and testing of drains and sewers of all materials in nominal widths DN 250 in open construction with the associated manholes down to a depth2) of 3 m.

Executive Group AK2

Installation of drains and sewers of all materials in nominal widths DN 1200 in open construction with the associated structures down to a depth2) of 5 m.

Executive Group AK1

Installation of drains and sewers of all materials and nominal widths, in particular also > DN 1200 and in depths > 5 m with the associated structures in open construction under aggravated conditions3).

Executive Group VP

Trenchless installation of drains and sewers using controllable pilot pipe methods and comparable, controllable methods.

A limitation on product pipes DN 150 is stated on the award certificate.

Executive Group VM

Trenchless unmanned installation of drains and sewers using controllable methods in micro-tunnelling using spiral and scouring conveyance.

Executive Group VMD

Trenchless installation of drains and sewers using enclosed, controllable shields and support of the heading face through liquid using compressed air or earth pressure (e.g. mix or EPB shield).

Executive Group V0

Trenchless manned installation of drains and sewers using open controllable shields without compressed air or manned installation based on mining construction techniques.

A limitation of mining construction techniques is stated on the award certificate.

Executive Group V0D

Trenchless manned installation of drains and sewers using open controllable shields under compressed air.

Executive Group S

Trenchless rehabilitation of drains and sewers of all materials and nominal widths with the associated structures.

Sewer construction quality marks of Appraisal Group S are awarded for the handling of one individual rehabilitation method. The methods are stated on the award certificate⁴).

Executive Group I

Inspection of drains and sewers of all materials and nominal widths with the associated structures.

Executive Group R

Cleaning of drains and sewers of all materials and nominal widths with the associated structures.

Executive Group D

Leakage testing of drains and sewers of all materials and nominal widths with the associated structures.

Executive Group ABAK

Tendering and construction supervision with installation and testing of drains and sewers of all materials and nominal widths in open construction with the associated structures.

Executive Group ABV

Tendering and construction supervision with trenchless installation of drains and sewers of all materials and nominal widths with the associated structures.

Executive Group ABS

Tendering and construction supervision with trenchless rehabilitation of drains and sewers of all materials and nominal widths with the associated structures.

3.2 Requirements Appraisal Group AK3

3.2.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the cor-

responding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.2.2 Configuration of enterprises

3.2.2.1 Personnel

- Technical responsible persons⁵) in commensurate number corresponding with the respective size of order with successful three-year employment in the construction of sewers or pipelines, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialist knowledge for the installation of drains and sewers. The verification of specialist knowledge is considered to be established through submission of an appropriate training certificate¹⁰),
- qualified personnel in commensurate number corresponding with the respective size of order, but with permanently at least one foreman and two sewer specialists (of these, if required, one pipeline specialist)⁶),
- training¹⁰).

3.2.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the construction site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- office and work yard with the necessary personnel,
- barriers for construction site safety and traffic direction,

Quality and Test Regulations

- road breaking equipment and joint cutters for road breaking,
- construction equipment for excavation as well as trench sheeting in accordance with DIN 4124,
- compacting equipment,
- lifting equipment and installation equipment,
- equipment for the operation of groundwater and wastewater reaches,
- levelling instruments and laser equipment for the position checking of the pipeline,
- working tools for pipes and fittings according to the manufacturers' specifications,
- Test equipment for verification in accordance with DIN EN 1610 and DWA-A 139E.

3.2.3 Subcontractors

Subcontractors for the execution of activities which fall into this or another appraisal group in accordance with Section 3.1, must fulfil the associated requirements of the quality and test regulations.

3.3 Requirements Appraisal Group AK2

3.3.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.3.2 Configuration of enterprises

3.3.2.1 Personnel

- Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order with successful three-year employment in the construction of sewers, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialist knowledge for the installation of drains and sewers. The verification of specialist knowledge is considered to be established through submission of an appropriate training certificate¹⁰⁾,
- qualified personnel in commensurate number corresponding with the respective size of order, but with permanently at least one foreman and one sewer specialist⁶⁾ per construction project; with construction projects of lesser scope without complicated conditions one charge hand in place of the foremen is permitted,
- training¹⁰⁾.

3.3.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the construction site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- office and work yard with the necessary personnel,
- barriers for construction site safety and traffic direction,
- road breaking equipment and joint cutters for road breaking
- construction equipment for excavation as well as trench sheeting in accordance with DIN 4124,
- compacting equipment,
- lifting equipment and installation equipment,
- equipment for the operation of groundwater and wastewater reaches,
- levelling instruments and laser equipment for the position checking of the pipeline

- working tools for pipes and fittings according to the manufacturers' specifications,
- test equipment for verification in accordance with DIN EN 1610 and DWA-A 139E.

