

4. Laboratory test

4.1. Test methods

The laboratory tests for the proof of conformity of the pellet quality with the requirements of OENORM EN ISO 17225-2 were carried out at Holzforschung Austria (1), AT-1030 Vienna and at BEA Institut für Bioenergie GmbH (2), AT-1150 Vienna.

OENORM EN ISO 16948 (C/H/N) ²	OENORM EN ISO 18122 (ash) ¹
OENORM EN ISO 16968 (minor elements) ²	OENORM EN ISO 18125 (net calorific value) ¹
OENORM EN ISO 16994 (chlorine, sulfur) ¹	OENORM EN ISO 18134-2 (moisture) ¹
OENORM EN ISO 17828 (bulk density) ¹	OENORM EN ISO 18846 (fines) ¹
OENORM EN ISO 17829 (dimensions) ¹	CEN/TS 15370-1 (ash melting behaviour) ²
OENORM EN ISO 17831-1 (mech. durability) ¹	

All the above-mentioned standards are applied in the current version.

4.2. Test results

Parameter	Unit	Reference state	Result	Requirements according to	
				ENplus® A1	ENplus® A2
Diameter, D	mm	ar	6,0	6 ± 1 (8 ± 1)	6 ± 1 (8 ± 1)
Length, L	mm	ar	12,3 (4 - 29)	3,15 < L ≤ 40	3,15 < L ≤ 40
Moisture, M	%	ar	6,8	≤ 10	≤ 10
Ash, A	%	d	0,3	≤ 0,7	≤ 1,2
Ash deformation temperature, DT	°C	d	1510	≥ 1200	≥ 1100
Mechanical durability, DU	%	ar	99,1	≥ 98,0	≥ 97,5
Fines F (< 3,15 mm) bagged pellets	%	ar	0,10	≤ 0,5	≤ 0,5
Net calorific value, Q	MJ/kg	ar	17,44	≥ 16,5	≥ 16,5
Net calorific value, Q	kWh/kg	ar	4,84	≥ 4,6	≥ 4,6
Gross calorific value, q _{v,gr}	MJ/kg	ar	18,84	--	--
Gross calorific value, q _{v,gr}	kWh/kg	ar	5,23	--	--
Bulk density, BD	kg/m ³	ar	650	600 ≤ BD ≤ 750	600 ≤ BD ≤ 750
Additives	%	d	0,6	≤ 2	≤ 2
Nitrogen, N	%	d	0,07	≤ 0,3	≤ 0,5
Sulfur, S	%	d	<0,005	≤ 0,04	≤ 0,05
Chlorine, Cl	%	d	<0,005	≤ 0,02	≤ 0,02
Arsenic, As	mg/kg	d	<0,50	≤ 1	≤ 1
Cadmium, Cd	mg/kg	d	0,20	≤ 0,5	≤ 0,5
Chromium, Cr	mg/kg	d	<1,0	≤ 10	≤ 10
Copper, Cu	mg/kg	d	1,2	≤ 10	≤ 10
Lead, Pb	mg/kg	d	0,62	≤ 10	≤ 10
Mercury, Hg	mg/kg	d	<0,075	≤ 0,1	≤ 0,1
Nickel, Ni	mg/kg	d	<1,0	≤ 10	≤ 10
Zinc, Zn	mg/kg	d	12	≤ 100	≤ 100

ar ... as received
d ... dry basis