



SLOVENSKI STANDARD

SIST EN 212:1995

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Zaščitna sredstva za les - Navodila za vzorčenje in pripravo zaščitnih sredstev za les in zaščenega lesa za analizo

Wood preservatives - Guide to sampling and preparation of wood preservatives and treated timber for analysis

Holzschutzmittel - Anleitung für die Probenahme und Probenvorbereitung von Holzschutzmitteln und von behandeltem Holz für die Analyse

Produits de préservation des bois - Guide pour l'échantillonnage et la préparation des produits de préservation du bois traité pour analyse

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English version

Wood preservatives.

Guide to sampling and preparation of wood preservatives
and treated timber for analysis

Produits de préservation des bois.
Guide pour l'échantillonnage et la
préparation des produits de préservation
du bois et du bois traité
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Holzschutzmittel. Anleitung
für die Probenahme und Proben-
vorbereitung von Holzschutzmitteln
und von behandeltem Holz für die
Analyse

This European Standard was accepted by CEN on 1985-09-10 .
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Up-to-date lists and bibliographical references concerning such
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This European Standard exists in three official versions
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Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden,
Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
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B R I E F H I S T O R Y

This European Standard was drawn up by the Technical Committee CEN/TC 38 "Methods of test for wood preservatives", the Secretariat of which is held by AFNOR.

This European Standard was adopted by CEN on the strength of its acceptance by the following Member countries :

Austria - Belgium - Denmark - France - Italy - Netherlands -
Portugal - Spain - Sweden - Switzerland - United Kingdom -

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C O N T E N T S

| | Page |
|--|------|
| 1 OBJECT | 4 |
| 2 FIELD OF APPLICATION | 4 |
| 3 HEALTH AND SAFETY HAZARDS | 4 |
| 4 GUIDANCE ON SAMPLING PRESERVATIVES | 5 |
| 5 GUIDANCE ON SAMPLING TREATED TIMBER | 9 |
| 6 METHOD FOR THE DETERMINATION OF THE MOISTURE CONTENT OF PRESERVATIVE-TREATED TIMBER | 13 |
| 7 GENERAL CONSIDERATIONS IN SAMPLING FOR ANALYSIS | 16 |

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1 OBJECT

This standard gives guidance on the general procedures to be followed in the sampling and preparation for analysis of preservatives and preservative-treated timber.

No attempt has been made here to define rigidly any detailed methodology to be followed in operations in these areas because this can depend upon the nature of the preservative, the method of treatment, and the particular requirements of National Approval Authorities.

Furthermore, the objectives of each analysis, and the demands of the individual analytical techniques, may impose their own requirements with regard to sampling and subsequent handling. Therefore, it is essential that the sampling plan for each operation should be devised in the light of the particular objective, using professional judgement based on experience.

2 FIELD OF APPLICATION

This standard is applicable to the provision of appropriate samples for analysis which may be used to check the content of active components in preservative formulations, and to determine the identity, location and concentration of preservatives in treated timber. The techniques described may be employed in a wide variety of applications ranging from laboratory research through to the checking of preservatives or preservative-treated timber for arbitration purposes.

In most cases it is possible, by chemical analysis, to determine whether or not a sample of timber has received a preservative treatment and the results can often give an indication of the type of treatment the wood has received when due consideration is given to other relevant factors, such as timber species and heartwood/sapwood ratio, in the samples under test.

No attempt has been made in this document to lay down detailed procedures to be adopted for control purposes at manufacturing plants where large volumes of preservatives are to be sampled.

3 HEALTH AND SAFETY HAZARDS

All preservatives may be considered potentially toxic both to man and to the environment and should be handled with care and in accordance with the specific recommendations for safe use agreed with National and International Authorities. The manufacturers' instructions should also be observed.

In handling solid timber after treatment, protective gloves should be worn if the timber is still wet or contains solvent. Once the timber has dried, unless blooming of the preservative on the surface is noted, no special precautions are necessary in handling such timber, other than the normal practice of washing hands before handling food or smoking (1).

When treated timber is machined or mechanically sanded or sawn, an efficient dust extraction system should be used or, failing this, the operator should be provided with, and should wear, appropriate respiratory protection.

The organic solvents commonly used for applying preservatives are flammable and it is essential that care be exercised in handling such materials (2).

4 GUIDANCE ON SAMPLING PRESERVATIVES

4.1 GENERAL

The method of sampling chosen should ensure that the sample obtained is as representative as possible of the total consignment.

4.1.1 Number of items in consignment

The least number of containers e.g. drums to be sampled from any given consignment of preservative materials, irrespective of whether the materials are solid or liquid, should be the nearest whole number to the square root of half the total number of drums in the consignment (see table 1). The drums to be sampled should be taken at random.

