

**Audit and Test Report:**  
**BEA2016080**

**Date:** 2016-05-19

## Inspection according ENplus

**Client:** **Latgales granulas SIA**  
Attn.: Mr. Arvis Aukonis  
Aļņi 5-11,  
Dekšāres pagasts, Viļānu novads,  
LV-4628, LATVIA

**Subject:** Wood pellets production **Latgales granulas SIA**,  
plant in Varkļāni, Kosmonautu iela 19, Latvia

**Content:** Site Audit 2016 and pellet testing according to ENplus  
**(initial inspection)**

**Order:** According to the order from 2016-04-15

**Date of audit  
and sampling:** 2016-04-28 by Kārlis Būmanis

**Receipt of samples:** 2016-04-29

**Ref:** Bum



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Accredited inspection body

## 1 SCOPE OF WORK

Inspection of the wood pellet production plant especially of quality measures, evaluation of quality related documents and internal testing of product quality of wood pellets production according EN*plus* requirements. A sample of the production is to be taken and tested according EN ISO 17225-2 for verification of pellet quality.

## 2 SCOPE OF APPLICATION

The test results given in this report have been obtained under the specific conditions of the individual tests. They shall serve as proof for the conformity of the sample(s) tested. The client is responsible for the conformity of products with EN*plus* regulations which will be assured when quality assurance measures according EN*plus* regulations are continuously applied.

## 3 INSPECTION AUDIT

The inspection audit was carried out according EN*plus* Handbook (in the currently version) on 2016-04-28 by Kārlis Būmanis (lead auditor) and Roberts Keraitis attended by Mr. Arvis Aukonis and Mr. Jānis Jonins (duration of audit approximately 3 hours).

Responsibilities in the factory are assigned clearly, a company organogram exists.

The responsibility in the company is divided as follows:

Contact person:	Mr. Arvis Aukonis
Production manager:	Mr. Jānis Jonins
Responsible for quality assurance:	Mr. Arvis Aukonis

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### 3.1 Products

Certified products	wood pellets EN ISO 17225-2, class A1
Dimensions	6mm
ENplus ID	Not yet certified
Certification body	HFA
Delivery to end customer*	Pellets are delivered in 15 kg bags (not marked, not ENplus, some part of bags has labels with the main properties indicated). There is no direct delivery of bulk pellets to final end customer.
Brand names	Latgales granulas. Bag design is under approval with Latbio.
Production amount*	Estimation for 2016: 13.000t
Storage capacity	~1000t bagged (on pallets in a hall), 80t intermediate storage (silos), 30t in bulk (silos)

\* according statement of client

### 3.2 Raw material

Origin of wood	100% delivery from mother company
Source raw material	100% chemically untreated wood residues (1.2.1.4 acc. EN ISO 17225-1)
Raw material species	100% coniferous (~50% spruce / ~50% pine),
Form of raw material	Shavings (dry), sawdust, chips
Raw material storage	The raw material is stored outside on paved ground and protected against wind.
Control and documentation of raw material	All incoming material is moisture and volume controlled and a visual inspection is performed. (raw material declaration available).
Suppliers	Direct delivery from sawmill (mother company) nearby (according to the specifications concerning quality).
Sustainability of raw material	No certification according FSC or PEFC of wood pellets, sustainability declaration available. Mother company is FSC certified.
Other raw materials used (e.g. pressing aids)	No additives or binders are used.

### 3.3 Production process

Raw material preparation	Hammer mill and pan grinder mill
Drying	Raw material is dried by a drum drier using raw wood material (lower quality) for the heat.
Separation of contaminants and impurities	Oversized particles and impurities are removed by sieves, stone traps and metal separators are used.
Pellet production	The dry raw material is pelletized by 1 ring die press and cooled by a counter current cooler.
Removal of fines	Fines are removed by different sieves with suitable size and sieve aperture, dust is removed by air separators.
Non complying pellets	A possibility for separation of low quality batches exists.
Documentation of failures, breakdowns and maintenance	A shift book exists containing all relevant information.
Storage of pellets	Pellets are either directly packed in 15kg bags or big bags. Bulk pellets are stored in silos. Pellets are protected against moisture and contamination. Storage capacity: ~1000t bagged (on pallets in a hall), 80t intermediate storage (silos), 30t in bulk (silos).
Form of dispatch	70% in small bags, 20% bulk, 10% big bags
Carbon footprint of production	Carbon footprint of production was calculated by using the recommended excel-sheet form EPC. Emissions are 51g CO <sub>2-eq</sub> ./kg pellets.

### 3.4 Quality control measures

The factory production control is carried out in accordance with the requirements of the regulations. Tests are done regular and are documented properly.

Parameter	Test frequency	Test equipment
Moisture	At least once a shift	IR-dryer
Bulk density	At least once a shift	5 l stainless steel container
Mechanical durability	At least once a shift	Self-made Tumbler (2 boxes)
Length	At least once a shift	Caliper rule
Fines	At least once a shift	3,15 mm sieve

Instruments are maintained properly, calibration and/or performance tests are done.

