International Organization for Standardization
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STRATEGIC BUSINESS PLAN
ISO/TC 326
Machinery intended for use with foodstuffs

Executive summary

Food industry is one of the biggest consumer-oriented markets. It is highly diverse due to the wide variety of food products.
Over the years machinery, highly automated appliances and system components for foodstuff processing have become more complex. It is therefore becoming increasingly important to take complete systems into consideration rather than single machines only.

The scope of ISO/TC 326 comprises the standardization of machines and associated equipment in the whole foodstuffs supply chain. This encompasses processing systems and complete production lines which process various raw materials to produce food.

Machinery in the scope of ISO/TC 326 is used particularly – but not exclusively – in the following sectors:

- bakery products,
- slaughterhouses and meat processing (preparation of meat for human consumption),
- poultry,
- fish,
- edible oil and fats,
- dairy,
- ice cream,
- pasta and cereals,
- fruit,
- beverages,
- raw material transformation processes such as roasting, grinding or distillation,
- vegetables,
- catering machinery.

The deliverables will specifically address the associated and connected aspects:

- occupational health and safety for operators during installation, processing, cleaning and maintenance (safety of machinery), taking into account functional safety;
- safety for consumers (food safety);
- hygienic design of machinery which is focusing on design principles and materials in contact with food to avoid adverse influence or contamination of foodstuff during the production process.

Food industry differs from other industries by the strong additional involvement of hygienic aspects. Consequently, a general hygienic design document that is useful for all food industry and also for machinery in the scope of ISO/TC 326 is of considerable importance.

The work of ISO/TC 326 will

- be of benefit for manufacturers and operators of such machinery and any associated equipment. The producers and suppliers of food machinery are not limited to producers of machines, but include all companies that structurally or as a separate activity produce,

assemble or supply installations, machines, equipment or tools for the food and beverage industry;
- also be of considerable help for occupational health and safety authorities and institutions since the standards will serve as benchmarks for setting common – globally acknowledged – safety levels;
- help to ensure that safe food is produced with the machinery concerned. This will help to ensure that food does not cause health risks to consumers and that food is not wasted.

ISO/TC 326 will cooperate with related committees in order to identify standardization needs and gaps. It will collaborate with other organizations to avoid duplications and overlapping standardization activities. The committee will not pursue subjects within the scope of other TCs and will actively work with existing standardization initiatives and contribute to the foremost aim of international standardization.

In this context, ISO/TC 326 recognizes the existence of well-established standardization organizations and their long-standing efforts in the areas of food products, including those of the International Conference on Harmonization, the Codex Alimentarius Commission, Global Food Safety Initiative (GFSI) and other ISO Technical Committees.

The resulting deliverables, primarily international standards (ISO), support the planning and construction of food machines and ensure and improve their safety and reliability and thus have a significant effect on the purchasing decisions of food producers. Consequently, they also help to ensure food safety. Another aim is to achieve a minimum standard of safety and hygienic design for food processing machinery in order to enable fair international competition and reduce global trade barriers.

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 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 also offers 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 and its products, materials, disciplines, or practices that are related to the scope of this ISO/TC. They may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

Feeding a growing world population is an enormous challenge for both primary producers and food producers. Food is derived from animals or plants, and the continuous satisfaction of the demand for raw materials already represents an enormous task for primary production. Products from agriculture, fisheries and aquaculture are processed as required and are used for food production.

Today our food supply system is very complex. However, not in all regions of the world foodstuffs are safe, tasty, nutritious, plentiful, varied, convenient, reasonably priced, and easily accessible. Scientific and technological advances in machinery intended for the use with foodstuffs must therefore be accelerated. Machines are needed in both developed and developing countries to feed a growing world population. They produce not only for the local and national, but also for the international market.

Food producers demand machines and systems that offer more and more flexibility in order to be able to react quickly to fluctuations in the supply of raw materials or shifts in market requirements. These machines usually must integrate and execute several different process steps. All this has led – and in the future will lead – to the development of more advanced and at the same time increasingly complex machines.

Despite all efforts, the degree of automation of various processes is not complete as it depends on many factors due to the individuality of the raw material. Human resources remain indispensable. People still have to operate machines and/or work hand in hand with them. They even have to face new tasks and challenges which may relate to new hazards.

Machines intended for use with foodstuffs are characterized by additional specific hazards and risks in relation to other machines. Furthermore, complex machines may create new safety and health hazards from which operators need to be protected. The same applies to hygienic design requirements for machinery and components that facilitates cleaning and disinfection of all food contact surfaces. A lack in the hygienic design of machinery can be seen as a hazard and may lead to risks for operators. For the consumer, too, it is essential that food safe conditions are achieved during the lifetime of the machine.

