



INSTYTUT TECHNOLOGII DREWNA

WOOD TECHNOLOGY INSTITUTE INSTITUT FÜR HOLZTECHNOLOGIE INSTITUT DE TECHNOLOGIE DU BOIS
UL. WINIARSKA 1 60-654 POZNAŃ - POLAND phone: (061) 849 24 00 fax: (061) 822 43 72 e_mail: office@itd.poznan.pl
http://www.itd.poznan.pl

CERTIFICATE

№ 19/BOŚ-U-179/2009

1. **Product name:** Fuel granulate (pellets) made of wood particles
2. **Customer:** EKOPAL Sp. z o.o.
Jagodne, ul. Jagodna 3
PL-12-200 Pisz
Poland
3. **Contract no.:** U-179-BOŚ/2009
4. **The object of the assessment:** The object of the assessment was solid biofuel in the form of pellets. The diameter of the pellets is 6 mm.
5. **Basis for the assessment:** Wood Technology Institute own procedures on the basis of the standard ÖNORM M 7135
6. **Test results:** For the details of the test results see description on page 2.
7. **Opinion:** On the basis of test results it is concluded that the tested sample of fuel granulate (pellets) made of wood particles meets the requirements which are described in standard ÖNORM M 7135 for formed fuels of natural wood. Abrasion was not determined.
8. **Author of the opinion:** Jacek PAWŁOWSKI, M.Sc. *Jacek Pawłowski*
9. **Validity period:** 21.09.2010
10. **Enclosed documents:** Test report no. 16/2009
11. **Date:** 21.09.2009

Pieczęć Instytutu

Kierownik Zakładu
KIEROWNIK
Zakładu Ochrony Środowiska
i Inżynierii DREWNA
[Signature]
doc. dr hab. inż. Andrzej Kłoczek



Dyrektor Instytutu

DYREKTOR

[Signature]
doc. dr Władysław Strykowski

Przedruk i kopiowanie: Only upon the consent of **EKOPAL Sp. z o.o.** seated in Jagodne near Pisz.
The certificate cannot be copied in parts, but only in its entire form.

Comparison of the properties of fuel granulate (“pellets”) of diameter of 6 mm produced from wood particles by EKOPAL Sp. z o.o. seated in Jagodne near Pisz

No.	Type of determined property	Unit	Requirements ÖNORM M 7135	Obtained results
1.	Combustion heat Q_s^a	kJ/kg	–	19 879
2.	Calorific value Q_i^d (dry basis)	kJ/kg	> 18 000	19 306
3.	Humidity	%	< 10	4.45
4.	Ash content (815°C)	%	< 0.5	0.22
5.	Specific gravity (weight density)	kg/dm ³	> 1.12	1.14
6.	Elementary substances:			
6.1.	Carbon	%	–	48.64
6.2.	Hydrogen	%	–	6.17
6.3.	Nitrogen	%	< 0.3	not detected
6.4.	Sulphur	%	< 0.04	not detected
6.5.	Chlorine	%	< 0.02	< 0.0020
7.	Length	mm	< 5×D*	≤ 33
8.	Abrasion	%	< 2.3	not determined

*D – diameter of pellets

Jacek Pawłowski