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Interested committees:

Title: Draft BS EN ISO 21415-2 Wheat and wheat flour — Gluten content. Part 2: Determination of wet gluten and gluten index by mechanical means.

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Introduction

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 21415-2

Wheat and wheat flour — Gluten content —

Part 2: Determination of wet gluten and gluten index by mechanical means

Blé et farines de blé — Teneur en gluten —

*Partie 2: Détermination du gluten humide et du gluten index par
des moyens mécaniques*

ICS: 67.060

ISO/TC 34/SC 4

Secretariat: **SAC**

Voting begins on:
2025-07-24

Voting terminates on:
2025-10-16

This document is circulated as received from the committee secretariat.

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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).

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The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 4, *Cereals and pulses*.

This third edition of ISO 21415-2 cancels and replaces the second edition (ISO 21415-2:2015). It has been technically revised by adding reproducibility requirements (see [10.3](#)) in accordance with practical observations in proficiency tests (see [Annex D](#)).

ISO 21415 consists of the following parts, under the general title *Wheat and wheat flour — Gluten content*:

- *Part 1: Determination of wet gluten by a manual method*
- *Part 2: Determination of wet gluten and gluten index by mechanical means*
- *Part 3: Determination of dry gluten from wet gluten by using an oven-drying method*
- *Part 4: Determination of dry gluten from wet gluten by a rapid drying method*

Introduction

The alternative techniques specified in this part of ISO 21415 and in ISO 21415-1 for isolation of wet gluten (i.e. manual extraction and mechanical extraction) do not generally yield equivalent results. The reason for this is that for full development of the gluten structure the dough needs to be allowed to rest. Hence, the result obtained by manual extraction is usually greater than that obtained by mechanical extraction, especially in the case of wheat with high gluten content. Therefore, the test report should always state the technique used.

Wheat and wheat flour — Gluten content —

Part 2:

Determination of wet gluten and gluten index by mechanical means

1 Scope

This part of ISO 21415 specifies a method for determining the content of wet gluten and the gluten index for wheat flours (*Triticum aestivum* L. and *Triticum durum* Desf.) by mechanical means. This method is directly applicable to flours. It also applies to common and durum wheat after grinding, if their particular size distribution meets the specification given in [Table B.1](#).

2 Terms and definitions

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

2.1

wet gluten

viscoelastic substance consisting mainly of two protein fractions (gliadin and glutenin) in hydrated form, obtained in the way indicated in this part of ISO 21415 or in ISO 21415-1

2.2

gluten index

mass proportion of wet gluten remaining on the sieve after centrifugation

Note 1 to entry: The higher the index, the stronger the gluten is.

2.3

ground wheat

result of experimental grinding of whole wheat with the granulometry cited in [Table B.1](#)

2.4

flour

finely ground wheat endosperm with a granulometry of less than 250 µm

3 Principle

Preparation of a paste from a sample of flour or of ground wheat and a sodium chloride solution in the equipment's chamber; separation of the wet gluten by washing this paste with a sodium chloride solution, followed by removal of excess washing solution by centrifugation and weighing the residue. The gluten index is obtained after centrifuging to force the wet gluten through a special sieve. The percentage of wet gluten remaining on the sieve after centrifuging is defined as the gluten index.

4 Reagents

Use only reagents of recognized analytical grade, unless otherwise specified and distilled or demineralized water, or water of equivalent purity.

4.1 Sodium chloride solution, 20 g/l.

Dissolve 200 g of sodium chloride (NaCl) in water, then dilute to 10 l. When using this, it is recommended that the temperature of the solution be $22\text{ °C} \pm 2\text{ °C}$.

4.2 Solution of iodine/potassium iodide (Lugol's solution).

Dissolve 2,54 g of potassium iodide (KI) in water. Add 1,27 g of iodine (I₂) to this solution and, when the reagents have completely dissolved, dilute to 100 ml with water.

5 Apparatus

Usual laboratory apparatus and, in particular, the following items.

5.1 Automatic gluten separation unit ¹⁾, (single or double) consisting of a washing/mixing chamber, mill(s) (see [Figures A.1](#) and [A.2](#)) and an electronically controlled distribution device for extracting the gluten.

5.1.1 Mixing/washing chamber(s), fitted with replaceable chrome-plated sieve support(s) with polyester sieves with an 88 µm mesh gap and polyamide sieves with an 840 µm mesh gap.

The distance between the mixing hook and the chrome-plated sieve support shall be $0,7\text{ mm} \pm 0,05\text{ mm}$. This value should be checked with the calibrated thickness shims supplied.

5.1.2 10 l plastic drum, to contain the sodium chloride solution ([4.1](#)) connected to the equipment by a plastic tube.

5.1.3 Distribution system, consisting of a peristaltic pump allowing the sodium chloride solution ([4.1](#)) used for washing the gluten to be delivered at a constant rate of between 50 ml/min and 56 ml/min.

For a detailed description of the unit and for detailed operating instructions, users of this part of ISO 21415 should consult the leaflet of the maker of the equipment used.

5.2 Dispenser, for the sodium chloride solution, permitting delivery of 3 ml to 10 ml with an accuracy of $\pm 0,1\text{ ml}$.

5.3 Centrifuge, capable of maintaining a rotational frequency of $6\,000 \pm 5$ per minute and producing a radial acceleration of $2\,000\text{ g}$, fitted with 2 perforated plates with holes of diameter 600 µm or 2 sieve cassettes with a 22 mm in diameter grid containing 600 µm holes, to determine the gluten index (cf. [Figures A.3](#) and [A.4](#)).

5.4 Balance, with a display precision of 0,001 g and capable of weighing to the nearest 0,01 g.

5.5 Stainless steel spatula.

5.6 Beakers with 500 ml capacity (to catch the rinsing water).

5.7 Stainless steel or plastic grippers.

5.8 Lab grinder, capable of producing a ground product with a granulometry meeting the requirements of [Table B.1](#).

1) The Glutomatic unit (types 2100 and 2200) made by Perten Instruments AB (Sweden) is the mechanical device most widely used at present for this purpose. This information is given for the benefit of users of this part of ISO 21415 and in no way implies that ISO approves or recommends exclusive use of this device. Other equipment may also be used if it yields similar results to those of the Glutomatic unit or those of the method described in ISO 21415-1.