

# Teknisk rapport

## SIS-CEN/TR 15252:2007

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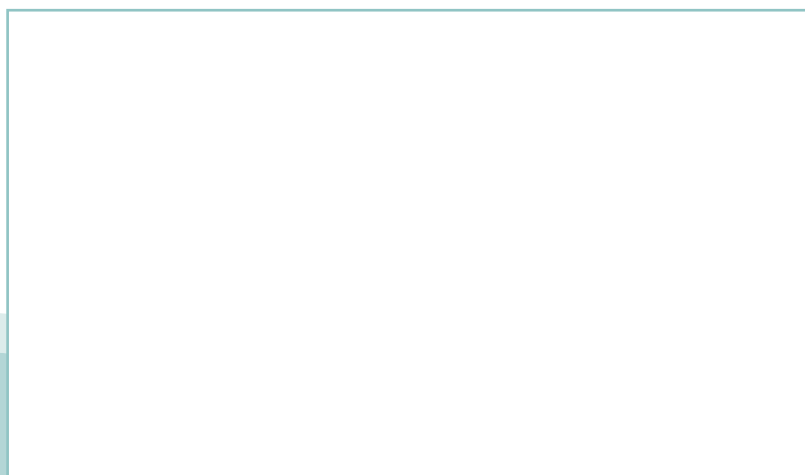
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**Karaktärisering av slam – Procedur för validering av metoder för bestämning av fysikaliska egenskaper hos slam**

**Characterization of sludges – Protocol for validating methods for physical properties of sludges**



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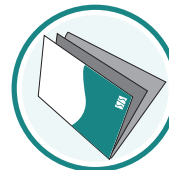
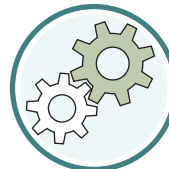
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Dokumentet är framtaget av kommittén för Karaktärisering av avfall, mark och slam, SIS/TK 535.

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TECHNICAL REPORT  
RAPPORT TECHNIQUE  
TECHNISCHER BERICHT

**CEN/TR 15252**

July 2006

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ICS 13.030.20

English Version

**Characterization of sludges - Protocol for validating methods for  
physical properties of sludges**

Caractérisation des boues - Protocole de validation des  
méthodes de détermination des propriétés physiques des  
boues

Charakterisierung von Schlämmen - Protokoll für  
Validierungsmethoden von physikalischen  
Schlammeigenschaften

This Technical Report was approved by CEN on 7 February 2006. It has been drawn up by the Technical Committee CEN/TC 308.

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

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## Foreword

This Technical Report (CEN/TR 15252:2006) 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

To be published as a “*standard*”, all the methods defined by CEN must be validated through interlaboratory trials. The *validation* procedure is carried out after the 6-months enquiry and before the formal vote, in order to incorporate comments received during enquiry into the final version to be officially approved.

Validation usually consists in analyzing reference samples circulated to many laboratories in different countries and in evaluating the “*repeatability/reproducibility*” of measurements, where:

- *Repeatability* is defined as the ability of a method to reproduce a measurement while being tested under an unchanging set of conditions. This does not imply that the obtained value is correct, but rather that it is the same every time;
- *Reproducibility* is the same as repeatability, but at a different set of conditions. It is therefore a more realistic indication of a method to reproduce a measurement, whenever a predefined set of conditions is recreated.

However, for physical parameters, with the exception of calorific value, samples of “*dried sludge*” cannot be used for analysis, but only “*fresh sludge*” samples, with the consequence that many problems arise because:

- the sludge physical characteristics change with time of storage, also considered that any preservation practice (e.g. freezing) makes things worse;
- the sludge physical characteristics are strongly affected by transport and handling;
- fresh sludge requires particular precautions and authorization for transport by ordinary delivering systems.

This involves that “*fresh sludge*” samples need to be examined by laboratories close to wastewater or waterworks plants and analysed as soon as possible, minimising their manipulation, so the circulation of fresh sludge samples to laboratories in several places and in different countries requires well defined procedures to guarantee the reliability of results.

A valid alternative could consist in the examination of “*synthetic sludge*” samples to be on-site prepared on the base of a defined recipe and ingredients.

Another possibility is carrying out validation tests through “*circulation of analysts*”, and not “*circulation of samples*”, thus allowing analysts from the participating laboratories to meet in a laboratory close to the place where samples are collected.

Finally, if any of the above options cannot be followed, validation could be limited to a “*confidence level evaluation*” through the statistical evaluation of sludge samples taken in different works and examined in laboratories located close to the respective works.

Therefore, one of the three procedures, which are described in the following, should be followed:

- the first by examining “*real or synthetic reference*” samples in different laboratories (*conventional round robin tests*);
- the second in examining “*reference*” samples in one laboratory, close to the place where samples are collected, where analysts from the participating laboratories will meet and work with their own apparatuses (*modified round robin tests*);
- the third including the statistical evaluation of sludge samples taken in different works and examined in laboratories located close to the respective works (*confidence level evaluation*).

In all cases, preliminary planning and arrangements are required.