



# STRATEGIC BUSINESS PLAN

## ISO/TC 165

### EXECUTIVE SUMMARY

TC 165 concerns itself with standardization of specifications, test methods, classification of strength and stiffness characteristics, and design requirements relating to timber, wood-based panels, products and systems and related lignocellulosic fibrous materials in structural applications. The use of timber in building construction goes back many centuries and has evolved from simple craft through prescriptive trade to sophisticated, performance based engineering. The manufacture of timber products for structural use has steadily increased and trade in these products has grown to reflect global optimization of the forest resources in both developed and developing countries. This has dramatically increased trade and encouraged uniformity of approaches to the technical issues influencing their regulation and use.

Production of sawn timber and wood based panels in 2016 was 833 million cubic metres up from 714 million in 2012. More than 190 million cubic metres, valued at \$65 billion, were traded internationally.

Work by TC 165 has already increased international uniformity of test methodology and design philosophy. This has led to increased interest and participation in the committee. Benefits of current work include; international adoption of uniform test methods and classification of design properties, unified approaches to design, and cooperation in the development and implementation of strategies to optimize the technically sound utilization of forest resources.

The committee priorities (see section 5.2) were reassessed and objectives were established as follows:

- Development of product specification, testing, characteristic values, and performance classification standards to support harmonization of design and building codes internationally.
- Facilitation of the global adoption of international standards governing the use of timber, wood-based panels, products and systems, and related lignocellulosic fibrous materials in structural applications.
- International cooperation in the development and expansion of the structural use of the above products and systems.

Note: This Business Plan has been developed based on the Framework for ISO Standards for Timber Structures which was first established at the 27<sup>th</sup> Meeting of TC 165 as shown in document N798. The framework document has since been updated annually and placed on the ISO website.

## 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.

Wood based products are a major economic component of both developed and developing countries in all regions of the world and represent a significant element of international trade.

Stakeholders in the standardization work of TC 165 include:

- Producers –manufacturers of timber based products
- Designers and builders of structures utilizing wood based materials
- Regulators (government) of construction
- Academic and research organizations
- Consumers.

Modern timber structures reflect sophisticated, state of the art engineering. However there is a diverse history of geographically based traditional approaches to design and construction in timber that have constrained progress toward international uniformity. Many of these approaches go back hundreds of years and involve such simple things as units of measure, traditionally accepted member sizes and support spacings, etc.

Production of timber and timber-based products, for structural use, has evolved from simple ‘cut to size based on local requirements’ to highly automated technologies based on maximizing recovery of optimized species properties. Manufacturing companies, through mergers, acquisitions and expansion to new areas are becoming global in the operational perspective. Ready access to the new technologies and expertise is leading to their adoption in developing as well as developed countries. These factors are leading to a more international approach to standardization.

Also of growing influence is the role of the WTO TBT code in its references to ISO Standards. The development of International Standards, particularly those targeted at commonality of test methods and application of test results in national codes and conformity assessment requirements, is increasingly recognized as a major factor in enhancing trade opportunities. TC165 priorities mirror the potential benefits of this commonality in trade liberalization for wood products industries and improved sustainability and economic growth in these industries.

The interest on timber structures reached new heights as the design and construction sector started building mid- and high-rise wood buildings throughout the world. This, in turn, heightened the importance of the standards that are published by this TC.

### **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:

- Annual world production of sawn timber and wood based panels in 2016 was 883 million cubic meters (588 in 2002), of which approximately 190 million was traded internationally.
- Value of trade annually exceeds \$ 69 billion

The following table provides a summary of world production, and the volume and value of imports and exports for sawn timber and wood based panels between 1996 and 2016. (Source: FAOSTAT-Forestry [www.fao.org/waicent/portal/statistics\\_en.asp](http://www.fao.org/waicent/portal/statistics_en.asp) )

