



TÜVRheinland®

DIN CERTCO

Precisely Right.



# Certification Scheme

## Non-Woody Pellets

in accordance with

**DIN EN ISO 17225-6**

(Edition: February 2023)

## Foreword

DIN CERTCO was founded in 1972 by DIN Deutsches Institut für Normung e. V., is now part of the TÜV Rheinland Group and is the certification body for issuing DIN marks and other certification marks for products, persons, services as well as companies based on DIN standards and similar specifications. Due to its independence, neutrality, competence and many years of experience, DIN CERTCO enjoys a high reputation both at home and abroad.

In order to prove the functionality of the system and our competence as a certification body, we have been accredited, certified or recognised by independent domestic and foreign bodies in both the voluntary and legally regulated areas. [Our accreditations.](#)

The certification scheme has been developed in connection with the development of the International Standard DIN EN ISO 17225-6, as well as the growing number of companies, which are specialized on the packaging of non-woody pellets.

In conjunction with the General Terms and Conditions of DIN CERTCO, this certification scheme forms the basis for providers of non-woody pellets to be able to mark their products with the quality mark "DIN*plus*". By doing so, they demonstrate that their products meet all requirements of the International Standard DIN EN ISO 17225-6 and in many cases exceed.

The "DIN*plus*" quality mark creates customer confidence: they can rest assured that an independent, neutral and specialist institution has carefully investigated and reviewed all the inspection criteria. External monitoring ensures that the product quality is maintained during production. All of which provides customers with added value that will help them decide which products to purchase.

Non-woody pellets receive the quality mark "DIN*plus*" if they fulfil the requirements set out in section 3 and 6, in accordance with the process described in this certification scheme.

This certification scheme defines requirements for the product "Non-Woody Pellets", for the surveillance of the production and the packaging in separate packaging facilities. This certification scheme of non-woody pellets is clearly distinguished from wood pellets according to DIN EN ISO 17225-2, which is offered via an independent certification by DIN CERTCO with "wood pellets class A1". DIN CERTCO expressly points out that non-woody pellets certified according to "DIN*plus*" shall only be used in combustion appliances and furnaces that have been specially adapted and tested for this purpose. If there is no proof of the combustion system for the non-woody fuel, a suitability test of the plant must be carried out, which corresponds to the respective requirements of the national guidelines and laws. These instructions shall be clearly communicated by the certified companies to the end-users. Any risk of confusion with wood-type pellets must be ruled out by the clear labeling. DIN CERTCO also recommends sustainable cultivation of the biomasses, does not support land and/or overexploitation, not support pelletization of food related raw materials and recommends sustainable packaging materials.

All certificate holders can be viewed on the DIN CERTCO homepage ([www.dincertco.de](http://www.dincertco.de)), which is updated on a daily basis.

## Amendments

a) None, as this certification scheme is the initial version with 2023-02

## Previous editions

No previous versions applicable.

## Remark

The German version of this certification scheme shall be taken as authoritative. No guarantee can be given to the English translation.

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## 1 Scope

This certification scheme applies to non-woody pellets in conjunction with the inspection basis set out below, contains all requirements for the award of the quality mark "DINplus".

This certification scheme establishes requirements that need to be met by the product itself, as well as requirements relating to the associated inspection and certification.

Manufacturers of non-woody pellets are in the scope of certification. Traders with physical contact, therefore a bagging system or loading of bulk non-woody pellets, such as silo and conveyor belt systems, are also within scope (section 6, trader). In addition, traders without any physical contact (placing on the market of packed or loaded goods) are also within scope (see sub-certificate).

## 2 Basis for inspection and certification

The currently valid versions of the following documents form the basis for inspection and certification:

DIN EN ISO 17225-6 „ Solid biofuels — Fuel specifications and classes — Part 6: Graded non-woody pellets”

- this certification scheme
- the general terms and conditions of DIN CERTCO
- the respective schedule of fees of DIN CERTCO
- Testing-, Registration- and Certification Regulations of DIN CERTCO

## 3 Product requirements

### 3.1 Raw material

Non-woody pellets are from herbaceous biomass, biomass from fruits or aquatic crops and permitted as non-woody pellets in this context. The actual origin of the raw materials must be clearly stated. The non-woody pellets can be composed of defined mixtures (blends) as well as of undefined mixtures of biomasses (woody and non-woody). Raw materials for mixtures with woody biomass are possible according to Annex, Table 2. Defined mixtures are deliberately chosen mixtures. Non-defined mixtures are random mixing ratios. The mixing ratio must be clearly stated (see 3.3, Table 1, footnote 1).

The following non-woody classes are permissible according to the Annex (according to DIN EN ISO 17225-1. Table 1):

- 2 Herbaceous biomass
- 3 Fruit biomass
- 4 Aquatic biomass
- 5 Blends and mixtures

Manufacturers of non-woody pellets must keep records on the origin of their biomass including a list of the suppliers recognized by the manufacturer and their confirmation to delivery exclusively biomass fulfilling the requirements according to Annex, table 2 for the non-woody pellet production.

The raw materials for the non-woody pellets shall not be produced by land and/or overexploitation. For the pelletizing no raw materials are allowed, which would be suitable as food.

