



STRATEGIC BUSINESS PLAN – ISO/TC 182

Executive summary

Standardisation in the field of geotechnics covers all aspects of the ground's behaviour related to the safe and economic performance of foundations and structures. It covers all aspects from methods of design, to the equipment and methods for drilling and sampling, field and laboratory testing on soil and rock to obtain reliable information for the design. It also includes groundwater measurements, identification and classification of soil and rock, as part of the ground and site investigation services.

The present objective of ISO/TC 182 is to prepare a consistent set of geotechnical International Standards in collaboration with CEN TC 341, covering as a minimum the geotechnical aspects of testing, monitoring, drilling, sampling and reporting.

These standards help to create a world market for the trade of services and equipment for geotechnical design, investigation and testing, which will eventually lead to reduction of cost in the building market.

1 Introduction

1.1 ISO technical committees and business planning

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

1.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: [ISO](#) (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of [IEC](#) (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of [ITU](#) (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 164 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the [International Standard](#).

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its [Technical Committees](#) are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

2 Business Environment of the ISO/TC

2.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this ISO/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

Standardisation in the field of geotechnics covers all aspects of the ground's behaviour related to the safe and economic performance of foundations and structures. It covers all aspects from methods of design, to the equipment and methods for drilling and sampling, field and laboratory testing on soil and rock to obtain reliable information for the design. It also includes groundwater measurements, identification and classification of soil and rock, as part of the ground and site investigation services.

The geotechnical design of a structure, together with the related investigation and monitoring activities is a relatively small part of the complete cost of construction, maintenance and demolition of structures/works.

However, its quality has a strong impact on the whole structure/works in terms of quality, avoiding damage to the structure and its environment, (neighbouring structures) etc. with significant additional safety and cost implications if things go wrong.

The goal of standardisation work is to harmonise quality requirements for design (as far as now technically achievable), methods of test, drilling and sampling and to achieve comparable results when these standards are applied. Manufacturers and users of equipment and methods of geotechnical investigation and testing should find ISO standards valuable for common use as they enable comparable results to be obtained and should reduce the variability of the results of geotechnical data, which are the basis for use in the design standards.

ISO standards for investigation, testing, identification and classification of soil and rock are important for the safety of infrastructure, e.g. buildings, bridges, tunnels, dams, towers, masts, roads, railways, airports, canals, harbours, pipelines, gas and water supply, sewers, etc.

These standards help to create a world market for the trade of services and equipment for geotechnical design, investigation and testing, which will eventually lead to reduction of cost in the building market.

The work of ISO/TC 182 is relevant to all geotechnical advisory services, e.g. engineering consultants, geotechnical testing and sampling laboratories and consultancy, both for planning of works, execution, monitoring and maintenance and even demolition. Geotechnical design is often a relevant part of (governmental) building regulations.

2.2 Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC:

Political: The standards provided by ISO/TC 182 help to create a world market for trade of geotechnical services and equipment and is in line with the goals set in the WTO; the standards of ISO/TC 182 can help governments to facilitate safety more efficiently for their civilians.

Economical: The turnover of all geotechnical services, described above is estimated (order of magnitude) 0,5% of the total engineering costs in the construction industry and (order of magnitude) 0,05 % of the turnover in the total construction industry. Although we do not know exact figures, this turnover is a huge amount and this makes even the turnover in the area of geotechnics considerable.

The effect of standards will be a greater commonality of geotechnical equipment and services; simplification for improved usability; reduction in the number of variations in methods, equipment and testing procedures and thus reduction of costs; increased distribution efficiency and ease of maintenance. Assurance of conformity can be provided by manufacturers declarations, or by audits carried out by independent bodies.

3 Benefits expected from the work of the ISO/TC

No building and construction activity from small to large scale can be performed without first performing a geotechnical investigation and testing on the building site and its surrounding. Worldwide it has been found that unforeseen or poorly defined ground conditions present a major factor in additional costs encountered in construction projects. Particularly failure of the foundation or of the sub-base will lead to enormous costs not only to the structure itself but in most cases also due to the consequential loss of operation of the (infra)structure, or even loss of lives.

