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APPLICATION REGULATIONS
FOR THE
PRODUCT CERTIFICATION
OF
ROAD MARKING MATERIALS -
GLASS BEADS, ANTISKID AGGREGATES AND
MIXTURES OF THE TWO
UNDER THE
BENOR MARK

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1 INTRODUCTION

This chapter gives and explains some of the rules concerning the certification regulations.

1.1 TERMINOLOGY

This clause defines some of the special terms and abbreviation used in these Application Regulations.

1.1.1 Definitions

Client	The party purchasing the product from the supplier. The definition applies to different types of purchaser: producers of other products, contractors, awarding authorities, authorities, et cetera.
Comparative test	A test carried out in pairs, in which the result of the control laboratory is compared with the result obtained by the supplier in order to verify the self-monitoring system.
Exclusive distributor	If a producer of BENOR certified product articles does not deliver product articles directly to a customer, but only to a distributor who further distributes the product articles to customers on the Belgian market, this distributor is considered an exclusive distributor.
Producer	Company responsible for manufacturing a product.
Product	Result of an industrial process or activity that is the subject of one or more reference documents. This a collective noun for all of the product articles and product types to which one and the same Application Regulations or certificate applies.
Product article	Set of units of a product with the same characteristics and performance that are produced in a specific manner and comply with the same technical data sheet.
Product family	Group of product articles that are manufactured by a producer, for which the results on a random product article of the family apply to all other product articles of the family. The producer can propose a list of product articles that will be part of one family for one or more different properties. The classification in families can be different for different properties.
Product type	Group of manufactured goods with similar characteristics. One product may be divided into different product types on the basis of the applicable reference document, property categories, application, et cetera. The Product types for road marking materials – glass bead, antiskid aggregates and mixtures of the two are: <ul style="list-style-type: none">- Drop on glass beads;- Premix glass beads;- Transparent antiskid aggregates;

- Non transparent antiskid aggregates;
- Mixtures of glass beads with different refractive indices;
- Mixtures of glass beads and antiskid aggregates;
- Mixtures of drop on materials and drying time accelerator.

Production unit	Technical installation(s) linked to a geographical location which is/are used by a supplier where the product is made, as defined in the Application Regulations.
Reference document	Document (standard, Technical Requirement or any other technical specification) that specifies the technical characteristics that the staff, equipment, production unit, raw materials, production processes and/or the product must comply with and which states that the relevant Application Regulation applies to a certain product and its manufacture.
Sampling	<p>Sampling can be subdivided into:</p> <ul style="list-style-type: none"> - removing part or all of a product or component; - applying an identification/mark to a defined part or to an entire product or component, <p>for the purpose of inspecting and testing it.</p>
Supplier	The party requesting, obtaining or no longer having the certificate and which is responsible for ensuring that the product meets the certification requirements. This definition applies to producers, distributors and importers. If a supplier is referred to with regard to raw materials, general equipment, control equipment or services, this is specifically stated.
Type test	A series of verifications to determine initially (initial type test) or possibly to confirm periodically (repeat type test) the characteristics of a product article and its conformity.

1.1.2 Abbreviations

TRA	Application Regulations
PTV	Technical prescriptions
TAR	Tariff regulations

1.1.3 References

EN 1423	Road marking materials - Drop on materials - Glass beads, antiskid aggregates and mixtures of the two
EN 1424	Road marking materials - Premix glass beads
CPR	Regulation (EU) N° 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC
CRC 01 BENOR	General certification regulations for the product certification in the construction sector under the BENOR mark
PTV 881	Technical requirements for paints for drop-on materials: glass beads, antiskid aggregates and mixtures of the two
PTV 882	Technical requirements for premix glass beads
TAR BENOR	Tariff Regulations for the product certification
TAR 81	Tariff Regulations for the Certification of road marking products – glass beads, antiskid aggregates and mixtures of the two within the framework of the BENOR mark of conformity TAR 81

These Application Regulations can specify dated and undated references. For dated references, only the cited version applies. For undated references, the last version of the referenced document applies, including any errata, addenda and amendments.

For any EN standards referred to in these Regulations, it shall always be the corresponding Belgian NBN EN publication that applies. The certification body may allow the use of a publication other than the Belgian publication, provided that the content is identical to the Belgian publication.

1.2 AVAILABILITY OF THE CERTIFICATION REGULATIONS

This clause describes how the certification regulations are made available.

The current version of the certification regulations is available free of charge on the certification body's website.

A printed version of the certification regulations can be ordered from the certification body. The certification body has the right to charge for these.

It is not permitted to make any modifications to the original certification regulations approved by the sectoral commission and/or registered certification regulations by the non-profit organisation BENOR.

1.3 STATUS OF THESE APPLICATION REGULATIONS

This clause refers to the data concerning the version, approval and ratification of these Application Regulations.

1.3.1 Status of these Application Regulations

These Application Regulations are version 5.0, that replaces version 4.0.

1.3.2 Approval of these Application Regulations

These Application Regulations were approved by the Sectoral Commission on the 30th of September 2024.

1.3.3 Ratification of these Application Regulations

These Application Regulations were ratified by the COPRO Management body on the 3rd of December 2024.

1.3.4 Registration of these Application Regulations

These Application Regulations were submitted to BENOR non-profit organisation on the 9th of December 2024.

1.5 QUESTIONS AND OBSERVATIONS

Questions or observations concerning the certification regulations must be sent to the sectoral organisation or the certification body.

2 OVERVIEW OF PRODUCT CERTIFICATION

This chapter indicates who is responsible for preparing the certification regulations. The objectives and scope of the product certification are described.

2.1 PREPARATION OF THE CERTIFICATION REGULATIONS

This clause indicates who is responsible for preparing the various certification regulations.

2.1.2 Preparation of these Application Regulations

A specific Application Regulation shall be drawn up for each product. This is done in principle by a specialist technical sectoral commission on which the parties with an interest in the area of the product in question are represented. The sectoral organisation shall be responsible for organising the sectoral commission (clause 3.1.4).

The structure of these Application Regulations follows the structure of the General Certification Regulations CRC 01 BENOR, supplementing the provisions of the same.

With the exception of the additions and/or changes set out in these Application Regulations, the clauses of the General Certification Regulations CRC 01 BENOR apply.

