बस्त्रादि—50 किग्रा खाद्यात्र फैक करने के लिये हल्के भार वाले पट्टन के बोरे — विशिष्ट

Textiles — Light Weight Jute Sacking Bags for Packing 50 kg Foodgrains — Specification

ICS 55.060: 59.060; 67.060

© BIS 2014
FOREWORD

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

The types of bags specified in this standard have been developed after extensive trials keeping in view the guidelines provided by the International Labour Organization (ILO) for not permitting manual carriage of weight exceeding 50 kg by the workers and consumers for their safety.

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 — LIGHT WEIGHT JUTE SACKING BAGS FOR PACKING 50 kg FOODGRAINS — SPECIFICATION

1 SCOPE

This standard prescribes constructional details and other requirements of light weight jute sacking bags for packing 50 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.

<table>
<thead>
<tr>
<th>IS No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3476 : 1986</td>
<td>Glossary of terms relating to jute (first revision)</td>
</tr>
<tr>
<td>9113 : 1993</td>
<td>Textiles — Jute sacking — General requirements (first revision)</td>
</tr>
</tbody>
</table>

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 single piece of twill weave jute sacking of uniform construction as given below with warp running along the length of the bag:

  Type A — Single warp, double well woven on modern shuttleless loom.
  Type B — Double warp, single well woven on conventional shuttle loom.

There shall be a single blue stripe, or stripes woven along the length of the bag or the bag shall be without stripe as agreed 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 two sides of the bags shall be sewn with herkla stitches on selvedge through two layers of sacking as specified in IS 9113. The number of stitches per decimetre shall be 10 ± 1.

4.3 Safety Stitch

If agreed to between the buyer and the seller, a line of safety union stitch shall be provided at the inner edges of the herkla stitches (see IS 9113). The number of safety union stitches per decimetre shall be 10 ± 1.

4.4 Hemming at the Mouth

Provisions of IS 9113 shall apply.

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

5.3 The contact moisture regain shall be 20 percent.

5.4 Additional Requirements for Labelling 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 (Prevention and Control of Pollution) Act, 1981 along with the authorization, if required under the Environment (Products) Act, 1986 and the Rules made thereunder, 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 thereunder.

5.4.1.3 The product packaging may display in brief the criteria based on which the product has been labelled environment friendly.
Table 1 Requirements of Jute Bags
(Clause 4.1 and 3.1)

<table>
<thead>
<tr>
<th>SI No.</th>
<th>Characteristic</th>
<th>Requirement</th>
<th>Tolerance</th>
<th>Method of Test, Ref to Cl of IS 9112</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td>Type A (3)</td>
<td>Type B (4)</td>
<td>(5)</td>
</tr>
<tr>
<td>(2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i)</td>
<td>Dimensions (see Note 1):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>Outside length, cm</td>
<td>94</td>
<td>94</td>
<td>+4 cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+4 cm</td>
</tr>
<tr>
<td>b)</td>
<td>Outside width, cm</td>
<td>57</td>
<td>57</td>
<td>-0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii)</td>
<td>Punched</td>
<td>46</td>
<td>64</td>
<td>+4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-3</td>
</tr>
<tr>
<td>iii)</td>
<td>Packed</td>
<td>30</td>
<td>28</td>
<td>+2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-2</td>
</tr>
<tr>
<td>iv)</td>
<td>Corrected mean Ave. g (see Note 2)</td>
<td>580</td>
<td>580</td>
<td>+8.0 Percent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-6.0 Percent</td>
</tr>
<tr>
<td>v)</td>
<td>Average breaking strength of sacking (woven), slipp method, 30 cm x 20 cm, Min. N (kgf):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Warpway</td>
<td>1,570 (162)</td>
<td>1,570 (162)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Webway</td>
<td>1,420 (160)</td>
<td>1,420 (145)</td>
<td></td>
</tr>
<tr>
<td>vi)</td>
<td>Average tear strength (5 cm x 20 cm, woven, slipp), Min. N (kgf):</td>
<td>490 (50)</td>
<td>490 (50)</td>
<td></td>
</tr>
<tr>
<td>vii)</td>
<td>Moisture regain, percent, Min.</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>viii)</td>
<td>Oil content on dry weight material, Max</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

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 22 percent. However, 16 percent of the individual values of moisture regain percent may be above 22 percent with an upper limit of 36 percent.