Dynamics

Economic

Industrial processing is indispensable to meet society's needs for food in sufficient quantities and of the necessary quality to meet the ever-increasing demands of the growing population. In the long term, this is only possible with the use of machines and their technologies. Machinery intended for the use with foodstuffs is therefore part of a modern food supply system. For these reasons, the number of such machines as well as the number of food producers is continuously increasing.
In addition to quantity and quality, the increase of shelf life of the food products is also a decisive factor in this system, which can be achieved by hygienic machine processing. An important prerequisite for this are machines that have been constructed according to hygienic design requirements. The production of food with long shelf lives allows longer transport routes to consumers, from local to global.

Technical

Machinery intended for the use with foodstuffs are becoming increasingly complex, and their system components and processes to be executed are becoming increasingly comprehensive. Technologies are continually being evolved. Due to the diversity of the product recipes and processing methods, there is a very wide range of machines designed for the use with foodstuffs. Companies that structurally or as a separate activity produce, assemble or supply installations, machines, equipment or tools for the food and beverage industry and food producers are in close contact with each other and develop tailor-made solutions. Frequently, also food producers themselves develop machines that are individually tailored to their products and processes. In all cases, the aim is the most efficient use of food raw materials and energy to reduce food losses and save resources.

Regulatory/Legal

Some regulations for machinery for use with foodstuffs mainly set basic rules relating to occupational health and safety of operators and requirements for the hygienic design. Other regulations in other regions are very specific and go into detail. But in any case, governments worldwide are concerned about these issues.
ISO/TC 326 will ensure that their deliverables do not conflict with any relevant existing international, national or regional statutory or regulatory requirements. Furthermore, it is noted that ISO deliverables do not supersede or substitute any applicable legal or regulatory requirements.

There are many different sectors interested in the standardization of machinery intended for use with foodstuffs, e.g.:

- machinery manufacturers;
- machine (part) suppliers;
- food producers;
- public authorities;
- occupational health and safety organizations;
- testing and certification bodies / technical service organizations;
- research organisations.

Relevant stakeholders also include customers, employees, trade unions, consultants, and consumers.

2.2 Quantitative Indicators of the Business Environment

It is hardly possible to quantify in an accurate way the total value of the global trade in machinery intended for use with foodstuffs. What is certain, however: The production of machines is constantly growing due to the demand.

3 Benefits expected from the work of the ISO/TC

There are a lot of stakeholders for whom an appropriate commercial, regulatory, and social environment must be provided and who benefit from the work of ISO/TC 326:

- machinery manufacturers,
- machine (part) suppliers,
- food producers,
- the employees of the afore-mentioned stakeholders
- public authorities,
- health and safety organizations,
- testing and certification bodies / technical service organizations,
- research organizations.

Relevant stakeholders who – at least indirectly – benefit from this TC's work are customers, trade unions, consultants, and consumers.

ISO/TC 326 supports all above-mentioned stakeholders by providing deliverables that address essential safety, health and hygienic design requirements for machinery intended for use with foodstuffs. The resulting deliverables (preferably standards) support the planning and construction of food machines and ensure and improve their safety and reliability and thus have a significant effect on purchasing decisions of food producers. Consequently, they also help to ensure food safety.

Machinery intended for the use with foodstuffs can be found particularly – but not exclusively – in the following processing sectors:

- bakery,
- slaughterhouses and meat (preparation of meat for human consumption),
- poultry,
- fish,
- edible oil and fats,
- dairy,
- ice cream,
- pasta and cereals,
- fruit,
- vegetables,
- beverages,
- raw material transformation processes such as roasting, grinding or distillation,
- catering.

Benefits:

Customers for machinery intended for use with foodstuffs have started to demand machinery that is more flexible and can cope with fluctuations in material supply or shifts in market demands.

This has led to the development of machines that integrate several process steps in one machine, which leads to more efficient use of materials and energy, new machinery, and increased productivity.

A view to occupational health and safety:
Manufacturers are provided with a framework and guidance to enable them to design and produce machinery intended for use with foodstuffs which is safe for the intended use for occupational purposes.

Accidents involving people on and with machines unfortunately occur wherever they are used. Each of these accidents has unpleasant consequences for the person concerned: Pain, illness, possibly short- or long-term health effects and even death can occur, causing varying degrees of inconvenience, grief, and financial burden to individuals and possibly families.

Economic consequences of accidents
Accidents involving machines at work cause costs, e.g. for medical care and rehabilitation. In many places, these costs are covered by a national social system, e.g. by the statutory occupational accident insurance, which results in costs for the general public. However, such systems do not exist everywhere in the world, so that these costs have to be covered by private insurances or to some part even by the accident victim himself.
In addition and apart from these direct accident costs, there is also a significant economic loss due to production interruption, loss of production and material damage. It is estimated that these costs are a multiple (factor 2-5) of the medical costs of accidents.

