



STRATEGIC BUSINESS PLAN

ISO/TC 61

EXECUTIVE SUMMARY

The scope of ISO/TC 61 is the standardization of nomenclature, methods of test, and specifications applicable to materials and products in the field of plastics. The objective of TC 61 is the timely development and maintenance of quality, market relevant, material and semi-finished product test methods and standards for the global plastics industry.

Plastics are one of the most important and versatile materials in the global economy. From packaging to aerospace applications, plastics provide designers, engineers, manufacturers, and consumers with products that contribute to economic growth, sustainability of the environment, and a higher standard of living worldwide. Inherently lightweight, plastics are an efficient use of natural resources and are part of the solution to the public's environmental performance expectations.

The need for a common terminology, measurement techniques, and material descriptors increases as globalization and international trade expands. A very large number of countries report trading in plastics. The plastics industry itself continues to evolve and rationalize through mergers and acquisitions, economic cycles, internal company restructuring, technical innovation, and changes in strategic business focus. To some extent, either in terms of feedstock supply or market opportunity, the centre of gravity of the global plastics industry is beginning to shift from North America and Europe to the Middle East and Asia.

The Committee has:

- A Subcommittee related to terminology (SC 1),
- Three Subcommittees related to materials (SC 9-Thermoplastic materials, SC 12-Thermosetting materials, and SC 13-Composites and reinforcement fibres),
- Two Subcommittees related to semi-finished products (SC 10-Cellular plastics and SC 11-Products),
- Four Subcommittees related to the various fields of testing (SC 2-Mechanical behaviour, SC 4-Burning behaviour, SC 5-Physical-chemical properties, and SC 6-Ageing, chemical and environmental resistance).

As appropriate, liaison activities exist with other standards development committees and organizations to help facilitate the efficient and effective development of globally relevant standards.

The TC holds annual meetings, supported by the plastics industry in a member body country, at which time all the active SCs meet. ISO/TC 61 is committed to the efficient use of state-of-the-art

electronic communication tools and has pioneered the on-site use of the Internet not only for preparation of standards but also during its annual meetings.

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 that 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 140 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 forums, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

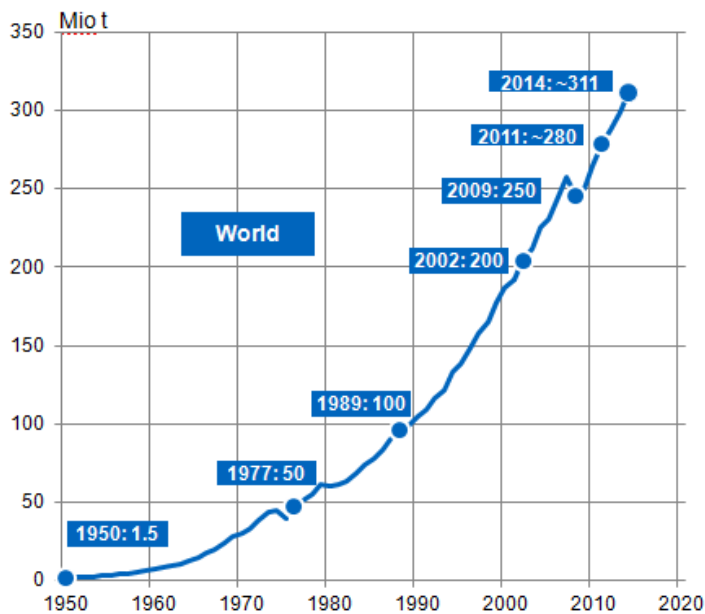
2 BUSINESS ENVIRONMENT OF THE ISO/TC

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:

Plastics are one of the most important and versatile materials in the global economy. Plastics can be designed to be durable, strong, lightweight, and resistant to chemicals; they can be transparent, translucent, or opaque; soft, flexible, or hard; insulators or conductors of heat and electricity. Plastics can be designed to be degradable. They can be fabricated into almost any shape and size. And they are recyclable using multiple resource recovery options. From packaging to aerospace applications, plastics provide designers, engineers, manufacturers, and consumers with products that contribute to economic growth, sustainability of the environment, and a higher standard of living worldwide. Inherently light weight, plastics are an efficient use of natural resources and are part of the solution to the public's environmental performance expectations.

The overall evolution of the plastics industry can be qualified as a success story. This industry has seen a constant growth over the last 50 years. Plastics production ramped up from 1.5 Mio t in 1950 to 311 Mio t in 2014. The Compound Annual Growth Rate (CAGR) is about 8,7%.



Includes Thermoplastics, Polyurethanes, Thermosets, Elastomers, Adhesives, Coatings and Sealants and PP-Fibers. Not included PET-, PA- and Polyacryl-Fibers

Figure 1 Plastics Production from 1950 to 2014

Source . Plastics Europe

The supply chain for plastic products in the marketplace can be categorized into three parts:

- (1) plastic resin manufacturing,
- (2) plastic product manufacturing and fabrication, and
- (3) industrial or consumer plastic product users.

Many of the plastic resin manufacturing companies and industrial users are multinational companies. Many have strategic alliances or joint ventures with international partners. To a lesser extent, plastic product manufacturers have manufacturing facilities or alliances in other countries—a trend that is growing. Plastic resins and plastic products are traded internationally. Plastic products are used as the basis for manufactured articles (such as toys) and as components of manufactured products (such as automobiles) making plastics an important and strategic factor in economies in which manufacturing plays a significant role. As developing countries enter into the manufacturing stage of economic development, plastics will continue to grow in importance. There is already international trade in end-of-life products for the purpose of reclaiming or recycling the plastic components.

The major markets for plastics are

- (1) packaging,
- (2) building and construction products,
- (3) electrical and electronic products,
- (4) automotive/transportation, and
- (5) household/consumer items.

Plastics products figure in all nine ISO technical sectors: Agriculture and food technology; Construction; Electronics, information technology and telecommunications; Engineering Technologies; Generalities, infrastructure and sciences; Health, safety and environment; Materials technologies; Special technologies; Transport and distribution of goods.

Nanotechnology promises to even further expand the performance capabilities of plastics.

While the vast majority of plastics continue to be derived from petroleum and natural gas, the development of biodegradable and bio-based plastic materials is gaining in market significance. Research, development, and demonstration projects in the field of biodegradable and new bio-based plastics are expanding worldwide, and some products have already entered the marketplace.

Another area of significant technical innovation today is plastics processing. Driven by the need to increase speed, reduce energy consumption, maximize product performance, and increase quality, new processing methods and equipment continue to be developed. The scope of these advances covers the full range of plastics from neat resins to filled polymers and highly reinforced composites.

Increasing attention is being paid by governments, environmental advocates, manufacturers, and the public to the three elements of sustainability—economic growth, ecological balance, and social progress. Plastics make beneficial contributions in all three areas allowing for significant growth opportunities in national and international markets.

Governmental or quasi-governmental regulations or codes must be met for specific applications, (e.g. automotive safety or fuel economy, building or electrical codes, food packaging regulations), and are important drivers for the development of technical standards.

The need for common terminology, measurement techniques, and material descriptors increases as the trend towards globalization and international trade continues. A multinational plastics resin manufacturer must be able to ensure that the material produced in one area of the world is the same as that produced in another. Similarly, end-users such as automotive and aerospace industry customers must be able to describe their material and product performance needs in a

way that facilitates sourcing from global or local manufacturers. Addressing this vital communications link is an important focus of ISO/TC 61.

2.2 Quantitative Indicators of the Business Environment

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

- **The Plastic Material Demand** continues to grow. This growth is around 4% until 2019 according to the best estimate
- **Despite high growth** rates in Asia and Central Europe- per capita consumption is still significantly below the level of “mature” industrial regions
- **Consequently** there is plenty of room for future growth

2.3 Demand of Plastics

The demand continues to increase and reached the value of over 310 millions of tons in 2014.

