



SLOVENSKI STANDARD
kSIST FprEN ISO 17718:2014
01-september-2014

Polnozrnata in pšenična moka (*Triticum aestivum* L.) - Ugotavljanje reoloških lastnosti kot funkcija mešanja in porasta temperature (ISO 17718:2013)

Wholemeal and flour from wheat (*Triticum aestivum* L.) - Determination of rheological behaviour as a function of mixing and temperature increase (ISO 17718:2013)

Weizenvollkorn- und Weizenmehl (*Triticum aestivum* L.) - Bestimmung der rheologischen Eigenschaften als Funktion von Kneten und Temperaturanstieg (ISO 17718:2013)

Farine et mouture complète de blé tendre (*Triticum aestivum* L.) - Détermination du comportement rhéologique des pâtes en fonction du pétrissage et de l'augmentation de la température (ISO 17718:2013)

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

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June 2014

ICS 67.060

English Version

**Wholemeal and flour from wheat (*Triticum aestivum* L.) -
Determination of rheological behaviour as a function of mixing
and temperature increase (ISO 17718:2013)**

Farine et mouture complète de blé tendre (*Triticum aestivum* L.) - Détermination du comportement rhéologique des pâtes en fonction du pétrissage et de l'augmentation de la température (ISO 17718:2013)

Weizenvollkorn- und Weizenmehl (*Triticum aestivum* L.) - Bestimmung der rheologischen Eigenschaften als Funktion von Kneten und Temperaturanstieg (ISO 17718:2013)

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.

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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.

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Foreword

The text of ISO 17718:2013 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 17718:2014 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 17718:2013 has been approved by CEN as FprEN ISO 17718:2014 without any modification.

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**Wholemeal and flour from
wheat (*Triticum aestivum* L.) —
Determination of rheological
behaviour as a function of mixing and
temperature increase**

*Farine et mouture complète de blé tendre (Triticum aestivum
L.) — Détermination du comportement rhéologique en fonction du
pétrissage et de l'augmentation de la température*

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ISO 17718:2013(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 17718 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 4, *Cereals and pulses*.

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Introduction

The behaviour of dough is dependent on numerous parameters. Some of these parameters, such as water absorption, dough development time, and kneading stability, are linked to the quality and quantity of the proteins, while other parameters, such as gelatinization, gelling stability, and retrogradation, are linked to the properties of the starch.

The Mixolab®¹⁾ measures the torque between two mixing arms during kneading while varying the in-bowl temperature, making it possible to gain in-depth information on samples and thus gain a better understanding of the characteristics of tested wheat or flours.

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Wholemeal and flour from wheat (*Triticum aestivum* L.) — Determination of rheological behaviour as a function of mixing and temperature increase

1 Scope

This International Standard specifies the determination of rheological behaviour as a function of mixing and temperature increase. It is applicable to all wholemeal and flour samples from industrial or laboratory milling of wheat (*Triticum aestivum* L.).

NOTE Wheat can be milled in the laboratory according to the methods described in ISO 27971^[5] or in BIPEA guidance document BY.102.D.9302.^[7]

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 document, the following terms and definitions apply.

3.1 <https://standards.iteh.ai/catalog/standards/sist/556546c5-3a68-4efe-a18e-3deca72fcc4b/sist-en-iso-17718-2015>
water absorption

volume of water required to obtain a dough with a maximum consistency of $(1,10 \pm 0,05)$ Nm

Note 1 to entry: Water absorption is expressed in millilitres per 100 g of flour with a moisture content of 14 % mass fraction.

3.2

time T1

time required for the dough to reach the target consistency C1 of $(1,10 \pm 0,05)$ Nm

Note 1 to entry: Development time is expressed in minutes.

3.3

stability

calculated time during which the dough achieves a consistency higher than $C1 - 11 \% \times C1$

4 Principle

Dough behaviour is determined as it is subjected to a combined kneading and temperature treatment during a constant temperature phase, followed by a heating phase, then held at high temperature, and subsequently cooled. Water is added to flour to achieve a maximum dough consistency of $(1,10 \pm 0,05)$ Nm during the first constant temperature phase.

The dough is first kneaded between two mixing arms rotating in opposite directions at 80 r/min, at a starting temperature of 30 °C. The torque that the dough creates between the two mixing arms is recorded. Kneading then continues while temperature is increased to 90 °C at a rate of 4 °C/min. The