



European Pellet Council

Handbook for the Certification of Wood Pellets for Heating Purposes

Version 2.0

April 2013

Publisher:

European Pellet Council (EPC)

c/o AEBIOM - European Biomass Association

Renewable Energy House

63-65 Rue d'Arlon

1040 Brussels, Belgium

www.enplus-pellets.eu

Supported by:



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BACKGROUND AND GOAL

The goal of the ENplus certification system for wood pellets is to secure the supply of wood pellets for heating and CHP up to 1 MW output power in residential, commercial and public buildings with a clearly defined and constant quality.

To guarantee that a constant level of high quality wood pellets is being delivered, the production as well as logistics and delivery procedures are controlled. As a result, aspects of a product certification are combined with those of a system certification.

With the classes ENplus-A1 and ENplus-A2, as well as the class EN-B, three wood pellet qualities are defined that are based on the specifications of the European standard EN 14961-2.

The certification system contains the following essential points:

- Requirements for wood pellet production and quality assurance
- Requirements for the product (EN 14961-2)
- Requirements for labelling, logistics and intermediate storage
- Requirements for the delivery to end customers

Specifications for internal quality management guarantee that the product requirements are maintained. Requirements for technical facilities, operational procedures and documentation are defined, which make the operation processes transparent and should lead to a rapid tracking and solving of problems. These specifications are based on the standards ISO 9001 and EN 15234-2.

The European Biomass Association (AEBIOM) is the owner of the licence rights of the ENplus System. The European Pellet Council (EPC), organised within AEBIOM, is responsible for the management and further development of the certification system and the transfer of licence rights to a National Licensor that will organise the introduction of ENplus in their respective countries or geographic areas.

NORMATIVE REFERENCES

- CEN/TS 15370: Solid biofuels, method for the determination of ash melting behaviour
- EN 14588: Solid biofuels – Terminology, definitions and description
- EN 14774-1: Solid biofuels – Determination of moisture content – Oven dry method – Part 1: Total moisture – Reference method
- EN14774-2: Solid biofuels – Determination of moisture content – Oven dry method – Part 2: Total moisture – Simplified procedure
- EN 14775: Solid biofuels – Determination of ash content
- EN 14778: Solid biofuels – Sampling
- EN 14780: Solid biofuels – Sample preparation
- EN 14918: Solid biofuels – Determination of calorific value
- EN 14961-1: Solid biofuels – Fuel specification and classes – Part 1: General requirements
- EN 14961-2: Solid biofuels – Fuel specification and classes – Part 2: Wood pellets for non-industrial use
- EN 15103: Solid biofuels – Determination of bulk density
- EN 15104: Solid biofuels – Determination of total content of carbon, hydrogen and nitrogen – Instrumental method
- EN 15210-1: Solid biofuels – Determination of mechanical durability of pellets and briquettes – Part 1: Pellets
- EN 15234-1: Solid biofuels – Fuel quality assurance – Part 1: General requirements
- EN 15234-2: Solid biofuels – Fuel quality assurance – Part 2: Wood pellets for non-industrial use
- EN 15289: Solid biofuels – Determination of total content of sulphur and chlorine
- EN 15297: Solid biofuels – Determination of minor elements – As, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, V and Zn
- EN 16127: Solid biofuels – Determination of length and diameter for pellets and cylindrical briquettes
- EN 45011: General requirements for organisations that operate product certification systems
- ISO 3310 (2001): Test sieves — Technical requirements and testing
- ISO 3166: Codes for the representation of names of countries and their subdivisions
- ISO/IEC 17020: Conformity assessment - Requirements for the operation of various types of bodies performing inspection

ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories

ISO/IEC 17065: Conformity assessment - Requirements for bodies certifying products, processes and services

ISO 9001: Quality Management Systems – Requirements

Note: National solid biofuel standards, storage standards or requirements for pellet production and use, which are not contradictive to EN-standards, can be added in the list of normative references by the National Licensor.

DEFINITIONS OF TERMS

Other terms and descriptions related to pellets and pellet properties are listed in EN 14588.

Owner of Licence

The owner of the licence for the ENplus trademark is the European Biomass Association AEBIOM. The European Pellet Council (EPC), organised within the AEBIOM, is responsible for the management of ENplus

National Licenser

National Licensers are associations representing the interests of the pellet sector in their respective countries or geographic areas that have signed a licence agreement with the AEBIOM that enables them to pass the ENplus licence on to qualifying enterprises.

Issuer of Licence

A producer or trader of pellets can receive the licence to use the ENplus trademark from the National Licenser responsible for the country in which the company's headquarters are. If such an association does not exist, the licence can be obtained directly from the EPC. If a National Licenser is terminated or loses the ENplus licence rights, licence users from this country will receive their established licence rights directly from the AEBIOM without further delay unless the licence user fails to conform with the ENplus requirements. The National Licenser may authorise one or more certification bodies to operate the licensing procedure in his country but is not allowed to transfer the licensing right. The licence to use the ENplus trademark is always issued by EPC or the National Licenser.

ENplus Handbook

This handbook, referred to as ENplus handbook, defines the rights, responsibilities and obligations of all participants in the ENplus certification program. The ENplus handbook will be revised regularly by a steering group that is authorised by the EPC. All changes have to be approved at the meeting of the National Licensers.

Third Party Certification

The EPC or the National Licenser mandates one or more certification bodies to handle the certification process. An agreement between the EPC / National Licenser and the selected certification bodies has to be signed by both parties. If the license has been issued before the National Licenser has received the ENplus licensing rights from the EPC or before the National Licenser has selected one or more exclusive certification bodies, the contract between the certified company and the previous certification body will be accepted by the National Licenser until its natural expiration date. The renewal of the certificate will be issued by the certification body selected by the National

Licenser. The certification bodies authorised by the National Licensor to operate in their respective countries or geographic areas are listed at the official ENplus homepage www.enplus-pellets.eu.

The certification body evaluates the conformity of the pellet producer or trader with the ENplus handbook provisions based on their ENplus application and the surveillance inspection report from a listed inspection body.. The pellet producer or trader will not be issued with a license from the EPC or the National Licensor until they receive approval from a listed certification body or the system support organisation respectively that the produce or trader conform to all the conditions in the ENplus handbook.

Group Certification

The National Licensor may choose a group certification model where he operates as the system support organisation. The National Licensor has to choose an accredited certification body for the conformity evaluation of the national ENplus implementation according to ISO 9001 and this handbook. The system support organisation evaluates the conformity of the pellet producer or trader with the ENplus handbook provisions based on the ENplus application and the surveillance inspection report from a listed inspection body. . The pellet producer or trader will not be issued with a license from the EPC or the National Licensor until they receive approval from a listed certification body or the system support organisation respectively that the produce or trader conform to all the conditions in the ENplus handbook.

Certification Bodies

Certification bodies assure the independence of the certification system and monitor the procedures. A listed certification body must be accredited according to ISO/IEC 17065 with a member of the European Co-Operation for accreditation (EA). Alternatively, accreditation according to EN 45011 will be valid until the 31.12.2014. The scope of accreditation must include EN 14961-2 and EN 15234-2. The EPC or National Licensor may allow reasonable exceptions. The National Licensor can choose to collaborate exclusively with one or more specific certification bodies in their country or area as specified in the licensing contract with the EPC. All authorised certification bodies are listed on the official web site of ENplus: www.enplus-pellets.eu.

System Support Organisation

A system support organisation is a National Licensor who decides to organise the national ENplus certification as a group certification.

Listed Inspection and Testing Bodies

Listed inspection bodies have to be accredited according to EN ISO 17020. The scope of accreditation must include EN 14961-2 and EN 15234-2. The EPC or National Licensor may allow reasonable exceptions if no National Licensor objects. Listed testing bodies have to be accredited according to ISO 17025 with a scope including

EN 14961-2 and have to use the testing standards specified in EN 14961-2. Inspection and testing bodies have to be accepted by the EPC. Only inspection and testing bodies that are listed on the official web site of ENplus are accepted within the ENplus system.

Certified Pellet Producer

A pellet producer is a company that produces pellets from woody biomass at one or more production sites. The individual production sites may be owned or operated by different legal entities as far as they are controlled by the pellet producer (e.g. subsidiary companies, majority interest). Pellet producers may apply for an ENplus producer certificate with the EPC or the National Licensor being responsible for the area where the companies headquarter is situated. Certified pellet producers are allowed to sell ENplus labelled pellets in bulk to pellet traders and ENplus labelled bagged pellets to everybody.