These clauses refer to the clauses of the General Certification Regulations CRC 01 BENOR.

2.2 OBJECTIVES

This clause describes the objectives of the certification regulations and the product certification.

2.2.2 The goal of these Application Regulations

- 2.2.2.1 These Application Regulations contain all the specific and additional rules for the certification of road marking materials – glass beads, antiskid aggregates and mixtures of the two. They also contain the rules relating to applications for a certification and additional information.
- 2.2.2.2 The Application Regulations shall be used by the sectoral organisation, the certification bodies and the inspection bodies in carrying out their tasks, example given when dealing with the certification application and external surveillance.

2.2.3 The goal of the product certification

The BENOR mark is a voluntary mark that is owned by the Bureau for Standardisation.

The BENOR mark is intended to confirm the confidence in the actions taken by the supplier with regard to the declaration of the conformity of a product with the reference documents. These reference documents may be agreed in a public voluntary framework and may be based on Belgian, European or international legislation.

The BENOR mark thus offers the client a sufficient degree of certainty that the product satisfies the well-defined quality requirements.

The BENOR mark does not declare the product's conformity with its performance and characteristics as stated by the supplier, but confirms that a sufficient degree of confidence indicates that the supplier is permanently capable of guaranteeing the conformity of a product that it produces and/or supplies in accordance with the rules set out in the reference documents.

The BENOR mark acts in the public interest by promoting the best practices in construction and thus contributes to technical and economic progress.

These application regulations are, furthermore, conceived in such a way that precisely those aspects are safeguarded that are important for road marking materials – glass beads, antiskid aggregates and mixtures of the two according to the interested parties. This concerns, among other things, improving consumer protection, meeting the expectations of the market and defending the public interest.

Under no circumstances does the certification affect the liability of the designer, the author of the tender document, the design or research consultancy, the contractor or the supplier.

2.3 SCOPE

The scope of the product certification is described in this clause. It states what is and what is not included in the product certification. The different types of certification regulations and reference documents are listed. There may also be a possibility of supplying some production parts not covered by the BENOR mark.

2.3.1 Object of product certification

2.3.1.1 The object of product certification is the control of production and supply of glass beads, antiskid aggregates and mixtures of the two.

In this regard we can look at:

- implementing and monitoring a quality plan;
- the possible type testing of a product article or product type;
- the receipt of the raw materials to be used in the production;
- the use of appropriate equipment and staff;
- the actual production;
- the controls on raw materials;
- the controls on the production process;
- the controls on the glass beads, antiskid aggregates and mixtures of the two;
- the recording and archiving of all relevant data and results.

The product types that belong to the certified production part are the glass beads, antiskid aggregates and mixtures of the two for road markings:

- glass beads,
- antiskid aggregates,
- mixtures of glass beads and antiskid aggregates.

The input for the certification consists of all relevant requirements of the applicable reference documents relating to the road marking materials - glass beads, antiskid aggregates and mixtures of the two. The output is conforming glass beads, antiskid aggregates or mixture of the two.

2.3.1.2 The conformity of the raw materials used in production also falls under the product certification.

The supplier uses the appropriate raw materials as described in PTV 883, PTV 884, PTV 885 or PTV 888. Provision may optionally be made to use certified raw materials and/or carry out a control on the raw materials used. Depending on the results of this control, the supplier takes appropriate actions in accordance with these Application Regulations.

2.3.1.3 The conformity of the resulting work is not covered by the product certification.

The use of compliant glass beads, antiskid aggregates and mixtures of the two is an essential link in the realisation of a high quality and conforming construction. However, given that there are still parameters that are not covered by the product certification, this certification cannot fully guarantee that the resulting structure will meet the project owner's quality requirements.

2.3.5 Application Regulations

2.3.5.1 These Application Regulations apply to the issue of a BENOR certificate and the use of the BENOR mark for glass beads, antiskid aggregates and mixtures of the two in accordance with at least one of the reference documents mentioned in clause 2.3.7.

2.3.5.2 BENOR certification of glass beads, antiskid aggregates and mixtures of the two is voluntary.

2.3.5.3 For drop on materials for which a harmonized EN standard applies, the BENOR certificate is only awarded after the supplier has complied with all the rules on the CE marking for the drop on materials.

2.3.6 Additional regulations and circulars

2.3.6.3 The rates that apply in the context of product certification are included in the General Tariff Regulation for TAR BENOR and in the Tariff Regulations for the Certification of road marking materials – glass beads, antiskid aggregates and mixtures of the two, TAR 81.

2.3.7 Reference documents

2.3.7.1 The applicable standard for the “drop on materials – glass beads, antiskid aggregates and mixtures of the two” is EN 1423.

2.3.7.2 In the context of the BENOR certification there are no applicable tender documents.

2.3.7.3 The applicable Technical requirements are PTV 881 and PTV 882.

2.3.7.4 Other applicable reference documents are mentioned in clause 1.1.3.

2.3.9 Exempt production parts to which the BENOR mark does not apply

2.3.9.1 There are no glass beads, antiskid aggregates and mixtures of the two that are constantly delivered outside of the BENOR mark.

2.3.9.2 The following glass beads, antiskid aggregates and mixtures of the two may be supplied outside the BENOR mark:

- glass beads, antiskid aggregates and mixtures of the two whose characteristics differ from the certified glass beads, antiskid aggregates and mixtures of the two in a clear and recognisable way for the client;
- glass beads, antiskid aggregates and mixtures of the two supplied outside of Belgium.

- 2.3.9.5 The exempted glass beads, antiskid aggregates and mixtures of the two are identified in a manner approved by the certification body.

2.4 CERTIFICATE

This clause describes the rules relating to the certificate.

2.4.2 Scope of the certificate

- 2.4.2.1 Each certificate is issued per product and per production unit. The scope of the certificate may be limited to the set of characteristics of glass beads, antiskid aggregates and mixtures of the two, as specified in these Application Regulations.
- 2.4.2.3 By issuing the certificate, the certification body acknowledges that there is a sufficient degree of confidence in the actions taken by the certificate holder in order to ensure the conformity of glass beads, antiskid aggregates and mixtures of the two to the technical data sheets and the reference documents.

