

**MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS**

**Draft**

**Regulation amending and supplementing**

**Regulation No RD-02-20-8 of 2013 on the design, construction and operation of sewerage systems** (SG, No. 49 of 2013; amended and supplemented in issue No. 82 of 2014 and SG issue No 99 of 2018).

§ 1. Article 1 shall be amended and supplemented as follows:

1. In paragraph 1, after the word “reconstructions”, the words “refurbishments or major renovations” shall be inserted and the words “in urbanised areas of more than 200 RE (Resident Equivalent)” shall be deleted;

2. Paragraph 2 shall be repealed;

3. Paragraph 3 shall be amended as follows:

“(3) Sewerage systems shall consist of:

1. sewerage networks, sewage collectors, facilities and building sewage diversions; Waste water treatment plants (WWTPs)”;

4. In paragraph 4, after the words “in accordance with those in force” shall be added “general and”, the words “Article 110(1) of” shall be deleted and the words “essential requirements” shall be replaced by “the requirements”.

§ 2. Article 2 shall be amended and supplemented as follows:

1. Paragraph 5 shall be amended as follows:

“(5) The deployment of sewerage networks and facilities in urban areas shall be carried out in compliance with the rules and norms for the deployment of technical conduits and facilities in settlements.”

2. New paragraphs 6 and 7 shall be added

(6) For sewerage networks and facilities outside urban areas, easement strips shall be defined in accordance with the requirements of Regulation No RD-02-20-1 of 2020 on the conditions and procedure for determining the dimensions and location of easement strips and of the special mode of exercise easements of water supply and sewerage lines (networks) and facilities outside the settlements and settlement entities (promulgated, SG issue No. 29 of 2020).

(7) For WWTPs that are not subject to an environmental impact assessment under environmental regulations, a protection zone of at least 350 m shall be provided. A reduction of this distance of up to 50 % shall be allowed after justified demonstration that the proposed technology reduces the emission of harmful emissions, noise and unpleasant odours.”

2. The former paragraphs 6 and 7 shall become paragraphs 8 and 9.

§ 3. Article 3 shall be amended and supplemented as follows:

1. In paragraph 1, sub-paragraph 1 shall be amended as follows:

“1. protection and mitigation of the risk of flooding of the urban area, taking into account flood risk and flood hazard maps, in accordance with the Flood Risk Management Plan (FRMP);”;

2. New paragraphs 3 and 4 shall be added

“(3) The minimum design service life shall be 25 years, taking into account planned future changes for the purpose of determining the waste water effluents”;

(4) Sewerage systems shall be designed and constructed in such a way as to prevent river water ingress into them.”

3. The former paragraph 3 shall be deleted;

4. The current paragraph 4 shall become paragraph 5.

§ 4. In Article 5(1), the words “design lifetime” shall be replaced by “economically reasonable working life”.

**§ 5.** In Article 6(1), the words "household and production" shall be replaced by "for domestic and industrial waters".

**§ 6.** Article 9 shall be amended and supplemented as follows:

1. In the main text, the words "waste water" shall be replaced by "water";
2. Sub-paragraphs 3 and 4 shall be amended to read as follows:  
"3. surface run-off (rain run-off, snow melting, street washing, etc.);  
4. External waters (infiltrated, drainage, etc.);"

**§ 7.** Article 10 shall be amended and supplemented as follows:

1. In paragraph 2, sub-paragraph 3 is repealed.
2. In paragraph 3, the following sub-paragraph 13 shall be inserted:  
"13. the results of comparative analysis of conceptual solutions with different types of sewerage systems, taking into account their impact on the environment (water, air and soil), health and technical aspects, cost/quality of waste water disposal and treatment services, etc."

**§ 8.** Article 11 shall be amended as follows:

"Article 11. (1) In the case of verification of the results of the design of gravitational sewerage networks, covering catchment areas above 200 ha and/or for flood risk assessment, computer models shall be applied to simulate run-off in accordance with Annex 6. The minimum necessary data shall be as follows:

1. Digital data on the existing sewerage network (type of sewerage network, degree of construction, spatial configuration, material from which the pipes are made, facilities along the network, technical condition and hydraulic capacity of the network and facilities, drainage standard at the time of design and at the end of the design life of the sewerage system);
2. Numerical data on surface water bodies (waste water receivers) (characteristic water quantities, water stands and water levels with a certain guarantee, presence, type and spatial configuration of river correction or shore reinforcements, targets for the receiving water);
3. Digital model of the terrain of the urbanised territory reflecting the respective spatial, building and hydrological-hydraulic characteristics;
4. Data from hydrological studies at the time of design;

(2) The design mandate shall include the available output data referred to in paragraph 1. In cases where not all necessary data are available, the assignment contains requirements for their acquisition and/or development.

(3) In designing reconstructions, major renovations and/or major repairs of existing sewerage networks, their period of operation, the location and type of sewage network and construction products used, as well as all available data in the technical operation of the network in case of emergency and/or flooding in adjacent areas and their environmental impacts, shall be taken into account in addition."

**§ 9.** Article 12 shall be amended and supplemented as follows:

1. In paragraph 1, the words "tree-shaped/dredging" shall be replaced by "tree-shaped";
2. In paragraph 2, the words "storm-water run-off" shall be replaced by "rain water".

