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TECHNICAL REQUIREMENTS

PTV 882

BENOR

TECHNICAL REQUIREMENTS

FOR

PREMIX GLASS BEADS FOR ROAD MARKING MATERIALS

COPRO - A not-for-profit impartial product control body for the construction industry

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CONTENTS

FOREWORD

This document contains the technical requirements for premix glass beads. The requirements included in these PTV respond to needs established by the various interested parties according to local customs.

The customer and/or user can require conformity of premix glass bead to the requirements of the PTV 882 to be demonstrated by way of a lot control.

The conformity of premix glass beads can also be certified under the voluntary BENOR mark. With the BENOR mark, the supplier has to declare the performance of premix glass beads for all the characteristics relevant to guaranteeing the application and limit values imposed by this PTV 882.

BENOR certification is based on full product certification in accordance with NBN EN ISO/IEC 17067.

1 INTRODUCTION

1.1 TERMINOLOGY

1.1.1 Definitions

Premix glass beads	Glass beads premixed in paints, in thermoplastic, cold plastic and in any other marking materials (during the production of the marking materials).
Producer	The party responsible for producing premix glass beads.
Product	The result of an industrial activity or process. Meant by this in the context of these technical requirements is a premix glass bead. It is the collective term for all product clauses to which this PTV apply.
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 technical file.
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.
Production unit	Technical facility/facilities tied to a geographical location used by a producer and in which one or more products are made.
Reference document	Document specifying the technical characteristics with which the materials, equipment, raw materials, production process and/or the product must comply (a standard, specification or any other technical specification).
Supplier	The party having to ensure that premix glass bead complies with the technical requirements. This definition can apply to the producer, the dealer, the importer or the distributor.
Test	Technical action comprising the determination of one or more properties of a raw material or product according to a specified process.
Type testing	A series of checks for initially establishing (initial type testing) or, possibly, periodically confirming (repeat type testing) the characteristics of a product article and its conformity.

1.1.2 Abbreviations

PTV	Technical Requirements

1.1.3 References

EN 1424	Road marking materials - Premix glass beads

This PTV may contain dated and undated references. Only the cited version applies to dated references. The latest version always applies to undated references, including any errata, addenda and amendments.

Of all the EN standards referred to in these requirements, the corresponding Belgian publication NBN EN applies in each case. COPRO can allow the use of a publication other than the Belgian one provided its content is identical to that of the Belgian publication.

1.2 AVAILABILITY OF THIS PTV

The current version of this PTV is available free of charge on the COPRO website.

A paper version of this PTV can be ordered from COPRO. COPRO has the right to charge for this.

No changes may be made to the original PTV approved by the sectoral commission and/or confirmed by the Management body of COPRO.

1.3 STATUS OF THIS PTV

1.3.1 Version of this PTV

This PTV concerns version 3.0 which will replace version 2.0.

1.3.2 Approval of this PTV

This PTV was approved by the Sectoral Commission on the 30th of September 2024.

1.3.3 Confirmation of this PTV

This PTV was confirmed by the Management body of COPRO on the 3rd of December 2024.

1.3.4 Registration of this PTV

This PTV was submitted to BENOR non-profit organisation on the 9th of December 2024.

1.4 HIERARCHY OF RULES AND REFERENCE DOCUMENTS

1.4.1 Legislation

If certain rules contained in this PTV are inconsistent with applicable law, the rules arising from the legislation shall prevail. It is the responsibility of the supplier to monitor this and report any contradictions to COPRO in advance.

1.4.2 Directives concerning health and safety

If certain technical requirements are inconsistent with the directives concerning health and safety, such directives shall prevail. It is the responsibility of the supplier to monitor this and report any contradictions to COPRO in advance.

1.4.3 Tender documents

If certain rules from the applicable tender document are inconsistent with these technical requirements, the supplier can report this to COPRO.

1.5 QUESTIONS AND COMMENTS

Questions or comments concerning these technical requirements are directed to COPRO.

2 CONTEXT OF TECHNICAL REQUIREMENTS

2.1 PTV REDACTION

2.1.1 Redaction of this PTV

These technical requirements for the premix glass beads are drawn up by the Sectoral Commission road marking materials of COPRO.

