



# ISO & water

Global solutions to global challenges



**ISO** standards share proven global solutions with all regions of the world

**ISO** standards offer harmonized technology, terminology and good practice, allowing countries sharing the same water resources to work together efficiently and effectively

**ISO** standards promote best practice for sustainable water management and quality, and facilitate access to water for the world's population

**ISO** standards constitute a complete offering to water issues – from pipes, through irrigation, to test procedures to water services management





## Nothing if not global

Few challenges are more global than water. Rivers and lakes cross national boundaries while oceans are shared resources. Droughts, floods and climate change cut across continents.

ISO provides global tools to help us manage our shared water resources equitably and durably – which are not only crucial for our quality of life, but vital for our very survival.

## The vital challenge

Although essential for life, water supplies are burdened by drought, water shortages, climate change, contamination and pollution, the requirements of large cities, intensive irrigation and a growing population with higher standards of living. Pressure on the world's water resources is reaching unsustainable levels.

Every year, more than 1.5 million children die from waterborne diseases. Water and sanitation are central for improving quality of life, alleviating poverty and hunger, and promoting sustainable development, environmental integrity and health. Considerable investments and sound management of resources, together with increased global cooperation are necessary to meet the needs of the world's population.

The goals of safe water and improved sanitation are highlighted in the UN Millennium Development Goals (MDGs), and are at the heart of the UN Decade of Action *Water for life 2005-2015*.

## Benefits of the ISO system

The water challenge knows no frontiers, and cannot be addressed in isolation.

ISO International Standards represent global consensus on global solutions. Their best practice and technological solutions are powerful tools for taking action on global challenges and achieving public policy goals.

ISO (International Organization for Standardization) is the world's largest developer of voluntary International Standards providing benefits for business, government and society. ISO is a network comprising the national standards institutes of 163\* countries. ISO standards make a positive contribution to the world we live in. They ensure vital features such as quality, ecology, safety, reliability, compatibility, interoperability, efficiency and effectiveness – at an economical cost.

They facilitate trade, spread knowledge, and share technological advances and good management practices.

ISO provides a platform for developing practical tools through common understanding and cooperation with all stakeholders on board. Working through its network of national members, its standards bring together the foremost expertise in the world and disseminate it to both developed and developing countries.

ISO water standards build confidence through consensus-based global solutions for good business practice, management of resources, risk assessment, metrics and infrastructure. They facilitate sustainable water management and increase water potential, helping alleviate water scarcity and contributing to achieving the UN's MDGs.

## Water quality

Every day, two million tons of sewage and other effluents drain into the world's waters. In developing countries, 70 % of industrial waste is dumped untreated, polluting the usable water supply.

ISO's more than 260\* water quality standards provide a common terminology, water sampling methods and reporting and monitoring guidance to check presence of bacteria, purity and other characteristics. They apply to everything from plant treatment agents to natural mineral waters.

## Who benefits?

ISO's water standards benefit state authorities and regulatory bodies; industries using water for processing and cooling purposes; the agricultural sector; laboratories and consultants engaged in monitoring activities; water and wastewater service providers; manufacturers of water-related infrastructure; planners, designers, contractors and construction companies; and most importantly, consumers.

\* As of January 2012





## ISO's comprehensive scope – widespread benefits

Out of a total of more than 19 000\* International Standards, ISO has developed more than 550\* relating to water. Its comprehensive toolbox of solutions features the work of the following ISO technical committees (TCs) and subcommittees (SCs) :

### *Service management and crises*

- **Service activities for drinking water supply and wastewater systems (ISO/TC 224)**  
– Three standards (ISO 24510:2007, ISO 24511:2007 and ISO 24512:2007) provide guidelines for the assessment, improvement and management of service activities for drinking water and wastewater systems. They can help water authorities and operators meet the expectations of consumers and the principles of sustainable development. A standard for crisis management of water utilities is underway.
- **Crisis situations** – An ISO International Workshop Agreement (IWA 6:2008) provides guidelines for the management of drinking water utilities under crisis conditions.

