

REOVEEPUHASTID. OSA 3: EELPUHASTUS

Wastewater treatment plants - Part 3: Preliminary treatment

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 12255-3:2024 sisaldab Euroopa standardi EN 12255-3:2024 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 31.01.2024.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 12255-3:2024 consists of the English text of the European standard EN 12255-3:2024.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 31.01.2024.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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EUROPEAN STANDARD

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NORME EUROPÉENNE

EUROPÄISCHE NORM

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Supersedes EN 12255-3:2000

English Version

Wastewater treatment plants - Part 3: Preliminary treatment

Stations d'épuration - Partie 3 : Prétraitements

Kläranlagen - Teil 3: Abwasservorreinigung

This European Standard was approved by CEN on 3 December 2023.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 12255-3:2024) has been prepared by Technical Committee CEN/TC 165 “Waste water 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of an identical text or by endorsement, at the latest by July 2024, and conflicting national standards shall be withdrawn at the latest by July 2024.

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.

This document supersedes EN 12255-3:2000.

EN 12255-3:2024 includes the following significant technical changes with respect to EN 12255-3:2000:

- a) comprehensive revision and additions in all sections;
- b) the addition of design recommendations;
- c) adaptation to the current state of the art;
- d) updating of the Normative references;
- e) editorial revision.

It is the third part prepared by Working Group CEN/TC 165/WG 40 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 design and construction principles*
- *Part 2: Storm water management systems*
- *Part 3: Preliminary treatment*
- *Part 4: Primary treatment*
- *Part 5: Lagooning processes*
- *Part 6: Activated sludge process*
- *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 1 Part 2 is under preparation.

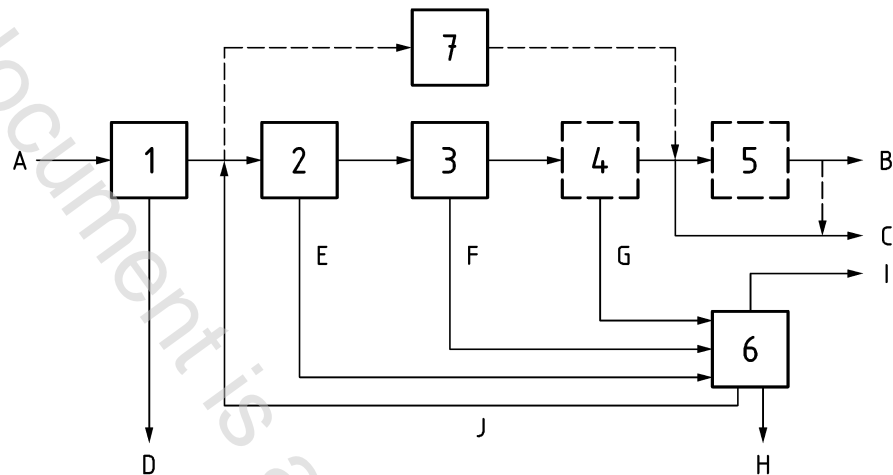
NOTE 2 For requirements on pumping installations at wastewater treatment plants see EN 752 “Drain and sewer systems outside buildings — Sewer system management” and EN 16932 (all parts) “Drain and sewer systems outside buildings — Pumping systems”.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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Introduction

Differences in wastewater treatment throughout Europe have led to a variety of systems being developed. This document gives fundamental information about the systems; this document has not attempted to specify all available systems. A generic arrangement of wastewater treatment plants is illustrated in Figure 1:



Key

- | | |
|---|--|
| 1 | preliminary treatment |
| 2 | primary treatment |
| 3 | secondary treatment |
| 4 | tertiary treatment |
| 5 | additional treatment (e.g. disinfection or removal of micropollutants) |
| 6 | sludge treatment |
| 7 | lagoons (as an alternative) |
| A | raw wastewater |
| B | effluent for re-use (e.g. irrigation) |
| C | discharged effluent |
| D | screenings and grit |
| E | primary sludge |
| F | secondary sludge |
| G | tertiary sludge |
| H | digested sludge |
| I | digester gas |
| J | returned water from dewatering |

Figure 1 — Schematic diagram of wastewater treatment plants

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

1 Scope

This document specifies design principles and performance requirements for preliminary wastewater treatment using screens with a mesh size above 50 μm , at plants serving more than 50 PT. It also includes grit removal and grease separation.

NOTE 1 For micro-screens with a mesh size below 50 microns see EN 12255-16.

NOTE 2 The primary application of this document is for wastewater treatment plants designed for the treatment of domestic and municipal wastewater. However, it contains information that can also be useful for commercial and industrial wastewater pretreatment and for combined sewer overflows (CSO).

This document applies in combination with EN 12255-1 and EN 12255-10.

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

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

EN 16323, *Glossary of wastewater engineering terms*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16323 and the following 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

aerated grit separator

structure for separating sand and other mineral matter from wastewater, using air to induce circulation

[SOURCE: Modified from EN 16323:2014, term number 2.3.9.1 “aerated grit chamber”, to recognize that not all separators are chambers]

3.2

bar screen

device comprising bars to separate objects from fluids

3.3

blocking factor

f_B

ratio of the area of a screen being blocked by withheld matter, to the open area of the clean screen

3.4

grit chamber

grit separating trap with a circular or rectangular footprint