STRATEGIC BUSINESS PLAN (SBP)

Clause 2.1.2 of the ISO/IEC Directives, Part 1

ISO/TC 306
Foundry Machinery

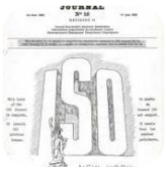
What is the main market trend?
The foundry machinery industry evolves toward modernization, efficiency, and ecological safety driven by smart manufacturing, 3D printing, clean energy, and resource recycling, focusing on "safe, clean, efficient" production and cost reduction.

Message from the Chair
Foundry is the "cornerstone" of industry. From precision components to major equipment, and from traditional manufacturing to green and intelligent manufacturing, it has always carried the core driving force for the development of global industry. ISO/TC306 has always taken "ensuring production safety, promoting technology upgrading, optimizing manufacture efficiency, and facilitating seamless international trade" as its mission.
Dr Yanchun Lou, Chair, ISO/TC 306

What benefits can standards bring?
Standards facilitate technical exchanges, ensure workplace safety, save costs, eliminate trade barriers, and support sustainable development aligned with regulatory and market demands.

About ISO/TC 306
- Secretariat →
- Scope →
- Participating members →
- Liaisons →

Who participates in standards development in this topic?
Participants include manufacturers, distributors, users, health/safety bodies, universities, research institutions, industry associations, regulators, ISO national standards bodies, etc.



High-profile standards
- ISO 23472-1:2020 →
- ISO 23062:2022 →
- ISO 23779:2024 →
- ISO 23063:2024 →
- Access the full TC 306 work programme →

What actions will the committee take in the next 3 years?
Developing safety as top priority, health and environmental protection, supported by technological innovation and adaptation.

About ISO
- ISO 2030 Strategy →
- ISO/IEC Directives, Part 1 →

How can you get involved?
Reach out to the ISO member in your country to learn more about participating in ISO/TC 306.

ISO's role in supporting the SDGs

ISO/TC 306 standards support the following SDGs

Introduction

The evolution of formal strategic planning in ISO Technical Committees is a key measure in supporting the ISO 2030 Strategy vision of making lives easier, safer and better. This document is designed to aid committees and their stakeholders in:

- Identifying benefits and vision of standardization within the committee's field of activity
- Linking benefits to higher strategic imperatives (ISO 2030 Strategy, SDGs, London Declaration Action Plan)
- Prioritizing among projects and allocating resources
- Providing transparency and communicating through a format adapted to three key audiences (general public, TMB and other TCs, and internal TC stakeholders
- Supporting data-driven continuous improvement, including user perspectives where available
- Maintaining strategic flexibility for different market cadences

International standards embody the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in ISO Technical committees, representative of all interested parties, supported by a WTO TBT-compliant public enquiry phase.

International standards are developed through a member-driven market-centric process, where any P- member may submit a proposal for new work.

This document represents an important filter through which new work items should be considered by P-members of a committee and shall be referenced in new work item proposals submitted to the committee per clause 2.3.4 of the ISO/IEC Directives, Part 1.

Beginning in 2026, deviations from this strategy shall be rationalized in new work item proposals.

Meeting global needs

To realize our vision, we must develop consensus-based standards that are relevant and respond to current and future challenges. We must focus on getting the right standards to market at the right time, and with the right content and in the right format.

Business environment and future trends

Foundry machinery refers to the machines and equipment used in foundries — industrial facilities where metal is melted, poured into molds, and cast into shapes. Foundries produce metal parts for industries like automotive, aerospace, construction, and manufacturing.

The focus of modern foundry production technology is mainly on "safe, clean and efficient", "reducing costs and labor intensity", "saving energy and resources" and "lightweighting" (including the use of lightweight structures and materials such as high-strength and lightweight alloys). Casting technology must meet these goals when competing with other manufacturing technologies or non-casting materials.

With the development of new technologies, foundry machinery industry has evolved into a modern, efficient, ecologically safe, and responsive sector, and these technologies have gradually penetrated into green technology fields such as smart manufacturing, 3D printing, clean energy, carbon neutrality, and resource recycling. In recent years, innovations from foundry machinery manufacturers have been constantly emerging, such as intelligent casting equipment. They can provide customers with not only individual machinery but also a complete set of technical equipment and comprehensive solutions from online consultation to full-cycle services.

