

Institut luxembourgeois de la normalisation de l'accréditation, de la sécurité et qualité des produits et services

**ILNAS-EN ISO 19493:2007** 

Water quality - Guidance on marine biological surveys of hard-substrate communities (ISO 19493:2007)

Qualité de l'eau - Lignes directrices pour les études biologiques marines des peuplements du substrat dur (ISO 19493:2007)

Wasserbeschaffenheit - Anleitung für meeresbiologische Untersuchungen von Hartsubstratgemeinschaften (ISO 19493:2007)

01011010010 0011010010110100101010101111

#### **National Foreword**

This European Standard EN ISO 19493:2007 was adopted as Luxembourgish Standard ILNAS-EN ISO 19493:2007.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html

#### THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

### EUROPEAN STANDARD LINAS-EN ISO 19493:20 EN ISO 19493

### NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

June 2007

ICS 13.060.10; 13.060.70

#### **English Version**

#### Water quality - Guidance on marine biological surveys of hardsubstrate communities (ISO 19493:2007)

Qualité de l'eau - Lignes directrices pour les études biologiques marines des peuplements du substrat dur (ISO 19493:2007) Wasserbeschaffenheit - Anleitung für meeresbiologische Untersuchungen von Hartsubstratgemeinschaften (ISO 19493:2007)

This European Standard was approved by CEN on 9 June 2007.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

#### **Foreword**

This document (EN ISO 19493:2007) has been prepared by Technical Committee CEN/TC 230 "Water analysis", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 147 "Water quality".

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 December 2007, and conflicting national standards shall be withdrawn at the latest by December 2007.

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

## ™FERNA™ONAL STANDARD

ISO 19493

First edition 2007-06-15

# Water quality — Guidance on marine biological surveys of hard-substrate communities

Qualité de l'eau — Lignes directrices pour les études biologiques marines des peuplements du substrat dur



#### PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.



#### **COPYRIGHT PROTECTED DOCUMENT**

#### © ISO 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Cont	ents	Page
Forewo	ord	iv
Introdu	iction	v
1	Scope	1
2	Terms and definitions	1
3	Quality and safety	3
4	Strategies and objectives for hard-substrate surveys	4
5	Sampling	8
6	Taxon identification and sample processing	11
	A (normative) Description of methods	
Annex	B (informative) Field recording form	17
Annex	C (informative) Biological definition of the supralittoral, eulittoral and sublittoral zones	18
Annex	D (informative) Basis for the choice of semi-quantitative surveys in a standard	19
Annex	E (informative) Detailed method for calculating level of exposure	20
Bibliog	raphy	21