2.2 OBJECTIVES

2.2.1 Purpose of this PTV

2.2.1.1 The aim of this PTV is to specify requirements for the premix glass beads used as raw materials for the production of thermoplastics and cold plastics.

2.3 SCOPE

2.3.1 Subject of these technical requirements

2.3.1.1 The subject of these technical requirements are the premix glass beads, which are used as raw materials for the production of thermoplastics and cold plastics.

2.3.2 Circulars

COPRO can supplement this PTV with one or more circulars forming an integral part of this PTV.

2.4 REFERENCE DOCUMENTS

2.4.1 Product standards

The applicable product standard is EN 1424.

2.4.2 Tender documents

The tender document(s) can refer to this PTV 882.

2.4.3 Test methods

The applicable test method(s) are mentioned in chapter 3.

2.4.4 Other

Other applicable reference documents are mentioned in clause 1.1.3.

3 REQUIREMENTS

3.1 PRODUCTION UNIT AND EQUIPMENT

3.1.1 Production unit

3.1.1.1 The production unit meets the requirements of the applicable reference documents.

The production unit (in its entirety and all its parts) is presumed to comply with all the applicable laws concerning the environments, operation, economic, et cetera.

3.1.2 Production equipment

The supplier has equipment suitable for production according to the reference documents.

3.2 RAW MATERIALS

Supplied glass beads comply to clauses 3.3.

3.3 PREMIX GLASS BEADS

3.3.1 General

3.3.1.1 Premix glass beads meet the requirements set out in clause 3.3.2 to 3.3.6.

3.3.1.2 The supplier shall in each case declare the performance for the characteristics set out in clauses 3.3.2 to 3.3.6 for the glass beads for the use as premix glass beads for road marking.

3.3.2 Granulometry

The granulometry of the premix glass beads is according to EN 1424, clause 4.1.

The granulometry of glass beads is determined in accordance with ISO 2591-1.

3.3.3 Refractive index

The refractive index is according to EN 1424, clause 4.2.

The refractive index is determined in accordance with EN 1423 Annex A.

3.3.4 Resistance to chemicals

The resistance to chemicals is according to EN 1424, clause 4.3.

The resistance to water, hydrochloric acid, calcium chloride and sodium sulphide the resistance to chemicals of glass beads shall be “Pass”.

The resistance to water, hydrochloric acid, calcium chloride and sodium sulphide is determined in accordance with EN 1423 Annex B.

3.3.5 Maximum weighted percentage of defective glass beads

See EN 1424, clause 4.4.

The maximum weighted percentage of defective glass beads is determined in accordance with EN 1423 Annex D.

3.3.6 Surface treatment

The presence of a surface treatment of the glass beads shall be declared.

When surface treatment is demonstrated the coated beads shall have a different behaviour than not coated beads.

The presence of a surface treatment is determined by the supplier according to:

- EN 1423 clause 5.3.1;
- a method proposed by the supplier, by which he demonstrates that the coated beads behave in a different way than the uncoated beads.

3.3.7 Content of dangerous substances

See EN 1423, clause 4.1.4.

Each element (As, Pb, Sb) shall be separately classified and shall comply to class 1 : ≤ 200 ppm (mg/kg).

The content of dangerous substances is determined in accordance with EN 1423 Annex I.

3.4 TYPE TESTING

3.4.1 General

The type test is conducted under the responsibility of the supplier.

3.4.2 Scope

The type test is conducted on each product article

3.4.3 Requirements

In case the producer, when producing the premix glass beads, uses a glass bead that he either

- manufactures himself;
- or does not manufacture himself and is supplied without a CE certification, he shall determine all the properties described in clause 3.3.

In case the producer, when producing the premix glass bead, uses a glass bead that he does not manufacture himself, but which is supplied with a CE attestation, the properties of the CE-certified product may be adopted. It is the producer's responsibility to verify that

- the attestation of conformity level of the supplied premix glass bead is that given in the harmonized standard NBN EN 1423 (AVCP 1);
- the characteristics of the premix glass bead comply with the requirements of this PTV.

If the producer of the product article produces himself the premix glass bead and the product article can be assigned to an existing product family, the following characteristics are not to be reassessed

- surface treatment; refractive index, resistance to chemicals, dangerous substances.

3.4.4 Type test report

The details and results of the type test are recorded in a type test report.