World Total							
Elements	Items	1996	2000	2004	2008	2012	2016
Export Quantity (m3)	Sawn wood (C)	80,450,042	92,782,047	108,811,908	93,561,148	99,226,395	122,272,000
Export Quantity (m3)	Sawn wood (NC)	16,418,319	20,818,129	26,303,876	20,498,353	21,343,281	24,273,000
Export Quantity (m3)	Wood Panels	45,819,208	56,865,180	77,372,420	75,393,212	74,817,548	90,890,000
Export Value (1000 US\$)	Sawn wood (C)	18,461,523	17,161,836	21,812,782	22,205,306	23,088,605	24,496,365
Export Value (1000 US\$)	Sawn wood (NC)	6,429,553	6,789,832	9,014,717	9,210,669	8,475,441	10,832,245
Export Value (1000 US\$)	Wood Panels	16,603,897	16,451,307	26,627,520	33,253,636	33,115,504	34,410,134
Import Quantity (m3)	Sawn wood (C)	78,240,983	91,659,812	107,670,835	92,086,546	94,889,476	118,106,000
Import Quantity (m3)	Sawn wood (NC)	19,043,632	23,976,289	26,605,046	21,013,281	21,884,732	22,719,000
Import Quantity (m3)	Wood Panels	43,142,399	59,853,258	79,159,486	72,422,571	72,571,368	83,946,000
Import Value (1000 US\$)	Sawn wood (C)	18,771,261	17,659,622	21,980,706	21,571,584	22,972,004	25,460,380
Import Value (1000 US\$)	Sawn wood (NC)	7,699,063	8,019,771	9,526,689	9,804,691	9,688,747	11,199,479
Import Value (1000 US\$)	Wood Panels	16,582,797	17,443,762	27,277,454	31,924,891	32,476,819	33,518,188
Production (m3)	Sawn wood (C)	267,352,368	279,676,979	318,332,426	278,844,898	288,474,002	334,752,000
Production (m3)	Sawn wood (NC)	119,390,530	105,465,912	106,987,036	112,276,961	124,260,452	132,820,000
Production (m3)	Wood Panels	148,063,493	186,219,048	238,432,999	265,229,986	301,122,837	415,602,000

FAOSTAT 2016

### **3. BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC**

Standardization activities undertaken by TC 165 are designed to establish a number of benefits including the following:

- a) Adoption of uniform test methods to obtain relevant data for the determination of structural properties of timber and lignocellulosic structural products which will facilitate international exchange and acceptance of strength and stiffness information and will eliminate costly duplication of testing for regulatory recognition of imported materials and products.
- b) Adoption of a uniform basis for the classification of design properties in order to provide a mechanism for the international utilization of design information developed by individual countries.
- c) Identification of unified approaches to the evolution of design philosophy and the establishment of a common basis for design of timber and lignocellulosic structures to increase the effective utilization of these products and facilitate international trade.
- d) Cooperation in developing strategies to increase the technical use of natural resources to provide developing countries with a technologically sound basis for the utilization of non-traditional timber and lignocellulosic structural products, such as round timber and bamboo, included in engineered structures.

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

### **4.1 Membership**

<https://www.iso.org/committee/53584.html?view=participation>

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

TC 165 well represents many timber producing and consuming regions. Australia, Austria, Canada, Finland, France, Germany, Indonesia, Japan, Korea Republic, Malaysia, New Zealand, South Africa, Sweden and the USA are active and strong participants. Some importing countries (e.g. UK, China) participate well. However active participation by more producing countries is highly desirable. Current P-Members deemed to be less active in voting and meeting participation than warranted include; Chile and the Russian Federation. O-Members that are significant producers (and exporters) that should, more appropriately, be P-Members and active participants include, Poland and Thailand. Other ISO members who would greatly benefit from participation in TC 165 are Brazil, Latvia, Lithuania and Estonia.

INBAR (International Network for Bamboo and Rattan) is listed as a liaison organization of ISO TC 165. INBAR makes an effective contribution to and participate actively in the work of TC 165 WG 12 developing ISO standards for structural products made of bamboo and design of engineered bamboo structures.

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

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

- Development of product specification, testing, characteristic values, and performance classification and design standards to facilitate international trade and harmonization of structural design and construction practices.
- Facilitation of the global adoption of international standards governing the safe and reliable structural use of timber, wood-based panels, products and systems, and related lignocellulosic fibrous materials such as bamboo.
- International cooperation in the development and expansion of the structural use of the above products and systems.