**§ 10.** Article 13(10) shall be amended to read as follows:

"10. the conditions for laying and backfilling the pipelines."

**§ 11.** New articles 15a and 15b shall be inserted:

"Article 15a. (1) Daily average water quantities for domestic waste water, industrial waste water and external waters shall be determined for two cases:

1. To the estimated year of commissioning;
2. At the end of the design lifetime, which shall be at least 25 years after the year of commissioning.

(2) The larger sum of the three water quantities in the cases referred to in paragraph 1 shall determine the year of measurement.

Article 15b. (1) The average daily water quantity of domestic waste water shall be defined as the product of the number of inhabitants (permanent, tourists, incoming, etc.) and the corresponding drainage rate.

(2) The drainage rate is accepted to be 90 % of the water supply standard for drinking and household needs.

(3) The number of residents shall be reported for the relevant year, in accordance with the cases referred to in Article 15a.

(4) Collecting systems where there is seasonal unevenness of the generated water quantities shall be sized for the season with a maximum number of residents. For the remaining seasons, the necessary checks shall be made to ensure their proper functioning.”

**§ 12.** Article 16(1) shall be repealed.

**§ 13.** In Article 17(2), after the words “where:  $m$  is a factor to be taken from 0.1 to 1.0” shall be added “after justification taking into account the status of the network, groundwater level, etc.”.

**§ 14.** In Article 19(1) in the description of  $Q_{EOB, max}^{yq}$  to Formula 2d, the indication in brackets “2a” shall be replaced by “2b”.

**§ 15.** Article 20 shall be amended as follows:

“Article 20 (1) The hydraulic sizing of the gravitational sewerage networks shall be carried out according to well-established hydraulic formulas for determining the minimum possible cross-sectional dimension of the volume of water.”

(2) The hydraulic sizing of the sewer pipes shall be carried out according to data from the technical specifications of the designed pipes using the well-established Kolbrook hydraulic formulae for all areas of hydraulic resistances and/or Manning formulae for the square area of the hydraulic resistances.

(3) The conduits for waste water shall be hydraulically dimensioned in such a way as to ensure ventilation, as well as to limit as much as possible the possibility of depositing suspended substances at the bottom and ensuring the movement of sediments already deposited along their length (providing conditions for the self-cleaning speed of waste water in the pipes).

(4) The admissible minimum and maximal waste water speed while sizing gravity sewer lines shall be compliant with Appendix 8.

**§ 16.** Article 21 shall be amended and supplemented as follows:

1. Paragraph 1 shall be amended as follows:

“(1) In the design of gravitational sewerage networks, a minimum diameter of 250 mm of tubes of circular cross-section shall be assumed. Non-circular cross-sections shall provide no less hydraulic conductivity.”

2. In paragraph 3, the words “m/m” shall be inserted after the number “0.01” and the words ““where the diameter used corresponds to the dimensioning water quantity” shall be deleted.

**§ 17.** Article 22 shall be repealed.

**§ 18.** In Article 23(2), a second sentence shall be inserted: “Revision shafts with a larger diameter of the input hole shall be designed when, depending on the specific conditions, this is required by the assignment of the contracting authority.”.

**§ 19.** In Article 25, new paragraph 4 shall be inserted:

“(4) When the roof plate of the shafts is more than 120 cm in size, the upper surface of the plate shall be at a level lower than or equal to the base of the bottom layer of the road structure. Exceptions shall be allowed for revision shafts in green or arable areas. In the case of reconstruction of manholes of a size greater than 120 cm, the upper surface of the roof plate of an inspection shaft shall be allowed to reach a maximum of 40 cm below the upper surface of the road surface.”

**§ 20.** Article 26 shall be amended and supplemented as follows:

1. In paragraph 1:
  - a) in the main text, the words “designed under streets” shall be deleted;
  - b) in sub-paragraph 1, the words “on the stree” shall be replaced by “according to BDS EN 124 “Gully tops and manhole tops for vehicular and pedestrian areas”;
2. Paragraph 4 shall be amended as follows:
 

“(4) The staircases/steps in the inspection shafts shall comply with BDS EN 14396 “Fixed ladders for manholes” and BDS EN 13101 “Steps for underground man entry chambers. Requirements, marking, testing and evaluation of conformity.”
- § 21. Article 28 shall be amended and supplemented as follows:
  1. Paragraph 1(3) shall be amended to read as follows:
 

“3. transverse to the streets at transverse tilts of the street up to 0.5 %. The linear rain catchment facilities shall comply with BDS EN 1433 “Drainage channels for vehicular and pedestrian areas. Classification, design and testing requirements, marking and evaluation of conformity.”
  2. Paragraph 2 shall be amended as follows:
 

“(2) Rainfall manholes shall be designed with a sedimentation part and an entrance grid that complies with BDS EN 124 “Gully tops and manhole tops for vehicular and pedestrian areas”.”;
  3. In paragraph 3, the words “should comply with BDS EN 124” shall be inserted after the words “rainwater intake facilities”;
  4. Paragraph 4 shall be amended as follows:
 

“(4) Rainwater intake facilities shall be secured against subsidence.”
  5. A new paragraph 5 shall be established:
 

“(5) For the streets of the primary street network, the grates of the rainwater inlet structures shall be provided with a system against accidental opening.”
  6. The current paragraph 5 becomes paragraph 6.
  7. The former paragraph 6 shall become paragraph 7 and the word "shafts" shall be replaced by "facilities";
  8. New paragraph 8 shall be inserted:
 

“(8) The drainage gullies and the water collection shafts to them shall be designed of waterproof and frost resistant material.”
- § 22. Article 31 shall be amended and supplemented as follows:
  1. In paragraph 1, the words "Rainfall manholes (rainfall spillways)" shall be replaced by "Rainfall spillways (rainfall manholes)";
  2. In paragraph 2, the words "rain shafts" and "rainfall manholes" shall be replaced by "rainfall spillways" and ‘rain overflows’ respectively.
- § 23. Article 32 shall be amended and supplemented as follows:
  1. In paragraph 1, the words "rainfall manholes" shall be replaced by "rainfall spillways" and the words "maximum average annual water quantity with 1 % guaranteed" shall be replaced by "1 % coverage of its maximum outflow rate’;
  2. In paragraph 2, the words “the inlet sewer conduit or channel” shall be replaced by “the outflow channel/pipeline”;
  3. New paragraph 3 shall be inserted:
 

“(3) Measures shall be provided in the structural design of rainwater overflow manholes to restrict the discharge of floating materials to the outflow collector in the event of overflow.”.
- § 24. Article 33 shall be amended and supplemented as follows:
  1. In paragraph 1, the words ‘rain shafts’ are replaced by ‘rain spillways’;
  2. In paragraph 2, the words "rainwater overflow shafts" shall be replaced by "rain overflows" and the words "and the hydraulic-constructive characteristics of the overflow" shall be deleted.

3. In paragraph 3, the words "storm-water run-off" shall be replaced by "rainfall run-off".

**§ 25.** In Article 35(5), the word "nominal" shall be deleted.

**§ 26.** Article 36(3) shall be amended to read as follows:

“(3) A pipe subway shall be designed at the inlet shaft of the duct, which, if necessary, creates the possibility of direct discharge of waste-water into another manhole of the sewerage system, retaining volume (of a size agreed with the operating organisation) or to be incorporated into a mobile waste-water intake. Discharge to a surface water body (receiving water body) is also permitted for rainwater sewers.

**§ 27.** Article 38 shall be amended and supplemented as follows:

1. In the second sentence of paragraph 1, the word “restraints” shall be replaced by “restraint tanks”;

2. In paragraph 2, the words “as a result of the back-watering” shall be deleted and a second sentence shall be inserted: “The maximum water level in the retention tank may not be higher than the tip of the inlet path.”

**§ 28.** Article 39(2) shall be amended to read as follows:

“(2) The operating volume of the retention tanks shall be determined according to Annex No 9.”

**§ 29.** Article 40 shall be amended and supplemented as follows:

1. Paragraph 1 shall be amended as follows:

“(1) To reduce the hydraulic load of sewer systems, where possible, surface run-off shall be detained in infiltration drainage systems near their area of formation or their direct discharge into a surface water body shall be envisaged.”;

2. In paragraph 2, the words “surface run-off uncontaminated rainwater” shall be replaced by “surface run-off”.

3. In paragraph 3, the following sub-paragraph 4 shall be inserted:

“4. the risk of increasing the humidity of the ground to nearby buildings and facilities shall be investigated.”

4. In paragraph 4, the words “Waste-water from car parks” shall be replaced by “surface run-off from parking lots and street pavements”.

**§ 30.** Article 44 shall be amended and supplemented as follows:

1. In paragraph 2, the word “sand traps” shall be replaced by “sand retainers”;

2. Paragraph 5 shall be amended as follows:

“(5) Where possible, an emergency pipeline shall be provided in front of the sewerage pumping stations to remove the effluent into another drainage shaft of the sewer system, for volume retaining, or for inclusion into a mobile water intake in the event of an accident or power shut-down.”

**§ 31.** Article 45 shall be amended and supplemented as follows:

1. In paragraph 2(2), the word “sucking” shall be replaced by “suction”;

2. Paragraph 4 shall be amended as follows:

“(4) The possibility of cleaning shall be provided for the draw-off tanks. In accordance with the technical feasibility and at the discretion of the designer, the homogenisation of waste water shall be envisaged in order to avoid dead zones in the draw-off tank.”

3. In paragraph 5 after the words “provided for” shall be added “fixed or mobile” and the word “weight” shall be replaced by “mass”.

**§ 32.** The following amendments and supplements shall be introduced in Article 47(1):

1. In the main text, the number “100” shall be replaced by “80”;

2. Item 2 shall be amended to read as follows:

“2. the minimum speed requirement of 0.7 m/s;”

3. A new sub-paragraph 3 shall be inserted:

“3. the requirement of minimum total financial costs;”

4. The previous items 3 and 4 shall become 4 and 5.

**§ 33.** In Article 48, the following paragraphs 3 and 4 shall be inserted:

“(3) In the case of passing of pressure sewage pipelines through water bodies, at least two pipelines shall be designed, one being operational and the other for emergency. It is allowed that both pipelines are working, as in this case the capacity, speeds and other parameters of the system shall be checked both in normal mode of operation and in emergency mode when one of the pipelines is operating.

