

Irish Standard I.S. EN 16932-2:2018

Drain and sewer systems outside buildings -Pumping systems - Part 2: Positive pressure systems

© CEN 2018 No copying without NSAI permission except as permitted by copyright law.

I.S. EN 16932-2:2018

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R.~xxx: Standard~Recommendation-recommendation~based~on~the~consensus~of~an~expert~panel~and~subject~to~public~consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on: Published:

EN 16932-2:2018 2018-04-11

This document was published ICS number:

under the authority of the NSAI

2018-04-30

and comes into effect on: 93.030

NOTE: If blank see CEN/CENELEC cover page

NSAI T +353 1 807 3800 Sales:

 1 Swift Square,
 F +353 1 807 3838
 T +353 1 857 6730

 Northwood, Santry
 E standards@nsai.ie
 F +353 1 857 6729

 Dublin 9
 W NSAI.ie
 W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

National Foreword

I.S. EN 16932-2:2018 is the adopted Irish version of the European Document EN 16932-2:2018, Drain and sewer systems outside buildings - Pumping systems - Part 2: Positive pressure systems

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This is a free page sample. Access the full version online.

This page is intentionally left blank

EUROPEAN STANDARD

EN 16932-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2018

ICS 93.030

Supersedes EN 1091:1996, EN 1671:1997

English Version

Drain and sewer systems outside buildings - Pumping systems - Part 2: Positive pressure systems

Réseaux d'évacuation et d'assainissement à l'extérieur des bâtiments - Systèmes de pompage - Partie 2:

Systèmes sous pression

Entwässerungssysteme außerhalb von Gebäuden -Pumpsysteme - Teil 2: Druckentwässerungssysteme

This European Standard was approved by CEN on 22 January 2018.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 16932-2:2018 (E)

Con	Page European foreword4			
Europ				
1	Scope	5		
2	Normative references	5		
3	Terms and definitions	5		
4	Symbols and units	7		
5	General	8		
6	Planning of positive pressure systems	8		
6.1	Type of pumping station	8		
6.1.1	Introduction			
6.1.2	Pumping stations with submersible pumps	9		
6.1.3	Pumping stations with dry installed pumps	11		
6.1.4	Other types of pumping stations	11		
6.2	Selection of type of pumping station	12		
6.3	Route and profile of rising mains	12		
7	Hydraulic design of pumping systems	13		
, 7.1	Introduction			
7.2	Establish inflow rates	_		
7.2.1	Foul wastewater pumping stations			
7.2.2	Surface water pumping installations			
7.2.3	Combined sewer pumping stations			
7.3	Select desired pump flow rates			
7.4	Dimensioning collection tank			
7.5	Select rising main diameter			
7.5.1	Pumping stations			
7.5.2	Pressure sewer systems			
7.6	Retention period			
7.7	Calculation of system characteristics			
7.7.1	System head calculation			
7.7.2	Pressure sewer systems			
7.8	Selection of pump units and duty points			
7.9	Check pressure transients (waterhammer)			
8	Detailed design of pumping stations	23		
8.1	General	23		
8.2	Layout	23		
8.3	Collection tank	24		
8.4	Pump units	25		
8.4.1	Pumps	25		
8.4.2	Air compressor units	25		
8.5	Controls and electrical equipment and instrumentation	25		
9	Septicity			
9.1	General			
9.2	Control of septicity			
9.2.1	General	27		

This is a free page sample. Access the full version online. I.S. EN 16932-2:2018

EN 16932-2:2018 (E)

9.2.2	Limiting retention period	27
9.2.3	Air flushing	27
9.2.4	Chemical treatment	28
9.2.5	Hydrogen sulphide stripping	28
	Dilution of the septic wastewater in fresh wastewater	
10	Testing and verification	
10.1	Pumping stations	28
10.2	Rising mains	28
10.3	Commissioning	28
11	Operation and maintenance manual	29
Biblio	ography	30

EN 16932-2:2018 (E)

European foreword

This document (EN 16932-2:2018) 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 October 2018, and conflicting national standards shall be withdrawn at the latest by October 2018.

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

Together with EN 16932-1:2018 and EN 16932-3:2018, this document supersedes EN 1091:1996 and EN 1671:1997.

EN 16932, *Drain and sewer systems outside buildings — Pumping systems*, contains the following parts:

- Part 1: General requirements;
- Part 2: Positive pressure systems;
- Part 3: Vacuum systems.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 16932-2:2018 (E)

1 Scope

This European Standard specifies requirements for design, construction and acceptance testing of wastewater pumping systems in drain and sewer systems outside the buildings they are intended to serve. It includes pumping systems in drain and sewer systems that operate essentially under gravity as well as systems using either positive pressure or partial vacuum.

This document is applicable to positive pressure systems.

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 1610:2015, Construction and testing of drains and sewers

EN 12050-1:2015, Wastewater lifting plants for buildings and sites — Part 1: Lifting plants for wastewater containing faecal matter

EN 12050-2, Wastewater lifting plants for buildings and sites — Part 2: Lifting plants for faecal-free wastewater

EN 12050-3, Wastewater lifting plants for buildings and sites — Part 3: Lifting plants for limited applications

EN 12050-4, Wastewater lifting plants for buildings and sites — Part 4: Non-return valves for faecal-free wastewater and wastewater containing faecal matter

EN 16323:2014, Glossary of wastewater engineering terms

EN 16932-1:2018, Drain and sewer systems outside buildings — Pumping systems — Part 1: General requirements

EN 16933-2:2017, Drain and sewer systems outside buildings — Design — Part 2: Hydraulic design

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16323, in EN 16932-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

Note 1 to entry: Certain key definitions from EN 16323:2014 have been repeated below for clarity. The following additional terms used in this document are defined in EN 16323:

aerobic;	maintenance;
anaerobic;	pumping station;



This is a free preview	 Purchase the entire 	e publication at the link below:
------------------------	---	----------------------------------

Product Page

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation