



BSI Standards Publication

Characterization of sludges — Good practice of sludge dewatering

National foreword

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English Version

Characterization of sludges - Good practice of sludge dewatering

Caractérisation des boues - Bonnes pratiques pour la déshydratation des boues

Charakterisierung von Schlamm - Gute fachliche Praxis der Schlammwässerung

This Technical Report was approved by CEN on 6 November 2012. It has been drawn up by the Technical Committee CEN/TC 308.

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Foreword

This document (CEN/TR 16456:2013) has been prepared by Technical Committee CEN/TC 308 "Characterization of sludges", the secretariat of which is held by AFNOR.

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Introduction

Sludge processing train is a major problem in water and wastewater treatment, as it can account for up to 50 % of total operating costs. The effectiveness and cost of sludge treatment and disposal operations are strongly affected by its volume and, consequently, by its water content or solids concentration. Thickening and dewatering are therefore important steps in the total sludge processing train and have serious impact on subsequent operations.

For illustration, Figure 1 shows the existing solutions for sludge water content reduction, and Figure 2 shows the level of dry matter content required for intended utilisation and disposal routes.

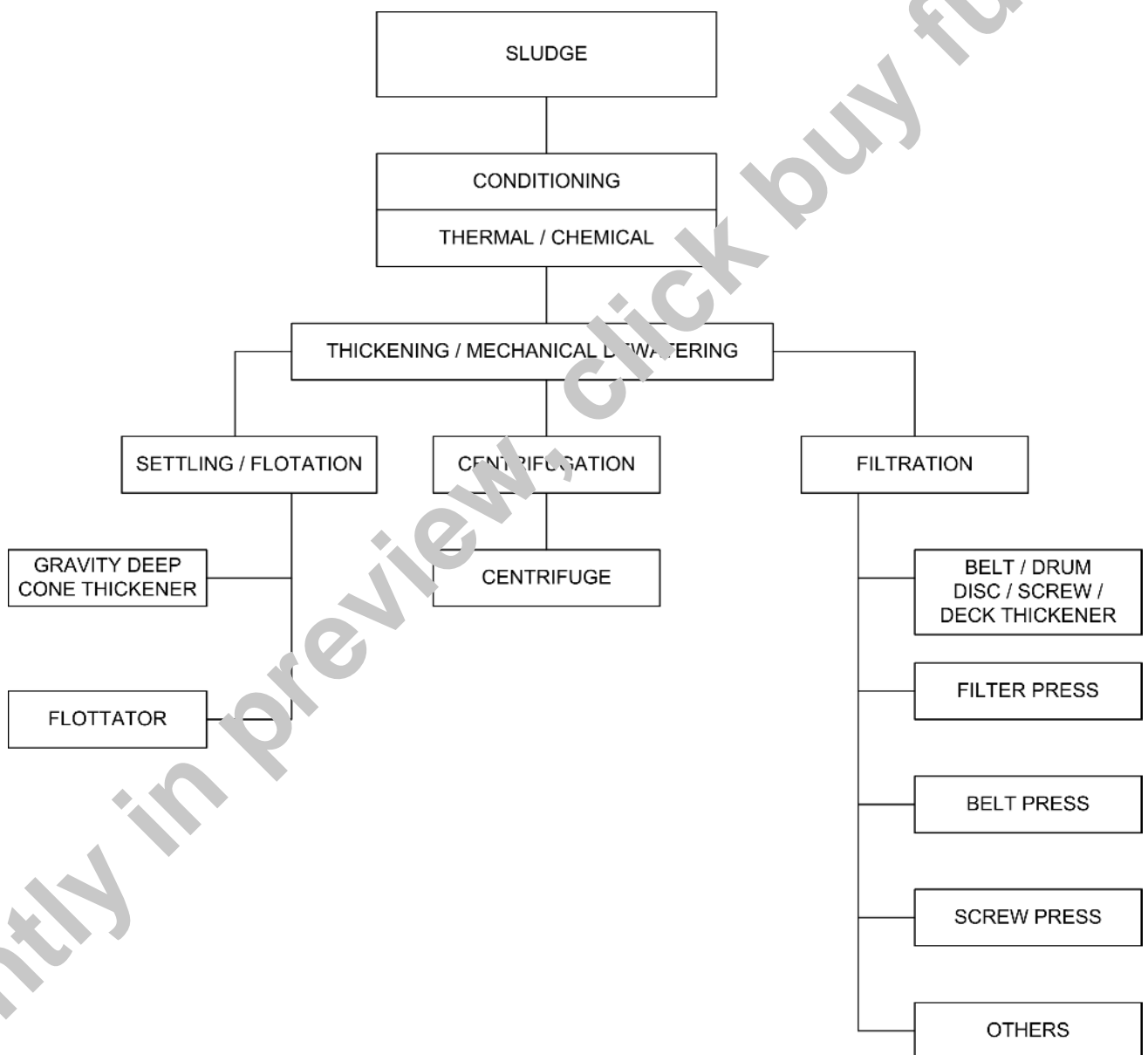


Figure 1 — Principal thickening / dewatering processes

This guide deals with the dewatering and thickening techniques quoted in Figure 1.

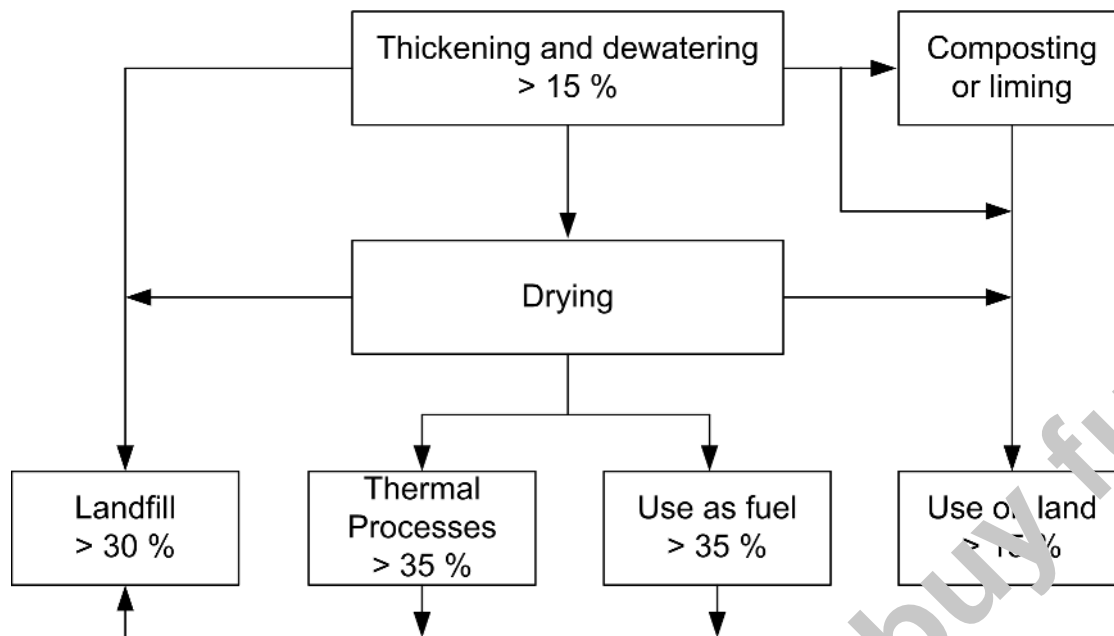


Figure 2 — Percentage Dry Solids (DS) usually required after thickening and dewatering for intended routes

Sludges management options are developed in a series of CEN Technical Reports to which belong the present report, see Figure 3 below.

