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SPECIFICATION FOR JUTE SACKING CLOTH FOR CEMENT BAG

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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Indian Standard

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0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 30 March 1987, after the draft finalized by the Jute and Jute Products Sectional Committee had been approved by the Textile Division Council.

0.2 Indian Standard on jute sacking bags for packing cement (IS : 2580-1982*) was published in 1963. It was first revised in 1965 and subsequently in 1982. With the increase in the demand for jute sacking cloth for manufacture of cement bags conforming to IS : 2580-1982*, by the fabricators, the need for preparing a separate standard for this fabric has been felt. Publication of this standard will help in procurement of the required quality of jute sacking cloth suitable for manufacture of cement bags conforming to IS : 2580-1982*.

0.3 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, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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1. SCOPE

1.1 This standard prescribes the constructional details and other particulars of double warp plain sacking cloth used for the manufacture of jute bags for packing cement as per IS : 2580-1982*.

2. TERMINOLOGY

2.1 Bale — A rectangular or square, pressed, rigid package containing the cloth, covered with bale covering with outer layer stitched and bound by metal hoops.

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*Jute sacking bags for packing cement (*second revision*).

†Rules for rounding off numerical values (*revised*).

2.2 Contract Net Mass (Bale) — The mass as obtained from the specified length per bale, nominal width and mass per square metre of cloth. It is calculated as follows:

$$\text{Contract net mass of a bale (kg)} = \frac{\text{Nominal width (cm)} \times \text{specified length (m)} \times \text{mass (g/m}^2\text{)}}{10^5}$$

2.3 Corrected Net Mass (Bale) — The mass obtained by adjusting the actual net mass on the basis of actual regain to the contract regain. It is calculated as follows:

$$\text{Corrected net mass of a bale (kg)} = \frac{\text{Net mass} \times (100 + \text{contract moisture regain, percent})}{100 + \text{average moisture regain, percent}}$$

2.4 Contract Regain — The percentage regain on the basis of which the corrected net mass is calculated.

2.5 Ends — The warp threads of fabric.

2.6 Pick (or Shots) — The weft or filling threads of a fabric.

NOTE — Shots per inch = picks per decimetre × 0·254.

2.7 Cut (or Full Cut) — A length of continuously woven cloth measuring 73 m or more.

2.8 Medium Cut — A length of continuously woven cloth measuring 37 m or more, but less than 73 m.

2.9 Short Piece — A length of continuously woven cloth measuring 14 m or more, but less than 37 m.

2.10 Porter — The value obtained by counting in a finished cloth the number of warp threads per full gauge length of 47 mm (37/20 inch) and dividing it by the number of warp threads per split.

NOTE — This definition of porter, based on the Indian practice, refers to the finished fabric and has to be distinguished from Dundee practice, according to which porter is evaluated in terms of loom reed used in weaving the cloth.

3. GENERAL REQUIREMENTS

3.1 The sacking cloth shall be woven with jute yarn in double warp plain weave. The cloth shall be generally of uniform construction. Its selvedges should be firm and straight.

3.2 The fabric shall be free from the major weaving defects, such as gaw holes, cuts, tears and crushed selvedges. It should be generally free from biasness and minor defects like floats, spots and stains.

3.3 It is recommended that jute batching oil conforming to IS : 1758-1975* may be made use of during the manufacture of the jute fabrics.

