

## CODES OF PRACTICE AND STANDARDS

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### Summary

The development of world community, progress in science and technology, continuous expansion of cooperation between different countries, ecological safety, and improvement of the level of health of all inhabitants of the Earth, attract more and more attention of international, regional and national organizations to standardization in all countries of the world without exception. It is difficult to name a field of human activity, where one cannot meet standardization. The scale of activity in the field of standardization grows continuously, and sphere of application of standardization principles enlarges itself with enlargement and deepening of knowledge, development of science and technology, and improvement of production.

The principal groups of standardization objects enveloping all field of activity in the field of protection of water and atmosphere are as follows:

- terms, definitions, classifying systems;
- requirements for the quality of natural water;
- methods for establishing norms of acceptable concentrations of pollutants;
- requirements for the application of pesticides, detergents, and fertilizers;
- improvement in production technology in the most important fields of industry;
- methods for water purification, waste water discharges, and waste water draining;
- limiting norms of waste water discharges in water bodies;
- norms of water consumption;
- rules of water preservation;
- methods for analysis, tests, measurements, and control tools.

In industrially developed countries in the second half of the twentieth century, standardization developed rapidly in the spheres of industrial production, economics, science, and technology. The world community understood the necessity of development of international standardization. At the same time, the world community faced problems that threatened the fate of the whole of humanity. These facts created a need for novel ideas about the world in which the humanity existed. Unfavorable environmental changes caused by irrational management of humanity led to elaboration of legal protection measures including national laws, national and international norms, rules, and standards.

The standardization of requirements for water quality is the responsibility of international organizations including WHO, EEC, UN, FAO, Codex Alimentarius, and ISO, each to the limits of their spheres of competence.

The ISO standards accumulate the most advanced scientific and technological experience of many countries. These standards are aimed at providing uniformity of production quality including unified methods of testing and assessing quality of goods. Recently, the thematic priorities of ISO have been shifting to the fields of health preservation, environmental protection, development of standards, and development of test methods. ISO has recently adopted a strategy in which the principal ideas are “Cost–Partnership–Optimization”.

The importance of international standards for international trade, environment preservation, and health protection is not in question. The Appendix containing Codex of Established Practice for Development, Adoption, and Application of Standards was included into the Agreement on Technical Barriers in Trade. An urgent appeal to governments is contained in the Codex to employ international standards as a mean for removing obstructions to free circulation of production throughout the world. The activity of the EC Commission in this field is widely known.

National norms exist and develop to regulate levels of substance contamination for environmental preservation. Standards are developing to regulate the requirements for water quality, which are a vitally important medium for life. Close attention is being paid to preservation and regional use of water systems. Techniques of protecting water bodies are well advanced in industrially developed countries. Novel more advanced technology is being introduced in industry; methods of utilization and repetitive use of raw materials are being comprehensively investigated and introduced, and methods for nuclear energy transformation are developing.

The results of national standardization are represented by the national standards DIN, AFNOR, BSI, ASTM, GOST, etc.

## **1. Introduction**

Ideas about normalizing and standardization were formed long ago in the evolving development of global economics, science, and technology, and in the course of perfection of the forms and methods of social production. “Standardization” is defined in the conventional social understanding as activity including the search for solutions of

repetitive problems in the spheres of science, technology, and economics. This activity is targeted to the achievement of maximum degree of order in various field. The results of this activity are the development, publication, and use of “codes”, “norms”, “rules”, and “standards”. This definition reflects the full diversity of standardization and characterizes it as an active effort for ordering, and not only in technical fields. Regulation and standardization are based on the objective achievements of science, technology, economics, and advanced experience. It defines the basis for not only present, but also future development. Thus, it must be conducted in indissoluble connection with technical progress.

In dependence on the level and scale of fulfillment of standardization, and on the forms of participation in this activity, it is commonly accepted to distinguish three type of standardization: international, regional, and national. This differentiation takes into consideration geographic, political, and economic features. International standardization is open for participation of corresponding national organizations for standardization between countries. Regional standardization is activity that is open for corresponding organizations from the states of a particular geographic, political, or economic region of world. Finally, national standardization is the regulating activity within the limits of a particular state. In addition, administrative and territorial standardization is possible as the regulating activity that is carried out at the level of an administrative or territorial unit.

Norms, rules, requirements, and characteristics concerning the standardizing object are developed in the standardization process. All these concepts and parameters are brought together in the regulating document.

According to the Guide 2 ISO/IEC Guide 2, (2004), a standard is a regulating document that is based on consensus and confirmed by a recognized organization. This document is targeted to the optimum degree of ordering in the particular field. The general principles, rules, and characteristics concerning various fields of activity or their results are established by the standard for common and multiple use. This Guide establishes the following varieties of normative documents: standards, technical specifications, codes of set practice, technical regulations and corpus of rules.

Technical specifications are the documents that establish the technical requirements, which should be met in any process or service. The corpus of rules is the document recommending technical rules or procedures of designing, manufacturing, mounting, technical service, and/or exploitation of equipment, constructions, or products. In cases where the document contains mandatory legal norms, and it is confirmed by the organization of power (i.e. by the body possessing the juridical authority and rights), the document is called an “order”.

The standards are classified in the following categories depending on their contents and purposes:

- basic standards that have a wide field of application or contain fundamental ideas for a certain field;
- terminology standards for terms and definitions;

- testing standards for methods for control,
- testing, measurements, and analysis;
- product standards, which establish the requirements to be met by product or group of products for correspondence to its functions;
- process standards for some operations or processes;
- service standards;
- interface standards;
- standards on data to be provided containing the list of characteristics for which the values or other data should be indicated to specify the particular products, functions (processes), or services

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### **Biographical Sketch**

**Vadim A. Taktashov** was the Head of Department All-Russian Research Institute on standardization, Gosstandart of Russia.

Vadim A. Taktashov - Doctor Science (tech.), associate professor (reader) of a metrology, certification and diagnostic, Vice-Director of Central Body of a national system certification of drinking water quality.

Dr. Taktashov research and teaching interests are focused in a number of areas.

First - standardization and quality management of development, production, servicing, maintenance, quality control and tests of different industries products.

A second area is standardization, metrology, management, test and audit drinking water quality.

A third focus is design (projection) quality engineering system (quality management and quality assurance standards).

Vadim A. Taktashov organized and headed activity of technical committees on national standardization in these areas, participated series of national systems of certification (space-rocket engineering, special equipment and methods of a guard, job safety, braits, drinking water, services in a scientific and technological orb etc.).

Dr. Taktashov – is the author more than 130 monographies and tutorials, publications, articles, national state standards, recommendations and normative documents.

Now Dr. Taktashov is General director of State Department inspection and quality assurance surveillance in Central Federal locale of Russia.