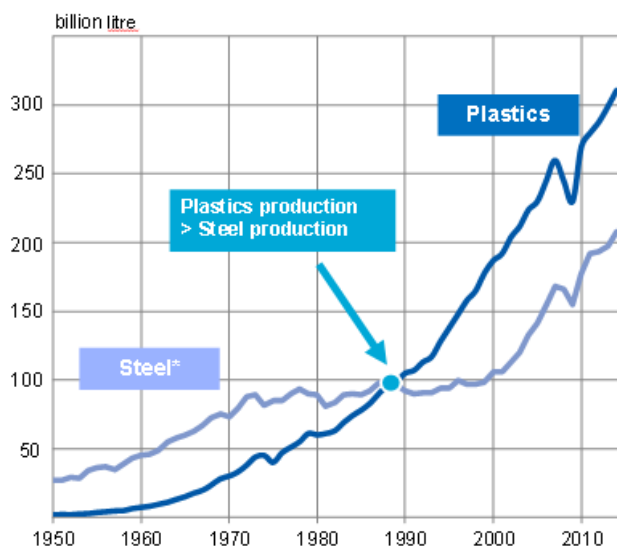


Figure 2 World benchmarking plastics and steel

Source : Plastics Europe

2.4 World thermoplastics demand

Below the situation concerning the largest type of Plastics : the Thermoplastics

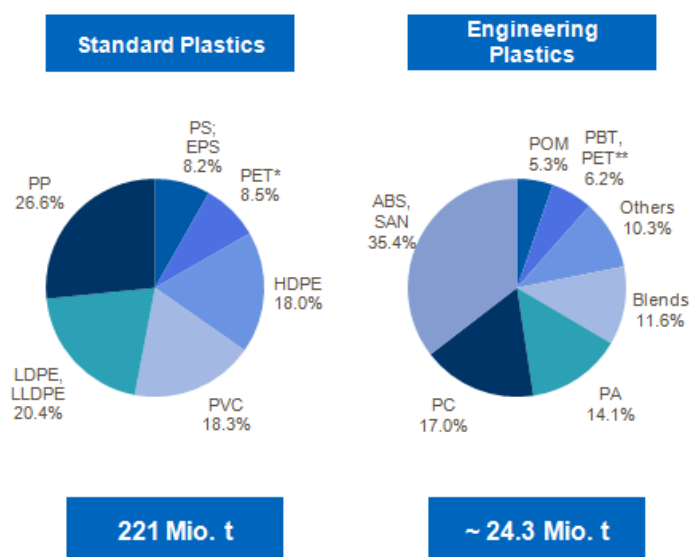


Figure 3 World thermoplastics Demand in 2014
Source : Plastics Europe

3 BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC

The Scope of ISO/TC 61 is the standardisation of nomenclature, methods of test, and specifications applicable to materials and products in the field of plastics. By agreement, standards in relation to thermoplastic elastomers are developed and maintained by ISO/TC 45 (Rubber and Rubber Products) and by ISO/TC 61 (TMB Resolution 26/2004)

Standards developed by ISO/TC 61 are primarily test methods and material characterisation documents that provide the means to objectively assess the suitability for use of materials and semi-finished products. As new materials or advances in material characterisation are developed, new work items for new standards or revisions of current standards are placed into the work programme of the TC. The work programme of ISO/TC 61 encompasses commodity plastics, engineering plastics, and the broad range of plastic composite materials. Both thermoplastics and thermosetting plastics are included within the scope of ISO/TC 61.

Responding to the advent of computer databases and modelling programs for plastic product selection and processing, a series of standards have been and are being developed for the acquisition and presentation of multipoint data on the properties of plastics.

Responding to the interest in the reclamation, recycling, and/or disposal of plastics, revisions have been made to the standard for symbols and abbreviated terms for plastics, and a standard has been developed for the identification and marking of plastics products. With the development of degradable plastics, several standards have been developed to measure the biodegradability or compostability of the new materials. Further development of international standards serving the growing demands of the plastics recycling industry will be needed that reflects overall sustainability goals.

One of the most important topic for ISO/TC 61 in last few years is the establishment of a WG to develop standards in the bio-based plastics field (SC 5/WG 23). This is a growing area as

significant developments are going on, and TC 61 wants to participate to that effort for providing solutions to address global challenges.

TC 61 maintains a comprehensive plastics vocabulary and terminology standard.

4 REPRESENTATION AND PARTICIPATION IN THE ISO/TC

Regional distribution of membership in TC 61

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

[ISO/TC 61 Plastics](#)

ISO/TC 61 encourages the active involvement of a broad cross-section of stakeholder technical experts in the development of its international standards and other deliverables. The experts that routinely participate in the standards developing activities of ISO/TC 61 include representatives of plastic resin manufacturers, national standards bodies, government laboratories, and independent research and testing laboratories. More than two-thirds of the P members send representatives to the annual meetings.