4. SPECIFIC REQUIREMENTS

4.1 The sacking cloth shall conform to the requirements laid down in Table 1.

TABLE 1 SPECIFIC REQUIREMENTS OF JUTE SACKING CLOTH FOR CEMENT BAGS

Sl No.	Characteristic	Requirement	Method of Test (Ref to Clause in Appendix A)
(1)	(2)	(3)	(4)
i)	Mass per square metre, g	$685 \begin{smallmatrix}+68\\-50\end{smallmatrix}$	A-7
ii)	Ends per dm	68 ± 4	A-8
iii)	Picks per dm	39 ± 2	A-8
iv)	Width, cm	$71 \begin{smallmatrix}+4\\-0\end{smallmatrix}$	A-6
v)	Breaking load of cloth (on 10 × 20 cm strip): N (kg), *Min*		A-9
	Warpway, Average	1 570 (160)	
	Weftway, Average	1 810 (185)	
vi)	Moisture regain	22 percent, *Max*	A-2
vii)	Oil content on dry deoiled material basis	8 percent, *Max*	A-10

NOTE — The width of sacking cloth shall be 71 cm or as agreed to between the buyer and the seller. However, for the agreed width, the same tolerance of + 4 cm shall apply.

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4.2 Length and Cuts — The length of cloth in a bale shall not be less than the length specified or as agreed to between the buyer and the seller.

4.2.1 The length of cloth in a bale shall be determined by the method prescribed in **A-5**.

4.2.2 No bale shall contain more than (a) two medium cuts and one short cut, or (b) three medium cuts (*see* **4.1.7** of IS : 2873-1969*).

4.3 Contract Regain — The contract moisture regain shall be 20 percent.

*Specification for jute batching oil (*first revision*).

†Specification for packing of jute products in bales (*first revisio n*).

5. PACKING AND MARKING

5.1 Packing — The sacking cloth shall be packed in bales as laid down in IS : 2873-1969* or as specified in the agreement between the buyer and and the seller.

5.2 Marking — The bales shall be marked as laid down in IS : 2873-1969*. Additional markings shall be made as stipulated by the buyer or required by the regulations or law in force.

5.2.1 The bales may also be marked with the Standard Mark.

NOTE — 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 Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6. SAMPLING

6.1 Lot — All bales of sacking cloth of same width delivered to one buyer against one despatch note.

6.2 Gross Mass — For evaluating the gross mass of bales, 10 percent of bales selected from the lot, shall constitute the test sample.

6.3 Other Requirements — For assessing the conformity to the requirements other than gross mass of bales, the number of bales to be selected from the lot shall be in accordance with the following table:

No. of Bales in the Lot	*No. of Bales to be Drawn and Opened for Inspection*
(1)	(2)
Up to 15	2
16 ,, 50	3
51 ,, 150	5
151 ,, 500	8
501 and above	13

*Specification for packing of jute products in bales (*first revision*).

6.4 From the bales selected as in **6.3**, the test sample shall be drawn as under:

Sl No.	*Test*	*Test Sample*
i)	Tare mass (of baling hoops and all other packing materials)	The bales selected as in **6.3**
ii)	Length of cloth per bale	
iii)	Number of medium and short cuts	
iv)	Moisture regain, percent	5 cuts from each bale selected as in **6.3**
v)	Width	
vi)	Ends and picks per dm	
vii)	Mass in g/m^2	
viii)	Breaking load	One cut from each bale selected as in **6.3** subject to a minimum of five cuts
ix)	Oil content, percent	

7. CRITERIA OF CONFORMITY

7.1 A lot shall be considered as conforming to the requirements of the standard if the following conditions are satisfied:

a) The total of the corrected net mass of bales under test is not less than the total of the contract net mass of the bales.

b) The total length of the cuts and the number of medium and short cuts in each bale shall meet the corresponding specified requirements (*see* **4.2.2**).

c) The average moisture regain percent for cuts under test is not more than the specified (*see* Table 1).

d) The average oil content percent for the cuts under test is not more than the specified (*see* Table 1).

e) The average ends per decimeter of the cuts under test is in accordance with the requirements specified (*see* Table 1).

f) The average picks per decimeter of the cuts under test is in accordance with the requirements specified (*see* Table 1).

g) The average value of the width and mass for the cuts under test is not less than the nominal value specified (*see* Table 1).

h) The average breaking load values obtained for all the test specimen for warp and weft is not less than the corresponding specified values (*see* Table 1).

