



SLOVENSKI STANDARD
kSIST FprEN ISO 5530-1:2014
01-september-2014

Pšenična moka - Fizikalne značilnosti testa - 1. del: Določanje vpijanja vode in reoloških lastnosti s farinografom (ISO 5530-1:2013)

Wheat flour - Physical characteristics of doughs - Part 1: Determination of water absorption and rheological properties using a farinograph (ISO 5530-1:2013)

Weizenmehl - Physikalische Eigenschaften von Teigen - Teil 1: Bestimmung der Wasserabsorption und der rheologischen Eigenschaften mittels Farinograph (ISO 5530-1:2013)

Farines de blé tendre - Caractéristiques physiques des pâtes - Partie 1: Détermination de l'absorption d'eau et des caractéristiques rhéologiques au moyen du farinographe (ISO 5530-1:2013)

Ta slovenski standard je istoveten z: FprEN ISO 5530-1

ICS:

67.060	Žita, stročnice in proizvodi iz njih	Cereals, pulses and derived products
--------	--------------------------------------	--------------------------------------

kSIST FprEN ISO 5530-1:2014

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

FINAL DRAFT
FprEN ISO 5530-1

June 2014

ICS 67.060

English Version

**Wheat flour - Physical characteristics of doughs - Part 1:
Determination of water absorption and rheological properties
using a farinograph (ISO 5530-1:2013)**

Farines de blé tendre - Caractéristiques physiques des pâtes - Partie 1: Détermination de l'absorption d'eau et des caractéristiques rhéologiques au moyen du farinographe (ISO 5530-1:2013)

Weizenmehl - Physikalische Eigenschaften von Teigen - Teil 1: Bestimmung der Wasserabsorption und der rheologischen Eigenschaften mittels Farinograph (ISO 5530-1:2013)

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 338.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 5530-1:2015

<https://standards.iteh.ai/catalog/standards/sist/ab86df02-63cb-4b60-a79e-263dc6e46114/sist-en-iso-5530-1-2015>

Foreword

The text of ISO 5530-1:2013 has been prepared by Technical Committee ISO/TC 34 "Food products" of the International Organization for Standardization (ISO) and has been taken over as FprEN ISO 5530-1:2014 by Technical Committee CEN/TC 338 "Cereal and cereal products" the secretariat of which is held by AFNOR.

This document is currently submitted to the Unique Acceptance Procedure.

Endorsement notice

The text of ISO 5530-1:2013 has been approved by CEN as FprEN ISO 5530-1:2014 without any modification.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 5530-1:2015](https://standards.iteh.ai/catalog/standards/sist/ab86df02-63cb-4b60-a79e-263dc6e46114/sist-en-iso-5530-1-2015)

<https://standards.iteh.ai/catalog/standards/sist/ab86df02-63cb-4b60-a79e-263dc6e46114/sist-en-iso-5530-1-2015>

INTERNATIONAL
STANDARD

ISO
5530-1

Third edition
2013-04-15

**Wheat flour — Physical
characteristics of doughs —**

Part 1:

**Determination of water absorption
and rheological properties using a
farinograph**

iTeh STANDARD PREVIEW

(standards.iteh.ai)

Farines de blé tendre — Caractéristiques physiques des pâtes —

*Partie 1: Détermination de l'absorption d'eau et des caractéristiques
rhéologiques au moyen du farinographe*

SIST EN ISO 5530-1:2015

<https://standards.iteh.ai/catalog/standards/sist/ab86df02-63cb-4b60-a79e-263dc6e46114/sist-en-iso-5530-1-2015>



Reference number
ISO 5530-1:2013(E)

© ISO 2013

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 5530-1:2015

<https://standards.iteh.ai/catalog/standards/sist/ab86df02-63cb-4b60-a79e-263dc6e46114/sist-en-iso-5530-1-2015>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2013

All rights reserved. Unless otherwise specified, 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
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	3
5 Reagent	3
6 Apparatus	3
7 Sampling	3
8 Procedure	4
8.1 Determination of the moisture content of the flour.....	4
8.2 Preparation of farinograph.....	4
8.3 Test portion.....	4
8.4 Common rules of determination.....	8
9 Evaluation of the farinogram and calculation of the derived rheological characteristics	8
9.1 General.....	8
9.2 Water absorption of flour.....	8
9.3 Characteristics relating to the consistency of dough.....	9
10 Precision	10
10.1 Interlaboratory tests.....	10
10.2 Repeatability.....	11
10.3 Reproducibility.....	11
11 Test report	11
Annex A (informative) Description of the farinograph	12
Annex B (informative) Examples of farinograms	17
Annex C (informative) Results of interlaboratory tests	22
Bibliography	26

ISO 5530-1:2013(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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.

