

**BUSINESS PLAN**  
ISO/TC 17  
Steel  
**EXECUTIVE SUMMARY**

It can be said that the significance of international standardization in the steel field is increasing more and more.

ISO/TC17 covers standardization in the field of cast, wrought and cold-formed steel, including delivery conditions for steel tubes for pressure purposes. Excluded: steel tubes within the scope of ISO/TC5; line pipe, casing, tubing and drill pipe within the scope of ISO/TC67; methods of mechanical testing of metals within the scope of ISO/TC 164.

ISO/TC17 covers standardization in the field of methods of determination of chemical composition, methods of testing (other than mechanical tests). In addition above unintended output and byproducts should be covered.

Basic attitude of the ISO TC17 for the preparation of ISO standards is follows,

- 1) ISO/TC17 esteems the spirit of the WTO/TBT Agreement and devotes all efforts toward the preparation of ISO standards usable in the market of its member nations, either directly or indirectly through national or regional standards.
- 2) Each nation already has its own national or regional standards reflecting market needs based on individual climatic and geological environments, historical backgrounds of technologies, Laws and technological regulations. To make ISO standards acceptable to the markets of different nations, the coverage and contents of their national or regional standards should be respected in their preparation, especially in the early stage of their preparation.
- 3) All member bodies should aim at keeping the difference between their national standards and ISO standards, at least, at the level a) or b) of "Modified" specified in the ISO/IEC Guide 21-1:2005.
- 4) The P-members of ISO/TC17 with ISO/TC17/SCs should ensure that all members are able to join the early development work of an ISO standard.

## **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/TC17**

### ***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: Underlined parts have external link

The relationship of man to iron and steel has a history of around 4000 years but the remarkable popularization of steel began with Dr. H Bessemer invention of an epoch-making method of steel making approximately 150 years ago. Since then, significant progress in the quality and quantity of steel has been made through technological innovation and it has now become the material most used for structures in the world.

The steel making technology as well as the methods to utilise steel have developed hugely during last decades. Standardisation must carefully follow the development and must be able to create requisite standards.

Steel industry has a great responsibility in fighting the global climate change. New challenges are sustainability and work safety. The increased need to emphasize these fields must be recognised.

New generations of steel continue to be developed that enable steel users to implement more durable, lightweight, safe and carbon-lean designs, enabling them to be more sustainable. Steel applications can help us to meet challenges such as climate change, poverty, population growth, water distribution and energy generation. The steel standardisation must carefully consider such development.

## ***2.2 Quantitative Indicators of the Business Environment***

The quantitative indicators describe the business environment in order to provide adequate information to support actions of the ISO technical committees:

The World Steel Association publishes monthly production statistics for crude steel, direct reduced iron (DRI) and blast furnace iron (BFI).

It can be said that the significance of international standardization of steel continues to increase.

## **3 BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC17**

The standards in the field of steel are roughly classified into three kinds of basic standards, test methods and inspection standards and product standards.

To enable clear communication between parties involved in transactions, basic standards such as “terms and conditions” are essential.

Test methods and Inspection standards are essential to avoid unnecessary problems and

troubles.

International standardization of steel products would lead to a total cost savings by unifying the kind of products, increasing the production lots and reducing the stock of products.

The main objective in the development of ISO standards in ISO/TC17 is to improve the market relevancy of ISO standards developed or to be developed within ISO/TC17, that is,

a) To make ISO standards more usable in the market, directly or indirectly through their adoption by national or regional standards in accordance with the requirement of WTO/TBT agreement and the long-range strategy of the ISO council.

b) To promote the timely and speedy development of ISO standards

(c) Standards for sustainability and work safety improve the responsibility of steel producing and steel using industry and add confidence in them.

## **4 REPRESENTATION AND PARTICIPATION IN THE ISO/TC**

### ***4.1 Countries/ISO member bodies that are P and O members of the ISO committee***

### ***4.2 Analysis of the participation***

ISO/TC17 is composed of P-members and O-members.

The members participating in the preparation of appropriate standards reflecting the market needs of individual nations are expected to adopt the following approaches:

a) Chairman, Convener and Secretary

- It is desirable for the Chairman, Convener and Secretary to identify the market needs of individual nations, appropriateness and feasibility as international standards based on the national standards or technical comments provided by the P-members in the proposal or preliminary stage.