Table 2 Requirements of Packed Bales
(Clause 5.2)

<table>
<thead>
<tr>
<th>SI No.</th>
<th>Characteristic</th>
<th>Requirement</th>
<th>Method of Test, Ref to Cl of IS 9113</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>(2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i)</td>
<td>Total number of bags per bale (see Note 1)</td>
<td>510</td>
<td>8.9</td>
</tr>
<tr>
<td>ii)</td>
<td>Number of bags per bundle</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>iii)</td>
<td>Correct mass of 1 bale, Kg (see Note 2)</td>
<td>790</td>
<td></td>
</tr>
<tr>
<td>iv)</td>
<td>Corrected net mass of a bale, kg</td>
<td>Not less than contract mass</td>
<td>8.1</td>
</tr>
<tr>
<td>v)</td>
<td>Number of joined bags per bundle of 21 bags</td>
<td>1</td>
<td>Visual</td>
</tr>
</tbody>
</table>

NOTES
1. The number of bags per bale shall be 510 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 bale = nominal mass of bag x specified number of bags per bale.

5.4.1.4 The material used for product packaging shall be resealable or made from recyclable or biodegradable materials.
5.4.1.5 Fatty alcohol based non-ionic as emulsifier should be used wherever required.
5.4.1.6 Polychlorinated 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 bales as prescribed in IS 2873 or as specified in the agreement between the buyer and the seller.
Table 3 Specific Requirements for ECO-Mark (Clause 5.4.2.1)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Parameter†</th>
<th>Maximum Limit, % or (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-halogenated hydrocarbons</td>
<td>3 percent</td>
</tr>
<tr>
<td>2</td>
<td>Pesticides (Sum parameter) 1a</td>
<td>≤ 1.0</td>
</tr>
<tr>
<td></td>
<td>Burned Pesticides Nil (Below detectable limit)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>pH of aqueous extract</td>
<td>6.0-7.0</td>
</tr>
<tr>
<td>4</td>
<td>Coupled analysis from azo-dyes (Sum parameters) 1b</td>
<td>≤ 2.0 (Not detectable limit using GFC)</td>
</tr>
</tbody>
</table>

*The methods of test for ECO-parameters are being developed by BIS and Textiles Committee. Till the methods of tests are standardized, the manufacturer shall declare conformance taking into consideration the dyes/dyes, auxiliaries and dyes used.

† The list of dyes used on jute, banned restricted or withdrawn is appended as Annex B.

‡ The list of coupled analysis released from azo-dyes is appended as Annex C.

8 SAMPLING AND CRITERIA FOR CONFORMITY

8.1 Lot

All bales 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 conformance of lot to the requirements of this standard, bales shall be first selected from each lot at random in accordance with the col 2 and 3 of Table 4. All the bales so selected in the sample shall be tested for ‘Gross mass of bale’, ‘Tare mass of baling hampers and other packing materials’ and ‘Number of bundles per bale’. Two bundles of bales selected at random from each bale selected in the sample shall be tested for total number of bags per bundle. The lot shall be considered as conforming to the requirements of this standard if all the following conditions are satisfied:

a) Total correct net mass of all the bales in the sample is not less than the total mass of all the bales.

b) Total number of bags in each bale selected as per 8.2 meet the relevant requirement.

8.3 Sample Size for Bags

For freedom from defects, length, width, ends/dm, picks/dm, number of stickers/dm, mass per bag and moisture regain, 16 bags shall be selected at random from each of the bales selected as per 8.2. The total number of bags to be tested from each lot for these requirements to be 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

Table 4 Sample Size and Acceptance Numbers

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>No. of Bales in the Lot</th>
<th>No. of Bales in the Sample</th>
<th>For Length, Width, Number of Stitches/dm, Ends/dm, Picks/dm, Moisture Regain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number of Bags from Each Bale: 16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total Number of Bags in Sample: 80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acceptance Number: 5</td>
</tr>
</tbody>
</table>

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

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 any one or more of these requirements. The lot shall be considered as conforming to the requirements of length, width, 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:

a) Average value of mass per bag, as obtained for sampled bags is not less than the nominal value specified, and

b) Not more than 10 percent of the individual values of mass of bags is below the lower specified value.

8.5 Sample Size and Criteria for Conformity for Breaking Strength Requirement

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

a) 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

b) None of the individual value is less than 20 percent below the specified value.

