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SOLID BIOFUELS TESTING SECTION

AB 088

Poznań, 27th June 2022

TEST REPORT
No. 2186/1-2/2022/S.M

Subject of the order	Quality testing of wood pellets – 3 Energy Poland Sp. z o.o.
Order No	A-2186-BDB/2022
Name and address of the customer	Control Union Poland Sp. z o. o. Al. Wojska Polskiego 45, 65-764 Zielona Góra
Name and address of the producer	3 Energy Poland Sp. z o.o. ul. Szczypkowice 25, 76-220 Główczyce
ENplus® ID / Sample No.	6mm-3EP-15.06.2022-2
Performance date	23.06 – 27.06.2022
Operators	Agnieszka Jankowska, M.Sc.Eng. Dariusz Radoński, B.Eng. Małgorzata Walkowiak, M.Sc.Eng.

Compiled by	Authorized by
Małgorzata Walkowiak, M.Sc.Eng.	Wojciech Cichy, PhD.Eng.

A qualified electronic signature has been affixed to this document, which according to the law is equivalent to written form.

1. IDENTIFICATION (DESCRIPTION OF TEST SAMPLE)

The object of the assessment was the sample of pellets with the diameter of 6mm, described by the customer as pellets made of post-production chemically uncontaminated sawdust.

Sample number: 6mm-3EP-15.06.2022-2.

Identification number: A-2186-BDB/2022.

2. DELIVERY DATE OF TESTED SUBJECTS

The sample was taken by the customer and delivered to the laboratory on 22nd June 2022.

3. TEST METHODS

- EN ISO 14780:2017-07 Solid biofuels – Sample preparation (Method 16M)
- EN ISO 18134-3:2015-11 Solid biofuels – Determination of moisture content – Oven dry method – Part 3: Moisture in general analysis sample (Method 1M)
- EN ISO 18122:2016-01 Solid biofuels – Determination of ash content (Method 2M)
- EN ISO 16948:2015-07 Solid biofuels – Determination of total content of carbon, hydrogen and nitrogen (Method 7M)
- EN ISO 16994:2015-06 Solid biofuels – Determination of total content of sulfur and chlorine (Method 8M)
- EN ISO 21404:2020-8 Solid biofuels – Determination of ash melting behaviour (14M Method)

4. EQUIPMENT OF THE TEST STANDS (elementary)

No.	Name	Type	Producer	Lab.No.
1.	Analytical balance	LE26P-0CE	SARTORIUS	M7/2
2.	Analytical balance	CPA225D-0CE	SARTORIUS	M8/57
3.	Laboratory drier	Redline RF115	BINDER	M1/47
4.	Calorimeter	C6000	IKA	M6/83
5.	Elemental analyzer	Flash EA 1112	THERMO ELECTRON CORPORATION	M7/8
6.	Furnace	FCF 7SM/pl	CZYLOK	M2/4
7.	Ionic chromatograph	ICS-1100	THERMO SCIENTIFIC	M8/54
8.	System for determination of characteristic temperatures of ash melting behaviour	PR-37/1600	Radio Research Institute	M14/88
9.	Sieve 0.075 mm	-	ATEST	M14/91

5. TESTS RESULTS

Tests results are presented in Record No. 1/2186/1-2/2022.

6. DECLARATION

Test results presented in this Report refer to the tested samples only.
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Record No. 1/2186/1-2/2022

Sample name: Wood pellets
Name of Producer: 3 Energy Poland Sp. z o.o.
ul. Szczypkowice 25, 76-220 Główczyce
EN*plus*® ID / Sample No. 6mm-3EP-15.06.2022-2

Origin:	1. Woody biomass
Traded form:	Wood pellets
Classification of origin according to EN ISO 17225-1:2014	1.2.1 Chemically untreated by-products and residues from the wood processing industry

Parameter	**Unit**	**Value**	**Uncertainty [±] [1]**	**Threshold value acc. to EN*plus*® Handbook, Part 3 version 3.0**		
				A1	**A2**	**B**
Ash	w-%$_d$	0.43	0.03	≤ 0.7	≤ 1.2	≤ 2.0
Nitrogen	w-%$_d$	0.19	0.03	≤ 0.3	≤ 0.5	≤ 1.0
Chlorine	w-%$_d$	0.0123	0.0001	≤ 0.02		≤ 0.03
Ash shrinkage temperature SST [2, 3]	°C	1380	25	Should be stated		
Ash deformation temperature DT [2, 3]	°C	> 1500	-	≥ 1200	≥ 1100	
Ash hemisphere temperature HT [2, 3]	°C	> 1500	-	Should be stated		
Ash flow temperature FT [2, 3]	°C	> 1500	-	Should be stated		

$_d$ dry $_{ar}$ as received
1. the expanded uncertainty was determined for coverage factor k = 2 and 95% confidence level
2. characteristic ash melting temperature determined in an oxidizing atmosphere
3. ash received at 815°C

End of report