

<b>STN</b>	<b>Zhodnocovanie, recyklácia, úprava a likvidácia kalu</b> <b>Požiadavky a odporúčania na prevádzku zariadení na anaeróbnú stabilizáciu kalu (ISO 19388: 2023)</b>	<b>STN EN ISO 19388</b>  75 7963
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Sludge recovery, recycling, treatment and disposal - Requirements and recommendations for the operation of anaerobic digestion facilities (ISO 19388:2023)

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/26

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EUROPEAN STANDARD

**EN ISO 19388**

NORME EUROPÉENNE

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September 2025

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## Sludge recovery, recycling, treatment and disposal - Requirements and recommendations for the operation of anaerobic digestion facilities (ISO 19388:2023)

Valorisation, recyclage, traitement et élimination des  
boues - Exigences et recommandations pour  
l'exploitation des installations de digestion anaérobie  
(ISO 19388:2023)

Schlammgewinnung, -verwertung, -behandlung und -  
beseitigung - Anleitung für den Betrieb anaerober  
Faulungsanlagen (ISO 19388:2023)

This European Standard was approved by CEN on 22 September 2025.

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**EN ISO 19388:2025 (E)**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

## **European foreword**

The text of ISO 19388:2023 has been prepared by Technical Committee ISO/TC 275 "Sludge recovery, recycling, treatment and disposal" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 19388:2025 by Technical Committee CEN/TC 308 "Characterization and management of sludge" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by March 2026, and conflicting national standards shall be withdrawn at the latest by March 2026.

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## **Endorsement notice**

The text of ISO 19388:2023 has been approved by CEN as EN ISO 19388:2025 without any modification.

**INTERNATIONAL  
STANDARD**

**ISO  
19388**

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**Sludge recovery, recycling, treatment  
and disposal — Requirements and  
recommendations for the operation of  
anaerobic digestion facilities**

*Valorisation, recyclage, traitement et élimination des boues —  
Exigences et recommandations pour l'exploitation des installations de  
digestion anaérobie*



Reference number  
ISO 19388:2023(E)

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# Contents

Page

<b>Foreword</b> .....	<b>v</b>
<b>Introduction</b> .....	<b>vi</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms, definitions and abbreviated terms</b> .....	<b>1</b>
3.1 Terms and definitions.....	1
3.2 Abbreviated terms.....	3
<b>4 Fundamentals</b> .....	<b>3</b>
4.1 Boundaries.....	3
4.2 Principle.....	4
4.3 Pre-treatment.....	5
4.3.1 General.....	5
4.3.2 Physical pre-treatment.....	8
4.3.3 Chemical pre-treatment.....	9
4.3.4 Enzymatic hydrolysis.....	9
4.4 Digester.....	9
4.4.1 Shape.....	9
4.4.2 Configurations.....	10
4.4.3 Mixing system.....	11
4.4.4 Heating system.....	14
4.4.5 Operating temperature.....	14
4.4.6 Line description.....	14
<b>5 Digestion performance</b> .....	<b>15</b>
5.1 Feedstock composition.....	15
5.2 Feeding characterization.....	15
5.3 Evaluation of the potential production of methane.....	16
5.4 Assessment of foaming risks.....	19
5.5 Rheological properties.....	20
5.6 Prediction of biogas quality.....	20
<b>6 Operating performance</b> .....	<b>21</b>
6.1 Pre-treatment.....	21
6.1.1 General.....	21
6.1.2 Shock loading or digester over-loading.....	22
6.1.3 Inadequate or excessive heating.....	22
6.1.4 Commissioning, start-up.....	22
6.1.5 Mixing efficiency and hydraulic retention time.....	24
6.1.6 Gas system.....	25
6.1.7 Gas monitoring.....	26
6.1.8 CH <sub>4</sub> production.....	26
6.1.9 Process monitoring.....	26
6.1.10 Return liquors.....	27
6.2 Digestate quality and characteristics.....	27
6.2.1 Process efficiency.....	27
6.2.2 Dewaterability.....	28
6.2.3 Biogas quality.....	28
6.2.4 Biogas quantity.....	28
6.2.5 Biogas conditioning.....	29
<b>7 Process safety — Trouble shooting</b> .....	<b>30</b>
7.1 Pressure control.....	30
7.2 Stop of CHP machines.....	30
7.3 Odour management.....	30
7.4 Foaming.....	30

**ISO 19388:2023(E)**

7.5	Corrosion.....	31
7.6	Struvite deposits.....	31
7.7	Sand and grit removal.....	31
<b>Annex A (informative) Stabilization of sludge.....</b>		<b>32</b>
<b>Annex B (informative) Chemical parameters of ammonium — pKa values of NH<sub>3</sub>/NH<sub>4</sub><sup>+</sup> .....</b>		<b>35</b>
<b>Bibliography.....</b>		<b>36</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 275, *Sludge recovery, recycling, treatment and disposal*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## ISO 19388:2023(E)

### Introduction

Anaerobic digestion of sewage treatment plant sludge is an increasing market at world scale. It presents advantages for sludge treatment in terms of sludge volume decrease, organic matter recycling and energy recovery.

Standardization of conditions of operation is therefore a main issue to ensure an efficient development of anaerobic digestion treatment. Anaerobic digestion process is subject to appropriate safety measures because it can represent many risks. Safety parameters are included in risks analyses (e.g. HAZOP).

Therefore, the objectives of this document are:

- to reduce volatile solids, mitigate odours production and generate biogas;
- to obtain good process stability and performance;
- to maximize qualities of by-products: digestate quality, biogas quality for different uses (injection of upgraded biogas into the gas grid, liquefied storage, fuel reuse, electricity and heat production);
- to perform safe and reliable operation: industrial safety for piping and automatism network and biogas equipment is in particular an important issue;
- to reduce emission of greenhouse gasses, especially of methane.

Anaerobic stabilization does not mean sludge sanitization: pathogens reduction is limited to 1 log to 3 logs. Higher reduction can only be obtained with specific conditions of temperature and residence time which are not discussed in this document.

# Sludge recovery, recycling, treatment and disposal — Requirements and recommendations for the operation of anaerobic digestion facilities

## 1 Scope

This document establishes requirements and recommendations for the operation of the anaerobic digestion of sludge in order to support safe and sufficient operation of anaerobic digestion facilities to produce sufficient biogas and control by-products qualities.

In particular, conditions to optimize mixing within the reactor and appropriate control systems management for safe and reliable operation are described in this document. Performance of the processes in terms of biogas and digestate production are presented depending on type of technologies available on the market. Blending sludge with waste (co-substrate) and mixing the sludge with organic wastes to increase digester loading are also considered.

This document is applicable to decision-makers and operators in charge of an anaerobic digestion system.

## 2 Normative references

There are no normative references in this document.

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**