(4) The location and type of air vents on the pressure pipelines shall be determined in accordance with the regulatory requirements for the design, construction and operation of water supply systems.”

**§ 34.** In Article 53, new paragraph 3 shall be inserted:

“(3) In order to ensure safety, the electrical panels shall be located above ground. Electrical panels are permitted to be located below the ground elevation for underpasses. In these cases, protection against flooding of the boards should be provided.”

**§ 35.** In Article 56(2)(4), the words “ground water” shall be replaced by “underground water”.

**§ 36.** In Article 70(2)(4), the words “ground water” shall be replaced by “underground water”.

**§ 37.** The title of Chapter Five shall be amended as follows: “Monitoring, control and automation of sewage networks”.

**§ 38.** Article 77 shall be amended and supplemented as follows:

1. Paragraphs 1 and 2 shall be amended to read as follows:

“(1) Monitoring, control and automation systems shall be designed for sewerage networks for the period of operation.

(2) The type of the monitoring, control and automation systems shall be analysed and evaluated at the stage of the investment design of the sewerage networks.”

2. In paragraph 3, the word “control” shall be replaced by “monitoring”.

**§ 39.** Article 78 shall be amended and supplemented as follows:

1. In paragraph 1:

a) in the main text, the word “control” shall be replaced by “monitoring” and the word “includes” shall be replaced by “are related to”;

b) in sub-paragraph 2, the words “measuring instruments” shall be replaced by “means of measurement”;

c) in sub-paragraph 3, the words “and the other separation chambers” shall be deleted;

d) item 4 shall be amended as follows:

“4. rainwater overflows;”;

2. In paragraph 3, sub-paragraph 5, the words “measuring devices” shall be replaced by “means of measurement”

**§ 40.** Article 79(3)(21) shall be amended to read as follows:

“21. the hourly, weekly and seasonal variability of the quantity and composition of the waste stream.”

**§ 41.** The following Article 79a shall be inserted:

“Article 79a. The requirements for the facilities in the WWTP set out in Chapter Seven of this Part of the Regulation may not be applied to the design of the WWTP for urban areas with less than 2000 RE (Resident Equivalent) provided that the treatment technology applied complies with the requirements of the normative acts referred to in Article 79(2) and the factors referred to in Article 79(3) are taken into account.”

**§ 42.** Article 81 shall be amended and supplemented as follows:

1. In paragraph 1, the word “characteristic” shall be replaced by “dimensional”;

2. In paragraph 2, the first sentence shall be amended as follows: “In case of reconstruction of the WWTP, it is permissible to determine the dimensioning water quantities and loads on the basis of an analysis of measured water quantities and WWTP inlet pollutant concentrations, with at least a 3 year database of measurements carried out at least once a day.”.

3. Paragraph 3 shall be amended as follows:

“(3) In the absence of reliable real data from measurements and/or studies, it is permissible to determine the polluting loads by equivalent inhabitants according to Annex 11.”

**§ 43.** In Article 83(2) and (3) shall be amended as follows:

(2) In case of a need for averaging by composition and/or quantity of the waste-water, averaging tanks shall be envisaged.

(3) The sizing of the WWTP shall take into account the impact of the sludge effluent from the sludge treatment processes.”

**§ 44.** Article 84 shall be amended and supplemented as follows:

1. In paragraph 1, the words “for WWTPs exceeding 10,000 RE” shall be inserted after the words “technological treatment schemes”;

2. Paragraph 2 shall be amended as follows:

“(2) For treatment plants between 2,000 RE and 10,000 RE, a technological scheme shall be chosen to ensure flexible and secure operation.”;

3. In paragraph 3, a second sentence shall be inserted: “Those waters and sludge shall be taken into account in the sizing of the WWTP.”.

**§ 45.** Article 85 shall be amended and supplemented as follows:

1. In paragraph 1, the words “The discharge devices” shall be replaced by “The discharge facilities”.

2. New paragraph 3 shall be inserted:

“(3) The discharge facilities into a river should be designed so that:

1. to protect the WWTP from flooding at 1% coverage of the maximum run-off;

2. to protect the river bed from digging out at a minimum of run-off.”

**§ 46.** In Article 88(3), the word “sand traps” shall be replaced by “sand retainers”.

**§ 47.** Article 89 shall be amended and supplemented as follows:

1. In paragraphs 1 and 2, the word “sand traps” shall be replaced by “sand retainers”.

2. Paragraph 3 shall be amended as follows:

“(3) For the purpose of subsequent recovery of sand, facilities shall be provided to flush the retained sand in order to remove organic matter in the following cases:

1. for treatment plants above 10,000 RE.

2. for treatment plants between 2,000 RE and 10,000 RE at the contracting authority's request.”

**§ 48.** The following amendments shall take place in Article 90:

1. In paragraph 1, the word “matter” shall be replaced by “substances”.

2. In paragraph 2, the word “sand traps” shall be replaced by “sand retainers”.

**§ 49.** Article 92(1) shall be amended to read as follows:

“(1) The biological treatment of waste water shall be applied to reduce biodegradable organic pollution, nitrogen and/or phosphorus.”

