

**Water quality - Biological classification  
of rivers - Part 1: Guidance on the  
interpretation of biological quality data  
from surveys of benthic  
macroinvertebrates**

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Part 1: Guidance on the interpretation of biological  
quality data from surveys of benthic  
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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 8689-1:2000 sisaldab Euroopa standardi EN ISO 8689-1:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 12.09.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 8689-1:2000 consists of the English text of the European standard EN ISO 8689-1:2000.</p> <p>This document is endorsed on 12.09.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This international standard gives guidance on the interpretation of data from surveys of benthic macroinvertebrates in running waters and their use in evaluating man-made stress. In order to make a complete ecological evaluation, it is necessary to study other groups of fauna and flora, as well as macroinvertebrates.</p>	<p><b>Scope:</b></p> <p>This international standard gives guidance on the interpretation of data from surveys of benthic macroinvertebrates in running waters and their use in evaluating man-made stress. In order to make a complete ecological evaluation, it is necessary to study other groups of fauna and flora, as well as macroinvertebrates.</p>
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ICS 13.060.10

Võtmesõnad:

**English version**

Water quality

**Biological classification of rivers**

Part 1: Guidance on the interpretation of biological quality data from  
surveys of benthic macroinvertebrates  
(ISO 8689-1 : 2000)

Qualité de l'eau – Classification  
biologique des rivières – Partie 1:  
Lignes directrices pour l'interpréta-  
tion des données relatives à la qualité  
biologique à partir d'études des  
macro-invertébrés benthiques  
(ISO 8689-1 : 2000)

Wasserbeschaffenheit – Biologische  
Klassifizierung von Flüssen – Teil 1:  
Richtlinie zur Interpretation von  
biologischen Beschaffenheitsdaten  
aus Untersuchungen von benthischen  
Makroinvertebraten in Fließ-  
gewässern (ISO 8689-1 : 2000)

This European Standard was approved by CEN on 2000-03-15.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

## Foreword

International Standard

ISO 8689-1 : 2000 Water quality – Biological classification of rivers – Part 1: Guidance on the interpretation of biological quality data from surveys of benthic macroinvertebrates,

which was prepared by ISO/TC 147 'Water quality' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 230 'Water analysis', the Secretariat of which is held by DIN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by September 2000 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 8689-1 : 2000 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

## Introduction

Many countries use benthic macroinvertebrates in surveillance and monitoring programmes to produce biological classifications of running waters that evaluate a variety of man-made stresses [1,2,3,4,5,6,7]. The list of benthic macroinvertebrate taxa found during a survey is normally used to calculate a biological index or score which is related to a particular stress [2,3,4,5,6,7]. A classification can be produced by comparison between a reference community, which represents unstressed conditions, and the observed community [6,8]. This type of classification takes into account the natural variability of biological communities.

As yet there is no single classification or index scheme that covers all geographical regions [1,2,3,5]. For rivers which cross national boundaries there is especially a need to have classifications which are the same or are at least comparable [9,10]. A comparison exercise allows conversion to be made between the differing classification schemes, without the need to sample and analyse data using the different methods each time a comparison is required.

According to the precise use to which this part of ISO 8689 is to be put, it is essential for specifiers and users mutually to agree any necessary variation or optional procedural details prior to use.

## 1 Scope

This part of ISO 8689 gives guidance on the interpretation of biological quality data relating to running waters from surveys of benthic macroinvertebrates. It is recognized that for a complete assessment of ecological status, other elements of biological quality should be assessed.

**NOTE** Annex A gives guidance on how the comparison of the various classification systems can be made where classifications of the biological quality of running waters using benthic macroinvertebrates already exist.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 8689. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 8689 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 5667-3, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of samples.*

ISO 7828, *Water quality — Methods of biological sampling — Guidance on handnet sampling of aquatic benthic macro-invertebrates.*

ISO 8265, *Water quality — Design and use of quantitative samplers for benthic macro-invertebrates on stony substrata in shallow freshwaters.*

ISO 9391, *Water quality — Sampling in deep waters for macro-invertebrates — Guidance on the use of colonization, qualitative and quantitative samplers.*

## 3 Terms and definitions

For the purposes of this part of ISO 8689, the terms and definitions given in ISO 5667, ISO 7828, ISO 8265 and ISO 9391 and the following apply.

### 3.1

#### **watercourse**

body of surface water that has running water perennially or at some time during the annual hydrologic cycle