

**Plastid. Vedelas olekus või emulsioonidena
või disperssete süsteemidena olevad
vaigud. Näivviskoossuse määramine
Brookfield'i katsemeetodil**

Plastics - Resins in the liquid state or as emulsions
or dispersions - Determination of apparent viscosity
by the Brookfield Test method

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 2555:2000 sisaldab Euroopa standardi EN ISO 2555:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 2555:2000 consists of the English text of the European standard EN ISO 2555:1999.</p> <p>This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This standard specifies a method of determining an apparent viscosity, by the Brookfield Test method, of resins in a liquid or similar state, using one of the types of rotational viscometer described in this standard</p>	<p>Scope:</p> <p>This standard specifies a method of determining an apparent viscosity, by the Brookfield Test method, of resins in a liquid or similar state, using one of the types of rotational viscometer described in this standard</p>
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ICS 83.080.01

Võtmesõnad: plastics, resins, viscosity measurement, viscometers, viscosity

English version

Plastics

Resins in the liquid state or as emulsions or dispersions

Determination of apparent viscosity by the Brookfield Test method
(ISO 2555 : 1989)

Plastiques – Résines à l'état liquide
ou en émulsions ou dispersions –
Détermination de la viscosité
apparente selon le Procédé
Brookfield (ISO 2555 : 1989)

Kunststoffe – Harze im flüssigen
Zustand, als Emulsionen oder
Dispersionen – Bestimmung der
scheinbaren Viskosität nach dem
Brookfield-Verfahren
(ISO 2555 : 1989)

This European Standard was approved by CEN on 1999-05-06.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 2555 : 1989 Plastics – Resins in the liquid state or as emulsions or dispersions – Determination of apparent viscosity by the Brookfield Test method,

which was prepared by ISO/TC 61 'Plastics' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 249 'Plastics', the Secretariat of which is held by IBN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by December 1999 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 2555 : 1989 was approved by CEN as a European Standard without any modification.

1 Scope

This International Standard specifies a method of determining an apparent viscosity, by the Brookfield Test method, of resins in a liquid or similar state, using one of the types of rotational viscometer described in this Standard.

The application of this method to specific products is detailed in annex A.

The viscometers, types A, B and C, permit viscosity measurements from 0,02 Pa·s (20 cP) to 60 000 Pa·s (60×10^6 cP).

2 Principle

A spindle, of cylindrical or related form (disc), is driven at a constant rotational frequency in the product being studied.

The resistance exerted by the fluid on the spindle, which depends on the viscosity of the product, causes a torque which is indicated by a suitable meter. This measurement may be based on tightening of a spiral spring depending on the torque, indicated by the movement of a needle on a dial.

The apparent viscosity by the Brookfield Test method is obtained by multiplying this dial reading by a coefficient which depends on the rotational frequency and characteristics of the spindle.

The products to which this International Standard is applicable are generally non-Newtonian and the measured viscosity depends on the velocity gradient to which the products are subjected during the measurement.

With these types of viscometer, the velocity gradient is not the same for every point of the spindle. Thus, for a non-Newtonian fluid, the result is not strictly the true "viscosity at a known velocity gradient" and therefore is conventionally called the apparent viscosity.

3 Apparatus

3.1 Brookfield-type viscometer, type A, B or C, chosen according to the product to be tested and the desired precision.

The detailed working principle of this apparatus, its description and the characteristics of the three types are given in annex B.

Each viscometer consists of:

- the viscometer body;
- seven interchangeable spindles numbered from 1 to 7 (number 1 being the largest); these spindles carry a mark that indicates the immersion level in the liquid; they are the same for the three types of viscometer; do not use spindles which show signs of corrosion or eccentricity;
- a detachable guard stirrup (type A only).

The rotational frequencies available on the different types of Brookfield viscometer are given in table 1.

NOTE — In the case of the Brookfield apparatus, the relationship between the models and available frequencies and viscometer types A, B and C are given in table 1. Other rotational frequencies within the same limits may be chosen.

Table 1 — Rotational frequencies available for the three types of viscometer

Viscometer type	Model	Rotational frequencies, min ⁻¹						
A	RVF	2	4	10	20			
	RVF 100			10	20	50	100	
	RVT	0,5	1	2,5	5	10	20	50 100
B	HAF	1	2	5	10			
	HAT	0,5	1	2,5	5	10	20	50 100
C	HBF	1	2	5	10			
	HBT	0,5	1	2,5	5	10	20	50 100

The shapes and sizes of the spindles are such that the viscosities corresponding to a maximum torque indication on the meter, for the various rotational frequencies, are those given in table 2.

The adjustment and calibration of these viscometers are usually carried out by the manufacturer of the apparatus.

1) The Brookfield Test method may be carried out using test equipment supplied by a number of manufacturers.