- When there are multiple proposals which are technically appropriate, they should be deleted their acceptability and try to achieve a consensus among the members so that there is no inconsistency or ambiguity left in the standards prepared.

b) P-members

- The members should submit their proposals in writing, together with a clear description of market needs and technical backgrounds to ensure a good understanding of these proposals among all members.

- Proposals should be considered on their technical requirements not on their geographical application.

- Revisions to ISO standards should be executed in member national versions of ISO standards as soon as possible.

## **5 OBJECTIVES OF THE ISO/TC AND STRATEGIES FOR THEIR ACHIEVEMENT**

### ***5.1 Defined objectives of the ISO/TC17***

Each subcommittee of TC17 should develop a plan for future work. Priorities should be identified for new work and the maintenance of existing standards through the systematic

review system.

ISO/TC17 covers standardization in the field of cast, wrought and cold-formed steel, including delivery conditions for steel tubes for pressure purposes. Excluded: steel tubes within the scope of ISO/TC5; line pipe, casing, tubing and drill pipe within the scope of ISO/TC67; methods of mechanical testing of metals within the scope of ISO/TC 164. ISO/TC17 covers standardization in the field of methods of determination of chemical composition, methods of testing (other than mechanical tests). In addition above unintended output and byproducts should be covered.

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

ISO standards should be used directly or indirectly through adopting them into national or regional standards in the market. For the time being, the latter case would currently be more appropriate in the field of steel.

An evaluation measure on adoption of ISO standards into national or regional standards has been addressed in ISO/IEC Guide 21 revised in 2005.

ISO/TC 17 considers that the adoption level of ISO standards to national or regional standards should be aimed at "Modified a)" or "Modified b)" defined in ISO/IEC Guide 21-1.

From this point of view, ISO/TC 17 has prepared document 17 N 2704, "Guideline for the preparation of ISO standards usable in the market by ISO/TC 17".

All members of ISO/TC 17 and ISO/TC 17/SCs taking part in the development of ISO standards are expected to be in accordance with this document.

The main points mentioned in the guideline, document 17 N 2704 are as follows.

### **Main points mentioned in document 17 N 2704**

#### **a) Basic attitude of TC 17 for the preparation of ISO standards**

- 1) ISO/TC 17 esteems the spirit of the WTO/TBT Agreement and devotes all efforts toward the preparation of ISO standards usable in the markets of its member nations, either directly or indirectly through national or regional standards.
- 2) Each nation already has its own national or regional standards reflecting market needs based on individual climatic and geographic environments, historical backgrounds of technologies, laws and technological regulations. To make ISO standards acceptable to the markets of different nations, the coverage and contents of their national or regional standards should be respected during their preparation, especially in the early stage of their preparation.
- 3) All nations should aim at keeping the difference between their national standards and ISO standards, at least, at the level a) or b) of "Modified" specified in the ISO/IEC Guide 21-1: 2005.
- 4) The P-members of ISO/TC 17 or ISO/TC 17/SCs should ensure that all members joining the early work for developing an ISO standard within ISO/TC 17 act in accordance with the

guideline.

### **b) Target image of correspondence of the specified items and contents between a national or regional standard and an ISO Standard**

The desired correspondence patterns of specified items and contents between a national or regional standard and an ISO standard are follows.

**Pattern A:** The items and contents specified in a national or regional standard are basically coincident with those of an ISO standard (Identical Type).

The ISO standards such as basic standards are definitions of terms, standards for test and analysis methods, and product standards are to be prepared based on standards internationally accepted would be aimed at this type.

This type corresponds to "Identical" in the ISO/IEC Guide 21-1: 2005.

**Pattern B:** While national and ISO standards do not coincide with each other in respect of specified items, the latter provides multiple options as regards specified contents.

National standards can be matched by making a suitable choice from them. (Cohabitation Type)

ISO standards can have multiple options reflecting market needs when it is difficult to restrict them to a single requirement as when they are prepared based on national or regional standards containing different specifications. Then, each nation or region can select suitable choices from the given options for their own national or regional standards. It should be noted that the given options do not involve technical inconsistencies and ISO standards should not simply list different national standards at random, like a shopping list.