3.3.3 Subcontractors

Subcontractors for the execution of activities which fall into this or another appraisal group in accordance with Section 3.1, must fulfil the associated requirements of the quality and test regulations.

3.4 Requirements Appraisal Group AK1

3.4.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.4.2 Configuration of enterprises

3.4.2.1 Personnel

- Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order with successful five-year employment in the construction of sewers, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialist knowledge for the installation of drains and sewers. The verification of specialist knowledge is considered to be established through submission of an appropriate training certificate¹⁰⁾,
- qualified personnel in commensurate number corresponding with the respective size of order, but with permanently at least one foreman and one sewer specialist⁶⁾ per construction project,

- training¹⁰⁾.

3.4.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the construction site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- office and work yard with the necessary personnel,
- barriers for construction site safety and traffic direction,
- road breaking equipment and joint cutters for road breaking
- construction equipment for excavation as well as trench sheeting in accordance with DIN 4124,
- compacting equipment,
- lifting equipment and installation equipment,
- equipment for the operation of groundwater and wastewater reaches,
- levelling instruments and laser equipment for the position checking of the pipeline
- working tools for pipes and fittings according to the manufacturers' specifications,
- test equipment for verification in accordance with DIN EN 1610 and DWA-A 139E.

3.4.3 Subcontractors

Subcontractors for the execution of activities which fall into this or another appraisal group in accordance with Section 3.1, must fulfil the associated requirements of the quality and test regulations.

Quality and Test Regulations

3.5 Requirements Appraisal Group VP

3.5.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.5.2 Configuration of enterprises

3.5.2.1 Personnel

- Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order with successful three-year employment in the trenchless construction of sewers, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialist knowledge for the trenchless installation of drains and sewers using controllable pilot pipe procedure and with this comparable processes. The verification of specialist knowledge is considered to be established through submission of an appropriate training certificate¹⁰⁾,
- qualified personnel in commensurate number corresponding with the respective size of order, but with permanently at least one specialist trained on the equipment employed and one sewer specialists⁶⁾, per construction project
- training¹⁰⁾.

3.5.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the construction site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instruction and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- office and work yard with the necessary personnel,
- barriers for construction site safety and traffic direction,
- controllable pipe driving plant,
- lifting equipment and installation equipment,
- surveying equipment,
- test equipment for verification in accordance with DIN EN 1610, DWA-A 125E and DWA-A 139E,
- measurement and recording equipment for the required driving parameters in accordance with DWA-A 125E. With product pipes DN 150 a manual recording is permitted.

3.5.3 Subcontractors

Subcontractors for the execution of activities which fall into this or another appraisal group in accordance with Section 3.1, must fulfil the associated requirements of the quality and test regulations.

3.6 Requirements Appraisal Group VP

3.6.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.6.2 Configuration of enterprises

3.6.2.1 Personnel

- Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order with successful three-year employment in the trenchless construction of sewers, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialist knowledge for the trenchless installation of drains and sewers using controllable microtunneling with screw and/or flush conveyor. The verification of specialist knowledge is considered to be established through submission of an appropriate training certificate¹⁰⁾,
- qualified personnel in commensurate number corresponding with the respective size of order, but with permanently at least one specialist trained on the equipped employed and one sewer specialist⁶⁾ per construction project.
- training¹⁰⁾.

3.6.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the construction site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UwV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- office and work yard with the necessary personnel,
- barriers for construction site safety and traffic direction,
- controllable pipe driving plant,
- lifting equipment and installation equipment,
- surveying equipment,
- test equipment for verification in accordance with DIN EN 1610, DWA-A 125E and DWA-A 139E,
- measurement and recording equipment for the required driving parameters in accordance with DWA-A 125E. With product pipes DN 150 a manual recording is permitted.

3.6.3 Subcontractors

Subcontractors for the execution of activities which fall into this or another appraisal group in accordance with Section 3.1, must fulfil the associated requirements of the quality and test regulations.

3.7 Requirements Appraisal Group VMD

3.7.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.7.2 Configuration of enterprises

3.7.2.1 Personnel

- Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order with successful three-year employment in the trenchless construction of sewers, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialist knowledge for the trenchless installation of drains and sewers using closed controllable shields and support of the working face through liquid with compressed air or earth pressure. The verification of specialist knowledge is considered to be established through submission of an appropriate training certificate¹⁰⁾,
- qualified personnel in commensurate number corresponding with the respective size of order, but with permanently at least one specialist trained on the equipped employed and one sewer specialist⁶⁾ per construction

Quality and Test Regulations

- training¹⁰).

3.7.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the construction site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- office and work yard with the necessary personnel,
- barriers for construction site safety and traffic direction,
- controllable pipe driving plant,
- lifting equipment and installation equipment,
- surveying equipment,
- test equipment for verification in accordance with DIN EN 1610, DWA-A 125E and DWA-A 139E,
- measurement and recording equipment for the required driving parameters in accordance with DWA-A 125E.