A certified pellet producer is not allowed to sell ENplus labelled pellets in bulk to consumers unless the certified pellet producer is also a certified pellet trader.

Certified Pellet Trader

A pellet trader is a company that buys and/or produces pellets and sells them to other traders or consumers. The individual selling points may be owned or operated by different legal entities (e.g. subsidiary companies, majority interest) as far as they are controlled by the pellet trader and do not have their own storage facilities or delivery trucks for pellets. A pellet trader may apply for an ENplus certificate if he sells and delivers bulk pellets – with his own equipment or via a service provider – or if he bags pellets and sells them. He has to apply with the EPC or National Licensor being responsible for the area where the companies headquarter is situated.

Sub-license Contractor

Certified traders may grant a trader who is not certified and has no physical contact (no storage and no delivery vehicle) with the pellets the right to use the certification seal of the certified trader by concluding a sub-licence contract. In that case, the physical handling (loading and delivery) has to be done by the certified trader.

A copy of the sub-licence contract must be submitted to the responsible National Licensor or the EPC, respectively.

ENplus ID

The ENplus identification number (ENplus ID) is a unique ID linked to a specific certified pellet producer or trader. It consists of 5 digits, beginning with the country code and ending with a three-digit number assigned by the EPC / National Licensor. The three digit number is used to distinguish producers (001 - 299) from traders (301 - 999). The ENplus ID has to be used on declaration labels and delivery documents. Producers who sell bulk pellets directly to end customers have to use their trader ID.

Bagged Pellets

Bagged pellets are defined as closed retail packages for end consumers. Bagged pellets may contain up to 1.5 tons of pellet and have to be sealed. Bagged pellets must have a declaration label.

Bulk Pellets

Bulk Pellets are pellets that are transported and sold in bulk, without any packaging. They are handled as a bulk good.

PART 1: GENERAL DESCRIPTION

1 CERTIFICATION SYSTEM

The European Pellet Council (EPC) organised within the European Biomass Association (AEBIOM) has received the licence rights to the ENplus System by a contract with the developer of the system, the German Pellet Institute (DEPI). It will pass on this right to National Licensor that will organise the introduction of ENplus into their respective countries or geographic areas.

The independence of the certification system will be guaranteed through the involvement of accredited certification organisations according to EN 45011. The certification programme is organised either as third party certification according to ISO/IEC 17065 or as group certification. National Licensors, responsible for managing ENplus, will decide on the kind of certification (individual or group) and choose the responsible certification body in their country. They will list these organisations on their national website and the official ENplus website www.enplus-pellets.eu.

Inspection bodies and testing bodies, verifying that producers or traders comply with the ENplus requirements, have to be accepted and listed by the EPC.

The essential components of the certification program are:

- Definition of quality classes and specification of pellet properties
- Specifications for the in-house quality management (equipment and processes, employee qualifications, documentation duties, internal quality control)
- Inspection and confirmation of the conformance of the wood pellets, pellet production, the logistics system (up to the end customer's store) and the quality management to European standards and the provisions of this handbook
- The execution of certification and external control, licensing and revoking, handling of complaints
- Labeling and use of the ENplus ID

The rights, responsibilities and obligations of all participants in the ENplus certification program are defined in this handbook. The handbook will be revised regularly by a steering group authorised by the EPC.

2 PELLET QUALITY

2.1 Quality Classes

The ENplus certification program covers three pellet quality classes with different demands on the used raw material as well as the wood pellet characteristics. They correspond to the classes of the EN 14961-2 and are named:

- ENplus-A1
- ENplus-A2
- EN-B

The pellet properties have to comply with EN 14961-2. Inspection and testing bodies have to follow the testing procedures described in EN 14961-2. Table 1 provides an overview of the most important pellet properties and their threshold values.

Table 1 Threshold values of the most important pellet parameters. More parameters can be found in EN 14961-2.

Property	Unit	ENplus-A1	ENplus-A2	EN-B	Testing standard
Diameter	mm	6 or 8			EN 16127
Length	mm	$3.15 \leq L \leq 40$ ³⁾			EN 16127
Moisture Content	w-% ¹⁾	≤ 10			EN 14774-1
Ash Content	w-% ²⁾	≤ 0.7	≤ 1.5	≤ 3.0	EN 14775 (550 °C)
Mechanical Durability	w-% ¹⁾	$\geq 97,5$ ⁴⁾		≥ 96.5 ⁴⁾	EN 15210-1
Fines (< 3.15 mm)	w-% ¹⁾	<1			EN 15210-1
Net Calorific Value	MJ/kg ¹⁾	$16,5 \leq Q \leq 19$	$16,3 \leq Q \leq 19$	$16,0 \leq Q \leq 19$	EN 14918
Bulk Density	kg/m ³	≥ 600			EN 15103
Nitrogen Content	w-% ²⁾	≤ 0.3	≤ 0.5	≤ 1.0	EN 15104
Sulfur Content	w-% ²⁾	≤ 0.03		≤ 0.04	EN 15289
Chlorine Content	w-% ²⁾	≤ 0.02		≤ 0.03	EN 15289
Ash Melting Behaviour ⁴⁾	°C	≥ 1200	≥ 1100		EN 15370

1) As received 2) Dry basis 3) A maximum of 1 w-% of the pellets may be longer than 40 mm, no pellets > 45 mm allowed

4) Deformation temperature, sample preparation at 815 °C

The ENplus requirements go beyond EN 14961-2 in the following points:

- Mandatory requirements on ash melting behaviour (EN 14961-2 is voluntary)
- ENplus-A1 requires an ash deformation temperature of ≥ 1200 °C.
- ENplus-A2 and EN-B require an ash deformation temperature of 1100 °C
- The ash used for analyses is produced at 815 °C.
- For EN-B, no chemically treated wood is allowed as raw material (see 2.2).

2.2 Requirements on Raw Materials

The types of wood indicated in Table 1 can be used according to the standard EN 14961-1 as raw material for the production of wood pellets.

Table 2: Wood types that are permitted to be used for wood pellet production

ENplus-A1	ENplus-A2	EN-B
1.1.3 Stem wood	1.1.1 Whole trees without roots	1.1 Forest, plantation and other virgin wood
1.2.1 Chemically untreated residues from the wood processing industry	1.1.3 Stem wood	1.2 Chemically untreated by-products and residues from the wood processing industry
	1.1.4 Logging residues	
	1.1.6 Bark	
	1.2.1 Chemically untreated by-products and residues from the wood processing industry	1.3.1 Chemically untreated used wood ^{a)}

a) Demolition wood is excluded. Demolition wood is used wood coming from the demolition of buildings or civil engineering installations.

ENplus also deviates from standard EN 14961-1, in that the use of chemically treated wood is not allowed. The only exception to this is wood which was externally treated with wood preservatives against insect attack (e.g. lineatus), which does not classify as chemically treated wood.

2.3 Requirements on Additives

An additive is a material, which is intentionally introduced into the pellet production – or is added after production – to improve the quality of fuel, reduce emissions or make production more efficient. Additives are allowed to a maximum of 2% of the total mass of the pellets. The amount of additives in production must be limited to 1.8 w-%, the amount of post-production additives (e.g. coating oils) must be limited to 0.2 w-% of the pellets. The type (material and trade name) and quantity (in w-%) of all additives has to be documented. Water, steam and heat are not additives in terms of this regulation.

Additives, such as starch, corn flour, potato flour, vegetable oil, lignin from sulphate kraft process etc., must origin from processed or unaltered farming and foresting products. The EPC may exclude the use of a particular additive if concerns are raised that it creates operational problems in heating devices or poses health or environmental risks. In that case as well as for the introduction of innovative additives, a company that wants to use a new additive must prove to the EPC that the additive is beneficial and harmless.

3 CERTIFICATE

3.1 Issuing of the Certificate

A pellet producer or pellet trader has to apply for a licence with either the EPC or the National Licensor. If an application is made with the EPC, the applicant has to choose a listed certification body and a listed inspection body. If an application is made with a National Licensor, the applicant has to choose a listed inspection body and a certification body / system support organisation in charge for his country. The certification body or the system support organisation approves the conformance of the application with the ENplus certification guidelines based on the information in the application form and any additional documents submitted, such as the initial inspection report (including the results of the laboratory tests) in case of pellet producers.

