

<b>STN</b>	<b>Spojivá pre náterové látky Stanovenie bodu mäknutia Časť 1: Metóda krúžok - guľôčka (ISO 4625-1: 2020)</b>	<b>STN EN ISO 4625-1</b>  67 1007
------------	---	---

Binders for paints and varnishes - Determination of softening point - Part 1: Ring-and-ball method (ISO 4625-1:2020)

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/20

Obsahuje: EN ISO 4625-1:2020, ISO 4625-1:2020

Oznámením tejto normy sa ruší  
STN EN ISO 4625-1 (67 1007) z júla 2006

**131946**



EUROPEAN STANDARD

**EN ISO 4625-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2020

ICS 87.060.20

Supersedes EN ISO 4625-1:2006

English Version

**Binders for paints and varnishes - Determination of softening point - Part 1: Ring-and-ball method (ISO 4625-1:2020)**

Liants pour peintures et vernis - Détermination du point de ramollissement - Partie 1: Méthode de l'anneau et de la bille (ISO 4625-1:2020)

Bindemittel für Beschichtungsstoffe - Bestimmung der Erweichungstemperatur - Teil 1: Verfahren mit Ring und Kugel (ISO 4625-1:2020)

This European Standard was approved by CEN on 30 June 2020.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN ISO 4625-1:2020 (E)**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

## **European foreword**

This document (EN ISO 4625-1:2020) has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with Technical Committee CEN/TC 139 "Paints and varnishes" the secretariat of which is held by DIN.

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 February 2021, and conflicting national standards shall be withdrawn at the latest by February 2021.

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

This document supersedes EN ISO 4625-1:2006.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## **Endorsement notice**

The text of ISO 4625-1:2020 has been approved by CEN as EN ISO 4625-1:2020 without any modification.

# INTERNATIONAL STANDARD

**ISO**  
**4625-1**

Second edition  
2020-07

---

---

## **Binders for paints and varnishes — Determination of softening point —**

### **Part 1: Ring-and-ball method**

*Liants pour peintures et vernis — Détermination du point de ramollissement —*

*Partie 1: Méthode de l'anneau et de la bille*



Reference number  
ISO 4625-1:2020(E)

© ISO 2020

**ISO 4625-1:2020(E)****COPYRIGHT PROTECTED DOCUMENT**

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

Published in Switzerland

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>1</b>
<b>5 Sampling and preparation of test pieces</b> .....	<b>2</b>
5.1 Sampling.....	2
5.2 Preparation of test pieces by the pour method.....	2
5.2.1 Field of application.....	2
5.2.2 Apparatus.....	2
5.2.3 Procedure.....	2
5.3 Preparation of test pieces from samples with a low softening point (up to 35 °C).....	2
5.3.1 Apparatus.....	2
5.3.2 Procedure.....	3
<b>6 Materials (heating-bath liquids)</b> .....	<b>3</b>
<b>7 Automated ring-and-ball method (reference method)</b> .....	<b>3</b>
7.1 Apparatus.....	3
7.2 Calibration.....	4
7.3 Procedure for materials with a softening point between 35 °C and 80 °C.....	4
7.4 Procedure for materials with a softening point between 80 °C and 150 °C.....	4
7.5 Procedure for materials with a softening point above 150 °C.....	4
<b>8 Manual ring-and-ball method (alternate method)</b> .....	<b>4</b>
8.1 Apparatus.....	4
8.2 Calibration.....	7
8.3 Procedure.....	7
8.3.1 Procedure for materials with a softening point between 35 °C and 80 °C.....	7
8.3.2 Procedure for materials with a softening point between 80 °C and 150 °C.....	8
8.3.3 Procedure for materials with a softening point above 150 °C.....	8
8.3.4 Procedure for materials with a softening point below 35 °C.....	8
<b>9 Expression of results</b> .....	<b>8</b>
<b>10 Precision and bias</b> .....	<b>8</b>
10.1 Precision of the automated method.....	8
10.1.1 General.....	8
10.1.2 Precision data.....	8
10.2 Precision of the manual method.....	9
10.2.1 General.....	9
10.2.2 Precision data.....	9
10.3 Bias.....	9
<b>11 Test report</b> .....	<b>10</b>
<b>Bibliography</b> .....	<b>11</b>



# ISO 4625-1:2020(E)

## 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 documents 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 35, *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 4625-1:2004), which has been technically revised. The main changes compared to the previous edition are as follows:

- the automated method has been classified to be the reference method;
- an introduction with information on all three methods described in the three parts of ISO 4625 series has been added;
- CAS-numbers have been added to the chemicals used;
- the text has been editorially revised;
- the normative references have been updated.

A list of all parts in the ISO 4625 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](http://www.iso.org/members.html).

## Introduction

The ISO 4625 series specifies three widely used procedures for the measurement of the softening point of rosin-based resins. This document presents the ring-and-ball method, which has been the accepted standard for many years. ISO 4625-2 presents the Mettler cup-and-ball method. A new method, called the Mettler method without the ball, is to be presented in a future document.

This document is still the only standard test method accepted in regulatory documents such as Title 21 of the Code of Federal Regulations (CFR) – Food and Drugs.

Other parts of the ISO 4625 series concern Mettler cup-and-ball methods. Although the recommended testing conditions differ, the only difference between the equipment required in such methods is that Mettler method without the ball does not use a ball. Surveys have shown that the Mettler cup-and-ball method specified in ISO 4625-2 is the most widely used in the USA, while the Mettler method without the ball is the most widely used in Europe. These methods are less time consuming than the ring-and-ball manual method and the equipment is less expensive than the ring-and-ball automated method.

As a consequence of the thermoplastic nature of the test resins, the softening points obtained using the recommended test conditions for all three methods are not generally the same. Consequently, the test method and the testing conditions used should be noted in the final report.



# Binders for paints and varnishes — Determination of softening point —

## Part 1: Ring-and-ball method

### 1 Scope

This document specifies the test methods for determining the softening point of resins (including rosin) and similar materials by means of ring-and-ball apparatus.

Both manual and automated methods are specified, the automated method being the reference method.

### 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 4618, *Paints and varnishes — Terms and definitions*

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

IEC 60751, *Industrial platinum resistance thermometer and platinum temperature sensors*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**