TECHNICAL REPORT

ISO/TR 24217-2

First edition

Fine bubble technology – Guideline for systematic standardization of fine bubble technologies —

Part 2: Assignment of sustainable development goals (SDGs) to fine bubble applications

PROOF/ÉPREUVE

Reference number
ISO/TR 24217-2:2021(E)

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Published in Switzerland

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 281, *Fine bubble technology*.

A list of all parts in the ISO 24217 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

In 2015, the United Nations set an ambitious 15-year plan to address some of the most pressing issues for the world. The Sustainable Development Goals (SDGs), known as Global Goals, are a global address to action to eradicate poverty, protect the planet and ensure that all the world people enjoy peace and prosperity. These 17 goals build on the successes of the Millennium Development Goals with additional areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities. The goals are interconnected – often the key to the success in individual initiatives for issues which are associated more commonly with each other. As SDGs get spread, there appears a trend that SDGs' investments are brought about, just as environment, social and governance (ESG) bonds are creating ESG investments. It is predicted that the world investors would evaluate and judge whether they are promoting SDGs and would become targets for investments or not. For example, in March 2017, the World Bank issued sustainable development target-linked credits for the first time. These credits are to fund for projects that meet the goals of the SDGs, such as eradicating poverty, reducing environmental impacts, correcting gender disparities, and improving public health. Capturing this trend is key.

Since the SDGs can be applied in various fields, they are also applicable to fine bubble technology, which has thefollowing two main features. First, fine bubble technology has a feature that involves simple components such as water and air. Further, most of fine bubble generating systems are compact and movable. Second, it is applicable and effective in many fields such as water purification, cleaning, agriculture applications, fishery applications and environmental recovery. Due to these two features, it can be applied relatively easily to water purification and cleaning in developing countries. Moreover, since fine bubble technology has eco-friendly cleaning and food production technologies, it can be said that it is effective as a common technology worldwide.

Although it is considered possible to link fine bubble technology with such features to the SDGs, the association between fine bubble technology and the SDGs is currently insufficient. For this reason, guidelines are necessary, which link SDGs and fine bubble technology.

This document provides a path for fine bubble suppliers to contribute to SDGs. Furthermore, showing banks and investors what successfully contributes to the SDGs can help them to leverage sufficient investments and to avoid improper investments.

Fine bubble technology – Guideline for systematic standardization of fine bubble technologies —

Part 2: Assignment of sustainable development goals (SDGs) to fine bubble applications

1 Scope

This document provides guidelines for suppliers to show in which part of the Sustainable Development Goals fine bubble technologies can contribute to users.

This document also provides guidelines for document writers to assess the contribution of their documents related to fine bubble technology to the Sustainable Development Goals.

It also enables users to understand the benefits of using fine bubble technologies.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 20480-1, *Fine bubble technology — General principles for usage and measurement of fine bubbles — Part 1: Terminology*

ISO 20480-2, *Fine bubble technology — General principles for usage and measurement of fine bubbles — Part 2: Categorization of the attributes of fine bubbles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20480-1 and ISO 20480-2 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
sustainability
state of the global goal system, including environmental, social and economic aspects, in which the needs of the present are met without compromising the ability of future generations to meet their own needs

Note 1 to entry: The environmental, social and economic aspects interact, are interdependent and are often referred to as the three dimensions of sustainability.

Note 2 to entry: Sustainability is the goal of *sustainable development* (3.2).

[SOURCE: ISO GUIDE 82, 3.1]

3.2
sustainable development
development that meets the present needs of environmental, social and economic aspects without compromising the ability of future generations to meet their own needs

Note 1 to entry: Derived from the Brundtland Report[1].

3.3
stakeholder
individual or group that has an interest in any decision or activity of an organization

[SOURCE: ISO 26000:2010, 2.20]

4 Actors contributing to the SDGs through fine bubble technologies

4.1 Partners

When partners consider a certain element of the SDGs within the given system, related systems and subsystems can also be considered, because they are all interconnected and interdependent.

For example, an aspect that seems to be primarily related to the environmental dimension of sustainability is also thought to have an impact within a social or economic dimension of sustainability, e.g. water purification using fine bubble technologies has an environmental impact, as well as a social and an economic impact on people and communities working for the factory. The potential for these multiple impacts to occur is always considered when drafting provisions relating to any element of the SDGs.

4.2 Stakeholders

Stakeholders consider how application of a standard would have an impact on their approach, in light of the SDGs. Like other types of impact, the impact on stakeholders can be either beneficial or adverse.

Different groups of stakeholders can be affected by issues of SDGs, either individually or collectively, and any group that can potentially be affected by the use or application of a standard can be taken into account by standards developers. In addition to consumers, customers, workers, organizations in the supply chain and communities, this also includes future generations and the wider general public, especially when coping with broader issues of the SDGs, such as climate change.

Particular attention can be paid to potentially vulnerable stakeholders, such as children or persons with special needs, because the impact on them is thought to be both greater and more difficult to identify than that on other stakeholder interests.

