Gravity drainage systems inside buildings - Part 4: Wastewater lifting plants - Layout and calculation

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EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 12056-4:2000 sisaldab Euroopa standardi EN 12056-4:2000 ingliskeelset teksti. Käesolev dokument on jõustatud 15.11.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 12056-4:2000 consists of the English text of the European standard EN 12056-4:2000. This document is endorsed on 15.11.2000 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This part gives layout, operation and maintenance requirements for lifting plants for wastewater containing faecal matter, faecal-free wastewater and rainwater within buildings and sites, together with their discharge pipework and connection to drain. It also covers faecal wastewater lifting plants for limited applications.	**Scope:** This part gives layout, operation and maintenance requirements for lifting plants for wastewater containing faecal matter, faecal-free wastewater and rainwater within buildings and sites, together with their discharge pipework and connection to drain. It also covers faecal wastewater lifting plants for limited applications.

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English version

Gravity drainage systems inside buildings

Part 4: Waste water lifting plants – Layout and calculation

Réseaux d'évacuation gravitaire à l'intérieur des bâtiments – Partie 4: Stations de relevage d'effluents – Conception et calculs

Schwerkraftentwässerungsanlagen innerhalb von Gebäuden – Teil 4: Abwasserhebeanlagen – Planung und Bemessung

This European Standard was approved by CEN on 1999-10-27.

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CEN

European Committee for Standardization
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Contents

Foreword

This European Standard 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 December 2000, and conflicting national standards shall be withdrawn at the latest by June 2001.

This part is the fourth in a series relating to the functional requirements of gravity drainage systems inside buildings. There will be five parts, as follows: Gravity drainage systems inside buildings :

Part 1: General and performance requirements
Part 2: Sanitary pipework - Layout and calculation
Part 3: Roof drainage - Layout and calculation
Part 4: Wastewater lifting plants - Layout and calculation
Part 5: Installation and testing, instructions for operation, maintenance and use

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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This part gives layout, operation and maintenance requirements for lifting plants for wastewater containing faecal matter, faecal-free wastewater and rainwater within buildings and sites, together with their discharge pipework and connection to drain. It also covers faecal wastewater lifting plants for limited applications.

2 Normative references

This standard incorporates by dated or undated reference provision 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 to 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.

EN 1085
Wastewater treatment - Vocabulary

prEN 12050-1
Wastewater lifting plants for buildings and sites - Principles of construction and testing - Part 1: Lifting plants for wastewater containing faecal matter

prEN 12050-2
Wastewater lifting plants for buildings and sites - Principles of construction and testing - Part 2: Lifting plants for faecal-free wastewater

prEN 12050-3
Wastewater lifting plants for buildings and sites - Principles of construction and testing - Part 3: Lifting plants for wastewater containing faecal matter for limited applications

prEN 12050-4
Wastewater lifting plants for buildings and sites - Principles of construction and testing Part 4: Non-return valves for faecal-free wastewater and wastewater containing faecal matter

EN 12056-1
Gravity drainage systems inside buildings - Part 1: General and performance requirements

EN 12056-2
Gravity drainage systems inside buildings - Part 2: Sanitary pipework - Layout and calculation

EN 12056-3
Gravity drainage systems inside buildings - Part 3: Roof drainage - Layout and calculation

EN 12056-5
Gravity drainage systems inside buildings - Part 5: Installation and testing, instructins for operation, maintenance and use

3 Definitions, symbols, units and designation

For the purposes of this standard, EN 1085 and the following definitions and symbols apply:

3.1 Definitions

3.1.1 Wastewater lifting plant
Device for the collection and automatic lifting of wastewater, which may or may not contain faecal matter, to a height above flood level.

3.1.2 Backflow
Flow of wastewater from a drain or sewer against the direction of flow back into the connected pipework.

3.1.3 Flood level
The maximum level to which waste water can rise within a drainage system.

3.1.4 Backflow loop
Part of the pressurized pipework from a wastewater lifting plant above flood level (see figures 1 and 2).

3.1.5 Duty flow, $\dot{V}_p$
Flow discharged by the pumping device of the wastewater lifting plant against the total head at the duty point (see figure 6).

3.1.6 Discharge head, H_p
Pressure produced by the pumping device of a wastewater lifting plant at the duty point to overcome the static height difference plus the total losses in the discharge pipework (see figure 6).

3.1.7 Collection tank for wastewater containing faecal matter
Unpressurized part of a wastewater lifting plant in which the incoming wastewater is stored prior to lifting.

3.1.8 Useful volume
Volume in the collection tank between switch-on level and switch-off level that can be lifted.