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

In general TC 165 views its work in relation to a range of products/components which are or may be utilized in timber structures. Standardization relates to five broad categories; Products/Material Specifications, test methods, characteristic values, design classification, and design standards. The Chairman's Advisory Group developed a framework document to better identify the relationships between work items within these categories (N798).

Strategies are based on TC 165's assessment of priorities (need and probability of success) and appropriate sequence of development to facilitate sequential utilization of the work in related activities and incorporation of work done by members' national or regional bodies.

*The following table sets out a framework for the activities and the establishment of priorities (priorities ranked 1 to 5 with 1 highest priority, 5 lowest)*

Product	Specifications	Test Methods	Characteristic Values	Design Classification	Design Standards
Sawn Timber	1	1	1	1	5
Jointed Sawn timber	2	3	3	4	5
Laminated Sawn	1	2	2	3	5
Laminated Veneer	TC89/SC3	2	2	4	5
Composite Strand	4	5	4	5	5
Panels - Veneer	TC89/SC3	1	1	2	5
Panels - Non Veneer	TC89/SC2	1	2	1	5
Round Timber	1	1	1	2	5
Bamboo	3	3	3	3	3
Composite I-Joist	1	1	1	1	5
Composite Panel	TC89	2	3	1	5
Composite Beam & Post	4	5	3	4	5
Component -Trusses	1	1	1	2	5
Component - Panels	4	3	4	4	5
Joints	1	1	2	2	3
Fasteners	1	1	1	2	5

As can be noted from the table above, TC165 has traditionally been less active in development of structural design standards. At its 2018 meeting in Istanbul, the Committee had agreed in principle to become more active in the standardization of design methods for selected connections fabricated with innovative fasteners, in order to facilitate the use of such innovative connection systems in timber structures.

The TC maintains close cooperation and coordination with ISO/TC89 and CEN/TC124 and encourages members and their experts to have as active a role as is practicable in other regional and international bodies involved in timber engineering and standards. Through this the role and benefit of ISO standards are promoted and participation in the work is encouraged.

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

- International standardization provides a basis for establishing (and enhancing) the value of timber resources – both those traditionally used and those having the potential of being used for structural and construction purposes.
- Of growing influence is the WTO TBT code referencing of ISO Standards. The development of International Standards, particularly those targeted at commonality of test methods and application of test results in national codes and conformity assessment requirements, is increasingly recognized as a major factor in enhancing trade opportunities. TC165 priorities mirror these benefits and have improved members' commitment to timely progress.
- The diverse history of geographically based traditional approaches to design and construction in timber is a major factor. Many of these go back hundreds of years and involve such simple differences as units of measure, traditionally accepted member sizes and support spacings, etc.
- In establishing standards there is a need to recognize historical practises, design skills, and economic factors of the various member states, including those of developing countries.
- Active adoption and use of ISO Standards developed by TC 165 is hampered because of differences with existing national and international standards. However, the ISO standards provide bases for the gradual revision of national and regional standards where they exist, and adoption by developing or other countries where comparable standards do not exist, they also provide a mechanism for harmonization of national and regional standards.
- While there are no direct legal factors governing the activities of TC 165, the standards developed can become regulation when adopted nationally or regionally.
- Limited national resources available to support participants in the work of the TC. Those involved invariably have responsibilities for work on National and/or regional standards and codes committees and a limited amount of time and financial resources. These must be rationed to reflect priorities attached to those responsibilities as they may vary from time to time, resulting in ISO work being sometimes being deferred in favour of national priorities.

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

Close liaison is maintained with CEN TC 124, and, where appropriate Vienna Agreement standards have been developed. Time allocated varies by project and can be found on the project link to the TC 165 project portal <http://isotc.iso.org/pp/search/default.action>. Stake holders are listed in Section 2.1.

### **Information on ISO online**

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

<https://www.iso.org/committee/53584.html>

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

- About (Secretariat, Secretary, 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\*](#)