
Bitumni in bitumenska veziva - Vzorčenje bitumenskih veziv

Bitumens and bituminous binders - Sampling of bituminous binders

Bitumen und bitumenhaltige Bindemittel - Probenahme von bitumenhaltiger Bindemittel

Bitumes et liants bitumineux - Échantillonnage des liants bitumineux

Ta slovenski standard je istoveten z: prEN 58**ICS:**

75.140	Voski, bitumni in drugi naftni proizvodi	Waxes, bituminous materials and other petroleum products
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

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EUROPEAN STANDARD
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Bitumens and bituminous binders - Sampling of bituminous binders

Bitumes et liants bitumineux - Échantillonnage des liants bitumineux

Bitumen und bitumenhaltige Bindemittel - Probenahme von bitumenhaltiger Bindemittel

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European foreword

This document (prEN 58:2026) has been prepared by Technical Committee CEN/TC 336 “Bitumens and bituminous binders”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 58:2012.

prEN 58:2026 includes the following significant changes with respect to EN 58:2012:

- a) in 3.9, the Note 1 to entry has been rephrased for better clarity;
- b) in Clause 4 “Safety precautions”, item h) was added recommending to carry out a safety assessment prior sampling operation and referring to product's SDS;
- c) in Clause 7 “Choice of sampling method”, a safety warning has been introduced recommending to avoid sampling in vicinity of open surfaces of liquid binder.

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1 Scope

This document specifies methods of sampling bituminous binders, to determine the average quality of the material under examination or to determine deviations from average quality.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12597, *Bitumens and bituminous binders — Terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12597 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

composite sample

sample made up by the mixing of several *spot samples* (3.9)

Note 1 to entry: A composite sample is regarded as a representative sample if the *spot samples* (3.9) are taken according to a sampling plan that makes it probable that the composition of the composite sample approaches that of the material as closely as possible.

3.2

divided sample

sample formed by dividing a *spot* (3.9), *composite* (3.1) or representative sample into several similar parts by appropriate means

3.3

flowing material

material which flows in a transport pipeline or out of the drainline of a storage container

3.4

laboratory sample

sample intended for laboratory tests

Note 1 to entry: Preparation of test samples is specified in EN 12594 [1]

3.5

layer sample

upper, middle or lower layer *spot sample* (3.9) taken at a specific depth in a *stationary material* (3.10), usually in order to detect segregation in large storage containers

3.6

main stream sample

sample taken from the outlet stream of a container, such that the entire cross-section of the outlet stream is included

3.7

material under examination

entire quantity of the bituminous binder of which the properties are to be assessed

Note 1 to entry: "Material under examination" is termed simply "material" in the body of this document.

3.8

side-stream sample

sample taken from the outlet stream by means of a sampling probe

3.9

spot sample

sample, taken in a single operation at a single place and time

Note 1 to entry: If it can be assumed that the material is homogeneous, a spot sample is regarded as a representative sample. If the material is not homogeneous, a composite sample shall be taken to ensure the sample is representative.

3.10

stationary material

material in a storage container when all valves are closed and there is no flowing in the container

3.11

surface sample

spot sample (3.9) taken at less than 5 cm below the upper surface

3.12

test sample

sample produced by treatment or subdivision of a *laboratory sample* (3.4) during preparation in the laboratory of the sample for individual tests

3.13

vertical straight-through sample

sample taken by drawing a sampling device through the total depth of the *material under examination* (3.7) and thereby including all layers of the material

4 Safety precautions

The safety precautions given in this clause represent good practice and shall be applied in all cases where they are not in conflict with local or other regulations that shall be followed.

The list of safety precautions given in this clause is not necessarily exhaustive and they should be considered in conjunction with relevant national safety regulations or recognized safety code(s) for the petroleum industry.

- a) All regulations concerning entry into hazardous areas shall be observed rigorously.
- b) Equipment shall be maintained adequately. Regular inspections of equipment should be carried out by a competent person.