2.4.3 The certificate

- 2.4.3.1 The certificate must contain at least the following information:
- the certificate number;
 - the identity of the certification body;
 - the identity and registered office of the certificate holder;
 - the identity, the identification number and the address of the production unit;
 - the reference documents;
 - the date of issue of the certificate;
 - a reference to the certification body's website, with regard to the validity of the certificate;
 - the scope of the certificate: the product types that are covered by the certificate.

The certificate describes the product in accordance with the Application Regulations.

2.4.7 Suspension by the certificate holder

- 2.4.7.3 The maximum permitted period during which the existing certified stock may still be supplied under the BENOR mark is 12 months from the date on which the suspension takes effect.

2.4.8 Cessation by the certificate holder

- 2.4.8.3 The maximum permitted period during which the existing certified stock may still be supplied under the BENOR mark is 12 months from the date on which the cessation takes effect.

2.5 IDENTIFICATION OF THE PRODUCT

This clause focuses on the identification of the glass beads, antiskid aggregates or mixture of the two. In addition to an internal identification and the public identification there is also the BENOR mark, which may be used by the certificate holder only under strict conditions.

2.5.1 Internal identification

The internal identification is freely chosen by the supplier insofar as it does not lead to confusion with the public identification.

2.5.2 Public identification

The product article is identified with:

- the information according to the applicable PTV, clause 5.2;
- reference to the product article's technical data sheet code.

The official and commercial names of each product are according to clause 5.1 of the applicable PTV.

2.5.3 Identification using the BENOR mark

The supply of a product article under the BENOR mark is illustrated by means of an identification marking. This is done in accordance with clause 2.6.3.

2.5.4 Identification of exempt production parts

An exempt production part may not refer to the BENOR certification and the technical data sheet code, not on the product, not on the delivery notes, not on or in any other document.

2.5.5 Delivery note

2.5.5.1 The delivery notes are divided into:

- delivery notes for the delivery of road marking materials from the producer to the client or the exclusive distributor(s);
- delivery notes for the delivery of road marking materials from the exclusive distributor to the client.

2.5.5.2 The following information must be included on each delivery note from the producer to the client or the exclusive distributor(s):

- name and, if possible, address of the producer;
- name and address of the production unit;
- name and contact details of the client or the exclusive distributor;
- public identification of the product article (clause 2.5.2);

- the code of the product's article technical datasheet (quick code) by means of the following: "Technical data sheet: code AAAA/CCCC (see extranet.copro.eu)" or "TDS: code AAAA/CCCC", whereby the code satisfies clause 2.7.2;
- departure date from the production unit;
- quantity per product article;
- the mandatory data according to the relevant reference documents;
- from the moment that the certificate is issued, reference is made to the BENOR mark, for each certified product article, in accordance with the rules of clause 2.6.4.

The following information must be included on each delivery note from the exclusive distributor to the client:

- name and address of the exclusive distributor;
- name and contact details of the client;
- the public identification of the product: (clause 2.5.2);
- date of departure from the exclusive distributor;
- the code of the product's technical datasheet (quick code) by means of the following: "Technical datasheet: quick code AAAA/CCCC (see extranet.copro.eu)" or "TDS: code AAAA/CCCC", whereby the quick code complies with clause 2.7.2;
- quantity per product article;
- the mandatory data according to the relevant reference documents;
- from the moment that the certificate is issued, reference is made to the BENOR mark for each certified product article, in accordance with the rules of clause 2.6.4.

2.6 USE OF THE BENOR MARK

This clause deals with the use of the BENOR mark.

2.6.1 Typographical description of the BENOR mark

- 2.6.1.2 When it is not technically possible to use the BENOR mark as described in clause 2.6.1.1, an alternative identification is permitted. All rules governing the use of the BENOR mark then apply to the use of the alternative identification.

2.6.4 The BENOR mark on the delivery note

- 2.6.4.4 The way in which the BENOR mark is affixed to the delivery note must be approved in advance by the certification body.

2.7 TECHNICAL DATA SHEET

2.7.1 General

- 2.7.1.1 The supplier shall prepare a technical data sheet for each certified product article.
- 2.7.1.2 All information listed on the technical data sheet is based on the type test.
- 2.7.1.3 For each delivery of glass beads, antiskid aggregates and mixtures of the two, the client must be provided with the corresponding valid technical data sheet. This is made possible by the certification body's website.
- 2.7.1.4 The information and results contained in the technical data sheet are used to assess the results of the self-monitoring and external surveillance.
- 2.7.1.5 The information given on the technical data sheet relating to the essential characteristics of a harmonized standard, must precisely match the information stated by the supplier in the declaration of performance.

3 THE STAKEHOLDERS

This chapter deals with the various parties involved in the product certification.

3.2 CERTIFICATION BODIES

This clause sets out information and rules concerning the functioning of the certification bodies.

3.2.5 Registered office and Secretariat

3.2.5.1 The only certification body for the certification of glass beads, antiskid aggregates and mixtures of the two is COPRO.

3.4 SUPPLIER

This clause deals with the supplier, the key player in the delivery of the glass beads, antiskid aggregates and mixtures of the two and therefore also in the product certification. A supplier may be a producer, distributor or importer. He is the player who is responsible for ensuring that glass beads, antiskid aggregates and mixtures of the two meets the requirements on which the certification is based and guarantees this to the client.

3.4.2 Possible suppliers

3.4.2.1 In these Application Regulations the term 'supplier' is used for an applicant or certificate holder.

4 REQUIREMENTS FOR A CERTIFIED PRODUCT

This chapter describes what is required to achieve certified glass beads, antiskid aggregates or mixture of the two. In the first place, this means a competent staff. With appropriate equipment and compliant materials this staff manufactures glass beads, antiskid aggregates and mixtures of the two at a specific production unit. An initial type test is required. The production and everything that comes with it must be carried out in accordance with a documented quality plan.

4.2 EQUIPMENT

This clause describes the rules relating to equipment.

4.2.2 Laboratory and control equipment

- 4.2.2.2 The supplier may refer to an external laboratory for some controls within the framework of the self-monitoring system, to which the requirements of clause 3.5 are applicable.
- 4.2.2.3 Not applicable.
- 4.2.2.4 The following controls within the framework of the self-monitoring system are carried out by the supplier at the production unit:
- for glass beads: granulometry, maximum weighted percentage of defective glass beads and presence of surface treatment;
 - for antiskid aggregates: granulometry.