TABLE 1 - SAMPLING OF DRUMS

| Number of drums in consignment (x) | $\sqrt{\frac{x}{2}}$ | Number of drums to be sampled |
|---------------------------------------|----------------------|----------------------------------|
| 10 | 2,24 | 2 |
| 20 | 3,16 | 3 |
| 50 | 5,00 | 5 |
| 100 | 7,07 | 7 |

- (1) See National appendix for national regulations, if these exist.
- (2) Attention is drawn to the need to comply with any statutory regulations that govern the use and storage of flammable liquids.

4.1.2 Choice of materials for sample container

It is essential in all cases that the sample container and its closure be made from material which is inert to the particular preservative under investigation. Thus, glass bottles are unsuitable for bifluoride solutions, and polyethylene containers should not be used for petroleum solvents.

4.1.3 Storage of samples

Prior to analysis, samples should be stored in a cool dark place.

4.2 SAMPLING OF SOLID PRESERVATIVES

4.2.1 Sampling device

A suitable sampling device for the purpose of sampling the preservative in a drum is a sampling spear of internal diameter 32 mm and sufficiently long to reach the bottom of the drum.

4.2.2 Procedure (see figure 1)

Before sampling, mix the contents of the drum as thoroughly as possible. Take great care to minimise the moisture picked up by the sample during the sampling, mixing and reducing processes. Using the sampling device, take five samples, one from the centre of the drum and the other four from points on a pair of diameters at right angles to each other, which are mid-way between the centre and the side of each drum selected for testing (operation 1). Ensure that the sampling spear reaches to the bottom of the drum.

Combine the 5 samples of approximately 400 g each in a clean, dry, air-tight container of about 2,5 kg capacity (operation 2) (3). If necessary, grind the whole of the bulk sample to pass a test sieve of nominal aperture size 2,00 mm, ensuring that no residue is left on the sieve. Mix the sample well (operation 3A). Transfer the entire sample to a clean dry surface and heap into a cone (operation 3 - cone 1). Turn over to form a new cone until the operation has been carried out three times (operation 3 cone 4). Form each conical heap by depositing material on the apex of the cone so that the portions which slide down the side are distributed as evenly as possible, and that the centre of the cone is not displaced. If some of the larger aggregates of the mixture roll and scatter round the base, either push these back to the edge of the heap or break them and distribute them evenly over the heap.

Flatten the final cone from the mixed contents of the container by repeated vertical insertions of the edge of a board, commencing about the centre and working radially round the cone, lifting the board clear of the material after each insertion. Carry out this operation so that the flattened heap is of uniform thickness and diameter and the centre coincides with the centre of the original cone (operation 4).

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- (3) To ascertain the homogeneity of the contents of a drum, individual spear samples may be analysed.

Quarter the heap along two diameters which intersect at right angles, using a suitable divider. Shovel one pair of opposite quarters into a cone and reject the remainder (operation 5). Mix the cone three times (operation 5 - cone 8) as described above, flatten the cone and quarter along two diameters (operation 6).

Repeat these operations until a reduced sample of about 200 g remains (operation 7). Immediately enclose the test sample in an air-tight container until required for analysis.

4.3 SAMPLING OF PRESERVATIVES IN PASTE FORM

4.3.1 Sampling device

A suitable device is a wide mouthed sampling can of about 500 ml capacity fitted with a long, stiff handle so that it can be submerged in the material to be sampled. It should also carry a removable lid to which a second stiff handle is attached, so that when the can is immersed in the paste the lid can be removed, allowing the can to fill.

A stout steel stirring rod, suitable for stirring the contents of a drum is also required.

4.3.2 Procedure

Thoroughly mix the preservative in each drum before the samples are taken. Displace any settled material from the base of the drum using the stirring rod. Reclose the drum and homogenise the contents by rolling and shaking the drum. Mechanical agitation should be used if available. Re-open the drums and test the contents for uniformity by probing with the steel rod. Continue alternate stirring, shaking and rolling until the contents are of a homogeneous consistency.

Take three samples from each drum with the sampling can, one from just below the surface of the preservative, the second at a position about halfway between the surface and the base of the drum and the third from near the base. Pour the three samples from each drum into a clean glass or plastic container and mix together.

Note : Should homogenisation prove to be impossible it will be necessary to dissolve or disperse the whole contents of the drum and take aliquot portions for analysis.

4.4 SAMPLING OF LIQUID PRESERVATIVES

4.4.1 Sampling device

A suitable sampling device consists of a thick walled glass tube of about 13 mm internal diameter, cut to a length suitable for extracting the treatment solution to a depth of about 600 mm. The actual length of the tube will depend on the container to be sampled.