

GERMAN ATV RULES AND STANDARDS

W A S T E W A T E R - W A S T E

STANDARD ATV - A 200E

Principles for the Disposal of Wastewater in Rurally Structured Areas

May 1997

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The Standard presented here has been prepared within the framework of the ATV committee work, taking into account the ATV Standard A 400 "Principles for the Preparation of Rules and Standards" in the Rules and Standards Wastewater/Waste, in the January 1994 version. With regard to the application of the Rules and Standards, Para. 1 of Point 5 of A 400 includes the following statement: "The Rules and Standards are freely available to everyone. An obligation to apply them can result for reasons of legal regulations, contracts or other legal grounds. Whosoever applies them is responsible for the correct application in specific cases. Through the application of the Rules and Standards no one avoids responsibility for his own actions. However, for the user, prima facie evidence shows that he has taken the necessary care".

The Rules and Standards are not the sole but rather an important source of knowledge for technically correct solutions for the tasks of wastewater and waste engineering in normal cases. For these the ATV Standards form a yardstick for correct technical conduct. They cannot, however, deal with all possible special cases, in which extensive or limited measures are offered. In special cases it is possible to deviate from the definitions of the Rules and Standards, if the same effectiveness with the same security can be achieved in a different fashion.

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Direction and Objective

This Standard indicates possibilities for the economic realisation of an ordered disposal of wastewater in rurally structured regions. However, with all the currently discussed measures for cost reduction, the actual aims, protection of lakes and rivers and safety of local hygiene may not be placed in jeopardy.

Wastewater treatment plants in rurally structured areas should not be planned, built and operated in accordance with the same principles and requirements as for urban areas, as otherwise the specific costs (DM/inhabitant) would be disproportionately high.

It is the objective of this Standard to simplify the application of relevant Standards specially for rural areas and to promote creative solutions. In this respect proposals for cost reduction, which have often not been taken into account, have been summarised without restricting the design possibilities through new detailed prerequisites. is the preparation and listing. With this, the reduction of the annual costs stands at the forefront, and not only the today propagated investment cost reductions, through divergence from quality ensuring standards. The latter cause, as a rule, considerable follow-on costs in the middle and long-term and/or premature reinvestments. Through this, the required effect of the lowering of charges - if at all - is only achieved in the short-term. Also, cost savings with public sewerage systems, may have not disproportionate costs for additional installations on private property.

The aim of the ATV Standard is not to so reduce standards that, through this, plant operators are in danger of not being able to maintain legal requirements and thus have to face the consequences of criminal and taxation law.

Equally the Standard cannot interfere with the following important cost, contribution and charge relevant factors:

- legal regulations;
- promotion practice of the Federal States;
- formulation of the communal contribution and charge regulations.

Task of this Standard is, in accordance with the given details in ATV Standard A 400 "Principles for the Revision of Rules and Standards" [11] to provide recommendations for the cost favourable solution of planning, construction and operating problems. It should show how the dimensioning bandwidths and planning latitude can be used in the rurally structured regions and, through this , how savings can be made., In particular the statements in the Standard, do not replace the necessary creative service of the engineer with conceptual planning and the constructive implementation in accordance with the requirements of the individual case.

1. Area of Application

The following listed criteria can serve as orientation for the term "rurally structured" within the sense of this Standard:

- small, often widely separated villages and localities;
- large property areas due to more widely spaced, open building, individual farmsteads, hamlets, scattered settlements;
- small settlement density, up to some 25 I/ha settlement area;

- small proportion of hard surfaces, up to some 20 % of the settlement area including roads and paths;
- no continuous , possibly incomplete, sewer network;
- few available technical drainage systems, frequently small sewage treatment plants; sewers often only as stormwater sewers to nearest lake or river, however, frequently with discharges from small sewage treatment plants;
- primarily agricultural structure and, as a rule, little industry and commerce;
- frequently small and low performance surface waters, often preloaded by diffuse inputs;
- often recreational facilities with seasonally heavily varying wastewater production.

The immediate surroundings of towns also counts as rurally structured area, insofar as the above-given criteria apply.

2. General Planning Principles

Basis of all planning of wastewater disposal facilities in rurally structured regions should be a wastewater action plan (WAP). This corresponds with the wastewater disposal concepts or plans legally laid down in some Federal States.

Drainage and wastewater treatment systems form one unit and are always to be so considered also with regard to the lakes and rivers into which discharges are to take place.

All characteristics of the disposal area are to be surveyed and investigated separately for stability and prognosis. They must also be included in the general development planning of a community and particularly in the construction management planning.

The sewerage system catchment area and the capacity of the sewage treatment plant are to be determined according to the actual built-up area and existing population as well as existing population equivalents from commerce. Development forecasts and blanket statements with high safety reserves are to be examined critically. With the determination of basic data one should, as far as possible, refer to existing data material (e.g. water consumption). Falling back on general recommendations must, as far as possible, be limited in order to be able to achieve the planning aims (no over-dimensioning, no unnecessary safety factors, cost optimisation).

The wastewater action plan contains:

- definition of the area of application, primarily according to water management and techno-economic criteria and not according to administrative limits and/or local political aspects;
- determination and techno-economic assessment of all existing wastewater systems (sewers, small sewage treatment plants, local sewage treatment plants), in order, as far as possible, to continue to use these;
- definition of the measures, necessary from the point of view of water pollution control, taking into account the legal data given;