International Standard

ISO 2884-2

Second edition

Paints and varnishes — Determination of viscosity using rotational viscometers —

Part 2: Relative measurement of viscosity using disc or ball spindles at specified speeds

Peintures et vernis — Détermination de la viscosité au moyen de viscosimètres rotatifs —
Partie 2: Mesurage relatif de la viscosité avec des agitateurs à disque ou à bille à des vitesses spécifiées

PROOF/ÉPREUVE

Reference number
ISO 2884-2:2024(en)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 139, *Paints and varnishes,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 2884-2:2003), which has been technically revised.

The main changes are as follows:

— terminology and symbols have been adapted to ISO 3219-1;

— a statement has been added that this document refers to a relative value for viscosity;

— description of the test procedure including the test report has been updated;

— the normative references have been updated.

A list of all parts in the ISO 2884 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Paints and varnishes — Determination of viscosity using rotational viscometers —

Part 2: Relative measurement of viscosity using disc or ball spindles at specified speeds

1 Scope

This document specifies a general procedure for determining the viscosity of paints, varnishes and related products, as well as binders. The method is primarily used to determine the relative viscosity of a product and to monitor this while thinning during a manufacturing process. It describes a relative measurement of viscosity using disc or ball spindles at specified speeds.

The method specified in this document is suitable for all paints and varnishes whether they are Newtonian in behaviour or not. It can also be applied to materials containing dispersions of particles.

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.

ISO 1513, *Paints and varnishes — Examination and preparation of test samples*

ISO 3219-1, *Rheology — Part 1: Vocabulary and symbols for rotational and oscillatory rheometry*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3219-1 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/

4 Measuring assembly

4.1 General

The measuring assembly consists of a rotational viscometer with a relative measuring geometry (disc or ball spindle in accordance with 4.2) and a defined container (in accordance with 4.3), in which the sample to be tested is contained. It shall be possible to control the temperature of the sample (in accordance with 4.4).

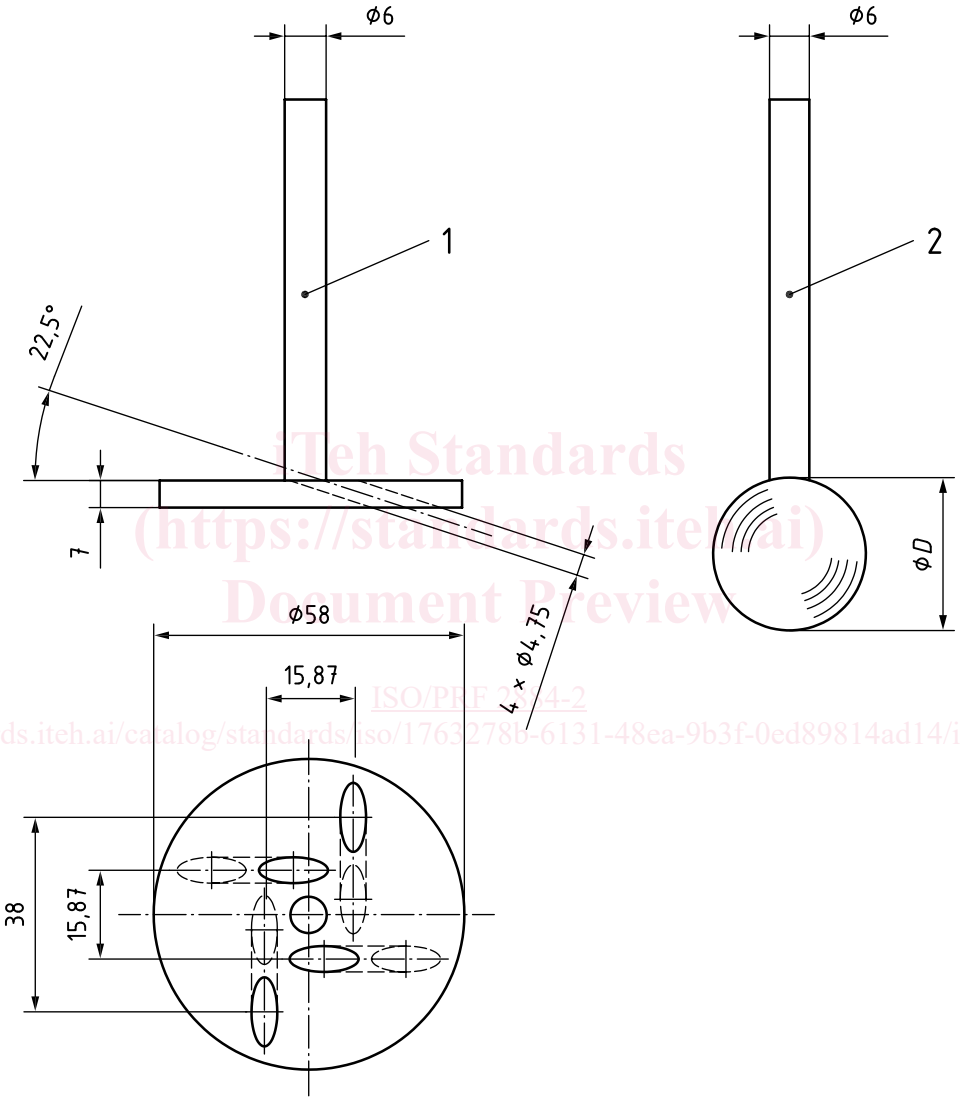
4.2 Spindles

The following types of spindles shall be used in the viscosity ranges described in Table 1:

— Disc spindle (type 1) for use at relative viscosity values of up to 1,5 Pa·s at a rotational speed of 200 min^{-1}. The disc shall have cross-channels designed to produce a slight agitating action. The dimensions shall be as shown in Figure 1.

— Ball spindles (type 2 and type 3) for use with relative viscosity values up to 6,5 Pa·s (type 2) and 34 Pa·s (type 3) at rotational speeds of 44 min^{-1} or 20 min^{-1}. The dimensions shall be as shown in Figure 1. The viscosity ranges of the spindles are shown in Table 1.

Dimensions in millimetres



Key

1 disc spindle (type 1)

2 ball spindle (type 2 and type 3)

Spindle	Diameter *D*
Type 2	31,75 mm
Type 3	19,05 mm

Figure 1 — Disc and ball spindles