### 3.2 Contamination, foreign substances

Foreign substances are not permitted - especially chemical treatments of the raw material, which contain halogenorganic compounds and heavy metals, which exceed the values of natural biomasses and the typical values in the country of origin. It shall be noted that biomasses that have been used specifically for chemical storage or that have been heavily chemically treated must also be tested for organohalogen compounds prior the injection into the pelletizing process. If chemically treated materials are used, this shall be clearly marked. For biomasses according to DIN EN ISO 17225-1, table 1, 2.2.2 and 3.2.2 of the chemically treated herbaceous biomasses and biomasses of fruits, a clear origin must be provided and described on the packaging/delivery bill. Chemicals are permitted except negligible levels of glue, grease and other biomass production additives used during production, if all chemical parameters of the non-woody pellets are clearly within the limits and/or concentrations are too small to be concerned with.

Chemically treated used woods and chemically treated industrial woods are not allowed, not even in mixtures (see Annex, table 2).

### 3.3 Fuel requirements

**Table 1 - Herbaceous biomasses, biomass of fruits, aquatic biomasses, blends and undefined mixtures.**

| Property class                     | units             | Class A   | Class B   |
|------------------------------------|-------------------|---|---|
| Origin and source <sup>1)</sup>    |                   | 2 Herbaceous biomass<br>3 Fruit biomass<br>4 Aquatic biomass<br>5 Blends and mixtures | 2 Herbaceous biomass<br>3 Fruit biomass<br>4 Aquatic biomass<br>5 Blends and mixtures |
| Diameter, D                        | mm                | D06 to D25, D ± 1,0   | D06 to D25, D ± 1,0   |
| Length                             | mm                | 3,15 ≤ L ≤ 40<br>(D06 to D10)   | 3,15 ≤ L ≤ 40<br>(D06 to D10)   |
|                                    |                   | 3,15 ≤ L ≤ 50<br>(D12 to D25)   | 3,15 ≤ L ≤ 50<br>(D12 to D25)   |
| Moisture, as received              | mass -%           | ≤ 12  | ≤ 15  |
| Ash content                        | mass - %, dry     | ≤ 6   | ≤ 10  |
| Mechanical durability, as received | mass - %          | ≥ 97,5  | ≥ 96,0  |
| Fines <sup>2)</sup> , as received  | mass - %          | ≤ 2,0   | ≤ 3,0   |
| Net calorific value, as received   | MJ/kg<br>kWh/kg   | ≥ 14,5  | ≥ 14,5  |
|                                    |                   | ≥ 4,0   | ≥ 4,0   |
| Bulk density, as received          | kg/m <sup>3</sup> | ≥ 600   | ≥ 550   |
| Additives <sup>3)</sup>            | Mass - %          | ≤ 5   | ≤ 5   |
| Nitrogen                           | mass-% dry        | ≤ 1,5   | ≤ 2,0   |
| Sulfur                             | mass-% dry        | ≤ 0,2   | ≤ 0,3   |
| Chlorine                           | mass-% dry        | ≤ 0,1   | ≤ 0,4   |
| Arsenic                            | mg/kg dry         | ≤ 1   | ≤ 1,5   |
| Cadmium                            | mg/kg dry         | ≤ 0,5   | ≤ 0,5   |
| Chromium                           | mg/kg dry         | ≤ 50  | ≤ 50  |
| Copper                             | mg/kg dry         | ≤ 20  | ≤ 20  |
| Lead                               | mg/kg dry         | ≤ 10  | ≤ 10  |
| Mercury                            | mg/kg dry         | ≤ 0,1   | ≤ 0,1   |
| Nickel                             | mg/kg dry         | ≤ 10  | ≤ 10  |
| Zinc                               | mg/kg dry         | ≤ 100   | ≤ 100   |
| Ash melting behavior <sup>4)</sup> | °C                | informative   | informative   |

- The biomass used shall be specified according to the 4-digit classification number (if not available at least 3-digit number) based on Table 2 of this certification scheme in the Annex in accordance with DIN EN ISO 17225-1, table 1. Mixtures may contain woody biomass. Blends (defined mixtures) are to be indicated exactly in %. Example: 70 % of the masses 4.4.1 common reed, 30 % of the masses 2.1.2.3 seeds. Undefined mixtures shall be named, in order from the main ingredient to the least. Example: 4.4.1 common reed, 2.1.2.3 seeds.
- Fines are particles smaller than 3.15 mm. The fines content must be measured at least at the loading point or bagging of the goods.
- The type of pressing aid/additive shall be defined. Examples are inhibitors of slag formation or other additives, such as starch, corn flour, potato flour, vegetable oil, lignin, which may be added improve the production, delivery or combustion. The type and quantity of additives which are in use shall be documented and will be checked during the inspection.
- It is recommended that all characteristic temperatures (shrinkage starting temperature (SST), deformation temperature (DT), hemisphere temperature (HT) and flow temperature (FT)) should be specified under oxidizing conditions. The pre-ashing temperature is 550 °C.