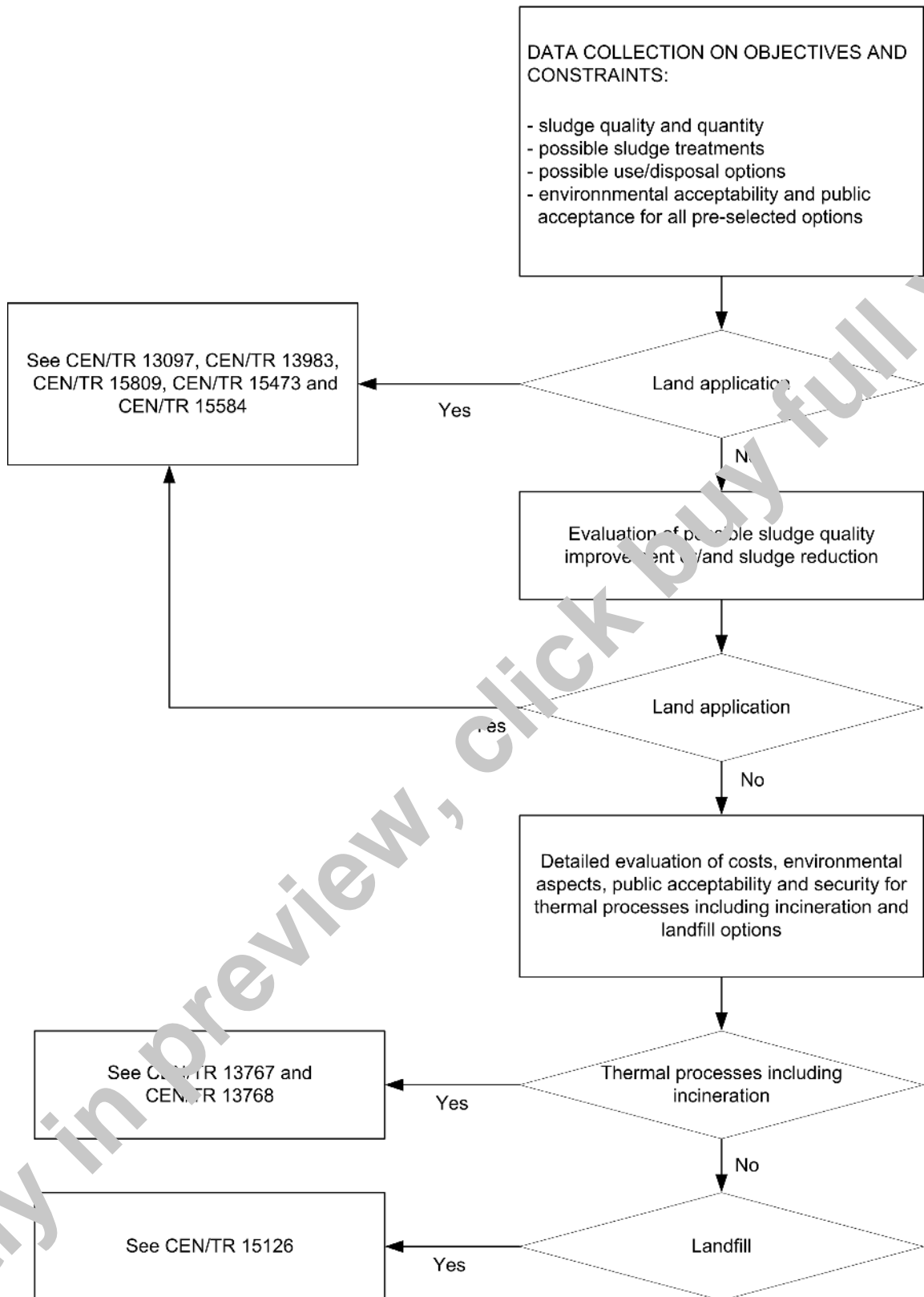


Figure 3 — A basic scheme for deciding on sewage sludge use/disposal options and the relevant CEN/TC 308 guidance documents

1 Scope

This Technical Report describes good practice for sludge dewatering and belongs to a series on sludge management options.

It gives guidance on technical and operational aspects of conditioning, thickening and dewatering processes.

Drying, which is another water content reduction process, is not dealt with in this document, but in CEN/TR 15473, *Characterization of sludges — Good practice for sludges drying*.

This report is applicable for sludges from:

- urban wastewater treatment plants;
- treatment plants for industrial wastewater similar to urban wastewater;
- water supply treatment plants.

This document may be applicable to sludges of other origin.

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 12832:1999, *Characterization of sludges — Utilization and disposal of sludges — Vocabulary*

prEN 16323:2011, *Glossary of wastewater engineering terms*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12832:1999, prEN 16323:2011 and the following (taken either from the normative references or from a technical dictionary [1]) apply.

3.1

cake

solid fraction of sludge as resulting from a solid-liquid separation process

3.2

centrate

sludge liquor separated by centrifugation

3.3

centrifugation

partial separation of solid from liquid under centrifugal forces

3.4

charge density

percentage of positive or negative charge

3.5

compressibility

ability of a sludge to be compressed under pressure