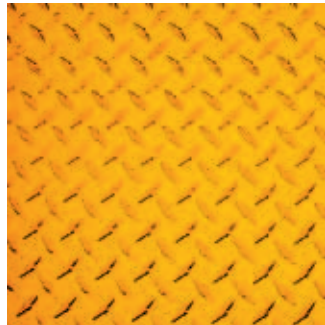




ISO & construction

From traditional foundations to innovative technologies



ISO standards make the construction industry more efficient and effective

ISO standards solve problems and provide solutions in all stages of the construction development process

ISO standards provide construction industry stakeholders with the information they need to compete on global markets

ISO standards provide a state-of-the-art technical base for regulators and help to drive down costs for producers, customers and consumers





Since the 1950s, the world's population has more than doubled. Around half the population lives in urban areas, increasing the need for building construction and infrastructure. At the same time, expanding globalization and international trade have enhanced the demand for standards.

Construction exacts a heavy toll on the planet's natural resources and raises environmental concerns for which ISO standards help to provide solutions.

ISO, as the principle developer of International Standards, makes a major contribution to the construction sector.



ISO – What it is, what it achieves

ISO (International Organization for Standardization) is the world's largest developer of voluntary International Standards providing benefits for business, government and society through a portfolio of more than 19 400* standards. ISO is a network comprising the national standards institutes of 164* 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 – and at an economical cost. They facilitate trade, spread knowledge, and share technological advances and good management practices.

ISO provides a platform to develop practical tools for the construction industry. ISO standards result from input from all stakeholders: architects, designers, engineers, owners, product manufacturers, regulators, policy makers, consumers. Working through the ISO network of national members, ISO standards feature the world's foremost expertise, disseminating knowledge to developed and developing countries.

ISO construction standards generate confidence because of ISO's consensus-based approach to providing global solutions. ISO takes into account good business practices and the optimal management of resources, while keeping watch to ensure environmental impact is reduced. ISO International Standards tackle the challenges of sustainable development at the same time as monitoring requirements for technical and functional performance.

Other ISO technical committees develop standards relating to other transversal subjects: ISO/TC 167, *Steel and aluminium structures*, and ISO/TC 179, *Masonry*.



* As end October 2012



Construction products systems

Hundreds of standards complement the work of ISO/TC 59, including those developed by the following ISO technical committees: ISO/TC 21, *Equipment for fire protection and fire-fighting*; ISO/TC 71, *Concrete, reinforced concrete and pre-stressed concrete*; ISO/TC 74, *Cement and lime*; ISO/TC 77, *Products in fibre reinforced cement*; ISO/TC 89, *Wood-based panels*; ISO/TC 92, *Fire safety*; ISO/TC 98, *Bases for design of structures*; ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*; ISO/TC 160, *Glass in building*; ISO/TC 162, *Doors and windows*; ISO/TC 165, *Timber structures*; ISO/TC 178, *Lifts, escalators and moving walks*; ISO/TC 189, *Ceramic tile*; ISO/TC 218, *Timber*; ISO/TC 219, *Floor coverings*, and ISO/TC 221, *Geosynthetics*.



Why **ISO** standards matter

The construction industry is a key sector in national economies, while providing servicing and products for export worldwide. In addition, the environment created by the industry is a major element in determining the quality of life of populations.

To avoid falling victim to change in a global market, becoming an obstacle to the implementation, coordination and maintenance of quality in construction, it is essential for stakeholders to benefit from globally recognized standards, continually updated to remain at the state of the art.

Who do **ISO** standards benefit ?

Implementing ISO standards in construction not only provides technical advantages, but also social, economic and environmental gains. International Standards benefit :

Industry: Design and manufacturing specifications are of major importance to all stakeholders. ISO sets standards on construction, based on international consensus, providing comprehensive solutions that facilitate international trade and exchange. ISO's International Standards reflect the state of the art, serving as a vehicle to disseminate new technologies and innovative practices.