### 3.4 Identifying marking

The packaging and/or the accompanying papers (with unpacked consignments) must be indicated analogously by the following data durably and in German language and/or in the national language of the sales market well readably:

- Name, contact option or registered trademark of the manufacturer or the supplier/distributor
- Designation of the product with indication of the diameter (in mm) e. g. non-woody pellets – class A, diameter 6 mm
- Nominal weight and/or mass of the packaging content
- Country of origin of the raw material used or exact origin according to classification 2.2.2 & 3.2.2 as per Table 2 in the Annex
- Designation of the raw material with indication of the 4-digit classification number from Annex (or at least 3-digits if 4-digits not available), e.g. from 2.1.2.3 Seeds of grasses.
- Any mixing ratios, see 3.1
- Any impurities, see raw 3.2
- Notice, that during transport and storage the non-woody pellets are to be protected from moisture
- The non-woody pellets shall only be combusted in heat-producing appliances that are suitable and permissible for this type of fuel (cf. operating instructions for the heat-producing appliance).
- Note that non-woody pellets should only be stored in well-ventilated storage areas suitable for this when bulk pellets are delivered to end-customers
- For clear identification of the delivery, every product or its packaging/insert/accompanying documents must be labelled with the year of manufacture and, in the case of several monitored production sites, the production site. This can take the form of an identification code and/or a serial number providing information on the year of manufacture and the production site (the encoding must be declared to DIN CERTCO). For reasons of the traceability the marking with the actual date is recommended.
- Quality mark “DINplus” (The mark may only be used in his original form. The mark may only be modified proportionally in terms of its size. Deviating from the colour design in the template, marks may be depicted in mono colouring) and with corresponding registration number (following successful certification, section 5.5).

## 4 Testing

### 4.1 General

For the performance of the tests required as the basis for the assessment and certification of the products, DIN CERTCO avails itself of the test laboratories to which it has awarded recognition.



## **4.2 Types of test**

### **4.2.1 Initial test**

The initial testing and establishes whether the non-woody pellets complies with the requirements of section 3 and the surveillance which has to be carried out by the producer or traders with physical contact comply with the requirements in the section 6.2.

### **4.2.2 Verification test (control test)**

The verification test is conducted repeatedly at determined intervals (see section 6.3) and serves to ascertain whether the certified product corresponds to the tested product during the production phase or placing on the market.

The test is commissioned by DIN CERTCO and must be evidenced on the due date by a positive test report.

The type and scope of the verification test are described in the section 6.3.1 of this certification scheme.

### **4.2.3 Supplementary test**

A supplementary test shall take place when additions, extensions or modifications (see section 5.10) are made to the certified product, production process, loading and bagging process or quality assurance system which may influence the product's conformity with the pertinent, fundamental requirements.

The type and scope of the supplementary test shall be laid down on a case by case basis by DIN CERTCO in conjunction with the testing laboratory.

### **4.2.4 Special Test**

A Special Test is conducted when

- defects are detected
- the production has been suspended for a period of more than 6 months
- required by DIN CERTCO - reasons to be specified
- requested in writing by a third party if a particular interest in the maintenance of proper conduct of market procedures in relation to competition or quality is involved.

The type and scope of the special test shall be laid down in accordance with the specific, respective purpose on a case by case basis by DIN CERTCO in conjunction with the testing laboratory.

Should defects be detected in the course of the special test or because of the suspended production, the certificate holder shall bear the costs of the examination procedure.

Should the special test at the request of a third party reveal no defects, the costs shall be borne by said third party.

## **4.3 Sampling**

The samples for the initial- and verification test are delivered usually by the producer to the laboratory authorized for testing. The costs bear by the producer.

The necessary sample quantity must be at least 10 kg for the determination of fines and 4 kg for the determination of the other characteristics defined in the product standard.

The samples must be clearly, permanent labeled and usually arrive at the authorized laboratory at least within 14 days. The sampling process must be reported.

When taking samples a distinction between two types is to be made:

#### **4.3.1 Extraction from flowing goods**

The necessary specimen material is to be taken from the “flow of goods” in the form of a minimum of 5 spot samples, each with a mass of 2 kg. The sampling has to be made at the latest possible extraction point at the production plant.

The specimen samples are to be taken so that between extractions, staggered within a given time, a multiple (at least ten times) of the quantity of a single specimen probe sample pass on the conveyor route.

#### **4.3.2 Extraction from stock piled goods**

The necessary specimen material, a minimum of 5 spot samples each with a mass of at least 2 kg, is to be extracted as evenly as possible from the stock, the transport vehicle or from the pallet and container and so forth.

Small packing units (< 20 kg) have to be taken as a unit.

#### **4.3.3 Test procedure**

The tests must be carried out in the laboratory in accordance with the testing standards mentioned in the product standard. Basis for testing deviates from mentioned testing standards are allowed if their comparability is traceable. This also applies for the testing proceeding for the factory production control.

The determination for the amount of pressing aid/additives are defined during the factory inspection on the basis of the manufacturer documentation by calculating the quantity balance between the quantity of pressing aid/additive used and the produced quantity of the non-woody pellets.

## **5 Certification**

A pre-requisite for performing the test according to this certification scheme is a previous appraisal by a DIN CERTCO inspector or by a testing laboratory/regulatory body recognized by DIN CERTCO. The QA-measures for continuous self-monitoring according to section 6.2 and the relevant records are inspected as part of this process. A separate factory inspection must take place at each production site or traders with physical contact (section 6.3.1), and this must relate clearly and in detail to the products being monitored.

Certification in the sense of this certification scheme relates to the assessment of conformity of a product and quality system of the manufacturing or trader operations by DIN CERTCO on the basis of test reports submitted by testing laboratories recognized by DIN CERTCO. To this end, the products to be certified are examined and subsequently monitored in respect of conformity with the requirements laid down in section 3.

The manufacturer's or traders with physical contract QA-system is assessed on the basis of the factory inspection report to ensure it meets the production requirements for maintaining the conformity of the products.

The basis for the certification of distributors without physical contact is the conformity of the packaging or delivery bills according to this certification scheme.

The right to use the quality mark "DIN*plus*" will be granted by the issuing of the respective certificate.

## 5.1 Application

Both manufacturers according to the § 4 German Product Liability Act (ProdHaftG) and distributors who, with the written consent of the certificate holder, bring the products onto the market under their own responsibility in the sense of the Product Liability Act, may apply.

The applicant must submit the following documents to DIN CERTCO:

- Application for certification in the original complete with legally binding signature
- an up-to-date test report concerning an Initial Examination (see section 4.2.1), in so far as the test was not commissioned by DIN CERTCO
- as applicable, questionnaire for Factory Inspection
- as applicable, packaging layout

## 5.2 Definition of classes, types and trademarks

Non-woody pellets are categorized and can be certified in two different quality classes under DIN*plus* (class A and B, see 3.3). These classes can be produced with different diameters (such as 6 mm and 8 mm) and may appear on a certificate as a type if they are manufactured at the same production site. The brand names managed under the types e.g. on packaging layouts are regarded as trademarks. Therefore, every trademark with the corresponding delivery note and the layout, if applicable, needs to be assessed by DIN CERTCO and an application for a sublicense is necessary.

## 5.3 Sublicense

According to DIN CERTCO's General Terms and Conditions sublicenses are necessary if certified products are intended to be brought onto the market on behalf of companies other than the main certificate holder or with a brand different to the brand mentioned on the main certificate.

### 5.3.1 Sublicenses without Self-Production or without physical contact

It is possible to issue sub-licences for all DIN*plus* certified non-woody pellets. They give the possibility bring products onto the market in the name of the sublicense holder with the registration number of the main certificate holder. Sub-licences are dependent upon the validity of the main certificate and will expire with it. Manufactured items may not be changed by sublicense holders.

### 5.3.2 Sublicenses for Manufacturers or Traders with physical contact

If a producer would like to bring his already certified products onto the market with different tradenames every packaging must be verified by DIN CERTCO and a sublicense must be applied for.

## 5.4 Conformity assessment

On the basis of the application, report of the laboratory analysis and the report of the factory inspection submitted, DIN CERTCO conducts the conformity examination. To this end, in particular, an assessment is made with the aid of the examination report as to whether the product meets the requirements of the certification scheme and of the Standard.

For sub-certificates the compliance assessment is based on the declaration of consent by the main certificate holder, as well as the delivery notes or packaging of the trademarks for the sub-certificate.

The applicant shall receive written notification from DIN CERTCO in the event of any possible deviations.

## 5.5 The Certificate and the right to use the mark

After successful testing and conformity assessment of the submitted documents, DIN CERTCO issues a certificate to the applicant and awards the right to use the quality mark "DINplus" in conjunction with a corresponding registration number. To ensure a traceability and well readability, the registration number must have a minimum height of 2 mm on the layout/delivery notes.



Format of Registration No.: **10NW000-A or -B**  
(at least 2 mm high)

Non-woody pellets, for which the right to use the quality mark "DINplus" has been awarded, must be marked with the respective quality mark "DINplus" and the respective registration number.

The mark and the registration number may only be used for the class/type/trademark for which the certificate has been issued. For other type/trademark a sublicense must be applied.

For each certificate, a registration number shall be issued. This may include classes/types/trademark of the same company (see section 5.2).

At the applicant's request another registration number can be issued for a sub-certificate.

In addition to this, the General Terms and conditions, Testing-, Registration- and Certification Regulations of DIN CERTCO shall apply.

## 5.6 Publications

All certificate holders can be viewed on the daily up-dated homepage of DIN CERTCO ([www.dincertco.de](http://www.dincertco.de)) under <Certificates and Registrations>. Manufacturers, users and consumers use this research possibility for obtaining information on certified products.

Besides the contact details of the certificate holders (telephone, telefax, e-mail, homepage), it is also possible to view the technical data of the registered non-woody pellets.

## 5.7 Validity of the certificate

The certificate is valid for 5 years. The period of validity is shown on the certificate. On expiry of the certificate, the right to use the mark also expires.

## 5.8 Renewal of the certificate

If the certification shall continue to apply beyond the date shown on the certificate, an up-to-date, positive test report must be submitted in good time to DIN CERTCO. Proof of conformity with the requirements of the test and certification specifications according to section 2 shall be provided within the scope of a factory inspection according to section 6.3.1 including sampling and verification test according to section 4.2.2.