If the application is approved, the applicant and the EPC / National Licensor are informed by submission of the conformity report (see Annex 3 and 4). The EPC / National Licensor will send the applicant the licence contract and a request for payment of the licence fee. When proof of the down payment of the licence fee has been received and the signed contract has been returned to the EPC / National Licensor, the EPC / National Licensor informs the certification body / system support organisation who will then send the certification document with the identification number and the validity period of the certificate to the applicant.

The certified company will be listed in a register with all other certified companies, which is published on the websites of the National Licensor and the EPC.

3.2 Validity of the Certificate

The certificate is valid for one certification period. One certification period lasts three years. The certification period starts with the issuing of the certificate. In the case of group certification, the certification period is the same for all members of the group. Certified producers and certified traders will receive a new certificate at the beginning of each certification period.

When violations of the ENplus certification programme occur or if the certification body states that a certified company is non-conforming, the National Licensor / EPC has the right to suspend the licence to use the ENplus trademark for a limited period or terminate the licence contract and request the certification body to revoke the certificate. If the certified company has several locations, the licence can be suspended for the location where the non-conformities were assessed until such time that they have been corrected. Wood pellets from other locations of the certified company can still be marketed as certified goods.

If the licence and the certificate are revoked, the ID number of the certified company gets blacklisted and will never get assigned to any certified company again. The former licence holder can re-apply for certification and licence after a period of one year. After the successful approval of his application he will be issued a new ID number.

3.3 Reporting Obligations

The certified company has to immediately report any changes relating to the information given in the original application form (e.g. client master data, contact person, quality manager, inspection body, delivery vehicles) to the EPC / National Licenser.

3.4 Regular and Extraordinary Inspections

Pellet producers have to undergo one mandatory annual audit. Additionally, extraordinary audits can be carried out upon demand by the certification body / system support organisation or the EPC / National Licenser, e.g. if significant numbers of complaints are received.

Traders are audited within the first year of certification and then at least once every certification period. In addition, extraordinary audits can be carried out if quality concerns are raised.

3.5 Objection Proceedings

Applicants and certified companies can file a written objection to the National Licenser and the EPC against the following decisions:

- Refusal of the requested certification
- Ordering of new monitoring inspections
- Ordering of extraordinary inspections (see 3.4)
- Ordering of more frequent inspections in the scope of internal controls
- Suspension and cancellation of the certificate / the licence (see 3.2)

The objection is only permissible when the applicant or certified company proves that the affected decision violates his/her own rights. A written decision on the objection will be made within two weeks by an objection committee to be set up by the National Licenser/ EPC. Any person who is directly affected by the objection decision will not participate in the decision making process.

3.6 Sub-licensing

Sub-licensing is a means to increase the number of selling points of ENplus pellets without additional costs for the certified trader. The basic principle is that the physical handling of the pellets is performed in total by the certified trader. It is mandatory that the non-certified trader has no own technical equipment such as stores and delivery vehicles. In that case, he may act as a sub-licensed trader of a certified trader. He will be allowed to sell ENplus pellets in bulk if a sub-licence contract with the certified trader grants them the right to use the ENplus ID of the certified trader. The sub-licence contract has to be submitted to the national organisation / EPC by the certified trader. The contract is only valid in the country where the certified trader is located.

4 CERTIFICATION SEAL

Every certified producer and trader has a unique certification seal for each pellet quality class it produces or sells. The ENplus ID of the certified company is an essential component of the certification seal and must be displayed below the ENplus logo.

The ENplus logo has to be a minimum height of 15 mm. Furthermore, the height of the identification number may not be any smaller than ten per cent of the seal's height, but a minimum height of 1.5 mm (Arial font size of 10).

The seal must be displayed in one of the colour variations or in monochrome specified in Annex 1.

When the certificate is issued, the certified company is granted the right to use the certification seal for the corresponding quality class to label its products and for advertising purposes. The seal has to be exclusively used in direct connection with the certified product. Certified companies who manufacture or trade certified and non-certified goods have to avoid the impression that the complete production and trade quantities are certified. The certification seal may only appear on delivery notes and invoices if they are issued exclusively for ENplus certified pellets.

Use of the logo without the identification number is only possible with the permission of the National Licensor / EPC.

5 TRACEABILITY AND TRANSPARENCY

A tracking system serves as a self-control and quality assurance aid to find out where the failures in the supply chain occurred and to identify which batches are out of specification. Through a system of unique identification numbers (ENplus IDs), each delivery should be able to be traced from the end customer through the entire logistics chain back to the producer. Therefore, an imprint of the sellers' ENplus ID on the delivery documentation is mandatory for each delivery of ENplus pellets for both, business to business sales, and consumer direct sales..

5.1 ENplus ID

Each ENplus ID has five characters that specify whether the certified company is a trader or a producer and which country he comes from. The first two digits indicate the country where the pellet producer or trader is located. Country codes are specified by ISO 3166-1-alpha-2. Companies who have been certified with DEPI in 2010 may use the numerical codes proposed in the German ENplus handbook 2010 until the end of 2014.

The three digits after the country code provide the number of the certified company in his country. The numbers 001 to 299 will be assigned to producers, the numbers 301 to 999 to traders. Certified Pellet producers who deliver loose pellets to end customers also need a trader certificate. They have to use their trader ENplus ID for bulk deliveries to end customers.

The whole supply chain can be identified by combining multiple ENplus IDs into an ID chain, that of the producer and those of all the traders involved in the supply chain, each ID is to be separated by a blank space.

The following example of an ID chain indicates that pellets were produced by the Austrian producer 012 and delivered by the German trader 344.

A	T	0	1	2
---	---	---	---	---

D	E	3	4	4
---	---	---	---	---

Since traceability and transparency are basic features of ENplus, customers should be informed of where their particular delivery of pellets originates from. Usually, a certified trader should use the ID chain, but this could be complex or even impossible if he buys or stores pellets from different certified producers. He may add the place of loading instead, or display only his ENplus-ID, but in case of complaints he must be able to trace the origin of the pellets from his internal documentation.

5.2 Reference Samples

The analysis of a reference samples offer a solid basis for the decision on quality related complaints from end customers or of disagreements on pellet quality between producers and trades. Reference samples have to be taken after the last sieving, e.g. from the moving material or from the silo of the delivery vehicle. The samples have to be archived for at least 9 months under proper conditions.

Certified producers have to take a minimum of 1.5 kg reference sample per each day of delivery and loading point. The same applies for each certified trader who operates an own storage. The date of sampling and the quality class of the pellets must be documented.

Additionally, certified traders have to take a minimum of 500 g reference sample from each loading of a delivery vehicle. The date, quality class, amount of pellets and the licence plate number of the delivery vehicle must be documented.

In case of loading at a producer's site, common samples for the producer and the trader are sufficient. The samples may be stored at the producers' site. However, the certified trader must have access to the stored samples.

The samples have to be sealed. The sample bags must have a consecutive registration number. The registration number should be stated in the delivery checklist.

5.3 Trade of Bagged Pellets

Certified wood pellets in bags should be labelled in the language of the country where the pellets are to be marketed. The label has to cover the following specifications:

- "Wood pellets" with the corresponding quality class
- Mass (in kg or metric ton)
- Diameter (6 mm or 8 mm)

- Certification seal of the manufacturer (certified producer or certified trader)
- Note “Store in dry conditions.”
- Note “Use only in approved and appropriate combustion systems according to manufacturer instructions and national regulations.”
- Manufacturer (Name and address of the certified company being responsible for bagging)

If the label states any pellet properties (e.g. ash content, calorific value), the parameter has to be measured according to the standard methods from EN 14961-2 except for the ash melting behaviour that has to be measured according to the ENplus handbook. This means for example that the calorific value has to be stated as received, not based on dry matter and should correspond to the test results. In view of current stocks of printed bags this requirement must be met no later than 1.1.2014.

The National Licensor / EPC is authorised to ask for a facsimile of each bag design from the certified company whose ENplus ID is printed on the bag. To avoid misuse of the ENplus seal, all facsimiles will be published on the National and the European ENplus homepage, so that the end consumer can verify the ENplus seal.