3.7.3 Subcontractors

Subcontractors for the execution of activities which fall into this or another appraisal group in accordance with Section 3.1, must fulfil the associated requirements of the quality and test regulations.

3.8 Requirements Appraisal Group VO

3.8.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.8.2 Configuration of enterprises

3.8.2.1 Personnel

- Technical responsible persons⁵) in commensurate number corresponding with the respective size of order with successful three-year employment in the trenchless construction of sewers, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialist knowledge for the trenchless manned installation of drains and sewers using open controllable shields without compressed air. The verification of specialist knowledge is considered to be established through submission of an appropriate training certificate¹⁰),
- qualified personnel in commensurate number corresponding with the respective size of order, but with permanently at least one specialist trained on the equipped employed and one sewer specialist⁶) per construction project,
- training¹⁰).

3.8.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the construction site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- office and work yard with the necessary personnel,
- barriers for construction site safety and traffic direction,
- controllable pipe driving plant,
- lifting equipment and installation equipment,
- surveying equipment,
- test equipment for verification in accordance with DIN

EN 1610, DWA-A 125E and DWA-A 139E,

- measurement and recording equipment for the required driving parameters in accordance with DWA-A 125E and equivalent measuring equipment for mining construction techniques.

3.8.3 Subcontractors

Subcontractors for the execution of activities which fall into this or another appraisal group in accordance with Section 3.1, must fulfil the associated requirements of the quality and test regulations.

3.9 Requirements Appraisal Group VOD

3.9.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.9.2 Configuration of enterprises

3.9.2.1 Personnel

- Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order with successful three-year employment in the trenchless construction of sewers, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialist knowledge for the manned trenchless installation of drains and sewers using open controllable shields under compressed air. The verification of specialist knowledge is considered to be established through submission of an appropriate training certificate¹⁰⁾,
- qualified personnel in commensurate number corre-

sponding with the respective size of order, but with permanently at least one specialist trained in the equipment employed and one sewer specialist⁶⁾ per construction project,

- training¹⁰⁾.

3.9.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the construction site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- office and work yard with the necessary personnel,
- barriers for construction site safety and traffic direction,
- controllable pipe driving plant,
- lifting equipment and laying equipment,
- surveying equipment,
- test equipment for verification in accordance with DIN EN 1610, DWA-A 125E and DWA-A 139E,
- measurement and recording equipment for the required driving parameters in accordance with DWA-A 125E.

3.9.3 Subcontractors

Subcontractors for the execution of activities which fall into this or another appraisal group in accordance with Section 3.1, must fulfil the associated requirements of the quality and test regulations.

3.10 Requirements Appraisal Group S

3.10.1 Experience and reliability

Experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks on the basis of a manual, recognised by the Quality Committee, in which the requirements on material, processes and a documented self-monitoring are specified bindingly and thus the comparison of NOMINAL-ACTUAL value is enabled fully and precisely.

Quality and Test Regulations

The suitability of a rehabilitation system is not appraised with the award of a quality mark

Experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.10.2 Configuration of enterprises

3.10.2.1 Personnel

- Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order alternative responsible specialists with a qualification to be recognised by the Quality Committee with successful three-year practical employment in sewer or pipeline construction as well as with specialist knowledge of the respective rehabilitation system to be employed.
- Specialist personnel in commensurate number corresponding with the respective size of order, at least one charge hand with three years' experience in sewer or pipeline construction as well as one trained specialist per construction project, for the respective rehabilitation system to be employed, with personal references,
- training¹⁰⁾.

3.10.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the construction site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,

- office and work yard with the necessary personnel,
- barriers for construction site safety and traffic direction,
- special equipment for implementation,
- test equipment for verification in accordance with DIN EN 1610 and DWA-A 139E,
- test equipment for verification in accordance with DIN EN 1610 and DWA-A 139E,

3.10.3 Subcontractors

Subcontractors for the execution of activities which fall into this or another appraisal group in accordance with Section 3.1, must fulfil the associated requirements of the quality and test regulations.

3.11 Requirements Appraisal Group I

3.11.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.11.2 Configuration of enterprises

3.11.2.1 Personnel

- Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialised knowledge for the appraisal of the actual status. Verification of the specialised knowledge for the appraisal of the current status is considered as furnished through submission of appropriate training

certificates⁷⁾ 10),

- personnel employed for the determination of the actual status must possess construction, operation and material technical knowledge from sewer construction. In addition to be verified:

Successful instruction or training in inspection; at least one year's experience in inspection.

