

Water quality - Guidelines for quantitative sampling and sample processing of marine soft-bottom macrofauna

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 16665:2005 sisaldab Euroopa standardi EN ISO 16665:2005 ingliskeelset teksti.

Käesolev dokument on jõustatud 28.12.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 16665:2005 consists of the English text of the European standard EN ISO 16665:2005.

This document is endorsed on 28.12.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

Käsitlusala:

This International Standard provides guidelines on the quantitative collection and processing of subtidal soft-bottom macrofaunal samples in marine waters.

Scope:

This International Standard provides guidelines on the quantitative collection and processing of subtidal soft-bottom macrofaunal samples in marine waters.

ICS 13.060.10, 13.060.70

Võtmesõnad:

ICS 13.060.70; 13.060.10

English Version

Water quality - Guidelines for quantitative sampling and sample processing of marine soft-bottom macrofauna (ISO 16665:2005)

Qualité de l'eau - Lignes directrices pour l'échantillonnage quantitatif et le traitement d'échantillons de la macrofaune marine des fonds meubles (ISO 16665:2005)

Wasserbeschaffenheit - Anleitung für die quantitative Probenahme und Probenbearbeitung mariner Weichboden-Makrofauna (ISO 16665:2005)

This European Standard was approved by CEN on 7 April 2005.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN ISO 16665:2005) has been prepared by Technical Committee ISO/TC 147 "Water quality" in collaboration with Technical Committee CEN/TC 230 "Water analysis", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 16665:2005 has been approved by CEN as EN ISO 16665:2005 without any modifications.

**Water quality — Guidelines for
quantitative sampling and sample
processing of marine soft-bottom
macrofauna**

*Qualité de l'eau — Lignes directrices pour l'échantillonnage quantitatif
et le traitement d'échantillons de la macrofaune marine des fonds
meubles*



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Contents

Page

Foreword.....	iv
Introduction.....	v
1 Scope	1
2 Terms and definitions.....	2
3 Quality and safety.....	3
3.1 Health and safety requirements	3
3.2 Quality assurance and quality control.....	4
4 Strategies and objectives for soft-bottom faunal surveys	5
4.1 Sampling programme and plan	5
4.2 Positioning of sampling stations	5
4.3 Reference stations.....	6
4.4 Types of surveys.....	6
4.5 Change in sampling programme and intercalibration	10
5 Sampling.....	10
5.1 Documentation and field log	10
5.2 Sampling and sample processing in the field	11
5.3 Sample fixation	15
5.4 Background environmental descriptors.....	15
6 Sample processing in the laboratory.....	18
6.1 Sorting	18
6.2 Sample residue	18
7 Taxon determination and quantification	19
7.1 Level of identification and taxon lists.....	19
7.2 Quantification.....	19
7.3 Reference collection (see also 7.7.8).....	20
7.4 Biomass	20
7.5 Data reporting	20
7.6 Storage and archiving	21
7.7 Analytical quality control and quality assurance	21
Annex A (informative) Processing particularly large samples	24
Annex B (informative) Sampling devices.....	25
Annex C (informative) Biomass measurements.....	27
Bibliography	28

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16665 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 5, *Biological methods*.

Introduction

Analysis of macrofaunal communities in soft-bottom sediments is an integral part of marine environmental assessment. The faunal composition, in terms of both the species present and their relative abundance, reflects integrated environmental conditions in the survey area over a period of time. The composition and structure of soft-bottom macrofaunal communities therefore can be used to characterise environmental conditions and estimate the extent of environmental impact.

Characterisation of environmental conditions is usually based on quantitative methods, in this case by relating the numbers of species and individuals captured to a known area of sea floor. For accurate data interpretation, it is essential to add information on the geophysical/geochemical characteristics or properties of the water masses and bottom sediments, including nutrients, oxygenation and redox state where appropriate.

For effective data utilisation and quality assurance of the work carried out, it is essential that surveys are intercomparable temporally, spatially and between operators. This International Standard contributes to on-going work on quality assurance of data from soft-bottom macrofaunal surveys. These guidelines primarily aim assisting in standardising monitoring surveys carried out for commercial purposes or in connection with the EU Water Framework Directive. For this reason, detailed specifications are given in areas of consequence for data intercompatibility.

Where appropriate, cost-benefit issues have been taken into consideration, and accepted minimal requirements for general environmental impact assessment have been given. The cited minimum requirements for accuracy are not intended to satisfy research needs, or to provide a full ecological understanding of the sampling area. Designers of programmes for research or other studies requiring a detailed knowledge of soft-bottom macrofauna should consult the guidelines given in Reference [17] for decisions of survey design and sampling frequency.

This International Standard applies to all areas of the sea floor where it is possible to collect faunal samples by a grab or coring device. For practical reasons, this applies to animals retained on a mesh screen of 0,5 mm or 1 mm aperture size.

The sensitivity of the method, here defined as detection of faunal disturbance, change in taxon composition or faunal mapping, is dependent on the type of environmental influences present in the area and on the level of competence/standardisation of the personnel.

Water quality — Guidelines for quantitative sampling and sample processing of marine soft-bottom macrofauna

1 Scope

This International Standard provides guidelines on the quantitative collection and processing of subtidal soft-bottom macrofaunal samples in marine waters.

This International Standard encompasses:

- development of the sampling programme;
- requirements for sampling equipment;
- sampling and sample treatment in the field;
- sorting and species identification;
- storage of collected and processed material.

This International Standard does not specifically address the following, although some elements may be applicable:

- bioassay sub-sampling;
- deep water (> 750 m) or offshore sampling;
- *in situ* faunal studies, e.g. recolonisation assays;
- nonbenthic organisms caught in the sampling device;
- estuarine sampling;
- intertidal sampling;
- meiofaunal sampling and analysis [3];
- sampling by dredge and sledge;
- Self-Contained Underwater Breathing Apparatus (SCUBA) sampling;
- statistical design.

Accuracy of position fixing is determined by the geographical area, equipment used and survey objective.