Trading with ENplus labelled bagged pellets is permitted without certification. The certified company who's ENplus ID is printed on the bag may grant a non-certified trader the use of its certificate seal for advertising (e.g. homepage of the non-certified trader). In that case, the certified company has to sign an agreement about the use of the certification seal with the non-certified trader and pass a copy of the agreement to the National Licensor / EPC. The use of the certification seal must only be linked to bagged pellets. If the non-certified trader also sells loose pellets, it has to be clearly obvious that the certificate is only valid for the certified bagged pellets.

Wood pellets of the EN-B class may not be sold in small bags (up to 50 kg bags).

6 COMPLAINT PROCEDURE

In case of complaints that cannot be solved between the customer and the certified vendor, the customer may request that the National Licensor / EPC handles the complaint. The National Licensor / EPC will propose a solution or may appoint an ENplus auditor who will investigate the incidence and decide whether the complaint is legitimate. The decision of the auditor is binding for all certified participants. In the case of a legitimate complaint, the costs for the auditor will be covered by the certified vendor of the pellets. Otherwise, the cost will be covered by the EPC / National Licensor.

The following conditions apply for complaints regarding pellets stored at the consumer:

- A sample of the stored pellets as well as the reference sample are analysed in an accredited testing laboratory and are not in line with the ENplus requirements.

- The amount of fines (< 3.15 mm) in the storage exceeds 4 w-%. The EPC will provide a sampling procedure to make sure that the sample is taken only from the last delivery. The following preconditions apply:
 - the amount of remaining pellets before the last delivery was less than 10% of the storage capacity,
 - the blowing distance does not exceed 30 m including the internal ducts,
 - the pellet storage is designed properly according to the guidelines for pellet storage.

The storage guideline will be published on the homepage of ENplus.

7 FEES

The schedule of ENplus fees is established by the National Licensor and is subject to approval by the EPC. The fees may consist of a basic fee and a licence fee per produced/traded amount of pellets.

Certified producers and traders have to report the amount of produced pellets of the preceding year to the EPC / National Licensor before the 15th of January and give a projection of the production/trade figures for the current year. The projection will be used to calculate the licence fee. The difference between the projected amount and the actual amount will be credited or charged in the following year.

Producer Fees

The license fee is based on the amount of all A1 and A2 pellets (loose pellets and bagged pellets) produced regardless whether they are sold as ENplus pellets or not. Pellets sold to power plants or for animal bedding are excluded from license payments under this scheme. The excluded amount is subject to approval by the EPC / National Licensor. In addition, there will be costs for surveillance inspections that have to be settled directly between the inspection body and the certified producer.

Trader Fees

The license fee is based on the amount of all A1 and A2 pellets traded in bulk regardless whether they are sold as ENplus pellets or not. Pellets sold to power plants or for animal bedding are excluded from license payments under this scheme. The excluded amount is subject to approval by the EPC / National Licensor. Traders, who use their own ENplus ID for pellet bags have to pay license fees also for the bagged pellets. Pellet producers with an additional trader certification have to pay the trader license fees only for those pellets that are sold directly to end customers.

The basic fee for Traders includes the costs for regular audits. In addition, there may be costs for surveillance inspections ordered by the EPC / National Licensor, e.g. in case of non-conformities.

8 LISTING OF CERTIFICATION, INSPECTION AND TESTING BODIES

8.1 Registration Requirements

A listed **certification body** must be accredited according to ISO/IEC 17065 with a member of the European Co-Operation for Accreditation (EA). Accreditation according to EN 45011 will be valid until the 31.12.2014. The scope of accreditation must include EN 14961-2 and EN 15234-2. The EPC or National Licenser may allow reasonable exceptions.

A listed **inspection body** must be accredited according to ISO 17020. The scope of accreditation must include EN 14961-2 and EN 15234-2. The EPC may allow reasonable exceptions. Senior auditors have to be listed with the EPC. They must have attended at least three producer audits and a 2-day training course acknowledged by the EPC. Listed auditors have to participate at least every second year in an auditors' workshops organised by the EPC.

Testing bodies must be accredited according to EN ISO 17025 for the testing standards specified in EN 14961-2. Testing bodies may cooperate to cope with all required tests according to the standard.

8.2 Application Procedures

Certification bodies can apply for listing with the EPC based on the requirements stated in this handbook. Written applications have to be submitted to the EPC.

National Licensers can choose to collaborate with one or more listed certification bodies in their country or area as specified in the licensing contract with the EPC. The agreement has to be completed with a written contact between both parties.

Inspection bodies can apply for listing with the EPC. The proposed auditors and their qualifications have to be listed in the application. Listing with the EPC is valid for all regions and countries. There is an annual fee of 800 € for being listed as an inspection body and a fee of 200 € for each listed auditor.

Testing bodies that intend to be listed must make a formal application to the EPC that includes their accreditations. Listing with the EPC is valid for all regions and countries. There is an annual fee of 500 € for being listed as a testing body.

The EPC has to provide the system support organisations / certification bodies with information about the accreditation details of the listed inspection and testing bodies and auditors. National Licensers can file a written objection to the EPC against the listing of an inspection body, testing body or auditor if they have experienced deficiencies, e.g. non-compliances with the requirements stated in chapter 8.1 or in the case of complaints from customers. The EPC will review the application and decide on it within one month and inform all relevant parties on the decision and its justification.

PART 2: CERTIFICATION OF PELLET PRODUCERS

9 APPLICATION OF PELLET PRODUCERS

The pellet producer has to apply for certification in the country where the production site is situated¹. The application procedure as well as both the certification body and the Licenser being responsible depend on the applicants' country of origin. If the EPC has transferred the licensing rights to a National Licenser, the National Licenser and the certification body named by the National Licenser are responsible for the application. Otherwise, the application is handled by the EPC and a legitimate certification body. All National Licensers are listed at www.enplus-pellets.eu.

9.1 Application Procedure

Basically, there are two options for the application procedure. The National Licenser defines which option is used in his country. National versions of this handbook should only describe the option that applies for their country.

Option 1: Coordination by Licenser

At first, the pellet producer has to choose a listed inspection body and sign an inspection contract for annual production control. In case of an application with the EPC, the applicant also has to choose one of the legitimate certification bodies.

Secondly, the pellet producer sends his application to the EPC / National Licenser. The application has to include the completed application form and a licence contract signed by the applicant.

Thirdly, the inspection body will perform an initial inspection. He will send a copy of the inspection report to the certification body / system support organisation in charge. The certification body will submit a conformity report to the EPC / National Licenser.

Finally, the EPC / National Licenser will send the countersigned licence contract and the individual certification seal to the applicant within two weeks after (1) the certification body states the conformity with the ENplus program and (2) the applicant has paid the licence fees for the on-going year.

Option 2: Coordination by the certification body

At first, the pellet producer has to choose a listed inspection body and sign an inspection contract for annual production control.

¹ The foregoing handbooks allowed to choose whether a production site was certified in the country of the production plant or in the country of the companies headquarter. Production sites that were certified in the country of the companies headquarter may keep the ENplus ID of the companies headquarter. In that case, the original Licenser as well as the original certification body may stay in charge, but the license fee per produced ton of pellets has to be transferred to the National Licenser responsible for the country where the production site is located.

Secondly, the pellet producer sends his application to the certification body in charge. The application has to include the completed application form and a licence contract signed by the applicant.

Thirdly, the inspection body will perform an initial inspection. It will send a copy of the inspection report to the certification body /system support organisation in charge. The certification body will submit the application documents and a conformity report to the EPC / National Licenser.

Finally, the EPC / National Licenser will send the countersigned licence contract and the individual certification to the applicant within two weeks after (1) the certification body states the conformity of the pellet producer with the ENplus program and (2) the applicant has paid the licence fees for the on-going year.

9.2 Mandate for Production Control

The applicant enters into an inspection contract with an inspection body listed with the EPC and commissions the inspection body with the annual inspection of its production facilities.

9.3 Initial Inspection of Production

The inspection body conducts an initial inspection of the production site(s) of the applying pellet producer in accordance with the EPC master checklist. The applicant has to give the auditor(s) access to all parts of the plant and to all the relevant documentation.