This type corresponds to "Modified a)" in the ISO/IEC Guide 21-1: 2005.

**Pattern C:** When an agreement cannot be reached as regards specified items or contents because of essential differences in individual market needs (including laws and technological regulations), ISO standards including only minimum agreeable specified items and contents should be prepared. (Common Denominator Type)

This type of ISO standards does not fully reflect the needs of individual markets. National or regional standards should then adopt all provisions of this type of ISO standards and add necessary items or contents to fill each market needs.

This type corresponds to "Modified b)" in the ISO/IEC Guide 21-1: 2005.

All ISO standards should be of Pattern A, Pattern B, Pattern C or a combination of Patterns B and C.

### **c) Responsibility**

Which of Patterns A, B, C or a combination of B and C should be selected depends on the market, use, type of product, items and contents specified in the standard, and some other factors.

The responsibility for applying the guideline shall be at the discretion of ISO/TC 17 or individual ISO/TC 17/SCs directly engaged in the preparation of standards.

Pattern A can only be accepted based upon the unanimous agreement of all P-members. If such an agreement cannot be reached, the Chairman of the sub-committees can select Pattern B, C or the combination of B and C, based upon consultation with the secretariat, convener and agreements reached by the majority of P-members.

## **6 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC WORK PROGRAMME**

Risks or constraints on the completion of the proposed work program in each ISO/TC17/SC are described in the table of ANNEX 1.

## **7 STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF THE ISO/TC**

This section gives an overview of the ISO/TC 17 structure, scopes of the ISO/TC 17 and any existing subcommittees and information on existing and planned standardization projects, publication of the ISO/TC 17 and its subcommittees.

### **7.1 Structure of the ISO/TC 17**

### **7.2 Current projects of the ISO/TC 17 and its subcommittees**

### **7.3 Publications of the ISO/TC 17 and its subcommittees**

**ANNEX 1 Objectives, strategies and risk analysis for the development of ISO standards in ISO/TC17/SCs**

TC/SC	Objectives and strategies for the development of ISO standards	Risk analysis Constraints on the completion of the proposed work program
TC17	The application of ISO deliverables should be only ISO/TS (Technical Specification), ISO/TR (Technical Report) and IS (ISO Standard) within ISO/TC 17. - Resolution No 8/2000 -	
SC1	<p>a) Objectives: Steel is characterized mainly by its alloying or residual elements in the iron matrix. Determination of chemical composition is one of the main factors for trading steel and steel products. SC1 contributes to promoting steel trading by standardizing chemical analysis methods, including referee and routine methods, to determine alloying or residual elements in steel and iron at a reasonable accuracy. Standardization of sampling and sample preparation for chemical analysis and technical guidance or guidelines for testing by several test methods are also developed.</p> <p>b) Strategies Develop standards that meet the following requirements.</p> <ol style="list-style-type: none"> <li>1) All analytical methods developed shall have measurement traceability</li> <li>2) Analysis methods with minimal environmental impact (using as few hazardous substances as possible)</li> <li>3) Analysis methods that do not require special skills or a high level of proficiency (Also possibility of increasing productivity and facilitating automation)</li> <li>4) Analytical methods for trace elements that adversely affect the properties of steel and the environment</li> <li>5) Routine analysis methods using physical methods.</li> </ol> <p>Improve standards from the following perspectives.</p> <ol style="list-style-type: none"> <li>1) Expansion of the applicable range due to change in product standards.</li> </ol>	<p>ISO standards of the chemical analysis need a statistical estimation of the analytical accuracy of the method employing round-robin tests. Accordingly, the results of the round-robin test sometimes cause the delay of the progress of standard development or lead to the suspension of its development.</p> <p>Although the number of P-members is large, the development of some standards has not progressed due to the lack of active participation of experts.</p>