ISO 5530-1 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 4, *Cereals and pulses*.

This third edition cancels and replaces the second edition (ISO 5530-1:1997), which has been technically revised.

ISO 5530 consists of the following parts, under the general title *Wheat flour — Physical characteristics of doughs*:

- *Part 1: Determination of water absorption and rheological properties using a farinograph*
- *Part 2: Determination of rheological properties using an extensograph*
- *Part 3: Determination of water absorption and rheological properties using a valorigraph*

Wheat flour — Physical characteristics of doughs —

Part 1:

Determination of water absorption and rheological properties using a farinograph

1 Scope

This part of ISO 5530 specifies a method, using a farinograph, for the determination of the water absorption of flours and the mixing behaviour of doughs made from them by a constant flour mass procedure, or by a constant dough mass procedure.

The method is applicable to experimental and commercial flour from wheat (*Triticum aestivum* L.).

NOTE This part of ISO 5530 is based on ICC 115/1^[1] and AACC Method 54-21.2.^[2]

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 712, *Cereals and cereal products — Determination of moisture content — Reference method*

3 Terms and definitions

For the purposes of this part of ISO 5530, the following terms and definitions apply.

3.1

consistency

resistance of a dough to being mixed in a farinograph at a specified constant speed

Note 1 to entry: It is expressed in farinograph arbitrary units (see 3.2).

3.2

farinograph unit

FU

arbitrary unit for consistency on the farinogram

Note 1 to entry: For the mathematical expression of farinograph units, see 6.1.

Note 2 to entry: It is also possible to define “farinograph unit (FU)” as a twisting moment of 100 g·cm, measured in the axis of the mixer.

3.3

maximum consistency

consistency measured at the end of dough development time

Note 1 to entry: For the mathematical expression of maximum consistency, see 9.2.

Note 2 to entry: It is expressed in farinograph units (FU).

Note 3 to entry: See 3.7.

ISO 5530-1:2013(E)**3.4****water absorption of flour**

volume of water required to produce a dough with a maximum consistency of 500 FU, under the specified operating conditions

Note 1 to entry: Water absorption is expressed in millilitres per 100 g of flour at 14 % (mass fraction) moisture content to an accuracy of 0,1 ml.

3.5**dough development time****DDT**

peak time

time from the beginning of the addition of water to the point on the curve immediately before the first sign of the decrease of maximum consistency

Note 1 to entry: In those cases where two maxima are observed, use the second maximum to measure the dough development time.

Note 2 to entry: See [Figure 1](#) and 9.3.

Note 3 to entry: It is expressed in minutes to the nearest 0,1 min.

3.6**stability**

difference in time between the point where the top part of the curve intercepts, for the first time, the line of 500 FU and the last point where leaves this line

Note 1 to entry: This value, in general, gives some indication of the tolerance of the flour to mixing.

Note 2 to entry: When the maximum consistency deviates from the (500 ± 20) FU line, the line of this consistency should be used to read the interceptions.

Note 3 to entry: The stability is expressed in minutes, to an accuracy of 0,5 min.

3.7**degree of softening**

difference between the centre of the curve at the point where it begins to decline and the centre of the curve 12 min after that point

Note 1 to entry: It is expressed in farinograph units (FU).

Note 2 to entry: In the case where two peaks appear, the second peak is considered.

Note 3 to entry: The degree of softening should be expressed to the nearest 5 FU.

Note 4 to entry: If another time is used to carry out this method, this has to be detailed in the report along with information on the reference standard applied. The definite time is usually 12 min.

3.8**mixing tolerance index****MTI**

difference from the top of the curve at peak (DDT) to the top of the curve measured at 5 min after peak is reached

Note 1 to entry: It is expressed in farinograph units (FU).

3.9**farinograph quality number****FQN**

length, along the time axis, between the point of the addition of water and the point where the height of the centre of the curve has decreased by 30 FU, compared to the height of the centre of the curve at DDT

Note 1 to entry: It is expressed in millimetres to an accuracy of 1 mm.