At the inspection, the following tasks must be carried out by the auditor(s):

- Sampling from production/storage, description and photo documentation of the sampling point(s). The sampling has to be carried out in accordance with EN 14778. The auditor has to pack and seal the drawn samples and arrange their delivery to the testing laboratory.
- Examination of the origin of raw materials and additives. Origin and sources of the raw materials have to be classified in accordance with EN 14961-2. If the raw material does not exclusively originate from an affiliated sawmill, the suppliers and the origin of the raw material are to be specified according to EN 14961-1 Table 1. The share of raw materials from certified sources (e.g. FSC or PEFC) has to be stated. Type and quantity of additives have to be stated.
- Inspection of the plant's own sampling and internal quality testing. If necessary, training in representative sampling has to be provided, including suggestions for improvement (Note: the sampling for self-monitoring purposes does not need to be carried out in accordance with EN 14778). The suitable test procedure for self-monitoring is to be determined.
- Examination of the production process and quality management documentation.

The initial inspection report (including the laboratory results, type and amount of additives, and the checklist) has to be forwarded to the applicant and copied to the certification body / system support organisation. The certification body / system support organisation will submit a conformity report to the EPC / National Licenser using a template (see Annex 3). The inspection report must include all the information required for the conformity report. The conformity report form may as well be part of the checklist.

If minor non-conformities are found during the inspection or laboratory test, the inspection body sets a reasonable deadline for corrective measures. The applicant has to prove that adequate corrective measures have been taken within the deadline.

When major non-conformities have occurred, the certification body will order a completely new audit to be conducted after the defects have been corrected. If the new audit also leads to a non-conformity decision, the certification body will revoke the certificate. Major non-conformities are ones that can influence the production quality on a sustained basis, such as inappropriate raw material or defective production and storage facilities.

10 SURVEILLANCE INSPECTIONS

Each production facility has to be inspected annually by a listed auditor in accordance with the EPC master checklist. The inspection can be carried out unannounced.

The inspection report (including the laboratory results and the checklist) has to be forwarded to the applicant and to the certification body / system support organisation. The certification body / system support organisation will submit a conformity report to the EPC / National Licenser using a template (see Annex 3). The inspection report must include all the information required for the conformity report. The conformity report form may as well be part of the checklist.

If minor non-conformities are found during the inspection or laboratory test, the inspection body sets a reasonable deadline for corrective measures. The applicant has to prove that adequate corrective measures have been taken within the deadline.

When major non-conformities have occurred, the certification body may suspend the certificate and order a completely new audit to be conducted after the defects have been corrected. If the new audit also leads to a non-conformity decision, the certification body will revoke the certificate. Major non-conformities are ones that can influence the production quality on a sustained basis such as inappropriate raw material or defective production and storage facilities.

11 QUALITY MANAGEMENT

The requirements for internal quality management of the pellet production are based on EN 15234-2 and ISO 9001. The quality management has to include an in-house manual and/or operating instructions, training records (external and internal) and procedures for the handling of claims and complaints.

11.1 Technical Operating Equipment and Operation Processes

The production facilities must fulfil the following requirements:

- The certified company must have suitable technical equipment for the production, loading and packaging of high quality wood pellets. The functions and condition of this equipment must be checked regularly.
- When raw materials are received, their adequacy must be checked (incoming goods inspection), e.g. by an individual inspection.
- Contamination of the raw materials by substances such as soil, stones and grain, as well as contamination of the manufactured pellets, must also be avoided. Manipulation areas, silos and technical operating equipment must be regularly checked for soiling and, if necessary, cleaned.
- Internal and external vehicles, as far as it does not involve special vehicles for the exclusive transport of certified wood pellets, have to be checked for contamination before loading.
- Before loading the wood pellets for delivery to the end customer, a fully functional and regularly maintained facility for the separation of fine material has to be used. Wood pellets have to be loaded with less than 1 w-% of fines.
- Wood pellets must be protected from moisture. They have to be stored and handled in dry areas including protection against condensation, rain or snow.
- Blending of wood pellets of different quality classes must be avoided by conscientious planning of operational procedures and spatially divided storage.
- When there are malfunctions in the production process, it is essential to check back and identify all the pellets that were produced out of specification. These wood pellets are not allowed to be sold as certified pellets.
- After repair and maintenance work has been carried out, the manufactured wood pellets must undergo an in-house quality inspection.
- All involved employees must receive annual training from the quality manager concerning the required quality demands.
- The certified company must have the appropriate testing instruments and testing means, as well as the know-how to inspect the manufactured pellets.

11.2 Quality Manager

The management must appoint an experienced employee as a quality manager. The quality manager has to participate in an external training course for pellet quality assurance at least in the first year and during every certification period. The training has to be approved by the EPC / National Licenser.

The quality manager must maintain the correct internal documentation and is responsible for reference samples and self-inspections. He must know the effects of different operating processes on the quality of the wood pellets and appropriately train

the other employees in their areas of responsibility. Moreover, he is the contact for his/her colleagues in the case of malfunctions in the production process. The quality manager can delegate individual monitoring and documentation tasks to other employees. In this case, he has to advise the responsible employee of his duties and monitor that these duties are being carried out correctly.

The quality manager also serves as contact person for the EPC / National Licenser. The latter will inform the quality manager about improvements and changes in the certification program.

11.3 Internal Documentation

The quality manager must ensure the orderly documentation and evaluation of operating processes that have an effect on the quality of the wood pellets. In detail, the documentation must at least encompass the following points:

- Incoming raw materials and additives (date, quantity, and name of the supplier; data sheet of additives, inspection notes)
- Outgoing goods (date, quality class, quantity and name of the customer; details of the vehicles or external forwarders and the freight which was transported by the vehicle; details of reference samples)
- Previous load has to be documented for every pellet vehicle, unless special vehicles for the exclusive transportation of certified wood pellets are being used.
- The addition of pressing aids or other additives (type as well as dosage)
- Production of wood pellets (period, quality class, quantity)
- Malfunctions of the production process (date, type, measures taken, quantity and disposition of non-conforming wood pellets)
- Repair and maintenance work that could lead to a change in the wood pellet quality (date, type of work performed)
- Employee training regarding the effect of the various production factors on the wood pellet quality (date, participants, contents)
- Areas of responsibility of the individual employees
- Self-inspections (documentation and evaluation of the results)
- Customer complaints (date, reason of the complaint, measures taken)

The documentation has to be kept up-to-date and should be regularly presented to the management. For this purpose, it is recommended to maintain a shift book. Discovered defects are to be immediately disclosed to the responsible employees and are to be remedied.

11.4 Self-Inspections

The producer must test the quality of the manufactured pellets to confirm that they comply with the product requirements and to avoid the production of non-conforming batches. The parameters in Table 3 have to be checked at least once a shift.

The frequency of the checks can be calculated by the formula (EN 15234-2):

$$N = \frac{10}{days} * \sqrt{\frac{ton}{10}}$$

N number of sample in 24h
 days annual working days
 ton annual quantity of pellets in tons

Example $N=10/220*\sqrt{50\ 000/10} = 3$ times per 24h

Table 3: Minimum requirements on of the internal quality control

Parameter	Sample point	Frequency
Bulk Density	After production, before storage	N, at least once per shift
Moisture	After production, before storage	N, at least once per shift
Mechanical Durability	After production, before storage	N, at least once per shift
Length	After production, before storage	N, at least once per shift
Fines	Last possible point before delivery	N, at least once per shift

The tests must be conducted according to the methods approved by the auditor. When reasonable doubts concerning the pellet quality exist, the inspection body can order that more frequent internal inspections or extraordinary inspections are carried out.

11.5 Sustainability Requirements

ENplus certified producers should be fully committed to ensuring that both the sourcing of the raw material for pellet production and the operation of the pellet plant complies with generally accepted sustainability principles. To document this commitment they have to sign the “Statement of Commitment” (Annex 5). They accept, that if there are any serious and substantiated concerns that these sustainability principles have been violated, the EPC / National Licenser can order a dedicated audit by the inspection body to provide evidence that the concerned sustainability principles are not violated.

ENplus certified producers also have to document the origin of the their raw material and inform the inspection body at the yearly audit about the

- total amount of raw material for pellet production originating from forest, plantation and other virgin wood (class 1.1) as defined in EN 14961-1 (chapter 2.2 of this handbook, Table 1) and the share of this raw material coming from certified sources (FSC, PEFC or equivalent systems).
- Total amount of residues used for pellet production and the share coming from certified chain of custody systems (FSC, PEFC or equivalent systems),

The annual inspection will verify the information. The values will be disclosed to EPC / National Licensor in the conformity report. The EPC / National Licensor will publish the aggregated results.