- Construction, operation and material technical specialist knowledge and successful training in inspection is considered as furnished through submission of appropriate training certificates⁷⁾ 10).
- training¹⁰⁾.

3.11.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the employment site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- facilities for traffic safety,
- equipment for optical inspection in accordance with DWA_M 149, Part 5 and further proof according to DWA-M 149E, Part 2, for the inspection of connecting sewers, building drains and structures.

3.11.3 Subcontractors

Subcontractors for the execution of activities, which fall into this or another appraisal group, must meet the relevant requirements of the quality and testing regulations.

3.12 Requirements Appraisal Group R

3.12.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.12.2 Configuration of enterprises

3.12.2.1 Personnel

– Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialised knowledge for the cleaning of drains and sewers. Verification of the cleaning is considered as furnished through submission of appropriate training certificates⁸⁾ 10),

- personnel employed must possess constructional, operational and material technical knowledge from sewer construction. In addition the following is to be verified:

Successful instruction or training in cleaning, at least one year's experience in cleaning, knowledge of disposal

- Construction, operation and material technical specialist knowledge and successful training in inspection is considered as furnished through submission of appropriate training certificates⁸⁾ 10).

- training¹⁰⁾.

3.12.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the employment site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,

Quality and Test Regulations

- facilities for traffic safety,
- suction vehicles and high-pressure flushing vehicles in accordance with DIN 30705 (terms see DIN 30702, requirements see DIN 30705 and DIN 30701).

3.12.3 Subcontractors

Subcontractors for the execution of activities, which fall into this or another appraisal group, must meet the relevant requirements of the quality and testing regulations.

3.13 Requirements Appraisal Group D

3.13.1 Experience and reliability

Special experience and reliability of the enterprise and of the personnel employed with regard to the execution of the described tasks.

Special experience of the enterprise is considered as verified through supporting documentation on the corresponding activities.

Reliability of the enterprise is considered as verified through submission of a corporate management system.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. acceptance certificates).

3.13.2 Configuration of enterprises

3.13.2.1 Personnel

- Technical responsible persons⁵⁾ in commensurate number corresponding with the respective size of order, alternative responsible specialists with a qualification to be recognised by the Quality Committee with specialised knowledge on leakage testing of drains and sewers. Verification of the cleaning is considered as furnished through presentation of appropriate general knowledge and submission of appropriate training certificates⁷⁾ 10),
- personnel employed must possess constructional, operational and material technical knowledge from sewer construction. In addition the following is to be verified:

Successful instruction or training in leakage testing,

at least one year's experience in practical testing,

Construction, operation and material technical specialist knowledge and successful training in inspection is considered as furnished through submission of appropriate training certificates⁷⁾ 10).

- training¹⁰⁾.

3.13.2.2 Operating facilities and equipment

All operating facilities required for the execution of the respective tasks must be available. Equipment must be provided on the employment site in sufficient quantity and in serviceable condition.

- Facilities according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instruction and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities are provided in adequate scope within the property of the enterprise,
- barriers for construction site safety and traffic direction,
- test equipment for the verification of lightness according to DIN EN 1610, DWA-A 139E and ATV-M 143E, Part 6.

3.13.3 Subcontractors

Subcontractors for the execution of activities, which fall into this or another appraisal group, must meet the relevant requirements of the quality and testing regulations.

3.14 Requirements Appraisal Group ABAK

3.14.1 Experience and reliability

Special experience and reliability of the organisation and of the personnel employed with regard to the tendering and construction supervision with construction and testing of drains and sewers in open construction.

Special experience of the organisation is considered as verified through supporting documentation on the corresponding activities.

Reliability of the organisation is considered as verified through submission of a certified corporate management system or the verification of an organisation

management for the minimisation of faults.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate attestations).

3.14.2 Configuration of enterprises

3.14.2.1 Personnel

- Responsible persons⁵⁾ in commensurate number corresponding with the respective size of order with successful five years employment in tendering a construction supervision with construction and testing of drains and sewers in open construction. Verification of the specialist knowledge is considered as furnished through submission of appropriate training certificates¹⁰⁾,
- Specialist personnel in commensurate number corresponding with the respective size of order. Verification of the specialist knowledge is considered as furnished through submission of appropriate training certificates¹⁰⁾,
- training¹⁰⁾.

3.14.2.2 Operating facilities and equipment

Personal protective equipment according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities

3.14.3 Subcontractors

Subcontractors must meet the requirements of this appraisal group. If only individual activities (e.g. construction supervision) are carried out by subcontractors, the requirements of the quality and testing regulations must be fulfilled for these activities.

3.15 Requirements Appraisal Group ABV

3.15.1 Experience and reliability

Special experience and reliability of the organisation and the personnel employed with regard to tendering and construction supervision with trenchless construction and testing of drains and sewers.

