

INTERNATIONAL STANDARD

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Paints and varnishes — Sampling of products in liquid or paste form

*Peintures et vernis — Échantillonnage des produits sous forme liquide
ou en pâte*



Reference number
ISO 1512:1991(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 1512 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Sub-Committee SC 9, *General test methods for paints and varnishes*.

This second edition cancels and replaces the first edition (ISO 1512:1974). This edition of ISO 1512 differs from the previous edition by specifically excluding the sampling of coating powders and by including an abbreviated procedure (see 8.2.1.2) when the containers to be sampled are from a single batch. The safety precautions to be considered have also been revised.

Annex A of this International Standard is for information only.

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Introduction

This International Standard is one of a series of standards dealing with the sampling and testing of paints, varnishes and related products in liquid or paste form. It does not deal with procedures for the sampling of raw materials used in the manufacture of paints and varnishes: these are described in ISO 842 (see annex A). Also it does not describe the sampling of paints in powder form (coating powders).

Correct sampling is a skilled operation and the various procedures require to be carried out with great care by operators having the required knowledge and experience. The general instructions in this International Standard are intended to supplement this knowledge and experience and are applicable to most situations. However, some products may require special sampling precautions that are not given in this International Standard and therefore special vigilance will be necessary on the part of operators to take note of any unusual characteristics exhibited by those products. It is also essential that operators adhere to any special precautions in accordance with product specifications and national safety regulations.

Paints and varnishes — Sampling of products in liquid or paste form

1 Scope

This International Standard describes methods for sampling paints, varnishes and related products in liquid or paste form that will provide uniform samples that are of convenient size and adequately represent the product to be tested. The sample or samples so obtained are suitable for examination and preparation in accordance with ISO 1513 prior to testing.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1513:1980, *Paints and varnishes — Examination and preparation of samples for testing*.

3 Definition

For the purposes of this International Standard, the following definition applies.

3.1 batch: The quantity of liquid paint or paste, produced in the final mixing operation after the completion of all production processes, in one large vessel from which smaller containers may be filled for distribution and marketing.

4 Health and safety precautions

4.1 This standard calls for the use of substances and/or procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and in no way absolves the user from statutory obligations relating to health and safety at any stage.

4.2 Particular attention is drawn to the following hazards of sampling paints, varnishes and related products although this list may not necessarily be exhaustive. These hazards include, in addition to explosions and flammability, toxicity by inhalation and/or absorption by the skin. Operators shall always be informed of known dangers and shall be advised to handle such products with due care, using protective equipment where necessary. Attention is drawn to national regulations and requirements concerning safety and hygiene.

5 Types of paints, varnishes and related products

The sampling procedures appropriate for use with paints, varnishes and related products depend on the nature and the physical properties of the products. The following types of product may conveniently be distinguished.

Type A: Fluid products consisting of a single homogeneous liquid phase.

Type B: Fluid products consisting of two liquid phases, such as emulsions.

Type C: Fluid products consisting of one or two liquid phases together with one or more solid phases. Such products are commonly called "paints" but may include enamels, lacquers, some varnishes, etc.

Types D: Viscous products consisting of one or more solid phases with small amounts of a liquid

phase (for example, putties, mastics, luting, cements, and pigment pastes in oil or other binders). This type also includes very viscous resinous materials.

6 Sampling equipment

6.1 General

The sampling tools, which are in general use for sampling raw materials and are described in ISO 842, may also be used for sampling finished products.

In sampling, equipment is required for two separate operations:

- a) mixing the product to make it as homogeneous as possible; and
- b) taking a truly representative sample.

6.2 Materials and design

All sampling equipment shall be made of materials that are not subject to deterioration, are unaffected by the product being sampled and are incapable of contaminating the sample. The design of the equipment shall take into account convenience in use and ease of cleaning. Therefore any grooves, acute internal angles, or areas which are inaccessible or difficult to inspect for cleanliness, shall be avoided.

6.3 Apparatus for mixing

6.3.1 Broad-bladed stirrers, of suitable length, capable of reaching the bottom of the container being sampled. Mechanical stirrers may be used.

Special care shall be taken when a metal stirrer is to be used for stirring a product of low flashpoint or in circumstances where an explosion hazard exists (see 4.2).

NOTE 1 Stirrers constructed from bronze or aluminium may be appropriate.

6.3.2 Paint shakers, suitable for small containers.

6.4 Apparatus for taking samples

6.4.1 Sampling tubes, inert to the product to be sampled; examples are shown in figures 1 to 3 and are described in 6.4.1.1 to 6.4.1.3.

6.4.1.1 The sampling tube shown as an example in figure 1 consists of two concentric metal tubes closely fitted into each other throughout their entire length, so that one tube can be rotated within the

other. A longitudinal opening or series of openings of about one-third of the circumference is cut in both tubes. In one position the tube is open and admits the liquid; by turning the inner tube it becomes a sealed container.

The inner tube is 20 mm to 40 mm in diameter. It may be undivided in its length, in which case the two tubes are provided with V-shaped ports at their lower ends, so placed that liquid contained in the instrument can be drained through them when the longitudinal openings are open.

Alternatively, the inner tube may be divided transversely into from three to ten compartments, in which case the bottom V-shaped ports are omitted. Such an arrangement enables separate samples of liquid to be withdrawn from different depths in the container.

The tube should be of sufficient length to reach the bottom of the container. It is inserted closed, then opened to admit the liquid and finally closed and withdrawn.

6.4.1.2 The sampling tube shown as an example in figure 2 may be used where the liquid to be sampled is known to be homogeneous in character. It consists of a metal or thick-walled glass tube which may vary from 20 mm to 40 mm in diameter and from 400 mm to 800 mm in length. The upper and lower ends are conical and narrow down to about 5 mm to 10 mm. At the upper end there are two rings to assist handling.

To take an individual sample, the tube is first closed at the top with the thumb or a stopper, and lowered until the desired depth is reached. It is opened for a short time to admit the liquid and then closed and withdrawn.

6.4.1.3 The sampling tube shown as an example in figure 3 consists of a metal tube with a valve at the base connected by a central rod to a screw handle at the top. When the handle is screwed down the valve is kept closed. It differs from the tubes previously described in that it is introduced into the liquid with the valve open, allowing the liquid to enter as the tube dips below the surface while the displaced air passes through an air-vent at the top of the tube. When the base of the tube touches the bottom of the container, the valve automatically closes. The handle is then screwed tight so as to keep the valve shut, and the tube containing the sample is withdrawn. The outside of the tube is wiped clean unless a cleaning device is used. Sampling tubes of various lengths are used, one 2 m long, made of aluminium, being convenient for sampling road tanks. This instrument, illustrated in figure 3, is not suitable for use where sediments have accumulated.