

ICS 75.160.10

English Version

**Solid recovered fuels - Methods for the determination of density
of pellets and briquettes**

Combustibles solides de récupération - Méthodes pour la
détermination de la densité des granulés et des briquettes

Feste Sekundärbrennstoffe - Verfahren zur Bestimmung
der Dichte von Pellets und Briketts

This Technical Specification (CEN/TS) was approved by CEN on 25 March 2006 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Principle.....	5
5 Apparatus	5
6 Sampling and sample preparation	8
7 Procedure	8
8 Calculation.....	9
9 Precision	10
10 Test report	10
Annex A (informative) Correction values for the density of water as a function of temperature	11
Annex B (informative) Volume determination of regularly shaped briquettes by stereometry.....	12
Bibliography	14

Foreword

This document (CEN/TS 15405:2006) has been prepared by Technical Committee CEN/TC 343 "Solid recovered fuels", the secretariat of which is held by SFS.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This Technical Specification specifies a method for the determination of particle density where the required volume is measured by the buoyancy in a liquid. The parameter particle density is not an absolute value, therefore conditions for its determination should be standardised in order to gain comparative measuring results. Practical experience shows that for briquettes, the method specified is also replaceable by a similar measurement applying a gravimetrical determination of the volume via the displaced liquid. In this case, the container with the liquid is not positioned underneath the balance as specified in this Technical Specification but is placed onto the balance which would then have to carry a higher total mass (at the same accuracy requirements). For all other requirements (e.g. for the wetting agent), the procedure as outlined in this Technical Specification should be followed, except, that the equation for density calculation shall be modified accordingly.

This Technical Specification is based on CEN/TS 15150 [1].

1 Scope

This Technical Specification specifies a method for the determination of particle density of irregularly shaped pieces of compressed fuels such as pellets or briquettes.

NOTE Particle density is subject to variation due to the susceptibility of organic material to environmental or technical impacts such as air humidity, vibration, abrasion or biodegradation. Therefore, particle density can vary during time thus the measured values should be regarded as a momentary fuel property.

2 Normative references

The following referenced documents are indispensable for the application of this Technical Specification. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CEN/TS 15357:2006, *Solid recovered fuels — Terminology, definitions and descriptions*

CEN/TS 15359, *Solid recovered fuels — Specifications and classes*

prCEN/TS 15442, *Solid recovered fuels — Methods for sampling*

prCEN/TS 15443, *Solid recovered fuels — Methods for laboratory sample preparation*

CEN/TS 15414-1, *Solid recovered fuels — Determination of moisture content using the oven dry method — Part 1: Determination of total moisture by a reference method*

CEN/TS 15414-2, *Solid recovered fuels — Determination of moisture content using the oven dry method — Part 2: Determination of total moisture by a simplified procedure*

3 Terms and definitions

For the purposes of this Technical Specification, the terms and definitions given in CEN/TS 15357:2006 apply.

4 Principle

Both mass and volume of an individual particle or a group of particles are determined. The volume is measured by determining the buoyancy in a liquid. This procedure follows the physical principle that the buoyancy of a body is equal to the mass of the displaced volume of a liquid. The apparent loss in mass between a measurement in air and a subsequent measurement in liquid marks its buoyancy. The volume of the sample body is calculated via the density of the applied liquid.

5 Apparatus

5.1 General apparatus requirements

5.1.1 Thermometer, for liquids, with an accuracy of 1 °C.

5.1.2 Facilities, for moisture content determination in accordance with CEN/TS 15414-2.