

## **Solid recovered fuels - Terminology, definitions and descriptions**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 15357:2011 sisaldb Euroopa standardi EN 15357:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 15357:2011 consists of the English text of the European standard EN 15357:2011.
Standard on kinnitatud Eesti Standardikeskuse 31.03.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 31.03.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kätesaadavaks tegemise kuupäev on 09.03.2011.	Date of Availability of the European standard text 09.03.2011.
Standard on kätesaadav Eesti standardiorganisatsionist.	The standard is available from Estonian standardisation organisation.

ICS 01.040.75, 75.160.10

### Standardite reproduutseerimis- ja levitamisõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:  
Aru 10 Tallinn 10317 Estonia; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

### Right to reproduce and distribute belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:  
Aru str 10 Tallinn 10317 Estonia; [www.evs.ee](http://www.evs.ee); Phone: 605 5050; E-mail: [info@evs.ee](mailto:info@evs.ee)

EUROPEAN STANDARD

**EN 15357**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2011

ICS 01.040.75; 75.160.10

Supersedes CEN/TS 15357:2006

English Version

## Solid recovered fuels - Terminology, definitions and descriptions

Combustibles solides de récupération - Terminologie,  
définitions et descriptions

Feste Sekundärbrennstoffe - Terminologie, Definitionen  
und Beschreibungen

This European Standard was approved by CEN on 22 January 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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 United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

## Contents

	Page
<b>Foreword.....</b>	<b>5</b>
<b>Introduction .....</b>	<b>6</b>
<b>1 Scope .....</b>	<b>7</b>
<b>2 Normative references .....</b>	<b>7</b>
<b>3 Terms and definitions .....</b>	<b>7</b>
<b>3.1 as received as received basis .....</b>	<b>7</b>
<b>3.2 ash content.....</b>	<b>7</b>
<b>3.3 ash fusibility, ash melting behaviour.....</b>	<b>8</b>
<b>3.4 ash sphere temperature .....</b>	<b>8</b>
<b>3.5 biodegradable .....</b>	<b>8</b>
<b>3.6 biogenic .....</b>	<b>8</b>
<b>3.7 biomass .....</b>	<b>8</b>
<b>3.8 bridging, arching.....</b>	<b>8</b>
<b>3.9 briquette.....</b>	<b>9</b>
<b>3.10 bulk density .....</b>	<b>9</b>
<b>3.11 calorific value heating value .....</b>	<b>9</b>
<b>3.12 chips.....</b>	<b>9</b>
<b>3.13 classification .....</b>	<b>9</b>
<b>3.14 coefficient of variation .....</b>	<b>9</b>
<b>3.15 co-incineration .....</b>	<b>9</b>
<b>3.16 co-incineration plant .....</b>	<b>9</b>
<b>3.17 collection tray.....</b>	<b>9</b>
<b>3.18 combined sample.....</b>	<b>9</b>
<b>3.19 common sample.....</b>	<b>10</b>
<b>3.20 component.....</b>	<b>10</b>
<b>3.21 composition.....</b>	<b>10</b>
<b>3.22 deformation temperature .....</b>	<b>10</b>
<b>3.23 delivery agreement .....</b>	<b>10</b>
<b>3.24 digestion .....</b>	<b>10</b>
<b>3.25 digestion vessel .....</b>	<b>10</b>
<b>3.26 distribution factor .....</b>	<b>10</b>
<b>3.27 drop flow.....</b>	<b>10</b>
<b>3.28 dry dry basis.....</b>	<b>10</b>
<b>3.29 dry ash free dry ash free basis .....</b>	<b>10</b>
<b>3.30 drying .....</b>	<b>10</b>
<b>3.31 dry matter .....</b>	<b>11</b>
<b>3.32 dry matter content .....</b>	<b>11</b>
<b>3.33 duplicate sample.....</b>	<b>11</b>
<b>3.34 durability.....</b>	<b>11</b>
<b>3.35 effective increment size .....</b>	<b>11</b>
<b>3.36 effective sample size .....</b>	<b>11</b>
<b>3.37 emission .....</b>	<b>11</b>
<b>3.38 energy density.....</b>	<b>11</b>
<b>3.39 flowability .....</b>	<b>11</b>
<b>3.40 flow temperature .....</b>	<b>11</b>
<b>3.41 fluff .....</b>	<b>11</b>
<b>3.42 fraction separation.....</b>	<b>12</b>
<b>3.43 fuel.....</b>	<b>12</b>
<b>3.44 fuel particle .....</b>	<b>12</b>
<b>3.45 fuel specification.....</b>	<b>12</b>

