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**Wheat, rye and their flours, durum wheat  
and durum wheat semolina —  
Determination of the falling number  
according to Hagberg-Perten**

*Blés tendres, seigles et leurs farines, blés durs et leurs semoules —  
Détermination de l'indice de chute selon Hagberg-Perten*



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# Contents

Page

Foreword .....	iv
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	1
4 Principle .....	2
5 Reagents .....	2
6 Apparatus .....	2
7 Sampling .....	3
8 Preparation of test sample .....	3
8.1 Whole grain .....	3
8.2 Flour and semolina samples .....	4
9 Procedure .....	4
9.1 Determination of the moisture content .....	4
9.2 Test portion .....	4
9.3 Determination of falling number .....	5
9.4 Calculation .....	6
10 Precision .....	7
10.1 Interlaboratory tests .....	7
10.2 Repeatability .....	7
10.3 Reproducibility .....	7
11 Test report .....	8
Annex A (normative) Equations for altitude correction of falling numbers .....	9
Annex B (informative) Results of interlaboratory tests .....	10
Bibliography .....	13

## 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.

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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.

ISO draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the falling number apparatus specified in 6.1.

ISO takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the ISO that he is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with the ISO. Information may be obtained from:

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ISO 3093 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 4, *Cereals and pulses*.

This fourth edition cancels and replaces the third edition (ISO 3093:2004), of which it constitutes a minor revision. It also incorporates the Technical Corrigendum, ISO 3093:2004/Cor.1:2008.

# Wheat, rye and their flours, durum wheat and durum wheat semolina — Determination of the falling number according to Hagberg-Perten

## 1 Scope

This International Standard specifies the determination of the  $\alpha$ -amylase activity of cereals by the falling number (FN) method according to Hagberg-Perten.

This method is applicable to cereal grains, in particular to wheat and rye and their flours, durum wheat and its semolina.

This method is not applicable to the determination of low levels of  $\alpha$ -amylase activity.

By converting the FN into a liquefaction number (LN), it is possible to use this method to estimate the composition of mixtures of grain, flour or semolina with known FNs necessary to produce a sample of a required FN.

## 2 Normative references

The following referenced documents are indispensable for the application 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 712, *Cereals and cereal products — Determination of moisture content — Reference method*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### falling number

#### FN

*t*

total time required to activate a viscometer stirrer and allow it to fall a predetermined distance through an aqueous gel prepared from heating a mixture of flour or semolina, and water in a viscometer tube, and which is undergoing liquefaction due to attack by the enzyme  $\alpha$ -amylase

NOTE 1 Time is counted from immersion in the water bath.

NOTE 2 The falling number is expressed in seconds.