Water quality - Visual seabed surveys using remotely operated and/or towed observation gear for collection of environmental data

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NATIONAL FOREWORD

See Eesti standard EVS-EN 16260:2012 sisaldab Euroopa standardi EN 16260:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 16260:2012 consists of the English text of the European standard EN 16260:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 24.10.2012.	Date of Availability of the European standard is 24.10.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Water quality - Visual seabed surveys using remotely operated and/or towed observation gear for collection of environmental data

Qualité de l'eau - Études visuelles des fonds marins utilisant un matériel d'observation commandé à distance et/ou tracté pour la collecte de données environnementales

Wasserbeschaffenheit - Visuelle Meeresbodenuntersuchungen mittels ferngesteuerter Geräte und/oder Schleppgeräten zur Erhebung von Umweltdaten

This European Standard was approved by CEN on 15 September 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 16260:2012) has been prepared by 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 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

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

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

Introduction

Information on the habitats, biotopes, substrates and species diversity on the seabed is an important part of ecosystem-based environmental management, and necessary in order to evaluate the consequences of various anthropogenic activities. Implementing European Directives and required monitoring of substrates and species diversity will require documentation and monitoring of different types of seabed types using inter-comparable and generally non-destructive methods. Many seabed areas are difficult, if not impossible to investigate using traditional sampling such as grabs and dredges or may host fragile communities such as cold-water coral reefs. Visual surveillance using geo-referenced positions is essential to allow revisiting of locations, documentation of environmental conditions and detection of changes in species composition which otherwise would be difficult to achieve. The equipment and methods described here may also be used in combination with acoustic equipment for seabed characterisation.

The methods presented in this European Standard are particularly suitable for seabed mapping and monitoring at depths below depths achievable using traditional SCUBA diving, and in cases where safety or economical issues limit the use of SCUBA diving. They are also suitable for the description of distribution and occurrence of large and scattered organisms on substrates, where sampling with grabs do not provide representative results. For investigations on soft seabed substrate please refer to EN ISO 16665 [1] and for investigations on shallower hard seabed to EN ISO 19493 [2].

This European Standard is also suitable within the operational depth of SCUBA-diving, e.g. for large scale surveys and mapping of the seabed composition, characteristic plant and animal species occurrence and depth distribution.

Remotely Operated Vehicles (ROVs) and passive tethered observation platforms are used for mapping and environmental surveys of the seabed via video and still photographs. However, the methods used and the results obtained can be rather variable without proposed consideration of geographic positioning, taxonomic precision and quantification. It is therefore important that the methods used are standardised in order to compare results.

WARNING — Persons using this European Standard should be familiar with normal laboratory and fieldwork practice. This European Standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This European Standard describes methods, requirements and equipment for remote visual surveillance of organisms and the seabed using still photography and video recording to ensure precise and reproducible data. The main aims of the methods are to record or monitor seabed conditions and organisms on and just above the seabed in a reproducible way at a resolution that is appropriate to the aims of the survey.

In caves and overhangs this standard may not be suitable due to technological limitations related to navigation and movement of the observation platform.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14996, *Water quality — Guidance on assuring the quality of biological and ecological assessments in the aquatic environment*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
sonar altimeter
acoustic instrument measuring the elevation above seabed

3.2
box-in-test
test to determine alignment/attitude errors in the navigational data, involving four different positions of the vessel relative to a fixed transponder

3.3
drop camera
video and/or still camera that is either lowered down to the seabed or suspended just above it, generally used for imaging at a single location, or manoeuvred along a set transect using the ships propulsion system on the surface

3.4
frame grab
still image obtained from video record

3.5
geographic precision
accuracy with which a given point can be relocated within a geodetic reference system

3.6
geographic resolution
lowest unit of measurement at which a geographic distribution can be reproduced