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 bales 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.
### ANNEX A

(*Clauses 4.5 and 8.4.1*)

**CLASSIFICATION OF DEFECTS**

<table>
<thead>
<tr>
<th>Type of Defect</th>
<th>Description</th>
<th>Major</th>
<th>Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAW</td>
<td>&gt; 1.5 cm</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>0.5 cm to 1.5 cm</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Multiple broken/missing warp</td>
<td>Two or more contiguous, regardless of length</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>(end)</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Multiple broken weft</td>
<td>Two or more contiguous, regardless of length</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>(pick)</td>
<td>One pick, full width</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut, hole, tear or patch</td>
<td>Two or more warp or filling threads ruptured at adjoining points</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Float</td>
<td>A place in the fabric where warp and weft yarns escape the required interlacement</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 2 cm²</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.5 cm² to 2 cm²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gap stitching</td>
<td>Stitches missing</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 1.5 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.5 cm to 1.5 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corner Gap</td>
<td>Corner of the bag not properly stitched resulting in formation of hole</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 1.5 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.5 cm to 1.5 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mildew</td>
<td>Staining of fabric due to fungal or bacterial growth visible to naked eye</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

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

### ANNEX B

(*Table 3*)

**LIST OF PESTICIDES USED ON JUTE—BANNED, RESTRICTED OR WITHDRAWN**

**B-1 PESTICIDES REGISTERED FOR USE ON JUTE IN INDIA**

- HERBICIDES: Dalapon
- FUNGICIDES: Carbendazim
- INSECTICIDES: Carbaryl, Carbofuran, Endosulfan, Lindane, Phosalone, Quinalphos

**B-2 EXTRACT FROM LIST OF PESTICIDES NOT APPROVED, RESTRICTED USE, WITHDRAWN OR BANNED IN THE COUNTRY AS ON 16.04.1992**

**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 Diethrin 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 — DYED

i) 4-Aminodiphenyl
   ii) 2-Amino-4-nitrotoluene
   iii) Benzidine
   iv) 4-Chloro-o-toluidine
   v) 2-Naphthylamine
   vi) α-Altocarmine
   vii) p-Chloraniline
   viii) 2,4-Diaminonicsola
   ix) 4,4' — Diaminodiphenylmethane
   x) 3,3' — Dimethoxybenzidine
   xi) 3,3' — Dimethoxybenzilidene
   xii) 3,3' — Dimethylbenzilidene
   xiii) 3,3' — Dimethyl 4,4' diaminodiphenylmethane
   xiv) p-Resorcin (2-Methoxy 5-methylaniline)
   xv) 4,4' Methylene bis (2-chloraniline)
   xvi) 4,4' Oxydianilin
   xvii) 4,4' Thiodianilin
   xviii) α-Toluicin
   xix) 2,4 — Toluidinediamine
   xx) 2,4,5 — Trimethylaniline
   xxi) p-Amino-acetobenzene
   xxii) 2-Methoxyaniline
Bureau of Indian Standards

BIS is a statutory institution established under the Bureau of Indian Standards Act, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically, a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of ‘BIS Catalogue’ and ‘Standards: Monthly Additions’.

This Indian Standard has been developed from Doc No.: TXD 03 (1055).

### Amendments Issued Since Publication

<table>
<thead>
<tr>
<th>Amend No.</th>
<th>Date of Issue</th>
<th>Text Affected</th>
</tr>
</thead>
</table>

### BUREAU OF INDIAN STANDARDS

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

**Regional Offices:**

- **Central**: Manak Bhawan, 9 Babudar Shah Zafar Marg, NEW DELHI 110002  
  *Telephones*: 2323 7617, 2323 3841
- **Eastern**: 1/14 C.I.T. Scheme VII M. V. I. P. Road, Kanpur 208004  
  *Telephones*: 2337 8499, 2337 6361
- **Northern**: SCO 335-336, Sector 34-A, CHANDIGARH 160022  
  *Telephones*: 260 3843, 260 9285
- **Southern**: C.I.T. Campus, IV Cross Road, CHENNAI 600 113  
  *Telephones*: 2354 1216, 2354 4442
- **Western**: Manakalaya, E9 MIDC, Marol, Andheri (East)  
  *Telephones*: 2832 9295, 2832 7858

**Branches:**
AHMEDABAD, BANGALORE, BHOPAL, BHUBANESHWAR, COIMBATORE, DEHRADUN, FARIDABAD, GHAZIABAD, GUVAPUR, HYDERABAD, JAIPUR, KANPUR, KOCHI, LUCKNOW, NAGPUR, PARWANO, PATNA, PUNE, RAJKOT, VISAKHAPATNAM.

Published by BIS, New Delhi