



SLOVENSKI STANDARD
SIST EN 58:2012

01-september-2012

Nadomešča:
SIST EN 58:2005

Bitumen in bitumenska veziva - Vzorčenje bitumenskih veziv

Bitumen and bituminous binders - Sampling bituminous binders

Bitumen und bitumenhaltige Bindemittel - Probenahme bitumenhaltiger Bindemittel

Bitumes et liants bitumineux - Echantillonnage des liants bitumineux
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Ta slovenski standard je istoveten z: ~~SIST EN 58:2012~~ EN 58:2012

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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
NORME EUROPÉENNE
EUROPÄISCHE NORM

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ICS 91.100.50

Supersedes EN 58:2004

English Version

Bitumen and bituminous binders - Sampling bituminous binders

Bitumes et liants bitumineux - Échantillonnage des liants
bitumineux

Bitumen und bitumenhaltige Bindemittel - Probenahme
bitumenhaltiger Bindemittel

This European Standard was approved by CEN on 7 January 2012.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 58:2012) has been prepared by Technical Committee CEN/TC 336 "Bituminous binders", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 58:2004.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 58:2012 (E)**1 Scope**

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

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1**composite sample**

sample made up by the mixing of several spot samples

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

2.2**divided sample**

sample formed by dividing a spot, composite or representative sample into several similar parts by appropriate means

2.3**flowing material**

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

2.4**laboratory sample**

sample intended for laboratory tests

2.5**layer sample**

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

2.6**main stream sample**

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

2.7**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.

2.8**side-stream sample**

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

2.9**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 spot sample is only regarded as representative of a limited region around the sampling point.

2.10**stationary material**

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

2.11**surface sample**

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

2.12**test sample**

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

2.13**vertical straight-through sample**

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

3 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 which 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 and/or recognised safety code(s) for the petroleum industry.

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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.

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 will 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.

4 Fundamentals of sampling

4.1 Correct sampling techniques are a prerequisite if meaningful test results are to be obtained.

4.2 The person taking the sample shall be experienced in the methods to be employed.

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4.3 If the sample is to be subdivided, a suitably large representative sample shall be taken and divided into the required number of divided samples.

4.4 A sampling report shall be prepared and signed by the person taking the sample.

The sampling report shall include:

- a) name and address of the manufacturer,
- b) name and address of the supplier (if different from manufacturer),
- c) object of sampling (batch number, storage container, pipe identification),
- d) nature and type of material sampled,
- e) date and time of sampling,
- f) name of the sampler,
- g) unique identification of the sample(s),
- h) number and amount of samples,
- i) sampling method used,
- j) reference to this European Standard,
- k) any deviation, by agreement or otherwise, from the procedure described in the standard,
- l) any special observations.

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A prepared form shall be used for the sampling report (for example, see 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 may be used, account should always be taken of possible contamination by residues, deposits or solvents. For this reason, it is relevant to enter data in the report on the previous history of the container vehicle or storage tank.

5 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.

6 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 8.

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 shall 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.

Viscous, plastic and semi-solid material shall be sampled using tools of the kind described in 8.4, semi-solid to brittle material by means of hand-operated tools described in 8.5 and granular material or lumps according to 8.5 and 8.6.

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

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**Table 1 — Sampling methods for material liquid
at either high or low temperatures in pipelines, containers or cans**

	Sampling method		Sampling from pipelines		Sampling from containers of capacity			
			Main stream	Side stream	> 800 m ³	> 50 m ³ to 800 m ³	> 2 m ³ to 50 m ³	≤ 2 m ³ and cans
<i>Sampling using permanently installed equipment</i>	sampling probe	8.1.2	-	+	-	-	-	-
	from sampling valve	8.1.3	-	-	+	+	+	-
		8.1.4	-	+	-	-	-	-
	3-way valve	8.1.5	+	-	-	-	-	-
<i>Sampling using immersion methods</i>	weighted sampling can	8.2.1	-	-	+	+	+	(+)
	surface sampling can	8.2.2	-	-	-	-	+	-
	bottom closing sampling tube	8.2.3	-	-	-	(+)	+	+
	open sampling tube	8.2.4	-	-	-	-	-	0
	vertical straight-through can	8.2.5	-	-	-	-	+	+
<i>Sampling directly from installations</i>	from spraying equipment	8.3	+	-	-	-	-	-
Key + usable (+) limited use 0 only usable for materials fluid at low temperature - not applicable								

7 Number of samples

The number of samples taken shall be dependent upon the size and form of the container and for deliveries in cans and lumps upon the number of those in a delivery; the number of samples to be taken from a container shall be as given for each sampling method in Clause 8.

For deliveries in cans and lumps, the number of cans or lumps from which samples are to be taken shall conform to Table 2. Initially, one sample from each can or lump shall be tested. If this test shows deviation from the specification, the remaining samples shall be tested.

If sampling is intended to check homogeneity (segregation) in stationary liquid material, at least three layer samples (upper layer, middle layer and lower layer) shall be taken. They shall not be mixed to form a composite sample.

If, in exceptional circumstances, it is desired to assess the average quality from layer samples, the geometry of the container shall be taken into account.

Table 2 — Number of cans or lumps from which samples are to be taken

Total number of cans or lumps (n)	Number of cans or lumps sampled
2 to 8	2
9 to 27	3
28 to 64	4
65 to 125	5
126 to 216	6
217 to 343	7
344 to 512	8
513 to 729	9
730 to 1 000	10
over 1 000	$\sqrt[3]{n}$, rounded to the nearest integer above, where n is the total number of cans or lumps

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8 Arrangements, equipment and methods of sampling

8.1 Sampling using permanently installed systems

8.1.1 Necessary drawing off before sampling.

IMPORTANT — Depending on the type of system (e.g. valve) used to take the sample and/or on the design of the unit (e.g. sampling pipe) from which the material is sampled, a draw-off shall be performed to ensure that the sample is a relevant and representative part of the material.

Each sampling point shall be assessed in order to define the minimum volume to be discarded and thus to fulfil the requirement listed above; assessment shall be reported in an appropriate document. More precisely, when a material draw-off is required (e.g. from a valve with dead volume, a long sampling pipe...), the quantity/volume of material to be taken prior sampling shall be accurately evaluated.

Any drawn off material or any sample after use, may be recycled on site or elsewhere.

NOTE It is preferable to use valves or sampling systems with zero or minimal dead volume. With valves having no dead volume, it is not necessary for any material to be drawn off before sampling.

WARNING — The sampling step on a running line shall be performed in accordance with all the appropriate safety and health practices.