11.6 Carbon Footprint

Pellet producers must state the amount of CO_{2-eq} emitted per metric ton of pellets produced. For this purpose, it is recommended to use the calculation tool provided by the EPC. The annual inspection will verify the stated CO_{2-eq} emissions per ton of produced pellets and this figure must be included in the audit report. The values will be disclosed to EPC / National Licensor in the conformity report. The EPC / National Licensor will publish the aggregated results.

11.7 Reporting of Produced Quantities

The National Licensor/ EPC may set up a reporting system for the monthly production figures of wood pellets. The report should summarise the total national production of wood pellets according to their quality class and packing.

The National Licensor / EPC has the responsibility of ensuring that the supplied individual data is treated as classified and kept securely at all times. The data will be used exclusively for market monitoring. The National Licensor/ EPC will publish the aggregated production figures on a regular basis.

PART 3: CERTIFICATION OF PELLET TRADERS

12 APPLICATION OF PELLET TRADERS

Each trader in the supply chain of ENplus certified bulk pellets needs certification. Companies who buy loose pellets and bag them also need to be certified. Certified pellet producers who deliver loose pellets to consumers also need a trader certification. Freight forwarders and storage companies, who are active on behalf of a certified trader, do not have to be certified. The certified trader has to register the delivery vehicles and storage facilities of the external service provider with the system support organisation / certification body.

The application procedure as well as the certification body and the Licenser being responsible depend on the applicants' country of origin. If the EPC has transferred the licensing rights to a National Licenser, the National Licenser and the certification body named by the National Licenser are responsible for the application. Otherwise, the application is handled by the EPC and a legitimate certification body. All National Licensers are listed at www.enplus-pellets.eu.

12.1 Application Procedure

Basically, there are two options for the application procedure. The National Licenser defines which option is used in his country. National versions of this handbook should only describe the option that applies for their country.

Option 1: Coordination by Licenser

The pellet trader sends an application and a signed licence contract to the National Licenser. The completed application form has to include a data sheet for each storage facility and delivery vehicle. In case of an application with the EPC, the applicant also has to name the certification body being responsible.

The EPC / National Licenser will send the countersigned licence contract and the individual certification seal to the applicant within two weeks after (1) the certification body states the conformity with the ENplus program and (2) the applicant has paid the licence fees for the on-going year.

Option 2: Coordination by the certification body

The pellet trader sends an application and a signed licence contract to the certification body. The completed application form has to include a data sheet for each storage facilities and delivery vehicle.

The certification body will submit the application documents and a conformity report to the EPC / National Licenser who will send the countersigned licence contract and the individual certification seal to the applicant within two weeks after (1) the certification body states the conformity of the pellet producer with the ENplus program and (2) the applicant has paid the licence fees for the on-going year.

13 SURVEILLANCE INSPECTIONS (AUDITS)

A certified trader must be inspected within the first year of certification. Subsequently, surveillance inspections will be carried out at least once in each certification period. The inspections can be carried out unannounced.

The surveillance inspection has to be carried out by a listed auditor following the requirements of the EPC master-checklist. The auditor is chosen by the certification body / system support organisation.

At the inspection, the following tasks are to be carried out by the auditor(s):

- Inspection of storage facilities, operating equipment, and delivery vehicles
- Check of delivery documents
- Check of the quality management and the internal documentation

The inspection report has to be forwarded to the applicant and to the system support organisation / certification body. The certification body / system support organisation will submit a conformity report to the EPC / National Licenser using the template provided by EPC (Annex 4). The inspection report must include all the information required for the conformity report. The conformity report form may as well be part of the checklist.

In case of non-conformities, the system support organisation / the certification body can set a reasonable deadline (a maximum of 10 weeks), in which the certified company has to verify that corrective measures have been taken. Otherwise the certificate can be revoked.

In case of major non-conformities, the system support organisation / the certification body is entitled to order a completely new surveillance inspection after the defects have been corrected. Major defects are defined as those that can influence the production quality on a sustained basis (e.g. inappropriate technical equipment or the mixing of certified and non-certified pellets).

14 QUALITY MANAGEMENT

14.1 Technical Operating Equipment and Operation Processes

The following requirements must be fulfilled during storage and delivery to end customers:

- The certified trader must have adequate technical equipment for the storage, handling and delivery of high quality wood pellets. The functions and condition of this equipment must be checked regularly.
- Manipulation areas, silos and conveyor equipment must be checked regularly for soiling and cleaned. This also applies to the loading of external vehicles. Responsibility for the inspection lies with the certified trader.

- The wood pellets must not absorb any moisture, e.g. through contact with condensate, rain or snow. Condensation should be avoided.
- The blending of wood pellets of different quality classes must be avoided through the robust planning of operational procedures and the possibility of spatially divided storage and transport. During transportation, different pellet qualities have to be stored separately.
- If wood pellets from the storage facility are delivered to end customers, the storage facility must be equipped with a device to separate the fine material before filling the transport vehicle. After the separation process, the fine material must amount to a maximum of 1 w-%. Reloading the delivery truck from a trailer or another vehicle without sieving is forbidden.
- The temperature of the loaded pellets must not exceed 40 °C (EN 15234-2).
- The delivery driver has to perform a visual inspection of the quality of the wood pellets during the loading process.
- Reference samples are to be taken when bulk wood pellets are delivered to the end customer (see 5.2).
- Silo vehicles for the transport to private customers must be equipped with a gauged on-board weighing system. Individual exemptions from this rule can be agreed between the certification body / system support organisation and certified traders for a maximum of 1 year. Such exemptions must be reported to the EPC / National Licensor, however, and can be lifted if repeated complaints from customers are received.
- The transport vehicle must be equipped with a low-abrasion blowing/suction feeding system – this means the delivery pipe should be coated to reduce friction and the connection between pipes should not contain sharp edges looking against the pellet flow.
- Silo vehicles must have a device to extract the supply air from the storage facility during the delivery. The certification body / system support organisation can accept other solutions that prevent dust from being blown into the building of the customer. The EPC must be informed about which other solutions are accepted.
- The amount of coating agents must be limited to 0.2 w-% of the pellets.
- When a delivery to an end customer is made, the transport mechanisms and the store should be checked for irregularities (e.g., missing impact mats, unfavourable pipe angles, missing ventilation). The filling level of the store must be estimated before the filling process begins. Obvious defects of the storage area or existing dust build-up must be documented on the delivery documents and have to be confirmed by the customer (see 14.5).
- When a delivery to the end customer is made, a checklist stating all relevant details for the quality of delivery (see Annex 3) has to be filled out. The check list may be integrated within the delivery note.

- Drivers with contact to end customers must participate in a training course on the knowhow of smooth pellet delivery and storage. The training has to be carried out within the first year of certification and once in each certification period. The training has to be approved by the EPC / National Licensor.

14.2 Quality Manager

The management of the certified trader must appoint an experienced employee as a quality manager. This person must maintain the correct internal documentation and is responsible for carrying out self-inspections, as well as for archiving reference samples. He must know the effects of different operating processes on the quality of the traded wood pellets and train the other employees accordingly. The quality manager can delegate individual monitoring and documentation tasks to other employees. In this case, he has to advise the responsible employee of his duties and monitor that these duties are being carried out correctly.

The quality manager has to participate in an external training course for pellet quality assurance at least once in the first year of certification and once in every certification period. The training has to be approved by the EPC / National Licensor.

The quality manager also serves as contact person for the EPC / National Licensor. The latter will inform the quality manager about improvements and changes in the certification program.

14.3 Internal Documentation

The quality manager must maintain the correct documentation and evaluate the operating processes that have a direct effect on the quality of the traded wood pellets.

In detail, the documentation must cover the following points:

- Materials received (pellets: date, pellet quality class, quantity, supplier; coating agents: date, type, quantity, supplier)
- Outgoing goods (date, pellet quality class, quantity, name of the customer, the store where the batch originates from, plate number of vehicles or external forwarders and the freight that was transported before as well as a confirmation of the cleaning of the vehicle)
- Problems during storage and transport (date, type of problem, measures taken, quantity and disposition of the non-conforming wood pellets)
- Previous freight of all delivery vehicles, unless special vehicles for the exclusive transportation of certified wood pellets are used
- Repair and maintenance work that can lead to a change in the wood pellet quality (date, type of work, quantity and disposition of the non-conforming wood pellets)
- Self-inspections (documentation and evaluation of the results, see 14.4)
- Areas of responsibility of the individual employees

- Internal training courses (date, participants, contents)
- Customer complaints (date, reason, measures taken).

