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hüdroakustiliste meetoditega**

**Water quality - Guidance on the estimation of fish
abundance with mobile hydroacoustic methods**

EESTI STANDARDI EESSÕNA

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English Version

Water quality - Guidance on the estimation of fish abundance with mobile hydroacoustic methods

Qualité de l'eau - Guide sur l'estimation de l'abondance des
poissons par des méthodes hydroacoustiques mobiles

Wasserbeschaffenheit - Anleitung zur Abschätzung der
Fischabundanz mit mobilen hydroakustischen Verfahren

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

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Foreword

This document (EN 15910:2014) 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of an identical text or by endorsement, at the latest by July 2014, and conflicting national standards shall be withdrawn at the latest by July 2014.

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Introduction

This document is one of several European Standards developed for the evaluation of species composition, abundance and age structure of fish in rivers, lakes and transitional waters. The following standards have already been published:

- EN 14011, *Water quality — Sampling of fish with electricity*;
- EN 14757, *Water quality — Sampling of fish with multi-mesh gillnets*;
- EN 14962, *Water quality — Guidance on the scope and selection of fish sampling methods*.

The initial draft of this document was constructed by an international group of experts during an ad hoc joint EIFAC/CEN workshop.

WARNING — Persons using this European Standard should be familiar with normal laboratory and fieldwork practice. This 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.

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 standardized method for data sampling and procedures for data evaluation of fish populations in large rivers, lakes and reservoirs, using hydroacoustic equipment deployed on mobile platforms (boats and vessels).

This standard covers fish population abundance estimates of pelagic and profundal waters > 15 m mean depth with the acoustic beam oriented vertically, and the inshore and surface waters of water bodies > 2 m depth with the beam oriented horizontally. The size structure of fish populations can only be determined to a relatively low degree of precision and accuracy, particularly from horizontally-deployed echosounders. As acoustic techniques are presently unable to identify species directly, other direct fish catching methods should always be used in combination.

This standard provides recommendations and requirements on equipment, survey design, data acquisition, post-processing of data and results and reporting. A selected literature with references in support of this standard is given in the Bibliography.

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, definitions, symbols and abbreviated terms

3.1 Terms and definitions

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

3.2 Symbols and abbreviated terms

Common abbreviations used in this document:

- EDSU Elementary Distance Sampling Unit; Unit: Metre (m);
- GPS Global Positioning System;
- MUR Maximum Usable Range; Unit: Metre (m);
- PST Peak of Small Targets;
- S_a Area Backscattering Strength; Unit: decibel, dB re 1 ($m^2 m^{-2}$);
- S_v Volume Backscattering Strength; Unit: decibel, dB re 1 m^{-1} ;
- SED Single Echo Detection;
- SNR Signal to Noise Ratio;
- ST Single Target;
- TS Target Strength; Units = dB re 1 m^2 ;
- TVG Time Varied Gain;
- YOY Young of the year.