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- c) All equipment and access facilities shall be checked to ensure that they are adequate for safe working before commencement of sampling.
- d) Metallic sampling devices used in flammable atmospheres shall be constructed only from non-ferrous metal(s).
- e) Cords used as components of sampling devices shall be constructed only from vegetable fibre(s), e.g. manilla or sisal; for emulsions, the cord used shall not absorb water from the emulsion.

NOTE Attention is drawn to the situation that, for cords made from man-made fibres, it is possible for an operator to build up a dangerous level of electrostatic charge on his person, if he is not earthed and wearing insulating gloves, and that certain man-made fibres can melt or dissolve in hot bitumen.

- f) Precautions shall be taken to prevent the breathing of bitumen vapours during sampling operations.
- g) For samples taken from the main stream, the sampling device shall be selected such that sampling can be performed without pressure.
- h) Prior to any bitumen or bituminous binder sampling operation, the hazards and risks associated with handling the product should be assessed. This should include reference to the Safety Data Sheet (SDS) of the product.

5 Fundamentals of sampling

- 5.1** Correct sampling techniques are a prerequisite to obtain meaningful test results.
- 5.2** The person taking the sample shall be experienced in the methods to be employed.
- 5.3** If the sample is to be subdivided, a suitably large representative sample shall be taken and divided into the required number of divided samples.
- 5.4** A sampling report shall be prepared and signed by the person taking the sample.

The sampling report shall include:

- a) the name and address of the manufacturer;
- b) the name and address of the supplier (if different from manufacturer);
- c) object of sampling (batch number, storage container, pipe identification);
- d) the nature and type of material sampled;
- e) the date and time of sampling;
- f) the name of the sampler;
- g) a unique identification of the sample(s);
- h) the number and amount of samples;
- i) the sampling method used;
- j) reference to this document including its year of publication (i.e. prEN 58:2026);

- k) any deviation, by agreement or otherwise, from the procedure specified in this document;
- l) any special observations or any unusual features observed.

A prepared form shall be used for the sampling report (see example given in Annex A); a copy of the sampling report shall be placed with each divided sample. Sampling reports shall not be put into sample containers.

Because of the variety of materials for which the same container vehicle or storage tank can be used, account should always be taken of possible contamination by residues, deposits or solvents. For this reason, it is recommended to enter data in the report on the previous history of the container vehicle or storage tank.

6 Sample size

Each divided sample should consist of at least 0,5 kg material.

NOTE The required size of a laboratory sample is dependent upon the nature and extent of the tests to be carried out.

7 Choice of sampling method

The sampling method to be used depends upon:

- a) nature, quantity and temperature of the material under examination;
- b) number, type and size of the containers or cans from which the sample is to be taken;
- c) whether the sample is to be taken from a stationary or a flowing material.

Arrangements, equipment and methods of sampling are described in Clause 9.

If samples shall be taken frequently from a large volume liquid material container, sampling appliances such as sampling valves, sampling probes or three-way cocks can conveniently be installed permanently. Otherwise, liquid test materials can be sampled by immersion techniques, for example, by weighted sampling cans or bottom closing sampling tubes; materials fluid at low temperature can be sampled from drums or containers of up to 2 m³ capacity by means of open sampling tubes. Table 1 gives an informative guideline for sampling devices.

Very good care should be taken when taking samples of liquid bitumen or bituminous binders from open surfaces by manual means, e.g. those described in section 9.2. An accurate hazard and risk assessment should be carried out before any operations where exposure to emissions, e.g. H₂S from hot bitumen might happen, and the appropriate working and protection measures be respected. It is recommended to apply other means of sampling but those where manual operations are to be carried out in vicinity of open surfaces of liquid binder.

Viscous, plastic and semi-solid material shall be sampled using tools of the kind described in 9.4, semi-solid to brittle material by means of hand-operated tools described in 9.5 and granular material or lumps according to 9.5 and 9.6.

Sampling from the main stream by disconnecting the pipe linking a container vehicle to a storage tank shall not be carried out.