Water quality - Sampling of fish with multi-mesh gillnets

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NATIONAL FOREWORD

See Eesti standard EVS-EN 14757:2015 sisaldab Euroopa standardi EN 14757:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 14757:2015 consists of the English text of the European standard EN 14757:2015.
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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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English Version

Water quality - Sampling of fish with multi-mesh gillnets

Qualité de l'eau - Echantillonnage des poissons à l'aide de filets maillants

Wasserbeschaffenheit - Probenahme von Fisch mittels Multi-Maschen-Kiemennetzen

This European Standard was approved by CEN on 16 April 2015.

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Foreword

This document (EN 14757:2015) 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of an identical text or by endorsement, at the latest by November 2015, and conflicting national standards shall be withdrawn at the latest by November 2015.

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.

This document supersedes EN 14757:2005.

This document contains the following technical changes compared with the previous edition:

a) this European Standard was revised to clarify that using pelagic gillnets is an option for fish sampling with gillnets;

b) the sampling design for the location of benthic gillnets was revised;

c) the requirements for the planning, sampling duration and sampling procedure were revised;

d) the requirements for data collection, data storage and data processing were revised;

e) the specifications concerning the handling of effects caused by gillnet selectivity were revised and shortened;

f) details and references for alternative sampling methods were included;

g) details for age and growth analyses where excluded from the normative part and added in an informative annex (Annex B).

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

This is one of several European Standards developed for evaluation of species composition, abundance and age structure of fish in rivers, lakes and transitional waters. Other standards describe “Sampling of fish with electricity” (EN 14011), “Guidance on the scope and selection of fish sampling methods” (EN 14962) and “Guidance on the estimation of fish abundance with mobile hydroacoustic methods” (EN 15910).

In most countries the use of the method specified in this European Standard requires permits from landowners and national or regional authorities. In many countries permits are also required from authorities for animal rights and animal welfare demands. Both fish diseases and diseases specific for other organisms, such as freshwater crayfish, may be spread by placing equipment contaminated with pathogens or parasites in the lake. The user of this method should check which national legislation is applicable.

WARNING — Persons using this European Standard should be familiar with usual 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 health and safety practices and to ensure compliance with any national regulatory conditions.

IMPORTANT — It is absolutely essential that tests conducted according to this European Standard be carried out by suitably trained staff.

1 Scope

This European Standard specifies a method for the sampling of fish in lakes, using benthic multi-mesh gillnets and gives recommendations on sampling of fish with pelagic multi-mesh gillnets. The method provides a whole-lake estimate for species occurrence, quantitative relative fish abundance, biomass expressed as Catch Per Unit Effort (CPUE) and size structure of fish assemblages in temperate lakes. It also provides estimates that are comparable over time within a lake and between lakes.

This European Standard specifies routines for sampling, data handling and reporting, and provides information on applications and further treatment of data. It also provides guidance for the sampling of fish for age and growth analyses. According to the principles of this standard other lentic water bodies can be sampled.

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 14962:2006, *Water quality - Guidance on the scope and selection of fish sampling methods.*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14962:2006 and the following apply.

3.1
sampling effort
number of gillnet-nights

Note 1 to entry: A gillnet-night is one gillnet fishing during one night. For example a sampling effort of 8 gillnet-nights is 8 gillnets fishing during one night, or 4 gillnets fishing during 2 nights etc.

4 Principle

The sampling procedure is based on stratified random sampling. The sampled lake is divided in depth strata and random sampling is performed within each depth stratum. Sampling of benthic fish is performed with specially designed multi-mesh gillnets which are 30 m long and 1,5 m deep. The gillnets are composed of 12 different mesh-sizes ranging from 5 mm to 55 mm knot to knot following a geometric series. Similar nets can be applied also for sampling of pelagic fish. In larger and deeper lakes and reservoirs sampling of pelagic fish with multi-mesh gillnets is highly recommended. The sampling effort (number of gillnet-nights) necessary to allow detection of 50 % changes in relative abundance between sampling occasions, ranges between 8 gillnet-nights for small, shallow lakes, up to 64 gillnet-nights for lakes of about 5 000 ha. If less accurate estimates of abundance are needed, an inventory sampling procedure may be used, thereby reducing the necessary sampling effort.

5 Equipment

5.1 Benthic gillnets

The multi-mesh gillnets have been designed for catching all types of freshwater fish species. Each gillnet shall be composed of 12 different mesh-sizes ranging from 5 mm to 55 mm (knot to knot). The mesh-sizes follow a geometric series, with a ratio between mesh-sizes of about 1,25. All gillnets shall have the same order of mesh panels (see Table 1).