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Wastewater lifting plants for buildings and sites – Part 3: Lifting plants for limited applications

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Denna standard ersätter SS-EN 12050-3, utgåva 1.

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This standard supersedes the Swedish Standard SS-EN 12050-3, edition 1.

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EUROPEAN STANDARD

EN 12050-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2015

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English Version

Wastewater lifting plants for buildings and sites - Part 3: Lifting plants for limited applications

Stations de relevage d'effluents pour les bâtiments et terrains - Partie 3 : Stations de relevage à application limitée pour effluents

Abwasserhebeanlagen für die Gebäude- und Grundstücksentwässerung - Teil 3: Hebeanlagen zur begrenzten Verwendung

This European Standard was approved by CEN on 17 January 2015.

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Foreword

This document (EN 12050-3:2015) 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of an identical text or by endorsement, at the latest by September 2015 and conflicting national standards shall be withdrawn at the latest by December 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12050-3:2000.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the Regulation (EU) No. 305/2011.

For relationship with EU Regulation, see informative Annex ZA, which is an integral part of this document.

EN 12050 “*Wastewater lifting plants for buildings and sites*” consists of the following parts:

- Part 1: *Lifting plants for wastewater containing faecal matter*
- Part 2: *Lifting plants for faecal-free wastewater*
- Part 3: *Lifting plants for limited applications*
- Part 4: *Non-return valves for faecal-free wastewater and wastewater containing faecal matter*

The main changes with respect to the previous edition are listed below:

- a) Title was shortened and scope changed to apply for lifting plants for limited applications for domestic non-commercial wastewater containing or not containing faecal matter;
- b) reaction to fire added;
- c) paragraph title “Evaluation of conformity” changed to “Assessment and verification of constancy of performance – AVCP” and updated in accordance with “Implementation of the Construction Products Regulation (CPR) in harmonized standards”;
- d) Annex ZA updated in accordance with “Implementation of the Construction Products Regulation (CPR) in harmonized standards” (adoption of the Regulation EU No. 305/2011);
- e) editorially revised.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard applies to lifting plants for limited applications for domestic non-commercial wastewater containing or not containing faecal matter and located below flood level.

NOTE Limited application means that the number of users is small and the plant is located in the same room as the sanitary appliance(s) served by it¹⁾ which are installed in accordance with EN 12056-1 and the layout and calculation are in accordance with EN 12056-4.

This European Standard applies to lifting plants for limited applications designed for wastewater containing faecal matter, where there is another WC available above flood level, and the plants serve no more than a single WC to which it is directly connected (at a distance of max. 0,5 m) and one hand washbasin, one shower and one bidet provided no other sanitary appliance is directly or indirectly connected.

This European Standard also applies to lifting plants for limited applications designed for faecal free wastewater, where a maximum of one hand washbasin or kitchen sink plus one further appliance such as a bathtub or a washing machine or a shower or a dish washer or an urinal are connected. No other sanitary appliance shall be directly or indirectly connected.

This European Standard contains general requirements, basic construction and testing principles, together with information on materials.

Construction and testing requirements for non-return valves used in wastewater lifting plants for limited applications are given in EN 12050-4.

This European Standard does not apply for lifting plants for limited applications for wastewater containing faecal matter where WC flushing is carried out by pressure flush valve.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 33, *WC pans and WC suites — Connecting dimensions*

EN 997, *WC pans and WC suites with integral trap*

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

EN 12056-4, *Gravity drainage systems inside buildings — Part 4: Wastewater lifting plants — Layout and calculation*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

¹⁾ The installation of a faecal lifting plant for limited applications above flood level is normally not allowed but limited to exceptional cases described in EN 12056-1; lifting plants above flood level are not subject to this standard.

EN ISO 9906:2012, *Rotodynamic pumps — Hydraulic performance acceptance tests — Grades 1, 2 and 3 (ISO 9906:2012)*

EN ISO 20361, *Liquid pumps and pump units — Noise test code — Grades 2 and 3 of accuracy (ISO 20361)*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

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

3.1.1

lifting plant for limited applications

device for the automatic lifting of wastewater which may or may not contain faecal matter to a height above flood level from sanitary appliances connected to it and located in the same room

Note 1 to entry A non-return valve according to EN 12050–4 is a component of the plant.

3.1.2

flood level

maximum level to which waste water can rise within a drainage system

[SOURCE: EN 12056-1:2000, 3.1.7]

3.1.3

tank of lifting plant for limited applications

integral part of a lifting plant for limited applications, containing the pump and its controls and the liquid volume required by the pump installation to fulfil its function

Note 1 to entry The tank of a lifting plant for limited applications is not considered to be a collection tank according to EN 12050–1.

3.1.4

pumping device of lifting plant for limited applications

component of a lifting plant for limited applications which pumps wastewater to a height above flood level

3.1.5

maximum pump operating pressure

maximum hydrostatic pressure that the pumping device is capable to create

3.1.6

ball passage

passage where a ball with a defined diameter can pass through without deformation

3.2 Symbols and abbreviations

3.2.1 Symbols

d_i pipe internal diameter, in mm

Q flow rate, in l/s

H discharge head, in m

v flow velocity, in m/s

3.2.2 Abbreviations

AVCP	assessment and verification of constancy of performance
DN	nominal diameter
CWT	classified without testing
CWFT	classified without further testing
SBI	single burn item
DoP	declaration of performance
FPC	factory production control

4 Material and product characteristics

4.1 Materials

Materials used shall be adequate to meet the demands of installation and operation. Materials shall comply with the requirements of this standard and shall not release dangerous substances (see 4.10). Examples of suitable materials for the construction of wastewater lifting plants are given in Annex A (informative).

For tanks only corrosion resistant materials or materials with a corrosion resistant protective coating shall be used.

4.2 Mechanical resistance

The structural stability of tanks shall be shown to be adequate for the place of installation. When tested according to 5.3.1 the tank shall be tight and shall not show any deformation influencing subsequent function of the lifting plant.

4.3 Watertightness

Lifting plants for limited applications, except their inlet, outlet and vent openings, shall be closed and watertight when tested according to 5.3.1.

4.4 Odourtightness

Lifting plants for limited applications for wastewater containing faecal matter shall be odourtight when tested according to 5.3.2.

4.5 Lifting effectiveness

4.5.1 General

The lifting plant for limited applications shall be capable of pumping domestic wastewater including all the solid matter it usually contains, as defined in EN 12056-1. It shall be designed in such a way that solid matter generally does not accumulate.

Lifting plants for limited applications for wastewater containing faecal matter with macerators are generally not suitable for handling wastewater with abrasive solids (e.g. sand).

Lifting plants for limited applications for faecal free wastewater shall be capable of pumping wastewater which can contain sand particles and other solids up to 2 mm size.