**§ 50.** In Article 93(2) and (3) shall be amended as follows:

“(2) Biological treatment facilities shall include a bio-reactor for carrying out the purification process and facilities for subsequent separation of treated water from the biomass. It is possible for the purification and separation processes to take place in a single facility.

(3) Biological treatment facilities shall be designed to ensure that the required level of treatment is achieved for the discharge or subsequent treatment of waste-water and to ensure reliable and flexible operation of the WWTP.”

**§ 51.** Article 94 shall be amended as follows:

“Article 94 (1) The extensive biological treatment shall be carried out in conditions similar to natural.

(2) The bottom and walls of extensive biological treatment facilities shall be designed watertight.

(3) Extensive biological treatment shall be applied alone or in combination with other biological treatment methods.”

**§ 52.** Articles 95 and 96 shall be repealed.

**§ 53.** Article 98 shall be amended as follows:

“Article 98. (1) A technological step for decontamination of treated waste water shall be designed, constructed and maintained in constant operational readiness to the WWTP.

(2) In the design of decontamination facilities, the requirements of BDS EN 12255-14 “Waste-water treatment plants” shall be complied with. Part 14: Disinfection“ and good engineering practices.”

**§ 54.** The following amendments and supplements shall be introduced in Article 100(1):

1. Sub-paragraph 3 shall be amended to read as follows: “3. the composition of sludge (chemical, biological and physico-chemical);”

2. Sub-paragraph 14 shall be inserted:

“14. the possibilities of extracting useful substances from the sludge.”

**§ 55.** In Article 104(3), the words “pipe diameter at least DN 80” shall be replaced by “internal diameter of pipelines 80 mm”.

**§ 56.** In Article 108(6), the words “Annex 1” shall be replaced by “Article 2(7)”.

**§ 57.** The title of Chapter 11 shall be amended as follows: “WWTP monitoring and management”;

**§ 58.** In Article 119(1), the words “operational control” shall be replaced by “operational surveillance”;

**§ 59.** In Article 120(1), (2), (3) and (5), the word “control” shall be replaced by “monitoring”;

**§ 60.** In Article 121(1), the word “control” shall be replaced by “observations”.

**§ 61.** In Article 123, new paragraph 4 shall be inserted:

“(4) All deviations from the project shall be coordinated with the designer and the construction supervision and shall be documented. If there is a need for substantial deviations from the approved investment project, the provisions of the Spatial Planning Act shall be complied with.”

**§ 62.** Article 125 shall be amended as follows:

“Article 125. (1) In case of earthworks related to the lowering of the groundwater level and in case of necessity of surface water drainage, the method of drainage of these waters as well as the strengthening and reinforcement of the foundation base in case of weak soils shall be provided for in the investment project.

(2) The discharge of surface water and groundwater under par. 1 shall be discontinued after completion of the construction process or after completion of the earthworks and completion of the construction installation works below the water level elevation of the groundwater.”

**§ 63.** Article 129 shall be amended and supplemented as follows:

1. In item 3, the word “subsurface” shall be replaced by “underground”.

2. In item 6, the words “in the absence of other indications, they shall not contain particles larger than 25 mm” shall be deleted.

**§ 64.** In Article 138, the words “as well as the characteristics of the soil’ shall be deleted and, and finally add, “in accordance with Annex 12a”.

**§ 65.** In Article 139(1), the words “the design workloads” shall be replaced by “the design loads”.

**§ 66.** Article 141 shall be amended and supplemented as follows:



1. Paragraph 1 shall be amended as follows:

“(1) The pipes shall be backfilled by laying layers of appropriate materials, in accordance with Annex No 12a.”;

2. Paragraph 2 shall be amended as follows:

“(2) The material type and compaction requirements for the base backfill and backfill for the area around the pipe shall be defined in part “Water supply and sewerage” of the investment project. The requirements for the compaction of the ground bed under the road surface and for the implementation of the road structure above the ground bed shall be part of the investment project for the construction of the road. In cases where there is no road surface, the design of the water supply and sewerage part shall decide on the type of backfill and the degree of its compaction.”

3. Paragraphs 3 and 4 shall be repealed.

4. Paragraph 8 shall be amended as follows:

“(8) Prior to final restoration of the top surface of the trench in which the waste water pressure pipe is laid, warning tape shall be placed on the main backfill for identification and protection. No warning tape shall be provided for gravitational areas.’

**§ 67.** Article 150 shall be amended as follows:

“Article 150 (1) The testing of sewerage networks and facilities shall be carried out after the completion of the construction and installation works and prior to laying of durable pavement.

(2) The testing of sewerage networks shall be carried out on a separate section, including facilities, in accordance with the requirements of Annex 14.

(3) The pipeline shall be tested after backfilling and removal of reinforcements.”

**§ 68.** Article 151 shall be amended as follows:

“Article 151. (1) The control and testing of the elements of the sewerage networks shall include the following procedures:

1. visual and instrumental control;

2. inspection with camera;

3. impermeability test.

(2) The visual and instrument monitoring referred to in paragraph 1(1) shall include tests for the following:

1. direction, straightness and inclination of the pipe sections;

2. pipe bottom elevations at the ends of pipe sections;

3. characteristic elevations of the facilities on the sewerage networks;

4. pipe connection levels of different sizes (diameters);

5. performance of insulation, screeds and surface coatings.

