

REOVEEPUHASTID
OSA 6: AKTIIVMUDAPROTSESSID

Wastewater treatment plants -
Part 6: Activated sludge processes

This document is a preview generated by EVS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12255-6:2002 sisaldab Euroopa standardi EN 12255-6:2001 ingliskeelset teksti.	This Estonian standard EVS-EN 12255-6:2002 consists of the English text of the European standard EN 12255-6:2001.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.01.2002.	Date of Availability of the European standard is 16.01.2002.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.060.30

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele. Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

ICS 13.060.30

English version

Wastewater treatment plants - Part 6: Activated sludge process

Stations d'épuration - Partie 6: Procédé à boues activées

Kläranlagen - Teil 6: Belebungsverfahren

This European Standard was approved by CEN on 9 November 2001.

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 Management Centre 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 Management Centre 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, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword.....	3
1 Scope	5
2 Normative references	5
3 Terms and definitions.....	5
4 Requirements	5
4.1 General.....	5
4.2 Planning.....	5
4.3 Flow-splitting structure.....	6
4.4 Biological reactor.....	6
4.4.1 Design	6
4.4.2 Operational parameters.....	7
4.4.3 Mixing.....	7
4.4.4 Aeration.....	7
4.4.5 Additional considerations.....	9
4.5 Clarifiers.....	10
4.5.1 General.....	10
4.5.2 Design	10
4.6 Return and surplus sludge systems.....	11
Annex A (informative) Design-Technical process characteristics.....	12
Bibliography	13

Foreword

This European Standard 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 July 2002, and conflicting national standards shall be withdrawn at the latest by December 2002.

In this standard the annex A is informative.

It is the sixth part prepared by the Working Groups CEN/TC 165/WG 42 and 43 relating to the general requirements and processes for treatment plants for a total number of inhabitants and population equivalents (PT) over 50. The Parts of the series are as follows:

- 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) filtration¹⁾

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).

¹⁾ In preparation.

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, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This document is a preview generated by EVS

1 Scope

This European Standard specifies the performance requirements for treatment of wastewater using the activated sludge process for plants 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 may 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, *Wastewater treatment — Vocabulary*.

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

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

EN 12255-11, *Wastewater treatment plants — Part 11: General data required*.

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

3 Terms and definitions

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

4 Requirements

4.1 General

The biological reactors and the clarifiers connected by the return sludge recirculation form a unit process - the activated sludge process. The performance of the process depends on the biological and chemical reactions in the activated sludge tanks as well as the separation of the activated sludge in the final clarifiers.

NOTE Biological treatment and clarification may be combined in the same tank e.g. a sequencing batch reactor (SBR).

The design shall take account of the requirements specified in EN 12255-1, EN 12255-10, EN 12255-11 and prEN 12255-12.

4.2 Planning

The following factors shall be considered in the design of an activated sludge treatment plant:

- the capacity and dimensions of the biological reactors;
- the prevention of dead zones and detrimental deposition in tanks/channels;