3.46	fundamental error .....	12
3.47	general analysis sample .....	12
3.48	gross calorific value .....	12
3.49	gross calorific value at constant volume .....	12
3.50	halogen content .....	12
3.51	hemisphere temperature .....	13
3.52	heterogeneity .....	13
3.53	homogenisation .....	13
3.54	homogeneity .....	13
3.55	incineration .....	13
3.56	incineration plant .....	13
3.57	increment .....	13
3.58	laboratory sample .....	13
3.59	lot .....	14
3.60	lower heating value .....	14
3.61	material flow .....	14
3.62	mechanical durability .....	14
3.63	metallic aluminium .....	14
3.64	microwave unit .....	14
3.65	minimum increment size .....	14
3.66	minimum sample size .....	14
3.67	mixed municipal waste .....	14
3.68	moisture .....	15
3.69	moisture analysis sample .....	15
3.70	municipal waste .....	15
3.71	net calorific value at constant volume .....	15
3.72	net calorific value at constant pressure .....	15
3.73	nominal top size .....	15
3.74	over size particles .....	15
3.75	oxygen combustion .....	15
3.76	particle density .....	15
3.77	particle size .....	15
3.78	particle size distribution .....	15
3.79	particle size reduction .....	16
3.80	pellet .....	16
3.81	point of delivery .....	16
3.82	precision .....	16
3.83	pre-treated waste .....	16
3.84	probabilistic sampling .....	16
3.85	producer .....	16
3.86	proximate analysis .....	16
3.87	random sampling .....	16
3.88	renewable energy sources .....	16
3.89	sample .....	16
3.90	sample container .....	17
3.91	sample preparation .....	17
3.92	sample division sample mass reduction .....	17
3.93	sample size reduction .....	17
3.94	sampling .....	17
3.95	sampling form .....	17
3.96	sampling plan .....	17
3.97	sampling record .....	17
3.98	separate collection .....	17
3.99	shape factor .....	17
3.100	shredding .....	17
3.101	size analysis sample .....	18
3.102	size reduction .....	18
3.103	solid biofuel .....	18
3.104	solid recovered fuel .....	18

3.105	solid recovered fuel blend .....	18
3.106	solid volume .....	18
3.107	sorting .....	18
3.108	sorting at source .....	18
3.109	specification .....	18
3.110	specification of solid recovered fuels .....	18
3.111	static lot .....	18
3.112	stratified sample .....	19
3.113	stratified arbitrary sample .....	19
3.114	stratified random sample .....	19
3.115	sub-lot .....	19
3.116	sub-sample .....	19
3.117	test portion .....	19
3.118	test sample .....	19
3.119	total ash ash content .....	19
3.120	total carbon .....	19
3.121	total chlorine .....	19
3.122	total hydrogen .....	19
3.123	total organic carbon .....	20
3.124	total moisture moisture content .....	20
3.125	total nitrogen .....	20
3.126	total oxygen .....	20
3.127	total sulphur .....	20
3.128	ultimate analysis .....	20
3.129	volatile matter .....	20
3.130	XRF .....	20
3.131	waste .....	20
3.132	waste supplier .....	20
	Annex A (informative) List of terms defined by EN ISO 9000 .....	21
	Bibliography .....	22

## Foreword

This document (EN 15357:2011) has been prepared by Technical Committee CEN/TC 343 "Solid recovered fuels", the secretariat of which is held by SFS.

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 September 2011, and conflicting national standards shall be withdrawn at the latest by September 2011.

This document supersedes CEN/TS 15357:2006.

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 differs from CEN/TS 15357:2006 as follows:

- a) alignment of terms and definitions in all CEN/TC 343 documents as far as possible;
- b) whole document editorially revised

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

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## Introduction

The drafting of this European Standard, that aims to provide a comprehensive solid recovered fuel glossary, has been performed in accordance with ISO 10241:1992 [1].

Terms are arranged in alphabetic order.