In either way, the type test report shall include:

- the origin of the premix glass beads and the characteristics according to clause 3.3 of this PTV.

3.4.5 Validity

The type test is valid as long as the raw materials are equivalent.

3.4.6 Modifications

If for the production of premix glass beads, a raw material, the composition, the production process or another relevant parameter is modified, the producer shall assess the influence of this modification on the characteristics of the product article or product type.

If the raw material used for applying the surface treatment is modified, the producer shall assess the influence of this modification on the characteristics of the product article.

If the producer for the production of premix glass beads

- uses, in comparison with the initial type test, a different origin of the glass, the producer shall assess the influence of this modification on the characteristics of the product article;
- uses, in comparison with the initial type test, a different origin of premix glass beads, the producer shall demonstrate that the characteristics of the new component comply with the declared characteristics of the original component.

Another origin means that the premix glass beads

- derive from a supplier while they were self-manufactured at the time of the initial type test;
- is self-manufactured while they were derived from a supplier at the time of the initial type test;
- derive from a supplier other than that supplier at the time of the initial type test.

3.4.7 Repeat type testing

Not applicable.

4 TEST METHODS

4.1 SAMPLING

4.1.1 Sampling method for lot control sampling

For lot control according to clause 6.2 the sampling is according to EN 1423, clause 5.2.

4.1.2 Sampling method for production control

For factory production control the producer can deviate from the method described in EN 1423. The correlation between his method and the method according to EN 1423 shall be demonstrated.

4.2 SAMPLE PREPARATION

4.2.1 Sample preparation

Sample preparation is according to EN 1423, Art. 5.2.

5 PRODUCT IDENTIFICATION

5.1 PRODUCT NAME

5.1.1 Official name

Premix glass beads.

5.1.2 Commercial name

The commercial name is freely chosen by the supplier insofar as it does not lead to confusion or clash with the official name.

5.2 IDENTIFICATION

5.2.1 Delivery modes

5.2.1.1 Premix glass beads can be delivered in bulk or in a package.

5.2.1.2 If premix glass beads are delivered in a package, it is identified on each packaging unit (e.g. per bucket or per bag) and per group of packages (e.g. per pallet).

5.2.2 Individual packages

The following information must be given on each packaging unit:

- name and address of the supplier and/or producer,
- name(s) of the premix glass beads,
- the quantity of the content,
- the batch or production number.
- the production date.

5.2.3 Group of packages

There are no requirements for identification of the group of packages.

5.3 DELIVERY NOTE

5.3.1 Information

Each delivery of premix glass beads is additionally accompanied of the delivery documents.

The following information is given on each delivery note:

- name and address of the supplier and/or producer,
- name of the customer,
- name(s) of the premix glass beads,
- date of loading,
- quantity of premix glass beads.

6 ASSESSMENT OF DELIVERIES

6.1 PRODUCT CHECK BY THE CUSTOMER ON DELIVERY

6.1.1 Check by the customer

On receipt of the premix glass beads, the customer checks:

- compliance of the delivery note with the ordered goods;
- in case of individual packages, compliance of the identification of the product with the delivery note.

If the premix glass beads are delivered under the voluntary BENOR mark, the conformity of the product is demonstrated and clause 6.2 does not apply.

6.2 LOT CONTROL BEFORE DELIVERY

6.2.1 General

The aim of a lot control is to check whether there is sufficient confidence that the characteristics of the premix glass beads of a supplied lot comply with this PTV.

6.2.2 Sampling

6.2.2.1 Sampling is carried out in principle by an impartial body or by the recipient (generally a road authority) on the supplier's premises.

6.2.2.2 Sampling is carried out according to clause 4.1.1 and is representative of the entire lot.

6.2.3 Lot size and number of samples

6.2.3.1 Number of samples are according to EN 13549.

6.2.4 Checking

All the characteristics of clause 3.3 are checked.

6.2.6 Processing of the premix glass beads

The products of a lot may only be processed after all the results of the test are known and satisfactory.

7 PROCESSING OF THE PREMIX GLASS BEADS

7.1 PROCESSING OF THE PRODUCT

7.1.1 Storage conditions

The premix glass beads should be stored in the closed original packages or in bulk containers, protected from moisture. Producers can add additional recommendations on the technical data sheet.