Many countries use testing standards that purport to be for the same test, however they do in fact often vary as a result of the local 'evolution' of the test. These differences in practice will affect the reported results. If we are to establish a common basis for design, then the geotechnical parameters used need to be 'common'. This can only result if the tests are undertaken in a common and consistent way. For this to happen we need a set of common standards across the geotechnical community. Harmonisation will result in economies in equipment design and manufacture as well as improvements in design practice.

4 Representation and participation in the ISO/TC

4.1 Membership

<https://www.iso.org/committee/54054.html>

4.2 Analysis of the participation

Much of the work in ISO/TC 182 is executed in close co-operation (under the Vienna Agreement) with CEN/TC 341.

ISO/TC 182 has the following active working groups dealing with distinct aspects of Geotechnics:

- WG 2: Monitoring in geotechnical engineering
- WG 4: Drilling and sampling methods and groundwater measurements
- WG 5: Geotechnical field vane test
- WG 6: Borehole dynamic probing
- WG 7: Cone and piezocone penetration tests
- WG 8: Borehole expansion tests
- WG 9: Geotechnical aspects of geophysical methods
- WG 11: Static testing of geotechnical structures
- WG 12: Standardization in geophysics
- WG 13: Laboratory testing of soils

5 Objectives of the ISO/TC and strategies for their achievement

5.1 Defined objectives of the ISO/TC

The present objective of ISO/TC 182 is to prepare a consistent set of International Standards geotechnical standards, in collaboration with CEN TC 341, covering as a minimum the geotechnical aspects of testing (soil, rock and foundation elements), monitoring, drilling, sampling and reporting.

5.2 Identified strategies to achieve the ISO/TC's defined objectives

ISO/TC 182 has been structured with working groups to cover the specific items that are currently under VA ISO lead with CEN/TC 341. Annual TC meetings are held but the WGs meet (currently virtually) as work requires or conduct matters by correspondence.

WGs are monitored by the TC against delivery timescales.

When reviewing the scope of and setting the priorities for the TC, close liaisons and cooperation with other CEN and ISO committees as well as with International and European associations and scientific societies is sort as and when necessary (e.g. CEN/TC 250/SC 7, CEN/TC 288, ISSMGE (International Society for Soil Mechanics and Geotechnical Engineering), ISRM (International Society for Rock Mechanics), IAEG (International Association of Engineering Geology and the Environment) and EFFC (European Federation of Foundation Contractors)).

6 Factors affecting completion and implementation of the ISO/TC work programme

Resources in this field have always been very limited.

The same chairman and secretary now oversee the work of ISO/TC 182 and CEN/TC 341 and this has lead to better monitoring of the work of the two TCs. The attitude and drive of WG convenors is crucial in driving the work forward to the required timescales. The success or otherwise of WGs is reviewed by and discussed at the annual TC meeting and decisions taken on their continuation/organisation as necessary.

Industry in this field mainly consists of small size enterprises. It is uncertain how this will affect further activities in this work.

European countries are strongly involved in the implementation of Eurocode 7, but this will not be allowed to adversely affect the work of this ISO/TC 182.

7 Structure, current projects and publications of the ISO/TC

Information on ISO online

The link below is to the TC's page on ISO's website:

<https://www.iso.org/committee/54054.html>

Click on the tabs and links on this page to find the following information:

- About (Secretariat, Committee Manager, Chair, Date of creation, Scope, etc.)
- Contact details
- Structure (Subcommittees and working groups)
- Liaisons
- Meetings
- Tools
- Work programme (published standards and standards under development)

Reference information

[Glossary of terms and abbreviations used in ISO/TC Business Plans](#)

[General information on the principles of ISO's technical work](#)