

<b>STN</b>	<b>Kvalita vody. Pokyny na skúmanie vodných makrofytov v tečúcich vodách.</b>	<b>STN EN 14184</b>  75 7713
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Water quality - Guidance for the surveying of aquatic macrophytes in running waters

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/14

Obsahuje: EN 14184:2014

Oznámením tejto normy sa ruší  
STN EN 14184 (75 7713) z augusta 2004

**119343**

English Version

## Water quality - Guidance for the surveying of aquatic macrophytes in running waters

Qualité de l'eau - Guide pour l'étude des macrophytes aquatiques dans les cours d'eaux

Wasserbeschaffenheit - Anleitung für die Untersuchung aquatischer Makrophyten in Fließgewässern

This European Standard was approved by CEN on 11 January 2014.

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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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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## Foreword

This document (EN 14184:2014) has been prepared by Technical Committee CEN/TC 230 “Water analysis”, the secretariat of which is held by DIN.

This document supersedes EN 14184:2003.

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of an identical text or by endorsement, at the latest by September 2014, and conflicting national standards shall be withdrawn at the latest by September 2014.

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 contains the following technical changes to the previous edition:

- a) this document is applicable to all kinds of running surface waters (e. g. rivers, streams, artificial canals);
- b) requirements for survey planning and documentation were revised concerning the requirements of the Water Framework Directive (WFD);
- c) a further example for estimator scales widely used in Europe to assess aquatic macrophyte abundance was added in Table 1;
- d) informative Annex A “Principles of interlaboratory comparison for macrophyte surveys in running waters – Occurrence and abundance of macrophyte species” was added.

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, 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

Macrophytes are an important component of aquatic ecosystems and can be used to facilitate the monitoring of ecological status. The requirement to use macrophytes in monitoring is inherent in numerous European directives (e. g. the Water Framework Directive (2000/60/EC), Urban Waste Water Treatment Directive (91/271/EEC), Nitrates Directive (91/676/EEC), etc.).

In addition to their important ecological role, the use of macrophytes as indicators of ecological quality in running waters is based on the fact that certain species and species groups are indicators for specific running water types and are adversely affected by anthropogenic impact.

In certain types of running water habitats the lack of macrophytes is not an effect of anthropogenic impact but a characteristic feature. For example, in geological formations like the flysch, or in the central part of deeper rivers macrophytes may be absent due to the habitat limitations imposed by geology and substrate, water depth, current flow velocity, turbidity, etc.

A wide range of sampling and survey methodologies has been developed for specific applications including conservation, drainage impact, management, ecological habitat enhancement etc. The methodology of this guidance standard is recommended specifically for the surveying of macrophytes in running freshwaters, of natural, heavily modified and artificial character, and for the purpose of monitoring ecological status. It could be used as the basis for investigative monitoring of water quality or other applications, as well.

According to the precise usage to which this European Standard is to be put, it is essential for specifiers and users to mutually agree on any necessary variations or optional procedural details prior to use.

**WARNING** — Working in or around water is inherently dangerous. Persons using this European Standard should be familiar with usual field and laboratory 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 specifies a method for surveying aquatic macrophytes in running waters for the purpose of assessing ecological status, using these organisms as elements of biological quality. The information provided by this method includes the composition and abundance of the aquatic macrophyte flora.

This European Standard is applicable to all kinds of surface running water bodies, like natural brooks, streams and rivers and their heavily modified equivalents, as well as to artificial water bodies like canals or run-of-river reservoirs.

The general principles of the approach described in this European Standard may also be applied when monitoring water bodies in the fluvial corridor of a river, such as side channels and oxbows.

It is recognized that for a complete assessment of ecological status, other elements of biological quality should also be assessed.

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**