Different countries have different laws, regulations, and standards regarding safety and health, environmental protection, product trade, product certification, etc. Due to differences in industrialization levels, scientific and technological development, natural conditions, and resource endowments, manufacturers and traders face significant inconveniences in adapting their products to the technical regulations and standards in different countries.

International standards for foundry machinery will support the sustainable development of the industry by ensuring personnel safety, reducing energy consumption and environmental pollution, improving product quality, and lowering production costs.

In international trade of foundry machinery, it is common to order foundry production lines with several or dozens of sets of equipment. This kind of contract is of high values and involves complex technology. Disputes often arise during contracting and final evaluation, and dispute resolution is difficult, resulting in economic losses. Both suppliers and users highly hope for technical support based on International Standards, to address the problems of signing a contract and coordinating the dispute during the engineering construction and evaluation. This will improve efficiency, save engineering costs, and guarantee project quality.

ISO/TC 306 will focus on the standardization of foundry machinery in terms of general applicability, safety, energy conservation, environmental protection, and occupational health.

Although casting processes and various casting machinery are basically similar in functions, principles, and main structures, equipment performance among manufacturers and the design and manufacturing of casting production lines vary significantly. With rising labor, raw material, and energy costs, foundries have entered an era of meager profits, which is more evident in developing countries. These factors determine that the main development model for foundry enterprises is large-scale, high-efficiency, and low-cost operations. Foundries pay special attention to the safety and reliability of casting machinery, advanced casting process design, and automated production line management and control technology. Casting is an energy-intensive process, so low-energy-consumption equipment is favored. ISO/TC 306 will monitor and track developments in both the foundry machinery and foundry industries when developing relevant standards.

Foundry industry is the foundation of machinery industry and is also energy-intensive and pollution-prone, and has been regulated by governments in most countries. Besides the administration of production safety measures, the safety of foundries mainly depends on the safety of the casting machinery. For example, in China, a casting industry access system is being established, and new foundries must obtain government approval. As one of the inspection criteria, casting machines used by foundries must conform to relevant standards. Therefore, the work of ISO/TC 306 also meets the needs of government regulators.

Benefits of standards and vision for standardization in the field of activity

Vision: International standards for foundry machinery, adopted and applied globally, to drive sustainable development by ensuring safety, efficiency, and environmental responsibility across global foundry operations.

Mission: To develop value-added international standards for foundry machinery industry, with a focus on general applicability, machinery safety, energy conservation, environmental protection, and occupational health.

The standardization work of ISO/TC 306 will be carried out, and the anticipated benefits to stakeholders will be in the following aspects:

- Facilitating technical exchanges and cooperation in the field of foundry machinery, and encouraging manufacturers to conduct more research and technical development in foundry machinery;
- Enabling foundry machinery manufacturers to have a standardized interpretation of safety requirements, providing a safe working environment for employees in the foundry industry, and protecting human health and personal safety;
- Saving costs and safeguarding the interests of both manufacturers and users;
- Eliminating technical barriers and promoting the development of international trade;
- Meeting market demands and helping the industry achieve sustainable development.

The standards of ISO/TC 306 aim to achieve the largest consensus among stakeholders and are adaptable to global trade. Meanwhile, they take into account the standardization needs of developing countries in the field of foundry machinery to promote their technological progress. Manufacturers in various countries can formulate their own technical specifications on the basis of the ISO/TC 306 standards, which cannot only make their products adaptable to global trade but also further enhance their competitive advantages in differentiation.

Regulators will rely on ISO/TC 306 standards covering safety, energy consumption, environment, and occupational health requirements. Governments can also introduce policies based on these standards to meet societal needs.

The continuous improvement of ISO/TC 306 standards will contribute increasingly to foundry machinery manufacturers, casting providers, and the economy of related countries.

Reflections on current publications and their market impacts

ISO/TC 306 has published 8 international standards, which play a significant role in foundry machinery industry. The published standards reshape the foundry machinery market in multiple ways.

ISO 23472 (Part 1-5), a series of vocabulary standards, is the bedrock for seamless communication in the global foundry machinery market. It eliminates language-based misunderstandings, and facilitates smoother international trade and cooperation. These standards provide technical support for technological progress in the industry and drafting of other documents, making it easier for new enterprises to enter the market and for existing enterprises to expand their businesses.

