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Sludge recovery, recycling, treatment and disposal — Guidance on thermal treatment of sludge

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The UK participation in its preparation was entrusted to Technical Committee EH/5, Sludge characterization.

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Valorisation, recyclage, traitement et élimination des boues - Lignes directrices pour le traitement thermique des boues (ISO/TR 20736:2021)

Schlammgewinnung, -verwertung, -behandlung und -beseitigung - Leitfaden für die thermische Behandlung von Schlamm (ISO/TR 20736:2021)

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Contents

Page

Foreword ..... **vi**
Introduction ..... **vii**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Abbreviated terms **3**
5 Sludge properties **4**
5.1 General 4
5.2 Physico-chemical characteristics 4
5.2.1 General 4
5.2.2 Dry matter 4
5.2.3 Loss on ignition 4
5.2.4 Calorific value 5
5.2.5 Grease, scum and screening 5
5.2.6 Physical consistency and others 6
5.3 Chemical and microbiological characteristics 6
5.3.1 General 6
5.3.2 Sulfur 6
5.3.3 Phosphorus 7
5.3.4 Nitrogen 7
5.3.5 Chlorine and other halogens 7
5.3.6 Organic micro pollutants 7
5.3.7 Trace elements 8
5.3.8 Pathogens 8
6 Thermal processes fundamentals **8**
6.1 General 8
6.2 Drying 9
6.3 Hydrolysis 10
6.4 Incineration 11
6.5 Pyrolysis 12
6.6 Gasification 13
6.7 Thermolysis 14
6.8 Carbonization 14
6.9 Wet oxidation 14
6.10 Melting 15
6.11 Pasteurization 15
7 Technologies **16**
7.1 General 16
7.2 Drying 16
7.2.1 Direct dryers 16
7.2.2 Indirect dryers 20
7.2.3 Solar dryers 22
7.3 Hydrolysis 23
7.4 Incineration 24
7.4.1 Fluidized bed furnace 24
7.4.2 Multiple hearth furnace (MHF) 28
7.4.3 Hybrid furnace 31
7.4.4 Others 32
7.5 Pyrolysis 33
7.6 Gasification 33
7.7 Thermolysis 35
7.8 Carbonization 36

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7.9 Wet oxidation 36
7.10 Melting 37
7.11 Pasteurization 39
7.12 Emerging technologies 40
7.12.1 General 40
7.12.2 Oxidation technologies 40
7.12.3 Enzymatic sludge hydrolysis 41
7.12.4 Plasma gasification 41
7.12.5 Ultrasound pretreatment 41
7.12.6 Microwave irradiation 41
7.12.7 Infrared radiation 42
7.13 Design aspects 42
7.14 Auxiliary equipment 42
7.14.1 General 42
7.14.2 Transport, receiving area, storage and feeding systems 43
7.14.3 Heat supply and recovery 43
7.14.4 Gas cleaning 44
7.14.5 Ash and other residues handling 44
7.14.6 Wastewater treatment 44
7.14.7 Process monitoring 44
7.14.8 Safety systems 45

8 Operational aspects 45
8.1 General 45
8.2 Drying 46
8.3 Hydrolysis 46
8.4 Incineration 46
8.4.1 General 46
8.4.2 Fluidized bed furnace 47
8.4.3 Multiple hearth furnace 48
8.5 Pyrolysis 49
8.6 Gasification 49
8.7 Thermolysis 49
8.8 Carbonization 49
8.9 Wet oxidation 49
8.10 Melting 50
8.11 Pasteurization 50
8.12 Hazards 50

9 Management of energy and secondary resources 50
9.1 General 50
9.2 Drying 51
9.3 Hydrolysis 51
9.4 Incineration 51
9.5 Pyrolysis 52
9.6 Gasification 53
9.7 Thermolysis 54
9.8 Carbonization 54
9.9 Wet oxidation 54
9.10 Melting 54
9.11 Pasteurization 54
9.12 Thermal treatments and circular economy 55

10 Management of residues 55
10.1 General 55
10.2 Flue gas 55
10.2.1 Characteristics and parameters 55
10.2.2 Equipment 57
10.3 Ashes 59
10.3.1 Composition/parameters 59

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10.3.2 Processes and equipment 60
10.4 Wastewater 61
11 Decommissioning of installations 61
11.1 General 61
11.2 Specific considerations 61
12 Co-management with other organic wastes 62
12.1 General 62
12.2 Specific considerations 63
12.3 Additional storage and transport aspects 65
12.3.1 General 65
12.3.2 Storage 65
12.3.3 Transport 66
13 Assessment of sustainability 66
13.1 General 66
13.2 Environmental aspects 67
13.3 Economical aspects 67
13.4 Social aspects 67
Annex A (informative) **Calorific values calculations 69**
Annex B (informative) **Various systems to input sludge into a household waste incineration plant 70**
Annex C (informative) **Case studies 72**
Annex D (informative) **Regulatory aspects 86**
Bibliography 89

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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).