Regulators: ISO standards are systematically reviewed and improved. They provide technical foundations for legislation and serve as the basis for national regulations which do not create unnecessary technical barriers to trade. Regulators can apply International Standards to extend building codes.

Consumers: ISO standards give consumers confidence in the construction industry. The same level of consumer protection is applicable whether a country's economy is mature or evolving.

The scope of **ISO** construction standards

Much of this work is the focus of ISO technical committee ISO/TC 59, *Buildings and civil engineering works*. Created in 1947, ISO/TC 59 has so far developed 109 International Standards. Topics range from terminology, the organization of information technology in building and civil engineering processes, the geometric requirements for buildings, to building elements and components including modular coordination, general rules for joints, tolerances and fit, and performance requirements.

ISO standards also address vital and topical issues such as sustainability, accessibility and service life.

Design life, durability, service life planning

The effort to ensure the guaranteed lifespan of a building, without running up extraordinary economic and environmental costs, is essential. TC 59's subcommittee ISO/TC 59/SC 14, *Design life*, covers standardization for fields such as terminology, life-cycle costs, durability, maintenance ; the members of SC 14 also bring their focus to bear on performance audits, data requirements and procedures.

Accessibility and usability

The increase in an aging population in developed countries adds their needs to those of people with disabilities, with repercussions on issues of building accessibility and usability. The planning, design and construction of buildings and other facilities must make provisions for a sufficient degree of accessibility and usability. ISO/TC 59/SC 16, *Accessibility and usability of the built environment*, delivers standards responding to the UN's Universal Declaration on Human Rights which states that everyone has the right to equal access to public services in his or her country.

Construction and IT

An important task for ISO/TC 59 has been to establish common terms of reference and terminology, to make it possible for construction documentation to be easily understood whatever the language, wherever the border. The standardization of products and services demands, in turn, that the digital exchange of documentation and data be standardized and fair for all parties. The standardization of digital basics, which allows progress in this field, is being developed by ISO/TC 59/SC 13, *Organization of information about construction works*.





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ISBN 978-92-67-10597-0
© ISO – November 2012



Sustainable environment

The construction industry is responsible for a great deal of waste and general pollution, and major improvements must be made to decrease these.

ISO standards help through the work of ISO/TC 59/SC 17, *Sustainability in buildings and civil engineering works*, which deals with issues ranging from general principles and environmental declarations for building products, to the framework of methods to assess environmental performance and the development of indicators for sustainability.

Construction procurement

ISO working group ISO/TC 59/WG 2, *Construction procurement*, has developed standards that provide processes, procedures and methods that are fair, equitable, transparent, competitive and cost effective. Procurement standards are especially relevant for developing countries that lack experience and the instruments necessary to aid them in becoming competitive. Procurement standards are key to a stakeholder's success in international trade. They furnish the framework around which public, private and international organizations may develop their procurement systems to achieve fair competition, to reduce the opportunity for abuse, and to improve predictability in procurement outcomes.



ISO and the future

In coming years, the construction sector will have to deal with important issues such as climate change and its impact on buildings and civil engineering works, and the energy efficiency of buildings. By providing accurate measurement methods for the thermal properties of building products and whole buildings, ISO/TC 163, *Thermal performance and energy use in the built environment*, and ISO/TC 205, *Building environment design*, provide tools for the efficient use of energy and the reduction of greenhouse gas emissions.

The development of aspects related to the delivery process for buildings and civil engineering works, e.g. the planning, organization and management of resources, from conception to completion, will lead to new standards. The stages of development and the delivery management framework, the process of managing ongoing multiple interdependent projects to deliver benefits for the same client, could lead to new standards on delivery processes, procedures and methods and facilities management (ISO/TC 267, *Facilities management*).

In the future, standards on sustainability will become as significant as past work, such as modular coordination, to improve the efficiency of construction and the manufacture and supply of building products.

ISO Resources

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

www.iso.org

ISO Focus+ magazine

(10 editions annually in English and French)

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