ISO 23062 focuses on the safety of molding and coremaking machinery and associated equipment. It reduces workplace accidents and promotes more efficient operation. In the market, foundries are more likely to choose machinery compliant with this standard as it offers a better balance between safety and productivity. This standard also drives non-compliant manufacturers to upgrade, driving the overall improvement of the molding and coremaking machinery market.

ISO 23063 is crucial for the high pressure die casting machine market. It sets strict safety requirements, ensuring the reliability of these machines. This leads to increased customer confidence, especially in industries like automotive and aerospace that rely heavily on high pressure die casting. Manufacturers conforming to this standard can demonstrate the high quality of their products, which is a key selling point in the market.

ISO 23779 significantly impacts the shot blasting machinery. By mandating enhanced safety features and better environmental performance, it not only protects operators and environment but also gives compliant manufacturers a competitive edge. As safety and environmental concerns gain more attention in the market, machinery conforming to ISO 23779 is more appealing to safety-conscious and eco-friendly customers, leading to increased market share.

These 8 ISO standards play a key role in enhancing communication efficiency, safety, and product quality in foundry machinery industry. Accordingly, they influence market competitiveness and drive progress across the entire industry.

Sustainability and climate change	Foundry industry has a significant impact on the environment and resources. The working environment of foundry machinery generally involves high temperature, high pressure, and high speed. Casting processes usually discharge large amounts of waste, dust, and gas emissions, which could be harmful to safety, health, and the environment if not prevented and carefully handled. The committee's strategy is to mitigate these impacts by addressing aspects such as energy and resource management, emissions and environmental impacts, sustainable supply chain management, and the entire product lifecycle. Specifically, in terms of energy and resource management, ISO/TC 306 aims to optimize energy and resource utilization in foundry industry. Regarding emissions and environmental impacts, strict standards will be developed to reduce pollution. In terms of sustainable supply chain management, it promotes responsible sourcing and green logistics. In terms of product lifecycle, it encourages to design products for recyclability and extend service life of products. All these efforts aim to achieve sustainable development in foundry industry and contribute to the fight against climate change. ISO/TC 306 standards respond to the following SDGs: • Target 8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, by modernizing the long-standing foundry industry with new developments including smart manufacturing and 3D printing • Target 8.8 Protect labor rights and promote safe and secure working environments for all workers, by standardizing molding, coremaking, die casting and shot blasting machinery safety requirements • Target 9.2 Promote inclusive and sustainable industrialization by ensuing that developing countries with established and emerging foundry industries benefit from standards that ensure these facilities' safety and sustainability • Target 12.4 Achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, by standardizing a full life-cycle approach for resource utilization in the foundry industry. All new work items approved during the life of this SBP are assumed to be aligned with the above SDGs. Exceptions will be noted in the relevant Form 4.

All voices heard

We need to ensure that we attract and retain the best experts and enable everyone to participate. We must listen to all voices, both in the development of standards and when making decisions as an organization.

Stakeholder mixture and engagement	Relevant stakeholders include foundry machinery manufacturers, distributors, users, health and safety bodies, etc. In addition, universities and research institutions focusing on related research, foundry industry associations that play a coordinating and guiding role, and government regulatory authorities are also considered stakeholders. As indicated in the GD, the vast majority of registered experts are affiliated with category A (industry and commerce). To enhance the comprehensiveness of stakeholder representation for subsequent work, TC 306 will initiate collaboration with P-members to identify and onboard additional stakeholder entities.
Developing country perspectives	Foundries are distributed worldwide, but their locations are concentrated in regions with strong manufacturing and metalworking industries, including China, India, Japan, South Korea, Germany, Italy, France, Spain, Poland, Sweden, Finland, the United States, Canada, Mexico, Brazil, Argentina and Chile. There is a smaller, but growing foundry market in Africa, with South Africa as the leading producer and growing presence in Egypt, Nigeria and Zambia. Several of these emerging markets are O-members in ISO/TC 306, including Argentina, India, Egypt, Zambia. It is crucial for developing countries to participate in the development of foundry machinery standards as P-members, but their current level of participation remains as observers or non-participants. Small and medium users in developing countries usually lack their own purchasing standards. They only present vague technical requirements for ordered equipment in contracts, and even the technical terms are inconsistent with that used by suppliers, leading to difficulties in communication and technical confirmation. They hope to obtain relevant international standards

