



STRATEGIC BUSINESS PLAN – ISO/TC 118

Executive summary

The scope of ISO/TC 118 comprises standardization within the field of:

- air compressors;
- compressors for the process, petroleum chemical and gas industry services;
- pneumatic tools and machines;
- compressed air treatment technology

The global market is estimated to be 25 billions USD.

Standards developed within ISO/TC 118 support a sustainable industry, innovation and infrastructure through internationally agreed specifications that meet requirements for quality, safety and more efficient use of resources.

Priority for the development of standards is determined by the needs of the end-users, society and the elimination of technical barriers to trade. To be in line with the above needs, the committee ISO/TC 118 should deal with standardization in the following fields:

- safety, accident prevention
- quality
- health safeguarding, ergonomic aspects
- environmental and sustainability aspects
- communication through common terminology, classification, methods for specifications, data sheets
- uniformity of test methods
- interfaces

ISO/TC 118 is currently monitoring the market and is working to develop or revise international standards covering the following domains:

- vibration measurements on hand-held tools
- displacement and dynamic compressors — Performance test code for electric driven low pressure air compressor packages
- safety requirements for fastener driving tools
- safety requirements for air compressor
- performance test methods for Impulse and impulsing tools
- noise measurement code for Hand -held non-electric power tools
- energy efficiency – Compressed air
- test method for Cycle Energy Requirement

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 program 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 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 118

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:

2.1.1 General

Standards developed within ISO/TC 118 support a sustainable industry, innovation and infrastructure through internationally agreed specifications that meet requirements for quality, safety and more efficient use of resources. ISO/TC 118 will also closely follow the adaptation to a circular economy to assess whether new standards need to be developed or existing standards need to be updated to meet new requirements.

2.1.2 Process compressors and expanders

Gas compressors and expanders are widely used in the process, petroleum, chemical and gas industries for gas compression and expansion. They are manufactured by a limited number of large manufacturers and sold worldwide. They are purchased and operated by companies with specific performance requirements and with experience of safe and efficient operation.

The American Petroleum Institute (API) has developed many of the standards that are currently used in the oil and gas industry. The user industry is increasingly global and now wishes to have global equipment standards recognized at ISO level, for which API continues to be a major partner for the standards development. The vision is "global standards used locally worldwide" and which are open to all industry experts to contribute to, review and approve.

2.1.3 Air compressors and compressed air systems

Air compressors are manufactured, on the one hand, by a limited number of major manufacturers with worldwide distribution and considerable resources and, on the other hand, by a large number of small manufacturers, who mainly serve local markets.

Compressed air is a highly reliable means of transmitting energy. The market for compressed air is considered mature and compressors are widely used in the industry and safely applied in a great diversity of applications.

Compressed air is used both in process and for ancillary equipment. Compressed air is used as an active agent in for example, the food, pharmaceutical and electronic industries and also in water treatment. Air separation is an expanding market for air compressors. For this air higher specifications of the quality of the air are needed. Compressed air is used both in process and for ancillary equipment.

Environmental concerns about the efficiency of energy-using products are increasing the interest in developing standardized methods for evaluating and comparing this aspect of compressor performance.

2.1.4 Pneumatic tools and machines

Even though the use of compressed air driven tools is decreasing for certain applications in the manufacturing industry, pneumatic power tools still play an important role in industries with intense assembling tasks, exemplified by the motor vehicle industry, household appliances and aircraft manufacturing.

Electric tools are obviously making inroads in areas, where pneumatic tools have been used traditionally, e.g. the tightening of threaded joints, where the result of the tightening has to be verified and stored. Nevertheless, in many areas, both electric and pneumatic tools can be used together since they have complementary benefits.

The increasing demand for quality assurance in the assembly industry, notably to secure that correctly tightened threaded joints are obtained, results in an interest for standardized performance test methods for tightening tools. This calls for a harmonization within standardization between ISO and IEC.

For material removal applications, pneumatic power tools, predominantly grinders and chipping hammers, are used extensively in the mechanical industry, especially in foundries, shipyards and steel construction. In those industries that require high productivity in rough working environments, pneumatic tools offer robustness, high power and ergonomic features to protect users from health issues.

