



**SLOVENSKI STANDARD**  
**SIST CWA 17916:2022**

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**Ukoreninjenje motečih (tujerodnih) vodnih rastlin - Nadzor z metodo grabljenja s čolnom**

Rooting nuisance (alien) aquatic plants - Control by means of rake method with a boat

**iTeh STANDARD PREVIEW**  
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**Ta slovenski standard je istoveten z: CWA 17916:2022**

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**AGREEMENT**

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English version

## Rooting nuisance (alien) aquatic plants - Control by means of rake method with a boat

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This CEN Workshop Agreement (CWA 17916:2022) was developed in accordance with CEN-CENELEC Guide 29 “CEN/CENELEC Workshop Agreements – A rapid prototyping to standardization” and with the relevant provisions of CEN/CENELEC Internal Regulations - Part 2. It was approved by a Workshop of representatives of interested parties on 2022-06-22, the constitution of which was supported by CEN following a public call for participation made on 2022-04-04. However, this CEN Workshop Agreement does not necessarily include all relevant stakeholders.

The final text of CWA 17916:2022 was submitted to CEN for publication on 2022-07-15.

The following organizations and individuals developed and approved this CEN Workshop Agreement:

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**CWA 17916:2022 (E)****Introduction**

This CWA describes how a rake method with a boat should be used to remove nuisance rooting aquatic plants. The rake method is an effective but drastic method to reduce the number of aquatic plants in waterways, and therefore it should be applied correctly. The rake method can produce a long-lasting solution for an excess of native rooted aquatic plants and alien rooted aquatic plants [invasive alien species]. The rake method takes account of the wellbeing of aquatic fauna, including fishhealth, and preventing unnecessary fish mortality.

For water-management clients, this document is intended as a guideline for having maintenance work and the full or partial removal of aquatic plants including roots carried out in a sustainable and ecologically responsible manner. Contractors that comply with this standard may state this and use it to obtain an award advantage during tenders.

**SDGs**

This document makes a contribution to the following Sustainable Development Goals (SDGs) that were agreed by the United Nations:

- SDG 6 'Clean water and sanitation';
- SDG 13 'Climate action';
- SDG 14 'Life below water';
- SDG 15 'Life on land'.

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[SIST CWA 17916:2022](https://standards.iteh.ai/catalog/standards/sist/3d7221b2-0826-4c1c-a099-2e0ab4d18306/sist-cwa-17916-2022)

<https://standards.iteh.ai/catalog/standards/sist/3d7221b2-0826-4c1c-a099-2e0ab4d18306/sist-cwa-17916-2022>

## 1 Scope

This document describes a rake method with a boat for removing nuisance rooting aquatic plants and for managing their growth. It also describes the requirements for this method, and sets out how work should be carried out in the field.

The rake method can be used for inland waterways with a depth of 0.6 m or more.

## 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, *Water quality – Guidance standard for assessing the hydromorphological features of rivers*

EN 15460, *Water quality – Guidance standard for the surveying of macrophytes in lakes*

EN 15940, *Automotive fuels – Paraffinic diesel fuel from synthesis or hydrotreatment – Requirements and test methods*

ISO 15380, *Lubricants, industrial oils and related products (class L) – Family H (Hydraulic systems) – Specifications for hydraulic fluids in categories HETG, HEPG, HEES and HEPR*

ASTM D8029-18, *Standard Specification for Biodegradable, Low Aquatic Toxicity Hydraulic Fluids*

## 3 Terms and definitions

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

### 3.1

#### **operations consultant**

adequately trained person in the area of aquatic ecology and vegetation who provides advice on removing aquatic plants

NOTE 1 to entry: national legislation may exist. If the operations consultant complies with the requirements of Article 3.4 of the Code of Conduct Nature Conservancy for Water Boards, this person may also act as an ecological expert.