Special experience of the organisation is considered to be verified through supporting documentation on corresponding activities.

Reliability of the organisation is considered to be verified through presentation of a certified quality management system or the verification of an organisation management for the minimisation of faults.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. attestations).

3.15.2 Configuration of enterprises

3.15.2.1 Personnel

- Responsible persons⁵⁾ in commensurate number corresponding with the respective size of order with successful five years employment in tendering a construction supervision with trenchless construction and testing of drains and sewers. Verification of the specialist knowledge is considered as furnished through submission of appropriate training certificates¹⁰⁾,
- Qualified personnel in commensurate number corresponding with the respective size of order. Verification of the specialist knowledge is considered as furnished through presentation of suitable training certificates¹⁰⁾.
- training¹⁰⁾.

3.15.2.2 Operating facilities and equipment

Personal protective equipment according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities .

3.15.3 Subcontractors

Subcontractors must meet the requirements of this appraisal group. If only individual activities (e.g. construction supervision) are carried out by subcontractors, the requirements of the quality and testing regulations must be fulfilled for these activities.

Quality and Test Regulations

3.16 Requirements Appraisal Group ABS

3.16.1 Experience and reliability

Special experience and reliability of the organisation and the personnel employed with regard to tendering and construction supervision with rehabilitation measures on drains and sewers.

Special experience of the organisation is considered to be verified through supporting documentation on corresponding activities.

Reliability of the organisation is considered to be verified through presentation of a certified quality management system or the verification of an organisation management for the minimisation of faults.

Special experience of personnel employed is considered as verified through supporting documentation on the corresponding activities.

Reliability of the personnel employed is considered as verified through submission of appropriate references (e.g. attestations).

3.16.2 Configuration of enterprises

3.16.2.1 Personnel

- Responsible person⁵) with successful five-year activity in tendering and construction supervision sewer rehabilitation tasks. Verification of the specialist knowledge is considered as furnished through presentation of a suitable training certificates^{9,10}).
- Qualified personnel in commensurate number corresponding with the respective size of order. Verification of the specialist knowledge is considered as furnished through presentation of suitable training certificates^{9,10}).
- training¹⁰).

3.16.2.2 Operating facilities and equipment

Personal protective equipment according to the provisions of the [German] Ordinance on Workplaces (ArbStättV), the [German] Accident Prevention Instructions and Rules (UVV) and the safety regulations for work in enclosed spaces of wastewater engineering facilities .

3.16.3 Subcontractors

Subcontractors must fulfil the requirements of this

appraisal group. If only individual activities (e.g. construction supervision) are carried out by subcontractors, the requirements of the quality and testing regulations must be met for these activities.

4 Test specifications

4.1 Inspections by the Quality Committee or its authorised representatives

Applicants for and users of quality marks are to present to the Quality Committee of the Gütegemeinschaft „Güteschutz Kanalbau“ [German Quality Audit Association “Quality protection sewer construction”] appropriate documentation as verification of the fulfilment of the quality requirements of the respectively strived for or certified appraisal group and all. Construction sites and projects are to be notified.

Visit to the firm

With the visit to the firm, an inspection engineer appointed by the Quality Committee inspects and evaluates, or a test centre tasked by the Quality Committee carries out spot-checks on, the compliance and documentation of the personnel belonging to the respective appraisal group, including the documentation of the self-monitoring and the notification of construction sites or the notification of projects. Documentation is checked and evaluated for completeness.

Results of visits to firms are recorded. The appraisal of the qualification takes into account all findings in a summary report. Copies are received by the applicants or users of the quality mark, the office of the Gütegemeinschaft „Güteschutz Kanalbau“ and the Quality Committee.

- Visits to firms take place following award of quality mark depending on the situation, however at least:
- 1 visit to the firm every 2 years in Appraisal Groups AK3, AK2, AK1, VP, VM, VMD, VO and VOD.
- 1 visit to the firm per year in Appraisal Groups S (each S-system), I, R, D, ABAK, ABV and ABS.

Visit to the construction site

With the visit to the construction site, an inspection engineer appointed by the Quality Committee inspects and evaluates, or a test centre tasked by the Quality Committee carries out spot-checks on, the compliance and documentation of the personnel belonging to the respective appraisal group, including the documentation of the self-monitoring and the notification of the

construction sites or notification of projects. Documentation is checked and evaluated for completeness.

Results of visits to firms are recorded. The appraisal of the qualification takes into account all findings in a summary report. Copies are received by the applicants or users of the quality mark, the office of the Gütegemeinschaft „Güteschutz Kanalbau“ and the Quality Committee. Who appraise the reports

Visits to construction sites take place following award of quality mark, depending on the number of construction sites, however at least:

- 2 unannounced visits to the construction site per year in Appraisal Groups AK3, AK2, AK1, VP, VM, VMD, VO and VOD.
- 1 unannounced visit to the construction site per year in Appraisal Groups S, I, R, and D.