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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.

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

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Introduction

Sludge treatment and management is globally a growing challenge for most countries:

— sludge is a by-product of water treatment process produced in large quantities as new wastewater treatment facilities are built and the existing ones are upgraded to keep up with the population growth;

— sludge treatment and disposal constitutes one of the most significant costs associated with water and wastewater treatment;

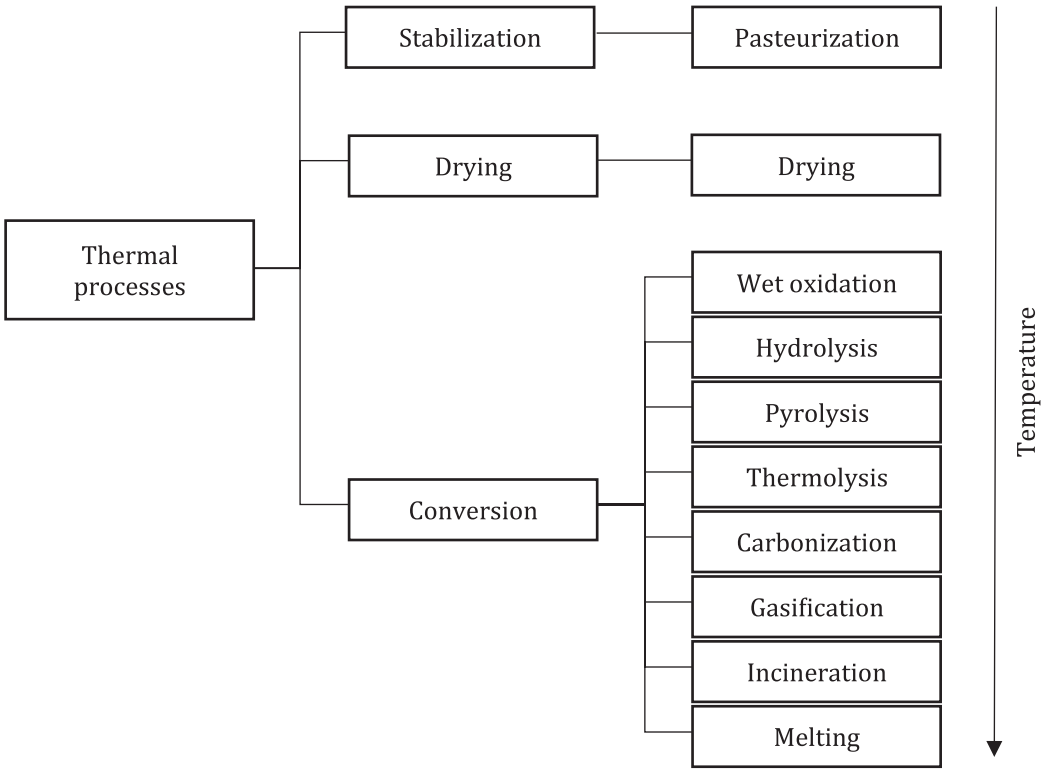
— stricter regulations on conventional outlets such as beneficial agricultural land, composting, landfilling require more treatment due to concerns about the long-term impacts on public health and environment;

— sludge is now being considered as a source of renewable energy, and also a source of valuable components such as carbon and nutrients.

The growing trend to recover energy and resources from waste sludge and stricter regulations on outlets have created interest in a number of thermal treatments and may meet, under certain conditions, the circular economy principles.

The objective of this document is to pragmatically present the methods for thermal treatment of sludge by covering the different process fundamentals, the associated technologies and operational aspects, the management of energy, valuables and residues, the aspects related to impacts and integration of installations referring to them.

Figure 1 highlights the thermal processes covered according to their main function and operating temperature.



NOTE The processes listed in the right column and connected to conversion and drying as main functions also achieve the sludge stabilization.

Figure 1 — Thermal processes covered by this document

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TECHNICAL REPORT **ISO/TR 20736:2021(E)**

Sludge recovery, recycling, treatment and disposal — Guidance on thermal treatment of sludge

1 Scope

This document describes good practices for the incineration and other organic matter treatment by thermal processes of sludges.

Thermal conditioning is excluded.

This document applies to sludges specifically derived from:

— storm water handling;

— night soil;

— urban wastewater collecting systems;

— urban wastewater treatment plants;

— treating industrial wastewater similar to urban wastewater.

It includes all sludge that may have similar environmental and/or health impacts but excludes hazardous sludge from industry and dredged sludge.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
melting
thermal treatment which makes sludge or ash temperature raising over melting point of sludge inorganic substances

3.2
drying
thermal treatment for evaporating water from dewatered sludge to control water content by heating

3.3
carbonization
part of *pyrolysis* (3.4), focusing on production of a solid secondary resource so-called bio-charcoal

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