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

5.1 Defined objectives of the ISO/TC

The objective of TC 61 is to produce and maintain timely, first quality, market relevant, safe material and semi-finished product test methods and standards for the global plastics industry. The TC believes that on-going strategic planning associated with its business plan can provide significant value to further define objectives for the Committee. It intends to be at the forefront of international standards development for the plastics industry and its stakeholders. While it will be sensitive to the different levels of technological sophistication among the P members, it will strive to advance state-of-the-art plastics standardization. Attention will be paid to the needs of all segments of the value chain. Special attention will be paid to those standards that extend the global use of plastics, support new applications for plastics and plastic composites, eliminate technical barriers to trade and address environmental aspects of plastics. Continuing attention will be paid to updating test methods and standardizing new ones. As developments continue for biodegradable and bio-based plastics, new standards will be developed as warranted. There will be continued progress in developing standards or guides that address the recovery and recycling of plastics and related environmental aspects of plastics. Major market opportunities exist for plastics in the global transportation/mobility and building and construction sectors. New/revised standards addressing the structural performance of plastics and composite materials will be needed in the coming years. New plastic materials continue to push the envelope for functional performance in the electrical and electronic and information technology markets. ISO/TC 61 material and material testing standards will help pave the way for continued global market penetration of plastics in competition with traditional materials. It is clear that market penetration and expansion of fast growing technologies such as new materials, nanotechnologies, and biotechnologies will require the availability of global standards. Plastics interface with each of these fields, and ISO/TC 61 standards must be part of the global technical standards base supporting commercialization.

ISO standards are systematically checked and reviewed every 5 years in order to keep the contents up to date. As a result of the systematic review, standards can be either confirmed, revised, or withdrawn.

As already mentioned, TC 61 will take a clear strategic direction towards standards for bioplastics as these materials will become a growing area.

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

ISO/TC 61 was formed in 1947. Its structure has evolved as the needs have changed or increased as the industry grew.

Each SC has a number of working groups where technical experts convene to develop or improve standards in their field of expertise.

The TC holds annual meetings, supported by the industry in a member body country, at which time all the SCs and active WGs also meet. During the week long meeting, training sessions are held for all the SC Chairs, Secretariats, Convenors and Project Leaders at which the procedures for developing standards and the importance of timetables for progression of the work is stressed. If required particular workshops are organized to review specific technical matters.

A Liaison Committee meeting allows the TC 61 membership the opportunity to review developments and the opportunity to plan for future needs associated with the important liaison function involving other standards developing organizations inside and outside of ISO. ISO/TC 61 maintains active liaisons with several organizations including product-focused standards groups. The TC Chair also meets with the individual SC Chairs and Secretariats at the end of the meeting to review the progression of the work and address situations that need attention. Both the training sessions and the SC "debriefings" have been instrumental in keeping projects moving within the TC.

ISO e-committees is the made tool for filing and saving/communicating and exchange of documents. It is also used to archive as well as prompt information on the status of standards under development. ISO/TC 61 is committed to the efficient use of state-of-the-art electronic communication tools. ISO/TC 61 has prepared a meeting planning guide for use by hosting countries. SC secretaries are also in charge for saving minutes of meetings on ISO e-committees.

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

The TC has had, and continues to have, a large programme of work divided among its SCs and WGs. As a consequence, retaining or obtaining subcommittee secretariats can sometimes be difficult. This is largely a resource issue, with many national standards bodies having faced reduced staffing and/or funding in recent years. The global plastics industry itself continues to evolve and rationalize through mergers and acquisitions, economic cycles, internal company restructuring, and changes in strategic business focus. To some extent, in terms of geographical representation, the activities of the global plastics industry is beginning seem to be shifting from the United States and Europe to Asia (production and markets) and the Middle East (feedstocks). In terms of sector representation, the current situation has been less balanced over the last years due to a surprising lower attendance by plastics producers.

The Standardization Administration of China holds the Secretariat for the TC since 1st January 2011. The objective of ISO/TC 61 is to share SC chairs and secretariats among different countries and regions.

There are continuing concerns regarding the cost to host annual meetings. Several cost reducing measures have been taken over the last several years and the meeting requirements are periodically reviewed to affect further savings. The institution of the "meeting website" has been a major advance. The TC has adopted a long-range meeting schedule to facilitate future planning by host countries. Joint hosting of meetings has been encouraged.

Lastly, the work of ISO/TC 61 can be impacted by the Vienna agreement; it is particularly important that projects being initiated in CEN and CENELEC take place with appropriate notification to ISO/TC 61. TC 61 has an excellent working relationship/liaison with CEN/TC 249, Plastics, and welcomes liaison opportunities with other CEN/TC's with which it shares common interests. Occasionally questions of jurisdiction arise between TC 61 and other IEC or ISO committees or subcommittees and efforts are underway to strengthen appropriate liaison activities.

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

The link below is to the TC 61 page on ISO's website:

[ISO/TC 61 on ISO Online](#)

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)

TC 61 also has developed its own website to promote people, activities and projects of the TC and its SCs.

[TC 61 home page](#)

Reference information

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

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