Re-examination

With non-compliance with requirements, a date for a prompt re-examination for the necessary and possible remedial action can be arranged by the inspector.

4.2 Checks by employees of the enterprise (self-monitoring)

With self-monitoring, for all appraisal groups, the requirements assigned in Chapter 3 are to be examined and compliance with them is to be documented.

The requirements made in the “Guidelines for self-monitoring” are applicable.

With self-monitoring of tasks of Appraisal Group S the requirements specified in the handbook of the respective rehabilitation system additionally apply.

The location of all drains and sewers as well as of man-holes is to be checked and documented for height and direction reach by reach during the execution of construction work (AK3, AK2, AK1, VP, VM, VMD, VO, VOD).

The compaction of embedment zone and covering with open construction (Appraisal Groups AK3, AK2, AK1) is to be verified reach by reach. The separation of the check points with sewer trenches is not to exceed a reach length or 25 m or be less than 3 checks per construction project.

The verification of the correct concrete processing in accordance with the monitoring class as well as mate-

rial- and process-specific verification (e.g. certificate of verification of performance in the concrete industry [in Germany the SIVV Certificate]) are to be carried out.

Acceptance certificates, the results of the final examinations and tests as well as all verifications of the self-monitoring are to be retained for at least 5 years.

4.3 Examination of the qualification and checks of the self-monitoring

Unannounced examinations at irregular intervals of the continued existence of the qualification, the self-monitoring and the fulfilment of the other requirements of the certified appraisal group under additional consideration of the specifications in the implementing rules.

With ascertained deficiencies the Quality Committee recommends disciplinary measures to the Executive Board, which are described in the implementing rules. If the reference measures no longer correspond sufficiently with the emphasis of the requirement profile of an appraisal group, the Quality Committee c, following appropriate appraisal, can decide upon an amendment classification or the Executive Board, on recommendation by the Quality Committee, can revoke the quality mark.

Further regulations for visits to firms and to construction sites see Section 4. 5 Marking (the Mark)

5 Marking (The Mark)

5.1 Award

Enterprises, public facilities and engineer offices, which render services in accordance with these quality and test regulations, can use the Quality Mark, Sewer Construction as soon as the right to the use of this quality mark has been awarded and the meeting of the specified quality is assured.

The appraisal group or groups are to be named as supplement below the quality mark. The user of the quality mark may use the quality mark only with the naming of the appraisal group or -groups for which the quality mark has been awarded.



Users of quality marks with the Appraisal Groups AK1,

Quality and Test Regulations

AK2, AK3, S, I, R and D meet the requirements of the quality assurance Production, Structural Maintenance, Rehabilitation and testing of private drainage facilities according to the assignment in Section 3.1, Table 1. Users of quality marks with the Appraisal Groups AK1, AK2, AK3, S, I, R and D therefore receive, on application following submission of the appropriate award certificate, the Quality Mark, Sewer Construction, RAL-GZ 961, the Quality Mark Private Property Drainage, in connection with the appropriate appraisal group.

5.2 Application

For the application of the quality mark the implementing rules of the Quality Mark Sewer Construction of the Gütegemeinschaft „Güteschutz Kanalbau“ apply exclusively.

Enterprises, public facilities and engineer offices, which render services in accordance with the quality and test regulations distinguish their services using the Quality Mark, Sewer Construction.

6 Amendments

These quality and test regulations can be supplemented and further developed taking into account technical advances. Amendments require the previous written approval of RAL [German Institute for Quality Assurance and Marking]. They are put into force by the Executive Board of the Gütegemeinschaft „Güteschutz Kanalbau“ following an appropriate period from the time of notification to the users of the quality mark.

- 1) Maintenance includes the measures for servicing, inspection and rehabilitation for correctly functioning operation and support.
- 2) Details on depth refer to the characteristic depth of the sole of the construction pit within an overall construction measure.
- 3) Construction under aggravated conditions includes, for example: groundwater reach, construction in groundwater without drawdown, construction under operation with larger wastewater yields, employment of special types of shoring, construction of special foundation measures.
- 4) An overview of rehabilitation methods can be obtained from the Gütegemeinschaft „Güteschutz Kanalbau“.

- 5) Persons with a qualification, who are assigned to at least Level 6 within the German and European Qualification Framework

For the Appraisal Groups ABAK, ABV, ABS, AK1, AK2, VOD, VO, VMD, VM:

- Persons with successful conclusion of a qualification in construction engineering (degree) or in another discipline of study with appropriate study content (syllabus plan).