4.3 RAW MATERIALS

This clause describes the rules relating to raw materials.

4.3.1 Requirements for raw materials

- 4.3.1.1 The supplied glass beads comply to the requirements of PTV 881 or PTV 882.

The supplied antiskid aggregates comply to the requirements of PTV 881.

For other raw materials the producer specifies the requirements. An example of specified characteristics is given in the next table.

Product	Characteristics
Glass	Visual control: type of glass (plane glass, hollowed glass), absence of contaminations, ...
Liquid organic raw materials	Density, solids content, specific function-related test, viscosity

4.3.2 Validation of raw materials

- 4.3.2.1 The supplier must have an overview of all the validated raw materials that may be used in a production.
- 4.3.2.2 The supplier must have the technical data sheet and, if appropriate, the certificate for each validated raw material.

4.3.3 Supply of raw materials

The delivery documents of the supplied materials are registered.

4.3.4 Storage of raw materials

The supplier must take the necessary actions to guarantee the identification and quality of the raw materials. The raw materials are stored in such a way that product damages (internal specifications and/or producer's specifications) are avoided.

4.3.5 Disposal of raw materials

Not applicable.

4.5 PRODUCT

This clause describes the rules relating to the glass beads, antiskid aggregates and mixtures of the two itself. This covers everything from the determination of the requirements, production, up to the delivery of glass beads, antiskid aggregates and mixtures of the two.

4.5.1 Period of activity

- 4.5.1.1 Production may not remain at the same level throughout the year. If production is irregular or temporarily interrupted, or if the number of production periods is lower than the number of external standard inspections determined in clause 7.2.3, the certificate holder may be required to notify the certification body in advance of the period of activity or interruptions, so that the external surveillance can be adapted accordingly.

In the event of production or delivery under the BENOR mark continuing to be interrupted, a minimum of external surveillance is provided (clause 7.2.3.2).

If production and delivery under the BENOR mark continue to be interrupted, the certificate holder can also opt at his own request for a suspension of the certificate in accordance with clause 2.4.7.

4.5.2 Determination, evaluation and communication of the requirements

Not applicable.

4.5.3 Client's order

Not applicable.

4.5.4 Production planning

Not applicable.

4.5.5 Production plan

4.5.5.1 The supplier must register the production parameters per product article.

4.5.6 Requirements for the product

4.5.6.1 The drop on materials: glass beads, antiskid aggregates and mixtures of the two shall satisfy the requirements in PTV 881. The premix glass beads shall satisfy the requirements in PTV 882.

4.5.7 Waste disposal

Not applicable.

4.6 QUALITY PLAN

This clause describes the rules that are imposed on the supplier's quality plan. The quality plan includes a quality manual and a technical file. The quality manual relates to the organisation of the supplier and the different procedures. The technical file may be regarded as a supplementary file with lists, summaries and reports about all kinds of related issues.

4.6.2 Quality manual

4.6.2.2 The quality manual shall contain the following parts:

- composition:
 - summary of the content;
 - identification of procedures and documents;
- terminology;
- organisational structure:
 - organisation chart;
 - job descriptions (see also clause 4.1);
- quality monitoring:
 - procedures for authorising delivery and identification of the product;
 - procedures related to quality monitoring, with in particular a procedure for dealing with complaints; this special procedure specifies how a complaint is handled, who is responsible for it, recording it in the complaints register, the inquiry, possible corrective actions and the notification of all interested parties;
 - procedures related to dealing with nonconforming outputs;
 - procedure related to actions for nonconforming production parts; this procedure covers at least the following elements:
 - immediate communication in writing to the client, the certification body or any other interested party;
 - determining, defining questionable or rejected production parts;
 - researching the causes and consequences of the nonconformity, including a risk analysis and assessment;
 - deciding to take corrective actions and corrective measures and implementing them;
 - assessing the effectiveness of the corrective actions and corrective measures;
- document management system;
- production control;
 - procedures relating to production;
- procedures relating to the production equipment (including maintenance, repairs, calibration);
- procedures relating to the controls;
- procedures relating to the control equipment (use, calibration);

- procedures relating to registration and archiving;
- procedures relating to staff and training.

4.6.2.3 Not applicable.

4.6.2.4 The quality in the context of the BENOR certification may overlap with or be a part of an overall quality manual, which may include procedures in the context of another certification (ISO 9001, CE, et cetera). In this case the supplier must ensure that there are no contradictions and that any references remain valid. The rules relating to the quality manual in the Application Regulations remain applicable. The “quality manual” as described above can be replaced by “documented information” as long as the necessary information is adequate.

4.6.3 Technical file

4.6.3.2 The technical file contains:

- a) an overview of all equipment used during production;
- b) a list of the names of members of staff involved in self-monitoring, including in particular the names of the quality manager, the self-monitoring manager(s) and their deputies, as well as those persons authorised to receive the inspection body’s inspection reports;
- c) a list of the names of members of staff who may be involved in the production, delivery and control;
- d) an overview of the control equipment that may be used in the context of the self-monitoring process;
- e) where appropriate, a list of the external self-monitoring laboratories approved by the supplier, with an indication of the possible controls;
- f) a list of the valid versions of all applicable reference documents;
- g) the method of identifying the product;
- h) where appropriate, the by the certification body approved derogations from the Application Regulations;
- i) if appropriate, the correlation reports approved by the certification body for alternative control and test methods;
- j) details of the exclusive distributor.

4.6.3.3 For those parts of the technical file the supplier is required to notify the certification body immediately of any temporary or permanent change resulting in a discrepancy with the situation described in the technical file:

Points b, e and g of clause 4.6.3.2.

4.7 TYPE TEST

This clause deals with the required type testing of the product. It is more commonly called (Initial) Type Testing or TT.

4.7.1 General

- 4.7.1.1 Type test is only required for the essential characteristics of drop on materials for which a harmonized EN standard applies. Type tests are conducted according to the requirements of the applicable PTV. The rules on the CE marking for essential characteristics of the drop on materials cover this type testing.
- 4.7.1.2 The type tests shall in principle be carried out by the supplier. If the supplier does not itself conduct certain controls of the type test, these shall be performed by an external laboratory that satisfies the requirements of clause 3.5.

