

## **Wastewater treatment plants - Part 14: Disinfection**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12255-14:2004 sisaldab Euroopa standardi EN 12255-14:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.05.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12255-14:2004 consists of the English text of the European standard EN 12255-14:2003.</p> <p>This document is endorsed on 18.05.2004 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 European Standard specifies performance requirements for the disinfection of effluents from wastewater treatment plants. The primary application is for wastewater treatment plants designed for the treatment of domestic and municipal wastewater for over 50 PT. Differences in wastewater treatment throughout Europe have led to a variety of systems being developed. This standard gives fundamental information about the systems, this standard has not attempted to specify all available systems. Detailed information additional to that contained in this standard can be obtained by referring to the bibliography.</p>	<p><b>Scope:</b></p> <p>This European Standard specifies performance requirements for the disinfection of effluents from wastewater treatment plants. The primary application is for wastewater treatment plants designed for the treatment of domestic and municipal wastewater for over 50 PT. Differences in wastewater treatment throughout Europe have led to a variety of systems being developed. This standard gives fundamental information about the systems, this standard has not attempted to specify all available systems. Detailed information additional to that contained in this standard can be obtained by referring to the bibliography.</p>
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**Võtmesõnad:** ozon, process control, separation, sewage, sewage clarification, sewage purification, sewage purification plant, sewage treatment, sewage treatment plants, sewage treatment works, specification (approval), specifications, ultraviolet radiation, water practice

ICS 13.060.30

English version

## Wastewater treatment plants - Part 14: Disinfection

Stations d'épuration - Partie 14: Désinfection

Kläranlagen - Teil 14: Desinfektion

This European Standard was approved by CEN on 11 September 2003.

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.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.



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## Foreword

This document (EN 12255-14:2003) has been prepared by Technical Committee CEN/TC 165 "Wastewater engineering", 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 June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

This is the fourteenth Part prepared by the Working Groups CEN/TC 165/WG 42 and WG 43 relating to the general requirements and processes for treatment plants for a total number of inhabitants and population equivalents (PT) over 50. EN 12255 with the generic title "Wastewater treatment plants" consists of the following Parts:

- *Part 1: General construction principles*
- *Part 3: Preliminary treatment*
- *Part 4: Primary settlement*
- *Part 5: Lagooning processes*
- *Part 6: Activated sludge processes*
- *Part 7: Biological fixed-film reactors*
- *Part 8: Sludge treatment and storage*
- *Part 9: Odour control and ventilation*
- *Part 10: Safety principles*
- *Part 11: General data required*
- *Part 12: Control and automation*
- *Part 13: Chemical treatment — Treatment of wastewater by precipitation/flocculation*
- *Part 14: Disinfection*
- *Part 15: Measurement of the oxygen transfer in clean water in aeration tanks of activated sludge plants*
- *Part 16: Physical (mechanical) filtration*

NOTE For requirements on pumping installations at wastewater treatment plants, provided initially as *Part 2: Pumping installations for wastewater treatment plants*, see EN 752-6 *Drain and sewer systems outside buildings — Part 6: Pumping installations*.

EN 12255-1, EN 12255-3 to EN 12255-8 and EN 12255-10 and EN 12255-11 were implemented together as a European package (Resolution BT 152/1998).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies performance requirements for the disinfection of effluents from wastewater treatment plants.

The primary application is for wastewater treatment plants designed for the treatment of domestic and municipal wastewater for over 50 PT.

Differences in wastewater treatment throughout Europe have led to a variety of systems being developed. This standard gives fundamental information about the systems, this standard has not attempted to specify all available systems.

Detailed information additional to that contained in this standard can be obtained by referring to the bibliography.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 1085:1997, *Wastewater treatment — Vocabulary*.

EN 12255-1, *Wastewater treatment plants — Part 1: General construction principles*.

EN 12255-5, *Wastewater treatment plants — Part 5: Lagooning processes*.

EN 12255-10, *Wastewater treatment plants — Part 10: Safety principles*.

EN 12255-12, *Wastewater treatment plants — Part 12: Control and automation*.

## 3 Terms and definitions

For the purposes of this European Standard, terms and definitions given in EN 1085:1997 and the following apply.

### 3.1

#### **residual concentration**

concentration of a disinfectant in the final effluent of the wastewater treatment plant

### 3.2

#### **UV radiation (UV dose)**

the received UV-dose over the duration of the UV irradiation along the pathway of an infinitesimal small water volume expressed in  $\text{J/m}^2$

### 3.3

#### **UV intensity**

quotient of the energy flux of the UV radiation received on the surface of an infinitesimal small area divided by the size of the area. The unit of UV intensity is  $\text{W/m}^2$

### 3.4

#### **UV-reactor**

a closed vessel reactor or an open channel section with an assembly of UV-lamps irradiating the water passing through the UV-reactor