### 3.2

#### **Basic Safety SCC**

#### **B-SCC**

certification in the area of health and safety at work, focused on employees who work in a hazardous environment without a leadership role

### 3.3

#### **CE marking**

marking for a product that complies with the applicable rules within the European Economic Area

### 3.4

#### **sustainability**

being financially and ecologically responsible in the long term

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**3.5  
ecological expert**  
person who is formally trained in the field and/or is recognized by an authoritative organisation as such

NOTE 1 to entry: in some countries legislation exists, e.g. in the Netherlands requirements are imposed by Article 3.4 of the Code of Conduct Nature Conservancy for Water Boards

**3.6  
ecological work protocol**  
protocol that describes how damage to protected or unprotected flora and fauna is prevented or limited (mitigated) to an acceptable level during the work

**3.7  
Most economically advantageous tender  
MEAT**  
tender where not only the price, but qualitative and/or social factors form part of the award criteria

**3.8  
external monitoring**  
systematic tracking of developments in the ecological and general quality of the raked area by a third party

**3.9  
rake method**  
method of using a rake to remove rooting aquatic plant, roots and all

**3.10  
hydrotreated vegetable oil 100 %  
HVO 100**

unmixed biodiesel made of waste vegetable oil and waste oil that was treated with hydrogen in accordance with EN 15940

**3.11  
Last Minute Risk Analysis  
LMRA**  
final check before starting the work to make sure the situation is safe

NOTE 1 to entry: This is a requirement imposed by the SCC certificate.

**3.12  
Dredge type developed by Satake 1987**  
aquatic plant sampling tool that is a type of rake where the tines are on a ring and point in the direction of the line

**3.13  
shipping inspectorate quality label  
NSI quality label**  
safety quality label for professionally used vessels and seagoing pleasure craft that are smaller than 24 m

**3.14  
Health, Safety and Environment Checklist for Contractors  
SCC certificate**  
certificate based on a management system to guarantee safety during work, which describes all the risks, control measures and the action plan for permanent workplaces



**3.15****(provisional) community inland navigation certificate****(p)CINC**

compulsory provisional certificate for floating equipment to sail on European waters

**3.16****SCC for operational managers****SOS-SCC**

certificate for health and safety at work, focused on managerial employees and self-employed persons

**3.17****double-headed garden rake**

aquatic plant sampling tool that is a type of rake that consists of two rake heads bound or welded together back to back, and attached to a line of at least 10 m

**3.18****alien species**

any live specimen of a species, subspecies or lower taxon of animals, plants, fungi or micro-organisms introduced outside its natural range; it includes any part, gametes, seeds, eggs or propagules of such species, as well as any hybrids, varieties or breeds that might survive and subsequently reproduce;

[SOURCE: Regulation (EU) No 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species]

**3.19****invasive alien species**

alien species whose introduction or spread has been found to threaten or adversely impact upon biodiversity and related ecosystem services;

[SOURCE: Regulation (EU) No 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species]

**4 Requirements imposed on parties and equipment****4.1 Client**

The client shall comply with the MEAT criterion for tendered services for CO<sub>2</sub> reductions based on e.g. ISO 14001 or other ISO standards related to the prevention, reduction and/or mitigation of CO<sub>2</sub> emissions

**4.2 Contractor**

The contractor shall:

- a) Have implemented a certified CO<sub>2</sub> management system;
- b) Work on the basis of a work plan with an ecological work protocol that is prepared by an ecological expert in accordance with any national legislation that may exist, e.g. in the Netherlands that would be Article 3.4 of the Code of Conduct Nature Conservancy for Water Boards; see Annex A for the points of attention;
- c) Have at least a SCC certificate.

Operational staff shall at least:

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- a) Have B-SCC or SOS-SCC in function of their job;
- b) Have proven knowledge of the effect of their work on the ecology, where aquatic plant recognition and identifying anoxia are key to safeguarding and improving biodiversity and preventing fish mortality;
- c) Work in accordance that with any legislation that may apply, e.g. in the Netherlands with the Code of Conduct Nature Conservancy for Water Boards.