	2) Specify or reassessment of analytical precisions	
SC3	<p>Objectives : SC3 establishes standards accepted and used in the world commercial exchange in the frame of structural steels (Only flat products produced on reversal mills are considered)</p> <p>For the time being, ISO TC17/SC3's activity concerns the publication of</p> <ul style="list-style-type: none"> <li>•ISO 6930</li> <li>•ISO 630-1, ISO 630-2, ISO 630-3, ISO 630-4</li> <li>•ISO 7788</li> </ul> <p>And the revision of ISO 630-5 and ISO 630-6</p>	New work items have been proposed and some of them have been included them in the program.
SC4	<p>Standardization of steel grades, dimensions and tolerances as well as of surface qualities of heat treatable and alloy steels used mainly in the engineering and automotive industry in either the non-heat treated or the heat-treated conditions. Examples are quenched and tempered, case hardening, roller bearing and tool steels including tubular products for these applications, but not those covered by ISO/TC 5.</p> <p>SC 4 aims at International Standards which are usable on all markets in the world and aims at detailed and clear specifications, but provides options if the actual situation on various markets is too different. For instance CEN (The European Committee for Standardization) has adopted many ISO standards produced by ISO TC 17/SC 4 identical as such as EN standards. Asian countries have adopted similiar standards based on ISO/TC 17/SC 4 standards.</p> <p>For the time being and with long time experience there are separate meetings for standards for stainless steels on one side and for engineering steels on the other side under the scope of SC 4 for facilitating the participation and for saving time and travel expenses. First experience with virtual and hybrid meetings are positive and could also be used in furture to reach these goals.</p>	<p>a) Increasing bureaucracy (not only on international level).</p> <p>b) Decreasing participation of active members (partly caused by "lean management" in the industry and in the standardization institutes).</p>
SC7	Several NWI are processed each year in accordance with ISO procedures	The major risk is the lack of active participation of P

		members, either in attending meetings or in answering to enquiries. Thus it is difficult to achieve a properly consensus and to find the specific expertise for the elaboration of standards.
SC9	<p>a) Objectives: SC 9 creates tinplate and blackplate specifications that address the international needs of the steel production and consumption industries in a timely and efficient manner. SC 9 is also responsible for revising and updating their standards to reflect changing requirements and technological improvements as well as mandated governmental and code initiatives.</p> <p>b) Strategy: To develop relevant standards according to the ISO rules and consensus policy.</p>	It may be difficult to harmonize mechanical properties from various national standards.
SC10	<p>a) Objectives: ISO/TC 17/SC 10 has finished all its work for the time being (ISO 9328-1 to -7 and ISO 15467 have been published in 2018). The start of review on ISO 9327-1 to -5 covering steel forgings and rolled or forged bars for pressure purposes has to be checked (see below).</p> <p>b) Strategies: A questionnaire procedure has to be initiated to check if a revision is necessary, taking account of the market needs.</p>	The results of internal inquiries to start new work items shall demonstrate a sufficient support to include them in the working program.
SC11	The objective of the committee is to continue to identify the products and practices which are necessary to allow steel castings to be purchased from ISO standards. In addition cast products which do not fall under the definition of steel will be considered for standardization where sufficient technical expertise is not available in the current TC or SC for the development of cast product standards. The subcommittee will address the revision of standards where the existing standards are found to be incomplete or difficult to implement.	The development of standards within SC11 places a large load on the active members limited. Attempts need to be made to encourage more members become active and large producers to become P-members
SC12	a) Objectives: SC12 creates hot rolled, cold rolled and coated sheet steel specifications that address the international needs of the steel production and consumption industries in a timely and efficient manner. SC12 is also responsible for revising and	The number of P-members actively participating in the project is insufficient, making it impossible to

