
**Woven polypropylene sacks for bulk
packaging of foodstuffs**

*Sacs tissés en polypropylène pour l'emballage en vrac de denrées
alimentaires*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 23560:2008](https://standards.iteh.ai/catalog/standards/sist/1078014a-6eaf-4bf9-8430-d040fe86a207/iso-23560-2008)

[https://standards.iteh.ai/catalog/standards/sist/1078014a-6eaf-4bf9-8430-
d040fe86a207/iso-23560-2008](https://standards.iteh.ai/catalog/standards/sist/1078014a-6eaf-4bf9-8430-d040fe86a207/iso-23560-2008)



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 23560:2008

<https://standards.iteh.ai/catalog/standards/sist/1078014a-6eaf-4bf9-8430-d040fe86a207/iso-23560-2008>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing 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
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	1
4 Manufacture.....	1
4.1 Raw materials	1
4.2 Fabric	2
5 Sack.....	2
6 Liner	3
7 Requirements	3
7.1 Conditioning and test conditions.....	3
7.2 Construction parameters	3
7.3 UV resistance	3
7.4 Mass of the bale	3
7.5 Drop testing	3
8 Food compatibility	3
9 Marking and packaging	3
9.1 Marking on sacks.....	3
9.2 Packaging	3
9.3 Marking on bales.....	4
10 Sampling and criteria for conformity.....	4
10.1 Sampling.....	4
10.2 Criteria for conformity	4
Annex A (normative) Method of calculation of the mass of a sack	6
Annex B (normative) Breaking strength of fabric and bottom seam	7
Annex C (normative) Drop testing.....	8
Bibliography	9

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 23560 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*.

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO 23560:2008

<https://standards.iteh.ai/catalog/standards/sist/1078014a-6eaf-4bf9-8430-d040fe86a207/iso-23560-2008>

Introduction

With the removal of trade barriers between nations, there is a need for an International Standard for the packaging, transportation and storage of foodstuffs such as cereals. Polypropylene (PP) sacks made from woven fabric are an ideal choice for the packaging of foodstuffs. Such sacks are produced from food-grade polypropylene and ensure the mechanical strength needed for storage and transportation.

This International Standard describes the construction of the sacks, their dimensions and test methods suitable for ensuring the long-term storage and transportation of foodstuffs in the sacks.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO 23560:2008](https://standards.iteh.ai/catalog/standards/sist/1078014a-6eaf-4bf9-8430-d040fe86a207/iso-23560-2008)

<https://standards.iteh.ai/catalog/standards/sist/1078014a-6eaf-4bf9-8430-d040fe86a207/iso-23560-2008>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 23560:2008

<https://standards.iteh.ai/catalog/standards/sist/1078014a-6eaf-4bf9-8430-d040fe86a207/iso-23560-2008>

Woven polypropylene sacks for bulk packaging of foodstuffs

1 Scope

This International Standard specifies the general characteristics, requirements and methods of test for woven polypropylene (PP) sacks. It is applicable to woven PP sacks, having a capacity of 50 kg or 25 kg, intended for the transport and storage of foodstuffs, such as cereals, sugar and pulses.

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 291, *Plastics — Standard atmospheres for conditioning and testing*

ISO 4892-3:2006, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps*

ISO 4915, *Textiles — Stitch types — Classification and terminology*

ISO 6591-2, *Packaging — Sacks — Description and method of measurement — Part 2: Empty sacks made from thermoplastic flexible film*

ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method*

ISO 13935-1, *Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 1: Determination of maximum force to seam rupture using the strip method*

3 Terms and definitions

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

3.1

woven PP sack

container made of woven polypropylene (PP) fabric, closed at one end, in certain cases combined with other flexible materials used, for instance, for the liner to provide the properties required for filling, storage and distribution of the packaged commodity

4 Manufacture

4.1 Raw materials

A suitable grade of PP conforming to food contact requirements shall be utilized in the manufacture of the PP tape/fabric used in the sacks.

4.2 Fabric

The fabric used in the manufacture of woven PP sacks shall be woven as a tube on a circular loom from PP tapes having a width of $(2,5 \pm 1)$ mm. The tapes shall be woven sufficiently tightly so that the packaged foodstuff does not leak out of the sack. The construction of the weave shall be sufficiently rough to ensure that filled sacks do not slip from a stack of sacks.

