

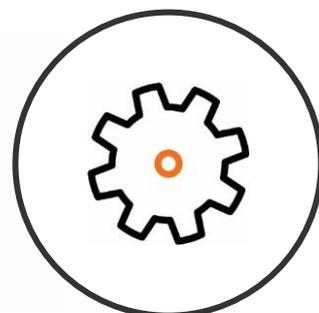


The world-leading  
Wood pellet certification

## **ENplus® Standard**

*ENplus® wood pellets –  
Requirements for companies*

ENplus® ST 1001:2022, first edition



Valid globally

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For Germany, the only official version of this document to be used in Germany is in German.

## Foreword

The European Pellet Council (EPC), founded in 2010 and a network of Bioenergy Europe AISBL, is an umbrella organisation that represents the interests of the European wood pellet sector. Its members are national pellet-, or pellet-related associations from numerous countries in and outside of Europe. The EPC provides a platform for the pellet sector to discuss issues that must be managed in the transition from a niche product to a major energy commodity. These issues include standardisation and certification of pellet quality, safety, security of supply, education and training, and pellet quality measuring devices.

Deutsches Pelletinstitut GmbH (German Pellet Institute) (**DEPI**) was founded in 2008 as a subsidiary of Deutscher Energieholz- und Pellet-Verband e. V. (German Wood Fuel and Pellet Association) (DEPV), and provides a communication platform and competence centre for topics related to heating with wood pellets. In 2010, **DEPI** created, in cooperation with German Biomass Research Center Leipzig (DBFZ) and proPellets Austria, the ENplus® scheme. In 2011, the trademark rights for all countries, except Germany, transferred to the EPC.

Today, the EPC is the governing body for the ENplus® quality certification scheme for all countries except Germany, which is governed by **DEPI**.

This document replaces the ENplus® Handbook, version 3.0 and will come into force on 1 January 2023 and therefore:

- a) initial inspections between the publication date (1 October 2022) and the date of entry into force (1 January 2023) may be conducted against either the requirements of this document, or against the ENplus® Handbook, version 3.0;
- b) all initial inspections after the date of entry into force (1 January 2023) shall be conducted against the requirements of this document;
- c) all surveillance and recertification inspections after the transition date (1 January 2024) shall be conducted against the requirements of this document.

Requirement 7.3.2.4 has a transition period until 1 January 2025.

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## Introduction

The key objective of the ENplus® scheme is to manage an ambitious certification scheme that thrives for consistent, high quality wood pellets. The **ENplus® logo** allows pellet quality to be communicated to customers and consumers in a transparent and verifiable way.

Wood pellets are a renewable fuel produced primarily from sawmill residues. Wood pellets are used as a fuel for residential heating systems as well as for industrial burners. They are a refined fuel that can be damaged during handling. Due to this, quality management is a necessity and should cover the entirety of the supply chain, from the choice of raw material to the final delivery to the end-user.

The ENplus® scheme covers technical properties of pellets, quality management related to the properties of the pellets, and customer satisfaction within the entire supply chain, from pellet production to end use.

The ENplus® scheme is primarily focused on the domestic and commercial heating sector, but the ENplus® certification is also available to all other actors within the pellet industry.

The 4th major **revision** of the ENplus® scheme resulted in a comprehensive change in the structure of the **ENplus® documentation**, in parameters for ENplus® certified pellets and relating processes, and management system requirements.

The requirements within this document are based on ISO 17225-2 with reference to the raw material and product properties.

This document is part of the **ENplus® documentation** that consists of ENplus® **standards**, ENplus® guidance documents, as well as ENplus® procedural documents. The following ENplus® **standards** are an integral part of the ENplus® scheme:

- a) ENplus® ST 1001, ENplus® wood pellets – Requirements for **companies**;
- b) ENplus® ST 1002, Requirements for certification and testing bodies operating ENplus® certification (valid globally except Germany);
- c) ENplus DE ST 1002, Requirements for certification, inspection and testing bodies operating ENplus certification (valid in Germany, only available in German language);
- d) ENplus® ST 1003, Usage of the **ENplus® trademarks** – Requirements.

Current versions of the **ENplus® documentation** are published on the **official ENplus® website**.

The term “shall” is used throughout this document to indicate those provisions that are mandatory. The term “should” is used to indicate those provisions which, although not mandatory, are expected to be adopted and implemented. The term “may” indicates permission, whereas “can” refers to the ability of, or a possibility open to, a user of this document.

The terms written in bold characters are defined in the chapter 3. Terms and Definitions.

# 1. Scope

**1.1** This document describes the requirements for **producers, traders, and service providers** of wood pellets that intend to obtain and maintain the ENplus® certification and to use the **ENplus® trademarks**. The **company** shall implement and maintain the ENplus® system in a manner that is adequate to its size and complexity to ensure its continuous conformity with the applicable ENplus® requirements. The chapters: General Requirements (see General requirements) and Management System Requirements (see Management system requirements) shall be applied by all **companies (producers, traders, and service providers)**. The process requirements chapters (see Requirements for producers and Requirements for traders) differentiate between specific requirements for the **producers, traders, and service providers**.

**1.2** This document covers the requirements for:

- a) raw material used and product properties
- b) processes in wood pellets production, handling, and trading
- c) quality management system in wood pellet production, handling, and trading.

**1.3** This document shall apply, without any modifications, in all countries where the ENplus® scheme operates. Country exceptions are marked within the document.

## 2. Normative references

The following referenced documents are essential for the application of this document as defined in its requirements. For undated references, the latest edition of the referenced document (including any amendment) applies.

ENplus DE ST 1002, *Requirements for certification, inspection and testing bodies operating ENplus certification*

NOTE: The document only applies to Germany (only available in German language). In all other countries ENplus® ST 1002 applies.

ENplus® ST 1002, *Requirements for certification and testing bodies operating ENplus® certification*

NOTE: The document applies to all countries, except Germany, where ENplus DE ST 1002 is available.

ENplus® ST 1003, *Usage of the ENplus® trademarks – Requirements*

ISO 3166, *Codes for the representation of names of countries and their subdivisions*

ISO 16948, *Solid biofuels - Determination of total content of carbon, hydrogen and nitrogen contents*

ISO 16968, *Solid biofuels - Determination of minor elements*

ISO 16994, *Solid biofuels - Determination of total content of sulphur and chlorine*

ISO 17225-1, *Solid biofuels - Fuel specifications and classes - Part 1: General requirements*

ISO 17225-2, *Solid biofuels - Fuel specifications and classes - Part 2: Graded wood pellets*

ISO 17828, *Solid biofuels - Determination of bulk density*

ISO 17829, *Solid Biofuels - Determination of length and diameter of pellets*

ISO 17831-1, *Solid biofuels - Determination of mechanical durability of pellets and briquettes - Part 1: Pellets*

ISO 18122, *Solid biofuels - Determination of ash content*

ISO 18125, *Solid biofuels - Determination of calorific value*

ISO 18134, *Solid biofuels - Determination of moisture content*

ISO 18135, *Solid biofuels - Sampling*

ISO 18846, *Solid biofuels - Determination of fines content in quantities of pellets*

NOTE: ISO 18846 is expected to be replaced by ISO 5370, *Solid biofuels – Determination of fines content in pellets*

ISO 20023, *Solid biofuels - Safety of solid biofuel pellets — Safe handling and storage of wood pellets in residential and other small-scale applications*

ISO 21404, *Solid biofuels - Method for the determination of ash melting behaviour*

ISO 21945, *Solid biofuels - Simplified sampling method for small scale applications*

ISO 3310-2, *Test sieves - Technical requirements and testing — Part 2: Test sieves of perforated metal plate*

### 3. Terms and Definitions

#### 3.1 appeal

A written request by any person or organisation (the appellant) for reconsideration of any decision affecting the appellant made by the **ENplus® scheme management** where the appellant considers such decisions have been taken in breach of the ENplus® requirements or procedures.

NOTE: Such adverse decisions may include:

- a) rejection of an application for usage of the **ENplus® trademarks**;
- b) refusal of an application for the ENplus® listing of certification and testing bodies.

#### 3.2 bag design approval number

A unique alfa-numerical code issued by the relevant **ENplus® scheme management** to the **bag design owner** for each approved bag design.

#### 3.3 bag design owner

The **company** permitted by the **ENplus® scheme management** to use the bag design.

NOTE: The **ENplus® ID** of the **bag design owner** is displayed in the bag design.

#### 3.4 bagged pellets

Pellets in a packaging unit that protects the pellets from quality degradation with a filling weight between 5 kg and 50 kg.

NOTE 1: A plastic bag is a typical example of a packaging unit for **bagged pellets**.

NOTE 2: Requirements for usage of the ENplus® bag design are defined in ENplus® ST 1003.

#### 3.5 big bag

A flexible intermediate bulk container (FIBC) made of flexible fabric that is designed for storing and transporting **bulk pellets** with a typical capacity of 1,500L. A delivery of pellets in **big bags** is considered a delivery of **bulk pellets**.

NOTE 1: A **big bag** can be sealed or unsealed.

NOTE 2: Delivery of pellets in **big bags** is considered as a **large-scale delivery**.

#### 3.6 bulk pellets

Pellets other than **bagged pellets** produced, stored, handled, or transported loose.

NOTE: **Bulk pellets** also include pellets in **big bags**.

#### 3.7 certification scope

The range or characteristics of the object of the conformity assessment covered by the ENplus® certificate, including quality class of ENplus® certified pellets, a **company's** activities (**producer, trader, or service provider**) and critical business activities, sites, and **service providers** covered by the ENplus® certification.

[source: modified from ISO/IAC 17000]

### 3.8 company

An entity that implements the requirements of ENplus® ST 1001.

### 3.9 complaint

A written expression of dissatisfaction (other than **appeal**) by any person or organisation which relates to the activities of the **ENplus® scheme management**, the **ENplus® certification bodies**, **ENplus® testing bodies**, and/or the ENplus® certified **company**.

### 3.10 consensus

General agreement characterised by the absence of sustained opposition to substantial issues by any important part of the concerned interest and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments.

NOTE: A **consensus** need not imply unanimity [ISO/IEC Guide 2].

### 3.11 delivery documentation

A document that includes information relating to the delivery of a product.

NOTE: A delivery note, a bill of loading or an invoice, used individually or in combination, are examples of **delivery documentation**.

### 3.12 DEPI

**DEPI** (Deutsches Pelletinstitut GmbH) is ENplus® governing body for Germany, certification body responsible for all certification activities within Germany and acts as inspection body within Germany.

### 3.13 documented information

Information and the medium on which it is contained, that is controlled and maintained by the **company**.

[source: ISO/IEC 9000]

NOTE 1: **Documented information** can be in any format or media and from any source.

NOTE 2: **Documented information** can refer to:

- a) the management system (including related processes);
- b) information created in order for the **company** to operate (general **company** operations documentation);
- c) evidence of results achieved (records).

### 3.14 ENplus® certification body

A body that is recognised to perform certification within the ENplus® certification scheme.

### 3.15 ENplus® certification seal

A distinctive graphic consisting of the **ENplus® logo** and unique **ENplus® ID**.

NOTE: The use of the **ENplus® certification seal** is described in ENplus® ST 1003.

### 3.16 ENplus® documentation

Documents that include requirements, guidance, and procedures of the ENplus® scheme.

NOTE: The **ENplus® documentation** structure is shown in ENplus® PD 2001, Annex A and includes ENplus® **standards**, ENplus® guidance documents and ENplus® procedural documents.

### 3.17 ENplus® ID

Unique alfa-numerical code issued by the relevant **ENplus® scheme management** to every ENplus® certified **company**.

NOTE: The use of the **ENplus® ID** is described in ENplus® ST 1003.

### 3.18 ENplus® International Management

Bioenergy Europe AISBL represented by the European Pellet Council (EPC), is the governing body of the ENplus® certification scheme with overall responsibility for the management of the ENplus® scheme outside Germany.

### 3.19 ENplus® logo

A distinctive graphic design that is a registered trademarked material and that is also part of the **ENplus® certification seal**, **ENplus® quality seal** and of the **ENplus® service sign** along with the **ENplus® ID**.

NOTE: The use of the **ENplus® logo** is described in ENplus® ST 1003.

### 3.20 ENplus® National Licensor

A governing body of the ENplus® certification scheme appointed by **ENplus® International Management** to manage the ENplus® scheme within a specific country.

NOTE: Contact details for **ENplus® National Licensors** are available by country on the **official ENplus® website**.

### 3.21 ENplus® quality class logo

A distinctive graphic referring to the ENplus® quality classes.

NOTE: The use of the **ENplus® quality class logo** is described in ENplus® ST 1003.

### 3.22 ENplus® quality seal

A distinctive graphic referring to the ENplus® quality classes consisting of the **ENplus® logo**, **ENplus® quality class logo** and unique **ENplus® ID**.

NOTE: The use of the **ENplus® quality seal** is described in ENplus® ST 1003.

### 3.23 ENplus® scheme management

A governing body of the ENplus® certification scheme that is either **ENplus® International Management**, an **ENplus® National Licensor**, or **DEPI** operating within their respective regions.

NOTE: Contact details for the **ENplus® scheme management** are available by country on the **official ENplus® website**.

### 3.24 ENplus® service sign

A distinctive graphic issued by the relevant **ENplus® scheme management** to every ENplus® certified **service provider** that includes the ENplus® **service provider** logo and the **ENplus® ID**.

NOTE: The use of the **ENplus® service sign** is described in ENplus® ST 1003.

### 3.25 ENplus® testing body

A body that is recognised to perform testing within the ENplus® certification scheme.

[source: modified from ISO 17020]

### 3.26 ENplus® trademarks

ENplus® copyright and trademark protected material (ENplus® figurative marks and wordmarks) that refers to the quality of pellets according to the ENplus® certification scheme.

### 3.27 large-scale delivery

A delivery of **bulk pellets** to a customer other than the **small-scale delivery**.

NOTE: Examples of **large-scale delivery**: a delivery of a complete truck load to one end-user above 20 tonnes, a delivery to a **trader**, a delivery by trains or vessels, a delivery of **big bags**.

### 3.28 multisite company

An organisation which is identified in having a central function relating to pellet production or trade (normally and hereafter referred to as a 'central office'). Here certain activities relating to quality management are planned, controlled, and managed within a network of local offices or branches (sites) at which such activities are fully or partially carried out.

NOTE 1: Typical cases of a **multisite company** are:

- a) a **producer** with a network of production sites, storage sites, delivery trucks, and/or sales offices that are a part of a single legal entity or are separate legal entities but with the managerial control by the legal entity of the **producer**;
- b) a **trader** with a network of other **traders** with or without delivery trucks, storage sites, or/and sales organisations that are a part of a single legal entity or are separate legal entities but with the managerial control by the legal entity of the certified **trader**;
- c) a **company** outsourcing activities to a **service provider** without a valid ENplus® certification.

NOTE 2: Eligibility criteria applicable to a **multisite company** are defined in General requirements.

### 3.29 non-conformity

Referring to the non-fulfilment of an ENplus® requirement.

### 3.30 official ENplus® website

The official website of the ENplus® scheme managed by the **ENplus® International Management** ([www.enplus-pellets.eu](http://www.enplus-pellets.eu)) for all countries except Germany and by **DEPI** ([www.enplus-pellets.de](http://www.enplus-pellets.de)) for Germany.

### 3.31 off-product use of ENplus® trademarks

Referring to the use of **ENplus® trademarks** other than **on-product use** which is not referring to a final product.

### 3.32 on-product use of ENplus® trademarks

The use of **ENplus® trademarks** in connection with, or reference to ENplus® certified pellets including:

- a) the use directly related to the individual certified pellets i.e. tangible products (bulk products), products in individual packaging, containers or bags, as well as vehicles for the transport of products;
- b) the use on documentation associated with pellets (an invoice/ packaging list/ advertisement/ brochure/ website/ social media, etc.), where the use of **ENplus® trademarks** refers to the individual certified pellets.

NOTE: Any use which can be received or understood by buyers or the public as referring to a specific product included in the product is considered as **on-product use**.

### 3.33 producer

A **company** producing wood pellets.

NOTE: A **producer** trading its own pellets through **large-scale delivery** is not considered a **trader**. A **producer** is considered a **trader** where its trading activities include **small-scale delivery**, or trades pellets procured from other **companies**.

### 3.34 revision

Introduction of all necessary changes to the substance and presentation of a normative document.

NOTE: The results of the **revision** are presented by issuing a new edition of the normative document [ISO/IEC Guide 2].

### 3.35 service provider

A **company** offering the following services without having ownership over the pellets.

- a) bagging of pellets;
- b) small-scale delivery of pellets;
- c) storage of **bulk pellets** in a facility from which the pellets are delivered to the end-users.

NOTE: The **producer** or **trader** can also become a **service provider** for another **company** where they do not have ownership over the pellets and conduct activities defined above.

### 3.36 small-scale delivery

A delivery of **bulk pellets** to an end-user that does not exceed 20 tonnes. This excludes deliveries of pellets in **big bags** and **vending machines**.

NOTE: A typical example of a **small-scale delivery** is a delivery of pellets to more end-users (households) along a single route (multi-drop).

### 3.37 standard

A document established by **consensus** and approved by a recognised body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree or order in a given context.

NOTE: **Standards** should be based on the consolidated results of science, technology, and experience, and aimed at the promotion of optimum benefits [ISO/IEC Guide 2].

### 3.38 trade of bulk pellets without physical contact

Trading in **bulk pellets** that takes ownership of the pellets but does not have physical possession of the pellets.

NOTE 1: “Physical possession” is defined as having physical control of the pellets either directly or through a contracted **service provider** or another subcontractor.

NOTE 2: An entity conducting the trade without physical contact can use **ENplus® trademarks** either based on its own ENplus® certification or based on written permission from the ENplus® certified **company** as defined in ENplus® ST 1003.

NOTE 3: Trading without physical contact as an ENplus® certified **company** is defined as a critical business activity (see Annex B).

### 3.39 trader

A **company** trading wood pellets. It can include the storage and / or delivery of pellets.

NOTE: The term “**trader**” also covers the term “**producer**” where the **producer**'s trading activities include **small-scale delivery** or trades pellets procured from other **companies**.

### 3.40 transport vehicle

A machine that transports wood pellets. Vehicles include motor vehicles, including trailers, railed vehicles (trains), or watercraft (water vessels).

### 3.41 vending machine

A self-service machine for the supply of small-scale quantities of **bulk pellets** to end-users.

NOTE: Self-service machines for the collection of pellets by **traders**, **service providers** or subcontractors are no **vending machines** in terms of this **standard**.

## 4. General requirements

**4.1** The **company** that intends to make **on-product use of the ENplus® trademarks** shall comply with the requirements for **producers** (see Requirements for producers) where it is responsible for:

- a) production of **bulk pellets**;
- b) large-scale delivery of bulk pellets from its own production;
- c) storage of **bulk pellets** in a facility from which the pellets are delivered to the end-users;
- d) bagging and trade of **bagged pellets** from its own production.

NOTE: The critical business activities to be covered by the ENplus® **certification scope** are shown in [Annex B](#).

**4.2** The **company** that intends to make **on-product use of the ENplus® trademarks** shall comply with the requirements for **traders** (see Requirements for traders) where it procures pellets from a supplier and is responsible for:

- a) small-scale delivery of bulk pellets;
- b) large-scale delivery of bulk pellets;
- c) storage of **bulk pellets** in a facility from which the pellets are delivered to the end-users;
- d) bagging of pellets;
- e) trade of **bagged pellets** (only where the **trader** is the **bag design owner**).

NOTE 1: The critical business activities to be covered by the ENplus® **certification scope** are shown in [Annex B](#).

NOTE 2: Where the **company** performs activities under [4.1 \(producer\)](#) as well as [4.2 \(trader\)](#), the **company** needs to comply with the requirements of Requirements for producers and Requirements for traders.

**4.3** The **service provider** that provides the following services to another **company** shall comply with the requirements relevant to those activities found in Requirements for traders:

- a) bagging of pellets;
- b) small-scale delivery of pellets;
- c) storage of **bulk pellets** in a facility from which the pellets are delivered to the end-users.

NOTE: The **service provider** is considered an “external resource” to the **company**, as defined in [7.2.4](#).

**4.4** The **company** or **companies** may implement the requirements of this **standard** and apply for the ENplus® certification as a **multisite company**. The **multisite company** does not need to be a unique legal entity, but all site activities related to the production or trading of pellets shall be subject to a common management system which is under continuous surveillance by the central office of the **multisite company**. The central office shall comply with the following responsibilities:

- a) be contractually responsible to the **ENplus® certification body** for ensuring that the ENplus® requirements are fully implemented and enforced at all sites;
- b) implement an internal control system of sites' conformity with the ENplus® requirements;

- c) be responsible for ensuring that any conditions on which the certification is dependent, and any **non-conformities** issued by the **ENplus® certification body**, thereafter, are fully implemented throughout the **multisite company**;
- d) shall have access to all relevant **documented information** required by ENplus® ST 1001 retained by the sites;
- e) shall demonstrate its ability to collect and analyse data from all sites as well as demonstrating its authority over all sites as well as displaying its authority to initiate change if required;
- f) shall have a system for ensuring that all market claims and **ENplus® trademarks** use by all participating sites are meeting the ENplus® requirements prior to publication; and
- g) shall appoint a quality manager that is responsible for the entire **multisite company**. Where the **multisite company** operates in more than one country, at least one quality manager shall be appointed for each country.

Where applicable, the requirements in 4.4 should be described in the contract between both the central office and the sites. Where the **company** includes sites that are not covered by the certification, it shall ensure that those sites do not create a risk for the **multisite company's** compliance with the certification requirements.

NOTE: The sites that do not perform activities regulated by this **standard** are not considered as the sites of the **multisite company** and are not covered by the ENplus® **certification scope**.

**4.5** The **multisite company** shall be identified and certified separately for activities covered by the term “**producer**”, “**trader**”, and “**service provider**”.

**4.6** In the case of the **producer**, the **multisite company** shall not cover production sites located in another country. An international **multisite company** consisting of **traders**, and / or **service providers** with the central office and / or a site in Germany is not possible.

**4.7** The eligibility of the **multisite company** for the ENplus® certification shall be assessed by the **ENplus® certification body** and approved by the relevant **ENplus® scheme management**. In case of the international **multisite company**, the relevant **ENplus® scheme management** shall consider comments received from **ENplus® scheme management** of the countries where the sites are located.

## 5. Requirements for producers

This chapter includes requirements for **producers** performing activities as defined in 4.1.

### 5.1 Product requirements

#### 5.1.1 Quality classes

**5.1.1.1** The **producer** shall determine the application of the quality classes (ENplus® A1, ENplus® A2, and ENplus® B) for produced pellets and shall ensure compliance with the threshold values specified in A.1.

#### 5.1.2 Requirements on wood raw material

**5.1.2.1** The **producer** shall only use wood raw material that is specified in the respective quality classes of pellets in A.2.

#### 5.1.3 Requirements on additives

**5.1.3.1** The **producer** shall only use additives in compliance with A.3.

### 5.2 Process requirements

#### 5.2.1 Incoming goods

**5.2.1.1** The **producer** shall establish a process of acceptance of incoming goods that includes:

- a) verification of **delivery documentation** for raw material;
- b) verification that the origin, quality and contamination of raw material used within the production of a particular quality class of pellets conforms to the requirements in 5.1.2;
- c) verification of **delivery documentation** for additives to ensure conformity with the requirements for additives in 5.1.3.

NOTE: The acceptance of incoming goods does not apply to roundwood where pellet production is integrated with sawmilling processes.

**5.2.1.2** The **producer** shall retain the following **documented information** relating to incoming goods:

- a) **delivery documentation** for raw material;
- b) **delivery documentation** for additives, including their types and volume;
- c) content of material used for production, including information on additives.

#### 5.2.2 Production process (including storage and bagging)

**5.2.2.1** The **producer** shall perform:

- a) periodic maintenance and cleaning of the production, storage and bagging installations, transporting equipment and operating equipment with an impact on pellet quality;
- b) periodic calibration, verification, or validation of operated measuring devices, including scales, and weighing system of the bagging line.

NOTE 1: Legislation, international **standards**, national **standards**, or **company's** documented specification that is fit for purpose provide reference basis for the calibration, verification, or validation of the measuring devices.

NOTE 2: The requirements for calibration, verification, or validation of testing devices are also included in [7.3.1.4](#).

**5.2.2.2** The **producer** shall retain the following **documented information** relating to the production, storage, and bagging processes:

- a) standard operating procedures for production, storage, and bagging of pellets including production parameters, such as additive dosing;
- b) records on maintenance, cleaning of production, storage and bagging installations, operating, and transporting equipment;
- c) work carried out with an impact on pellet quality, e.g., shifts protocols, change of die;
- d) documentation on calibration, verification, or validation of the measuring devices.

**5.2.2.3** The **producer** shall ensure that ENplus® certified pellets of the specific ENplus® quality classes are physically separated throughout the entire production, storage, bagging, and delivery process. This shall be achieved by one of these strategies:

- a) physical separation in terms of production and storage space; or
- b) physical separation in terms of time; or
- c) clear identification of the ENplus® certified pellets / ENplus® quality class.

Where the **producer** combines pellets of different ENplus® quality classes, this shall always result in downgrading the outcome pellets to the lowest ENplus® quality class of the combined pellets.

**5.2.2.4** The **producer** bagging pellets shall only use an approved bag design in compliance with ENplus® ST 1003. Where the **producer** is the **bag design owner**, permission is given by the relevant **ENplus® scheme management**. Where this is not the case, permission is given by the **bag design owner**. The **producer** bagging the pellets shall ensure that **bagged pellets** conform to information included on the applied bag design.

### 5.2.3 Outgoing Goods

**5.2.3.1** The **producer** operating a loading station for **bulk pellets** shall separate the fine fraction before loading the **transport vehicle** or before the filling of **big bags** to ensure that the content of fines does not exceed 1,0 w-%. The device for separating the fines shall be constructed to reduce the content of fines from 10,0 w-% to below 1,0 w-%. Pellets shall not be stored after the separation of fines, except when they are in a hopper, or when they are in **big bags**. If there is a hopper, it shall be completely discharged periodically once after the decuple of the hopper's volume has been operated. In case the hopper's capacity is larger than 20 metric tonnes, it shall be completely discharged every 200 tonnes.

The requirement does not apply where a written agreement between the **producer** and its customer specifies a higher amount of fines in situations where the pellets are not directly delivered to an end-user and subsequent separation of fines is ensured.

**5.2.3.2** The **producer** shall choose a device and a methodology to ensure that the temperature of outgoing **bulk pellets** is not higher than 40 °C and that the temperature is periodically measured before delivery in accordance with [Table 2](#) (see [5.2.4.1](#)). Where the pellet temperature exceeds 40 °C, the **producer**:

- a) shall not deliver the pellets to the end-user;
- b) shall either not deliver the pellets to another **company** or shall inform the **company** as a part of the **delivery documentation** (see 5.2.5.1) about the increased temperature and related risks.

**5.2.3.3** The **producer** delivering **bulk pellets** to end-users, with the exception of delivery of **big bags**, shall not transfer pellets from one **transport vehicle** / trailer to another vehicle / trailer without separating the fines.

NOTE: Filling pellets from **big bags** to a bulk **transport vehicle** is not exempted from this requirement and requires the separation of fines.

**5.2.3.4** The **producer** delivering pellets in **big bags** shall ensure that:

- a) the fabric of the **big bag** is water repellent;
- b) the **big bag** opening is closed in order to avoid contamination and water absorption;
- c) information attached to the **big bag** includes the **ENplus® ID** of the refueler, ENplus® quality class and diameter.

**5.2.3.5** The **producer** who is responsible for the loading of **bulk pellets** shall ensure that **transport vehicles** used for goods other than pellets do not contaminate the ENplus® certified pellets. This shall be demonstrated by **documented information**. Where the loading sites are fully automated, the **producer** shall include in the **delivery documentation** a clear statement that the delivery vehicle has not been checked for contamination.

**5.2.4 Self-monitoring of pellet quality**

**5.2.4.1** The **producer** shall implement regular monitoring and evaluation of the parameters of pellet quality shown in **Table 1** and **Table 2**. General requirements for self-monitoring are specified in 7.3.1.

● **Table 1**

**Self-monitoring in the production process**

Production process	Bulk	Frequency
<b>Overlength</b> (visual control + measurement of unusual pellet)	X	min. 1 per shift per production line
<b>Moisture</b>	X	min. 1 per shift per production line
<b>Mechanical durability</b>	X	min. 1 per shift per production line

NOTE 1: The production line is defined by the process with the same input material stream and common output stream.

NOTE 2: Where the mechanical durability is not measurable at the production process, an alternative sampling point shall be found at the loading or bagging process.

● **Table 2**

**Self-monitoring at the loading process / before or after bagging**

Last loading point/ before or after bagging	Bulk before loading	Bagging station	Frequency
<b>Overlength</b> (visual control + measurement of unusual pellets)	X	X	1 per day with loading / bagging

<b>Amount of fines (≤ 3,15 mm)</b> (where separation of fines is required according to 5.2.3.1)	X	X	1 per day with loading/bagging for sieving device with loading speed under 1 ton/minute and where the speed cannot be verified (separately per loading site or storage location)  1 per week with loading/bagging for sieving device with loading speed above 1 ton/minute (separately per loading site or storage location)
<b>Temperature</b>	X		1 per day with loading (during the loading process)
NOTE: An increased amount of fines is usually found in the last 10% of the volume of a storage coursed by segregation.			

**5.2.4.2** The **producer** shall increase the minimum sampling and testing frequency defined in 5.2.4.1 where reasonable doubt exists concerning pellet quality and in case of changes in input material, technological, and production parameters (i.e. change of gear, not change of die or roller).

**5.2.4.3** In the case of a short and integrated process of production and bagging without an intermediary storage, the **producer** may perform the self-monitoring required in 5.2.4.1 after the bagging based on sampling of produced bags.

**5.2.4.4** The **producer** shall implement regular monitoring of any additional parameter for which the external testing conducted as a part of the ENplus® certification process resulted in values that are close to the thresholds defined in A.1.

## 5.2.5 Delivery documentation

**5.2.5.1** The **producer** communicates within the **delivery documentation** the ENplus® certified status of pellets to the customer. The **delivery documentation** for ENplus® certified pellets shall contain at least the following information:

- a) ENplus® certification seal or ENplus® ID of the producer;
- b) **ENplus® quality class** in a format "ENplus A1", "ENplus A2" or "ENplus B" or the respective **ENplus® quality seal**;
- c) **bag design approval number** or an internal article number that can be linked to the **bag design approval number** (in case of **bagged pellets**);
- d) mass of delivered pellets in kg or metric tonnes;
- e) diameter of pellets;
- f) bulk, bagged pellets, or pellets in big bags;
- g) date of loading, or a date of delivery;
- h) clear identification of the **transport vehicle** where the **producer** is responsible for the transport;
- i) information about pellets temperature exceeding 40 °C (see 5.2.3.2 b)).

NOTE: The vehicle's license plate is a typical example of the clear identification of the **transport vehicle** (see bullet point h)).

**5.2.5.2** The **producer** delivering **bulk pellets** to a **trader** without separation of fines (see 5.2.3.1) shall provide the customer with information on the content of fines that may exceed the 1,0 % threshold.

NOTE: **Delivery documentation**, contracts, or other means of communication can be used to satisfy the requirement.

**5.2.5.3** The **producer** shall establish and maintain a mass balance account for production and all sales transactions of all pellets. The mass balance account shall:

- a) allow the identification of ENplus® certified pellets, including their quality classes, diameters, and bag designs, and other pellets (both **bulk** and **bagged pellets**) in production, storage, and sales transactions;
- b) include all production batches leaving the production process (time period and volume) with reference to the internal production documentation;
- c) include all outgoing (sales) transactions (date and volume) of all pellets with reference to specific issued **delivery documentation**;
- d) include information on pellets in the storage;
- e) allow verification that the volume of outgoing ENplus® certified pellets does not exceed the volume of produced ENplus® certified pellets.

NOTE 1: The term “production batch” is used to cover an amount of pellets produced during a specific period.

NOTE 2: A unique product code for different quality classes of bulk and bagged ENplus® certified pellets and other pellets is an appropriate means for the identification of production and sales transactions (see bullet point **a**)).

NOTE 3: The volume of pellets entered into the mass balance account based on internal production documentation (see bullet point **b**)) is then verifiable based on production capacity, procurement of raw material or other means.

## 6. Requirements for traders

This chapter applies to **traders** as defined in 4.2 and **service providers** as defined in 4.3.

### 6.1 Product requirements

**6.1.1** The **trader** with bagging activities shall determine the application of the quality classes (ENplus® A1, ENplus® A2) for the **bagged pellets** and shall ensure compliance with the threshold values specified in A.1 for the following parameters:

- a) mechanical durability;
- b) content of fines (>3,15 mm).

NOTE: The conformity with other parameters of Annex A is delivered through the **traders'** compliance with the respective process and management system requirements specified in 6.2 and Management system requirements.

**6.1.2** The **trader of bulk pellets** delivering to the end-user shall ensure compliance with the threshold values specified in A.1 for the content of fines.

NOTE: The conformity with other parameters of Annex A is delivered through the **traders'** compliance with the respective process and management system requirements specified in 6.2 and Management system requirements.

**6.1.3** The **trader** using post-production additives (e.g. coating oils) shall comply with A.3 and 6.2.3.6.

### 6.2 Process requirements

#### 6.2.1 Incoming goods

**6.2.1.1** The **trader** shall establish a process of acceptance of incoming pellets which includes both the verification and retaining of **delivery documentation**, including delivery notes and weighing receipts where applicable.

**6.2.1.2** The **trader** shall only accept bulk ENplus® certified pellets of a specific ENplus® quality class for those deliveries to which the **delivery documentation** complies with 5.2.5.1 for pellets received from a **producer**, and 6.2.5.1 for pellets received from another **trader**.

NOTE: The check of **delivery documentation** is conducted at the time of delivery, or when the **delivery documentation** is available.

**6.2.1.3** The **trader** shall only accept bulk ENplus® certified pellets that were delivered by suppliers that hold a valid ENplus® certification.

NOTE: A copy of an ENplus® certificate is not sufficient evidence on the validity of the ENplus® certification. The **ENplus® official website** provides information about the actual validity of the ENplus® certification.

**6.2.1.4** The **trader** shall keep the following **documented information** related to the procured pellets:

- a) a list of all pellet suppliers;
- b) **delivery documentation** for all incoming ENplus® certified pellets;

**6.2.1.5** The **trader** shall ensure that the ENplus® certified pellets of the specific ENplus® quality classes are physically separated and remain identifiable throughout the whole trading/handling process, including storage. This shall be achieved by one of the following strategies:

- a) physical separation in terms of space during the storage, handling, and trading activities;
- b) physical separation in terms of time;
- c) clear identification of the ENplus® certified pellets / ENplus® quality class.

The **trader** shall declare the same quality class as stated in the **delivery documentation** of the purchased pellets or may downgrade it to the lower quality level if this is included in the **trader's certification scope**, e.g. ENplus® A1 may be downgraded to ENplus® A2. Where the **trader** combines pellets from different ENplus® quality classes, the resulting class shall be the lowest ENplus® quality class between the combined classes. E.g. ENplus® A1 + ENplus® A2 = ENplus® A2.

## 6.2.2 Facilities and equipment

**6.2.2.1** The **trader** shall perform:

- a) periodic maintenance and cleaning of the storage and bagging installations, operating, and transporting equipment with an impact on pellet quality;
- b) periodic calibration, verification, or validation of operated measuring devices, including the scales and weighing system of the bagging line.

NOTE 1: Legislation, international **standards**, national **standards**, or **company's** documented specification that is fit for purpose provide reference basis for the calibration, verification, or validation of the measuring devices.

NOTE 2: The requirements for calibration, verification, or validation of testing devices are also included in [7.3.1.4](#).

**6.2.2.2** The **trader** shall retain the following **documented information** related to the storage, bagging, and delivery processes:

- a) standard operating procedures for storage and bagging of pellets;
- b) records on maintenance and cleaning of storage and bagging installations, operating, and transporting equipment;
- c) work carried out with a potential impact on pellet quality;
- d) documentation on calibration, verification, or validation of the measuring devices.

**6.2.2.3** The **trader** bagging pellets shall only use an approved bag design in compliance with ENplus® ST 1003 based on approval given by the relevant **ENplus® scheme management** (where the **trader** is the **bag design owner**) or based on written permission given by the **bag design owner**. The **trader** shall ensure that **bagged pellets** conform to the information included in the bag design.

### 6.2.3 Outgoing goods (including loading at the production site)

**6.2.3.1** The **trader** operating a loading station for **bulk pellets** shall separate the fine fraction before loading the **transport vehicle** or filling **big bags** to ensure that the fines content of the outgoing pellets does not exceed 1,0 w-%. The device for separating the fines shall be constructed to reduce the share of fines from 10,0 w-% to below 1,0 w-%. Pellets shall not be stored after the separation of fines, except for pellets in a hopper or **big bags**. If there is a hopper, it shall be completely discharged periodically once after the decuple of the hopper's volume has been operated. In case the hopper's capacity is larger than 20 metric tonnes, it shall be completely discharged every 200 tonnes.

The requirement does not apply where a written agreement between the **trader** and its customer specifies a higher amount of fines in situations where the pellets are not directly delivered to an end-user and subsequent separation of fines is ensured.

**6.2.3.2** The **trader** operating a loading station shall measure the pellet temperature once per day with loading (during the loading process). The **trader** shall choose a device and a methodology to ensure that the temperature of outgoing pellets is not higher than 40 °C. Where the pellet temperature exceeds 40 °C, the **trader**:

- a) shall not deliver the pellets to the end-user;
- b) shall either not deliver the pellets to another **trader** or shall inform the **trader** as a part of the **delivery documentation** (see 6.2.5.1) about the increased temperature and related risks.

**6.2.3.3** The **trader** delivering **bulk pellets** to end-users, except for a delivery of pellets in **big bags**, shall not transfer pellets from one **transport vehicle** / trailer to another vehicle / trailer without separating the fines.

NOTE: Filling pellets from **big bags** to a bulk **transport vehicle** is not exempted from this requirement and requires the separation of fines.

**6.2.3.4** The **trader** with **small-scale deliveries** of **bulk pellets** to end-users shall ensure that the construction and technology of the **transport vehicle** prevents a significant increase of fines. The **trader** shall ensure that the construction and the technology of the used **transport vehicles** is:

- a) approved by **ENplus® International Management** for the use in countries outside Germany and by **DEPI** for the use in Germany; or
- b) tested in accordance with relevant testing protocols. Both the testing protocols and the testing results shall be approved by **ENplus® International Management** for the use in countries outside Germany and by **DEPI** for the use in Germany.

NOTE: The use of the technology of the **transport vehicle** and its approval always refers to the country in which the pellet delivery takes place.

**6.2.3.5** The **trader** shall retain a list containing all **transport vehicles** for **small-scale deliveries** including their technology and compliance with requirements for specific countries in relation to pellet delivery (see 6.2.3.4).

**6.2.3.6** The **trader** using a **transport vehicle** with both a blowing system and a coating device shall ensure that the maximum dosing of coating agents is limited to 0.2 w-% of the pellets.

**6.2.3.7** The **trader** using a **transport vehicle** for **small-scale deliveries** to end-users shall ensure that the vehicles are equipped with a low-abrasion feeding system – the delivery vehicle shall have the ability to deflect electric current (grounding of the vehicle) and delivery hoses shall be coated to reduce friction. The connection between hoses shall not contain sharp edges in opposition to the pellet flow.

**6.2.3.8** The **trader** using a **transport vehicle** with blowing system for **small-scale deliveries** to end-users shall ensure that the extracted or vented air shall be filtered (e.g., by fabric filter) to limit dust emissions to the surrounding environment.

**6.2.3.9** The **trader** shall ensure that all **transport vehicles** for **small-scale delivery** to end-users are equipped with a calibrated on-board weighing system. Any exemption from the requirement shall be approved by the **ENplus® scheme management** that is relevant to the country of the delivery.

**6.2.3.10** The **trader** shall ensure that all **transport vehicles** for **small-scale delivery** to end-users are equipped with a personal CO detector.

**6.2.3.11** The **trader** who is responsible for the loading of **bulk pellets** shall ensure that **transport vehicles** used for goods other than pellets do not contaminate the ENplus® certified pellets. This shall be demonstrated by **documented information**. Where the loading sites are fully automated, the **trader** shall include in the **delivery documentation** a clear statement that the delivery vehicle has not been checked for contamination.

**6.2.3.12** The **trader** delivering pellets in **big bags** shall ensure that:

- a) the fabric of the **big bag** is water repellent;
- b) the **big bag** opening is closed to avoid contamination and water absorption; and
- c) information attached to the **big bag** includes the **ENplus® ID** of the refueler, ENplus® quality class and diameter.

**6.2.3.13** The **trader** operating a **vending machine** shall comply with the requirements of this **standard** for the storage of pellets for the delivery to end-users, including separation of fines. Additionally, the **trader** operating the **vending machine** shall comply with the following requirements:

- a) Fines shall be separated before pellets are filled into the transport container/bag of the end-user. The amount of fines shall not exceed 1,0 w-% at any time;
- b) The silo of the **vending machine** shall be completely discharged once after the silo's volume has been used;
- c) The temperature of the provided pellets shall not exceed 40°C;
- d) The end-user shall be provided with **delivery documentation** according to 6.2.5.1 (except c));
- e) The technology of the **vending machine** shall be approved by **ENplus® International Management** for all countries except Germany and by **DEPI** for Germany.

## 6.2.4 Self-monitoring of pellets quality

**6.2.4.1** The **trader** operating a loading or bagging station shall ensure regular monitoring and evaluation of the parameters of pellet quality shown in [Table 3](#).

### ● **Table 3**

#### **Self-monitoring of pellets quality by traders**

Last loading point / before or after bagging	Bulk before loading	Bagging station	Frequency
<b>Amount of fines (<math>\leq 3,15</math> mm)</b> (where separation of fines is required according to 6.2.3.1)	X	X	1 time per day when loading/bagging for a sieving device with a loading speed under 1 ton/minute and where the speed cannot be verified (separately per loading site or storage location)  1 time per week when loading/bagging for a sieving device with a loading speed above 1 ton/minute (separately per loading site or storage location)  For <b>vending machines</b> : 1 time per month during the <b>vending machine</b> operation.
<b>Temperature</b>	X	-	1 per day with loading (during the loading process)

**6.2.4.2** The **trader** shall increase the minimum sampling and testing frequency defined in 6.2.4.1 where reasonable doubt exists concerning pellet quality, or in case of changes in input material, technology, and settings influencing the pellet quality.

**6.2.4.3** The **trader** delivering **bulk pellets** shall conduct visual inspection of the pellet quality and cleanliness of the **transport vehicle** during the loading process.

## 6.2.5 Delivery documentation

**6.2.5.1** The **trader** shall present the **delivery documentation** to the customer to communicate the ENplus® certified status of pellets. The **delivery documentation** for the ENplus® certified pellets shall contain at least the following information:

- a) the **ENplus® certification seal** or **ENplus® ID** of the trader issuing the delivery documentation;
- b) the ENplus® quality class in a format "ENplus A1", "ENplus A2" or "ENplus B" or the respective **ENplus® quality seal**;
- c) the mass of delivered pellets in kg or metric tonnes;
- d) the **bag design approval number** or an internal article number that can be linked to the **bag design approval number**, in case of **bagged pellets**;
- e) the diameter of the pellets;
- f) the form in which they come (bulk, **bagged pellets**, or pellets in **big bags**);
- g) the date of loading, or date of delivery;
- h) a clear identification of the **transport vehicle** where the **trader** is responsible for the transport;
- i) information about pellets temperature exceeding 40 °C (see 6.2.3.2b)).

NOTE 1: The vehicle's license plate is a typical example of clearly identifying the **transport vehicle** (see h)).

NOTE 2: The requirements for the use of the **ENplus® trademarks** (see a) and b)) are included in ENplus® ST 1003.

**6.2.5.2** For each **small-scale delivery** of **bulk pellets** to end-users, the **trader** shall ensure that the customer (or their representative) signs the **delivery documentation** and receives a copy of it. The **delivery documentation** shall contain at least the following information, in addition to that required in 6.2.5.1:

- a) the status of the storage room with obvious defects related to the ENplus® *Storage Guidelines* (ENplus® Guidance Document). It shall be stated in the delivery records where the driver is unable to check the status of the storage room;
- b) the amount of residual pellets. It shall be stated in the delivery records where the driver is unable to check the amount of residual pellets;
- c) the volume of delivered pellets resulting from the calibrated on-board weighting system;
- d) the conditions of delivery, e.g., length of pipes, length of hoses, blowing pressure, blowing time;
- e) the boiler status (on/off);
- f) any irregularities encountered during the delivery;
- g) note: "storage rooms shall be ventilated";
- h) note: "store in dry conditions";
- i) note: "use only in approved combustion systems according to manufacturer instructions and legal regulations".

NOTE 1: The status of the storage room and conditions of the **bulk pellet** delivery are included in the ENplus® *Storage Guidelines* (ENplus® Guidance Document).

NOTE 2: Bullet points a), b), and d) have an impact on the acceptance of potential **complaints** (see 7.3.4.7).

NOTE 3: Bullet point c): An exemption from the usage of the calibrated on-board weighting system is defined in 6.2.3.9.

**6.2.5.3** The **trader** delivering **bulk pellets** to another **trader** without separation of fines (see 6.2.3.1) shall provide the customer with information on the content of fines that may exceed the 1,0 % threshold.

