

# INTERNATIONAL STANDARD

**ISO  
5223**

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## Test sieves for cereals

*Tamis de contrôle pour céréales*

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## Foreword

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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.

International Standard ISO 5223 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Subcommittee SC 4, *Cereals and pulses*, in collaboration with the International Association for Cereal Science and Technology (ICC).

This third edition cancels and replaces the second edition (ISO 5223:1983), which has been technically revised.

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## Introduction

The commercial value of a batch of cereals is affected by the presence of undesirable substances. The amount of these substances in a sample is measured by carrying out various separating processes, of which the principal one is test sieving.

The test sieving procedure is carried out under conditions determined by commercial practice, contracts or official regulations, with low accuracy. Consequently, more often than not, the only dimensions given for test sieves are the diameter or the width of the apertures in the perforated plate. The other features of test sieves are not normally specified, despite their effect on the results.

Therefore, this international Standard describes those test sieves most frequently used in commerce.

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# Test sieves for cereals

## 1 Scope

This International Standard specifies requirements for test sieves to be used for the laboratory determination of undesirable substances in a sample of cereals and which pass through test sieves of the following nominal sizes:

a) test sieves with long rounded apertures:

1,00 mm × 20,0 mm  
1,70 mm × 20,0 mm  
1,80 mm × 20,0 mm  
1,90 mm × 20,0 mm  
2,00 mm × 20,0 mm  
2,20 mm × 20,0 mm  
2,50 mm × 20,0 mm  
2,80 mm × 20,0 mm  
3,55 mm × 20,0 mm

b) test sieves with round apertures:

diameter 4,50 mm

Test sieves with long rounded apertures listed in a) are used in particular for separating "shrivelled" kernels from rye, durum wheat, common wheat and barley, with the exception of those with apertures of diameters 2,50 mm and 2,80 mm, which are usually used for the calibration of malting barley.

Test sieves with round apertures of diameter 4,50 mm are used for separating broken grains from maize.

This International Standard does not apply to test sieves used for testing grain for insect infestation.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2395:1990, *Test sieves and test sieving — Vocabulary*.

ISO 3310-2:1990, *Test sieves — Technical requirements and testing — Part 2: Test sieves of perforated metal plate*.

## 3 Definitions

For the purposes of this International Standard, the definitions given in ISO 2395 apply.

## 4 Requirements

### 4.1 General

All parts shall be made of metal. A cover and a receiver, made of the same metal and gauge as the sieve frame, shall be used.

In the case of test sieves with long rounded apertures, test sieving is carried out using one or more test sieves. In the latter case, the test sieves shall have different nominal aperture sizes and shall constitute a regular or irregular set of test sieves.

## 4.2 Sieving medium

The sieving medium shall consist of stainless steel, plated mild steel, or other suitable material<sup>1)</sup>. It shall be attached to the frame by welding or by other methods so that it cannot become detached from the frame. It is recommended that the same type of sieving medium be used for all test sieves in one analysis.

Holes in perforated plates shall be cleanly formed. The plates shall be mounted punch-side uppermost.

### 4.2.1 Test sieves with long rounded apertures

The characteristics of test sieves are given in table 1.

The apertures shall be arranged in lines as shown in figure 1.

There shall be no part-slots at the junction of the sieving medium with sieve frame.

### 4.2.2 Test sieves with round apertures

Unless otherwise specified in this International Standard, test sieves with round apertures shall comply with the requirements of ISO 3310-2 and, in particular, shall have the following characteristics:

- nominal diameter of aperture ( $w$ ): 4,50 mm;
- aperture tolerance:  $\pm 0,14$  mm;
- pitch (centres) ( $p$ ): 6,3 mm nominal; 7,2 mm max.; 5,3 mm min.

The apertures shall be arranged in staggered rows as shown in figure 2.

**Table 1 — Characteristics of test sieves with long rounded apertures and linear perforations**

Dimensions in millimetres

Dimensions of apertures				Pitches <sup>1)</sup>					Plate thickness
Width	Tolerance on width	Length	Tolerance on length		Normal tolerance	Reduced tolerance		Tolerance	
$w_1$	$\pm \Delta w_1$	$w_2$	$\pm \Delta w_2$	$p_1$	$\pm \Delta p_1$	$\pm \Delta p_1$	$p_2$	$\pm \Delta p_2$	
1,00	0,03	20,0	0,2	3,0	0,20	0,10	25,0	0,5	0,5 to 0,6
1,70	0,04	20,0	0,2	4,0	0,24	0,12	25,0	0,5	0,8 to 0,9
1,80	0,04	20,0	0,2	4,2	0,24	0,12	25,0	0,5	0,8 to 0,9
1,90	0,04	20,0	0,2	4,3	0,24	0,12	25,0	0,5	0,8 to 0,9
2,00	0,04	20,0	0,2	4,5	0,26	0,13	25,0	0,5	0,8 to 0,9
2,20	0,05	20,0	0,2	4,9	0,26	0,13	25,0	0,5	0,8 to 0,9
2,50	0,05	20,0	0,2	4,9	0,26	0,13	25,0	0,5	0,8 to 0,9
2,80	0,05	20,0	0,2	4,9	0,26	0,13	25,0	0,5	0,8 to 0,9
3,55	0,06	20,0	0,2	6,8	0,34	0,17	25,0	0,5	0,8 to 0,9

1) See figure 1.

1) For further details, see ISO 683-13:1986, *Heat-treatable steels, alloy steels and free-cutting steels — Part 13: Wrought stainless steels*.