### *Quality and conservation*

- **Hydrometry (ISO/TC 113)** – Some 70 standards for water and silt measurement and groundwater availability support water planning and conservation. They enable reliable and accurate measurements, and facilitate self-sufficiency in meeting future water needs.

- **Water quality (ISO/TC 147)** – (see box “Water quality”)
- **Water footprint (ISO/TC 207/SC 5)** – Work is undergoing on a standard (ISO 14046) for calculating water footprints that will promote efficient measurement and management of this scarce resource. The standard will help organizations harmonize reporting, setting an international benchmark for water use.

### *Infrastructure*

- **Irrigation (ISO/TC 23/SC 18)** – (see box “Irrigation”)
- **Treated wastewater reuse for irrigation (ISO/PC 253)** – This project committee is working on a best practice standard to prevent any adverse impacts on public health, the environment, soils and crops, as a result of treated wastewater irrigation. Publication of ISO 16075 is expected in 2013.
- **Measurement of fluid flow in closed circuits (ISO/TC 30)** – Standards for measuring water flows and metering that can help water conservation.
- **Piping & valves** – Standards for plastics pipes (ISO/TC 138), cast iron pipes (ISO/TC 5/SC 2) and valves (ISO/TC 153) improve quality of life, by ensuring water supply systems are reliable and enabling efficient access to this resource.

### **Irrigation**

Agriculture accounts for about 70 % of the world's freshwater use (22 % goes to industry and only 8 % to domestic consumption). Irrigation can increase yields of crops by 100 % to 400 %, and is crucial to support the planet's rapidly growing population.

ISO standards for performance, materials, test methods, data interpretation and reporting (ISO/TC 23/SC 18) promote a more efficient irrigation, easing the strain on water resources. ISO is also working on a standard for the use of treated wastewater in irrigation (ISO 16075), a key step forward for sustainability.



### **Access and scarcity**

Some 894 million people have no access to safe drinking water and over 2.5 billion people worldwide live without adequate sanitation.

ISO standards for infrastructure and water quality can be used to bring safe water to millions. Standards for pipes and valves increase the efficiency of water distribution services and reduce leakages, preventing unnecessary water losses. Metering and hydrometry standards help monitor and measure water conservation.





## ISO's partners

The development of International Standards cannot take place in isolation. The value of ISO standards relies on its multi-stakeholder approach, which consolidates contributions from industry, government, research, academia, international organizations and NGOs representing all stakeholders, including consumers and small businesses.

On the water scene, ISO works closely with UN agencies such as the World Health Organization, the World Meteorological Organization, the Food and Agriculture Organization and the UN Environment Programme among many others.

Other examples of organizations actively participating in ISO's work on water standards include the Organisation for Economic Co-operation and Development, the International Water Association and Consumers International to name a few.

The result is international consensus on solutions to water issues across frontiers.

## ISO and the future – what's coming

Water as a vital global challenge has become a strategic priority for ISO and, in 2011, was the subject of a special task force which investigated areas where standardization could help. The task force concluded that ISO should focus on processes and good practice taking into account the needs of both developed and developing countries. New and varied stakeholders such as water supply authorities are being encouraged to engage in ISO's work to increase its impact and relevance.

Future projects could tackle issues such as domestic and communal wastewater sanitation, water conservation, recycling and desalination and water losses (e.g. leak detection). The scope of ISO/TC 224 could be expanded to look at issues such as governance and benchmarking. And efforts will be made to promote and monitor the development of standards for new technologies in order to facilitate dissemination of more efficient innovations.



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## ISO resources

**ISO's Website** (in English and French, with top levels in Russian and individual publications in other languages)

[www.iso.org](http://www.iso.org)

**ISO Focus+ magazine**

(10 editions annually in English and French)

[www.iso.org/iso/iso-focus-plus](http://www.iso.org/iso/iso-focus-plus)

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