	<p>updating their standards to reflect changing requirements and technological improvements as well as mandated governmental and code initiatives.</p> <p>b) Strategies: SC12 has developed and is utilizing several strategic programs. The programs consist of standardization of nomenclature, standardized tolerance tables, uniformity of ordering information and annual progress reports showing the status of SC12 standards. These programs provide uniformity and timely preparation as well as improved international acceptance of specifications through the reduction in the time of document development as well as a reduction in negative ballots due to major issues having been previously agreed upon.</p> <p>Through its memberships, SC12 interacts with many national, regional and other standards writing organizations in an effort to achieve harmonious global standards.</p>	<p>develop standards in a stable manner. In addition, the large number of standards is a burden on the limited number of active members.</p>
SC15	<p>a) Objectives: SC15 aims to continue developing and maintaining standards of terminology, technical requirements, materials, dimensions and tolerances, test methods for railway rails, rail fasteners, wheel and wheelsets in an efficient manner, and promote them to be applied on all markets in the world if applicable.</p> <p>b) Strategy: To develop standards according to the ISO rules if revision is necessary, taking into account the fact of market needs.</p>	<p>Major risk is the lack of active participation of P members.</p>
SC16	<p>a) Objectives: SC16 develops and maintains product standards for steels for the reinforcement and prestressing of concrete. The objective covers both requirements and test methods. It also covers a standard on vocabulary. The objectives of each of them are as follows:</p> <p>1) Test method standards will promote world trade by</p> <ul style="list-style-type: none"> <li>- making the specifications of the products clear and comparable</li> <li>- reducing the need for repeated testing of products sold in various markets</li> </ul> <p>2) Product standard for mechanical splices will in addition - give confidence in the reliability of the splices</p> <ul style="list-style-type: none"> <li>- promote the application of splices in cases where they bring technical and economic advantages</li> <li>- consolidate and spread the existing knowledge on</li> </ul>	<p>There is a risk, or rather an encountered obstacle, that it is difficult to find somebody who will pay for the use of manpower required developing the standards. Somebody must pay for the work which will give benefit to everybody</p>

	<p>how the splices should reliably be used in concrete design</p> <p>3) Product standard for bars with end anchorages will</p> <ul style="list-style-type: none"> <li>- give confidence in the reliability of the anchorages</li> <li>- promote the application of end anchorage's in cases where they bring technical and economic advantages</li> <li>- consolidate and spread the existing knowledge on how the anchorages should reliably be used in concrete design</li> </ul> <p>4) Product standard for zinc-coated reinforcing and prestressing steel will</p> <ul style="list-style-type: none"> <li>-give confidence in the reliability of the coating</li> <li>-promote the application of zinc coatings in cases where they bring technical and economic advantages</li> </ul> <p>5) Vocabulary standard will</p> <ul style="list-style-type: none"> <li>-constitute a common basis for national and regional standards</li> <li>- facilitate worldwide communication and trade</li> </ul> <p>b) Strategy: To develop relevant standards according to the ISO rules and consensus policy</p> <p>6) Standard for stainless steel bars will improve and stable the product quality, promote trade and meet the need of the market.</p> <p>7) Sustainability standard(s) will ensure the implementation and achievement of UN's sustainable development goals and reducing the environmental footprint of the materials and the constructions.</p>	
SC17	<p>a) Objectives: SC17 develops product standards and related standards for steel wire rod, wire and wire products to fulfill the industry need.</p> <p>b) Strategy: In developing ISO standards, the relevant national standards from all over the world will be taken into account, in order to reach maximum consensus.</p>	<p>The major risk is to find how to harmonize the different technical requirement from various national standards.</p> <p>The risk also arises from the lacking of available experts due to the economic situation.</p> <p>Attempts need to be made to encourage more members to propose and lead new work item.</p>
SC19	<p>a) Objectives: SC19 prepares ISO standards on qualities and delivery condition of steel tubes, seamless and welded, for pressure purposes which are adoptable in every country's national standard. It also</p>	<p>a) Increasing bureaucracy (not only on international level).</p>

	<p>deals with the Non Destructive testing of such products. SC now has a New Work Item to deal with, the Revision of ISO 11484 with the Scope enlarged to cover all steel products. The SC is also working for the periodical five years review of its own standards.</p> <p>b) Strategy: In developing ISO standards, the existing ISO rules are followed trying to reach the consensus as wide as possible.</p>	<p>b) Decreasing participation of active members, due to the less availability of economical and human resources.</p>
SC20	<p>Objective: Standardization of general technical delivery conditions, inspection documents and general rules for mechanical testing, selection and preparation of samples and test pieces for mechanical testing of wrought steels</p> <p>SC 20 only has 5 published standards and TS, but some of them are referenced from nearly all ISO steel product standards, which makes them very important.</p> <p>Strategy: The standards should be stable and not change too often. However, they should fulfill modern ISO standards requirements and not become old and obsolete.</p> <p>Keeping the standards up to date with new IT-technologies might therefore be a challenge in the future.</p>	