	as a support to reduce risks. In some countries, customs and users require testing or certification for imported foundry machinery, especially regarding product performance and specific technical requirements. Since these countries have neither domestic nor international standards on foundry machinery, coordination is very difficult. From a global perspective on the layout of the foundry industry, most foundry enterprises are distributed in developing countries. One of the reasons for this situation is resource scarcity, such as insufficient funding, small enterprise scales, a limited number of experts, and inadequate information, among others. In the future, as economic globalization advances, a greater share of foundry industry will further shift to developing countries. It is expected that these developing countries will deepen their understanding of international standardization activities through ISO/TC 306 and are likely to increase their participation in these activities. To more effectively incorporate the standpoints of developing countries, this ISO/TC 306 will encourage more developing countries to become P-members, starting with the existing O-members with large foundry presence in their territories. This will strengthen the influence of ISO/TC 306, ensuring that the international standardization process of foundry machinery is more inclusive and balanced.

ISO Standards used everywhere

To encourage the widespread use of ISO standards and attract experts to the development process, we must clearly demonstrate the benefits of using ISO standards.

Coordination and cohesion	ISO/TC 306 collaborates with other ISO technical committees and professional organizations worldwide on the standardization of foundry machinery. It has cooperated with CEN/TC 202, which is committed to the standardization of foundry machinery within Europe in the past years. ISO/TC 306 standards maintain strong normative references to those published by ISO/TC 199, ensuring interoperability between generic machine safety standards (Type-B) and the specific requirements of foundries.
National adoption perspectives	ISO/TC 306's key safety standards were developed under the Vienna Agreement, including ISO 23779:2024 (Shot blasting machinery — Safety and environmental requirements), ISO 23063:2024 (Foundry machinery — Safety requirements for high pressure die casting machines) and ISO 23062:2022 (Foundry machinery — Safety requirements for molding and coremaking machinery and associated equipment). EN ISO 23062:2022 has been adopted as a European Standard and is referenced in the context of the Directive 2006/42/EC (Machinery Directive)
Conformity assessment	ISO/TC 306 will standardize the vocabulary, safety requirements, environmental requirements, and test methods of foundry machinery—covering the entire process from selection of assessment objects and criteria, through determination of conformity via testing/inspection, to review of evidence and issuance of conformity statements—to provide a systematic framework and foundation for global conformity assessment.

ISO TC 306 Strategic Objectives

ISO 2030 Strategy objective	Strategic objectives	Proposed actions	Responsibility and priority	Measure of success
Deliver ISO standards when the market needs them	To develop standards related to safety requirements, risk assessment, test methods and environment and sustainable development across the life cycle of foundry machinery.	To proceed the development of PWI 25794 Safety requirements for low pressure die casting machines. To gather interested experts and to collect WI proposals	AHG 1 or new WGs HIGH	Creation of new groups working on the related items.
Deliver ISO standards when the market needs them	To harmonize common vocabulary to facilitate technical exchange and international trade.	To discuss potential revisions to the ISO 23472 series (vocabulary) standards based on P-member feedback on national adoptions and use.	WG 1 HIGH	Revision of the standards based on the feedback from stakeholders.
Demonstrate the benefits of standards	To enhance the safety, reliability, efficiency, and environmental performance of foundry machinery.	To discuss potential revisions to ISO 23062, ISO 23063 and ISO 23779 based on P-member feedback on national adoptions and use.	WG 2, WG 3, WG 4 HIGH	Positive stakeholder feedback on the practical value/impact of the related ISO standards.
Advance environmental sustainability through ISO standards	To optimize energy and resource utilization in foundry industry	To discuss for energy and resource utilization optimization in the foundry industry.	All members MEDIUM	Technical documents delivered to improve environmental protection and to reduce energy consumption.
Advance inclusivity and diversity in the ISO system	To increase P-membership of developing countries with foundry industries	To initiate foundry standard outreach program (training, pairing assistance, communication platform) to boost developing countries' ISO P-membership participation.	All members MEDIUM	Participation in TC activities including meetings and standard development from more developing countries.