

Overview of European standards and international standards on solid biofuels

As of January 2013

Below table provides an overview of European and international standards on solid biofuels. The European Standards are developed in CEN/TC 335 "Solid biofuels". Most of the standards on the work programme of CEN/TC 335 have been formally published as European (EN) standards. The international standards are developed in ISO/TC 238 "Solid biofuels". The standards on the work programme of ISO/TC 238 are either still under development or the process should formally be initiated. The list of (future) international standards is based on the information available at the so-called ISO Project Portal (31 January 2013); the work programme may extend in future. The work programme of ISO/TC 238 shows much overlap with the work programme of CEN/TC 335, noting that differences exist. For example, where the European standards on fuel specifications and classes (EN 14961 series) focus on non-industrial use, the international standards on this topic (future ISO 17225 series) enlarge the scope to industrial use as well.

European standards (EN)

If dated, the (draft) standard is published and publicly available

Terminology

EN 14588:2010 Solid biofuels – Terminology, definitions and descriptions

Fuel specifications and classes

EN 14961-1:2010 Solid biofuels – Fuel specifications and classes – Part 1: General requirements

EN 14961-2:2011 Solid biofuels – Fuel specifications and classes – Part 2: Wood pellets for non-industrial use

EN 14961-3:2011 Solid biofuels – Fuel specifications and classes – Part 3: Wood briquettes for non-industrial use

EN 14961-4:2011 Solid biofuels – Fuel specifications and classes – Part 4: Wood chips for non-industrial use

EN 14961-5:2011 Solid biofuels – Fuel specifications and classes – Part 5: Firewood for non-industrial use

EN 14961-6:2012 Solid biofuels – Fuel specifications and classes – Part 6: Non-woody pellets for non-industrial use

International standards (ISO)

If dated, the (draft) standard is published and publicly available

Terminology

ISO/DIS 16559 Solid biofuels -- Terminology, definitions and descriptions

Fuel specifications and classes

ISO/DIS 17225-1 Solid biofuels -- Fuel specifications and classes -- Part 1: General requirements

ISO/DIS 17225-2 Solid biofuels -- Fuel specifications and classes -- Part 2: Graded wood pellets

ISO/DIS 17225-3 Solid biofuels -- Fuel specifications and classes -- Part 3: Graded wood briquettes

ISO/DIS 17225-4 Solid biofuels -- Fuel specifications and classes -- Part 4: Graded wood chips

ISO/DIS 17225-5 Solid biofuels -- Fuel specifications and classes -- Part 5: Graded firewood

ISO/DIS 17225-6 Solid biofuels -- Fuel specifications and classes -- Part 6: Graded non-woody pellets

European standards (EN)*If dated, the (draft) standard is published and publicly available***Fuel quality assurance**

EN 15234-1:2011	Solid biofuels – Fuel quality assurance – Part 1: General requirements
EN 15234-2:2012	Solid biofuels – Fuel quality assurance – Part 2: Wood pellets for non-industrial use
EN 15234-3:2012	Solid biofuels – Fuel quality assurance – Part 3: Wood briquettes for non-industrial use
EN 15234-4:2012	Solid biofuels – Fuel quality assurance – Part 4: Wood chips for non-industrial use
EN 15234-5:2012	Solid biofuels – Fuel quality assurance – Part 5: Firewood for non-industrial use
EN 15234-6:2012	Solid biofuels – Fuel quality assurance – Part 6: Non-woody pellets for non-industrial use

Sample and sample preparation

EN 14778:2011	Solid biofuels – Sampling
EN 14780:2011	Solid biofuels – Sample preparation

Physical and mechanical properties

EN 14774-1:2009	Solid biofuels – Determination of moisture content – Oven dry method – Part 1: Total moisture – Reference method
EN 14774-2:2009	Solid biofuels – Determination of moisture content – Oven dry method – Part 2: Total moisture – Simplified method
EN 14774-3:2009	Solid biofuels – Determination of moisture content – Oven dry method – Part 3: Moisture in general analysis sample

International standards (ISO)*If dated, the (draft) standard is published and publicly available*

ISO/DIS 17225-7	Solid biofuels -- Fuel specifications and classes -- Part 7: Graded non-woody briquettes
-----------------	--

Fuel quality assurance

ISO/CD 17588	Solid biofuels -- Fuel quality assurance
--------------	--

ISO/NP 17589	Solid biofuels -- Conformity assessment for fuel quality assurance
--------------	--

Sample and sample preparation

ISO/NP 18135	Solid biofuels -- Sampling
ISO/NP 14780	Solid biofuels -- Sample preparation