Attention is drawn to the fact that the terms:

**biomass, biodegradable, co-incineration plant, emission, incineration plant, renewable energy source, waste, waste supplier**

listed in this European Standard are defined, amongst others, also in the following Directives, Decisions (see Bibliography):

- Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste [3];
- Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market [4];
- Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste [5];
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives [6];
- Commission Decision (2007/589/EC) of 18 July 2007 establishing guidelines for the monitoring and reporting of greenhouse gas emissions [16].

NOTE Legislation can change.

DG XI Director General communicated to CEN in 1996 that "when a definition exists in a Directive, it not only applies strictly for the purposes of the Directive, but also to all adjacent work such as that of CEN. No other definition can be used if not agreed by the Council".

As a consequence, definitions given in European Standards, Technical Specifications or Technical Reports cannot contradict definitions contained in European Legislation.

Many terms defined by EN ISO 9000 are used in the standardisation work within the scope of CEN/TC 343, especially in EN 15358 [17].

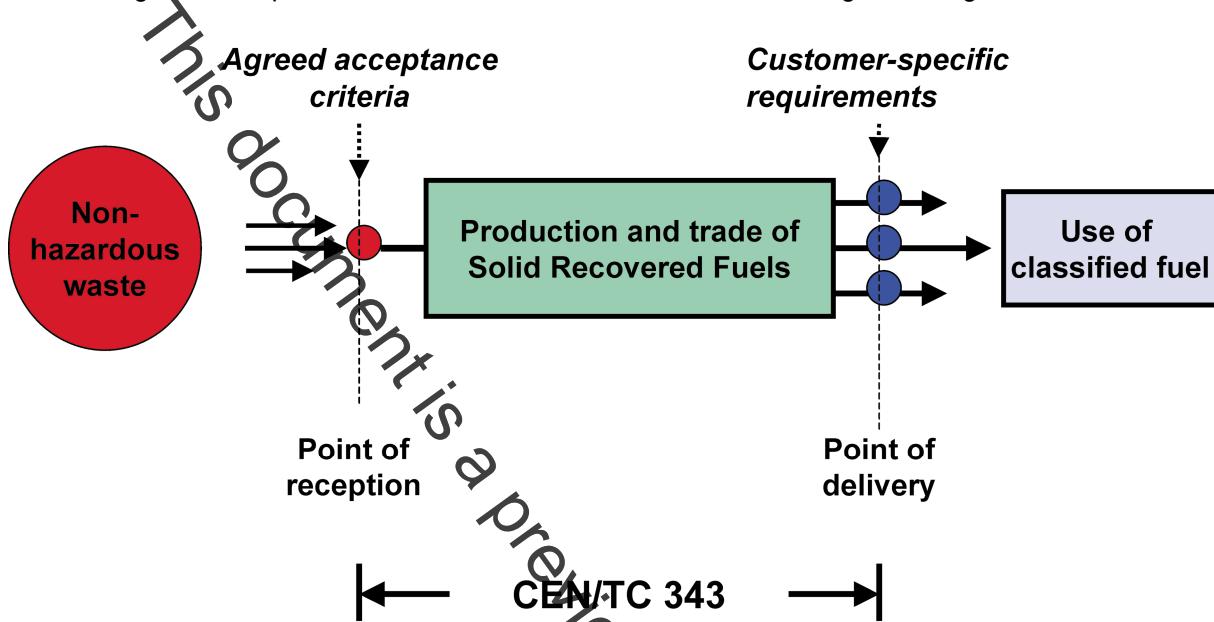
Therefore an informative list of terms defined by EN ISO 9000 is given in Annex A.

## 1 Scope

This European Standard defines terms and definitions concerned in all standardisation work within the scope of CEN/TC 343, i.e. terms used in the field of production and trade of solid recovered fuels that are prepared from non-hazardous waste.

NOTE Solid biofuels are covered by the scope of CEN/TC 335.

The embedding of the scope within the waste/solid recovered fuels field is given in Figure 1.



**Figure 1 — Linkage between selected terms in the field of waste, recovered fuels and conversion to end-use energy**

Definitions in other standards with a scope different from the scope of this European Standard can be different from the definitions in this European Standard.

## 2 Normative references

Not applicable.

## 3 Terms and definitions

### 3.1

**as received**

**as received basis**

calculation basis for material at delivery

### 3.2

**ash content**

see **total ash**