For the Appraisal Groups AK3, VP, S, I, R, D:

- Persons having passed the Master Technician's examination, if appropriate activities, knowledge and skills are included in the "Master Technician's Ordinance" (ordinance regarding the professional activity description and regarding the examination requirements in Parts I and II of the Master Technician's examination),
- Persons with successful qualification as "Certified Technician" in an appropriate construction discipline,
- Persons having passed the examination as accredited advanced training certified foreman in the field of civil engineering (PolierPrV 2012, amended by Art. 1 V dated 22.04.2014).

- 6) Where required, a skilled construction engineering worker with a professional activity description to be recognised by the Quality Committee.
- 7) E.g. "Specialist for pipe, sewer and industry service", "DWA certified sewer inspector", "DWA General knowledge of leak testing of drainage facilities outside buildings", "Specialist for wastewater engineering", "Certified sewer rehabilitation consultant" or comparable supporting documents¹⁰).
- 8) E.g. "Specialist for pipe, sewer and industry service", "DWA certified sewer cleaner", "Specialist for wastewater engineering", "Certified sewer rehabilitation consultant" or comparable supporting documents¹⁰).
- 9) E.g. "Certified sewer rehabilitation consultant" or comparable supporting documents¹⁰).
- 10) Information on the requirements on further training and its contents are obtainable from the Gütegemeinschaft „Güteschutz Kanalbau“.

Implementing Regulations

1 Basic quality principles

The basic quality principles for the Quality Mark consist of the quality and test regulations for the production and maintenance of drains and sewers. They are further developed to match technical advances.

2 Award

- 2.1 The Gütegemeinschaft Herstellung und Instandhaltung von Abwasserleitungen und -kanälen e. V. - Güteschutz Kanalbau [The German Quality Audit Association for the Fabrication and maintenance of Drains and Sewers – Quality Protection Sewer Construction] awards to enterprises, public institutes and engineer offices, which carry out, tender for and/or supervise the construction for the fabrication and/or maintenance of drains and sewers, on application, the right to use the Quality Mark "Fabrication and Maintenance of Drains and Sewers".
- 2.2 The application is to be addressed, in writing, to the Managing Director of the Gütegemeinschaft Herstellung und Instandhaltung von Abwasserleitungen und -kanälen e. V. - Güteschutz Kanalbau (registered office Bad Honnef). A legally binding, signed certificate of obligation is to be appended to the application (Specimen 1).
- 2.3 The application is reviewed by the Quality Committee. The Quality Committee, unannounced, checks the services of the applicant in accordance with the Quality and Test Regulations. It can inspect the operations of the applicant as well as request and examine the documents referred to in the Quality and Test Regulations. It issues a certificate on the test results which it forwards to the applicant and the Board of Management of the Gütegemeinschaft. The Quality Committee entrusts a suitable inspection engineer or test centre of its choice with these tasks. The person tasked with the inspection is to prove his identity before the start of the inspection activities. The costs of the inspection are borne by the applicant.
- 2.4 If the inspection proves to be positive, the Board of Management of the Gütegemeinschaft, on the recommendation of the Quality Committee, awards the Quality Mark to the applicant. The award is certified (Specimen 2). If the inspection proves to be negative, the Quality Committee defers the application or rejects it. They must justify the deferment / rejection in writing.

3 Employment

- 3.1 Users of marks may employ the Quality Mark for services, which correspond with the Quality and Test Regulations, only.
- 3.2 The Gütegemeinschaft is alone entitled to have manufactured means of marking the Quality Mark (metal stamping, embossed stamps, blocks, seals, seal marks, rubber stamps or similar) and issue them or have them issued to users of marks and to determine in detail the category of usage.
- 3.3 The Board of Management can enact/issue special provisions for the use of the quality mark in advertising and in the advertising of the quality association in order to preserve the integrity of competition and prevent misuse of the Mark. The individual advertising may not be prevented through this. For that the maxim of the integrity of competition applies.
- 3.4 The Quality Committee, in agreement with the RAL, can determine the employment of the Quality Mark in different forms for different services.
- 3.5 If the right to the use of the Mark has been irrevocably revoked, the award certificate and all means of marking are to be returned. There is no entitlement to a reimbursement of costs.

4 Monitoring

- 4.1 The Quality Association is entitled and obliged to monitor the use of the Quality Mark and the compliance with the Quality and Test Regulations. The continuity of the monitoring by suitable, neutral test engineers or within the scope of a monitoring contract with a neutral test institute is to be verified to RAL.
- 4.2 Every user of the Mark is obliged to comply with the Quality and Test Regulations. He/she is to hold ready all acceptance certificates so far as the fabrication and maintenance or the tendering for and/or construction surveillance of drains and sewers are concerned. The Quality Committee or its representatives can inspect these documents at any time and, if necessary, check the records for completeness. The user of the Mark submits his/her quality assured services to the monitoring checks by the Quality Committee or its representatives in scope and frequency according to the associated requirements of the Quality and Test Regulations. He/she bears the inspection costs.
- 4.3 The user of the Mark has to allow the inspector, at all times, to inspect the enterprise during operating hours and the unhindered execution of the inspection. In addition, information can be obtained from customers for the checking of the completeness of the acceptance certificates.

