Draft for Public Comment

Form 36

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Responsible committee: LBI/50 Fine Bubble Technology (FBT)

Interested committees:

Title: Draft BS ISO 4240-3 Fine bubble technology — Environmental applications. Part 3: Test method for on-site evaluation of the performance of algae bloom removal facilities.

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Introduction

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx

1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex **(e.g. 3.1)**	Paragraph/ Figure/Table/Note	**Type of comment**	**Commend (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations on each comment submitted**
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

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DRAFT International Standard

ISO/DIS 4240-3

ISO/TC **281**

Secretariat: **JISC**

Voting begins on:
2025-04-15

Voting terminates on:
2025-07-08

Fine bubble technology — Environmental applications —

Part 3: Test method for on-site evaluation of the performance of algae bloom removal facilities

ICS: 07.030

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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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This document was prepared by Technical Committee *[or Project Committee]* ISO/TC *[or ISO/PC]* ###, *[name of committee]*, Subcommittee SC ##, *[name of subcommittee]*.

This second/third/... edition cancels and replaces the first/second/... edition (ISO #####:####), which has been technically revised.

The main changes compared to the previous edition are as follows:

— xxx xxxxxxx xxx xxxx

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

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Introduction

Algal bloom in water systems can cause a variety of damages to the ecosystem. For instance, they can lead to a foul odour that negatively affects nearby residents. Moreover, the algal bloom reduces the amount of usable water resources and diminish the quality of tap water. Despite efforts to remove the algal bloom using methods such as dredging or spraying of chemicals, they remain expensive, have limited application, and often provide only a temporary solution.

To address this issue at its core, an algal bloom removal facility that utilizes microbubbles is proposed as the solution. This technology targets the water systems where algal bloom and using microbubbles to lift the microalgae and cyanobacteria to the water surface, making them easy to collect. Compared to the expensive and potentially harmful methods of using chemicals, this approach offers a more cost-effective and eco-friendly way of removing microalgae and cyanobacteria from the water system.

However, there is a problem that the algal bloom removal facility is not suitable to test in laboratory. Usually, these devices are too large to be tested in the laboratory, and even if a large space is secured, it is inefficient or impossible to prepare the natural water system conditions in the laboratory. In some cases, tests were conducted for each part, but the results of the tests conducted for each part do not guarantee the performance of the algal bloom removal facility when they are assembled. Therefore, the on-site evaluation method is needed for algal bloom removal facility. This document provides the evaluation method of algal bloom removal facility by measuring the chlorophyll-a concentration before and after treatment.

However, there is a problem that the algal bloom removal facility is usually too large for testing in laboratory. Even if the laboratory has a large space, in more cases, it is inefficient and/or impossible to prepare a model of natural water system in the laboratory. Sometimes, tests were obligated to conduct for each part, but in this case, there is not guarantee the truthiness of the test results about a performance of the algal bloom removal facility as the assembly. Therefore, using an evaluation method for testing algal bloom removal facility on-site is improved the test precision.

This document provides the evaluation method of a performance of algal bloom removal facility on-site by measuring the chlorophyll-a concentration before and after treatment.

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