



BSI Standards Publication

Characterization of sludges — Physical consistency

Part 1: Determination of flowability —
Method by extrusion tube apparatus

National foreword

This British Standard is the UK implementation of EN 16720-1:2016.

BSI, as a member of CEN, is obliged to publish EN 16720-1:2016 as a British Standard. However, attention is drawn to the fact that during the development of this European Standard, the UK committee voted against its approval as a European Standard.

The UK committee is concerned that the validation trials (Annex C) have not been completed. Consequently it is difficult to assess the reproducibility and performance of this method.

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

A list of organizations represented on this committee can be obtained on request to its secretary.

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

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Amendments/corrigenda issued since publication

Date	Text affected
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English Version

Characterization of sludges - Physical consistency - Part 1: Determination of flowability - Method by extrusion tube apparatus

Caractérisation des boues - Consistance physique -
Partie 1: Détermination de l'aptitude à l'écoulement -
Méthode utilisant un appareil à tube d'extrusion

Charakterisierung von Schlämmen - Physikalische
Beschaffenheit - Teil 1: Bestimmung des
Fließverhaltens - Verfahren mit Gerät mit
Extrusionsrohr

This European Standard was approved by CEN on 19 March 2016.

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 16720-1:2016) has been prepared 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of an identical text or by endorsement, at the latest by November 2016 and conflicting national standards shall be withdrawn at the latest by November 2016.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.

EN 16720, *Characterization of sludges - Physical consistency* consists of the following two parts:

- *Part 1: Determination of flowability - Method by extrusion tube apparatus*
- *Part 2: Determination of solidity* (in preparation)

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.

Introduction

The evaluation of physical consistency is recognized to be very important since it affects almost all treatment, utilization and disposal operations, such as storage, pumping, transportation, handling, land spreading, de-watering, drying, landfilling. It is also to be pointed out that in many analytical methods for sludge characterization (e.g. pH, dry matter, leachability, etc.), different procedures are required depending on whether the sample to be examined is liquid or not. No standardized procedures have previously been available for the evaluation of this sludge property.

Physical consistency is a characteristic strictly linked to the rheological properties of fluids. Details on flow behaviour of fluids are available in Annex A (informative).

Flowability represents the boundary area between the liquid and the paste-like physical state, i.e. the state in which a sludge is able to “flow” under the effect of gravity or pressure below a certain threshold (CEN/TR 15463).

This document defines a method for determining the flowability of sludge (Flowability index, F_i) by means of an extrusion tube apparatus.