- 4.4 If an inspection proves negative or raises objections to a service, the Quality Committee has the inspection repeated. The user of the Mark can also demand a repeat inspection.
- 4.5 A record is to be made of each inspection. The Quality Association and the user of the Mark each receive one copy thereof.
- 4.6 If the Quality Committee is approached by third parties with complaints about services, then the former has to inform the complainants that, in the case of the carrying out of a special inspection, the complainant has to bear the costs if the complaint is unjustified. If the complaint is justified, the costs are borne by the user of the Mark.
- 4.7 For additional visits with repeat inspections as well as increased visits due to a decision of the Quality Committee, the charges are raised according to the schedule of contributions and fees.

5 Penalisation of Contraventions

- 5.1 If deficiencies are determined in the quality assurance by the Quality Committee, the Board of Management, on the recommendation of the Quality Committee, imposes penalty measures on the user of the Mark. These are dependent on the severity of the contravention:

Implementation regulations

- 1. Additional conditions within the scope of self-monitoring,
 - 2. Reduction of the visit interval,
 - 3. Admonishment,
 - 4. Limited or permanent withdrawal of the Mark.
- 5.2 The measures given under 5.1 can be combined with each other.
 - 5.3 The user of the Mark is to be heard before enforcement of the measures.

6 Appeals

Users of the Mark can file with the Quality Committee an appeal against the penalty measures, within four weeks following receipt of these in a registered letter, over which a decision is to be made with justification at the latest within three months.

7 Re-award

If the right to use the Mark had been withdrawn, it can be re-awarded at the earliest after three months. The procedure is governed by Section 2. The Board of Management can set additional conditions.

8 Amendments

These implementation regulations together with examples (Certificate of Obligation, Award Certificate) are recognised by RAL. Amendments, also of an editorial nature, for their effectiveness require the previous written agreement from RAL.

Implementing Regulations

Certificate of Obligation

1. The signatory / the signatory firm hereby apply by the Gütegemeinschaft Herstellung und Instandhaltung von Abwasserleitungen und -kanälen e. V. - Güte-schutz Kanalbau, for
 - the acceptance as Member *
 - the award of the right to use *) the Quality Mark for the fabrication and maintenance of drains and sewers.
2. The signatory / the signatory firm confirms that
 - the Articles of Association of the Gütegemeinschaft Herstellung und Instandhaltung von Abwasserleitungen und -kanälen e. V. - Güteschutz Kanalbau,
 - the Quality Mark Articles of the Gütegemeinschaft Herstellung und Instandhaltung von Abwasserleitungen und -kanälen e. V. - Güteschutz Kanalbau,
 - the Implementation regulations of the Gütesicherung Kanalbau RAL-GZ 961,
 - the Quality and Test Regulations of the Gütesicherung Kanalbau RAL-GZ 961 are noted and hereby, with the agreement of a membership, are recognised without reservation as being binding.

Place, Date

Firm's stamp and signature

*) Delete non-applicable as required

GÜTESCHUTZ KANALBAU GÜTEGEMEINSCHAFT HERSTELLUNG UND INSTANDHALTUNG VON ABWASSERLEITUNGEN UND -KANÄLEN E. V.

Award Certificate

The Gütegemeinschaft Herstellung und Instandhaltung von Abwasserleitungen und -kanälen e. V. - Güteschutz Kanalbau hereby award, on the basis of the inspection report, presented to its Quality Committee, on the firm

the proprietary quality mark für the fabrication and maintenance of drains and sewers, approved by RAL Deutsches Institut für Gütesicherung und Kennzeichnung e.V. (German Institute for Quality Assurance and Marketing) and through registration with Deutsches Patent- und Markenamt (German Patent and Trade Mark Office) as Collective Mark.

The use of the quality mark is permitted only in combination with the addendum shown below the quality mark.

Bad Honnef, dated

Gütegemeinschaft Herstellung und Instandhaltung
von Abwasserleitungen und -kanälen e. V

Chairperson

Managing Director

Güteschutz Kanalbau
Linzer Straße 21
53604 Bad Honnef
West Germany

Gütegemeinschaft Herstellung
und Instandhaltung von
Abwasserleitungen und -kanälen e. V.

Telefon +49 2224-9384-0
Telefax +49 2224-9384-84
E-Mail info@kanalbau.com

www.kanalbau.com