(3) The camera inspection referred to in paragraph 1(2) shall include checks on:

1. implementation of pipe connections;

2. damage and deformation to the pipe sections;

3. number and locations of building discharges and rain catchment facilities;

4. the design longitudinal slope visualised graphically.

(4) In the course of the inspection referred to in paragraph 3(4), reverse slopes shall be not allowed, as well as differences between the elevations of the design and executed profile, which are:

- greater than 5 cm for internal diameters  $\leq 500$  mm;

- greater than 7 cm for internal diameters  $> 500$  mm;

(5) The inspection with a camera shall be carried out prior to the start of the road construction (where available).

(6) The impermeability test of the pipelines and facilities referred to in paragraph 1(3) shall be carried out in accordance with the recommendations of the approved investment project.

(7) The material captured during the video recording under paragraph 1(2) shall be considered an integral part of the documentation on the acceptance of the sewerage network.

(8) If, at the time of the test, the groundwater level is above the pipeline's elevation, an infiltration test shall be performed. The maximum permissible infiltration rates shall comply with the maximum permissible ex-filtration rates set out in Annex 14. In cases where the infiltration test is successful, it shall be considered a hydraulic impermeability test.”

**§ 69.** Article 152 shall be amended and supplemented as follows:

1. A new paragraph 2 shall be established:

(2) The impermeability testing of gravity sewers above DN 1,000 shall be carried out in accordance with the contracting authority's requirements.

2. The former paragraph 2 shall become paragraph 3.

3. The former paragraph 3 shall become paragraph 4 by replacing at the end the words “sewer line” by “of the two pipelines”;

4. The current paragraph 4 shall be changed to paragraph 5.

**§ 70.** The following Articles 152a and 152b shall be inserted:

“Article 152a. The testing of pushers, as well as of pumping stations and units, shall be carried out according to the procedure in line with the regulatory requirements for water supply systems.

Article 152b. The testing of concrete tanks shall be carried out in accordance with the procedures referred to in Article 176 of this Regulation.”

**§ 71.** Article 177 shall be amended and supplemented as follows:

1. In paragraph 1, the words “of test” shall be inserted after the words “under pressure”;

2. In paragraph 2, the words “the sample pressure” shall be replaced by “the test pressure”.

**§ 72.** Article 179 shall be amended and supplemented as follows:

1. A new paragraph 3 shall be established:

“(3) Testing of plastic pressure sewer pipelines for strength and water-tightness shall be carried out according to procedures specified in the regulatory requirements for the design, construction and operation of water supply systems.”

2. The current paragraph 3 becomes paragraph 4 and in it the words “the requirements of Regulation No. 2 of 2005 on the design, construction and operation of water supply systems (SG issue No. 34/2005)” shall be replaced by “the normative requirements for the design, construction and operation of water supply systems”

3. The current paragraph 4 shall be changed to paragraph 5.

4. The former paragraph 5 shall become paragraph 6 by deleting the words “preliminary and final”

**§ 73.** In § 1 of the Additional Provisions the following amendments and additions shall be made:

1. Sub-paragraph 8 shall be repealed;

2. Sub-paragraph 9 shall be amended to read as follows:

“9. “Combined sewerage network” means the combination of a mixed and separate sewerage network.”;

3. Sub-paragraph 11 shall be amended to read as follows:

“11. “Flood” means the temporary water covering of an area of land normally not covered by water.”;

4. Sub-paragraph 24 shall be amended to read as follows:

“24. “Resident Equivalent” (1 RE) means an organic biodegradable load with a five-day biochemical oxygen demand (BOD)<sub>5</sub> of 60 g of oxygen per day”

5. New sub-paragraphs 28, 29, 30, 31, 32 and 33 shall be inserted:

“28. “Economically justified service life” is in accordance with § 5(65) of the Additional Provisions of the Spatial Planning Act.

29. “Design lifetime” shall be equal to the number of years after entry into service for which the required hydraulic capacity in the design of the sewerage system is determined.”.

30. “Treated waste water” means waste water at the outlet WWTP.

31. “Sludge water” is the water separated in the sludge treatment processes in the WWTP.’

32. “Mobile receiver” is a sewage tank transport vehicle.

33. “Techno-economically more advantageous solution” is a justified solution adopted as a result of an analysis of developed options and their comparison in terms of technical and economic indicators.

**§ 74.** In the Transitional and Final Provisions of the Regulation, § 7 is inserted:

“§7. The standards referred to in the Regulation shall be subject to the existing versions, with the exception of harmonised standards within the meaning of Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, to which the version published in the Official Journal of the European Union applies.”

**§ 75.** Annex 1 shall be repealed.

**§ 76.** Annex 1a shall be amended as follows:

1. In the explanation to “Annex 1a”, the words ‘to Article 2(7)’ shall be replaced by “to Article 2(9)”.

2. In the table under sub-paragraph 1.7, row 7 shall be inserted:

7.	Priority substances and priority hazardous substances	once annually	Composite sample
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3. In sub-paragraph 2.5, at the beginning, the word “Debit” shall be replaced by “Volume”;

**§ 77.** In Annex 3 the following amendments and supplements shall be introduced:

1. In sub-paragraph 2(a), the words “data for” shall be replaced by “analysis of”.

2. In sub-paragraph 2, the words “b” and “c” shall be replaced by “analyses”;

3. In sub-paragraph 2(d), the word “data” shall be replaced by “analysis” and the words “estimated data” shall be replaced by “estimated analysis”.