NOTE: **Delivery documentation**, contracts, or other means of communication may be used to satisfy the requirement.

**6.2.5.4** The **trader** shall establish and maintain a mass balance account for all transactions of all pellets. The mass balance account shall:

- a) allow identification of transactions of ENplus® certified pellets, including their quality classes, diameters, different bag designs, and other pellets (both bulk and **bagged pellets**);
- b) include all incoming transactions (date and volume) of all pellets with reference to specific received **delivery documentation**;
- c) include all outgoing transactions (date and volume) of all pellets with reference to specific issued **delivery documentation**;
- d) include information on the volume of all pellets in the storage;
- e) allow verification that the volume of outgoing ENplus® certified pellets does not exceed the volume of incoming ENplus® certified pellets.

NOTE: A unique product code for different quality classes of **bulk** and **bagged pellets** is an appropriate means for the identification of incoming and sales transactions (bullet point a)).

## 7. Management system requirements

### 7.1 Organisational roles, responsibilities, and authorities

**7.1.1** Top management of the **company** shall ensure that the responsibilities and authorities for relevant roles relating to the production and trade of wood pellets are assigned, communicated, and understood within the **company**.

**7.1.2** Top management shall appoint a quality manager and his/her substitute with general authority to implement measures relating to the quality of wood pellets and to the conformity with the requirements of this **standard**.

**7.1.3** The quality manager shall:

- a) have knowledge and competences of the effects of different operating processes on the quality of the produced and traded pellets;
- b) have the capacity to communicate with personnel of the **company**;
- c) implement measures to meet the requirements for quality control and the internal quality management documentation;
- d) serve as a contact person for the ENplus® certification body and the ENplus® scheme management;
- e) serve as a contact person in case of malfunctions and **non-conformities** in the production, trading, and handling process that affects the quality of wood pellets;
- f) be responsible for training and competences of all employees;
- g) ensure control of **documented information** relating to the quality of wood pellets and conformity within this document;
- h) be responsible for the monitoring and control of the quality of wood pellets.

NOTE: The tasks of the quality manager can be delegated to other personnel of the **company**.

### 7.2 Support

#### 7.2.1 Resources

**7.2.1.1** The **company** shall determine and provide the resources needed for the establishment, implementation, maintenance, and continual improvement of processes for the production and trading of wood pellets.

**7.2.1.2** The **company** shall determine and provide the persons necessary for the effective implementation of its quality management system, for its operation, and for the control of its processes.

**7.2.1.3** The **company** shall determine, provide, and maintain the infrastructure, including technical equipment and installations necessary for the production, storage, handling, and packaging of wood pellets to achieve conformity of the wood pellets with the requirements of this document. The technical equipment and installations shall fulfil the relevant specifications described in 5.2 and 6.2 of this document together with the following specifications, where applicable:

- a) unloading, manipulation, and storage areas for raw materials and related technical equipment and installations shall be protected against contamination by substances such as soil, stones, and grains;
- b) pellet storages shall protect the pellets from moisture and contamination;
- c) facilities for the storage of **bagged pellets** shall protect the pellets from direct sunlight unless the packaging material is UV resistant;
- d) pellet loading areas shall protect the pellets from moisture caused by weather conditions such as rain or snow.

## 7.2.2 Competence

**7.2.2.1** The **company** shall determine necessary competences of personnel that affect the quality of wood pellets and shall ensure that these personnel are competent on the basis of appropriate education, training, and experience.

**7.2.2.2** The quality manager shall participate in an external training that is organised or recognised by the relevant **ENplus® scheme management** within the first year of the certification and then at least once every certification period. Where the quality manager's substitute participates in the external training, the **company** shall demonstrate an efficient transfer of knowledge between the **company's** personnel.

**7.2.2.3** All persons doing work that affects the quality of wood pellets shall participate in a training on the quality of wood pellets and conformity with the relevant requirements of this document at least once during the certification period. Before conducting their tasks, the respective employees shall get a comprehensive introduction into quality aspects regarding pellet handling.

NOTE 1: The drivers training conducted in accordance with [7.2.2.4](#) also satisfies the requirement [7.2.2.3](#).

NOTE 2: The training can be organised as a **company's** internal or external training.

**7.2.2.4** All drivers of **transport vehicles** for **small-scale delivery** in contact with the end-users shall participate in a training on reliable pellet delivery and storage at least once during the certification period. Before conducting their tasks, the driver shall get a comprehensive introduction into the correct handling of the equipment.

NOTE: The driver's training can be organised as a **company's** internal or external training.

**7.2.2.5** The **company** shall retain appropriate **documented information** as evidence of the required training, including the date, duration, scope, and participants of the training.

## 7.2.3 Documented information

**7.2.3.1** The **company** shall develop, maintain, and retain **documented information** required by this document to support the operation of processes, to trace the cause of quality problems, and to provide evidence on compliance with this document. The **documented information** shall be retained for at least three years.

NOTE: The list of **documented information** required by this **standard** is included in [Annex C](#).

## 7.2.4 External resources

**7.2.4.1** The **company** may outsource the bagging of pellets, **small-scale delivery**, and / or storage of **bulk pellets** in a facility from which the pellets are delivered to end-users to external **service providers** that are either:

- a) holders of a valid ENplus® certification for **service providers** where the outsourced activities are covered by the **certification scope**;
- b) holders of a valid ENplus® certification for a **producer** or **trader** where the outsourced activities are covered by the **certification scope**;
- c) **service providers** without the valid ENplus® certification that shall be considered as sites of the **multisite company**.

**7.2.4.2** The **company** may outsource activities relating to the requirements of this **standard** other than defined in 7.2.4.1 to external sub-contractors.

NOTE: Subcontracting of activities that are not regulated by this document is not affected by 7.2.4.

**7.2.4.3** The **company** shall maintain a list of all its **service providers** (see 7.2.4.1) and other sub-contractors (see 7.2.4.2). The **company** shall maintain legal ownership of all pellets during the outsourcing, or the legal ownership shall be returned after the outsourcing.

**7.2.4.4** The **company** shall take full responsibility for the activities outsourced to the external **service providers** and other sub-contractors, and their compliance with the requirements of this document.

**7.2.4.5** The **company** shall ensure that the **service provider** without a valid ENplus® certification is competent to perform the outsourced activities and complies with the relevant requirements of 7.2.2 of this document.

**7.2.4.6** The **company** shall establish an outsourcing agreement with each non-certified **service provider** (see 7.2.4.1c) / other subcontractor (see 7.2.4.2) specifying at a minimum that the **service provider** / other sub/contractor shall:

- a) conform to all applicable ENplus® requirements and the **company's** own procedures for the outsourced activities;
- b) not to make unauthorised use of any the **ENplus® trademarks (on and off-product)**;
- c) accept an inspection to be conducted as a part of the ENplus® certification process;
- d) provide the **company** with information on any received **complaint** and assists in the **complaint** investigation;
- e) the contracted activities shall not be further outsourced to a third party without the **company's** consent and on-going compliance with 7.2.4.

## 7.3 Performance evaluation

### 7.3.1 Self-monitoring

**7.3.1.1** The **company** shall monitor and measure the quality of pellets as required by the process requirements of this document (see 5.2.4 and 6.2.4).

**7.3.1.2** The **company** shall define appropriate sampling and testing methods as well as suitable equipment for the purpose of testing pellet quality. Where the testing methods deviate from ISO 17225-2, they shall be validated by comparative measurement and approved by the **ENplus® certification body**. Pellets shall be sampled from the flow of falling material, or by the sampling of bags after the bagging process. An alternative sampling technique may be used where it is technically impossible to take the sample from the falling material and when approved by the **ENplus® certification body**.

NOTE: The approval of the testing methods by the **ENplus® certification body** may include additional conditions concerning the frequency of testing or additional tests, e.g., ash content where raw material with high ash content is blended with low-ash raw materials.

**7.3.1.3** The **company** shall use the testing conducted as a part of the ENplus® certification process as the comparative measurement for the testing methods applied by the **company** in its internal quality control.

**7.3.1.4** The **company** shall ensure periodic maintenance and the cleaning of testing devices as well as their calibration, verification, or validation. The results of the testing conducted as a part of the ENplus® certification process shall be used for the purposes of the validation of the testing devices.

NOTE: Legislation, international **standards**, national **standards**, or the **company's** documented specification that is fit for purpose, provides the reference basis for the calibration, verification, or validation of the testing devices.

**7.3.1.5** The **company** shall retain the following **documented information** relating to the monitoring and measurement of pellet quality:

- a) testing procedures;
- b) testing results and their evaluation, including **non-conformities**, causes, and corrective actions;

## **7.3.2 Non-conforming products**

**7.3.2.1** The **company** shall ensure that pellets that do not conform to its own requirements as well as to those requirements outlined within this document are identified and controlled in order to prevent their unintended use or delivery. The **company** shall take appropriate action based on the nature of the **non-conformity** and its effect on the conformity of the pellets.

NOTE: Appropriate actions required in 7.3.2.1 and 7.3.2.2 means that non-conforming pellets are not delivered to the customer. This might include additional testing before loading, removal of the non-conforming pellets, etc.