4.7.2 Scope

The scope of the type tests is according to the applicable PTV.

4.7.3 Requirements

- 4.7.3.1 The requirements for the type test are stated in the applicable PTV.

4.7.4 Type test report

- 4.7.4.1 The data and the results of the type test shall be included in a type test report and are assessed by the certification body.
- 4.7.4.3 The certification body edits the assessment reports of the type test.

4.7.5 Validity

- 4.7.5.2 The period of validity of a type test is as described in the applicable PTV.

4.7.6 Modifications

If a raw material, the composition, production process or another relevant parameter is modified, the supplier shall verify the effect of this modification on the characteristics of the product article or product type.

It may be necessary for part or all of the type test to be performed again.

If the results of the repeated type tests do not meet the requirements of the existing technical data sheet for the product article, the producer will immediately inform the certification body.

4.7.7 Repeat type test

The rules concerning the repeat type tests are described in the applicable PTV.

4.7.8 External surveillance

The external surveillance on the type test is described in clause 7.2.

5 OBTAINING A CERTIFICATE

This chapter describes how a supplier can apply for and ultimately obtain a certificate and the rules that must be followed.

5.2 APPLICATION PERIOD

This clause deals with the period between the approval of the application and the issue of the certificate. It describes what is authorised during that period, what must be done and what must not be done.

5.2.4 Trial period

5.2.4.2 The trial period commences on the date of the initial inspection, subject to the favourable opinion of the inspection body.

Before the trial period can start, the following results of the start-up inspection must be completed:

- availability of trained personnel;
- availability of all necessary compliant and calibrated control equipment;
- a compliant production unit (storage, ...);
- availability of raw materials;
- availability of all relevant reference documents;
- a draft quality plan.

5.2.4.3 The duration of the trial period is in principle minimum 10 production days for every product type and maximum 12 months.

5.2.5 Self-monitoring during the trial period

During the trial period, the self-monitoring applies as stipulated in clause 6.

The minimum number of tests before the end of the trial period, whose results comply with the applicable PTV, is given in the table below. In addition, the two most recent test results shall be compliant.

Product type	Property	Minimum number of tests in the trial period
Glass beads	Granulometry	5 / property
	Weighted percentage of defective glass beads	
	Surface treatment	
	Content of dangerous substances	2
	Refractive index	2
	Resistance to chemicals	2
Antiskid aggregates	Granulometry	5
	Resistance to fragmentation (friability)	2
	pH value	2
	Content of dangerous substances (only for glass grains)	2
	Chromaticity coordinates and luminance factor (non-transparent antiskid aggregates)	2
Mixture of glass beads and antiskid aggregates	Granulometry	3
Mixture of glass beads with different refractive indices	Granulometry	3

5.2.7 External surveillance during the trial period

During the trial period, the external surveillance as set out in clause 7 is applied.

The minimum number of tests carried out under supervision of the inspection body, whose result comply with the requirements of the applicable PTV is two per product type. In addition, the result of the last two tests attended per product type, must be compliant.

Per product type from the tables below, all characteristics are determined at least twice by an external laboratory. At least twice, the conformity of the entire set of tests must meet the requirements of the applicable PTV. Furthermore, for the last two determinations, the conformity must meet the requirements of the applicable PTV.

Product type	Property
Glass beads	Granulometry
	Weighted percentage of defective glass beads
	Content of dangerous substances
	Refractive index
	Resistance to chemicals
Antiskid aggregates	Granulometry
	Resistance to fragmentation (friability)
	pH value
	Content of dangerous substances (only for glass grains)
	Chromaticity coordinates and luminance factor (non-transparent antiskid aggregates)
Mixture of glass beads and antiskid aggregates	Granulometry
Mixture of glass beads with different refractive indices	Granulometry

The minimum number of compliant comparative tests is two per product type.

5.2.8 Closure of the application file

- 5.2.8.1 If the trial period cannot be closed with a positive result after the period of one year, the applicant is notified in writing by the certification body of the closure of the application file. The applicant may then, if desired, submit a new application.

6 SELF-MONITORING

This chapter deals with the control carried out by the supplier as part of the product certification. It contains details of what must be monitored and how the supplier guarantees the traceability of the controls and results. It also indicates what must be done in the event of nonconformities.

6.1 REGISTRATION AND ARCHIVING

This clause sets out the rules relating to the traceable archiving of monitoring, controls and results.

6.1.1 Worksheets

6.1.1.5 Computerisation of worksheets is allowed.

6.1.2 Registers

6.1.2.3 Raw materials register:

This register contains

- the specifications of the producer regarding the supplied raw materials;
- the control results of the tests performed by the producer on the raw materials;
- test results supplied by the producers of the supplied raw materials;
- the delivery notes of all the supplied raw materials.

All technical data regarding the delivered raw materials (glass, products for surface treatments, ...), must be registered. If a delivery comprises several batches, the technical data for each batch must be provided or tested (see clause 6.2.3). In case glass beads are supplied for the production of glass beads or mixtures in which the glass beads are used, the verification of CE labelling and/or BENOR labelling of these glass beads is part of the registration.

In case CE marked antiskid aggregates are supplied for the production of mixtures of glass beads and antiskid aggregates, the verification of CE labelling is part of the registration.

Production register:

The production process is registered on hard or soft copy with traceable information of the process. The register of the production process contains the registered and dated trace of each manual or automatic control so as to discover the causes of any nonconformities that may have been found on the end products.

The manufactured quantities per day are registered for each product article including the identification of the manufactured batches.

Tests register:

All control results concerning the certified end products are registered and are available in the form of an historical survey.

Stock and deliveries register:

All documents accompanying the delivery of products covered by the BENOR mark are registered (hard or soft copy).

Equipment register:

This register contains the results and the proofs or certificates of the control, gauging and calibration of the production equipment (not necessarily of all equipment, to be justified by the producer) and the registration of the maintenances that could have an impact on product conformity.

Control equipment register:

This register contains the results and the proofs or certificates of the control, gauging and calibration of the control equipment and the registration of the maintenances that could have an impact on product conformity.