4. In sub-paragraph 2, in letters “e”, “f”, “i”, “j” and “k” the word “data” shall be replaced by “analysis”;

5. In sub-paragraph 2(g), the words “data (circumstances)” shall be replaced by “analyses”.

**§ 78.** Annex 4 shall be amended as follows:

1. In sub-paragraph 2(e), the words “hydrological data” shall be replaced by “hydrological and hydraulic analysis”;

2. In sub-paragraph 2, in letter “i” the word “data” shall be replaced by “analysis”.

3. In sub-paragraph 2, the letter “m” shall be inserted:

“m) analysis of sewage network and overflows.”

**§ 79.** Annex 6 shall be amended as follows:

1. In the explanation to “Annex 6”, the words “to Article 11(1) and (2)” shall be replaced by “to Article 11(1)”.

2. Sub-paragraph 1.1 “Simplified (empirical) methods” shall be amended as follows:

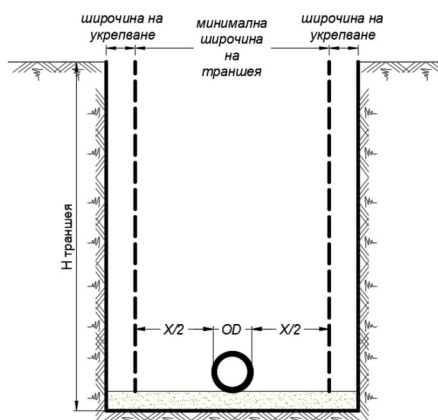
1:1 Simplified (empirical) methods

In these methods the sewage flow shall be considered even and stationary. The velocity at the corresponding fill shall be used to calculate run off time, but the velocity under full profile flow conditions may also be used. The simplified (empirical) methods shall primarily be used to

establish the maximum amount of surface storm-water run-off from catchment areas up to 200 ha using the rational method or run-off times up to 15 min using the constant intensity method.”

§ 80. Annex 7 shall be amended as follows:

1. The figure below Table 1 shall be indicated as Figure 1: “Figure 1 Unfortified trench”;
2. Figure 2 shall be created after Figure 1:



**Figure 2 Fortified trench**

широчина на укрепване	width of reinforcement
минимална широчина на траншея	minimum trench width
Н траншея	N trench

§ 81. In the explanation to “Annex 8”, the words “under Article 20(3)” shall be replaced by “under Article 20(4)”.

§ 82. In Annex 10 the following amendments and supplements shall be introduced:

1. In sub-paragraph 1 of the explanation for  $Q_{Bov\ cd.}$  after formula (1), the words “according to Article 16” shall be replaced by “pursuant to Article 16a”;

2. In sub-paragraph 4 of point (a), the word “sand-traps” shall be replaced by “sand-retainers” and after formula (4) the words “In the presence of an equalization or storm-water detention basin, the sizing water quantity shall be determined in relation to the accepted operating mode of the respective facility” shall be added;

1. In sub-paragraph 5, point (b) shall be amended as follows:

“b) the throughput capacity of distribution and collection channels, chutes and pipelines shall be increased by 20% compared to their dimensioned water quantity.”

§ 83. In the explanation to “Annex 11”, the words “under Article 81(2)” shall be replaced by “under Article 81(3)”.

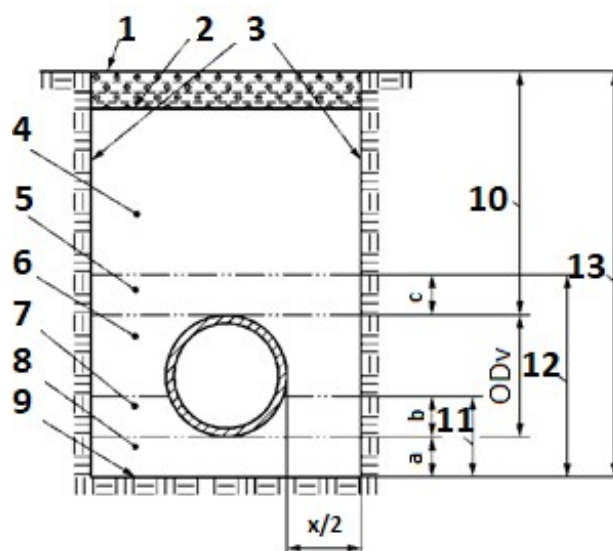
§ 84. Annex No 12a shall be inserted:

“Annex No 12a  
to Articles 138 and 141(1)

### Backfilling of sewer pipe trenches

1. Construction and elements of the trench

An example of construction and elements of a trench for sewage pipelines is shown in the following figure.