Physical and mechanical properties

ISO/CD 18134-1	Solid biofuels -- Determination of moisture content -- Oven dry method -- Part 1: Total moisture -- Reference method
ISO/CDP 18134-2	Solid biofuels -- Determination of moisture content -- Oven dry method -- Part 2: Total moisture - Simplified method
ISO/NP 18134-3	Solid biofuels -- Determination of moisture content -- Oven dry method -- Part 3: Moisture in general analysis sample

European standards (EN)*If dated, the (draft) standard is published and publicly available*

EN 14775:2009	Solid biofuels – Determination of ash content
EN 14918:2009	Solid biofuels – Determination of calorific value
EN 15103:2009	Solid biofuels – Determination of bulk density
EN 15148:2009	Solid biofuels – Determination of the content of volatile matter
EN 15149-1:2010	Solid biofuels – Determination of particle size distribution – Part 1: Oscillating screen method using sieve apertures of 1 mm and above
EN 15149-2:2010	Solid biofuels – Determination of particle size distribution – Part 2: Vibrating screen method using sieve apertures of 3,15 mm and below
CEN/TS 15149-3:2006	Solid Biofuels – Methods for the determination of particle size distribution – Part 3: Rotary screen method
EN 15150:2011	Solid biofuels – Determination of particle density
EN 15210-1:2009	Solid biofuels – Determination of mechanical durability of pellets and briquettes – Part 1: Pellets
EN 15210-2:2010	Solid biofuels – Determination of mechanical durability of pellets and briquettes – Part 2: Briquettes
EN 16126:2012	Solid biofuels – Determination of particle size distribution of disintegrated pellets
EN 16127:2012	Solid biofuels – Determination of length and diameter for pellets and cylindrical briquettes

Chemical analysis

EN 15104:2011	Solid biofuels – Determination of total content of carbon, hydrogen and nitrogen – Instrumental methods
EN 15105:2011	Solid biofuels – Determination of the water soluble chloride, sodium and potassium content
EN 15289:2011	Solid biofuels – Determination of total content of sulfur and chlorine

International standards (ISO)*If dated, the (draft) standard is published and publicly available*

ISO/CD 18122	Solid biofuels -- Determination of ash content
ISO/NP 18125	Solid biofuels -- Determination of calorific value
ISO/CD 17828	Solid biofuels -- Determination of bulk density
ISO/CD 18123	Solid biofuels -- Determination of the content of volatile matter
ISO/CD 17827-1	Solid biofuels -- Determination of particle size distribution for uncompressed fuels -- Part 1: Horizontally oscillating screen using sieve for classification of samples with a top aperture of 3.15 mm and above
ISO/CD 17827-2	Solid biofuels -- Determination of particle size distribution for uncompressed fuels -- Part 2: Vertically vibrating screen using sieve for classification of samples
ISO/CD 17831-1	Solid biofuels -- Methods for the determination of mechanical durability of pellets and briquettes -- Part 1: Pellets
ISO/CD 17831-2	Solid biofuels -- Methods for the determination of mechanical durability of pellets and briquettes -- Part 2: Briquettes
ISO/CD 17830	Solid biofuels -- Determination of particle size distribution of disintegrated pellets
ISO/CD 17829	Solid biofuels -- Determination of length and diameter of pellets

Chemical analysis

ISO/DIS 16948	Solid biofuels -- Determination of total content of carbon, hydrogen and nitrogen
ISO/DIS 16995	Solid biofuels -- Determination of the water soluble content of chloride, sodium and potassium
ISO/DIS 16994	Solid biofuels -- Determination of total content of sulphur and chlorine

European standards (EN)*If dated, the (draft) standard is published and publicly available*

EN 15290:2011	Solid biofuels – Determination of major elements – Al, Ca, Fe, Mg, P, K, Si, Na and Ti
EN 15296:2011	Solid biofuels – Conversion of analytical results from one basis to another
EN 15297:2011	Solid biofuels – Determination of minor elements – As, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, V and Zn

ISO/CD Committee Draft developed by ISO (draft available for members only)

ISO/DIS Draft International Standard (draft available for public enquiry)

ISO/NP New Project by ISO, but standard development to be initiated

International standards (ISO)*If dated, the (draft) standard is published and publicly available*

ISO/DIS 16967	Solid biofuels -- Determination of major elements
ISO/DIS 16993	Solid biofuels -- Conversion of analytical results from one basis to another
ISO/DIS 16968	Solid biofuels -- Determination of minor elements
ISO/CD 16996	Solid biofuels -- Determination of elemental composition by X-ray fluorescence