



NSAI
Standards

Irish Standard
I.S. EN 14757:2015

Water quality - Sampling of fish with multi-mesh gillnets

I.S. EN 14757:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN 14757:2015

Published:

2015-05-27

*This document was published
under the authority of the NSAI
and comes into effect on:*

2015-06-13

ICS number:

13.060.70

65.150

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

EN 14757

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2015

ICS 13.060.70; 65.150

Supersedes EN 14757:2005

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.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Principle	6
5 Equipment	6
5.1 Benthic gillnets	6
5.2 Pelagic gillnets.....	7
6 Sampling design and procedure	7
6.1 Sampling design	7
6.2 Planning.....	8
6.3 Sampling period.....	8
6.4 Sampling	9
6.5 Safety instructions.....	9
7 Time series sampling	9
7.1 Sampling effort.....	9
7.2 Depth stratification of benthic gillnets	10
7.3 Sampling of the pelagic habitat.....	12
8 Inventory sampling	12
8.1 Sampling effort.....	12
8.2 Depth stratification of benthic gillnets	12
9 Data handling and reporting	13
9.1 Fish data	13
9.2 Supplementary data	14
9.3 Databases and quality control.....	15
10 Dealing with gillnet selectivity.....	16
11 Estimation of sampling variance.....	16
11.1 Within-lake variation.....	16
11.2 Within-lake and between-year variation	17
11.3 Between-lake variation	17
12 Applications and further analyses	17
13 Limitations and supplementary sampling.....	18
14 Alternative sampling	18
Annex A (informative) Distribution of benthic multi-mesh gillnets at different depth strata in lakes with different area and maximum depth.....	19
Annex B (informative) Sampling fish for age and growth analysis	21
B.1 General.....	21
B.2 Selection of individuals.....	21
B.3 Choice of hard structure for age and growth analysis	22
B.3.1 General requirements.....	22

B.3.2	Otoliths	22
B.3.3	Scales	23
B.3.4	Operculum bones	23
B.3.5	Cleithrum and metapterygoid	23
Annex C (informative) Example of forms for registration of fish and supplementary data		24
Bibliography		27

EN 14757:2015 (E)

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 were 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.

EN 14757:2015 (E)

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).

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-