5 Identifying a key element of the SDGs specifically applicable to fine bubble technologies

Regarding the approaches outlined in Clause 4, suppliers can identify the key elements of SDGs that are considered relevant and critical to the subject area. Many sources of information on SDGs can be useful in this process. These sources include material data sheets, studies on risks or trends, legal requirements, product declarations, sustainability reports, impact assessment reports, published peer-reviewed scientific studies and the results of stakeholder consultations.

Table 1 shows examples of key elements of SDGs specifically applicable to fine bubble technologies.

Table 1 — Goals for fine bubble technologies

Goal	Description	Examples of key elements
1 No poverty	End poverty in all its forms everywhere	— Contribute to the sustainable production of food and resources — Appropriate new technology
2 Zero hunger	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	— Create reliable food products — Improve agricultural methods — Ensure sustainable food production and implement resilient agricultural practices — Agricultural sustainability
3 Good health and well-being	Ensure healthy lives and promote well-being for all at all ages	— Sterilization methods — Medical devices — Surgical implants and instruments — Improve water quality by reducing pollution and minimizing the discharge of hazardous chemicals and materials
6 Clean water and sanitation	Ensure availability and sustainable management of water and sanitation for all	— Water management — Water reuse — Water use efficiency — Improve water quality by reducing pollution and minimizing the discharge of hazardous chemicals and materials
7 Affordable and clean energy	Ensure access to affordable, reliable, sustainable and modern energy for all	— Energy efficiency
8 Decent work and economic growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	— Economic growth — Technological upgrading and innovation — Resource efficiency in consumption and production
9 Industry, innovation and infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	— Resilient infrastructure — Promote inclusive and sustainable industrialization and foster innovation — Increase the efficiency in resource-use — Upgrade infrastructure and retrofit industries to make them sustainable

Table 1 *(continued)*

Goal	Description	Examples of key elements
11 Sustainable cities and communities	Make cities and human settlements inclusive, safe, resilient and sustainable	— Responsible use of resources — Preserving the environment — Water management — Community resilience — Clean water — Energy efficiency — Environment-friendly cities — Green building
12 Responsible consumption and production	Ensure sustainable consumption and production patterns	— Reducing the environmental impact — Reduce discharging chemicals and wastes to the water and the soil
13 Climate action	Take urgent action to combat climate change and its impacts	— Quantify greenhouse gas emissions — Promote good practice in environmental management — Efficient use of natural resources
14 Life below water	Converse and sustainably use theoceans, seas and marine resources for sustainable development	— Development of fisheries and aquaculture — Environmental management of marine resources, including increasing do level to accelerate the growth of freshwater aquaculture (fish and shrimp) — Prevent and reduce marine pollution of all kinds — Value-added sustainable fisheries
15 Life on land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	— Protect, restore and promote sustainable use of terrestrial ecosystems — Sustainably manage forests — Stop biodiversity loss
17 Partnerships for the goals	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	

Suppliers can determine the relevance and significance of each key element for each application.

6 Assignment of SDGs to applications of fine bubble technologies

6.1 General

Suppliers can describe intended specific approaches to achieve the SDGs identified in Clause 5 (refer to Annex C). Consequently, the application is thought to contribute to the achievement of the SDGs (see Annex A).

6.2 Applications of fine bubble technologies

Applications of fine bubble technologies have many sustainability issues. Suppliers can consider the different SDGs in regard to their applications, and how the scope and application of a standard would affect them.

Examples include:

— the impact on health and safety resulting from the use of the application technologies;

— the working conditions of those delivering the application technologies;

— the nature and distribution of environmental, social or economic benefits that can result from the use of the application technologies;

— the impact on economic development or innovation.

6.3 General principles and measurement technologies of fine bubble technologies

General principles and measurement technologies of fine bubble technologies can directly or indirectly govern or affect physical or social processes, which are thought to have an impact on the SDGs.

When identifying these kinds of general principles and measurement technologies of fine bubble technologies, the nature of such underlying processes and their consequences are considered, especially as shown below:

— the environmental consequences (e.g. those associated with the production, distribution and use of energy) of the production of the materials;

— the conditions of work for people involved in the production of the materials, including their health and safety;

— the environmental and health and safety consequences of the operational implementation of the processes;

— the potential of cost saving by improving procedures, measurement and definitions;

— the potential of facilitating the development of technologies that promote new industries and employment, or provide beneficial services or the similar economic benefits (and any resulting environmental or social benefits).

7 Review and revision of documents on applications of fine bubble technologies

All documents on applications of fine bubble technologies can be linked to the SDGs. If documents were not previously linked to the SDGs, their relationship with the SDGs can be regularly discussed.

Though the Sustainable Development Goals are due in 2030, the philosophy and spirit created toward the SDGs are not abandoned. It is very important to maintain the philosophy and spirit of the SDGs after 2030 to contribute to solving the world's challenges.