APPENDIX A

(*Table* 1)

METHODS FOR TESTING AND INSPECTION

A-0. TESTING AND INSPECTION PROCEDURE

A-0.1 Testing and inspection of the lot shall be carried out on the samples drawn in accordance with **6.**

A-1. MASS OF BALES

A-1.1 Determine the gross mass of the each bale in the test sample to nearest kg (Wg) (**6.2**).

A-1.2 Remove the baling hoops and all other packing materials of the bales (**6.4**), weigh them separately up to nearest kg (Wt).

A-1.3 Find separately the net mass (Wn) of bales under test, $W_g - W_t$.

A-1.4 Determine individually the corrected net mass of bales under test (W) by the following formula:

$$W = \frac{Wn \times (100 + \text{contract moisture regain, percent})}{100 + \text{Average moisture regain, percent, of bale}}$$

A-2. MOISTURE REGAIN

A-2.1 Determine the moisture regain in each cut (**6.4**) on opening the bales by the use of a suitable moisture meter. After opening the bales, sufficient time (not less than 10 minutes) should be allowed to lapse before measuring moisture regain to enable the cloth to attain conditions for the normal use of the moisture meter. Take at least 4 readings for each cut.

NOTE — IJIRA (Indian Jute Industries' Research Association) Moisture meter* may be used for the purpose. This meter works on the principle of measuring electrical resistance which changes with the moisture content in the material. The specimen (jute product) is placed under the electrode gun having two poles specially designed spring-loaded electrodes. A small amount of current passing through the electrodes is then amplified and recorded on the meter which is calibrated against the actual moisture regain based on oven-dry method of the material or whose readings are calibrated in a separate chart against the actual moisture regain based on the same method. This instrument shall be operated according to the manufacturer's instructions.

*Mention of the name of the specific instrument is not intended to promote or give preference to the use of that instrument over these not mentioned.

A-3. LENGTH OF CUTS

A-3.1 Determine the length of cloth in each cut (**6.4**) in the bales (**6.3**) correct to a decimeter in accordance with IS : 1954-1969*.

A-4. NUMBER OF MEDIUM CUTS AND SHORT PIECES

A-4.1 From the results of **A-3**, determine the number of medium cuts and short pieces in each bale (**6.3**).

A-5. LENGTH PER BALE

A-5.1 Determine the total length of cloth in each bale (**6.3**) by adding up the length of cuts (**A-3**) in the respective bales.

A-6. WIDTH

A-6.1 Determine the width of cuts (**6.4**) correct to 0·5 cm in accordance with IS : 1954-1969*.

A-7. MASS IN GRAMS PER SQURAE METER

A-7.1 Weigh the cuts (**6.4**) up to nearest 0·1 kg after the measurement of moisture regain (**A-2**) and determine the mass in g/m² of cloth at 20 percent moisture regain for each cut separately from the corresponding moisture regain (**A-2**); measured length (**A-3**) and nominal width of cuts.

A-8. ENDS AND PICKS

A-8.1 Count the ends and picks from each cut (**6.4**) at four and ten places respectively with suitable gauge measuring 5 cm and determine the ends and picks per dm in accordance with IS : 1963-1981†.

A-9. BREAKING LOAD

A-9.1 Test from each cut (**6.4**) 5 warpway and 5 weftway specimens for breaking load with 100 mm-wide ravelled strips and 200 mm between grips according to IS : 1969-1985‡.

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*Methods for determination of length and width of fabrics (*first revision*).

†Methods for determination of threads per unit length in woven fabrics (*second revision*).

‡Methods for dete rmination of breaking load and elongation of woven textile-fabrics (*second revision*).

A-10. OIL CONTENT

A-10.1 From each cut (**6.4**) take two representative strips, together weighing approximately 20 g, and determine the oil content on dry deoiled material basis in accordance with IS : 2969-1974*.

*Method for determination of oil content of jute yarn and fabrics (*first revision*).