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Water quality - Guidance standard on determining the degree of modification of river hydromorphology

## EESTI STANDARDI EESSÕNA

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ICS 13.060.45

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EUROPEAN STANDARD

**EN 15843**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2025

ICS 13.060.45

Supersedes EN 15843:2010

English Version

## Water quality - Guidance standard on determining the degree of modification of river hydromorphology

Qualité de l'eau - Guide pour la détermination du degré de modification de l'hydromorphologie des rivières

Wasserbeschaffenheit - Anleitung zur Beurteilung von Veränderungen der hydromorphologischen Eigenschaften von Fließgewässern

This European Standard was approved by CEN on 13 July 2025.

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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  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 15843:2024) 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of an identical text or by endorsement, at the latest by March 2026, and conflicting national standards shall be withdrawn at the latest by March 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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## Introduction

This document will enable broad comparisons to be made of river hydromorphological modifications throughout Europe (e.g. for reporting by the European Environment Agency). The assessment of river 'quality' in Europe has evolved over the past 30-40 years. From its original focus on organic pollution it now relies on methods for analysing a range of chemical and biological attributes. More recently, several European countries have developed systems for evaluating the hydromorphological features of rivers. The EC Water Framework Directive (WFD) has reinforced the need for this broader view of river 'quality' through its requirement for determining 'ecological status' based on macrophytes, phytobenthos, invertebrates and fish. The Directive also requires that hydromorphological and physico chemical conditions should be suitable for supporting biological communities.

EN 14614:2020, *Water Quality – Guidance standard for assessing the hydromorphological features of rivers* describes a standard for field survey and feature recording, whereas this standard gives guidance on assessing the modification of river hydromorphological features. It focuses especially on human pressures that affect rivers; thus, it may be helpful for implementing the WFD by indicating the extent to which these pressures might have caused a departure from hydromorphological reference conditions. Although the procedure described in this standard enables the hydromorphological characterization and assessment of rivers, it does not attempt either to describe methods for defining high status for hydromorphology under the WFD or to link broadscale hydromorphological classification to assessments of ecological status. However, the content of this standard has the potential to contribute to both of these.

In addition to its relevance to the WFD, this standard has applications also for nature conservation, meeting the goals of the Biodiversity Strategy (e.g. re-instating connectivity), environmental impact assessment, river basin management, flood risk management (e.g. the EC Floods Directive) and setting targets for river restoration work.

## 1 Scope

This document provides guidance on characterizing the modifications of river hydromorphological features described in EN 14614:2020. Both standards focus more on morphology than on hydrology and continuity, and include a consideration of sediment and vegetation. This document will enable consistent comparisons of hydromorphological forms and processes between rivers within a country and between different countries in Europe, providing guidance for broad-based characterization across a wide spectrum of hydromorphological modification of river channels, banks, riparian zones and floodplains. Although of lesser focus, it considers the indirect effects of catchment-wide modifications to these river and floodplain environments. Its primary aim is to assess 'departure from naturalness' as a result of historical and modern human pressures on river hydromorphology, and it suggests suitable sources of information (see EN 14614:2020, Table A.1) which can contribute to characterizing the modification of hydromorphological properties. In doing so, it does not replace methods that have been developed for local assessment and reporting.

Decisions on river management for individual reaches or catchments require expert local knowledge and vary according to river type.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14614:2020, *Water quality - Guidance standard for assessing the hydromorphological features of rivers*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### **aquatic vegetation morphotype**

morphological character of aquatic vegetation, which combines the shape of the leaves, whether the leaves are emergent, floating or submerged, and whether or not the vegetation is rooted in the riverbed

### 3.2

#### **armouring**

where the riverbed surface comprises coarser particles than the underlying river bed layers as a result of removal (mobilization and transport) of the finer particles from the bed surface layer

[SOURCE: EN 14614:2020, 3.4]