

**DRAFT Indian
Standard**

**Textiles — Jute Bags for
Pouring or Filling of 5 kg, 10 kg
and 15 kg Food grains —
Specification**

ICS XXXXXX

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BUREAU OF INDIAN STANDARDS

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.org.in www.standardsbis.in

FOREWORD

~~This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by Jute and Jute Products Sectional Committee had been approved by the Textile Division Council.~~

~~With the enactment of *The National Food Security Bill, 2013*, there has been an urgent need for packaging food grains in small pack sizes of 5, 10 and 15 kg.~~

~~For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.~~

Indian Standard

TEXTILES — JUTE BAGS FOR POURING OR FILLING OF 5 kg, 10 kg AND 15 kg FOODGRAINS — SPECIFICATION

1 SCOPE

This standard prescribes constructional details and other requirements of jute bags for pouring or filling of 5 kg, 10 kg and 15 kg foodgrains.

2 REFERENCES

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

<i>IS No.</i>	<i>Title</i>
5476 : 1986	Glossary of term relating to jute (<i>first revision</i>)
9113 : 2012	Textiles — Jute sacking — General requirements (<i>second revision</i>)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 5476 shall apply.

4 MANUFACTURE

4.1 The bags shall be made from plain woven jute hessian fabric of uniform construction having nominal mass of 267 g/m².

There shall be with or without id-mark as agreed to between the buyer and the seller. The constructional particulars of sacking used in the fabrication of the bags shall be such that the bags meet the requirements specified in Table 1.

4.2 Seam

The side and bottom (for Gusset bags) seams of bags shall be sewn with lock stitched with the base fabric of bags. The gusset is folded laterally with a hemming width of 1.5 ± 0.5 cm and lock stitched with the base fabric. The thread will be made by 60 Tex polyester yarn. The number of stitches per decimetre shall be 10 ± 1.

4.3 Lock stitched at the Mouth

Mouth of the bags shall be stitched by lock stitched and will be made by 60 Tex polyester yarn. The number of stitches per decimeter shall be 10 ± 1.

4.4 Bag Handle

The handle of the bag should be made by cotton webbing, it should be flat and the colour will be off white.

4.4.1 “Bag handle length” is defined as the requisite portion of the handle that is stitched with the two surface points on the base fabric of the bag.

4.5 Freedom from Defects

The bags shall meet the requirement of freedom from major defects as given in Annex A.

5 SPECIFIC REQUIREMENTS

5.1 The bags shall conform to the requirements specified in Table 1.

5.2 The cartons containing the bags shall also conform to the requirements specified in Table 2.

5.3 The contract moisture regain shall be 16 percent.

5.4 Additional Requirements for Labeling as Environment Friendly Products

5.4.1 General Requirement

5.4.1.1 The bags shall conform to the requirements for quality and performance prescribed under 5.1 to 5.3.

5.4.1.2 The manufacturers shall produce to BIS, environmental consent clearance from the concerned State Pollution Control Board as per the provisions of *Water (Prevention and Control of Pollution) Act, 1974* and *Air (Preventions and Control of Pollution) Act, 1981* along with the authorization, if required under the *Environment (Products) Act, 1986* and the Rules made there under, while applying for ECO-Mark. Additionally, the manufacturer shall produce documentary evidence on compliance of the provisions related to noise level and occupational health under the provisions of *Factory Act, 1948* and Rules made there under.

5.4.1.3 The product packaging may display in brief the criteria based on which the product has been labeled environment friendly.