## 5.9 Expiry of the certificate

In the event that the new Standard conformity examination according to section 4 has not been completed before expiry of the validity period, the right to use the quality mark "DINplus" and the registration number expires without the necessity for explicit notification from DIN CERTCO.

Furthermore, the certificate can also expire if:

- the surveillance according to section 6 is not performed punctually or completely,
- the quality mark "DINplus" is misused by the certificate holder,
- the requirements laid down in the Certification scheme or its accompanying documents are not fulfilled,
- the certification fees are not paid on the due date
- the prerequisites for the issuing of the certificate are no longer fulfilled
- DIN CERTCO has evidences that the biomasses of the raw material originate from land and/or overexploitation or that the purpose of the raw materials is for food production

## 5.10 Alterations/amendments

### 5.10.1 Alterations/amendments to the product

The certificate holder is obliged to notify DIN CERTCO of all alterations to the product without delay. The testing laboratory in conjunction with DIN CERTCO shall decide on the scope of an examination that shall be conducted according to section 4.2.3 and whether it is a matter of a substantial alteration. The respective test report shall be forwarded to DIN CERTCO by the test laboratory.

Should DIN CERTCO determine a substantial alteration, the certificate with the corresponding registration number shall expire. For the modified product, a new application for initial certification authorising the use of the quality mark "DINplus" may be submitted.

The certificate holder remains obliged to notify of any changes in the formal details (e. g. certificate holder or his address).

The certificate holder may apply to DIN CERTCO for an extension of the existing certificate for further design-types (sub-types) of the same type.

It is for DIN CERTCO to decide whether these amendments require a complementary examination. The design-types shall be entered in the certificate for the already certified product and, provided that the conditions are fulfilled, shall be regarded as an integral part of same.

### **5.10.2 Alterations to the basic test specifications**

If the basic test specifications for the certification are modified, an application for the alteration of the certification shall be submitted within 6 months of receiving notification from DIN CERTCO and, as a rule, after 12 months, proof of conformity with the modified examination specifications shall be submitted in the form of a positive test report (see section 4.2.3).

### **5.11 Product defects**

In the event that a certified product on the market is found to be defective, the certificate holder shall be summoned in writing by DIN CERTCO to rectify the defects.

In conjunction with the testing laboratory, DIN CERTCO shall decide whether it is a serious or a minor defect.

In the case of defects having a direct or indirect effect on the technical safety or functionality of the product (serious defects), the manufacturer or trader must ensure that, until the defects have been rectified, the products are no longer marked with the Mark "DIN*plus*".

The defects must also be rectified without delay in installed products or products in storage. The manufacturer or trader must submit proof to DIN CERTCO within 3 months, in the form of a test report on a special test in accordance with section 4.2.4, that the defects have been rectified and that the product in question again fulfils the stipulated requirements. In the meantime, DIN CERTCO can suspend the right to use the "DIN*plus*" quality mark.

In the case of defects that have no influence on the technical safety or functionality of the product (minor defects), the manufacturer or traders must submit suitable proof to DIN CERTCO within 3 months that the defects in the product in question have been rectified. Should the manufacturer fail to observe these deadlines, he and the distributor of product will no longer be permitted to use the quality mark "DIN*plus*".

Should reason for complaint continue to exist, DIN CERTCO shall initially suspend the certificate and at the same time issue a final deadline for the rectification of the defects. Should the certificate holder fail to meet this demand, or fail to meet it within the period of grace, or if it is again not possible to prove that the defects have been rectified, the certificate shall be annulled.

## **6 Surveillance**

### **6.1 General information**

The constant surveillance of the certified product during the entire duration of the certification period is an integral component of the certification itself. We distinguish between internal monitoring by the manufacturer or trader and third monitoring by DIN CERTCO. Hereinafter traders with physical contact are meant.

## 6.2 Surveillance by the manufacturer/or the trader

During manufacturing and packaging must be ensured, by suitable quality assurance measures, that the product characteristics confirmed by the certification are maintained. This can be accomplished by means of an in-house factory production control (FPC) focussed on the product itself or on the production and, in addition, can be guaranteed within the framework of a quality management system. Factory production control comprises the continual monitoring of the production process by the manufacturer or trader, which guarantees the conformity of the products manufactured with the specified requirements.

### 6.2.1 Scope of incoming inspection at pellet factory (manufacturer)

As part of the incoming inspection, a regular visual inspection for the incoming raw material must be carried out and documented in a suitable way. The incoming inspection must cover following contents:

- Classification of the raw material (material for non-woody pelletizing, boiler fuel etc.)
- Visual inspection of the delivery trucks in regard to the cleanness of the goods
- Supplier must be recognized by the producer

If the raw material is provided exclusively only from other production facilities of the same company it is allowed to skip the incoming inspection.

As well as the list of permissible suppliers, a manufacturer declaration from the non-woody supplier must be provided and documented, stating the quality of the biomasses in terms of its naturalness, if applicable the chemical treatment, compounds and origin.

