

STRATEGIC BUSINESS PLAN

ISO/TC 297

“Waste collection and transportation management”

EXECUTIVE SUMMARY

The main field and the overall size of the markets addressed by the committee:

Standardization of vehicles, equipment, environmental efficiency, service measures, test methods, safety and health requirements contributes to:

- a decrease of costs in production, operation and maintenance;
- a decrease of accidents and occupational diseases; consequently social costs will be reduced;
- provide added values to the essential health and safety requirements.

Benefits through standardization:

By the use of standards in the field of waste management the state-of-the-art between those who develop waste containers, refuse collection vehicles etc. and the operators is ensured. By using ISO Standards access of products to the market is made easier; this leads to a better acceptance of these products worldwide.

Benefits through standardization:

- better understanding among users and manufacturers;
- preserving hygienic conditions in public (traffic) areas;
- interchangeability of components of systems and/or pieces of equipment;
- supporting manufacturers and suppliers of waste bins technology to develop machines, e.g. refuse collection vehicles, to meet essential safety and health requirements;
- development of product standards which are based on accepted ISO standards;
- provision of an overall framework and guidance to enable designers, manufacturers, etc. to produce machinery, etc. which is safe to be used as intended for professional and private purposes;
- contribution towards the abolition of technical barriers to trade and opening of the markets throughout the world;
- provision of a common basis for coherent and comprehensive product safety, health and environment standards;
- Avoiding duplication of work on horizontal subjects like methodology, protective devices and particular health and safety aspects;
- Standardized basis for testing and certification institutes;
- Observing requirements by private and municipal waste management companies.

The main objectives and the priorities in the work of the committee

The main objective of ISO/TC 297 are the standardization of machines, equipment (including pneumatic waste conveyance system) and management systems for collection, temporary storage and transportation of solid and liquid waste and solid and liquid recyclables (valuables) and for cleaning of sewage systems.

Whereby:

- *Liquid waste* means waste in any liquid or sludge form from domestic, institutional, commercial or industrial source.
- *Liquid recyclables* means recyclables in any liquid or sludge form from domestic, institutional, commercial or industrial source.
- *Solid waste* means waste in any solid form from domestic, institutional, commercial or industrial source.
- *Solid recyclables* means recyclables in any solid form from domestic, institutional, commercial or industrial source.
- Pneumatic waste conveyance system (PWCS) is an automated waste collection system where refuse is conveyed from within a development through a network of pipes to a centralised point of collection by means of differential air pressure.

Taking into particular account:

- Terminology;
- Technology;
- Performance;
- Quality;
- Environmental aspects;
- Safety and ergonomic aspects;
- Maintenance;
- Logistical aspects;
- Data management and
- Service procedures.

Excluded are:

- Urban wastewater systems covered by ISO/TC 224
- Sludge recovery, treatment and disposal and also water re-use as far as they are covered by ISO/TC 275 and ISO/TC 282
- General environmental management (e.g. ISO 14000) and road traffic safety management systems aspects (e.g. ISO 39001) are covered by ISO/TC 207 and ISO/TC 241
- Road maintenance equipment are covered by ISO/TC 195/SC 2
- Road vehicles are covered by ISO/TC 22.
- Machinery used on landfills are covered by ISO/TC 127



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 products 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 162 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 297

2.1 Description of the Business Environment

2.1.1 Introduction

Waste management is of world-wide interest and a problem which has also been taken into account by the Sustainable Development Goals (SDGs). The standardized products are

used in many countries worldwide. The identification and weighing technique is useful to minimize the amount of waste by easing the application of the "Polluter pay" principle.

2.1.2 State of the art of Waste management

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. They are characterized by the:

- standardization in the field of waste management, taking into particular account technical and logistical aspects;
- drafting of standards for products and procedures as well as safety requirements for the collection, transport, temporary storage and transfer of solid and liquid waste.