5.4.1.4 The material used for product packaging shall be reusable or made from recyclable or biodegradable materials.

Table 1: Requirements of Jute Bags								
(Clauses 4.1 and 5.1)								
Sl. No.	Characteristics	Requirements					Tolerance	Method of Test,
		Type 1	Type 2	Type 3	Type 4	Type 5		Ref to Clause of IS: 9113
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(i)	Capacity, kg	5	10	10	15	15		---
(ii)	Type of fabric	Natural	Natural	Stiffening	Natural	Stiffening		
(iii)	Type of Stitching	Corner fold	Corner fold	With Gusset	Corner fold	With Gusset		
(iv)	Dimension (see Note) :							8.3.2
	a) Outside Width, cm	35	45	43	50	50	(+2) (-0)	
	b) Outside Height, cm	35	38	35	40	35	(+2) (-0)	
	c) Gusset Width, cm	10	15	15	20	20	(+2) (-0)	
	d) Handle, cm	2.5 X 35	2.5 X 40	2.5 X 40	2.5 X 40	2.5 X 40		
(v)	Ends/dm	48	48	48	48	48	(+2) (-2)	8.4.2
(vi)	Pick/dm	48	48	48	48	48	(+2) (-2)	8.4.2
(vii)	Corrected mass/bag (g) (see Note)	122	165	220	190	265	(+4%) (-2%)	8.5.2
(viii)	Average Breaking Strength of Bag (Raveled strip method, 10 cm X 20 cm), Min, kgf (N) :							8.6.2
	a) Warp way	138 (1358)	114 (1118)	156 (1530)	125 (1231)	156 (1530)		
	b) Weft way	166 (1628)	159 (1564)	128 (1260)	150 (1471)	161 (1579)		
(ix)	Average Seam Strength (5 cm X 20 cm raveled strip), Min, kgf (N) :	13	13	13	13	13		8.7
(ix)	Average Load Strength of Bag (Hanging method, 1.22 m height, with deserved load for 1 hour), Min	No Damage						
(x)	Moisture Regain, percent, Max	16.0	16.0	16.0	16.0	16.0		8.2
(xi)	Oil-content on dry de-oiled material, Max	3.0	3.0	3.0	3.0	3.0		8.8

NOTES

1 The bags of specified dimensions are suitable for packing of wheat, rice and similar coarse grains. For packing of other materials, the buyer and the seller may agree to the dimensions other than those specified above. The mass of such bags may be calculated by the method given in 5.3 of IS 9113. However, tolerances specified in this table for dimension and on the mass shall be permissible.

2 Average moisture regain shall be maximum 16 percent. However, 10 percent of the individual value of moisture regain percent may be above 16 percent with an upper limit of 20 percent.

Table 2 Requirements of Packed Cartons

(Clause 5.2)

SI No. (1)	Characteristic (2)	Requirement (3)			Method of Test, Ref to Clause of IS 9113 (4)
		5 kg	10 Kg	15 kg	
i)	Total number of bags per carton ¹	100	50	50	8.9
ii)	Carton size, cm	32*37* 65	40*47*36 (Normal), 42*37*38 (Gusset)	52*42*36 (Normal), 51*37*38 (Gusset)	
ii)	Contract mass of a carton, kg ²	As calculated			—
iii)	Corrected net mass of a carton, kg	Not less than contract mass			8.1

¹ The number of bags per carton shall be 100/50 or as specified in an agreement between the buyer and the seller.

² Contract mass of a bale is calculated as follows:

Contract mass of a carton = Nominal mass of bag × Specified number of bags per carton.

5.4.1.5 Fatty alcohol based non-ionic as emulsifier should be used, wherever required.

5.4.1.6 Polyhalogenated based phenolic fire retardants shall not be used.

5.4.2 Specific Requirements

5.4.2.1 The bags shall conform to the requirements given in Table 3.

6 PACKING

The bags shall be packed in cartons as prescribed in Table-2 (Clause 5.2) or as specified in the agreement between the buyer and the seller.

7 MARKING

7.1 The cartons shall be marked as agreed to between buyer and seller.

7.2 BIS Certification Marking

The cartons may also be marked with the Standard Mark.

7.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

7.3 The cartons may also be marked with ECO-Mark in addition to Standard Mark, if the requirements specified in 5.4 are also satisfied.

8 SAMPLING AND CRITERIA FOR CONFORMITY

8.1 Lot

All cartons of jute bags of same size produced under similar conditions of production and delivered to a

buyer against one dispatch note shall constitute a lot.

8.2 Sample Size and Criteria for Conformity

For assessing the conformity of lot to the requirements of this standard, cartons shall be first selected from each lot at random in accordance with the col. 2 and col. 3 of Table 4. All the cartons so selected in the sample shall be tested for a) Gross mass of cartons, b) Tare mass of carton and other packing materials and c) Number of bags per carton. Seven numbers of bags selected at random from each carton. Selected bags in the sample shall be tested for total number of bags per carton. The lot shall be considered as conforming to the requirements of this standard, if all the following conditions are satisfied:

- Total corrected net mass of all the cartons in the sample is not less than the total mass of all the cartons.
- Total number of bags in each carton selected as per 8.2 meets the relevant requirement.

8.3 Sample Size for Bags

For freedom from defects, length, width, ends/dm, picks/dm, number of stitch/dm, mass per bag and moisture regain, 7 bags shall be selected at random from each of the cartons selected as per 8.2. The total number of bags to be tested from each lot for these requirements is given in col. 5 of Table 4.

8.4 Criteria for Conformity

8.4.1 Criteria for Conformity for Freedom from Defects

Each bag selected in the sample shall be tested for freedom from defects. A bag shall be termed as defective, if it contains two or more major defects (see Annex A). A lot shall be considered conforming to this requirement, if the number of defective is less than or equal to the acceptance number given in col 6 of Table 4. Acceptance number given in Table 4 is on The basis of an AQL of 4.0

percent.

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Table 3 Specific Requirements for ECO-Mark

(Clause 5.4.2.1)

SI No.	Parameter ¹⁾	Maximum Limit, Hessians and Sackings mg/kg (ppm)
(1)	(2)	(3)
i)	Non-halogenated hydrocarbons	3 percent
ii)	a) Pesticides (Sum parameter) ²⁾	1.0
	b) Banned Pesticides	Nil
		(Below detectable limit)
iii)	pH of aqueous extract	6.0 - 7.0
iv)	Coupled aminess from azo-dyes (Sum parameters) ³⁾	50.0
		(Detectable limit using GC-MS)

¹⁾ The methods of tests for ECO-parameters are being developed. Till the methods of tests are standardized, the manufacturer shall declare conformance taking into consideration the chemicals, auxiliaries and dyes used.

²⁾ The list of pesticides used on jute, banned restricted or withdrawn is appended as Annex B.

³⁾ The list of coupled amines released from azo-dyes is appended as Annex C.

8.4.2 Criteria for Conformity for Length, Width, Ends/dm, Picks/dm, Number of Stitches/dm and Moisture Regain

The lot which meets the requirements of **8.4.1** shall be tested for length, width, ends/dm, picks/dm, number of stitches/dm and moisture regain as per the plan. A bag shall be termed as defective, if it fails to meet anyone or more of these requirements. The lot shall be considered as conforming to the requirements of ends/dm, picks/dm, stitches/dm and moisture regain, if the total number of defective found in the sample is less than or equal to the corresponding acceptance number given in col 6 of Table 4.

8.4.3 Criteria for Conformity for Mass per Bag

The lot which meets the above requirements shall then be tested for mass of bag. The lot shall be declared as conforming to this requirement if,

- average value of mass per bag, as obtained for sampled bags is not less than the nominal value specified, and
- the corrected mass of at least 80 percent of the bags under test is in accordance with the requirements specified. Out of the remaining bags, mass of not more than 10 percent of individual value of mass is below the specified value by more than 12 percent of the specified nominal value.

8.5 Sample Size and Criteria for Conformity for Breaking and Load Strength Requirement

The lot, which meets the above requirements, shall then be tested for breaking strength requirements. For this purpose, two bags shall be selected at random from each lot selected in the sample. Suitable test specimens shall be taken from one bag and tested for warpway, weftway and seam strength. Another bag shall be tested for Load strength with appropriate weight. The lot shall be declared as conforming to these requirements if,

- average values of warpway, weftway and seam breaking strengths respectively, as obtained for all test specimens are not less than the corresponding values specified, and
- none of the individual value is less than 12 percent below the specified value.
- Bag taken for load strength, failing the requirement shall be termed as defective. The lot shall be considered as confirming if the bag meets the testing requirements.

8.6 Sample Size and Criteria for Conformity for Oil Content

The lot, which meets the above requirements, shall then be tested for oil content. For this purpose two bags shall be selected out of two different cartons selected as per **8.2**. The lot shall be declared as conforming to this requirement, if both the bags meet the requirement of oil content.

8.7 The lot shall be considered as conforming to the requirements of this standard, if **8.2** and **8.4** to **8.6** are satisfied.

Table 4 Sample Size and Acceptance Numbers*(Clauses 8.2, 8.3, 8.4.1 and 8.4.2)*

Sl No.	No. of Carton in the Lot	No. of Carton in the Sample	For Length, Width, Number of Stitches/dm, Ends/dm, Picks/dm, Moisture Regain		
			No. of Bags from Each Bale	Total Number of Bags in Sample	Acceptance Number
(1)	(2)	(3)	(4)	(5)	(6)
i)	Up to 25	5	7	35	5
ii)	26 to 90	8	7	56	6
iii)	91 to 300	12	7	84	8
iv)	301 to 500	18	7	126	10

NOTE — If the number of cartons in a consignment exceeds 500, the same shall be split into number of lots each comprising maximum of 500 cartons. Joined bags shall also be drawn during sampling of bags for visual inspection and breaking strength test.

