

For the production of wood pellets produced by

**Sparrow d.o.o., Varvarin, SERBIA**

certified according to **ENplus® A2** with the ID number: **RS 007**

we confirm the following test results analysed within the inspection 2017 valid until the inspection in 2018.

Sample 2017243	Standard	unit	Pellets	Limit values according ENplus®	
				Class A1	Class A2
mechanical durability	ISO 17831-1	[%]	98,9	≥ 98,0	≥ 97,5
bulk density (ar)	ISO 17828	[kg/m³]	645	750≥BD≥600	750≥BD≥600
moisture content	ISO 18134-2	[%]	6,4	≤ 10	≤ 10
ash content 550°C (db)	ISO 18122	[%]	1,0	≤ 0,7	≤ 1,2
net calorific value (ar)	ISO 18125	[MJ/kg]	16,9	≥ 16,5	≥ 16,5
net calorific value (ar)	ISO 18125	[kWh/kg]	4,7	≥ 4,6	≥ 4,6
net calorific value (db)	ISO 18125	[MJ/kg]	18,3	-	-
net calorific value (db)	ISO 18125	[kWh/kg]	5,1	-	-
Sulphur content (db)	ISO 16994	[%]	0,007	≤ 0,04	≤ 0,05
Chlorine content (db)	ISO 16994	[%]	<0,005	≤ 0,02	≤ 0,02
Nitrogen content (db)	ISO 16948	[%]	0,14	≤ 0,30	≤ 0,50
pressing aid / additives	-	[%]	none	≤ 2	≤ 2
<b>dimensions</b>					
finer (< 3,15 mm)	ISO 18846	[%]	0,15	≤ 0,5* / ≤ 1	≤ 0,5* / ≤ 1
length (3,15 ≤ L ≤ 40 mm)	ISO 17829	[%]	99,6	> 98,5* / >98	> 98,5* / >98
length (40 ≤ L ≤ 45 mm)	ISO 17829	[%]	0,3	≤ 1	≤ 1
length (> 45 mm)	ISO 17829	[amount]	none	0	0
diameter	ISO 17829	[mm]	6	6 or 8 ± 1	6 or 8 ± 1
<b>heavy metals</b>					
Chromium (db)	ISO 16968	[mg/kg]	<1,0	≤ 10	≤ 10
Copper (db)	ISO 16968	[mg/kg]	1,05	≤ 10	≤ 10
Zinc (db)	ISO 16968	[mg/kg]	<5,0	≤ 100	≤ 100
Lead (db)	ISO 16968	[mg/kg]	<0,50	≤ 10	≤ 10
Mercury (db)	ISO 16968	[mg/kg]	<0,05	≤ 0,1	≤ 0,1
Cadmium (db)	ISO 16968	[mg/kg]	0,12	≤ 0,5	≤ 0,5
Arsenic (db)	ISO 16968	[mg/kg]	<0,50	≤ 1	≤ 1
Nickel (db)	ISO 16968	[mg/kg]	<1,0	≤ 10	≤ 10
<b>Ash melting behaviour (815°C ash preparation temperature)</b>					
shrinking temperature SST	CEN/TS 15370-1	[°C]	880	-	-
deformation temperature DT	CEN/TS 15370-1	[°C]	1250	≥ 1200	≥ 1100
hemisphere temperature HT	CEN/TS 15370-1	[°C]	>1550	-	-
flow temperature FT	CEN/TS 15370-1	[°C]	>1550	-	-

\* for bags or sealed big bags, ar...as received, db...dry basis