### 6.2.2 Scope of production monitoring tests at pellet factory (manufacturer)

The monitoring tests carried out by the factory itself on the finished product must be carried out by qualified personnel at least once every 8 hours. They comprise the following tests:

1. Determination of the water content
2. Determination of the mechanical durability (abrasion)
3. Determination of the bulk density
4. Determination of the pellet length
5. Determination of fine content (at least at packaging or before loading)
6. The type and quantity of any additives used must be continually logged.

When processing raw materials with potentially elevated ash content, the ash content of the end product must be regularly determined.

If the product fails a test, the manufacturer must immediately implement all measures to remedy the shortcoming. Faulty products must be labeled and separated. The test must be repeated after the correction measures have been carried out to determine whether the shortcoming has been remedied.

### 6.2.3 Scope of incoming inspection at packaging factory/for trader

As part of the incoming inspection, a regular visual inspection for every delivery must be carried out and documented in a suitable way. All suppliers who deliver non-woody pellets which will be sold as certified products must be named to DIN CERTCO. If non-certified products shall be bought and it should be assured in a proper way that a mixing with certified products is eliminated. The incoming inspection must cover following contents:

- Classification of the products (DINplus certified non-woody pellets, non-certified non-woody pellets etc.)
- Visual inspection of the delivery trucks in regard to the cleanness of the goods, water etc.
- A confirmation from the supplier that the characteristics which have been controlled during the FPC (see section 6.2.2) of the producer met the requirements of the certification.

#### **6.2.4 Scope of production monitoring tests at packaging factory**

To ensure that the requirements for the amount of fines (3.3) continuously will be met, the abrasion occurs during production need to be screened just before loading or packaging. The functionality of the sieving machine has to be checked regular.

The monitoring tests carried out during packaging must be carried out by qualified personnel at the beginning of a batch and at least once every 8 hours. They comprise the following test:

1. Determination of fines
2. Determination of the mechanical durability

If the product fails a test, the manufacturer must immediately implement all measures to remedy the shortcoming. Faulty products must be labeled and separated. The test must be repeated after the correction measures have been carried out to determine whether the shortcoming has been remedied.

#### **6.2.5 Outgoing goods for the pellet factory/the trader**

A reference sample of at least 1.5 kg once a day or 0,5 kg per load must be taken once a day. This sample must be labeled accordingly so that any complaints/customer queries can be assigned to the relevant time of production and processed. This sample must be stored for at least 9 month. Attention must be paid in the supply of bulk non-woody pellets, that the delivery of non-woody pellets shall not exceed a temperature of 40 °C.

#### **6.2.6 Documentation and records**

For the following quality-relevant processes, the manufacturer or trader must have written procedures approved by the appropriate person responsible:

- Monitoring of incoming and outgoing
- Monitoring of the test equipment used (calibration, functional check)
- Implementation of monitoring tests
- Duties and responsibilities
- Complaints management
- Maintenance work
- Training of employees

The execution of these processes must be documented on the appropriate form. At least the following information must be included:

- Description of the test object, test equipment, abnormality, type of training, or similar
- Date of implementation and if applicable manufacture
- Result of the test and if scheduled, comparison with the specified requirements
- Signature of the person responsible and if applicable the participants

Documents shall be stored at least 5 years or longer in respect of national requirements. Records shall be provided to DIN CERTCO or its authorized representatives on request.



### 6.3 Surveillance by DIN CERTCO

DIN CERTCO annually examines the conformity of the product with the requirements laid down in this certification scheme on the basis of surveillance inspections (section 4.2.2) as well as the effectiveness of the factory production control according to section 6.2 within the framework of factory inspections.

#### 6.3.1 Factory inspection

Within the framework of factory inspections, DIN CERTCO, or one of its authorised representatives, inspects the manufacturing and testing facilities as well as the quality assurance measures (QA-measures).

The factory inspection also serves to determine whether the technical manufacturing prerequisites are met for the continual conformity of the products with the requirements laid down in section 3.

The factory inspection is unannounced if possible and must be carried out at least once a year for every manufacturing site, bagging system and loading device with physical contact must be performed at least once a year. In exceptional cases, with the permission of DIN CERTCO beforehand, a Remote-Audit can be possible.

The inspection body must be informed immediately of any interruption to the manufacture of the object being monitored that makes assessment in accordance with the contract impossible, stating the expected duration of the interruption. The same applies for resumption of the activities.

The applicant must appoint a specialist manager and provide the inspection body with his or her name. The same applies for the deputy. Any change must be notified to the regulatory body immediately in writing.

The assigned representatives of the inspection body are authorized to check the operating and storage facilities of the company and its production sites including its delivery warehouses at any time during operating hours unannounced and perform the actions required in relation to the inspection. The assigned representatives of the inspection body must also be presented with all documentary evidence relating to the production for their examination, if required. It must also be ensured that samples can be taken if the applicant and the authorized inspector are absent.

The sample for manufacturers shall be examined in full in accordance with Table 1. For traders a test for mechanical durability, bulk density, fines, length diameter and moisture shall be performed.

For manufacturers with two classes according to section 3.3 (class A and B) a sample shall be taken per class and fully tested pursuant to the requirements according to table 1, 3.3. For different types within one class according to 5.2 (such as 6 and 8 mm) one sample shall be taken and tested completely according to table 1, 3.3. The second sample taken with a different diameter shall be tested for mechanical strength, moisture, length, diameter, bulk density and fines, provided that the raw material conditions and additional production settings are of the same value. Otherwise, the sample with the other diameter shall be tested full according to table 1, 3.3.