2.1.3 Marketing trends

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC 297:

Trends of the business environment

- development of new collection and treatment technology for reducing collection and treatment costs (e. g. saving labor costs when emptying waste containers by using automatic systems);
- different flexible operation methods with combined services;
- reducing occupational health and safety risks and problems, e.g. by providing safe and efficient technical instruments and reliable procedures for handling the waste;
- measuring and comparing of fuel consumption and environmental efficiency aspects of refuse collection vehicles;
- separation of waste in different fractions already at collection – e. g. glass, paper, metal, synthetic packaging, biological waste and residual waste;
- separate treatment of these fractions;
- identification of waste containers and bins in order to support this process efficiently;
- waste containers and bins, cleaning, maintenance, repair and replacement services ;
- Identification and determination of quantity of waste for realization of accounting systems which are equitable according to expenditure and consequently for waste reduction;

2.1.4 Relevant stakeholder

Interested parties (stakeholders) in the standardization process are all parties interested in

waste management regarding the collection, transport, temporary storage etc. of waste, for example manufacturers of all kinds of waste containers, waste collection vehicles, machines and authorities, municipalities, institutes, laboratories, consumer representatives and other governmental / non-governmental organizations.

Already taking part in the standardization activity within ISO/TC 297 are associations and national companies, suppliers of raw material for the containers, test institutes, producers of vehicles and machines, national standard organizations representing a national point of view and others.

In the short history of Waste Management, certain stakeholders have recognized the advantages and always pushed the development of new technology and disposal procedures. Also in the future, these stakeholders will lead and influence the growth of waste disposal.

Users:

- small and medium sized enterprises (SME);
- operators;
- manufacturers;
- public authorities;
- municipalities;
- service provider;
- testing and certification institutes;
- insurances associations;
- supplier;
- OEMs Automotive;
- universities and R&D organizations.

Experts from those groups are essential to be included in the work of ISO/TC 297. Although the main committee already comprises representatives from the relevant groups, it will be a continuous effort to include more experts here and in the participating national mirror committees.

2.1.5 Environmental issues

Resources and energy efficiency combined with economical production are the central challenges in the future. Modern waste collection and waste transportation technologies are one of the key factors to tackle those challenges.

The efficient collection, treatment and servicing technologies of these branches will become in addition a key player in placing advanced environmentally efficient production on a cost- and resource- efficient footing.

2.1.6 Relevant international, regional, national standards and voluntary initiatives

Sludge recovery, treatment and disposal and also Water re-use is out of the scope of this ISO/TC and handled in ISO/TC 275 and ISO/TC 285. General environmental management (e.g. ISO 14000) and road traffic safety management systems aspects (e.g. ISO 39001) will be not part of the working program and have to be handled in ISO/TC 207 and ISO/TC 241.

Several initiatives have been established already years ago, mainly on the national and European region. Among those are the French (AFNOR), German (DIN) and Italian (UNI) working groups in e. g. CEN/TC 183. CEN/TC 183 “Waste management” has been in existence for decades and has published a number of European standards. As the secretariat of both CEN/TC 183 and ISO/TC 297 are hosted by DIN, a close cooperation is guaranteed.

Also in ISO, some other committees have started NWIPs in the field of waste management. ISO/TC 297 will decide in each case how to proceed (liaisons, collaboration, change of jurisdiction towards ISO/TC 297 or the other committee).

Outside of the standardization area, several international organizations and federations, like ISWA, EUnited, etc., are working in the field of waste management and therefore collaborations with them might be beneficial.

2.1.7 Technical barriers and other regulatory issues

Not known so far.

2.2 Quantitative Indicators of the Business Environment

According to the latest research studies, the world population today produces about 3.5 million tons of waste every day. If there is no fundamental change in the near future, the emergence of solid waste could increase up to 11 million tons per day in the year 2100. That means a triplication of waste production in less than 90 years.

Possible approaches for changing this forecast are a decelerated population growth rate, improvements of a resource saving management system for megacities and last but not least technical developments based on ISO standards.