Complaints register (see clause 8.1.3 and 8.1.4):

This register will contain the list of all the complaints regarding the BENOR certified products and follow-up.

- 6.1.2.5. All records are available for inspection at the production unit.
- 6.1.2.7 During the inspection, the inspection body may mark the pages of a register.
- 6.1.2.9 All registers may be kept digitally and not on paper.

6.2 CONTROLS WITHIN THE FRAMEWORK OF SELF-MONITORING

This clause sets out the rules in relation to all checks carried out by the supplier as part of the self-monitoring process in the context of product certification.

6.2.1 General provisions

- 6.2.1.7 For drop on materials, the supplier must declare the performance for each essential characteristic included in clause 6.2.1.8 in its Declaration of Performance in accordance with the CPR and CE mark.
- 6.2.1.8 The BENOR certification is only valid for drop on materials when the following essential characteristics correctly form the subject of the CE mark:
 - for glass beads: granulometry, weighted percentage of defective glass beads, content of dangerous substances, refractive index and resistance to chemicals;
 - for transparent antiskid aggregates: granulometry, content of dangerous substances and fragmentation;
 - for non-transparent antiskid aggregates: granulometry, chromaticity coordinates, luminance factor and friability.

6.2.2 Control locations

The controls can be conducted:

- on the production unit for all the routine tests,
- in a laboratory at a different location for other tests.

6.2.3 Self-monitoring of raw materials

The inspection scheme of all the raw materials is documented.

6.2.3.1 Self-monitoring of glass cullet

The producer shall establish a control system to ensure that all used glass cullet satisfies with the internal specifications. The certification body can decide that other controls have to be included in the control system.

6.2.3.2 Self-monitoring of glass beads

In case the glass beads are supplied, the glass beads must conform to EN 1423. The system of attestation of conformity of the supplied glass beads is AVCP 1.

The declared value on the Declaration of Performance of the applicable characteristics comply with the requirements of the applicable PTV.

In case glass beads are supplied with a BENOR certificate, no further controls are necessary.

6.2.3.3 Self-monitoring of antiskid aggregates

In case the antiskid aggregates are supplied, the antiskid aggregates must conform to EN 1423.

In case the antiskid aggregates are supplied with a CE attestation of conformity:

- the system of attestation of conformity of the supplied antiskid aggregates is AVCP 1,
- the declared value on the Declaration of Performance of the applicable characteristics comply with the requirements of the applicable PTV.

In case antiskid aggregates are supplied without a CE attestation of conformity, the producer of the drop on materials shall perform the tests on the raw material, following the standard test methods mentioned in the applicable PTV and according to the following tables:

Transparant antiskid aggregates	
Property	Minimum frequency
pH-value	1 test/year/supplier
Granulometry	every delivery and at least every 10 t
Dangerous substances (only for glass grains)	every delivery
Resistance to fragmentation (friability)	every delivery

Non-transparent antiskid aggregates	
Property	Minimum frequency
pH-value	1 test/year/supplier
Chromaticity coordinates	every delivery
Luminance factor	every delivery
Granulometry	every delivery and at least every 10 t
Resistance to fragmentation (friability)	every delivery

In case antiskid aggregates are supplied with a BENOR certification, no further controls are necessary.

6.2.3.4 Self-monitoring of products for surface treatment

The producer shall establish a control system to ensure that all products used for surface treatment satisfy with the internal specifications. The certification body can decide that other controls have to be included in the control system.

6.2.3.5 Self-monitoring of drying time accelerator

The producer shall establish a control system to ensure that the product used as drying time accelerator satisfies with the internal specifications. The certification body can decide that other controls have to be included in the control system.

6.2.4 Self-monitoring of the production unit

Not applicable.

6.2.5 Self-monitoring of the production process

The supplier determines the parameters that must be checked before and during production and includes them in the procedures relating to production (see clause 4.6.2.2). These checks are registered according to the same procedures.

The production process shall be controlled in such a way that, over a period of one year, the fraction of the production that is refused or declassified for non-conformity, is less than 10 % per product and less than 5 % on the total of certified products (after adjustment).

6.2.6 Self-monitoring of the product

Self-monitoring of the manufactured products shall be carried out for all relevant characteristics from the applicable reference documents. The standard test methods are mentioned in the applicable PTV. The minimum test frequencies to be followed are those mentioned in clause 6.2.6.1, 6.2.6.2, 6.2.6.3, 6.2.6.4 and 6.2.6.5.

6.2.6.1 Self-monitoring of glass beads

Property	Minimum frequency
Granulometry	Production per batch: on each batch and: at least every 5 ton of glass beads and at least 1 time per post of maximum 8 h
Weighted percentage of defective glass beads	
Surface treatments	
Content of dangerous substances ^{*2}	Every 1000 ton and at least once a month ^{*1}
Refractive index	1/year ^{*1}
Resistance to chemicals	1/year ^{*1}
^{*1} : tests performed in a control laboratory at the request of inspection body may be taken into account. ^{*2} : if during production, glass beads and glass grains are made from the same raw material, the content of dangerous substances is only to be determined on one of both.	

6.2.6.2 Self-monitoring of antiskid aggregates

Property	Minimum frequency
Granulometry	1/10 tons and 1/post of maximum 8 h
Resistance to fragmentation (friability)	1/year ^{*1}
pH value	1/year ^{*1}
Content of dangerous substances (only for glass grains) ^{*2}	1/1000 ton and 1/month ^{*1}
Chromaticity coordinates and luminance factor (non-transparent antiskid aggregates)	1/100 ton and 1/month
^{*1} : tests performed in a control laboratory at the request of inspection body may be taken into account. ^{*2} : if during production, glass beads and glass grains are made from the same raw material the content of dangerous substances is only to be determined on one of both.	

6.2.6.3 Self-monitoring of mixtures of glass beads and antiskid aggregates

Except for the granulometry, the characteristics of mixtures of glass beads and anti-skid aggregates are determined separately for the glass beads and antiskid aggregates used in the mixture.

If the glass bead fraction of the mixture is supplied as raw material, the glass beads shall comply with clause 6.2.3.2 of this regulation.

