

# TEST REPORT

## BEA2024267

Date of report: 2024-07-05

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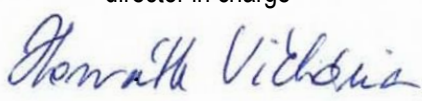

**Order:** Fuel testing according ENplus® certification program of wood pellets ENplus® ST.1001:2022  
**Order date:** 2024-04-15  
**Sample(s):** Wood pellets  
**Sample details:** 15 kg pellets in plastic bag class A1 from production, internal sample no.: BEA2024267-2 and 15 kg pellets in plastic bag class A1 resample from production, internal sample no.: BEA2024267-4

**Receipt of samples:** 2024-04-23; 2024-07-02  
**Testing period:** 2024-04-23 – 2024-07-04

BEA2024267 parameter ENplus®	limit values A1	limit values A2	-2 result pellets from production	unit
diameter	6 ± 1, 8 ± 1	6 ± 1, 8 ± 1	6,0	mm (ar)
length (3,15 ≤ L ≤ 40 mm)*	(3,15 ≤ L ≤ 40)	(3,15 ≤ L ≤ 40)	14,8 ± 5,6	mm (ar)
length (40 ≤ L ≤ 45 mm)*	≤ 1	≤ 1	0	% in mass (ar)
length (> 45 mm)	0	0	0	piece(s)
share of pellets with a length < 10mm	-	-	11,7	% in mass (ar)
category L < 20%, 20% ≤ M ≤ 30%, S > 30%	-	-	L	-
amount of pellets for length determination	≥ 100	≥ 100	1 256	piece(s)
moisture content*	≤ 10,0	≤ 10,0	7,3	% in mass (ar)
ash content	≤ 0,70	≤ 1,20	0,41	% in mass (db)
mechanical durability*	≥ 98,0	≥ 97,5	98,7	% in mass (ar)
bulk density	600 ≤ BD ≤ 750	600 ≤ BD ≤ 750	720	kg/m <sup>3</sup> (ar)
particle density	-	-	1,33	g/cm <sup>3</sup> (ar)
coarse fines (3,15 ≤ CPF < 5,6 mm)	-	-	0,4	% in mass (ar)
fines content (< 3,15 mm), bulk	≤ 1	≤ 1	-	% in mass (ar)
fines content (< 3,15 mm), bags	≤ 0,5	≤ 0,5	0,5	% in mass (ar)
net calorific value q <sub>P,net</sub>	≥ 16,5	≥ 16,5	17,9	MJ/kg (ar)
net calorific value q <sub>P,net</sub>	≥ 4,6	≥ 4,6	4,98	kWh/kg (ar)
net calorific value q <sub>P,net</sub>	-	-	18,8	MJ/kg (db)
net calorific value q <sub>P,net</sub>	-	-	5,22	kWh/kg (db)
gross calorific value q <sub>V,gr</sub>	-	-	19,3	MJ/kg (ar)
gross calorific value q <sub>V,gr</sub>	-	-	5,37	kWh/kg (ar)
nitrogen content	≤ 0,3	≤ 0,5	0,06	% in mass (db)
sulphur content	≤ 0,04	≤ 0,04	0,006	% in mass (db)
chlorine content	≤ 0,02	≤ 0,02	<0,005	% in mass (db)
arsenic	≤ 1	≤ 1	<0,5	mg/kg (db)
cadmium	≤ 0,5	≤ 0,5	0,13	mg/kg (db)
chromium	≤ 10	≤ 10	<1	mg/kg (db)
copper	≤ 10	≤ 10	<1	mg/kg (db)
lead	≤ 10	≤ 10	<0,5	mg/kg (db)
mercury	≤ 0,1	≤ 0,1	<0,075	mg/kg (db)
nickel	≤ 10	≤ 10	<1	mg/kg (db)
zinc	≤ 100	≤ 100	9,4	mg/kg (db)
shrinking temperature SST	-	-	1030	°C
deformation temperature DT	≥ 1200	≥ 1100	1400	°C
hemisphere temperature HT	-	-	>1550	°C
flow temperature FT	-	-	>1550	°C

db... dry basis, ar... as received, \*measured on the resample BEA2024267-4 received on 2024-07-02

The test results apply only to the samples investigated. As a rule, they are not the only criteria for assessing the raw material or product in question and its suitability for a specific purpose of application. Test Reports may only be made available to third parties, either free of charge or against payment, if the full wording is given and if the author is expressly named. Unless otherwise indicated, at client's request neither the measurement uncertainty was stated, nor were decision rules agreed. The General Terms and Conditions of BEA Institut für Bioenergie GmbH shall apply as amended.

 	director in charge 	
	Dr. Viktoria Horvath	