**7.3.2.2** The **company** shall retain **documented information** that:

- a) describes the **non-conformity**;
- b) identifies the volume of non-conforming pellets;
- c) describes the actions taken;
- d) identifies the authority deciding the action in respect of the **non-conformity**.

**7.3.2.3** In order to identify the cause of non-conforming products, the **company** shall demonstrate the ability to identify the **producer**, the supplier, or a group of suppliers for pellets sold as ENplus® certified.

**7.3.2.4** The **company** responsible for bagging the pellets shall ensure that the bag design allows identification of:

- a) the entity responsible for bagging the pellets;
- b) date, and site of the bagging.

NOTE: The serial number that ensures compliance with requirement 7.3.2.4 is defined by ENplus® ST 1003 as an obligatory part of the bag design.

### 7.3.3 Reference samples

**7.3.3.1** The **producer** of **bulk pellets** shall take at least a 1.5 kg reference sample per production day.

**7.3.3.2** The **producer** or **trader**, as a **bulk pellet** loading station operator (**small-scale delivery**), shall take a reference sample during the delivery loading process. The reference sample should be taken from falling material. The sample shall consist of at least 1.5 kg for each loading point per delivery day.

NOTE: The analysis of a reference sample offers a solid basis for the decision on **complaints** relating to quality from customers (business-to-business as well as end-users).

**7.3.3.3** The **trader** operating a **vending machine** shall take at least a 1.5 kg reference sample per month during which the **vending machine** is in operation. The reference sample shall be taken from falling material.

**7.3.3.4** The reference samples shall be:

- a) sealed (bags with tamper-proof closing);
- b) numbered to ensure that production or loading site, production or loading date, and quality class are identifiable;
- c) stored for at least nine (9) months under appropriate conditions.

### 7.3.4 Complaint management

**7.3.4.1** The **company** shall have a process to receive, evaluate, and make decisions on **complaints** relating to pellet quality and compliance with the ENplus® requirements as explicitly defined in this **standard** and ENplus® ST 1002. The **company** shall retain **documented information** to record and track **complaints**, as well as actions undertaken to address them.

**7.3.4.2** The **company** shall have ability to process and communicate **complaints** in the language(s) of the country where the **company's** customer (B2C) is situated.

**7.3.4.3** The **company** shall also be responsible for **complaints** relating to the activities of the contracted **service provider** and another sub-contractor.

**7.3.4.4** The **company** shall appoint a person, preferably the quality manager, that shall be responsible for the **complaint** management.

**7.3.4.5** Upon receipt of a written **complaint**, the **company** shall ensure an investigation of the **complaint** by gathering and evaluating all necessary information to reach a decision and give a written notice of the outcome to the complainant. The **company** shall give a first reply to the complainant within one week at the latest. Where the cause of the **complaint** concerns the previous entities in the supply chain, the **company** shall also communicate the **complaint** to the supplier and request cooperation in the **complaint** investigation.

**7.3.4.6** Outside Germany, in circumstances where the **complaint** is rejected as not relating to the **company's** activities, or where the complainant is not satisfied with the outcome(s) of the **complaint's** resolution, the **company** shall inform the said complainant about the possibility to submit the **complaint** to the relevant **ENplus® scheme management**.

**7.3.4.7** When investigating the **complaint**, the **company** shall accept the **complaint** relating to the amount of fines in the end user's storage with **small-scale deliveries** of **bulk pellets**, if the amount of fines (<3.15 mm) in the store exceeds 4,0 w-%. The following conditions need to be met:

- a) the amount of pellet residue before the last delivery was < 10 % of the storage capacity;
- b) less than 20 % of the actual delivery has been consumed;
- c) the end-user's storage meets the criteria for the proper pellet storage in accordance with the *ENplus® Storage Guidelines* (ENplus® Guidance Document) which is valid in the respective country of the storage location;
- d) where pellets are blown from the **transport vehicle** with a blowing system into the end-user's storage, the blowing distance has not exceeded 30m, including the internal ducts;
- e) the end-user's storage has been completely emptied, and where necessary, cleaned periodically in accordance with the *ENplus® Storage Guidelines* (ENplus® Guidance Document) which is valid in the respective country of the storage location.

**7.3.4.8** When investigating a **complaint** related to the delivery of bags or **big bags**, the **company** shall accept the **complaint** relating to the amount of fines at the end user's site if the limit for the amount of fines (<3.15 mm), as defined in [Table 4](#), is exceeded.

**7.3.4.9** Where the **complaint** investigation includes the testing of products:

- a) testing shall be performed by an accredited testing body, except in the case of testing the fines content, moisture, mechanical durability or bulk density of which the testing can be conducted by the **company**;
- b) the **company** shall ensure that the sample is collected by a qualified internal, or external person. The **company** shall allow the complainant and other involved party to be present during the collection of the sample;
- c) sampling of **bulk pellets** shall follow ISO 21945;
- d) testing of **bagged pellets** shall be based on a delivered, unopened bag;
- e) testing of a relevant reference sample shall be used to investigate the cause of the **complaint**;
- f) the storage conditions and the sampling (a number of the samples, an increment, etc.) shall be documented.

NOTE: For all countries except Germany, the accepted accreditation of testing bodies is defined in ENplus® ST 1002, Annex A. In Germany, ENplus DE ST 1002 is available.

**7.3.4.10** In the case where laboratory results show that the **complaint** was not justified, the **company** may charge the complainant for the laboratory analysis.

## 7.4 ENplus® trademarks usage and communication

**7.4.1** The **company** shall use the **ENplus® trademarks** with or without the trademark sign (**ENplus® logo**, **ENplus® certification seal**, **ENplus® ID**, **ENplus® quality seal**, **ENplus® service sign**, **ENplus® bag design**) in compliance with ENplus® ST 1003.

**7.4.2** Where the **company** communicates ENplus® certified pellets values or a range of values of parameters that are covered by [A.1](#), the **company** shall ensure that the communicated values or range of values follow [A.1](#) and are supported by the results of the **company's ENplus® testing body** for the entire period for which the communication is made.

NOTE 1: The communication covers invoices, **delivery documentation**, brochures, website, product leaflets, etc.

NOTE 2: Communication that is a part of the bag design is regulated by ENplus® ST 1003.

**7.4.3** Where the **trader** includes the share of pellets with a length < 10 mm in the **delivery documentation** for a **small-scale delivery**, it shall only be stated in length categories (L, M, S) as indicated in **A.1**.

## **7.5 Reporting requirements**

**7.5.1** The ENplus® certified **company** shall immediately report to the **ENplus® certification body** the following information that may affect the scope of the **company's** certification:

- a) changes in the critical business activities (see **Annex B**);
- b) new or terminated sites in case of a **multisite company**;
- c) changes in the legal status of the **company**, a contact person, and contact details;
- d) information about issuance of the **ENplus® trademarks** permission to other entities (see ENplus® ST 1003).

NOTE: Additional information is to be collected by the **ENplus® certification body** either as part of the application for certification or as part of the inspection.

**7.5.2** The ENplus® certified **company** shall immediately provide the relevant **ENplus® scheme management** with the following information necessary for the governance of the ENplus® scheme:

- a) changes in the legal status of the **company**, a contact person, and contact details;
- b) information about issuance of the **ENplus® trademarks** permission to other entities (see ENplus® ST 1003);
- c) information on production and trading figures as requested by the relevant **ENplus® scheme management**;
- d) other information requested by the relevant **ENplus® scheme management** for statistical purposes, **complaints** management, etc.

NOTE: The form and means of the information transfer is defined by the **ENplus® scheme management**.

## **8. Bibliography**

This chapter provides additional documents that are relevant to the quality of wood pellets:  
ISO 9001, Quality management systems – Requirements

## Annex A. ENplus® pellet classes, properties, and values

### A.1 Quality Classes

**A.1.1** Table 4 includes mandatory threshold values for essential pellet parameters for specific ENplus® quality classes.

**A.1.2** Pellets shall not include contamination of non-wood material or wood fibres in another form than wood pellets (e.g. wood chips or particles).

NOTE: The contamination does not refer to additives that is regulated by A.3 and fines whose content is regulated by Table 4.