If the glass bead fraction of the mixture is manufactured by the producer, the characteristics of the glass beads shall be determined in accordance with clause 6.2.6.1 of this regulation.

If the antiskid aggregate fraction of the mixture is supplied as raw material, the antiskid aggregate shall comply with clause 6.2.3.3 of this regulation.

If the antiskid aggregate fraction of the mixture is manufactured by the producer, the characteristics of the antiskid aggregate shall be determined in accordance with clause 6.2.6.2 of this regulation.

For the determination of the granulometry of the mixture of glass beads and antiskid aggregates, the provisions of the following table are to be followed:

Property	Minimum frequency
Granulometry	Production per batch: on each batch and at least every 5 ton of mixture manufactured and at least 1 time per post of maximum 8 h

6.2.6.4 Self-monitoring of mixtures of glass beads with different refractive indices

Except for the granulometry, the characteristics of mixtures of glass beads with different refractive indices are determined separately for the glass beads used in the mixture.

If the glass beads are supplied as raw material, the glass beads shall comply with clause 6.2.3.2 of this regulation.

If the glass beads are manufactured by the producer, the characteristics of the glass beads shall be determined in accordance with clause 6.2.6.1 of this regulation.

For the determination of the granulometry of the mixture of glass beads with different refractive indices, the provisions of the following table are to be followed:

Property	Minimum frequency
Granulometry	Production per batch: on each batch and at least every 5 ton of mixture manufactured and at least 1 time per post of maximum 8 h

6.2.6.5 Self-monitoring of mixtures of drop on materials and drying time accelerator

The characteristics of mixtures of drop on materials and drying time accelerator are determined for the drop on material used in the mixture.

The characteristics of the drop on material shall be determined in accordance with clause 6.2.6.1, 6.2.6.2 or 6.2.6.3 of this regulation.

6.2.7 Controls, calibrations and verifications of the equipment

The controls, calibrations and verifications of the production equipment and the control equipment are carried out in accordance with the rules of Regulatory Note 81.

6.3 FOLLOW-UP OF NONCONFORMITIES

This clause sets out what the supplier must do in the case of nonconformities.

6.3.1 Dealing with nonconformities

6.3.1.1 In case of serious nonconformities (breakdown or malfunctioning of laboratory equipment, discovery of a nonconformity after delivery of the product, ...) the supplier shall contact the certification body.

Every deviation has to be clearly identified in the corresponding register. Every corrective or preventive action shall be recorded.

The rules to be followed on determining the deviation of a product are described in clause 6.3.2, 6.3.3 and 6.3.4.

6.3.3 Discovery of a nonconformity before delivery of the product

6.3.3.4 The delivery of rejected production parts is done at the discretion and under the sole and exclusive responsibility of the supplier.

7 EXTERNAL SURVEILLANCE

This chapter describes the rules pertaining to the external surveillance by the inspection body in connection with the product certification. The inspections can differ according to their content or the location in which they are conducted.

7.2 INSPECTIONS

This clause deals with the inspections carried out by the inspection body. Inspections may differ according to their content or the location where they take place.

7.2.1 Content of the inspections

7.2.1.2 The external supervision can partly be done by means of remote inspections, provided that the producer and the certification body agree to it. The parts eligible for remote inspection are specified in clauses 7.2.1.3.

In case of deviations or sanctions, the agreement for remote inspections may be withdrawn.

7.2.1.3 The standard inspections cover:

- the control equipment for self-monitoring;
- the raw materials, as defined in the Application Regulations;
- the stock of raw materials;
- the production process;
- the product;
- the self-monitoring system;
- the implementation of controls within the framework of the self-monitoring system;
- following up changes to the quality plan;
- the work books and registers;
- the assessment of self-monitoring results;
- the identification of the product;
- the delivery of the product;
- if appropriate, the questionable production parts;
- carrying out controls under the supervision of the inspection body;
- samples for the comparative tests;
- evaluating the results of the comparative tests and controls carried out under the supervision of the inspection body;
- the implementation of corrective actions and corrective measures in case of nonconformity.

The following parts are eligible for remote inspection (non-exhaustive list):

- verification of the quality plan (except for the practical application of it on the production unit);
- the assessment of self-monitoring results;

- the assessment of ITT-test results;
- verification of delivery notes;
- the assessment of calibration reports;

7.2.1.4 The additional inspections may concern:

- controls that were not feasible at the time of the standard inspection;
- any controls in the external laboratory for self-monitoring;
- the conducting of checks and controls on non-certified raw materials under the supervision of the inspection body;
- any additional controls deemed necessary by the certification body, for example in the context of a complaint received or due to suspension or termination by the certificate holder;
- additional checks carried out at the request of the supplier, on identifying nonconformities in the self-monitoring system, which, according to the provisions of the Application Regulations, require the intervention of the inspection body;
- additional controls carried out as a result of a sanction imposed by the certification body (clause 8.2);
- additional controls at the request of the supplier.

7.2.3 Planning and frequency of the inspections

7.2.3.1 A standard inspection of the production unit is planned, in principle, in consultation with the supplier. Other inspections can be conducted without informing the supplier beforehand.

7.2.3.2 The number of standard inspections is 2 per year per production unit. The standard inspections are distributed evenly over time, taking into account clauses 4.5.1, 7.3.1.3 and 7.3.2.2.

If since last inspection there has been no production of BENOR certified products, the certification body can decide to perform less inspections than the number of standard inspections foreseen on annual basis. The minimum external surveillance in the event of production or delivery under the BENOR mark remaining interrupted consists of:

- an inspection within four years;
- after a year of interruption: an investigation into the ability of the certificate holder to continue to comply with the rules of the Application Regulations, with, in particular, the changes in personnel, equipment, raw materials, the production unit, the product and the quality plan since the previous inspection being checked. This investigation can be done via correspondence.

To enable the inspection body to organise inspections, the inspection body can require the producer, in case of discontinuous productions, to inform the inspection body of the productions of concerned glass beads, antiskid aggregates and mixtures of the two.

7.3 CONTROLS IN THE CONTEXT OF EXTERNAL SURVEILLANCE

This clause sets out the rules relating to controls – and often certain tests - carried out within the framework of external surveillance. These controls may be carried out by the supplier in the presence of the inspection body and/or by an external laboratory. If they are performed by the supplier’s laboratory as well as a control laboratory, this relates to comparative tests.