14.4 Self-Inspections

The quality manager is responsible for regular inspections of the storage facilities. The minimum requirements are a weekly inspection including:

- visual inspection of the stored wood pellets,
- inspection of the device for the separation of fines
- checking the temperature of the pellets
- sampling of pellets from loading and determination of the amount of fines to monitor the sieving device

The tests have to be carried out in line with a regular inspection plan. The execution and the results must be documented.

14.5 Delivery Documentation of Bulk Pellets

When a delivery of bulk pellets to an end customer is made, a checklist stating all the relevant details for the quality of delivery (see Annex 5) has to be filled out. The check list may be integrated within the delivery note.

The delivery documentation for bulk pellets has to cover at least the following specifications:

- “Wood pellets” with the corresponding quality class
- ENplus ID (see 5.1)
- Mass in kg or metric ton
- Diameter (6 mm or 8 mm)
- Licence plate number of the delivery vehicle
- Status of the storage room (e.g. missing impact mats, unfavourable pipe angles, and missing ventilation)
- Amount of residual pellets
- Conditions of delivery (length of pipe, blowing pressure, blowing time)
- Boiler status (on/off)
- Note “storage rooms have to be ventilated”
- Note “Store in dry conditions.”
- Note “Use only in approved and appropriate combustion systems according to manufacturer instructions and national regulations.”

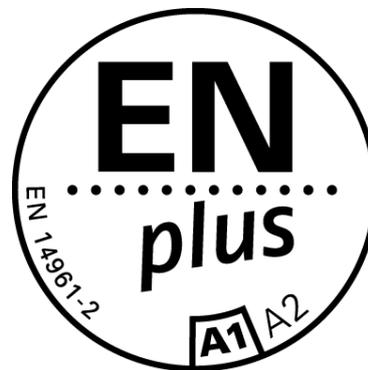
If the customer is present, he has to sign the delivery documentation for confirmation.

ANNEX 1: DESIGN OF THE CERTIFICATION SEAL



ES 100

ENplus seal for wood pellets of the quality category ENplus-A1 (example Spanish producer)



ES 100

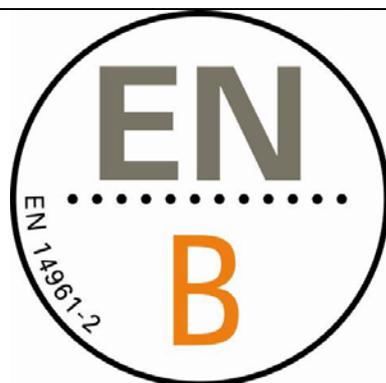


ES 100

ENplus seal for wood pellets of the quality category ENplus-A2 (example Spanish producer)

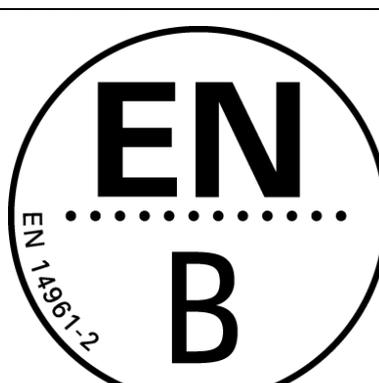


ES 100



ES 100

ENplus seal for wood pellets of the quality category EN-B (example Spanish producer)



ES 100

ANNEX 2: TESTING METHODS FOR IN-HOUSE SAMPLING AND QUALITY ASSURANCE

For internal quality control regular testing of samples according to clause 11.4 is required. We recommend the use of testing methods according to EN 14961-2. However, other methods may be used if their adequacy and comparability is verified e.g. in course of the surveillance inspection by comparative measurement according to standard methods.

A2-1 Sampling

Sampling should respect the principles of EN 14778 but a simplified procedure is sufficient. The internal documentation must define the sampling procedure.

In general, it is recommended to take a one sample of 5 kg from the moving material for length, bulk density, durability and moisture determination e.g. after the cooler and one sample of 3 kg for fines determination and as retain sample from moving material at the last possible point before truck loading or packaging. Special care is necessary to sample the complete stream of material. If only small bags are produced, a complete bag may be taken for determination of all parameters. Sampling from static material e.g. out of big-bags, containers, piles or out of the silo truck is not recommended for determination of fines.

The individual samples will be compiled into a cone which will be pressed flat and divided into four equally large parts by a vertically inserted scoop. The process has to be repeated until the required sample size for the respective test is achieved.

A2-2 Determination of overlength

The internal quality control has to ensure that the amount of pellets with a length > 40 mm is less than 1% of the pellet mass and that not a single pellet exceeds the maximum length of 45 mm. Experienced staff will find oversized pellets by visual inspection of the sample. The size of those pellets should be measured with a caliper that has a resolution of at least 0.1 mm.

For documentation it is sufficient to confirm the check for oversized pellets on the test protocols and make notes when pellets with overlength are found.

A2-3 Mechanical Durability (DU)

The determination of the mechanical durability should follow EN 15210-1. At first, fines are removed from the sample by gentle hand sieving using a 3.15 mm sieve according to ISO 3310-2. A sample with a mass of 500 ± 10 g should be filled in the testing chamber of the tumbler, which rotates at (50 ± 2) revolutions per minute. After 500 rotations, the drum has to be emptied and the fine material will be sieved again.

Alternatively, a Ligno-Tester may be used. 100 g ± 0.5 g pellets are weighed and treated in the Ligno-Tester for 60 seconds at 70 mbar. The procedures described by the equipment manufacturers must be observed. Special care is necessary for equipment maintenance and service requirements (e.g. regular check of accuracy of pressure gauge and frequent change of dust filter).

The remaining wood pellets will be weighed and the mechanical durability will be determined using the following formula:

$$DU = \frac{m_A}{m_E} * 100$$

DU	mechanical durability (%)
m _E	mass of the pre-sieved wood pellets before
m _A	mass of the sieved wood pellets after

A2-4 Bulk Density (BD)

The determination of the bulk density is done according to EN 15103. Wood pellets are poured from a height of 200 to 300 mm into a measuring cylinder with a volume of five litres until the cylinder is full and a debris cone has formed. Subsequently, the cylinder will be dropped three times from a height of approximately 150 mm on a hard surface in order to consolidate the wood pellets. After excess material has been removed by striking a straight edge along the top and larger cavities have been filled, the mass of the full container is determined.

The bulk density (BD) will be calculated using the following formula:

$$BD = \frac{(m_2 - m_1)}{V}$$

BD	bulk density
m ₁	mass of the empty container
m ₂	mass of the full container
V	net volume of the measuring cylinder

Note: household measuring beakers or plastic buckets are not considered as suitable equipment.

A2-5 Moisture Content (M)

The determination of the moisture content should be done according to EN 14774-2.

First, the mass of an empty drying dish will be determined (accuracy: 0.1 g). Subsequently, the dish will be filled with at least 300 grams of wood pellets and re-weighed. The sample will then be dried in a drying chamber (oven) at (105 ± 2) °C until constant mass has been achieved. After the mass has been determined within 15 seconds after removing it from the drying chamber (weighing as hot), the moisture content will be calculated using the following formula:

$$M = \left[\frac{(m_2 - m_3)}{(m_2 - m_1)} * 100 \right]$$

M	moisture content as received (w-%)
m ₁	mass of the empty drying pan
m ₂	mass of the drying pan and sample before drying

m_3 mass of the drying pan and sample after drying

Alternatively, faster methods may be used e.g. infrared balances or a humimeter. In that case, the testing procedures described by the equipment manufacturers must be observed including sample preparation requirements.

Online measurement of moisture content is recommended only for process control but does not substitute sampling and determination of moisture as described above.

A2-6 Amount Fine Material (F)

The determination of the content of fine material should follow EN 15210-1. The sample should be hand sieved using a 3.15 mm sieve according to ISO 3310-2. Care must be taken that all fine particles are separated but no new fine material is formed due to intensive sieving. The sieved fine material is weighed.