The required construction parameters of sacks are given in Table 1.

Table 1 — Required construction parameters of fabric and sacks

Parameter		Requirement		Test method
		Type 1	Type 2	
Capacity (kg)		50	25	—
Dimensions (cm)	Inside length	100 ⁺² / ₀	65 ⁺² / ₀	ISO 6591-2
	Inside width	57 ⁰ / ₋₁	48 ⁰ / ₋₁	
Mass of sack (g)		135 ⁺⁹ / ₋₄	67 ⁺⁴ / ₋₃	See Annex A
Average breaking strength of fabric (N)	Lengthwise	≥ 918	≥ 816	See Annex B
	Widthwise	≥ 918	≥ 816	
Elongation at break of fabric (%)	Lengthwise	(20 ± 5)	(20 ± 5)	See Annex B
	Widthwise	(20 ± 5)	(20 ± 5)	
Average breaking strength of bottom seam (N)		≥ 377	≥ 337	See Annex B
NOTE 1	The dimensions specified provide the optimum free space of at least 20 % of the length above the surface of the contents.			
NOTE 2	The masses given for the sacks are based on typical ones for fabric weighing 106 g/m ² for type 1 sacks and 96 g/m ² for type 2 sacks.			
NOTE 3	The average breaking strength of the fabric and the average breaking strength of the bottom seam are calculated with respect to a specimen width of 50 mm.			

Woven PP sacks of the dimensions specified in Table 1 are suitable for the packaging of foodstuffs such as wheat, rice, pulses, millet and other, similar, grains. Other sack dimensions are allowed by agreement between the purchaser and seller. The mass of such sacks shall be calculated by the method given in Annex A.

5 Sack

5.1 The sack may be flat or gusseted.

5.2 The bottom seam shall be stitched with two rows of chain stitches in accordance with ISO 4915. The two rows of stitches shall be separated from each other by at least 4 mm and the outer stitch shall be at least 7 mm from the outer edge of the sack. The stitching shall be done through a single or double fold, so that the stitches pass through a minimum of four layers of the fabric, made in such a way that the seam width is at least 25 mm. The number of stitches per unit length shall be (14 ± 2) stitches/dm. These requirements shall be verified by visual inspection.

5.3 The material used for stitching shall be polypropylene tape or any other thread suitable for the purpose. The stitching shall be uniform with no loose thread or knots. These requirements shall be verified by visual inspection.

5.4 The closure of the filled sack shall be designed to prevent leakage of the contents during transport and handling.

6 Liner

If required by the buyer, the unlaminated sacks shall be provided with a loose liner made of a suitable polyolefin film conforming to the requirements for food contact. The width of the liner shall be 10 % more than the width of the sack. The bottom seam of the liner shall be at least 25 mm from its bottom edge. The liner shall be free from pinholes, patches, tears, blisters and other visible defects.

7 Requirements

7.1 Conditioning and test conditions

The atmospheres for conditioning and testing shall be as specified in ISO 291.

7.2 Construction parameters

The sacks shall conform to the requirements specified in Table 1, within the limits specified in 10.2.

7.3 UV resistance

Sacks made of UV-stabilized fabric shall retain at least 50 % of their original breaking strength when tested (see Annex B) after exposure to UV radiation and weathering for 144 h in accordance with the procedure given in ISO 4892-3:2006, Table 4, method A, cycle No. 1.

7.4 Mass of the bale

The mass of a bale of sacks (excluding packing material) shall be within ± 3 % of the mass calculated by multiplying the number of sacks by the mass specified in Table 1 for one sack.

7.5 Drop testing

When tested in accordance with Annex C, sacks shall meet the requirements specified in that annex.

8 Food compatibility

When used for foodstuffs, as will normally be the case, the sacks shall meet the legal requirements for food contact of the country where they are to be used.

9 Marking and packaging

9.1 Marking on sacks

The identification mark of the manufacturer, along with any information required by the buyer, shall be printed on the sacks, using ink or another suitable method that will ensure legibility during use.

9.2 Packaging

The sacks shall be packed to form a circular bale, using a layer of woven PP fabric for wrapping, and suitably secured. Each bale shall contain 500 sacks or a multiple thereof.