Chief Engineers of the craft shall:

- a) Comply with the requirements for operational staff;
- b) If required for the area and the specific craft: have a boatmaster's certificate 1 and/or 2;
- c) Be able to recognise and distinguish alien plants;
- d) Scored a pass for the practical assessment of knowledge and skills required to operate a rake boat (e.g. on the basis of a course organised by the company of the contractor);
- e) Work safely with the rake method and sail safely, in accordance with the requirements in section 5 of this document.

**4.3 External ecological expert**

An external ecological expert may be consulted to determine the types of aquatic plants that are present and to what extent. If the present species are expected to include alien species that could be easily confused with other natural species, an external ecological expert has to be engaged to identify the species.

Monitoring the species of aquatic plants takes place if required by the client.

The external ecological expert uses the following procedure for identification and monitoring:

- 1) Take random samples of the aquatic plants in the stretch that needs to be cleaned up and identify them. Use a garden rake on a long handle, a double-headed garden rake, or a dredge type developed by Satake 1987 as a sampling tool. Sample from the bank or from a craft, depending on the dimensions of the water.
- 2) Take at least twenty samples in the work area. If there are areas with distinctive morphological or ecological features, take at least three samples per distinctive area.
- 3) On the basis of the sample, prepare an estimate of the total cover of the submerged aquatic plants and of the individual species. For a linear water, estimate the cover of the waterway. In the case of clear zoning, estimate the cover and the fill per zone.
- 4) Use the working method described in EN 14614, EN 15460, and other relevant national standards.
- 5) Send the results of the surveys to the client and the contractor.

**4.4 Equipment**

The contractor's equipment (craft and rake) should comply with one of the following requirements:

- The equipment is certified on the basis of the community inland navigation certificate.

- There is an application statement for the certification of existing floating equipment available for the equipment.
- The equipment is certified in accordance with the requirements of the (provisional) community inland navigation certificate ((p)CINC).

The equipment also complies with the following:

- The equipment is proven to comply with statutory requirements, such as CE marking and the NSI quality label.
- The manufacturer's technical construction file is complete and is available for inspection on request. This file contains, amongst other things, the choices made, calculations, supporting evidence.
- The risk analysis prepared by the manufacturer, including the modifications produced on that basis, is documented and available for inspection on request.
- According to the CO<sub>2</sub> reduction targets on the basis of the CO<sub>2</sub>Performance ladder, the required fuel type for the equipment is HVO 100 (in accordance with EN 15940), electricity or hydrogen.
- Technical maintenance of the equipment is documented and complies with the manufacturer's requirements (based on the maintenance log) and is proven to be maintained, as aquatic plant fragments have been removed and it was cleaned at the start of the work and on changing between areas; see Annex C.
- The hydraulic system shall be filled with hydraulic BIO oil that complies with ASTM D8029-18 and ISO 15380.

The rake to be used depends on the type of bed (mud, sand, peat), species (root system) and the vessel; see Annex B.

## 5 Protocol

This section describes the steps for removing nuisance rooting aquatic plants with the rake method.

### 5.1 Step 1 Survey of future work area and awarding the order

Following the client's request, the operations consultant prepares a survey of the future work area, and writes a report. This report should be shared with the client in order to agree the content of the order. Then the client can award the order for removing nuisance rooting aquatic plants.

### 5.2 Step 2 Survey the vegetation

The contractor produces an inventory of the plant species. If alien plants are observed or if the presence of alien plants is suspected, the contractor engages an ecological expert. The expert reports to the client and the contractor.

### 5.3 Step 3 Prepare a work plan

The contractor prepares a work plan on the basis of the vegetation that has to be removed. The work plan should include at least the following (see also Annex A for the compulsory points of attention):

- a) The ecological work protocol in accordance with any national legislation that may exist, e.g. in the Netherlands Article 3.4 of the Code of Conduct Nature Conservancy for Water Boards;