#### ● Table 4

##### Threshold values of essential pellet parameters

Quality class	ENplus® A1	ENplus® A2	ENplus® B	Unit	Testing standard
Diameter (as received)	6 ± 1, 8 ± 1	6 ± 1, 8 ± 1	6 ± 1, 8 ± 1	mm	ISO 17829
Length (as received)	3,15 ≤ L ≤ 40 (a)	3,15 ≤ L ≤ 40 (a)	3,15 ≤ L ≤ 40 (a)	mm	ISO 17829
Share of pellets with a length < 10 mm (as received) - Category L < 20%, 20% ≤ M ≤ 30%, S > 30%	value & category to be stated	value & category to be stated	value & category to be stated	w-%	ENplus® Guidance Document (b)
Moisture (as received)	≤ 10,0	≤ 10,0	≤ 10,0	w-%	ISO 18134
Ash (dry basis)	≤ 0,70	≤ 1,20	≤ 2,00	w-%	ISO 18122
Mechanical durability (as received) (c)	≥ 98,0	≥ 97,5	≥ 97,5	w-%	ISO 17831-1
Bulk density (as received)	600 ≤ BD ≤ 750	600 ≤ BD ≤ 750	600 ≤ BD ≤ 750	kg/m³	ISO 17828
Particle density (as received)	value to be stated	value to be stated	value to be stated	g/cm³	ISO 18847
Coarse fines (3,15 mm ≤ FP < 5,6 mm) (as received)	value to be stated	value to be stated	value to be stated	w-%	analysis based on ISO 18846 (d, e, f, g)
Fines (< 3,15 mm) (bulk) (as received)	≤ 1,0	≤ 1,0	≤ 1,0	w-%	ISO 18846 (d, f, g)
Fines (< 3,15 mm) (bags) (as received)	≤ 0,5	≤ 0,5		w-%	ISO 18846 (e, f, g)
Net calorific value (as received)	≥ 4,6 (h)	≥ 4,6 (h)	≥ 4,6 (h)	kWh/kg	ISO 18125

Additives (as received)	≤ 2,0 (i)	≤ 2,0 (i)	≤ 2,0 (i)	w-%	
Nitrogen (dry basis)	≤ 0,3	≤ 0,5	≤ 1,0	w-%	ISO 16948
Sulfur (dry basis)	≤ 0,04	≤ 0,04	≤ 0,04	w-%	ISO 16994
Chlorine (dry basis)	≤ 0,02	≤ 0,02	≤ 0,03	w-%	ISO 16994
Arsenic (dry basis)	≤ 1	≤ 1	≤ 1	mg/kg	ISO 16968
Cadmium (dry basis)	≤ 0,5	≤ 0,5	≤ 0,5	mg/kg	ISO 16968
Chromium (dry basis)	≤ 10	≤ 10	≤ 10	mg/kg	ISO 16968
Copper (dry basis)	≤ 10	≤ 10	≤ 10	mg/kg	ISO 16968
Lead (dry basis)	≤ 10	≤ 10	≤ 10	mg/kg	ISO 16968
Mercury (dry basis)	≤ 0,1	≤ 0,1	≤ 0,1	mg/kg	ISO 16968
Nickel (dry basis)	≤ 10	≤ 10	≤ 10	mg/kg	ISO 16968
Zinc (dry basis)	≤ 100	≤ 100	≤ 100	mg/kg	ISO 16968
Ash deformation temperature	≥ 1200	≥ 1100	≥ 1100	°C	ISO 21404 (j)

(a) A maximum of 1% of the pellets may be longer than 40 mm. No pellets longer than 45 mm are allowed.

(b) 100 pellets should be measured (after sieving with a 5,6 mm sieve) for the length distribution mass where only 50 are recommended in the ISO 17829. The results shall be both expressed by the exact value and the category (L, M, S).

(c) At the loading point of the **transport vehicle** at the production site.

(d) At **company** gate or when loading **big bags** or truck for deliveries to end-users.

(e) At **company** gate, when filling bags (**bagged pellets**).

(f) The indication "3,15 mm" respective "5,6 mm" designates particles which pass through a round hole sieve with an aperture size of 3,15 mm, respective 5,6 mm, according to ISO 3310-2.

(g) ISO 18846 will be replaced by ISO 5370.

(h) Equal ≥ 16,5 MJ/kg as received.

(i) The amount of additives in production shall be limited to 1,8 w-% while the amount of post-production additives (e.g. coating oils) shall be limited to 0,2 w-% of the pellets.

(j) Ash is produced at 815 °C. All characteristic temperatures listed in ISO 21404 shall be stated in the report.

NOTE: The results are considered conforming if the value reported by the laboratory is within the specified limit.

## A.2 Requirements on wood raw material

**A.2.1** Table 5 includes mandatory requirements for wood raw material used in the production of the ENplus® quality classes.

NOTE 1: The types of wood indicated in Table 5 originates in ISO 17225-2. The raw material assortments are defined in ISO 17225-1.

NOTE 2: The ENplus® scheme deviates from the **standard** ISO 17225-2 - the use of demolition wood and of chemically treated wood is not allowed for any ENplus® certified pellets.

**A.2.2** Rotted raw material and raw material including contaminants or a high amount of bark shall not be used in the production of ENplus® certified pellets.

### ● Table 5

#### Wood types that are permitted to be used for wood pellet production

ENplus® A1		ENplus® A2		ENplus® B	
1.1.3	Stem wood <sup>a)</sup>	1.1.1	Whole trees without roots <sup>a)</sup>	1.1	Forest, plantation, and other virgin wood <sup>a)</sup>
1.2.1	Chemically untreated by-products and residues from the wood processing industry <sup>b)</sup>	1.1.3	Stem wood <sup>a)</sup>	1.2.1	Chemically untreated by-products and residues from the wood processing industry <sup>b)</sup>
		1.1.4	Logging residues <sup>a)</sup>		
		1.2.1	Chemically untreated by-products and residues from the wood processing industry <sup>b)</sup>	1.3.1	Chemically untreated used wood <sup>c)</sup>
<p>a) wood which was externally treated with wood preservatives against insect attack, e.g., lineatus, is not considered as chemically treated wood if all chemical parameters of the pellets comply with the limits and/or concentrations are too small to be concerned with;</p> <p>b) negligible levels of glue, grease, and other timber production additives which are used in wood processing industry during production of timber and timber product (from virgin wood) are acceptable if all chemical parameters of the pellets are clearly within the limits and/or concentrations are too small to be concerned with;</p> <p>c) demolition wood is excluded.</p>					

## A.3 Requirements on additives

**A.3.1** The **producer** shall only use additives to a maximum of 2% of the total mass of the pellets. The amount of additives used in production shall be limited to 1,8 w-%, while the amount of post-production additives (e.g. coating oils) shall be limited to 0,2 w-% of the pellets.

**A.3.2** Additives, such as starch, corn flour, potato flour, vegetable oil, lignin from sulphate craft process shall originate from processed or unaltered farming and forestry products.

## Annex B. Critical business activities and ENplus® certification scope

Table 6 provides information on critical business activities that are covered by the ENplus® certification scope.

### ● Table 6

#### Critical business activities included in the certification scope

Certification scope	Critical Business Activities Always included in the certification scope	Critical business activities Only included in the scope after inspection
Producer	Production	Bagging and trade of <b>bagged pellets</b> (from its own production)
	<b>Large-scale delivery</b> of pellets (from its own production)	Storage of pellets (B2C, from its own production)
Trader of <b>bulk pellets</b>	Procurement of pellets	Storage of pellets (B2C)
	<b>Trade of bulk pellets without physical contact</b> <b>Large-scale delivery</b> of pellets	<b>Small-scale delivery</b> of pellets
Trader of <b>bagged pellets</b>	Procurement of pellets Trade of <b>bagged pellets</b> (where the trader is the <b>bag design owner</b> )	Bagging of pellets
Trader of <b>bulk pellets</b> without physical contact	Procurement of pellets <b>Trade of bulk pellets without physical contact</b>	
Service provider		Storage of pellets (B2C)
		Bagging of pellets
		<b>Small-scale delivery</b> of pellets

NOTE 1: Storage of pellets (B2C) means storage of **bulk pellets** in a facility from which the pellets are delivered to the end-user. The storage of pellets (B2C) also covers **vending machines**.

NOTE 2: Only **traders** of **bagged pellets** that are the **bag design owners** are eligible for the ENplus® certification.

## Annex C. Documented information required by ENplus® ST 1001

### ● Table 7

#### Documented information required by ENplus® ST 1001

Area	Requirement		NOTE
	Producers	Traders	
<b>Delivering documentation</b> for incoming goods	5.2.1.2		Records
<b>Delivery documentation</b> on procured pellets		6.2.1.4	Records
Production, storage, and bagging processes	5.2.2.2 a)	6.2.2.2 a)	Procedures
Maintenance and cleaning of equipment and facilities	5.2.2.2 b)	6.2.2.2 b)	Records
Records on work carried out	5.2.2.2 c)	6.2.2.2 c)	Records, e.g., shift protocols, change of the press
Documentation on calibration, verification, or validation of the measuring devices	5.2.2.2 d)	6.2.2.2 d)	Records
List <b>transport vehicles</b> for <b>small-scale delivery</b>		6.2.3.5	Records
Contamination of <b>transport vehicles</b>	5.2.3.5	6.2.3.11	Records
Mass balance account	5.2.5.3	6.2.5.4	Records
<b>Delivery documentation</b> on outgoing pellets	5.2.5.1 5.2.5.2	6.2.5.1 6.2.5.2 6.2.5.3	Records
Training of personnel	7.2.2.5	7.2.2.5	Records
External resources - subcontracting	7.2.4.3, 7.2.4.6	7.2.4.3, 7.2.4.6	Records, contracts
Self-monitoring	7.3.1.5	7.3.1.5	Procedures, records
Non-conforming products	7.3.2.2	7.3.2.2	Records
<b>Complaints</b> management	7.3.4.1	7.3.4.1	Procedures, records
Usage of the <b>ENplus® trademarks</b> – permissions for the use	7.4, (also ENplus® ST 1003)	7.4, (also ENplus® ST 1003)	Written permission issued to other entities
Usage of the <b>ENplus® trademarks</b> – Bag design approvals	7.4, (also ENplus® ST 1003)	7.4, (also ENplus® ST 1003)	Bag design approvals
Usage of the <b>ENplus® trademarks</b> – Bag design permissions	7.4, (also ENplus® ST 1003)	7.4, (also ENplus® ST 1003)	Bag design permissions issued to other entities



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