A view to food safety and hygienic design:
Industrial processing is indispensable to meet society's needs for food in sufficient quantities and of the necessary quality to meet the ever-increasing demands of the growing population. In the long term, machinery intended for the use with foodstuffs is therefore part of a modern food supply system.
Food safety means handling, processing, and storing food in such a way that it is not adversely influenced to such an extent that its consumption causes human illness. Machines constructed according to hygienic design criteria contribute significantly to reducing this risk. In addition, the work-related health risks for operators in food processing are reduced.
The shelf life of the products is also a decisive factor in this system, which can only be achieved by machines built according to hygienic design. The production of food with long shelf lives makes it possible to extend storing times and to bridge longer transport routes to consumers, from local to global. It also helps to reduce food losses.

ISO/TC 199 addresses safety of machinery in general. Its standards ISO 14159 and ISO 21469 deal with hygiene aspects for machinery and associated equipment used in applications where hygiene risks to the consumer of the product can occur. Since hygienic design experts and hygiene know-how are most common in the food machinery sector, the experts in the new TC will happily liaise with the hygiene experts in ISO/TC 199 with the objective to further develop or revise hygiene-related standards (e.g. by setting up Joint Working Groups).

Globally applicable minimum requirements for safety and hygienic design of food machinery create a level playing field for internationally acting players and are the basis for a functioning trade respecting health and safety of operators and other people.

Furthermore, the results of standardization efforts will support national and international competitiveness, promote the exchange of goods and services by removing technical barriers and support market access.

The aim of ISO/TC 326 is to contribute directly to the reduction of accidents involving machinery intended for use with foodstuffs by defining safety requirements to minimize the risks for all hazards.
This is supplemented and extended by requirements for Hygienic Design, which, in addition to the above-mentioned objectives, also contribute to the health of operators at the workplace.

4 Representation and participation in the ISO/TC

4.1 Membership

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

The current P and O membership of ISO/TC 326 may be viewed on the ISO website by clicking on the link embedded in the heading of this section.

4.2 Analysis of the participation

This ISO/TC was newly founded, and therefore no reliable statements can be made at present about active participation in the work of the working groups.

It can be assumed that the members of ISO/TC 326 comprise countries and stakeholder representatives from all regions of the world.

ISO/TC 326 will – if necessary – liaise and/or co-operate with other technical committees that are related in terms of content, together with efforts to improve representation and participation of relevant stakeholders in this ISO committee.
Possible candidates for such liaisons and/or co-operations could be:

- ISO/TC 23 “Tractors and machinery for agriculture and forestry”
- ISO/TC 34 “Food products”
- ISO/TC 199 “Hygiene and safety of machinery”
- ISO/TC 283 “Occupational health and safety management”
- ISO/TC 293 “Feed machinery”
- ISO/TC 313 “Packaging machinery”
- IEC/TC 61 “Household machines and similar electrical appliances”

- CEN/TC 153 “Machinery intended for use with foodstuffs and feed”

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

5.1 Defined objectives of the ISO/TC

Objectives and priorities in the work of the ISO/TC 326 are to develop primarily international (ISO-)standards dealing with

– the harmonization of the safety requirements for equipment which is used in different food industry sectors;
– equipment that forms an integral part of machinery intended for use with foodstuffs;
– comprehensive requirements on hygiene and hygienic design, taking into account the special needs of the sectors concerned;

in accordance with the ISO strategy. But also other ISO-deliverables may be possible.

The TC will develop a package of International Standards to these aspects. A standard will cover at least one machine or group of machines within the above food machinery sectors.

A statement on the availability of the deliverables cannot be made due to the current situation.

ISO/TC 326 will regularly review its strategy in order to support the overall objectives of ISO, in particular to help it achieve its Global Vision 'to be the world's leading provider of high quality, globally relevant International Standards through its members and stakeholders'.

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

ISO/TC 326 bundles all relevant safety information for machinery and equipment intended for use with foodstuffs (production and processing).

Due to the different machines used in the various sectors, it is necessary to set up specific working groups based on the needs and concerns of each sector. Horizontal issues that affect all machines may be dealt with in topic-related working groups.

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

The successful implementation of the ISO/TC 326 program depends very largely on the willingness and availability of the various experts to participate in the specific working groups.

Based on the present situation, the TC shall evaluate alternative working methods. People have already become familiar with the use of web conferences, which offer practicable alternatives to face-to-face meetings. However, the global reach of members inevitably means that some members in different time zones are disadvantaged at such conferences.
In any case, face-to-face meetings – allowing better possibilities for discussion and to reach consensus – should be preferred in the future after we will be back to normal.

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:

ISO/TC 326 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 program (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