Today, the industrial regions of Europe and North America are producing the most waste. Scientist and Experts for reusability of material are expecting the highest volume of waste per day in 2050. It is expected that already in 2025, the daily solid waste volume will be more than 6 million tons. It is comparable with a 5.000 km long row of refuse collection vehicles. An urban citizen is causing up to four times more waste than a landsman. Especially urban territories and megacities will get a problem with waste, because the waste accumulation will have a particularly strong growth always where the economic growth is significant high. Based on the latest predictions the Indian and south Asian economy will grow much stronger around 2025. In 2050 this appearance will reach the African economy and in particular all regions southern the Sahara. The development in Africa is crucial for the height of the peak and the timing of the worldwide waste accumulation.

3 BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC 297

Generally speaking, the aims of standardization are:

- a) to promote the quality of products, processes and services by defining those features and characteristics that govern their ability to satisfy given needs i.e. their

fitness for purpose;

- b) to promote improvements in the quality of life, occupational health and safety, protection of the environment;
- c) to promote the economic use of materials, energy, and human resources in the production and services;
- d) to promote clear and unambiguous communication between all interested parties, in a form suitable for reference or quotation in legally binding documents;
- e) to promote international trade by the removal of barriers caused by differences in national practices;
- f) to promote industrial efficiency through variety control.

Benefits through standardization:

- better understanding among users and manufacturers;
- reduction of the number of types of equipment;
- interchangeability of components of systems and/or pieces of equipment;
- supporting manufacturers and suppliers of vehicles and waste bin technology to develop machines, e.g. refuse collection vehicles, to meet essential safety and health requirements;
- development of product standards which are based on an accepted ISO standards;
- provision of an overall framework and guidance to enable designers, manufacturers, etc. to produce machinery, etc. which is safe to be used as intended for professional and private purposes;
- contribution towards the abolition of technical barriers to trade and opening of the markets throughout the world;
- provision of a common basis for coherent and comprehensive product safety, health and environment standards;
- avoiding duplication of work on horizontal subjects like methodology, protective devices and particular health and safety aspects;
- standardized basis for testing and certification institutes,
- observing requirements by private and municipal waste management companies.

4 REPRESENTATION AND PARTICIPATION IN THE ISO/TC 297

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

The daily updated list can be found [here](#).

4.2 Analysis of the participation

In ISO/TC 297, mainly those countries participate actively, which have already a very developed waste management system. The participants are mainly from Europe and Asia. ISO/TC 297 would like to see more representatives from other regions and more countries

participating that would like to improve their waste management system in order to take also their needs and expectations into account when developing standards.

Internal liaisons have been initiated with:

- ISO/TC 23, Tractors and machinery for agriculture and forestry
- ISO/TC 127, Earth-moving machinery
- ISO/TC 195, Building construction machinery and equipment
- ISO/TC 195/SC 2, Road-operation and associated equipment
- ISO/TC 207, Environmental management
- ISO/TC 275, Sludge recovery, recycling, treatment and disposal
- ISO/TC 323, Circular economy

The intensity of these liaisons has nevertheless to be improved.

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

5.1 *Defined objectives of the ISO/TC*

Standardization of machines, equipment and management systems for collection, temporary storage and transportation of solid and liquid waste and recyclables (valuables).

Taking into particular account:

- Terminology;
- Technology;
- Performance;
- Quality;
- Environmental aspects;
- Safety and ergonomic aspects;
- Maintenance;
- Logistical aspects;
- Data management and
- Service procedures.

Excluded are:

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- Road vehicles are covered by ISO/TC 22.
- Machinery used on landfills are covered by ISO/TC 127

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

The following key strategies have been identified to achieve the defined objectives in 5.1:

- Use of national, regional and valid ISO Standards or other standards as source documents on which to base International Standards;
- Frequent physical- and web meetings, use of correspondence and ISO's balloting portal in order to shorten the time of developing International Standards.

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

As already mentioned in clause 2.1.6, more and more national and international organizations and federations are becoming aware of the rising importance of waste management and are trying to start standardization initiatives themselves. Such competing initiatives would endanger the benefits of the standardization efforts described above. In order to avoid these competing initiatives their representatives are being contacted as soon as they have made themselves aware in the hope to channel these initiatives into the work of ISO.