### 3.5 Quality assurance

Quality management system	<p>There is a quality management system implemented, consisting of individual documents for most important quality related topics; SOP's are available covering:</p> <ul style="list-style-type: none"> <li>• Receipt of raw materials</li> <li>• Requirements for measuring and test equipment</li> <li>• Instruction of self inspection</li> <li>• Responsibilities</li> <li>• Customer complaint management</li> <li>• Training of staff</li> </ul>
Documentation raw material	<p>All incoming raw materials are documented, data are collected including date, amount, and type. Only one supplier.</p> <p>A declaration of sustainability is available. Pellets are not in the scope of FSC certification.</p> <p>Since additives are not used, there is no documentation.</p>
Customer complaints	<p>Customer complaint management is implemented. Documentation contains date, reason and action to achieve customer satisfaction. 1 complaint (concerning quality of product: slagging, claim rejected)</p>
Documentation of outgoing goods	<p>Documentation of outgoing goods is done according to the requirements, except labelling.</p>
Check of temperature of outgoing goods	<p>Temperature of loaded pellets is checked regularly with IR-Gun and documented. Temperature is usually &lt; 25 °C but always ≤ 40 °C.</p>

### 3.6 Retain samples

Retain samples pellets	<p>Sampling frequency: once a shift Sample amount: ~1,5-2 kg Retention period: 1 year</p>
Retain sample labelling	<p>Retain samples are labelled accordingly.</p>
Storage for retain samples	<p>The storage of retain samples corresponds with the requirements.</p>

### 3.7 Labelling

The requirements concerning the labelling will be met as soon as the certification process is finished.

## 4 SAMPLING

Samples were taken following the principles of EN 14778.

One 15kg bag and 1 sample 1,6kg were taken from the bagging station. The bags were signed by the auditor and were taken by the auditor to the auditor's lab.

## 5 TESTS

Laboratory testing took place in May 2016 according EN ISO 17225-2.

## 6 PELLET LAB ANALYSIS RESULTS

Sample 2016080	Standard	unit	Pellets	Limit values according ENplus	
				Class A1	Class A2
mechanical durability**	ISO 17831-1	[%]	98,3	≥ 98,0	≥ 97,5
bulk density (ar)**	ISO 17828	[kg/m <sup>3</sup> ]	670	750≥BD≥600	750≥BD≥600
moisture content**	ISO 18134-2	[%]	4,3	≤ 10	≤ 10
ash content 550°C (db)**	ISO 18122	[%]	0,4	≤ 0,7	≤ 1,2
net calorific value (ar)**	EN 14918	[MJ/kg]	18,2	≥ 16,5	≥ 16,5
net calorific value (ar)**	EN 14918	[kWh/kg]	5,1	≥ 4,6	≥ 4,6
Sulphur content (db)	ISO 16994	[%]	0,009	≤ 0,04	≤ 0,05
Chlorine content (db)	ISO 16994	[%]	< 0,005	≤ 0,02	≤ 0,02
Nitrogen content (db)	ISO 16948	[%]	0,11	≤ 0,30	≤ 0,50
pressing aid / additives	-	[%]	0	≤ 2	≤ 2
<b>dimensions**</b>					
finer (< 3,15 mm)	EN 15149-2	[%]	0,4	≤ 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	≤ 1	≤ 1
length (> 45 mm)	ISO 17829	[amount]	0	0	0
diameter	ISO 17829	[mm]	6,1	6 or 8 ± 1	6 or 8 ± 1
<b>heavy metals**</b>					
Chromium (db)	ISO 16968	[mg/kg]	< 1	≤ 10	≤ 10
Copper (db)	ISO 16968	[mg/kg]	0,8	≤ 10	≤ 10
Zinc (db)	ISO 16968	[mg/kg]	7,2	≤ 100	≤ 100
Lead (db)	ISO 16968	[mg/kg]	< 0,5	≤ 10	≤ 10
Mercury (db)	ISO 16968	[mg/kg]	< 0,05	≤ 0,1	≤ 0,1
Cadmium (db)	ISO 16968	[mg/kg]	0,1	≤ 0,5	≤ 0,5
Arsenic (db)	ISO 16968	[mg/kg]	< 0,5	≤ 1	≤ 1
Nickel (db)	ISO 16968	[mg/kg]	< 1	≤ 10	≤ 10
<b>ash melting behaviour (ash preparation at 815°C)</b>					
shrinking temperature SST	CEN/TS 15370-1	[°C]	910	-	-
deformation temperature DT	CEN/TS 15370-1	[°C]	1340	≥ 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

\*\* in cooperation with subcontractors

ar...as received; db...dry basis

## 7 SUMMARY

The pellet production of **Latgales granulas SIA** in Varakļāni (LATVIA) is complying with all requirements of

**ENplus, quality A1.**



### Deviations from 2015:

- ◆ None, initial inspection in 2016.

### Type A and B non-conformities:

- ◆ None.

### Type C non-conformities:

- ◆ The requirements concerning the labelling (especially the ID-number) will be met as soon as the certification process is finished and agreed with LATbio.

### Recommendations for improvements till next audit 2017:

- ◆ Expected changes in production technology (additive /binder) or products (8 mm) should be reported to the auditor and LATbio.
- ◆ Retain sample storage furnishing in the technical room.

This inspection report no. **BEA2016080** comprises 7 pages and 0 appendix(es).

Head of inspection body