The fine material amount (F) will be calculated as follows:

$$F = \frac{m_A}{m_E} * 100$$

m_E mass of the sample before sieving
 m_A mass of the sieved particles

ANNEX 3: CONFORMITY REPORT FOR PELLET PRODUCER

Certification body:

Date of Inspection:

Certified Pellet Producer

Company :

Address:

Site:

Address:

ENplus ID:

Quality Manager:

Product

Brand names :

Quality classes:

ENplus-A1

ENplus-A2

EN-B

Other

Production (recent year):

A1: t (metric ton)

A2: t

B /other: t

Bagged Pellets:

yes

no

→ attach a photo or prepress repro of each bag design

Carbon footprint:

g CO₂-eq./ kg pellets

Raw materials

Sources :

% virgin wood (1.1)

% residues (1.2)

% used wood (1.3)

Sustainability:

% of (1.1) from certified sources

% of (1.2) from certified Chain of Custody

Species :

% spruce

% pine

% hardwood

% other wood

Additives:

w-% of pellets

Type of additives:

Storage & delivery

Pellet Storage:

A1: metric tons

silo

hall

A2: metric tons

silo

hall

Direct delivery to end customers:

yes

no

Complaints (customers): number:

accepted:

rejected:

Inspection results

Inspection body : _____

Auditor: _____

Major non-conformities:

yes

no

solved

Description of non-conformities and measures taken:

Minor non-conformities:

yes

no

solved

Description of non-conformities and measures taken:

The pellet production at the above named site conforms to the requirements of the ENplus certification program as specified in the ENplus-handbook.

yes

no

(place and date)

(Signature and company stamp)

Attachments

laboratory results (one for each quality class of loose and bagged pellets)

facsimiles of bags (one for each bag design)

- Send to EPC or National Licenser -

ANNEX 4: CONFORMITY REPORT FOR PELLET TRADER

Certification body: [] Date of Inspection: []

Certified pellet trader

Company : [] Address: []

ENplus ID: [] Quality Manager: []

Product

Brand names : []

Quality classes: ENplus-A1 ENplus-A2 EN-B Other

Bulk trade amount: A1: [] t (metric ton) A2: [] t B/other: [] t
(recent legal year)

Bagged Pellets with own ID: yes no Trade amount (recent year): [] t

- attach a photo or prepress repro of each bag design -

Pellet supply

Suppliers : certified producer certified trader non-certified vendors

ENplus-IDs of suppliers: []

Storage & delivery

Pellet storage capacity: A1: [] metric tons silo hall

A2: [] metric tons silo hall

Complaints (customers): number: [] accepted: [] rejected: []

Reasons for complaints: fines: [] % of complaints overlength: [] % of complaints

odour : [] % of complaints durability: [] % of complaints

other: []

Inspection results

Inspection body : _____

Auditor: _____

Major non-conformities:

yes

no

solved

Description of non-conformities
and measures taken:

Minor non-conformities:

yes

no

solved

Description of non-conformities
and measures taken:

The above named pellet trader conforms to the requirements of the ENplus certification program as specified in the ENplus-handbook.

yes

no

(place and date)

(Signature and company stamp)

Attachments

- list of storage sites (operator, address, capacity) → **mark the ones checked in audit**
- list of delivery vehicles (owner, number plate, location) → **mark the ones checked in audit**
- list of sub-licensors (company name, contract date)

- Send to EPC or National Licenser -

ANNEX 5: EXAMPLE OF A DELIVERY CHECKLIST

License Plate No. of Delivery Vehicle: _____

Company address and logo

Customer: _____

Address: _____

Ordered Quantity: _____

Pellet Quality class: A1 A2 B Diameter: __ mm

ENplus ID: _____ Registration number. of reference sample: _____



XX 000

Storage

Type: massive bunker bag silo underground silo

other: _____

Capacity: _____ metric tons Inventory: _____ metric tons

Quality of remaining quantity: good medium bad

Conformity: storage complies with ENplus guideline impact mats

Ventilation in storage: ventilated cap other type of ventilation no

Discharge system: suction screw other: _____

Imprint of weighing protocol

Delivery

Boiler status: on off

Length of filling hose: _____m Number of hose bends: _____x 45° _____x 95°

Pipe length between connector and store: _____m

Bends in the blow-in pipe: yes/number: _____ no

Blowing pressure: _____bar Blowing time: _____minutes

Bunker full after filling: yes no

Trailer possible: yes no

Comments: _____

Use only in approved and appropriate combustion systems according to the manufacturer instructions and national regulations – pellets are to be stored in a dry place – storage facilities are to be ventilated.

(place and date)

(driver)

(customer)

Please note: The storage room should be constituted so that it is suitable for filling with a silo truck. Excess pressures and low pressures could occur. Since we have no influence on the condition of the storage space, we cannot be held liable for damages occurring during the blow-in process. According to the knowledge gained in recent years, we recommend a complete emptying and cleaning of the storage space following every 2nd delivery at the latest.

ANNEX 6: SUB-LICENCE CONTRACT

ENplus Sub-licence Contract

Certified Trader

Name: _____

Street: _____

City: _____

ENplus-ID: _____

Non-certified Trader

Name: _____

Street: _____

City: _____

Preface

ENplus is a quality certification program for wood pellets that relies on a chain of custody from the pellet producer to the end customer. All companies in the supply chain who have physical contact with the pellets have to be certified. Certified companies are identified by their ENplus ID. The ENplus ID must be annotated on the delivery documents and invoices during the entire supply chain. If ENplus wood pellets are handled by a non-certified company, the pellets may not be sold as certified goods. Sub-licensing is only possible if the Non-certified Trader has no own storage and/or delivery equipment and has no physical contact with the pellets.

Agreement

The Certified Trader grants the Non-certified Trader the permission to use the ENplus ID of the Certified Trader for offerings and sales of bulk pellets of the quality class

ENplus-A1

ENplus-A2

The right to do so is limited to the delivery of pellets that come from the Certified Trader and are delivered by the Certified Trader. The Non-certified Trader is not allowed to have physical contact with the pellets.

The Non-certified Trader is

allowed

not allowed

to use the certification seal of the Certified Trader for promotion.

This agreement is valid for 12 months and can be extended for 12 months respectively.

Place, Date, Signature (Certified Trader)

Place, Date, Signature (Non-certified Trader)

- Contract must be submitted to the ENplus National Licenser within one week after signing -

ANNEX 7: DECLARATION OF SUSTAINABILITY

STATEMENT OF COMMITMENT TO SUSTAINABLE PELLET PRODUCTION

The management of(NAME OF THE COMPANY)..... is committed to ensuring, that its wood sourcing practices and its pellet production operations are carried out in accordance with the following principles:

- *The production of woody biomass does not significantly take place at the expense of the net carbon balance of carbon reservoirs in vegetation and soil.*
- *The production of the woody biomass does not interfere negatively with biodiversity within the forest of origin*
- *The production of woody biomass maintains or improves the soil quality*
- *The production of woody biomass does not exhaust ground and surface water and avoids or significantly limits negative impacts on water resources.*
- *The production of pellets avoids or significantly limits negative impact on air quality*
- *The production of wood pellets does not endanger food, water supply or subsistence means of local communities.*
- *The production of wood pellets respects property rights and contributes to local prosperity and to the welfare of the employees and the local population.*
- *Ethic principles related to health and safety, human rights, freedom of association, compulsory labour, child labour, discrimination, environmental responsibility, business integrity and corruption in all its forms are fully respected.*
- *Wood sourcing is fully compliant with the European Timber Regulation (EUTR) and the EU Forest Law Enforcement, Governance and Trade (FLEGT) regulations.*

The Management of(NAME OF THE COMPANY)..... will make this commitment public (e.g. by publication on its website) or by other adequate means of communication. The management also agrees that it will accept any investigations organised by the inspection body being responsible for the production control as part of the ENplus certification, if there is a serious case and/or substantiated concerns raised that these principles are not being followed.

Name, signature, date

FURTHER ANNEXES CAN BE ADDED BY NATIONAL LICENSER, E.G., SPECIFYING REQUIREMENTS FOR DELIVERY NOTES, COMPLAINT DATA MANAGEMENT, CONFIRMATION OF PRIOR FREIGHT AND TRUCK CLEANING, ETC.