7.3.1 Controls under the supervision of the inspection body

7.3.1.2 The controls under the supervision of the inspection body are further divided into:

- controls in the presence of the inspection body;
- controls by a control laboratory.

Tests carried out by an external laboratory can be used by the supplier within the framework of the self-monitoring system.

7.3.1.3 The tests carried out under the supervision of the inspection body are:

Product type	Property	Number of tests witnessed
Glass beads	Granulometry	1 / inspection
Antiskid aggregates	Granulometry	1 / inspection
Glass beads	Weighted percentage of defective glass beads (glass beads and premix glass beads)	2 / inspection, with a maximum of 1 test per product article
Glass beads	Surface treatments (glass beads)	1 / surface treatment / year
Mixture of glass beads and antiskid aggregates	Granulometry	1 / inspection
Mixture of glass beads with different refractive indices	Granulometry	1 / inspection

In case the producer uses an alternative method for determination of granulometry, the determination of the granulometry in presence of the inspection body is performed according to the reference test method as mentioned in the applicable PTV and according to the alternative method.

In case the producer uses an alternative method for the determination of the weighted percentage of defective glass beads, the determination of the weighted percentage of defective glass beads under the supervision of the inspection body is realised according to the alternative method.

In case of doubt, the determination of the weighted percentage of defective glass beads in presence of the inspection body is performed according to the test method mentioned in the applicable PTV.

The tests to be carried out by an external control laboratory are:

Product type	Property	Frequency
Glass beads	Refractive index	1 / year
	Resistance to chemicals	1 / year
	Content of dangerous substances	2 / year ^{*1}
	Granulometry	1 / year
	Weighted percentage of defective glass beads	1 / year
Antiskid aggregates	Chromaticity coordinates and luminance factor (non-transparent antiskid aggregates)	1 / year
	Resistance to fragmentation (friability)	1 / year
	pH-value	1 / year
	Content of dangerous substances (only for glass grains)	2 / year ^{*1}
	Granulometry	1 / year
Mixture of glass beads + antiskid aggregates	Content of aggregates	In case of doubt
	Granulometry	1 / year
Mixture of glass beads with different refractive indices	Granulometry	1 / year

^{*1} If during production, glass beads and glass grains provide from the same raw material, the content of dangerous substances is only to be determined on one of both.

The standard test methods are mentioned in the applicable PTV.

- 7.3.1.7 The transport of test samples to the laboratory is the responsibility of the supplier. The transport costs are to be borne by the supplier.
- 7.3.1.8 The cost of the controls performed by a control laboratory is to be borne by the supplier.
- 7.3.1.10 The results of controls under the supervision of the inspection body are assessed by the inspection body in the same way as for the self-monitoring. The results of controls by a control laboratory are assessed by the certification body in the same way as for the self-monitoring.
- 7.3.1.11 The actions to be taken as a result of nonconforming results of controls under the supervision of the inspection body are the same as for self-monitoring (clause 6.3). The certification body can furthermore also impose additional internal self-monitoring and/or external surveillance or a sanction.

7.3.2 Comparative tests

7.3.2.2 The foreseen comparative tests are:

Product type	Test	Frequency
Glass beads	Granulometry + weighted percentage of defective glass beads	1 / year
Antiskid aggregates	Granulometry	1 / year
Mixture of glass beads and antiskid aggregates	Granulometry	1 / year

Mixture of glass beads with different refractive indices	Granulometry	1 / year
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The standard test methods are mentioned in the applicable PTV.

- 7.3.2.3 Sampling for the comparative tests takes place according to the choice of the inspection body. The inspection body spreads the comparative tests over the various certified products. The supplier carries out the sampling and any preparation under the supervision of the inspection body.
- 7.3.2.6 The transport of the samples to the control laboratory is the responsibility of the supplier. The transport is at the expense of the supplier.
- 7.3.2.9 The results of the comparative tests are assessed by the certification body. Test results are regarded as reproducible when the difference between the test results for each test of the internal and external labs is inferior to the following data:

Properties		Reproducibility interval
Granulometry: cumulative retained mass %		
0 < X ≤ 2	98 < X ≤ 100	2 %
2 < X ≤ 5	95 < X ≤ 98	3 %
5 < X ≤ 10	90 < X ≤ 95	5 %
10 < X ≤ 20	80 < X ≤ 90	6 %
20 < X ≤ 35	65 < X ≤ 80	7 %
35 < X ≤ 65		8 %
Weighted percentage of defective glass beads		4 %

where $X = (\text{internal result} + \text{result control lab})/2$.

- 7.3.2.10 For the property “weighted percentage of defective glass beads” the following steps are only needed if the external result is higher than the internal result.

If the differences are greater than the accepted reproducibility interval, a re-test will be carried out internally and/or at the control lab, both in presence of the inspection body.

If the reproducibility is still nonconforming after this/these re-test(s) a sample is tested by a second control lab.

If the results of the re-test are satisfactory according to clause 7.3.2.9, the results of the first control laboratory are not taken into account. If this is not the case, the result of the comparative test will definitively be regarded as unsatisfactory.

7.6 EVALUATION SYSTEM

This clause describes how the external surveillance is monitored by the inspection and certification body. The possible sanctions imposed by the certification body are discussed in chapter 8.

7.6.3 Points system

Not applicable.

7.6.4 Self-monitoring level

Not applicable.

7.6.5 External surveillance level

Not applicable.

9 RATES AND INVOICING

This chapter contains the financial rules, rates and rules on invoicing.

9.1 FINANCIAL RULES

9.1.5 Additional financial rules

Not applicable.

9.2 RATES

9.2.2 Certification contribution

The amount for the certification payments is included in the Tariff Regulations for the Certification of road marking products – glass beads, antiskid aggregates and mixtures of the two within the framework of the BENOR mark of conformity TAR 81.

9.2.3 Inspection contribution

The amounts of the flat fee per inspection, performance fee, the travel allowance, transport costs and accommodation allowance are stipulated in the TAR BENOR.

9.2.4 Production contribution

Not applicable.

9.2.8 Indexing of rates

Indexation of all tariffs is done analogously to that described in TAR BENOR.