

English Version

**Solid biofuels - Determination of particle size distribution - Part 3:  
Rotary screen method**

Biocombustibles solides - Détermination de la distribution  
granulométrique - Partie 3 : Méthode au tamis rotatif

Feste Biobrennstoffe - Bestimmung der  
Teilchengrößenverteilung - Teil 3: Verfahren mit  
rotierendem Sieb

This Technical Report was approved by CEN on 18 July 2011. It has been drawn up by the Technical Committee CEN/TC 335.

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## Foreword

This document (CEN/TR 15149-3:2014) has been prepared by Technical Committee CEN/TC 335 "Solid biofuels", the secretariat of which is held by SIS.

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.

This document supersedes CEN/TS 15149-3:2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

EN 15149, *Solid biofuels — Determination of particle size distribution*, consists of the following parts:

- *Part 1: Oscillating screen method using sieve apertures of 1 mm and above;*
- *Part 2: Vibrating screen method using sieve apertures of 3,15 mm and below;*
- *Part 3: Rotary screen method* [Technical Report; the present document].

The most significant changes since the latest edition of this text are the following ones:

- The former edition was a Technical Specification; it was turned into the present Technical Report.
- References have been consistently updated.

## Introduction

Part 1 describes the reference method for size classification of samples with a nominal top size of 3,15 mm and over.

Part 2 describes the reference methods for all samples with a nominal top size below 3,15 mm.

Part 3 describes an innovative method, by which the degree of overestimating the fine particle fractions is reduced. As it is currently not generally available, it is here proposed for research and development purposes or for individual quality management processes, in which the quality requirements are bilaterally defined between the suppliers and consumers based on this method.

NOTE The nominal top size is defined as the aperture size of the sieve where at least 95 % by mass of the material passes (see Bibliography).

## 1 Scope

This Technical Report specifies a method for the determination of the size distribution of particulate biofuels by the rotary screen method. The method described is meant for particulate biofuels only, namely materials that either have been reduced in size, such as most wood fuels, or are physically in a particulate form e.g. olive stones, nutshells, grain, etc. This document applies to particulate uncompressed fuels with a nominal top size of 3,15 mm and over, e.g. wood chips, hog fuel, olive stones, etc.

## 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 14778, *Solid biofuels — Sampling*

EN 14780, *Solid biofuels — Sample preparation*

EN 14774-1, *Solid biofuels — Determination of moisture content - Oven dry method — Part 1: Total moisture — Reference method*

EN 14774-2, *Solid biofuels — Determination of moisture content — Oven dry method — Part 2: Total moisture — Simplified method*

EN 15149-2, *Solid biofuels — Determination of particle size distribution — Part 2: Vibrating screen method using sieve apertures of 3,15 mm and below*

EN ISO 16559, *Solid biofuels — Terminology, definitions and descriptions (ISO 16559)*

ISO 3310-2, *Test sieves — Technical requirements and testing — Part 2: Test sieves of perforated metal plate*

## 3 Terms and definitions

For the purpose of this document, the terms and definitions given in EN ISO 16559 apply.

### 3.1

#### **nominal top size**

aperture size of the sieve where at least 95 % by mass of the material passes

## 4 Principle

A sample is subjected to sieving through sieves in a rotary sieving machine sorting the particles by increasing size.

## 5 Apparatus

### 5.1 Rotary screen.

For the test a rotary sieving device is required for which the operating principle is shown in Figure 1. The rotary sieving device consists of five joined cylindrical sieve rings each with an inner diameter of 500 mm