If a manufacturer/trader has several production lines or bagging and loading systems which are used in different ways, then for each different production line /bagging and loading system a sample must be taken to test for mechanical durability, moisture, length, diameter, bulk density and fines. In the use of various raw materials a sample must be taken for each production line/bagging and loading system and fully tested pursuant to 3.3.

The samples taken are tested by the DIN CERTCO recognized testing body. The samples shall represent the average production quality. Sampling extends across all of the manufacturer's merchandise or traders with physical contact found in the production or storage facilities. Faulty goods (rejects) are exempt from sampling, provided they are stored separately and clearly labeled.

Records must be kept of the factory inspection and the participants must sign these.

In addition to the information required of DIN EN ISO 17020, the test report/factory inspection report must contain further information on at least the following:

1. Origin, type, composition and quality of the raw materials used
2. Information on storage of raw materials and end products (sorts separation)
3. Details on the production process (with individual production steps)
4. Information on the existing quality assurance system  
Are there written procedures and working instructions (quality manual), protocols, particularly for the following processes:
  - Monitoring tests according to section 6.2 of the certification scheme
  - Calibration and inspection of the measuring and test equipment
  - Responsibilities, particularly for decisions about the subsequent course of action in the event of detection of abnormalities, interruptions to production etc.
  - Further training of employees
  - Maintenance work
  - Customer complaints
5. Information on supplying the non-woody pellets (screening, packaging, shipment etc.)
6. Corrective actions carried out to correct formerly detected deviations
7. Summary of the deviations
8. Inspector's appraisal

Should the results of the factory inspection prove insufficient, the applicant shall be informed accordingly without delay. In this case, the scope of additional measures needed to fulfil all requirements shall be determined between the certification body and the applicant. Should the applicant be unable to implement the necessary measures, the procedure shall be terminated.

### **6.3.2 Second annual sampling**

If a discrepancy arises during testing as per table 1,3.3 during the annual site inspection in accordance, then irrespective of the immediate retesting of parameters, additional samples shall be taken within the control year. The failed parameters shall be tested with the additional samples, carried out by a DIN CERTCO approved testing laboratory due to table 1, 3.3.

Sampling is done unannounced if possible. It is performed by a DIN CERTCO approved inspector and can be carried out via a suitable online-procedure or on-site. For an online process DIN CERTCO or the body appointed by DIN CERTCO can specify at least three production periods, from which a sample is selected for testing.

### 6.3.3 Result of the surveillance by DIN CERTCO

The results of the factory inspection and laboratory testing are summarized in a test and inspection report. The manufacturer is informed about the deviations from the requirements of this certification scheme and given a time limit within which to correct the deviations. The further procedure is in accordance with section 5.11.

## 7 Annex

**Table 2 – classification numbers according to DIN EN ISO 17225-1, table 1**

|                       |  |  |   |
|-----------------------|--|--|---|
| 1. Woody biomass      | 1.1 Forest, plantation and other virgin wood               | 1.1.3 Stemwood   | 1.1.3.1 Broad-leaf with bark<br>1.1.3.2 Coniferous with bark<br>1.1.3.3 Broad-leaf without bark<br>1.1.3.4 Coniferous without bark<br>1.1.3.5 *                                 |
|                       |  | 1.1.7 Segregated wood from gardens, parks, roadside maintenance, vineyards, fruit orchards and driftwood from freshwater |   |
|                       |  | 1.1.8 *  |   |
|                       | 1.2 By-products and residues from wood processing industry | 1.2.1 Chemically untreated wood by-products and residues   | 1.2.1.1 Broad-leaf with bark<br>1.2.1.2 Coniferous with bark<br>1.2.1.3 Broad-leaf without bark<br>1.2.1.4 Coniferous without bark<br>1.2.1.5 Bark (from industrial operations) |
|                       |  | 1.2.3 *  |   |
| 1.3 Used wood         | 1.3.1 Chemically untreated used wood                       | 1.3.1.1 Without bark<br>1.3.1.2 With bark<br>1.3.1.3 Bark  |   |
|                       | 1.3.3 *  |  |   |
| 2. Herbaceous biomass | 2.1 Herbaceous biomass from agriculture and horticulture   | 2.1.1 Cereal crops   | 2.1.1.1 Whole plant<br>2.1.1.2 Straw parts<br>2.1.1.3 Grains or seeds<br>2.1.1.4 Husks or shells<br>2.1.1.5 *   |
|                       |  | 2.1.2 Grasses  | 2.1.2.1 Whole plant<br>2.1.2.2 Straw parts<br>2.1.2.3 Seeds<br>2.1.2.4 Shells<br>2.1.2.5 Bamboo<br>2.1.2.6 *  |
|                       |  | 2.1.3 Oil seed crops   | 2.1.3.1 Whole plant<br>2.1.3.2 Stalks and leaves<br>2.1.3.3 Seeds<br>2.1.3.4 Husks or shells<br>2.1.3.5 *   |
|                       |  | 2.1.4 Root crops   | 2.1.4.1 Whole plant<br>2.1.4.2 Stalks and leaves<br>2.1.4.3 Root<br>2.1.4.4 *   |
|                       |  | 2.1.5 Legume crops   | 2.1.5.1 Whole plant<br>2.1.5.2 Stalks and leaves<br>2.1.5.3 Fruit<br>2.1.5.4 Pods<br>2.1.5.5 *  |
|                       |  | 2.1.6 Flowers  | 2.1.6.1 Whole plant<br>2.1.6.2 Stalks and leaves<br>2.1.6.3 Seeds<br>2.1.6.4 *  |