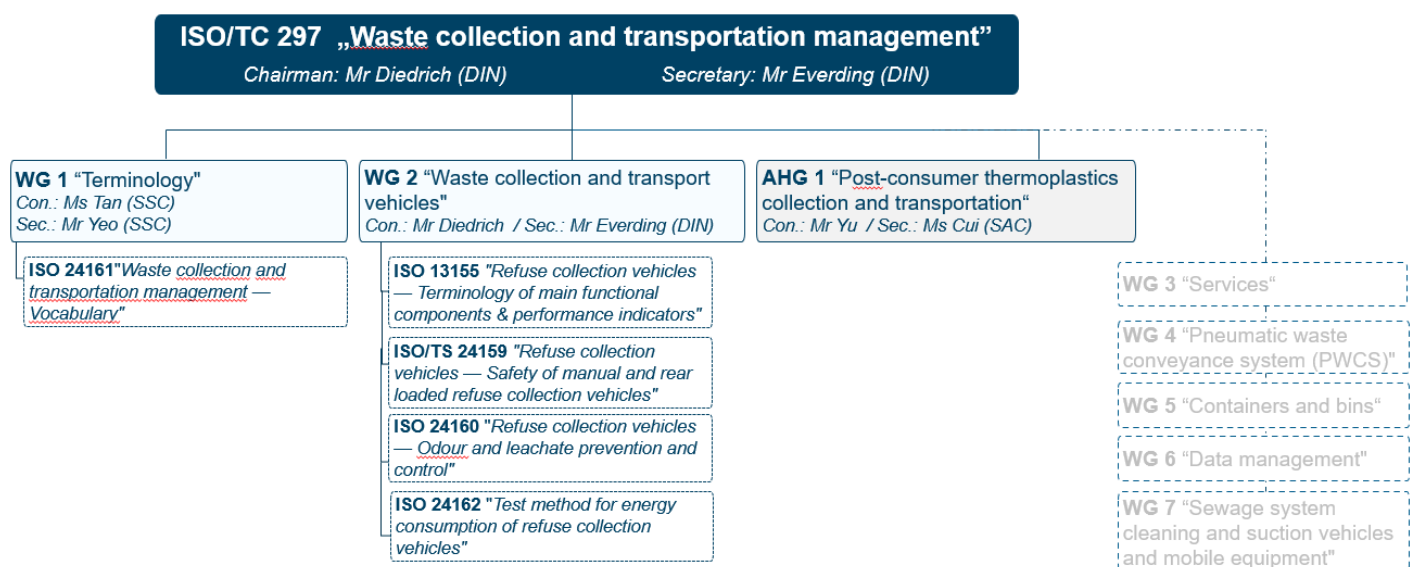
The more such initiatives insist on staying in existence, the greater are the demands on the resources to keep these initiatives in line and informed about the developments.

7 STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF THE ISO/TC 297

This section gives an overview of the ISO/TC's structure, scopes of the ISO/TCs and any existing subcommittees and information on existing and planned standardization projects, publication of the ISO/TC and its subcommittees.

7.1 Structure of the ISO committee

See the following structure of ISO/TC 297.



* **WG 3 to 7**: Initially intended structure of TC 297, but not (yet) established

7.3 Publications of the ISO technical committee and its subcommittees

All published ISO standards can be found [here](#).

Besides, the following regional standards and other specifications are available, which can be taken into consideration:

- EN 840 (all parts), Mobile waste collection and waste transportation containers
- EN 1501 (all parts), Refuse collection vehicles — General requirements and safety requirements
- EN 12574 (all parts), Stationary waste containers
- EN 13071 (all parts), Stationary waste containers up to 5000 l, top lifted and bottom
- emptied
- EN 14803, Identification and/or determination of the quantity of waste

7 Bibliography

Glossary of terms and abbreviations used in ISO/TC Business Plans

General information on the principles of ISO's technical work