1	Surface	9	bottom of the trench
2	ground bed on the road surface (where applicable)	10	cover height
3	walls of the trench	11	height of the base
4	basic backfill	12	height of the area around the pipe
5	initial backfilling	13	depth of the trench
6	lateral backfill	a	thickness of the bottom of the base
7	upper part of the base	b	thickness of the upper part of the base
8	lower part of the base	c	thickness of the initial backfill

ODv is the vertical projection of the  
external diameter

**Figure Example trench construction and elements**

## 2. Backfill materials for the area around the pipe

The materials to be used for the backfilling must be determined by the design. Materials from the groups referred to in sub-paragraphs 3, 4 and 6 may be used.

## 3. Re-use of the soil from the excavation

The re use of soil from the backfill trench may take place where provided for by the design. The soil from the excavation shall be free of materials that may adversely affect the pipe (e.g. excessive particles, tree roots, debris, organic materials, frozen materials, snow and ice) and clay clods larger than 75 mm in size.

## 4. Materials delivered

The materials supplied shall be referred to in points (a), (b) and (c). They may include recycled materials and their use must take into account the environmental consequences.

### a) Grain materials

Grain materials may be:

- fractionated (one-size) grain material;
- ungraded grain material (material with different granular composition);
- sand

- any additional materials;
- crushed materials.
- b) Materials with binders  
Binder materials may include:
  - soil with cement;
  - stabilised soil (e.g. with cement, calcium carbonate);
  - lightweight concrete;
  - concrete with reduced cement and/or sand content and free of coarse additive material (for pavement or concrete base);
  - non-armoured concrete;
  - reinforced concrete;
  - self-compacting backfill materials.
- c) Other materials

Materials which can be compacted, other than those described in letters (a) and (b), may be used for the area around the pipe when they are not expected to adversely affect the pipe. The project must take into account the environmental impact of these materials.

#### 5. Maximum particle sizes in the area around the tube

Table 1 gives the maximum particle sizes in the area around the pipe for some pipe types. In the case of reuse of soil from the excavation, no soil clods of a size greater than twice that specified in Tab. 1. The use of frozen material as well as debris (e.g. asphalt concrete pieces, bottles and timber) is not allowed.

For wall-structured tubes and materials not listed in the table, e.g. polyethylene pipes and pipes of PE 100 RC, the requirements of product standards or, where not available, the manufacturer's technical specifications shall be complied with.

Table 1

Material of the pipes		Particle size
Fiberglass pipes	DN ≤ 400	0 – 16 mm Single grains up to 16 mm
	DN <400	0 – 32 mm Single grains up to 32 mm
Plastic tubes	DN < 315	up to 20 mm
	DN <315	up to 30 mm
Concrete and glass ceramic pipes	DN ≤ 200	up to 22 mm
	DN <200	up to 30 mm

Notes:

- The values indicated for plastic pipes are for the largest particles of ungraded granular material. If using fractionated (one-dimensional) granular material, the maximum grain size, depending on diameter, shall be smaller than those given in the table, depending on diameter, as follows:  
15 mm for DN < 315; 20 mm for DN ≥ 315
- Where there is a technical specification from the manufacturer of the pipe and fittings indicating the type and size of backfill particles in the area around the pipe that differ from the values in the table, comply with the manufacturer's requirements.

#### 6. Materials for main backfill

The materials used for main backfill shall comply with the requirements of the design. Most of the materials defined in sub-paragraph 2 can be used as a main backfill. Some materials, such as fractionated round grain material, may not be suitable for any conditions.

The maximum size of rock material from the excavated soil (or materials referred to in sub-paragraph 4) to be used for the main backfill shall be 75 mm or equal to the thickness of the

original backfill or half the thickness of the compacted layer, whichever is the least. The maximum size may be further limited depending on the application area (e.g. roads), soil conditions, groundwater availability and pipe material. For rocky areas, special conditions can be defined.

**§ 85.** Annex 14 shall be amended as follows:

1. In the explanation to “Annex 14”, the words “under Article 152(1)” shall be replaced by “under Article 150(2), Article 151(8) and Article 152(1)”.

2. In the second sentence of sub-paragraph 1, the words “from the top of the pipes” shall be added at the end.

### **Transitional and final provisions**

**§ 86.** (1) The Regulation shall apply to investment projects for which the proceedings for approval of an investment project and the proceedings for issuance of a building permit commence after its entry into force

(2) The commencement of proceedings for the approval of an investment project and the issue of a building permit shall be deemed to be the date of submission of the investment project for approval by the competent authority.

**§ 87.** (1) The proceedings initiated for the commissioning of sewerage systems or parts of sewerage systems shall be completed according to the existing procedure.

(2) For the procedure initiated under paragraph 1 shall be deemed to be the drawing up of the statement of findings referred to in Article 176(1) of the Spatial Planning Act for the transmission by the builder to the contracting authority of a sewerage system or part of a sewerage system.

**§ 88.** (1) Proceedings commenced for the construction of sewerage systems or parts of sewerage systems shall be completed in accordance with the existing procedure.

(2) Proceedings under paragraph 1 shall be deemed to be the issue of the building permit for a sewerage system or part of a sewerage system.

**§ 89.** The Regulation shall enter into force four months after its promulgation in the State Gazette.

**ANDREY TSEKOV**

**MINISTER FOR REGIONAL**

**DEVELOPMENT AND PUBLIC WORKS**