ANNEX A*(Clauses 4.5 and 8.4.1)***CLASSIFICATION OF DEFECTS**

Type of Defect	Description	Major	Minor
GAW	> 1.5 cm	x	
	0.5 cm to 1.5 cm		X
Multiple broken/missing warp (end)	Two or more contiguous, regardless of length	x	
Multiple broken weft (pick)	Two or more contiguous, regardless of length	x	
	One pick, full width		X
Cut, hole, tear or patch	Two or more warp or filling threads ruptured at adjoining points	x	
Float	A place in the fabric where warp and weft yarns escape the required interlacement	> 2 cm ²	
		0.5 cm ² to 2 cm ²	X
Gap stitching	Stitches missing	> 1.5 cm	
		0.5 cm to 1.5 cm	X
Corner gap	Corner of the bag not properly stitched resulting in formation of hole	> 1.5 cm	
		0.5 cm to 1.5 cm	X
Mildew	Staining of fabric due to fungal or bacterial growth visible to naked eye	x	

NOTES

- 1 x – Major defects.
X – Minor defects.
- 2 Two minor defects shall be counted as one major defect.

ANNEX B*(Table 3)***LIST OF PESTICIDES USED ON JUTE – BANNED, RESTRICTED OR WITHDRAWN****PESTICIDES REGISTERED FOR USE ON JUTE IN INDIA**

- a) Herbicides : Dalapon
- b) Fungicides : Carbendazim
- c) Insecticides : Carbaryl, Carbofuran,
Endosulfan, Lindane, Phosalone, Quinalphos

EXTRACT FROM LIST OF PESTICIDES NOT APPROVED, RESTRICTED USE, WITHDRAWN OR BANNED IN THE COUNTRY AS ON 10.04.1992**B-2.1 Pesticides not Approved for Use**

2,4, 5-T

B-2.2 Pesticides Restricted for Use

Use of DDT in agriculture is banned. In very special circumstances warranting the use of DDT for plant protection, the State or Central Government may purchase it directly from M/s Hindustan Insecticides Ltd, to be used under expert Government supervision. Use of DDT for public health programme up to 10 000 MT per annum, except in case of any major outbreak, is restricted.

Use of Dieldrin shall be restricted for Locust Control in desert areas by Plant Protection Advisor to the Government of India.

B-2.3 Pesticides Banned/Withdrawn

Pentachlorophenol, Toxaphene and Aldrin.

ANNEX C*(Table 3)***LIST OF COUPLED AMINES RELEASED FROM AZO - DYES**

- | | |
|-----------------------------------|---|
| i) 4-Aminodiphenyl | xii) 3,3' – Dimethylbenzidine |
| ii) 2-Amino-4 -nitrotoluene | xiii) 3,3' – Dimethyl-4,4' diaminodiphenylmethane |
| iii) Benzidine | xiv) <i>p</i> -kresidin (2-Methoxy 5-methylaniline) |
| iv) 4-Chloro- <i>o</i> -toluidine | xv) 4,4' Methylene-bis-(2 -chloraniline) |
| v) 2-Naphylamine | xvi) 4,4' Oxydianiline |
| vi) <i>o</i> -Aminoazotoluene | xvii) 4,4' Thiodianiline |
| vii) <i>p</i> -Chloraniline | xviii) <i>o</i> -Toluidine |
| viii) 2,4-Diaminoanisole | xix) 2,4 – Toluylenediamine |
| ix) 4,4' – Diaminodiphenylmethane | xx) 2,4,5 – Trimethylaniline |
| x) 3,3' – Dimethoxybenzidine | xxi) <i>p</i> -Amino-azobenzene |
| xi) 3,3' – Dimethoxybenzidine | xxii) 2-Methoxyaniline |

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Amendments Issued Since Publication

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BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.org.in

Regional Offices:*Telephones*

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	{ 2323 3641
Eastern : 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700054	{ 2337 8620, 2337 8560
Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022	{ 260 3843 260 9285
Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113	{ 2254 1216, 2254 1442 2254 2519, 2254 2315
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