In addition to productivity and accuracy, safety and ergonomics are two other features of importance for all handheld power tools in order to comply with customer requirements and working environment legislations. In particular, sound and vibration emissions from handheld power tools have to be measured and declared in accordance to several EN ISO Standards to conform with the EU Machinery Directive.

Furthermore, new requirements on vibration emissions and the declaration of vibration values from repeated shocks will emerge from EU legislation – more specifically the recently agreed Machinery Product Regulation. This has caused an urgent need for a standardized method to measure this value and the need to revise the EN ISO 28927 series for evaluation of vibration emissions. This new standardized method applicable to a large number of handheld tools independently of the power source, shall be developed preferably by a working group with ISO and IEC representatives.

2.1.5 Quality of compressed air and air treatment equipment

The purity of compressed air to be achieved, applying compressed air treatment, is specified by the user related to his compressed air applications, while different applications may require individual purities and specifications. There is an increasing trend to request more stringent air purity requirements comprising additional energy savings at the same time. This is resulting in the need for further development of air treatment equipment and standards by which its performance can be measured.

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:

- The global market is estimated to be 25 billions USD.

- The generation and use of compressed air is estimated to account for as much as 10% of the industrial consumption of electricity in both the European Union and the United States of America.
- Major manufacturers of compressed air equipment, in the developed regions and in some developing countries, are using ISO 7183 for rating compressed air dryers.
- Increasing numbers of compressed air users are referencing ISO 8573 when specifying air purity requirements.
- Most major manufacturers of hand-held pneumatic tools use ISO 28927 for declaring vibration values, both in Europe and in other regions in which occupational hygiene is a concern.

Number of standards elaborated by ISO/TC 118: 80

3 Benefits expected from the work of the ISO/TC 118

The growth of industry throughout the world creates new opportunities for compressors and power tools in both large and small industrial organizations. The handling and maintaining of compressors ought to be more safe and easy, as they are long-lasting products, especially the small ones used by non-professional users. Control systems tend to be more sophisticated, such as energy management systems, remote control and monitoring, and open the possibilities to keep the parameters within more narrow limits. Requirements on energy effectiveness put more demanding requirements on control systems. Increased concern about the environment has resulted in regulatory requirements in several countries and the disposal of used machines and of contaminants from compressed air receive particular attention. In many of these areas, the standards of ISO/TC 118 fulfil important functions, providing fair bases for the specification and comparison of similar equipment, as well as the ability to compare characteristics and performance of equipment based on different technologies.

Some areas of standardization within the scope of ISO/TC 118, e.g. noise measurements, specifications of compressors for the oil and gas industries, have historically been covered by sector-based or regional standards. These are being systematically replaced or co-branded as ISO standards, enabling a broader spectrum of experts to participate in the consensus-building process and promoting a wider acceptance of the resulting standards.

The requirements for a high and dedicated compressed air purity are increasing, particularly in process applications. ISO 8573 series is a recently completed suite of nine standards enabling the purity of compressed air to be classified and measured. ISO 12500 series provides methods for testing the performance of compressed air filters, ISO 7183 for compressed air dryer.

In some areas, standards have become tools to demonstrate compliance with legal requirements. Emphasis on the protection of workers has created regulatory requirements imposed on compressors, gas treatment equipment and especially pneumatic tools, particularly in respect of noise and vibrations. Measurement standards such as EN ISO 2151, EN ISO 15744 and EN ISO 28927 were developed under the lead of ISO/TC118 (following European mandates to CEN) to provide a means of conforming with the European Machinery Directive, while simultaneously gaining acceptance in other major market areas thus avoiding potential technical barriers to trade.

4 Representation and participation in the ISO/TC 118

4.1 Membership

[Countries/ISO members bodies that are P and O members of the ISO committee](#)

4.2 Analysis of the participation

In ISO/TC 118 there are 14 Participating (P) members and 20 Observing (O) members. Members from India, China and Japan are becoming more active.

A more active participation from countries that are merely users of compressors is desired.

Positive is the interest from USA/API to try to co-ordinate the revision procedures of the API standards with the corresponding ISO-standards.