|                    |   |   |                                  |  |
|--------------------|---|---|----------------------------------|--|
|                    |   | 2.1.7 Segregated herbaceous biomass from gardens, parks, roadside maintenance, vineyards and fruit orchards |                                  |  |
|                    |   | 2.1.8 *   |                                  |  |
|                    | 2.2 By-products and residues from food and herbaceous processing industry | 2.2.1 Chemically untreated herbaceous residues  | 2.2.1.1 Cereal crops & grasses   |  |
|                    |   |   | 2.2.1.2 Oil seed crops           |  |
|                    |   | 2.2.1.3 Root crops  |                                  |  |
|                    |   | 2.2.1.4 Legume crops  | 2.2.1.5 Flowers                  |  |
|                    |   | 2.2.1.6 *   |                                  |  |
|                    |   | 2.2.2 Chemically treated herbaceous residues  | 2.2.2.1 Cereal crops and grasses |  |
|                    |   |   | 2.2.2.2 Oil seed crops           |  |
|                    |   |   | 2.2.2.3 Root crops               |  |
|                    |   |   | 2.2.2.4 Legume crops             |  |
|                    |   |   | 2.2.2.5 Flowers                  |  |
|                    |   | 2.2.2.6 *   |                                  |  |
|                    |   | 2.2.3 *   |                                  |  |
|                    | 2.3 *   |   |                                  |  |
| 3. Fruit biomass   | 3.1 Orchard and horticulture fruit  | 3.1.1 Berries   | 3.1.1.1 Whole berries            |  |
|                    |   |   | 3.1.1.2 Flesh                    |  |
|                    |   | 3.1.1.3 Seeds   |                                  |  |
|                    |   |   | 3.1.1.4 *                        |  |
|                    |   | 3.1.2 Stone/kernel fruits   | 3.1.2.1 Whole fruit              |  |
|                    |   |   | 3.1.2.2 Flesh                    |  |
|                    |   |   | 3.1.2.3 Stone/kernel/fruit fibre |  |
|                    |   |   | 3.1.2.4 *                        |  |
|                    |   | 3.1.3 Nuts and acorns   | 3.1.3.1 Whole nuts               |  |
|                    |   |   | 3.1.3.2 Shells/husks             |  |
|                    |   | 3.1.3.3 Kernels   |                                  |  |
|                    |   | 3.1.3.4 *   |                                  |  |
|                    |   | 3.1.4 *   |                                  |  |
|                    | 3.2 By-products and residues from food and fruit processing industry      | 3.2.1 Chemically untreated fruit residues   | 3.2.1.1 Berries                  |  |
|                    |   |   | 3.2.1.2 Stone/kernel/fruit fibre |  |
|                    |   |   | 3.2.1.3 Nuts and acorns          |  |
|                    |   |   | 3.2.1.4 Crude olive cake         |  |
|                    |   |   | 3.2.1.5 *                        |  |
|                    |   | 3.2.2 Chemically treated fruit residues   | 3.2.2.1 Berries                  |  |
|                    |   |   | 3.2.2.2 Stone/kernel fruits      |  |
|                    |   |   | 3.2.2.3 Nuts and acorns          |  |
|                    |   |   | 3.2.2.4 Exhausted olive cake     |  |
|                    |   |   | 3.2.2.5 *                        |  |
|                    |   | 3.2.3 *   |                                  |  |
|                    | 3.3 *   |   |                                  |  |
| 4. Aquatic biomass | 4.1 Algae (latin name)  | 4.1.1 Micro algae   |                                  |  |
|                    |   | 4.1.2 Macro algae   |                                  |  |
|                    |   |   | 4.1.2.1 Green sea weed           |  |
|                    |   |   | 4.1.2.2 Brown sea weed           |  |
|                    |   |   | 4.1.2.3 Red sea weed             |  |
|                    |   | 4.1.3 *   |                                  |  |
|                    | 4.2 Water hyacinth  |   |                                  |  |
|                    | 4.3 Lake and sea weed (latin name)  | 4.3.1 Lake weed   |                                  |  |
|                    |   | 4.3.2 Sea weed  |                                  |  |
|                    |   | 4.3.3 *   |                                  |  |
| 4.4 Reeds          | 4.4.1 Common reed   |   |                                  |  |
|                    | 4.4.2 Other reed  |   |                                  |  |
|                    | 4.4.3 *   |   |                                  |  |
|                    | 4.5 *   |   |                                  |  |
| 5 *                | 5.1 Blends  |   |                                  |  |
|                    | 5.2 Mixtures  |   |                                  |  |

\*Blends and mixtures