In regard to the pneumatic power tools, concerns have been raised that the engagement from P-members is decreasing. NSB:s do not attend plenary meetings and do not nominate experts to ongoing projects. This is a worrying tendency that can be observed within several areas of standardization.

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

5.1 Defined objectives of the ISO/TC 118

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It is a further aim of ISO/TC 118 to publish and encourage the use of the standards which it produces, as well as to obtain feedback from users, to inform the standards review process.

5.2 Identified strategies to achieve the ISO/TC's 118 defined objectives

ISO/TC 118 has regular meetings in countries in different parts of the world to encourage and enable concerned parties to take a more active part.

ISO/TC 118 has created four subcommittees to focus on each of the markets / products served by its standards, namely: Process compressors, Pneumatic tools and machines, Compressed air treatment technology and Air compressors and compressed air systems. All work is progressed by the subcommittees and their working groups.

ISO/TC 118/SC 3 aims at revising and developing the standards that are required for power tools in order to comply with the new Machinery Product Regulation. In addition, for an improved harmonization within standardization, an ad-hoc group has been established with representatives from ISO/TC 118/SC 3 and IEC/TC 116 with the purpose to address common topics of interest in the field of vibration measurement and declaration. Furthermore, preliminary work shall be initiated to develop a standardized method to evaluate reaction loads on operators using tightening tools.

The elaboration of a Technical Specification on energy efficiency of air compressors operating at variable volume flow rate is still in the planning phase in ISO/TC 118/SC 6. This work will involve the creation of a new measurement code or codes, for which pre-normative research was required.

ISO/TC 118/SC 1 is focused on compressors for the process, petroleum, chemical and gas industries and is principally engaged in the transformation of API standards. It has four working groups, three of which are joint working groups with ISO/TC 67/SC 6. Many of the current ISO standards lag behind the related API standards (API=American Petroleum Institute), but agreement has been reached to work for co-branded documents for the next editions of the API and ISO standards.

ISO/TC 118/SC 1 strives to achieve agreement between the stakeholders and in particular to work closely with API, with respect to both content and schedule. The preference of ISO/TC 118/SC 1 is to develop documents jointly with the AOPI Subcommittee on mechanical Equipment in order that the same text can be published by both organizations, thereby achieving the goal of one world standard.

ISO/TC 118/SC 4 has nearly completed the ISO 8573 series, test methods for contaminants in compressed air, and its work on ISO 12500, requirements on filters and separators for compressed air, is well advanced. These standards are to be published and their use encouraged by a variety of means. This will include the websites of industry liaison bodies, which will also be used to invite feed-back which can be considered when the standards are due for review.

ISO/TC 118/SC 6 has stated activities in the review of existing standards on terminology, preferred pressure and compressor classification. New initiatives are initiated in the environmental area with respect to performance measurements of compressed air systems and performance measurements of compressors.

New work on safety of compressors will start to benefit from the work done in Europe and its revision using the Vienna agreement.

The rapid increase of digital meetings as opposed to exclusively physical meetings enables more frequent meetings when required. It is also the intention of ISO/TC 118 to make use of new IT tools developed for online drafting of standards in order to speed up the drafting process.

6 Factors affecting completion and implementation of the ISO/TC 118 work programme

The timely transformation of API standards in ISO/TC 118/SC 1 is dependent upon API continuing to support the agreement to work for co-branded documents for the next editions of the API and ISO standards.

The forthcoming introduction of the new EU Machinery Product Regulation, is pressurizing the development of the ISO 18623 series of Air compressor safety requirements.

Resources in terms of experts, project leaders and supporting roles such as secretary support is a major factor when it comes to completing projects within set time frames. ISO/TC 118 has experienced a decline of engagement from NSB:s and within some areas there are difficulties to recruit new experts, which put extra strain on the remaining members and experts. This has led to delays and cancelled projects which is a setback when it comes to achieving the objectives of ISO/TC 118 and to implement the work program.

7 Structure, current projects and publications of the ISO/TC 118

Information on ISO online

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

[ISO/TC 118 on ISO Online](#)

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](#)